Margaret Carroll <mcarroll@cfa.harvard.edu>

From:	Amanda Preston <apreston@cfa.harvard.edu>
Sent:	Thursday, January 21, 2010 1:55 PM
To:	Karen McLaine <kmiminos@cfa.harvard.edu>; Marci Miller <mmiller@cfa.harvard.edu>; Lynne Nee <lnee@cfa.harvard.edu>; Nayla Rathle <nrathle@cfa.harvard.edu>
Cc:	Nancy Brickhouse <nbrickhouse@cfa.harvard.edu>; Robert Palleschi <rpalleschi@cfa.harvard.edu>; Margaret Carroll <mcarroll@cfa.harvard.edu>
Subject:	2009 ExxonMobil Gift of $76,106
Attachments:	2009-12-31_3011 ExxonMobil_$76106 00_00001.pdf; Re: Unrestricted gift to Smithsonian Astrophysical Observatory

Dear Karen, Marci, Lynne, and Nayla:

I received an email from Judith Batty at ExxonMobil about the $76,106 contribution for Dr. Willie Soon's research. I have attached the 3011 Transmittal Form from 4/2/09. You will see that $22,181.00 was allocated to task 40301770IS50AP. This amount is equivalent to the indirect costs that would have been charged if the gift had been a grant. On instructions from Charles Alcock, I asked ExxonMobil to allow us to reclassify that amount as an unrestricted contribution. Judith Batty assented to our request (see attached email).

I have the following questions and comments:

Charles Alcock agrees that this money should be used to defray any shortfall in development funding.

Do we move it from 301770 to 101600? Or to the DDF?

How does it get moved?

Do I need to file an amended 3011 or does a journal entry take care of it?

Please let me know your thoughts and any decisions you make about this.

Thank you,

Amanda

Amanda Preston
Advancement and External Affairs Officer Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS-45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6
Email: apreston@cfa.harvard.edu

Margaret Carroll <mcarroll@cfa.harvard.edu>

From: [redacted]
Sent: Monday, January 11, 2010 2:50 PM
To: Amanda Preston <apreston@cfa.harvard.edu>
Subject: Re: Unrestricted gift to Smithsonian Astrophysical Observatory

Hi Amanda, I have discussed lifting the restriction on the portion of our donation designated for indirect costs, and you can consider the
restriction lifted. Judith

Judith N. Batty
Senior Director, Federal Relations
Exxon Mobil Corporation
2000 K Street NW, Suite 710
Washington, DC 20006
Telephone: [redacted] Fax: [redacted] [redacted]

apreston@cfa.harvard.edu

12/29/2009
12:44 PM

To: <[redacted]>
cc:
Subject: Unrestricted gift to Smithsonian Astrophysical Observatory

Dear Judith,

This is to follow up on our telephone conversation in early December. I hope you received my letter highlighting our current research areas. I would very much like to learn if there are any avenues of support that we might explore. I expect to be in Washington in the last week of January. Perhaps we could meet then. I will call you in the next week or so.

I write also about another matter. You may recall that we discussed utilizing the portion of ExxonMobil's March contribution of $76,106 that was designated for indirect costs instead for unrestricted purposes.

You thought you would have a chance to discuss this with others in your office and get back to me. I'm hoping you'll have some thoughts on that soon.

With best wishes for the New Year,

Amanda

Amanda Preston
Advancement and External Affairs Officer Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS-45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6
Email: apreston@cfa.harvard.edu

2009-400000-00016

SMITHSONIAN INSTITUTION

Tracking # 200X-XX0000-00016

TRANSMITTAL FORM FOR GIFTS & PROMISES (PLEDGES) TO GIVE

[Note: All payments from external sources deposited to 802/803 grant and contract funds must be routed on a CRV through OSP.]

DATE OF GIFT	CASH	CHECK	CREDIT CARD		DISCOVER	OTHER		PLEDGES
3-17-09	$	$76,106.00	$		VISA/MASTERCARD			WIRES
		#2500407776	CREDIT CARD MERCHANT #		AMERICAN EXPRESS	$		STOCK (PROCEEDS)
								GIFT IN KIND

GIFT CHARTFIELD: SPLIT FUNDED

Fund	Budget Ref	Designated Code	Dept. ID		Account	Class	Program	Project ID	Activity ID	Amount
801	0000	301770	404S50		Unrestricted Designated(5804)	0302	4210	40301770IS5000	DEFAULT	$53,925.00
					Permanently Restricted (5803)					
				X	Temporarily Restricted (5802)					
801	0000	301770	404S50		Unrestricted (5801)	0302	8700	40301770IS50AP	DEFAULT	$22,181.00
					Endowment Pig Payms (1315)					

QUID PRO QUO CHARTFIELD (Complete ONLY for Non Tax Deductible Benefits associated with a GIFT)

Fund	Budget Ref	Designated Code	Dept. ID		Account	Class	Program	Project ID	Activity ID	Amount

DONOR INFORMATION

DONOR NAME	SI UNIT / PROJECT CONTACT NAME AND TELEPHONE NUMBER
EXXON MOBIL CORPORATION	SAO

MAILING ADDRESS:

	HOME
x	WORK P.O. BOX 2518, HOUSTON, TEXAS 77252-2518
	PURPOSE/PROJECT TO SUPPORT: UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE", DR. WILLIE SOON, PI
	NAME OF PERSON WHO RECEIVED FUNDS AMANDA PRESTON — DATE SI RECEIVED GIFT/PROMISE 4/2/09

SECURITIES INFORMATION

STOCK/BOND NAME			
UNIT PRICE ON DATE SI RECEIVED OWNERSHIP $ (Mean Value per Share of Stock /Face Value of Bond)	NUMBER OF SHARES / BONDS	TOTAL MEAN VALUE OF GIFT $ (Number X Mean per Share for Stocks/Face for Bonds)	DATE SI RECEIVED OWNERSHIP

GIFT IN KIND INFORMATION

NEW GIK?		DESCRIPTION
PAYMENT ON GIK?		

PLEDGE AND PAYMENT SCHEDULE INFORMATION

			PAYMENT SCHEDULE		
NEW PLEDGE?			SCHEDULED PAYMENT	PAYMENT AMOUNT	DISCOUNT AMOUNT
PLEDGE PYMT?					
Remarks: 4/7/09 PLEASE NOTE IN REMARKS IF PLEDGE IS CONDITIONAL. SUBMIT 1011 TO NOTIFY IF CONDITION IS NOT MET					

PREPARED BY Amanda Preston	TELEPHONE NUMBER 617-496-7321	UNIT AND MRC NUMBER 60 Garden Street, MS 45 Cambridge, MA 02138	DATE PREPARED 4/3/09

Comments PLEASE NOTE IN COMMENTS IF SOFT CREDIT SHOULD BE APPLIED; IF SO, LIST TO WHAT OTHER DONOR RECORDS	REQUIRED DONOR DOCUMENTATION ATTACHED			
		YES		NO

SI-3011 (06/07)

Exxon Mobil Corporation
Washington Office
2000 K Street, N.W.
Suite 710
Washington, DC 20006
202 862 0200 Telephone
202 862 0267 Facsimile

Mark D. Boudreaux
Senior Director, Federal Relations

ExxonMobil

March 30, 2009

Ms. Amanda Preston
Smithsonian Astrophysical Observatory
60 Garden Street, MS-45
Cambridge, MA 02138-1516

Dear Ms. Preston:

ExxonMobil is pleased to provide the enclosed contribution to the Smithsonian Astrophysical Observatory in the amount of $76,106.00 for General Support.

We ask that you please complete the enclosed form and return it to the Community Relations Group at the address indicated.

We are pleased to support the Smithsonian Astrophysical Observatory and wish you continued success.

Sincerely,

Mark Boudreaux

Enclosure

This is the request from 12/08.

Smithsonian Astrophysical Observatory

c/o Amanda Preston
60 Garden Street
MS-45
Cambridge, MA 02138-1516

Phone: 617-495-7321
Fax: 617-495-7105
E-mail:
apreston@cfa.harvard.edu

Request for Payment

To:

Attention: Mark Boudreaux
ExxonMobil Corporation
2000 K. Street, NW
Suite 710
Washington, DC 20006

Please make check payable to:
Smithsonian Astrophysical Observatory

Mail check to:
Amanda Preston
Advancement and External Affairs Officer
Smithsonian Astrophysical Observatory
60 Garden Street, MS 45
Cambridge, MA 02138-1516

December 2, 2008

Request for contribution to support Year Two of the research project: *"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States"*, Dr. Willie Soon, Principal Investigator

Project Costs	
Salary and Benefits:	
Dr. Willie Soon (75 days)	$49,305
Administrator (1 day)	617
Secretarial (1.5 days)	953
Indirect Costs	21,876
Total Salary and Benefits:	$72,751
Other Costs:	
Travel	$2,000
Publications	1,050
Indirect Costs	305
Total Other Costs:	$3,355
Total All Costs:	$76,106

Thank you very much.

Questions: Please contact Amanda Preston, 617-495-7321, apreston@cfa.harvard.edu.

SMITHSONIAN INSTITUTION

Tracking # 2008 - 400000 – 00032

TRANSMITTAL FORM FOR GIFTS & PROMISES TO GIVE

DATE OF GIFT	CASH	CHECK	CREDIT CARD		OTHER		STOCK SALE
6-11-08	$	$76,106.00	$	DISCOVER / VISA/MC / AMEX		PLEDGES / WIRES	OR
						LAST 4 DIGITS OF C.C. MERCHANT #	

CHARTFIELDS: SPLIT FUNDED SEE BELOW

Fund	Budget Ref	Designated Code	Dept. ID	Account	Class	Program	Project ID	Activity ID
				Unrestricted Designated(5604)				
				Permanently Restricted (5603)				
				Temporarily Restricted (5602)				
				Unrestricted (5601)				
				Endowment Pledge Payments (1315)				

DONOR INFORMATION

DONOR NAME	SI UNIT / PROJECT CONTACT
EXXON MOBIL CORPORATION	SAO/Preston

MAILING ADDRESS

X	HOME	P.O. BOX 2519, HOUSTON, TX 77252-2519
	WORK	

PURPOSE/PROJECT: TO SUPPORT "UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE", DR. WILLIE SOON, P.I.

NAME OF PERSON WHO RECEIVED GIFT/Pledge: AMANDA PRESTON

DATE SI RECEIVED GIFT/PROMISE: 7-1-08

SECURITIES INFORMATION

STOCK/BOND NAME		
DATE OF TRANSFER TO SI OWNERSHIP	NUMBER OF SHARES / FACE VALUE OF BONDS	UNIT PRICE

GIFT IN KIND INFORMATION

NEW GIK?		DESCRIPTION
PAYMENT ON GIK?		

PLEDGE AND PAYMENT SCHEDULE INFORMATION

NEW PLEDGE?		PAYMENT SCHEDULE		
PAYMENT ON PLEDGE?		SCHEDULED PAYMENT	PAYMENT AMOUNT	DISCOUNT AMOUNT
REMARKS				
NOTE IN REMARKS IF PLEDGE IS CONDITIONAL. SUBMIT SI-11 TO NOTIFY IF CONDITION IS NOT MET				

PREPARED BY	TELEPHONE NUMBER	UNIT AND MAC NUMBER	DATE PREPARED
Amanda Preston	617-496-7321	Smithsonian Astrophysical Observatory 60 Garden Street, MS 45 Cambridge, MA 02138-1516	7-2-08

Comments: SPLIT GIFT AS FOLLOWS

$53,876 to:
801 0000 301770 404550 0302 4210 4030177055000 DEFAULT

$22,230 to:
801 0000 301770 404550 0302 [illegible] DEFAULT

REQUIRED DONOR DOCUMENTATION ATTACHED: YES / NO

SI-3011 (04/05) All payments from external sources deposited to 802/803 grant and contract funds must be approved by OSP.

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

CODE	OUR REFERENCE	DATE	YOUR REFERENCE	NET AMOUNT
PAY4	1900006183	03/09/09	78171	76,106.00

Payment made per agreement with ExxonMobil contracting entity.
REFER ANY INQUIRIES TO 1-800-833-1510 OR CHECK THE PAYMENT STATUS AT
HTTP://PAYMENT-ADVICE.COM

* INCLUDE WITH EACH INQUIRY	PAYEE ID NUMBER	CHECK NUMBER	CHECK DATE	CHECK AMOUNT
	6357421	2500407776	03/17/09	76,106.00

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

62-20/311

P O BOX 2519
HOUSTON TX 77252-2519

CHECK NUMBER 2500407776

6357421

DATE 03/17/09

PAY TO THE ORDER OF

SMITHSONIAN ASTROPHYSICAL
OBSERVATORY
60 GARDEN ST MS 45
CAMBRIDGE MA 02138-1516

********$76,106.00*

VOID AFTER SIX MONTHS

CITIBANK NA
NEW CASTLE, DE 19720 2405

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW - IF NOT PRESENT DO NOT CASH

SI-000008

Amanda Preston <apreston@cfa.harvard.edu>

From: Amanda Preston <apreston@cfa.harvard.edu>
Sent: Thursday, January 21, 2010 11:41 AM
To: Exemption 6 [redacted]
Subject: Acknowledgment Form
Attachments: 2010-01-21_Exxon Mobil_Acknowledgement_00002.PDF

Dear Ms. Ceja:

Attached please find the signed Acknowledgment Form for ExxonMobil's contribution of $76 106.00 to the Smithsonian Astrophysical Observatory. I regret that this is so late coming to you. In actual fact, I was in discussions with Mr. Boudreaux and with Ms. Batty about this contribution until just last week and so we delayed this final acknowledgment until we were in agreement.

I hope you forgive our delay.

With best regards.

Amanda Preston

Amanda Preston
Advancement and External Affairs Officer
Harvard-Smithsonian Center for Astrophysics
60 Garden Street, MS-45
Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6 [redacted]
Email: apreston@cfa.harvard.edu

Facsimile

ExxonMobil

To **Ms. Rachel**

Re Acknowledgement Form

Fax 617-495-7105

Pages 2 pages + cover

From **Victoria Ceja**

Date January 15, 2010

Please have someone fill out the form attached and return via fax to my attention. Thank you.

Victoria Ceja
Exxon Mobil Corporation - Public Affairs
Corporate Citizenship & Community Investments
5959 Las Colinas Blvd.
Irving, TX 75039
Phone: [redacted]
Fax: [redacted]
[redacted]

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

CODE	OUR REFERENCE	DATE	YOUR REFERENCE	NET AMOUNT
PAY4	1900006183	03/09/09	78171	76,106.00

Payment made per agreement with ExxonMobil contracting entity.
REFER ANY INQUIRIES TO 1-800-833-1510 OR CHECK THE PAYMENT STATUS AT HTTP://PAYMENT-ADVICE.COM

* INCLUDE WITH EACH INQUIRY	PAYEE ID NUMBER	CHECK NUMBER	CHECK DATE	CHECK AMOUNT
	6357421	2500407776	03/17/09	76,106.00

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

62-20/311

P O BOX 2519
HOUSTON TX 77252-2519

CHECK NUMBER 2500407776

6357421 DATE 03/17/09

PAY TO THE ORDER OF
SMITHSONIAN ASTROPHYSICAL
OBSERVATORY
60 GARDEN ST MS 45
CAMBRIDGE MA 02138-1516

********$76,106.00*

VOID AFTER SIX MONTHS

CITIBANK NA
NEW CASTLE, DE 19720 8409

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW - IF NOT PRESENT DO NOT CASH

[redacted]

SMITHSONIAN INSTITUTION

Tracking # 200X-XX0000-00016

TRANSMITTAL FORM FOR GIFTS & PROMISES (PLEDGES) TO GIVE

[Note: All payments from external sources deposited to 802/803 grant and contract funds must be routed on a CRV through OSP.]

DATE OF GIFT	CASH	CHECK	CREDIT CARD		DISCOVER	OTHER		PLEDGES
3-17-09	$	$76,106.00	$		VISA/MASTERCARD			WIRES
					AMERICAN EXPRESS	$		STOCK (PROCEEDS)
		#2500407776	CREDIT CARD MERCHANT #					GIFT IN KIND

GIFT CHARTFIELD: SPLIT FUNDED

Fund	Budget Ref	Designated Code	Dept. ID		Account	Class	Program	Project ID	Activity ID	Amount
801	0000	301770	404S50		Unrestricted Designated(5604)	0302	4210	40301770IS5000	DEFAULT	$53,925.00
					Permanently Restricted (5603)					
				X	Temporarily Restricted (5602)					
801	0000	301770	404S50		Unrestricted (5601)	0302	8700	40301770IS50AP	DEFAULT	$22,181.00
					Endowment Pig Paymts (1315)					

QUID PRO QUO CHARTFIELD (Complete ONLY for Non Tax Deductible Benefits associated with a GIFT)

Fund	Budget Ref	Designated Code	Dept. ID		Account	Class	Program	Project ID	Activity ID	Amount

DONOR INFORMATION

DONOR NAME	SI UNIT / PROJECT CONTACT NAME AND TELEPHONE NUMBER
EXXON MOBIL CORPORATION	SAO

MAILING ADDRESS:

	HOME
x	WORK P.O. BOX 2519, HOUSTON, TEXAS 77252-2519
	PURPOSE/PROJECT TO SUPPORT: UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE", DR. WILLIE SOON, PI
	NAME OF PERSON WHO RECEIVED FUNDS AMANDA PRESTON — DATE SI RECEIVED GIFT/PROMISE 4/2/09

SECURITIES INFORMATION

STOCK/BOND NAME			
UNIT PRICE ON DATE SI RECEIVED OWNERSHIP $ (Mean Value per Share of Stock /Face Value of Bond)	NUMBER OF SHARES / BONDS	TOTAL MEAN VALUE OF GIFT $ (Number X Mean per Share for Stocks/Face for Bonds)	DATE SI RECEIVED OWNERSHIP

GIFT IN KIND INFORMATION

NEW GIK?		DESCRIPTION
PAYMENT ON GIK?		

PLEDGE AND PAYMENT SCHEDULE INFORMATION

			PAYMENT SCHEDULE		
NEW PLEDGE?			SCHEDULED PAYMENT	PAYMENT AMOUNT	DISCOUNT AMOUNT
PLEDGE PYMT?					
Remarks:					
PLEASE NOTE IN REMARKS IF PLEDGE IS CONDITIONAL. SUBMIT 3011 TO NOTIFY IF CONDITION IS NOT MET					

PREPARED BY	TELEPHONE NUMBER	UNIT AND MRC NUMBER	DATE PREPARED
Amanda Preston	617-495-7321	60 Garden Street, MS 45 Cambridge, MA 02138	4/3/09

Comments	REQUIRED DONOR DOCUMENTATION ATTACHED			
PLEASE NOTE IN COMMENTS IF SOFT CREDIT SHOULD BE APPLIED. IF SO, LIST TO WHAT OTHER DONOR RECORDS		YES		NO

Exxon Mobil Corporation
Washington Office
2000 K Street, N.W.
Suite 710
Washington, DC 20006
Exemption 6 Telephone
Facsimile

Mark D. Boudreaux
Senior Director, Federal Relations

ExxonMobil

March 30, 2009

Ms. Amanda Preston
Smithsonian Astrophysical Observatory
60 Garden Street, MS-45
Cambridge, MA 02138-1516

Dear Ms. Preston:

ExxonMobil is pleased to provide the enclosed contribution to the Smithsonian Astrophysical Observatory in the amount of $76,106.00 for General Support.

We ask that you please complete the enclosed form and return it to the Community Relations Group at the address indicated.

We are pleased to support the Smithsonian Astrophysical Observatory and wish you continued success.

Sincerely,

Mark Boudreaux

Enclosure

Acknowledgement

Please return this completed form to Exxon Mobil Corporation, Community Relations Group, Public Affairs Department, Room 2423, 5959 Las Colinas Blvd., Irving, TX 75039-2298 or Fax: 972/444-1405.

200901293

Smithsonian Astrophysical Observatory
60 Garden Street, MS 45
Cambridge, MA 02138-1516

Organization Tax ID: 53-0206027

The 1993 Omnibus Budget Reconciliation Act imposes substantiation requirements for charitable contributions. In order to comply with the regulations, ExxonMobil requires each nonprofit organization receiving a grant of $250 or more to provide the following information. ***Acknowledgment must be provided within thirty days after receipt of ExxonMobil contribution***. Failure to respond may result in cancellation of support in the future.

1. Please indicate the date contribution was received: April 2, 2009

2. Please indicate the amount of the check and/or describe any property received: $76,106.00

3. Were any goods and/or services provided to ExxonMobil by your organization in return for this contribution? (meals, entertainment, gifts, etc.) Yes _____ No XX

   If yes, please provide a description and good faith estimate of the value.

   not applicable

Signature: Amanda Preston Date: January 21, 2010

Print Name: Amanda Preston Title: Advancement and External Affairs Officer

Harvard-Smithsonian Center for Astrophysics
60 Garden Street, Cambridge, MA 02138-1516 (617) 495-7000

December 3, 2009

Ms. Judith Batty, Esq.
Exxon Mobil Corporation
2000 K Street, NW, Suite 710,
Washington, DC 20006

Dear Judith:

Thank you very much for meeting with me by phone last week to discuss ExxonMobil's most recent contribution to the Observatory. I hope to hear from you soon that we can use the "indirect cost" portion of the gift for general operating support.

In view of the fact that you will no longer be funding Dr. Soon's research, this letter is a high-level overview of the research efforts pursued here at the Smithsonian Astrophysical Observatory. It would be very helpful to follow up this letter with a meeting to determine which areas of research might merit more discussion and exploration. I am in Washington frequently, and would be happy to visit your office at your convenience.

As you may know, the Smithsonian Astrophysical Observatory (SAO) is a research institute of the Smithsonian Institution headquartered in Cambridge, MA. Its affiliation with the Harvard College Observatory (HCO) is known worldwide as the Harvard-Smithsonian Center for Astrophysics (CfA). The Observatory's primary mission is to advance knowledge of the universe through research in astronomy and astrophysics and in related areas of fundamental physics and geophysics. The secondary mission is to be of service to the national and international astronomical communities, and to society in general, in areas associated with our primary mission. The Observatory has a strong record of achievement in developing and successfully implementing large, complex, and innovative observational and theoretical research projects. SAO also supports the curiosity-driven research carried out by individual researchers and small groups. Research in science education and outreach to many different publics round out our programs.

SAO uses its resources to attack fundamental questions in astronomy and astrophysics. These range from the mysteries of the formation and evolution of planets, stars, black holes, galaxies and larger scale structures in the Universe, to those surrounding the mysterious dark matter and dark energy pervading the Universe. Our own Sun provides a particularly rich laboratory for the study of both fundamental physics and the development of stars and solar systems.

SAO has helped to develop some of the world's most sophisticated astronomical instruments to probe the universe with high resolution at wavelengths across the electromagnetic spectrum. SAO developed and operates telescope facilities in Arizona, Hawaii, Massachusetts, and Chile. The Observatory plays leading roles in several NASA missions (including the currently orbiting Chandra X-ray Observatory, the Spitzer Space Telescope and Hinode (with the Japanese Space Agency), as well as

missions organized by the European Space Agency. A widely recognized program that utilizes space-borne technologies to study our Earth has been operating at SAO for many years.

SAO is also a leading center for theoretical and computational astrophysics, utilizing complex numerical simulations calculated on thousands of parallel processors to model the formation of the early universe and the development of galaxies and planets. SAO's strong laboratory astrophysics program uses laboratory experiments to expand our understanding of physical processes and applies these results to processes throughout the Universe.

SAO's current research goals include:

a. To play a lead role in a "next-generation," ground-based optical/infrared telescope, the Giant Magellan Telescope;
b. To develop the next-generation x-ray technology necessary for the follow on missions to the Chandra X-ray Observatory;
c. To play a major role in multi-wavelength observations of star and planet formation, of the formation and evolution of galaxies, of the nature and physics of dark energy and dark matter, and of the "markers" of possibly habitable planets like Earth.
d. To strengthen the synergy between astronomical observatory and laboratory experiments conducted on the Earth to ensure that we are using the best atomic and molecular data to interpret astrophysical observations of the Universe and our own planet.

Enclosed please find the following materials:

- A brief fact sheet on SAO
- A copy of the Executive Summary of our science strategic plan
- Copies of two press releases on important discoveries from the past month

We would be delighted to host you and some of your colleagues at one of our facilities. Our telescope facilities in Arizona and Hawaii are fascinating and make for a wonderful hands-on introduction to the Observatory and to the big questions in contemporary astrophysics. So, too, a visit to our headquarters in Cambridge offers an intriguing glimpse into the engineering and technology development that underlie our observing capabilities.

Please do not hesitate to be in touch if you would like additional information or if we can do anything to arrange some behind-the-scenes visits. I will call you in a few weeks to follow up.

With best regards,

Amanda Preston
Advancement and External Affairs Officer

Enclosures

This is the request from 12/08.

Smithsonian Astrophysical Observatory

c/o Amanda Preston
60 Garden Street
MS-45
Cambridge, MA 02138-1516

Phone: 617-495-7321
Fax: 617-495-7105
E-mail:
apreston@cfa.harvard.edu

Request for Payment

To:

Attention: Mark Boudreaux
ExxonMobil Corporation
2000 K. Street, NW
Suite 710
Washington, DC 20006

Please make check payable to:
Smithsonian Astrophysical Observatory

Mail check to:
Amanda Preston
Advancement and External Affairs Officer
Smithsonian Astrophysical Observatory
60 Garden Street, MS 45
Cambridge, MA 02138-1516

December 2, 2008

Request for contribution to support Year Two of the research project: *"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States"*, Dr. Willie Soon, Principal Investigator

Project Costs	
Salary and Benefits:	
Dr. Willie Soon (75 days)	$49,305
Administrator (1 day)	617
Secretarial (1.5 days)	953
Indirect Costs	21,876
Total Salary and Benefits:	$72,751
Other Costs:	
Travel	$2,000
Publications	1,050
Indirect Costs	305
Total Other Costs:	$3,355
Total All Costs:	$76,106

Thank you very much.

Questions: Please contact Amanda Preston, 617-495-7321, apreston@cfa.harvard.edu.

Harvard-Smithsonian Center for Astrophysics
60 Garden Street, Cambridge, MA 02138-1516 (617) 495-7000

July 11, 2008

Mark D. Boudreaux
Senior Director, Federal Relations
Exxon Mobil Corporation
2000 K Street, NW
Suite 710
Washington, DC 20006

Dear Mr. Boudreaux:

Thank you very much for Exxon Mobil's contribution of $76,106 to the Smithsonian Astrophysical Observatory to support Dr. Willie Soon's project, "Understanding Solar Variability and Climate Change." Restricted gifts are very important for our science research, particularly the projects that seek to better understand our own Sun.

Please accept my thanks on behalf of the entire Observatory.

With best regards,

Amanda Preston
Advancement and External Affairs Officer

60 Garden Street
MS-45
Cambridge, MA 02138
617-495-7321 (voice)
617-495-7105 (fax)
apreston@cfa.harvard.edu (email)

Smithsonian Astrophysical Observatory

GIFT RECEIPT FOR TAX RECORDS

60 Garden Street, MS 45, Cambridge, MA 02138-1516 Tel: (617) 495-7321 Fax: (617) 495-7105 Email: development@cfa.harvard.edu

To: ***Exxon Mobil Corporation***

This receipt gratefully acknowledges your contribution to the Smithsonian Astrophysical Observatory of:

$76,106.00 (seventy-six thousand one-hundred and six dollars)

for: ***"Understanding Solar Variability and Climate Change" (Dr. Willie Soon)***

Date Received: ***July 1, 2008***

By: Amanda Preston Date: ***July 11, 2008***

Amanda Preston, Advancement and External Affairs Officer

The Smithsonian Astrophysical Observatory has not provided you with any goods or services in exchange for this contribution.

Exxon Mobil Corporation
Washington Office
2000 K Street, N.W.
Suite 710
Washington, DC 20006
Exemption 6 Telephone
Facsimile

Mark D. Boudreaux
Senior Director, Federal Relations

ExxonMobil

June 30, 2008

Ms. Amanda Preston
Smithsonian Astrophysical Observatory
60 Garden Street, MS-45
Cambridge, MA 02138-1516

Dear Ms. Preston:

ExxonMobil is pleased to provide the enclosed contribution to the Smithsonian Astrophysical Observatory in the amount of $76,106.00 for General Support.

We ask that you please complete the enclosed form and return it to the Community Relations Group at the address indicated.

We are pleased to support the Smithsonian Astrophysical Observatory and wish you continued success.

Sincerely,

Mark D Boudreaux

Enclosure

SMITHSONIAN INSTITUTION

Tracking # 2008 - 400000 – 00032

TRANSMITTAL FORM FOR GIFTS & PROMISES TO GIVE

DATE OF GIFT	CASH	CHECK	CREDIT CARD		DISCOVER	OTHER		PLEDGES		STOCK SALE
6-11-08	$	$76,106.00	$		VISA/MC			WIRES		GIK
					AMEX		LAST 4 DIGITS OF C.C. MERCHANT #			

CHARTFIELDS: SPLIT FUNDED SEE BELOW

Fund	Budget Ref	Designated Code	Dept. ID		Account	Class	Program	Project ID	Activity ID
					Unrestricted Designated(5604)				
					Permanently Restricted (5603)				
					Temporarily Restricted (5602)				
					Unrestricted (5601)				
					Endowment Pledge Payments (1315)				

DONOR INFORMATION

DONOR NAME	SI UNIT / PROJECT CONTACT
EXXON MOBIL CORPORATION	SAO/Preston

MAILING ADDRESS:

X	HOME	P.O. BOX 2519, HOUSTON, TX 77252-2519
	WORK	
	PURPOSE/PROJECT	TO SUPPORT "UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE", DR. WILLIE SOON, P.I.
	NAME OF PERSON WHO RECEIVED FUNDS	AMANDA PRESTON

DATE SI RECEIVED GIFT/PROMISE: 7-1-08

SECURITIES INFORMATION

STOCK/BOND NAME		
DATE OF TRANSFER TO SI OWNERSHIP	NUMBER OF SHARES / FACE VALUE OF BONDS	UNIT PRICE

GIFT IN KIND INFORMATION

NEW GIK?		DESCRIPTION
PAYMENT ON GIK?		

PLEDGE AND PAYMENT SCHEDULE INFORMATION

			PAYMENT SCHEDULE		
NEW PLEDGE?			SCHEDULED PAYMENT	PAYMENT AMOUNT	DISCOUNT AMOUNT
PAYMENT ON PLEDGE?					
REMARKS:					

NOTE IN REMARKS IF PLEDGE IS CONDITIONAL SUBMIT 3011 TO NOTIFY IF CONDITION IS NOT MET

PREPARED BY	TELEPHONE NUMBER	UNIT AND MAIL CODE NUMBER	DATE PREPARED
Amanda Preston *Amanda Preston*	617-495-7321	Smithsonian Astrophysical Observatory 60 Garden Street, MS 45 Cambridge, MA 02138-1516	7-2-08

Comments: SPLIT GIFT AS FOLLOWS

$53,876 to:
801 0000 ###### 404S50 0302
4210 40######IS50[redacted]

$22,230 to:
402 0000 040201 5601
8700 40040201I9114
DEFAULT

REQUIRED DONOR DOCUMENTATION ATTACHED: YES / NO

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

CODE	OUR REFERENCE	DATE	YOUR REFERENCE	NET AMOUNT
PAY4	1900014331	06/05/08	76244	76,106.00

Payment made per agreement with ExxonMobil contracting entity.
REFER ANY INQUIRIES TO 1-800-833-1510 OR CHECK THE PAYMENT STATUS AT
HTTP://PAYMENT-ADVICE.COM

* INCLUDE WITH EACH INQUIRY	PAYEE ID NUMBER	CHECK NUMBER	CHECK DATE	CHECK AMOUNT
	6357421	2500349950	06/11/08	76,106.00

EXXON MOBIL CORPORATION OR AN AFFILIATED COMPANY

62-20/311

P O BOX 2519
HOUSTON TX 77252-2519

CHECK NUMBER 2500349950

6357421

DATE 06/11/08

PAY TO THE ORDER OF
SMITHSONIAN ASTROPHYSICAL
OBSERVATORY
60 GARDEN ST MS 45
CAMBRIDGE MA 02138-1516

********$76,106.00*

VOID AFTER
SIX MONTHS

CITIBANK NA
NEW CASTLE, DE 19720 2408

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - HOLD AT AN ANGLE TO VIEW - IF NOT PRESENT DO NOT CASH

SI-000022

Smithsonian Astrophysical Observatory

c/o Amanda Preston
60 Garden Street
MS-45
Cambridge, MA 02138-1516

Phone: 617-495-7321
Fax: 617-495-7105
E-mail:
apreston@cfa.harvard.edu

Request for Payment

To:

Attention: Lauren Kerr
ExxonMobil Corporation
2000 K Street, NW
Suite 710
Washington, DC 20006

Please make check payable to:
Smithsonian Astrophysical Observatory

Please mail check to:
Amanda Preston
Advancement and External Affairs Officer
Smithsonian Astrophysical Observatory
60 Garden Street, MS 45
Cambridge, MA 02138-1516

Date: February 27, 2008

Request for contribution of $76,106 to support the research project:

"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States"
Dr. Willie Soon, Principal Investigator

Thank you very much.

Questions: Please contact Amanda Preston, 617-495-7321, apreston@cfa.harvard.edu.

Amanda Preston <apreston@cfa.harvard.edu>

From: Amanda Preston <apreston@cfa.harvard.edu>
Sent: Wednesday, February 27, 2008 2:44 PM
To: [redacted]
Subject: Proposal to Support Dr. Willie Soon

Attachments: Soon Proposal 2008.pdf; Request for Payment (Soon 2008).pdf


Soon Proposal 2008.pdf (87 KB)...


Request for ayment (Soon 2008.

Dear Lauren,

Thanks very much for getting back to me last week about ExxonMobil's support of Dr. Willie Soon's research. We are very pleased at the outcome of this decision.

I am attaching a proposal for your review and a request for payment. You may recall that I mentioned the adjustment in our indirect costs upwards from the 15% that Walt Buchholtz and I negotiated when he was still in your position. You will see in the attached that the project cost increases to ~$76,000.

I look forward to hearing good news from you soon.

With best regards and thanks,

Amanda

Amanda Preston
Advancement and External Affairs
Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS 45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: [redacted]
Email: apreston@cfa.harvard.edu

Smithsonian Astrophysical Observatory

Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States

A Proposal to ExxonMobil Corporation

Dr. Willie Soon, Principal Investigator
Smithsonian Astrophysical Observatory
Solar, Stellar and Planetary Sciences Division
(617-495-7488; wsoon@cfa.harvard.edu)
February, 2008

Research Target and Proposal:
This proposal seeks $76,106 from ExxonMobil Corporation for year one of this two-year project, *"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States."* Dr. Willie Soon proposes to conduct an intensive up-to-date science review of solar variability and climate change (see e.g., Soon 2007a), with emphasis on the signals from temperature records of the U.S., that will be a clear improvement of previous studies. The goals for the first year are to collect and assess the scientific quality of the available temperature records from the United States, aggregated into four inter-related spatial domains: 1) a rural city (i.e., a city that is minimally disturbed by urban development), 2) an individual state, 3) regional U.S. area, and 4) the whole conterminous U.S. The goals for the second year are to study any plausible connection of these U.S. temperature records with estimated solar irradiance history for the past 112 years from 1895 to 2006.

The previously published research paper by Soon (2005) identifies both the multidecadal variation in total solar irradiance and the 11-year solar UV irradiance forcings to be important in explaining the observed Arctic surface air temperature change over the past 130 years or so. The overall goal for this two-year program is to extend our basic understanding on how the variable solar irradiance outputs could be physically connected to the Earth climate system. The ability to confirm or reject the statistical correlations shown in Figure 1 will be of enormous scientific importance. The ultimate physical understanding will arise from detailed assessments on how the solar irradiance is related to the cloud field as well as how the solar irradiance may systematically and persistently modulate the land surface heat fluxes (i.e., sensible and latent heats) on multidecadal to centennial time scales. A parallel hypothesis regarding the role of rising atmospheric carbon dioxide (see e.g., Soon 2007b) in warming the surface temperatures of the United States on these four spatial scales will also be evaluated.

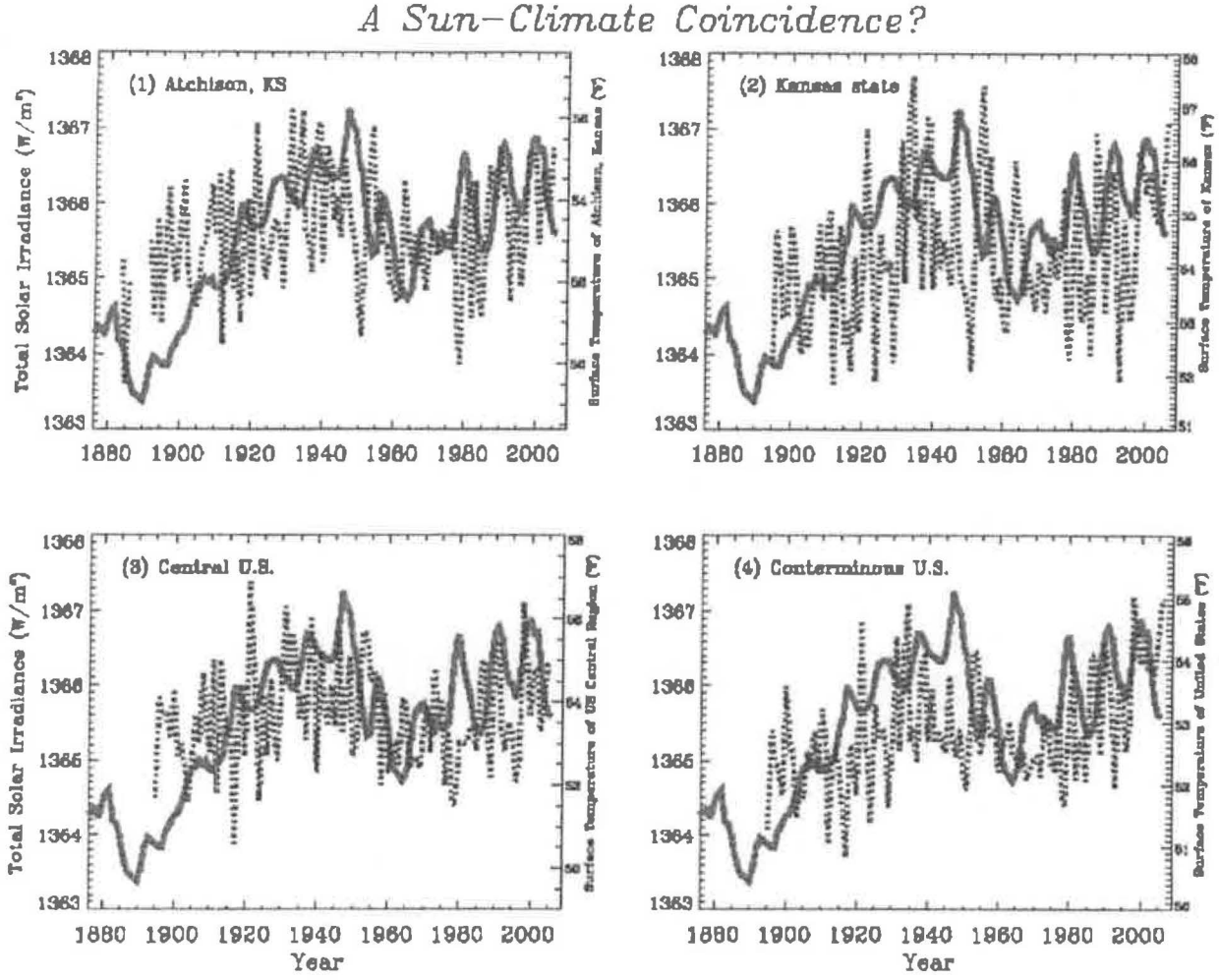

Figure 1: A plausible connection of the solar irradiance (red curves in all four plots; based on Hoyt and Schatten 1993-rescaled to the mean absolute value[1] measured by the ACRIM radiometers) compared with U.S. temperature records in four spatial domains (the blue dotted curves are for 1) Atchinson, KS, 2) State of Kansas, 3) Central region of the U.S., and 4) Conterminous U.S.). These results extend the previous relation found for the Arctic shown in Soon (2005). The scientific hypothesis for this sun-climate relation will be carefully formulated and examined in the proposed project.
[Temperature Data Source: U.S. National Climatic Data Center, http://lwf.ncdc.noaa.gov/oa/climate/research/cag3/cag3.html].

Expected Outcomes:

(1) Publication of both original and review papers on solar variability and climate change and various environmental impacts of that related change in leading scientific journals for the advancement of climate and meteorological sciences.

[1] Soon (2007a) calls for the solar physics community to firmly establish this value emphasizing its great importance in establishing the mean climatology in climate models. The mean climatology in climate models can be subjected to a rather arbitrary tuning given that the absolute level of total solar irradiance is not determined to any level of confidence, with values ranging from 1372 to 1360 W/m^2.

(2) Development of tools, including power-point presentations and concise scientific essays, for unbiased and more accurate science accounting that will more powerfully serve informed public policy making.

(3) Better public education with active participations by Dr. Soon in all national and international forums interested in promoting the basic understanding of solar variability and climate change.

Research Team:

Dr. Willie Soon at the Smithsonian Astrophysical Observatory, which is a member of the Harvard-Smithsonian Center for Astrophysics, will lead and direct this scientific research program. In addition, the PI *may* solicit interest for collaborative efforts from interested colleagues at no additional cost to the proposal.

Funding Request:

This research proposal requests $76,106 from the Exxon-Mobil Corporation for work to start March, 2008, extending for a duration of about one year. The funding is primarily to support approximately four months of Dr. Soon's full-time research at the Smithsonian Astrophysical Observatory and minimal administrative and clerical support for the project, as well as a small amount of travel to a scientific meeting or publication costs. The Observatory's indirect costs for the project are also included.

Salary and Benefits:	
Dr. Willie Soon (80 days)	$49,370
Administrator (1 day)	749
Secretarial (2.5 days)	917
Indirect costs	21,946
Total Salaries and Benefits:	$72,982
Other Costs:	
Travel	$ 1,790
Publications	1,050
Indirect costs	284
Total Other Costs:	$ 3,124
TOTAL ALL COSTS:	**$76,106**

References

Hoyt D. V. and Schatten K. H. (1993) A discussion of plausible solar irradiance variations, 1700-1992. Journal of Geophysical Research 98 (A11), 18895-18906 [with updates from Dr. Nicola Scafetta, Duke University, private communication May 31, 2007].

Soon W (2005) Variable solar irradiance as a plausible agent for multidecadal variations in the Arctic-wide surface air temperature records of the past 130 years. Geophysical Research Letters 32: L16712.

Soon W (2007a) Some Issues of Solar Irradiance Variability and Climatic Responses: A Brief Review. Invited Talk GC42A-05 at the American Geophysical Union Fall Meeting (December 10-14, 2007).

Soon W (2007b) Implications of the secondary role of carbon dioxide and methane forcing in climate change: Past, present, and future. Physical Geography 28, 97-125.

ESTIMATE OF COST

Period of Performance: January 15, 2008 through December 31, 2008

Loaded		Hrs	Dollars
	Productive Labor:		
	Dr. Willie Soon, PI	494	$25,209
	Program Administration	8	$495
	Secretary	20	$607
	Total Productive Labor	522	26,311
	Leave @ 19.5%		5,131
	Total Direct Labor		31,442
	Fringe Benefits @ 26.5%		8,332
	Direct Operating Overhead Base		39,774
	Direct Operating Overhead @ 30%		11,932
	Travel -see schedule		1,789
	Printing and Reproduction - see schedule		1,050
	G & A Base		54,545
	G & A @ 10%		5,455
	TOTAL ESTIMATED COST		$60,000

15% Admin Chg

ESTIMATE OF COST

Period of Performance: January 15, 2008 through December 31, 2008

	Hrs	Dollars	
Productive Labor:			
Dr. Willie Soon, PI	640	$32,659	
Leave @ 19.5%		6,369	
Total Direct Labor		39,028	
Fringe Benefits @ 26.5%		10,342	
		49,370	
Travel -see schedule		1,789	
Printing and Reproduction - see schedule		1,050	
		52,209	
		7,831	Administrative Charge 15%
TOTAL ESTIMATED COST		$60,040	

Amanda Preston <apreston@cfa.harvard.edu>

From: Amanda Preston <apreston@cfa.harvard.edu>
Sent: Friday, May 02, 2008 11:37 AM
To: Exemption 6 [redacted]
Subject: FW: Proposal to Support Dr. Willie Soon

Attachments: Soon Proposal 2008.pdf; Request for Payment (Soon 2008).pdf


Soon Proposal 2008.pdf (84 KB)...


Request for ayment (Soon 2008.

Dear Lynn,

Thank you for your call. It was good to speak with you again.

Attached is the proposal and the request for payment I sent to Lauren at the end of February.

Please don't hesitate to call if you have questions.

Thanks much,

Amanda
Amanda Preston
Advancement and External Affairs
Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS 45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6 [redacted]
Email: apreston@cfa.harvard.edu

----Original Message----
From: Amanda Preston <apreston@cfa.harvard.edu>
Sent: Wednesday, February 27, 2008 2:44 PM
To: Exemption 6 [redacted]
Subject: Proposal to Support Dr. Willie Soon

Dear Lauren,

Thanks very much for getting back to me last week about ExxonMobil's support of Dr. Willie Soon's research. We are very pleased at the outcome of this decision.

I am attaching a proposal for your review and a request for payment. You may recall that I mentioned the adjustment in our indirect costs upwards from the 15% that Walt Buchholtz and I negotiated when he was still in your position. You will see in the attached that the project cost increases to ~$76,000.

I look forward to hearing good news from you soon.

With best regards and thanks,

Amanda

Amanda Preston
Advancement and External Affairs
Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS 45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6
Email: apreston@cfa.harvard.edu

Amanda Preston <apreston@cfa.harvard.edu>

From: Amanda Preston <apreston@cfa.harvard.edu>
Sent: Tuesday, February 12, 2008 3:57 PM
To: Exemption 6
Subject: Further Word?

Dear Lauren,

Just a quick note to see if you've heard anything about the issue of restricted gifts versus general operating support.

I'm around all week and can move things along quickly once we know it's okay to proceed.

Thanks much,

Amanda

Amanda Preston
Advancement and External Affairs
Harvard-Smithsonian Center for Astrophysics 60 Garden Street, MS 45 Cambridge, MA 02138-1516

Voice: 617-495-7321
Fax: 617-495-7105
Blackberry: 617-285-4829
Cell: Exemption 6
Email: apreston@cfa.harvard.edu

Amanda Preston <apreston@cfa.harvard.edu>

From: Willie Soon [wsoon@cfa.harvard.edu]
Sent: Tuesday, January 15, 2008 8:24 AM
To: Sara Yorke; Amanda Preston <apreston@cfa.harvard.edu>
Subject: (2) let's submit this proposal for $60K to Exxon-Mobil ...

Attachments: KerrLauren08-Jan15--Sun-USClimate-Proposal-Exxon-FINAL.doc

KerrLauren08-Ja
15--Sun-USClim.

dear Sara and Amanda,

can you help submit this proposal to

Lauren Kerr
Exxon Mobil Corporation
2000 K Street NW, Suite 710
Washington, D.C. 20006
Ph: Exemption 6
F:

Assistant: Lynn Gellner
Exemption 6

asap??

Any way you can help me stretch this proposal to maximize my work at SAO would be appreciated ...

Willie

ps: i have answered Lauren's questions

------ Original Message ------
Subject: Re: would it be OK for me to submit my sun-climate research proposal to Exxon-Mobil for 2008 support?
Date: Mon, 14 Jan 2008 14:08:31 -0500
From: Exemption 6
To: Willie Soon <wsoon@cfa.harvard.edu>
CC: Exemption 6

Hi Willie - the proposal looks fine. Please have the Center send me an invoice for 2008, for General Support for your work. Can you clarify for me, on page two there's a reference to "original" and "review" papers - does that mean not peer reviewed, and peer reviewed?

I'd love to see a copy of the DVD. Who is releasing it - Smithsonian?

Lauren Kerr
Exxon Mobil Corporation

2000 K Street NW, Suite 710
Washington, D.C. 20006
Ph: Exemption 6
F:

Assistant: Lynn Gellner
Exemption 6

Acknowledgement

Please return this completed form to Exxon Mobil Corporation, Community Relations Group, Public Affairs Department, Room 2423, 5959 Las Colinas Blvd., Irving, TX 75039-2298 or Fax: 972/444-1405.

200800623

Smithsonian Astrophysical Observatory
60 Garden Street, MS 45
Cambridge, MA 02138-1516

Organization Tax ID: 530206027

The 1993 Omnibus Budget Reconciliation Act imposes substantiation requirements for charitable contributions. In order to comply with the regulations, ExxonMobil requires each nonprofit organization receiving a grant of $250 or more to provide the following information. ***Acknowledgment must be provided within thirty days after receipt of ExxonMobil contribution***. Failure to respond may result in cancellation of support in the future.

1. Please indicate the date contribution was received: 7-1-08

2. Please indicate the amount of the check and/or describe any property received: $76,106.00

3. Were any goods and/or services provided to ExxonMobil by your organization in return for this contribution? (meals, entertainment, gifts, etc.) Yes _____ No ✓

   If yes, please provide a description and good faith estimate of the value.

Signature: Amanda Preston Date: 7-2-08

Print Name: AMANDA PRESTON Title: ADVANCEMENT AND EXTERNAL AFFAIRS OFFICER

SI-000035

Smithsonian Astrophysical Observatory

AGREEMENT
FOR FUNDING A GRANT TO
SMITHSONIAN ASTROPHYSICAL OBSERVATORY

THIS AGREEMENT is entered into by and between the **Smithsonian Astrophysical Observatory**, located at 60 Garden Street, Cambridge, MA 02138-1516, hereinafter referred to as "Smithsonian"), and **Southern Company Services, Inc.**, having its principal place of business at 600 North 18th Street, Birmingham, Alabama 35203, on behalf of itself, its parent and its affiliate companies, (collectively referred to as " SCS").

WITNESSETH

WHEREAS, the Smithsonian is interested in conducting an intensive science review of solar variability and climate change, as provided in the attached Proposal P6882-1-08 (referred to as the "Project"); and,

WHEREAS, SCS, on behalf of itself, its parent and its affiliate companies is interested in furthering the research on the Project and in obtaining advance information and is therefore willing to make a grant to fund this research.

NOW, THEREFORE, Smithsonian and SCS hereby agree as follows:

1. **Scope of Work.** The Scope of Work for this Project shall be conducted in accordance with the attached Proposal P6882-1-08 entitled "Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States", which is incorporated and made a part of this Agreement. In consideration of the Research to be provided by Smithsonian, SCS agrees to make an advance payment in the sum of Sixty Thousand Dollars ($60,000.) and to reimburse Smithsonian for its costs in accordance with the Proposal in an amount not to exceed the advance sum.

2. **Limited Nature of Parties Obligations.**

   The obligations of SCS and the Smithsonian hereunder shall be limited to payment of the amounts and the Project effort as specified in Article 1 above. SCS assumes no other obligation or responsibility of any kind to the Smithsonian or any other participants or sponsors, if any. SCS makes no warranties or Representations, Express or implied, of any kind.

3. **Termination.** Smithsonian understands and agrees that in the event the Project is terminated prior to completion or is not in accordance with the attached Proposal, SCS shall be entitled to a refund of the unexpended funds.

4. **No Joint Venture**. This Agreement is not intended to create nor shall it be construed to create any partnership, joint venture, employment or agency relationship between or among the parties, and no party shall be liable for the payment or performance of any debts, obligations, or liabilities of any other party, unless expressly assumed in writing.

5. **Deliverables.** In consideration to SCS for its one (1) year funding contribution to the Project, Smithsonian shall deliver to SCS a progress report of the findings including a detailed summary and analysis of the results and findings at the end of the one year period. SCS shall be entitled to a no-cost, non-exclusive irrevocable license to utilize the data and results of the Project for its internal purposes.

6. **Authority.** Each party represents and warrants to the other that as of the effective date of this Agreement: (a) it has all requisite power and authority to enter into and perform its obligations under this Agreement, and (b) there are no actions, suits, or proceedings pending, or to the best of its knowledge threatened, which may have a material adverse effect on its ability to fulfill its obligations under this Agreement or on its operations, business, properties, assets or condition.

7. **Assignment and Subcontracting Prohibited.** This Agreement shall not be assigned by Smithsonian nor its obligations subcontracted without the prior written consent of SCS, which shall not be unreasonably withheld. Any assignment or subcontracting in violation of this provision shall be deemed null and void and SCS shall be entitled to a refund of its contribution in full.

8. **Subsequent Changes in Agreement.** This Agreement may be modified only by an amendment executed in writing by a duly authorized representative for each party.

9. **Partial Invalidity.** If any provision of this Agreement is found to be unenforceable then, notwithstanding such unenforceability, this Agreement shall remain in effect and there shall be substituted for such unenforceable provision a like but enforceable provision which most nearly effects the intention of the parties. If a like but enforceable provision cannot be substituted, the unenforceable provision shall be deemed to be deleted and the remaining provisions shall continue in effect, provided that the performance, rights, and obligations of the parties hereunder are not materially adversely affected by such deletion.

10. **Successors and Assigns.** This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns, if any, of the parties, provided that this provision shall not be construed to permit any assignment which would be unauthorized or void pursuant to any other provision contained herein.

11. **Non-Waiver.** No provision of this Agreement shall be deemed waived and no breach shall be deemed excused unless such waiver or consent is in writing and signed by the party claimed to have waived or consented. No consent by either party to, or waiver of, a breach by the other, whether express or implied, shall constitute a consent to, waiver of, or excuse for any different or subsequent breach.

12. **Force Majeure.** Neither party shall be deemed to be in default of any provision of this Agreement or liable for failures in performance resulting from acts or events beyond the reasonable control of such party. Such acts shall include but not be limited to acts of God, civil or military authority, civil disturbance, war, strikes, fires, other catastrophes, or other 'force majeure' events beyond a party's reasonable control.

13. **Survival of Representations.** The provisions contained in this Agreement that by their sense and context are intended to survive the performance hereof by either or both parties shall so survive the completion of performance and termination of this Agreement, including the making of any and all payments due hereunder.

14. **Notices.** All notices permitted or required to be given under this Agreement shall be in writing and shall be deemed duly given upon personal delivery (against receipt) or on the fourth day following the date on which each such notice is deposited postage prepaid in the United States Mail, registered or certified, return receipt requested. All notices shall be delivered or sent to the other party at the address(es) shown below or to any other address(es) as the party may designate by ten (10) days prior written notice given in accordance with this provision.

If to Smithsonian:

Smithsonian Institution Astrophysical Observatory
60 Garden Street
Cambridge, MA 02138-1516
Attention: Dr. Willie Soon (for technical matters)
Attention: Mr. William J. Ford (for contractual matters)

If to SCS:

Southern Company Services, Inc.
600 North 18th Street
Bin 14N-8195
Birmingham, Alabama 35203
Attention: Robert P. Gehri (for technical matters)
Attention: Joseph L. Coker (for contractual matters)

15. **Publicity.** Smithsonian shall not publish and utilize the name or otherwise identify SCS or its affiliate companies in any publications or other advertisements without the express written consent of SCS. As further consideration to SCS, Smithsonian shall provide SCS an advance written copy of proposed publications regarding the deliverables for comment and input, if any, from SCS.

16. **Duplicate Originals.** Duplicate originals of this Agreement shall be executed, each of which shall be deemed an original but both of which together shall constitute one and the same instrument.

17. **Entire Agreement.** This Agreement contains the entire agreement of the parties and there are no oral or written representations, understandings or agreements between the parties respecting the subject matter of this Agreement which are not fully expressed herein.

IN WITNESS WHEREOF, each of the parties hereto acknowledge that they have caused this Agreement to be executed in duplicate originals by its duly authorized representative on the respective dates entered below.

SOUTHERN COMPANY SERVICES, INC.
("SCS")

By: Bryan Baldwin
(Signature)

Name: Bryan Baldwin
(Typed or printed)

Title: Manager, Environmental Assessment

Date: 2/28/08

THE SMITHSONIAN INSTITUTION ASTRPPHYSICAL OBSERVATORY
("Smithsonian")

By: William J. Ford
(Signature)

Name: William J. Ford
(Typed or printed)

Title: Contract and Grant Specialist

Date: 2/21/08

Smithsonian Astrophysical Observatory

Sponsored Programs and Procurement Department

30 January 2008

Mr. Robert P. Gehri
Principal Research Specialist
Research and Environmental Affairs
Southern Company Services
600 North 18th Street
Birmingham AL 35291

Dear Mr. Gehri:

The Smithsonian Astrophysical Observatory (SAO), per your request, is pleased to submit the attached Proposal P6882-1-08 for a one (1) year Research Grant with Nonprofit Organizations in the amount of $60,000 for Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States that could commence on 15 January 2008 and continue through 31 December 2008.

The program will be conducted by the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. The program will be performed under the direction of Dr. Willie Soon, as the Principal Investigator, within the Solar, Stellar, and Planetary Sciences Division, with Dr. Nancy Brickhouse as the Associate Director of the Division.

Inquiries of a technical nature should be directed to Dr. Willie Soon, Mail Stop 16, Smithsonian Astrophysical Observatory, 60 Garden Street, Cambridge, Massachusetts 02138-1516, telephone (617) 495-7448, e-mail wsoon@cfa.harvard.edu. Inquiries and documents of a contractual nature should be directed to Mr. William J. Ford, Contract and Grant Specialist, Mail Stop 23, same address, telephone (617) 495-7317, e-mail wford@cfa.harvard.edu.

Sincerely yours,

Charles Alcock
Director

WJF/cm
Enclosure

SMITHSONIAN INSTITUTION
60 Garden Street
Cambridge MA 02138-1516
617.495.7000 Telephone

PROPOSAL TO

SOUTHERN COMPANY SERVICES

FOR

UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE: SIGNALS FROM TEMPERATURE RECORDS OF THE UNITED STATES

P6882-1-08

For the period 15 January 2008 through 31 December 2008

January 2008

Smithsonian Institution

Astrophysical Observatory

Cambridge, Massachusetts 02138

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

PROPOSAL TO

SOUTHERN COMPANY SERVICES

FOR

UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE: SIGNALS FROM TEMPERATURE RECORDS OF THE UNITED STATES

PP6882-1-08

For the period 15 January 2008 through 31 December 2008

Funds Requested: $60,000

Principal Investigator

Dr. Willie Soon

Associate Director,
Solar, Stellar, and Planetary Division

Dr. Nancy S. Brickhouse

January 2008

Smithsonian Institution

Astrophysical Observatory

Cambridge, Massachusetts 02138

Director: Dr. Charles Alcock

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

Smithsonian Astrophysical Observatory

Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States

A Proposal to The Southern Company

Dr. Willie Soon, Principal Investigator
Smithsonian Astrophysical Observatory
Solar, Stellar and Planetary Sciences Division
(617-495-7488; wsoon@cfa.harvard.edu)
January, 2008

Research Target and Proposal:
This proposal seeks $60,000 from The Southern Company for year one of this two-year project, *"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States."* I propose to conduct an intensive up-to-date science review of solar variability and climate change (see e.g., Soon 2007a), with emphasis on the signals from temperature records of the U.S., that will be a clear improvement of previous studies. The goals for the first year are to collect and assess the scientific quality of the available temperature records from the United States, aggregated into four inter-related spatial domains: 1) a rural city (i.e., a city that is minimally disturbed by urban development), 2) an individual state, 3) regional U.S. area, and 4) the whole conterminous U.S. The goals for the second year are to study any plausible connection of these U.S. temperature records with estimated solar irradiance history for the past 112 years from 1895 to 2006.

The previously published research paper by Soon (2005) identifies both the multidecadal variation in total solar irradiance and the 11-year solar UV irradiance forcings to be important in explaining the observed Arctic surface air temperature change over the past 130 years or so. The overall goal for this 2-year program is to extend our basic understanding on how the variable solar irradiance outputs could be physically connected to the Earth climate system. The ability to confirm or reject the statistical correlations shown in Figure 1 will be of enormous scientific importance. The ultimate physical understanding will arise from detailed assessments on how the solar irradiance is related to the cloud field as well as how the solar irradiance may systematically and persistently modulate the land surface heat fluxes (i.e., sensible and latent heats) on multidecadal to centennial time scales. A parallel hypothesis regarding the role of rising atmospheric carbon dioxide (see e.g., Soon 2007b) in warming the surface temperatures of the United States on these 4 spatial scales will also be evaluated.

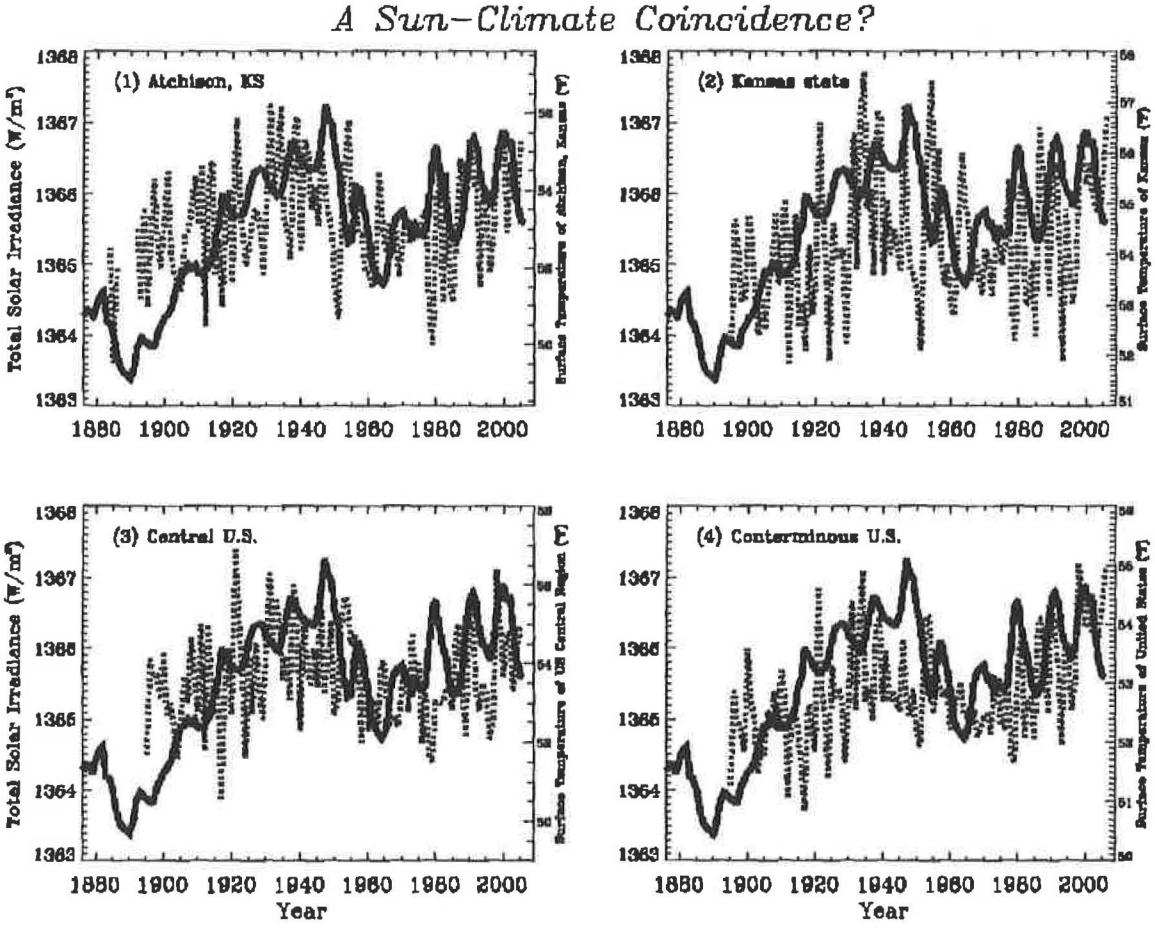

Figure 1: A plausible connection of the solar irradiance (red curves in all four plots; based on Hoyt and Schatten 1993-rescaled to the mean absolute value[1] measured by the ACRIM radiometers) compared with U.S. temperature records in 4 spatial domains (the blue dotted curves are for 1) Atchinson, KS, 2) state of Kansas, 3) Central region of the U.S., and 4) conterminous U.S.). These results extend the previous relation found for the Arctic shown in Soon (2005). The scientific hypothesis for this sun-climate relation will be carefully formulated and examined in the proposed project.
[Temperature Data Source: U.S. National Climatic Data Center, http://lwf.ncdc.noaa.gov/oa/climate/research/cag3/cag3.html].

[1] Soon (2007a) calls for the solar physics community to firmly establish this value emphasizing its great importance in establishing the mean climatology in climate models. The mean climatology in climate models can be subjected to a rather arbitrary tuning given that the absolute level of total solar irradiance is not determined to any level of confidence, with values ranging from 1372 to 1360 W/m².

Expected Outcomes:

(1) Publication of both original and review papers on solar variability and climate change and various environmental impacts of that related change in leading scientific journals for the advancement of climate and meteorological sciences.

(2) Development of tools, including power-point presentations and concise scientific essays, for unbiased and more accurate science accounting that will more powerfully serve informed public policy making.

(3) Better public education with active participations by the PI of this research proposal in all national and international forums interested in promoting the basic understanding of solar variability and climate change.

Research Team:

Dr. Willie Soon at the Smithsonian Astrophysical Observatory, which is part of the Harvard-Smithsonian Center for Astrophysics, will lead and direct this scientific research program. In addition, the PI *may* solicit interests for collaborative effort from interested colleagues at no additional cost to the proposal.

Funding Request:

The funding is primarily to support approximately 3.5 months of the full-time research work of Dr. Willie Soon at the Smithsonian Astrophysical Observatory and a small amount of travel to a scientific meeting or publication costs. This research proposal requests $60,000 from the Southern Company for work to start January, 2008, extending for a duration of about one year.

References

Hoyt D. V. and Schatten K. H. (1993) A discussion of plausible solar irradiance variations, 1700-1992. Journal of Geophysical Research 98 (A11), 18895-18906 [with updates from Dr. Nicola Scafetta, Duke University, private communication May 31, 2007].

Soon W. (2005) Variable solar irradiance as a plausible agent for multidecadal variations in the Arctic-wide surface air temperature records of the past 130 years. Geophysical Research Letters 32: L16712.

Soon W. (2007a) Some Issues of Solar Irradiance Variability and Climatic Responses: A Brief Review. Inivited Talk GC42A-05 at the American Geophysical Union Fall Meeting (December 10-14, 2007).

Soon W. (2007b) Implications of the secondary role of carbon dioxide and methane forcing in climate change: Past, present, and future. Physical Geography 28, 97-125.

ESTIMATE OF COST

Period of Performance: January 15, 2008 through December 31, 2008

Productive Labor:	Hrs	Dollars
Dr. Willie Soon, PI	494	$25,209
Program Administration	8	$495
Secretary	20	$607
Total Productive Labor	522	26,311
Leave @ 19.5%		5,131
Total Direct Labor		31,442
Fringe Benefits @ 26.5%		8,332
Direct Operating Overhead Base		39,774
Direct Operating Overhead @ 30%		11,932
Travel -see schedule		1,789
Printing and Reproduction - see schedule		1,050
G & A Base		54,545
G & A @ 10%		5,455
TOTAL ESTIMATED COST		$60,000

TRAVEL SCHEDULE

DESTINATION	NO TRIPS	NO TRAVELERS	DAYS/ TRIP	RATE PER DIEM	TOT PER DIEM	AIR FARE	TOT AIR FARE	MISC*	TOTAL COST
Scientific Meeting-San Francisco	1	1	5	204	$1,020	$500	$500	$269	$1,789
TOTAL TRAVEL					$1,020		$500	$269	$1,789

*Includes local transportation costs and meeting registration fees

PRINTING AND REPRODUCTION SCHEDULE

COST BASIS	OBJECT CLASS DESCRIPTION	VENDOR	TOTAL COST
Est	Page charges	*Astrophysical Journal*	$1,050
	# Pages	10	
	Cost Per Page	105	
TOTAL PRINTING AND REPRODUCTION			$1,050

CONTRACTUAL AND COST INFORMATION INCLUDING CERTIFICATIONS

The Smithsonian Institution, an independent trust establishment was created by an act of the Congress of 1846 to carry out the terms of the will of James Smithson of England, who had bequeathed his entire estate to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." After accepting the trust property for the United States, Congress vested responsibility for administering the trust in a Smithsonian Board of Regents.

The Smithsonian performs research, educational and other special projects supported by grants and contracts awarded under the cost principles of the Federal Acquisition Regulation, Subpart 31.7 Contracts with Nonprofit Organizations. It is audited by the Defense Contract Audit Agency, Landover, Maryland.

The Charter of the Smithsonian Institution carries a mandate for the "increase and diffusion of knowledge among men." Therefore, any grant or contract that may be awarded as a result of this proposal must be unclassified, in order not to abridge the Institution's right to publish, without restriction, findings that result from this research project.

Considering the nature of the proposed effort, it is requested that a Research Grant with reimbursement via electronic funds transfer be awarded to cover the proposed project in accordance with Subpart C Section .22(e) of OMB Circular No. A-110 dated 30 September 1999.

Pursuant to Subpart C, Section .33 and .34 of OMB Circular No. A-110 dated 30 September 1999, it is requested that title to all exempt property and equipment purchased or fabricated under the proposed contract be vested irrevocably in the Institution upon acquisition.

In accordance with an agreement between the Office of Naval Research and the Smithsonian, the Institution operates with predetermined fixed overhead rates with carry-forward provisions. For Fiscal Year 1996 and beyond, the Indirect Cost and Fringe Benefits Rates are developed in accordance with the Office of Management and Budget Circular (OMB) A-122: Cost Principles for nonprofit organizations. The following approved rates, provided by ONR Negotiation Agreement dated 2 November 2007, shall be used for forward pricing and billing purposes for Fiscal Year 2008. The Fringe Benefits Rate will be applied to the Total Direct Labor Costs. The Material Overhead Rate will be applied to the cost of materials, equipment and subcontracts. The Direct Operating Overhead Rate will be applied to the Direct Labor and Benefits costs. The G&A Rate will be applied to the base consisting of total costs except the costs associated with the materials, equipment and subcontracts.

The following Approved Rates shall be used for forward pricing and billing purposes for Fiscal Year 2008:

Material Burden Rate (Cost of Materials, equipment and subcontracts)	5.4%
Personnel Leave Rate (Total Direct Labor Costs less paid leave and training (Productive Labor))	19.5%
Fringe Benefits Rate (Full/Part Time Employees) (Total Direct Labor Costs)	26.5%
Fringe Benefits Rate (Intermittent Employees) (Total Direct Labor Costs)	8.5%
Direct Operating Overhead Rate (Total Direct Labor and Fringe Benefits Costs)	30.0%
General and Administrative Rate (G&A) (Base consists of Direct Operating Activities less Net Costs Associated with materials, subcontracts and equipment)	10.0%
Central Engineering Overhead Rate (Central Engineering Direct Labor and Benefits Costs)	28.9%

Rate verification can be made by contacting Ms. Linda Shipp, Office of Naval Research, Indirect Costs/ONR 242, 800 N. Quincy Street, Room 704, Arlington, Virginia 22217, telephone (703) 696-8559, or e-mail linda_shipp@onr.navy.mil.

Engineering services are provided by the Central Engineering Department as a Cost Center. Charges by the department to research projects are inclusive of Direct Labor, Fringe Benefits, and Central Engineering Overhead.

CERTIFICATIONS

Pursuant to Executive Order 12549 and implementing rule (FAR 52.209-5), the Smithsonian Institution certifies that it presently is not debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency.

Pursuant to Section 1352, Title 31, United States Code (USC) and implementing rule (FAR 52.203-12), the Smithsonian Institution certifies that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.

AMENDMENT ONE
TO
AGREEMENT FOR FUNDING A GRANT TO
SMITHSONIAN ASTROPHYSICAL OBSERVATORY

This **AMENDMENT ONE** ("Amendment") is made and entered into by and between The Smithsonian Astrophysical Observatory, (the "Smithsonian") and Southern Company Services, Inc., ("SCS") and is effective on the date it is executed by the later of the parties ("Effective Date").

WHEREAS, Smithsonian and SCS (the "Parties") entered into an Agreement for Funding a Grant to Smithsonian Astrophysical Observatory ("Agreement") dated February 28, 2008; and

WHEREAS, the parties now desire to amend such Agreement;

NOW, THEREFORE, for and in consideration of the mutual agreements, promises and covenants contained herein, the adequacy and sufficiency of which are hereby acknowledged, the parties hereby mutually agree as follows:

1. The following sentence is hereby added after the last sentence of Paragraph 1, Scope of Work:

   "In consideration of further continued Research to be provided by Smithsonian to SCS, SCS agrees to make a second advance payment in the sum of Sixty Thousand Dollars ($60,000.00) for its costs for additional research in an amount not to exceed the second advance sum.

2. The following sentence is hereby added after the first sentence of Paragraph 5, Deliverables:

   "In consideration to SCS for its second one (1) year of funding contribution to the Project, Smithsonian shall deliver to SCS a progress report of the findings including a detailed summary and analysis of the results and findings at the end of the second one (1) year period."

3. The following new Paragraph is hereby added after Paragraph 17:

   "18. **Invoicing and Payment.** Smithsonian shall invoice SCS in advance for the full amount of funding for each year that SCS may provide funding. All invoices shall be mailed to Robert P. Gehri at the address for notices provided in Paragraph 14, Notices. SCS shall pay Smithsonian for the full amount of each invoice within thirty (30) days after receipt of each such invoice. Payment shall be mailed to the address set forth in the invoice."

EXCEPT AS EXPRESSLY MODIFIED BY THIS AMENDMENT, ALL OTHER TERMS AND CONDITIONS OF THE AGREEMENT SHALL REMAIN IN FULL FORCE AND EFFECT.

IN WITNESS WHEREOF, each of the Parties hereto have caused this Amendment to be executed in duplicate originals by its duly authorized representative on the respective dates entered below.

Smithsonian Astrophysical Observatory ("Smithsonian")

By: _____

PETER W. SOZANSKI
(Name typed or printed) CONTRACTING OFFICER

Title: _____

Date: 5/1/09

Southern Company Services, Inc. ("SCS")

By: _____

Bryan Baldwin
(Name typed or printed)

Title: Manager, Environmental Assessment

Date: April 6, 2009

6 March 2009

Dr. Robert P. Gehri
Southern Company Services, Inc.
600 North 18th Street
Bin 14N-8195
Birmingham, AL 35207

Reference: Agreement for SAO Proposal P6882-1-08 – Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States

Subject: Year 1 Report

Dear Dr. Gehri:

Transmitted herewith is one (1) copy of the subject report for the period 15 January 2008 through 14 January 2009, in accordance with the provisions of the above referenced Agreement.

Very truly yours,

William J. Ford
Contract and Grant Specialist

WJF/cm
Enclosure

cc: Mr. Joseph L Coker, Southern Co, w/encl.

ebc: C. Alcock, w/encl.
N. Brickhouse, w/encl.
W. Soon, w/encl.
N. Rathle, w/encl.
P. Sozanski, w/encl.
File: Southco-001, w/encl.

UNDERSTANDING SOLAR VARIABILITY AND CLIMATE CHANGE: SIGNALS FROM TEMPERATURE RECORDS OF THE UNITED STATES

YEAR 1 REPORT

For the Period 15 January 2008 to 15 January 2009

Principal Investigator: Dr. Willie Soon

January 2009

Prepared for
Southern Company
Atlanta, GA 30308

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

The Southern Company contact for this grant is Robert Gehri,
Southern Company, 30 Ivan Allen Jr. Blvd. NW, Atlanta, GA 30308

Year 1 Report
"Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States" For the Southern Company

Period of performance: 1/15/08 to 1/15/09

by Willie Soon, Principal Investigator
Smithsonian Astrophysical Observatory
Solar, Stellar and Planetary Sciences Division
(617-495-7488; wsoon@cfa.harvard.edu)

The goals of this research proposal have been completely and successfully executed with the following list of deliverables:

(1) The publication of: "Polar bear population forecasts: A public-policy foecasting audit" *Interface*, vol. 38, 382-405 by Scott Atrmstrong, Kesten Green and Willie Soon (2008) [with comments and replies]

Calls to list polar bears as a threatened species under the United States Endangered Species Act are based on forecasts of substantial long-term declines in their population. Nine government reports were written to help US Fish and Wildlife Service managers decide whether or not to list polar bears as a threatened species. We assessed these reports based on evidence-based (scientific) forecasting principles. None of the reports referred to sources of scientific forecasting methodology. Of the nine, Amstrup et al. [Amstrup, S. C., B. G. Marcot, D. C. Douglas. 2007. Forecasting the rangewide status of polar bears at selected times in the 21st century. Administrative Report, USGS Alaska Science Center, Anchorage, AK.] and Hunter et al. [Hunter, C. M., H. Caswell, M. C. Runge, S. C. Amstrup, E. V. Regehr, I. Stirling. 2007. Polar bears in the Southern Beaufort Sea II: Demography and population growth in relation to sea ice conditions. Administrative Report, USGS Alaska Science Center, Anchorage, AK.] were the most relevant to the listing decision, and we devoted our attention to them. Their forecasting procedures depended on a complex set of assumptions, including the erroneous assumption that general circulation models provide valid forecasts of summer sea ice in the regions that polar bears inhabit. Nevertheless, we audited their conditional forecasts of what would happen to the polar bear population assuming, as the authors did, that the extent of summer sea ice would decrease substantially during the coming decades. We found that Amstrup et al. properly applied 15 percent of relevant forecasting principles and Hunter et al. 10 percent. Averaging across the two papers, 46 percent of the principles were clearly contravened and 23 percent were apparently contravened. Consequently, their forecasts are unscientific and inconsequential to decision makers. We recommend that researchers apply all relevant principles properly when important public policy decisions depend on their forecasts.

(2) The publication of : "Reply to response to Dyck et al. (2007) on polar bears and climate change in western Hudson Bay by Stirling et al. (2008)" *Ecological Complexity*, vol. 5, 289-302 by Dyck, Soon et al. (2008)

We address the three main issues raised by Stirling et al. [Stirling, I., Derocher, A.E., Gough, W.A., Rode, K., in press. Response to Dyck et al. (2007) on polar bears and climate change in western Hudson Bay. Ecol. Complexity]: (1) evidence of the role of climate warming in affecting the western Hudson Bay polar bear population, (2) responses to suggested importance of human–polar bear interactions, and (3) limitations on polar bear adaptation to projected climate change. We assert that our original paper did not provide any ''alternative explanations [that] are largely unsupported by the data'' or misrepresent the original claims by Stirling et al. [Stirling, I., Lunn, N.J., Iacozza, I., 1999. Long-term trends in the population ecology of polar bears in western Hudson Bay in relation to climate change. Arctic 52, 294–306], Derocher et al. [Derocher, A.E., Lunn, N.J., Stirling, I., 2004. Polar bears in a warming climate. Integr. Comp. Biol. 44, 163–176], and other peer-approved papers authored by Stirling and colleagues. In sharp contrast, we show that the conclusion of Stirling et al. [Stirling, I., Derocher, A.E., Gough, W.A., Rode, K., in press. Response to Dyck et al. (2007) on polar bears and climate change in western Hudson Bay. Ecol. Complexity] – suggesting warming temperatures (and other related climatic changes) are the predominant determinant of polar bear population status, not only in western Hudson (WH) Bay but also for populations elsewhere in the Arctic – is unsupportable by the current scientific evidence. The commentary by Stirling et al. [Stirling, I., Derocher, A.E., Gough, W.A., Rode, K., in press. Response to Dyck et al. (2007) on polar bears and climate change in western Hudson Bay. Ecol. Complexity] is an example of uni-dimensional, or reductionist thinking, which is not useful when assessing effects of climate change on complex ecosystems. Polar bears of WH are exposed to a multitude of environmental perturbations including human interference and factors (e.g., unknown seal population size, possible competition with polar bears from other populations) such that isolation of any single variable as the certain root cause (i.e., climate change in the form of warming spring air temperatures), without recognizing confounding interactions, is imprudent, unjustified and of questionable scientific utility. Dyck et al. [Dyck, M.G., Soon, W., Baydack, R.K., Legates, D.R., Baliunas, S., Ball, T.F., Hancock, L.O., 2007. Polar bears of western Hudson Bay and climate change: Are warming spring air temperatures the ''ultimate'' survival control factor? Ecol. Complexity, 4, 73–84. doi:10.1016/j.ecocom. 2007.03.002] agree that some polar bear populations may be negatively impacted by future environmental changes; but an oversimplification of the complex ecosystem interactions (of which humans are a part) may not be beneficial in studying external effects on polar bears. Science evolves through questioning and proposing hypotheses that can be critically tested, in the absence of which, as Krebs and Borteaux [Krebs, C.J., Berteaux, D., 2006. Problems and pitfalls in relating climate variability to population dynamics. Clim. Res. 32, 143–149] observe, ''we will be little more than storytellers.''

(3) The publication of the scientific manuscript "Centennial variations of the global monsoon precipitation in the lastmillennium: Results from ECHO-G model" by Jian Liu, Bin Wang, Qinghua Ding, Xueyuan Kuang, Willie Soon and Eduardo Zorita (2009) in press for the peer-reviewed journal *Journal of Climate*.

We investigate how the global monsoon (GM) precipitation responds to the external and anthropogenic forcing in the last millennium by analyzing a pair of control and forced millennium simulations with the ECHO-G coupled ocean–atmosphere model. The forced run, which includes the solar, volcanic and greenhouse gas forcing, captures the major

modes of precipitation climatology comparably well when contrasted with those captured by the NCEP reanalysis. The strength of the modeled GM precipitation in the forced run exhibits a significant quasi-bi-centennial oscillation. Over the past 1000 years, the simulated GM precipitation was weak during the Little Ice Age (1450-1850) with three weakest periods occurring around 1460, 1685, and 1800, which fell in, respectively, the Spörer Minimum, Maunder Minimum, and Dalton Minimum periods of solar activity. Conversely, strong GM was simulated during the model Medieval Warm Period (ca. 1030-1240). Before the industrial period, the natural variations in the total amount of effective solar radiative forcing reinforce the thermal contrasts both between the ocean and continent and between the northern and southern hemispheres resulting in the millennium-scale variation and the quasi-bi-centennial oscillation in the GM index. The prominent upward trend in the GM precipitation occurring in the last century and the notable strengthening of the global monsoon in the last 30 years (1961-1990) appear unprecedented and owed possibly in part to the increase of atmospheric carbon dioxide concentration though our simulations of the effects from recent warming may be overestimated without considering the negative feedbacks from aerosols. The simulated change of GM in the last 30 years has a spatial pattern that differs from that during the Medieval Warm Period, suggesting that global warming that arises from the increases of greenhouse gases and the input solar forcing may have different effects on the characteristics of GM precipitation. We further note that GM strength has good relational coherence with the temperature difference between the northern and southern hemispheres, and that on centennial timescale, the GM strength responds more directly to the effective solar forcing than the concurrent forced response in global mean surface temperature.

(4) The publication of the scientific manuscript "Validity of Climate Change Forecasting for Public Policy Decision Making" by Kesten Green, Scott Armstrong, and Willie Soon (2009) in the peer-reviewed journal *International Journal of Forecasting* [Status: accepted; subject to further revision]

Policymakers need to know whether prediction is possible and if so whether any proposed forecasting method will provide forecasts that are substantively more accurate than those from the relevant benchmark method. Inspection of global temperature data suggests that it is subject to irregular cycles on all relevant time scales and that variations during the late-20th Century were not unusual. In such a situation, a "no change" extrapolation is an appropriate benchmark forecasting method. We used the U.K. Met Office Hadley Centre's annual average thermometer data from 1850 through 2007 to examine the performance of the benchmark method. The accuracy of forecasts from the benchmark is such that even perfect forecasts would be unlikely to help policymakers. For example, mean absolute errors for 20- and 50-year horizons were 0.18°C and 0.24°C. We nevertheless evaluated the Intergovernmental Panel on Climate Change's 1992 projected long-term linear warming rate of 0.03°C-per-year. We used the IPCC projection for our demonstration of benchmarking because it has influenced important policy decisions. The small sample of errors from *ex ante* projections for 1992 through 2008 was practically indistinguishable from the benchmark errors. Validation for long-term forecasting, however, requires a much longer horizon. We illustrate proper

validation procedures by projecting the IPCC warming rate successively over a period analogous to that envisaged in their 0.03°C-per-year 21st Century warming scenario in which CO_2 levels are expected to grow exponentially. Namely 1851 to 1975. The errors from the projections were more than seven times greater than the errors from the benchmark method. Relative errors were larger for longer forecast horizons. Our validation exercise illustrates the importance for policymakers of determining predictability before making expensive decisions.

(5) Preparation of the scientific manuscript "Multiple and changing cycles of active stars II. Results" by K. Olah, Z. Kollath1, T. Granzer, K.G. Strassmeier, A.F. Lanza, S. Jarvinen, H. Korhonen, S.L. Baliunas, W. Soon, S. Messina, and G. Cutispoto (2009) for publication in the peer-reviewed journal *Astronomy & Astrophysics* (Status: submitted)

ABSTRACT

Aims. We study the time variations of the cycles of 20 active stars based on decades-long photometric or spectroscopic observations.

Methods. A method of time-frequency analysis, as discussed in a companion paper, is applied to the data.

Results. Fifteen stars definitely show multiple cycles; the records of the rest are too short to verify a timescale for a second cycle. The cycles typically show systematic changes. In three stars we found 2-2 cycles that are not harmonics, and which vary in parallel, indicating that a common physical mechanism arising from a dynamo construct. The positive relation between the rotational and cycle periods is confirmed for the inhomogeneous set of active stars.

Conclusions. Stellar activity cycles are generally multiple and variable.

(6) Preparation of the scientific manuscript "Solar Arctic-Mediated Climate Variation on Multidecadal to Centennial Timescales: Empirical Evidence, Mechanistic Explanation, and Testable Consequences" (2009) by Willie Soon for publication in the peer-reviewed journal *Physical Geography* (Status: submitted)

The abstract of this new paper says: "Soon (2005) showed that the variable total solar irradiance (TSI) could explain, rather surprisingly, well over 75% of the variance for the decadally-smoothed Arctic-wide surface air temperature over the past 130 years or so. The present paper provides additional empirical evidence for this physical connection, both through several newly published high-resolution paleo-proxy records and through robust climate-process modeling outputs, and proposes a mechanistic explanation, involving 1) the variable strength of the Atlantic meridional overturning circulation (MOC) or thermohaline circulation (THC), 2) the shift and modulation of the Inter-Tropical Convergence Zone (ITCZ) rainbelt and tropical Atlantic ocean conditions, and 3) the intensity of the wind-driven subtropical and subpolar gyre circulation, across both the North Atlantic and North Pacific. A unique test of this proposed solar TSI-Arctic thermal-salinity-cryospheric coupling mechanism is the 5-to-20-year delayed effects on

(1) the peak Atlantic MOC flow rate centered near 30-35°N, and (2) sea surface temperature (SST) for the tropical Atlantic. The solar Arctic-mediated climate mechanism on multidecadal to centennial timescales presented here can be compared with and differentiated from both the related solar TSI and UV irradiance forcing on decadal timescale. The ultimate goal of this scientific research is to gain sufficient mechanistic details so that the proposed solar-Arctic climate connection on multidecadal to centennial timescales can be confirmed or falsified. A further incentive is to expand this physical connection to longer, millennial-scale variability as motivated by the multiscale climate interactions shown by Braun et al. (2005), Weng (2005) and Dima and Lohmann (2009)."

(7) The prominent participation of PI in the following list of scientific talks and discussion at both national and international forums of professional scientists: All power-point talks are available upon request

(a) January 4-6, 2008: Awakening 2008 Conference, Sea Island, Georgia
"The secondary role of CO2 radiative forcing in climate change:
Real facts you are not even supposed to find out!"

(b) March 2-4, 2008: International Climate Conference, New York City, NY
"Global Warming 101: Al Gore's CO2 Theory"

(c) March 15, 2008: Good Neighbor Forum, Cheyenne, WY
"Global Warming Explained!" (co-panelist Lyle Laverty, Assistant Secretary of Fish, Wildlife and Park Services)

(d) March 31, 2008: Deliberative Polling Event at California University of Pennsylvania, California, PA
"Global Warming Explained: The importance of getting the science right!"

(e) April 3, 2008: Department of Physics Colloquium, University of Buffalo, NY
"The secondary role of CO2 and CH4 forcing on climate change:
Past, present and future"

(f) April 24, 2008: Sutherland Institute Global Warming Panel
(with Roy Spencer as co-panelist) "Future of Utah", Salt Lake City, Utah

(g) June 19-22, 2008: 1st Annual "Winning Ideas Weekend" of the Free to Choose Network, New York City, NY
"The Sun, CO2 and Global Warming" (with Dave Legates as co-panelist)
(among other speakers: John Fund of WSJ and John Stossel of ABC News)

(h) June 23-28, 2008: Nice France Special session for the ISF.
Session Title: "Climate Forecasting and Public Policy."

"Do the Forecasts by the U.S. Government Provide Valid Evidence
for the Decision to Classify Polar Bears as an Endangered Species?"
J. Scott Armstrong, The Wharton School, U. of Pennsylvania, Philadelphia, PA,
Kesten. C. Green, Business and Economic Forecasting,
Monash University, Vic 3800, Australia and
Willie Soon, Harvard-Smithsonian Center for Astrophysics, Cambridge MA

(i) July 11-13, 2008: Annual Meeting of Doctors for Disaster Preparedness,
Phoenix, Arizona
"Endangering the Polar Bears: How environmentalists kill"

(j) August 6-14, 2008: the 33rd International Geological Congress, Oslo, Norway

(i) co-chairing, with Professor Bob Carter of James Cook University,
the science session CGC-03:
"Solar drivers of climate change and the stratigraphic record"
(ii) selected by Professor David Gee of Uppsala University,
the IGC SciCom Chairman, to be one of the speakers
for the August 8's Theme of the Day of IGC on "Climate" and the title of my talk:
"Solar and Climate Variability: Past, present and future"
(iii) invited speaker for CGC-03 session:
"Solar irradiance variability and climatic responses: A brief review"
(iv) contributing author for CGC-03 session:
"Relationship between the global monsoon intensity and the effective solar radiation in the last millennium" by Jian Liu, Bin Wang and Willie Soon

(k) September 15, 2008: Marshall Institute Climate Discussion Group,
"The Sun-Climate Connection"

(l) September 23, 2008: University of Southern California, Ayn Rand Institute Global Warming and Policy Panel (with Keith Lockitch as co-panelist), "On the science of global climate change"

(m) September 25, 2008: University of California Berkeley, Ayn Rand Institute Global Warming and Policy Panel (with Keith Lockitch as co-panelist), "On the science of global climate change"

(n) September 29, 2008: Columbus, Ohio, Annual Meeting of the G&T Managers' Association, "On the science of global climate change"

(o) November 24-26, 2008: Jakarta, Indonesia, **Invited speaker at the International Symposium on Climate and Weather of the Sun-Earth System** hosted by Indonesia's National Agency for Meteorology & Geophysics (as part of the scoping processes for the upcoming UN IPCC AR5 reports).

Charles G. Koch
CHARITABLE FOUNDATION

September 21, 2009

Charles Alcock
Director
Harvard-Smithsonian Center for Astrophysics
60 Garden Street
Cambridge, MA 02138-1516

Dear Mr. Alcock:

Pursuant to the request of the Smithsonian Institution, we are happy to enclose our check in the amount of $65,000 in support of research to be conducted under the direction of Dr. Willie Soon at the Harvard-Smithsonian Center for Astrophysics.

You have previously agreed that the grant will be expended only for an educational, scientific, literary, or other charitable purpose described in Section 170(c)(2)(B) of the Internal Revenue Code ("Code"), and that the grant will not be used to influence legislation, to influence the outcome of any election, for a political campaign or intervention, or to carry on any voter registration drive.

The terms and conditions contained in this letter agreement supersede all prior oral or written agreements and understandings between the parties and shall constitute the entire agreement between the parties with respect to the matters contained herein. This letter agreement shall not be modified or amended except by a writing duly executed by parties hereto.

According to the information that was furnished to us, your organization is qualified to be exempt under Code section 501(c)(3) and is still classified as a public charity pursuant to Code section 509(a)(1). Please inform us if there has been a change in your tax status since then.

Finally, we must ask that any funds not expended for the purposes described in Code section 170(c)(2)(B), which the grant is being made, be returned to us. Please indicate your agreement with these conditions by returning a signed copy of this letter to the Foundation, attention Grants Coordinator.

Sincerely,

Richard Fink

Richard H. Fink
President

cc: Dr. Willie Soon

Acknowledged and Agreed to by the Smithsonian Institution
By: Thomas G. Bonnenfant
Print Name & Title: Thomas G. Bonnenfant, Contracting Officer
Date: 12/01/09

Courthouse Tower • 1515 N. Courthouse Road, Suite 200 • Arlington, VA 22201 • Phone: 703.875.1600 • Fax: 703.875.1601

P7422-11-09

Smithsonian Astrophysical Observatory

Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States

A Proposal for $65K Support to Charles G. Koch Charitable Foundation

Dr. Willie Soon, Principal Investigator
Smithsonian Astrophysical Observatory
Solar, Stellar and Planetary Sciences Division
(617-495-7488; wsoon@cfa.harvard.edu)
July, 2008

Research Target and Proposal:
This proposal seeks $65,000 from The Charles G. Koch Charitable Foundation for year one of this two-year project, "*Understanding Solar Variability and Climate Change: Signals from Temperature Records of the United States.*" I propose to conduct an intensive up-to-date science review of solar variability and climate change (see e.g., Soon 2007a), with emphasis on the signals from temperature records of the U.S., that will be a clear improvement of previous studies. The goals for the first year are to collect and assess the scientific quality of the available temperature records from the United States, aggregated into four inter-related spatial domains: 1) a rural city (i.e., a city that is minimally disturbed by urban development), 2) an individual state, 3) regional U.S. area, and 4) the whole conterminous U.S. The goals for the second year are to study any plausible connection of these U.S. temperature records with estimated solar irradiance history for the past 112 years from 1895 to 2006.

The previously published research paper by Soon (2005) identifies both the multidecadal variation in total solar irradiance and the 11-year solar UV irradiance forcings to be important in explaining the observed Arctic surface air temperature change over the past 130 years or so. The overall goal for this 2-year program is to extend our basic understanding on how the variable solar irradiance outputs could be physically connected to the Earth climate system. The ability to confirm or reject the statistical correlations shown in Figure 1 will be of enormous scientific importance. The ultimate physical understanding will arise from detailed assessments on how the solar irradiance is related to the cloud field as well as how the solar irradiance may systematically and persistently modulate the land surface heat fluxes (i.e., sensible and latent heats) on multidecadal to centennial time scales. A parallel hypothesis regarding the role of rising atmospheric carbon dioxide (see e.g., Soon 2007b) in warming the surface temperatures of the United States on these 4 spatial scales will also be evaluated.

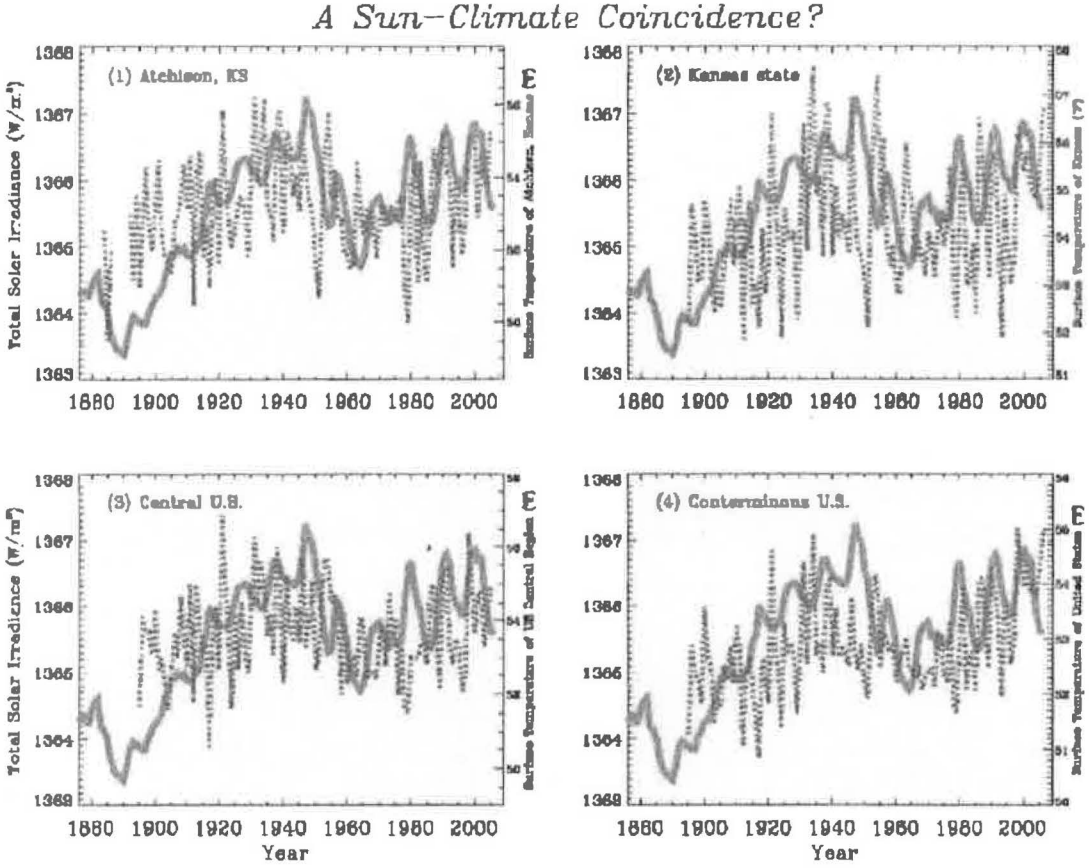

Figure 1: A plausible connection of the solar irradiance (red curves in all four plots; based on Hoyt and Schatten 1993-rescaled to the mean absolute value[1] measured by the ACRIM radiometers) compared with U.S. temperature records in 4 spatial domains (the blue dotted curves are for 1) Atchinson, KS, 2) state of Kansas, 3) Central region of the U.S., and 4) conterminous U.S.). These results extend the previous relation found for the Arctic shown in Soon (2005). The scientific hypothesis for this sun-climate relation will be carefully formulated and examined in the proposed project.
[Temperature Data Source: U.S. National Climatic Data Center.
http://lwf.ncdc.noaa.gov/oa/climate/research/cag3/cag3.html]

[1] Soon (2007a) calls for the solar physics community to firmly establish this value emphasizing its great importance in establishing the mean climatology in climate models. The mean climatology in climate models can be subjected to a rather arbitrary tuning given that the absolute level of total solar irradiance is not determined to any level of confidence, with values ranging from 1372 to 1360 W/m².

Expected Outcomes:

(1) Publication of both original and review papers on solar variability and climate change and various environmental impacts of that related change in leading scientific journals for the advancement of climate and meteorological sciences.

(2) Development of tools, including power-point presentations and concise scientific essays, for unbiased and more accurate science accounting that will more powerfully serve informed public policy making.

(3) Better public education with active participations by the PI of this research proposal in all national and international forums interested in promoting the basic understanding of solar variability and climate change.

Research Team:

Dr. Willie Soon at the Smithsonian Astrophysical Observatory, which is part of the Harvard-Smithsonian Center for Astrophysics, will lead and direct this scientific research program. In addition, the PI *may* solicit interests for collaborative effort from interested colleagues at no additional cost to the proposal.

Funding Request:

The funding is primarily to support approximately 6 months of the full-time research work of Dr. Willie Soon at the Smithsonian Astrophysical Observatory and a small amount of travel to a scientific meeting or publication costs. This research proposal requests $65,000 from the Charles G. Koch Charitable Foundation for work to start January 1, 2009, extending for a duration of about one year.

References

Hoyt D. V. and Schatten K. H. (1993) A discussion of plausible solar irradiance variations, 1700-1992. Journal of Geophysical Research 98 (A11), 18895-18906 [with updates from Dr. Nicola Scafetta, Duke University, private communication May 31, 2007].

Soon W. (2005) Variable solar irradiance as a plausible agent for multidecadal variations in the Arctic-wide surface air temperature records of the past 130 years. Geophysical Research Letters 32: L16712.

Soon W. (2007a) Some Issues of Solar Irradiance Variability and Climatic Responses: A Brief Review. Inivited Talk GC42A-05 at the American Geophysical Union Fall Meeting (December 10-14, 2007).

Soon W. (2007b) Implications of the secondary role of carbon dioxide and methane forcing in climate change: Past, present, and future. Physical Geography 28, 97-125.

SCS Contract No.: 15670

AGREEMENT
BETWEEN
SMITHSONIAN ASTROPHYSICAL OBSERVATORY
SOUTHERN COMPANY SERVICES, INC.

THIS AGREEMENT is entered into by and between the **Smithsonian Astrophysical Observatory**, located at 60 Garden Street, Cambridge, MA 02138-1516, hereinafter referred to as "Smithsonian"), and **Southern Company Services, Inc.,** having a place of business at 600 North 18th Street, Birmingham, Alabama 35203, on behalf of itself, its parent and its affiliate companies, (collectively referred to as " SCS").

WITNESSETH

WHEREAS, the Smithsonian is interested in conducting an intensive science review of solar variability and climate change, as provided in the attached Proposal P7480-3-10 (referred to as the "Project"); and,

WHEREAS, SCS, on behalf of itself, its parent and its affiliate companies is interested in furthering the research on the Project and in obtaining advance information and is therefore willing to fund this research.

NOW, THEREFORE, Smithsonian and SCS hereby agree as follows:

1. **Scope of Work.** The Scope of Work for this Project shall be conducted in accordance with the attached Proposal P7480-3-10entitled "Understanding Solar Radiation and Climate Change: A Research Program into the Physical Links between Surface Sunshine History and Chinese Temperature Record", which is incorporated and made a part of this Agreement. In consideration of the Research to be provided by Smithsonian, SCS agrees to make an advance payment in the sum of Sixty Thousand Three Dollars ($60,003.) and to reimburse Smithsonian for its costs in accordance with the Proposal in an amount not to exceed the advance sum.

2. **Limited Nature of Parties Obligations.**

   The obligations of SCS and the Smithsonian hereunder shall be limited to payment of the amounts and the Project effort as specified in Article 1 above. SCS assumes no other obligation or responsibility of any kind to the Smithsonian or any other participants or sponsors, if any. SCS makes no warranties or Representations, Express or implied, of any kind.

3. **Termination.** Smithsonian understands and agrees that in the event the Project is terminated prior to completion or is not in accordance with the attached Proposal, SCS shall be entitled to a refund of the unexpended funds.

4. **No Joint Venture.** This Agreement is not intended to create nor shall it be construed to create any partnership, joint venture, employment or agency relationship between or among the parties, and no party shall be liable for the payment or performance of any debts, obligations, or liabilities of any other party, unless expressly assumed in writing.

5. **Deliverables.** In consideration to SCS for its one (1) year funding contribution to the Project, Smithsonian shall deliver to SCS a progress report of the findings including a detailed summary and analysis of the results and findings at the end of the one year period. SCS shall be entitled to a no-cost, non-exclusive irrevocable license to utilize the data and results of the Project for its internal purposes.

6. **Authority.** Each party represents and warrants to the other that as of the effective date of this Agreement: (a) it has all requisite power and authority to enter into and perform its obligations under this Agreement, and (b) there are no actions, suits, or proceedings pending, or to the best of its knowledge threatened, which may have a material adverse effect on its ability to fulfill its obligations under this Agreement or on its operations, business, properties, assets or condition.

7. **Assignment and Subcontracting Prohibited.** This Agreement shall not be assigned by Smithsonian nor its obligations subcontracted without the prior written consent of SCS, which shall not be unreasonably withheld. Any assignment or subcontracting in violation of this provision shall be deemed null and void and SCS shall be entitled to a refund of its contribution in full.

8. **Subsequent Changes in Agreement.** This Agreement may be modified only by an amendment executed in writing by a duly authorized representative for each party.

9. **Partial Invalidity.** If any provision of this Agreement is found to be unenforceable then, notwithstanding such unenforceability, this Agreement shall remain in effect and there shall be substituted for such unenforceable provision a like but enforceable provision which most nearly effects the intention of the parties. If a like but enforceable provision cannot be substituted, the unenforceable provision shall be deemed to be deleted and the remaining provisions shall continue in effect, provided that the performance, rights, and obligations of the parties hereunder are not materially adversely affected by such deletion.

10. **Successors and Assigns.** This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns, if any, of the parties, provided that this provision shall not be construed to permit any assignment which would be unauthorized or void pursuant to any other provision contained herein.

11. **Non-Waiver.** No provision of this Agreement shall be deemed waived and no breach shall be deemed excused unless such waiver or consent is in writing and signed by the party claimed to have waived or consented. No consent by either party to, or waiver of, a breach by the other, whether express or implied, shall constitute a consent to, waiver of, or excuse for any different or subsequent breach.

12. **Force Majeure.** Neither party shall be deemed to be in default of any provision of this Agreement or liable for failures in performance resulting from acts or events beyond the reasonable control of such party. Such acts shall include but not be limited to acts of God, civil or military authority, civil disturbance, war, strikes, fires, other catastrophes, or other 'force majeure' events beyond a party's reasonable control.

13. **Survival of Representations.** The provisions contained in this Agreement that by their sense and context are intended to survive the performance hereof by either or both parties shall so survive the completion of performance and termination of this Agreement, including the making of any and all payments due hereunder.

14. **Notices.** All notices permitted or required to be given under this Agreement shall be in writing and shall be deemed duly given upon personal delivery (against receipt) or on the fourth day following the date on which each such notice is deposited postage prepaid in the United States Mail, registered or certified, return receipt requested. All notices shall be delivered or sent to the other party at the address(es) shown below or to any other address(es) as the party may designate by ten (10) days prior written notice given in accordance with this provision.

If to Smithsonian:

Smithsonian Institution Astrophysical Observatory
60 Garden Street
Cambridge, MA 02138-1516
Attention: Dr. Willie Soon, Mail Stop 28 (for technical matters)
Attention: Mr. Thomas G. Bonnenfant, Mail Stop 23 (for contractual matters)

If to SCS:

Southern Company Services, Inc.
600 North 18th Street
Bin 14N-8195
Birmingham, Alabama 35203
Attention: Justin T. Walters, Bin 14N-8195 (for technical matters)
Attention: Joseph L. Coker, Bin 7N-8374 (for contractual matters)

15. **Publicity.** Smithsonian shall not publish and utilize the name or otherwise identify SCS or its affiliate companies in any publications or other advertisements without the express written consent of SCS. As further consideration to SCS, Smithsonian shall provide SCS an advance written copy of proposed publications regarding the deliverables for comment and input, if any, from SCS.

16. **Duplicate Originals.** Duplicate originals of this Agreement shall be executed, each of which shall be deemed an original but both of which together shall constitute one and the same instrument.

17. **Entire Agreement.** This Agreement contains the entire agreement of the parties and there are no oral or written representations, understandings or agreements between the parties respecting the subject matter of this Agreement which are not fully expressed herein.

IN WITNESS WHEREOF, each of the parties hereto acknowledge that they have caused this Agreement to be executed in duplicate originals by its duly authorized representative on the respective dates entered below.

SOUTHERN COMPANY SERVICES, INC.

("SCS")

By: _____
(Signature)

Name: John J. Jansen
(Typed or printed)

Title: Principal Scientist

Date: 7/21/10

THE SMITHSONIAN INSTITUTION ASTRPPHYSICAL OBSERVATORY
("Smithsonian")

By: _____
(Signature)

Name: Thomas G. Bonnenfant
(Typed or printed)

Title: Contract and Grant Specialist

Date: 7/28/2010

PROPOSAL TO

SOUTHERN COMPANY

FOR

Understanding Solar Radiation and Climate Change: A Research Program into the Physical Links between Surface Sunshine History and Chinese Temperature Record

P7480-3-10

For the period 1 May 2010 through 30 April 2011

Funds Requested: $60,003

Principal Investigator
Dr. Willie Soon

Associate Director of Solar, Stellar & Planetary Sciences
Dr. Nancy S. Brickhouse

March 2010

Smithsonian Astrophysical Observatory
Cambridge, Massachusetts 02138

Director: Dr. Charles Alcock

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

Understanding Solar Radiation and Climate Change: A Research Program Into the Physical Links Between Surface Sunshine History and Chinese Temperature Record

Scientific Justification/Statement of Work
March, 2010

Research Motivation, Target and Proposal:

The primary motivation for such an in-depth scientific research proposal is to explore the mechanism on how the Earth's climate system actually varies naturally on multidecadal to multicentennial timescales. Establishing the reality of large natural climate change on the important timescales of decades to centuries is well supported by available climate proxy data but has been one of the most difficult hurdles in arguing for catastrophic man-made global warming or climate change. Thus, this scientific research proposal will be both timely and relevant for the current debate about man-made climate change.

In Soon (2009), a scientific hypothesis on how variable sunlight affects Earth's surface temperature and climate was outlined for the first time. The physical mechanism involves variable solar outputs, primarily in the visible light portion of the spectrum, modulating the equator-to-pole heat transport and affecting the heat and water budgets of the Arctic air-sea-ice system. Ultimately, the solar-Arctic changes modulate the Atlantic Ocean "conveyor-belt" circulation which has significant climatic teleconnections to different parts of the world.

Figure 1 shows such a predicted consequence – the connection between the variable solar irradiance with the Chinese temperature record from 1880-2002. The motivation in the search for a plausible solar explanation came from Zhou and Yu (2006):

> **"No model could successfully produce the reconstructed warming over China in the 1920s. ... Limitations of the current state-of-the-art coupled models in simulating spatial patterns of the 20th century [surface air temperature] over China cast a shadow upon their capability toward projecting credible geographical distributions of future climate change through IPCC scenario simulations." (p. 5843)**

In the context of this research proposal, my goal is to uncover the physical mechanism of natural climate variation or other anthropogenic factors of climate change other than greenhouse gases; the conclusion of Zhou and Yu (2006; p. 5857) "further [computer climate model] runs without the GHG [greenhouse gases] are encouraged for the international modeling groups" is important.

Although impressive, my new result (Figure 1) is still unsatisfactory for a simple reason: What actually happens to the incoming solar radiation and does it actually reach the surface of the Earth? In other words, while the correlation is impressive, a physical explanation is required.

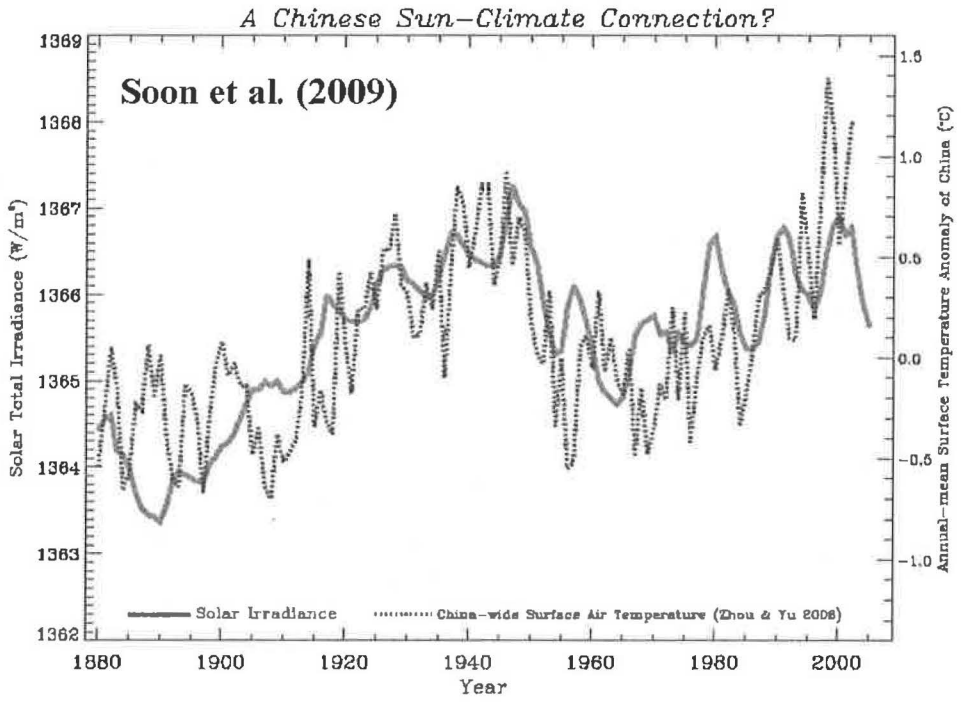

Figure 1

Figure 2 shows an exciting and promising hint that indeed one can demonstrate that a large part of the incoming solar radiation at the top of the atmosphere can, in fact, reach the surface of the Earth under favorable weather and climatic conditions with appropriate water vapor and cloud distributions. This result (Figure 2) suggests that the incoming solar radiation is strongly modulated by the transparency of the atmosphere. Once we replace the solar radiation recorded at the top of atmosphere by the available record of sunshine reaching the surface (*i.e.*, accounting for the atmospheric transmissivity), the connection between the Chinese temperature history and solar radiation becomes even stronger in explaining the rapid warming of the last 20 years of the Chinese air temperature record.

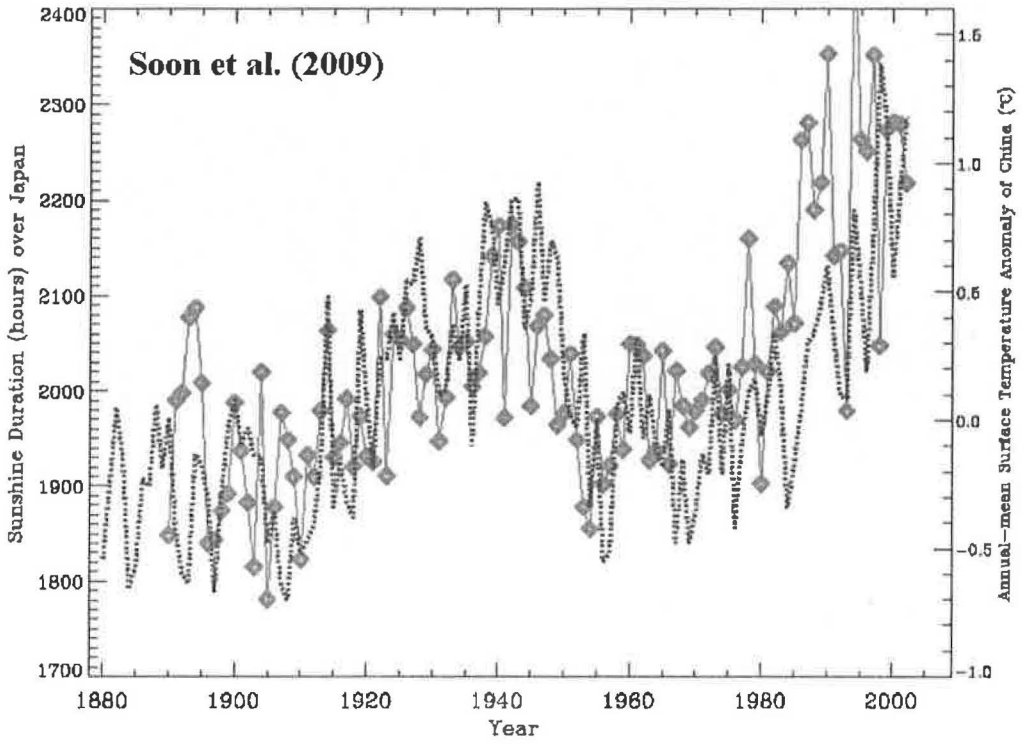

Figure 2

The main sources of data for this research (including those shown in Figures 1 and 2) will include:

(a) Composite total solar irradiance data (Hoyt and Schatten 1993; and see updates and discussion in Scafetta and Willson 2009 and Soon 2009),

(b) Surface sunshine duration measurements (*e.g.,* see the high-quality data from the Japanese Meteorological Agency; Stanhill and Cohen 2008, private communication with Professors Gerry Stanhill and Shep Cohen September 2008), and

(c) Chinese and other high-quality temperature station records (Wang *et al.* 2001; 2004 and Zhou and Yu 2006, private communication with Professor Tian Jun Zhou May 2008).

The main hypothesis postulated by this research proposal is that if the empirical results from Figures 1 and 2 can be fully confirmed, then we are finally able to say for the first time that the Sun-climate connection through its impact on surface air temperature is a proven fact rather than mere speculation and spurious correlation.

The near-term and longer-range research strategy: In light of the current debate concerning the role of atmospheric carbon dioxide in causing global and regional warming – including the encouraging results of the Chinese temperature history shown here – I propose the following 2-prong research plan that involve both a quick turn-around research publication time for the most important results as shown in Figure 1 and Figure 2 as well as a longer 3-year research program that will uphold the scientific results to the climate science community for regions beyond China. The proposed research program will be especially invaluable in serving to inform the 5th UN IPCC reports which will be finalized in 2014.

Specific scientific research steps will include further research to:

(1) Determine if a similar relationship can be shown for the temperature history in Japan and the direct surface sunshine records over Japan and its surrounding sea.

(2) Evaluate if the enhanced surface sunshine for the most recent 20 years can be explained by cloud cover and/or simply changes in the transparency of the atmosphere above the East China region related to distribution of water vapor or by particulate matter (aerosols).

(3) Find if a similar empirical relationship as in Figure 2 may exist elsewhere since similar results for Figure 1 can clearly be shown, for example, for temperature records of the United States (under current investigation by Willie Soon).

(4) Quantify and explain the relationship shown in Figure 2 which will ultimately involve the study of the surface energy budget over the seas around Japan and China and how the modulation of the sea surface energy budget will lead to a land-sea contrast that will modify the East Asian monsoon weather-climate system.

Research Team:
Dr. Willie Soon at the Smithsonian Astrophysical Observatory, which is part of the Harvard-Smithsonian Center for Astrophysics, will lead and direct this scientific research program. This research program will also involve a distinguished list of atmospheric scientists, oceanographers, climate modelers and geologists.

Funding requirements: This research proposal requests $60,000 from the Southern Company for work to start in May 2010 and extend for a duration of 12 months to support part-time research work of Dr. Willie Soon.

References:

Hoyt, D.V., and Schatten, K.H. (1993) A discussion of plausible solar irradiance variations, 1700-1992. *Journal of Geophysical Research*, vol. 98, 18895-18906.

Scafetta, N., and Willson R. (2009) ACRIM-gap and TSI trend issue resolved using a surface magnetic flux TSI proxy model. *Geophysical Research Letters*, vol. 36, doi:10.1029/2008GL036307.

Soon, W. (2009) Solar Arctic-mediated climate variation on multidecadal to centennial timescales: Empirical evidence, mechanistic explanation, and testable consequences. *Physical Geography*, vol. 30, 144-184.

Stanhill, G., and Cohen, S. (2008) Solar radiation changes in Japan during the 20th century: Evidence from sunshine duration measurements. *Journal of Meteorological Society of Japan*, vol. 86, 57-67.

Wang, S., Gong, D., and Zhu, J. (2001) Twentieth-century climatic warming in China in the context of the Holocene. *The Holocene*, vol. 11, 313-321.

Wang, S., Zhu, J., and Cai, J. (2004) Interdecadal variability of temperature and precipitation in China since 1880. *Advances in Atmospheric Sciences*, vol. 21, 307-313.

Zhou, T., and Yu, R. (2006) Twentieth-century surface air temperature over China and the globe simulated by coupled climate models. *Journal of Climate*, vol. 19, 5843-5858.

BUDGET NARRATIVE

Understanding Solar Radiation and Climate Change: A Research Program into the Physical Links between Surface Sunshine History and Chinese Temperature Record

PI: Dr. Willie Soon

Period of Performance: 01 May 2010 – 30 April 2011

The budget includes 4 months of the PI's salary and benefits, as well as minor costs for salary and benefits for administrative and clerical work specific to this research effort. Indirect rates applied are listed on the Estimate of Cost page and the Contractual and Cost section.

PI: Willie Soon
Sponsor: Southern Company Services

ESTIMATE OF COST

Period of Performance: 05-01-10 THRU 04-30-11

Productive Labor:	Hrs	Dollars
PI Soon	440	$24,693
Program Administrator	40	2,222
Staff Assistant	24	781
Total Productive Labor	504	27,696
Leave @ 18.5 %		5,124
Total Direct Labor		32,820
Fringe Benefits @ 27.6 %		9,058
Direct Operating Overhead Base		41,878
Direct Operating Overhead @ 27.7%		11,600
G & A Base		53,478
G & A @ 12.2%		6,524
TOTAL ESTIMATED COST		$60,003

CONTRACTUAL AND COST INFORMATION INCLUDING CERTIFICATIONS

The Smithsonian Institution, an independent trust establishment was created by an act of the Congress of 1846 to carry out the terms of the will of James Smithson of England, who had bequeathed his entire estate to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." After accepting the trust property for the United States, Congress vested responsibility for administering the trust in a Smithsonian Board of Regents.

The Smithsonian performs research, educational and other special projects supported by grants and contracts awarded under the cost principles of the Federal Acquisition Regulation, Subpart 31.7 Contracts with Nonprofit Organizations. It is audited by the Defense Contract Audit Agency, Landover, Maryland.

The Charter of the Smithsonian Institution carries a mandate for the "increase and diffusion of knowledge among men." Therefore, any grant or contract that may be awarded as a result of this proposal must be unclassified, in order not to abridge the Institution's right to publish, without restriction, findings that result from this research project.

Considering the nature of the proposed effort, it is requested that a Cost-Reimbursement (No Fee) Research and Development Contract with reimbursement via electronic funds transfer be awarded to cover the proposed project in accordance with Subpart C, Section 215.22(e) of Title 2 of the Code of Federal Regulations (CFR) Part 215 [formerly the Office of Management and Budget (OMB) Circular A-110: *Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, Hospitals and Other Non-Profit Organizations]*.

Pursuant to Subpart C, Section 215.33 and 215.34 of Title 2 CFR Part 215 [formerly OMB Circular No. A-110], it is requested that title to all exempt property and equipment purchased or fabricated under the proposed contract be vested irrevocably in the Institution upon acquisition.

In accordance with an agreement between the Office of Naval Research and the Smithsonian, the Institution operates with predetermined fixed overhead rates with carry-forward provisions. For Fiscal Year 1996 and beyond, the Indirect Cost and Fringe Benefits Rates are developed in accordance with Title 2 CFR Part 230 [formerly OMB Circular A-122: *Cost Principles for Non-Profit Organizations*]. The following approved rates, provided by ONR Negotiation Agreement dated 4 March 2010, shall be used for forward pricing and billing purposes for Fiscal Year 2010. The Fringe Benefits Rate will be applied to the Total Direct Labor Costs. The Material Overhead Rate will be applied to the cost of materials, equipment and subcontracts. The Direct Operating Overhead Rate will be applied to the Direct Labor and Benefits costs. The G&A Rate will be applied to the base consisting of total costs except the costs associated with the materials, equipment and subcontracts.

The following Approved Rates shall be used for forward pricing and billing purposes for Fiscal Year 2010:

Material Burden Rate (Cost of Materials, equipment and subcontracts)	5.3%
Personnel Leave Rate (Total Direct Labor Costs less paid leave and training {Productive Labor})	18.5%
Fringe Benefits Rate (Full/Part Time Employees) (Total Direct Labor Costs)	27.6%
Fringe Benefits Rate (Intermittent Employees) (Total Direct Labor Costs)	8.5%
Direct Operating Overhead Rate (Total Direct Labor and Fringe Benefits Costs)	27.7%
General and Administrative Rate (G&A) (Base consists of Direct Operating Activities less Net Costs Associated with materials, subcontracts and equipment)	12.2%
Central Engineering Overhead Rate (Central Engineering Direct Labor and Benefits Costs)	28.2%

Rate verification can be made by contacting Ms. Linda Shipp, Office of Naval Research, Indirect Costs/ONR 242, 800 N. Quincy Street, Room 704, Arlington, Virginia 22217, telephone (703) 696-8559, or e-mail linda_shipp@onr.navy.mil.

Engineering services are provided by the Central Engineering Department as a Cost Center. Charges by the department to research projects are inclusive of Direct Labor, Fringe Benefits, and Central Engineering Overhead.

CERTIFICATIONS

Pursuant to Executive Order 12549 and implementing rule (FAR 52.209-5), the Smithsonian Institution certifies that it presently is not debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency.

Pursuant to Section 1352, Title 31, United States Code (USC) and implementing rule (FAR 52.203-12), the Smithsonian Institution certifies that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement.

UNDERSTANDING SOLAR RADIATION AND CLIMATE CHANGE: A RESEARCH PROGRAM INTO THE PHYSICAL LINKS BETWEEN SURFACE SUNSHINE HISTORY AND CHINESE TEMPERATURE RECORD

Final Report

Agreement No. 15670

For the Period 1 May 2010 to 30 April 2011

Principal Investigator: Dr. Willie Soon

May 2011

Prepared for
Southern Company Services, Inc.
Birmingham, Alabama 35203

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

The goals of this research project have been completely and successfully executed with the following list of deliverables:

(1) The publication of the invited paper "Avoiding Carbon Myopia: Three Considerations for policy makers concerning man made carbon dioxide" by Willie Soon and David R. Legates (2010) in *Ecology Law Currents*, vol. 37, 1-9.

In December 2009, lawmakers and representatives from around the world, along with scientists, numerous journalists, and various celebrities flew to Copenhagen, Denmark. For the most part, their goal was to promote a regulatory scheme aimed at controlling human carbon emissions by declaring the element a tradable commodity and establishing laws and regulations to govern the trade.

The proposed regulations were premised on the flawed notion, articulated by the United Nations Intergovernmental Panel on Climate Change (IPCC), that increasing atmospheric carbon dioxide (CO_2) concentrations will change climate dramatically and thereby cause major ecological and economic damage.

While many scientists, including us, have observed some changes in climate, the hypothesized *dangerous* consequences of rising atmospheric CO_2 are too speculative for responsible regulatory policy. In analyzing climate policy, decision makers should be cognizant of three key considerations regarding the impact of projected rises in atmospheric CO_2: (1) policy choices likely will have no measurable effect on the occurrence of severe weather; (2) positive effects on ecosystems and biodiversity are likely and should be weighed against the negatives; and (3) carbon trading schemes (such as the one touted in Copenhagen) are unlikely to lead to a reduction in atmospheric CO_2.

Given these considerations, policy makers must carefully consider their objectives and the potential impacts, both positive and negative, of carbon emission control. If climate change regulation proceeds unchecked, it will likely produce policy that is out of touch with both the real world and objective science and will likely impose large costs on society that benefit only a small cadre of "climate entrepreneurs" and provide no meaningful effect on the Earth's climate.

(2) The publication of the scientific manuscript "Sea Level Changes in Bangladesh: Observational Constraints on Human, Geologic and Weather-Climate Variability Related Factors" by David R. Legates and Willie Soon (2011) (as a book chapter) in *Understanding Climate Change Issues in Bangladesh*, Rafique Ahmed et al. (editors), in press.

Bangladesh is a nation prone to flooding due to its geographical location. Situated on the Bay of Bengal, Bangladesh is the floodplain of the Ganges River which is fed by other major rivers including the Meghna and the Brahmaputra Rivers. Since much of Bangladesh lies in the flat, coastal delta of the *Mouths of the Ganges*, it is easily susceptible to flooding from both coastal storms as well as spring meltwater. As Bangladesh does not have flood control structures on the Ganges River, the increase in river flow resulting from rain and snowmelt from the Himalayas of both India and Nepal often floods the country. Indeed, the Indian highlands are among the regions of the world with the heaviest annual precipitation. Moreover, tropical storms which frequent Indian Ocean during the high sun season – when highland rains are greatest and the flow of the Ganges is highest – often drive storm surges into the low-lying country.

It is well noted that current conditions in and around Bangladesh are harsh and unforgiving. The adverse impact of natural hazards is commonplace and this only serves to exacerbate the economic and social difficulties that plague the country. It has to be recognized, however, that floods and droughts, storm surges and high winds associated with tropical storms, and other naturally-caused catastrophes have always

affected this region. Such variations have occurred despite any possible effects of anthropogenic CO_2 and indeed are likely to occur again in the future, regardless of any steps taken to mitigate the effects of anthropogenic CO_2 emissions.

Thus, the tendency by self-indulged politicians, rent-seeking advocates, and scare-mongers in the popular press to downplay the current difficulties present in the climate of Bangladesh and hype future disasters postulated from a rise in global sea levels is clearly counterproductive for the Bangladeshi citizens. It serves to divert efforts from proper planning, mitigation, and adaptation strategies that are vital to saving lives *now*. However, the future of Bangladesh is not bleak as attention is paid to helping the Bangladeshi people develop realistic controls on river flow and discharge and provide timely dissemination of warnings of environmental hazards (*e.g.*, cyclones and flooding) while simultaneously protecting the Ganges-Brahmaputra-Meghna Delta landscape and the continued destruction of the mangrove forest ecosystem. Only by properly addressing current problems can Bangladesh be prepared for future changes in the climate, regardless of the source – natural or anthropogenic.

Moreover, one has to recognize that in other tidal wetland systems such as the Kirkpatrick marsh land (Maryland, USA) around the Chesapeake Bay (off the USA Atlantic coast, bounded by Maryland and Virginia), evidence exists that enhanced levels of atmospheric CO_2 may actually stimulate marsh vegetation thereby providing an effective counter to sea level rise and ocean water encroachment. Langley *et al.* (2009:6182) notes:

> "Here, we present experimental evidence that plant response to elevated atmospheric [CO_2] stimulates biogenic mechanisms of elevation gain in a brackish marsh. Elevated CO_2 (ambient + 340 ppm) accelerated soil elevation gain by 3.9 mm yr^{-1} in this 2-year field study, an effect mediated by stimulation of below-ground plant productivity. Further, a companion greenhouse experiment revealed that the CO_2 effect was enhanced under salinity and flooding conditions likely to accompany future [sea level rise]. Our results indicate that by stimulating biogenic contribution to marsh elevation, increases in the greenhouse gas, CO_2, may paradoxically aid some coastal wetlands in counterbalancing rising seas."

It also is likely that increased CO_2 will enhance vegetation growth in the Ganges-Brahmaputra-Meghna Delta region and help offset rises in sea level, regardless the cause.

(3) Submission of the scientific manuscript "Temporal derivative of total solar irradiance and anomalous Indian Summer Monsoon: An empirical evidence for a sun-climate connection" by Rajesh Agnihotri, Koushik Dutta and W. Soon (2011) in the peer-reviewed journal *Journal of Atmospheric and Solar-Terrestrial Physics.*

Abstract

Identifying the pattern of natural climate variability is of immense importance to delineate the effects of anthropogenic climate changes. Global and regional climates are suspected to vary, in unison or with delays, with the Total Solar Irradiance (TSI) at decadal to centennial timescales. Here we show that the Indian summer monsoon rainfall correlates well with the temporal derivative of TSI on multidecadal timescales. This linkage between the temporal derivative of TSI and the Indian summer monsoon is tested and corroborated both for the instrumental period (1871-2006) and for the last ~300 years using a speleothem $\delta^{18}O$ record representing rainfall in southwestern India. Our analyses indicate that both anomalously drier and wetter periods of the Indian monsoon record fall near negative and positive excursions in the TSI derivative, respectively. Our study thus demonstrates the potential of 'TSI derivative' as an important indicator of natural monsoon variability on an interdecadal timescale.

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The 20th Century surface air temperature (SAT) records of China from various sources are analyzed using data which include the recently-released Twentieth Century Reanalysis Project (20CRv2). Two key features of the Chinese records are confirmed: (1) significant 1920s and 1940s warming in the temperature records, and (2) evidence for a persistent multi-decadal modulation of the Chinese surface temperature records in covariation with solar radiation. New evidence is presented for this Sun-climate link for the instrumental record from 1880 to 2002. As well, two non-local, physical aspects of solar radiation-induced modulation of the Chinese SAT record are documented and discussed.

Teleconnections that provide a persistent and systematic modulation of the temperature response of the Tibetan Plateau and/or the tropospheric air column above the Eurasian continent (*e.g.*, 30-70°N; 0 to 120°E) are described. These teleconnections may originate from the solar irradiance-Arctic-North Atlantic Overturning Circulation mechanism proposed by Soon (2009). Also considered is the modulation of large-scale land-sea thermal contrasts, both in terms of meridional and zonal gradients, between the subtropical western Pacific and mid-latitude North Pacific and the continental landmass of China. The Circumglobal Teleconnection (CGT) pattern of summer circulation of Ding and Wang (2005) provides a physical framework for study of the Sun-climate connection over East Asia. Our results highlight the importance of solar radiation reaching the ground, and the concomitant importance of changes in atmospheric transparency or cloudiness or both, in motivating a true physical explanation of any Sun-climate connection. We conclude that solar radiation provides demonstrable forcing for Chinese SAT changes on multidecadal to centennial timescales. Therefore, a comprehensive view of local and remote factors of climate change in China must take account of this, as well as other natural and anthropogenic forcings.

(5) Preparation of the scientific report "Research to date on forecasting for the manmade global warming alarm" by Scott Armstrong, Kesten Green and Willie Soon (as a supporting document for the Testimony of Professor Scott Armstrong to the Subcommittee on Energy and Environment on March 31, 2011).

Abstract

The validity of the manmade global warming alarm requires the support of scientific forecasts of (1) a substantive long-term rise in global mean temperatures in the absence of regulations, (2) serious net harmful effects due to global warming, and (3) cost-effective regulations that would produce net beneficial effects versus alternatives such as doing nothing.

Without scientific forecasts for all three aspects of the alarm, there is no scientific basis to enact regulations. In effect, it is a three-legged stool. Despite repeated appeals to global warming alarmists, we have been unable to find scientific forecasts for any of the three legs.

We drew upon scientific (evidence-based) forecasting principles to audit the forecasting procedures used to forecast global mean temperatures by the Intergovernmental Panel on Climate Change (IPCC) –leg "1" of the stool. This audit found that the procedures violated 81% of the 89 relevant forecasting principles

We also did an audit of the forecasting procedures used for two papers that were designed to support proposed regulation related to protecting polar bears – leg "3" of the stool. On average, these procedures violated 85% of the 90 relevant principles.

The warming alarmists have not demonstrated the predictive validity of their procedures. Instead, their argument for predictive validity is based on their claim that nearly all scientists

agree with the forecasts. Such an appeal to "voting" is contrary to the scientific method. It is also incorrect.

We conducted a validation test of the IPCC forecasts based on the assumption that there would be no interventions. This test found that the errors for IPCC model long-term forecasts (91 to 100 years in the future) were 12.6 times larger than those from an evidence-based "no change" model.

Based on our analyses, we concluded that the global warming alarm is an anti-scientific political movement.

We then turned to the "structured analogies" method to forecast the likely outcomes of this movement. In this ongoing study, we have, to date, identified 26 historical alarmist movements. None of the forecasts for the analogous alarms proved correct. In the 25 alarms that called for government intervention, the government impost regulations in 23. None of the 23 interventions was effective and harm was caused by 20 of them.

(6) The prominent participation of PI in the following list of scientific talks and discussion at both national and international forums of professional scientists: All power-point talks are available upon request.

(a) May 17, 2010, International Climate Conference 4, Chicago

(b) May 18, 2010: University of Chicago
Ayn Rand Institute Global Warming and Public Policy Discussion Panel

(c) May 20, 2010: Ohio State University, Department of Economics Seminar

(d) June 11-13, 2010: Doctors for Disaster Preparedness Annual Meeting, Orlando, Florida

(e) September 10, 2010: Hong Kong University, Department of Earth Sciences Seminar

(f) September 14, 2010: PAGES 2nd Global Monsoon Symposium (Invited Talk), TongJi University Shanghai, China

(g) September 16, 2010: 2000-year Climate Simulation Workshop (Invited Talk), HuangShan, China (organized by Nanjing Institute of Geography and Limnology)

(h) March 2-4, 2011: WSJ ECO:NOMICS conference discussion leader

(i) April 28-30, 2011: University of Delaware, Departments of Geography and Physics Joint Seminar

Charles G. Koch
CHARITABLE FOUNDATION

November 8, 2010

Mr. Charles Alcock
Director
Harvard-Smithsonian Center for Astrophysics
60 Garden Street
Cambridge, MA 02138-1516

Dear Mr. Alcock:

Pursuant to the request of the Smithsonian Institution, we are happy to enclose our check in the amount of $55,000.00 for research to be conducted under the direction of Dr. Willie Soon at the Harvard-Smithsonian Center for Astrophysics.

You have previously agreed that the grant will be expended only for an educational, scientific, literary, or other charitable purpose described in Section 170(c)(2)(B) of the Internal Revenue Code ("Code"), and that the grant will not be used to influence legislation, to influence the outcome of any election, for a political campaign or intervention, or to carry on any voter registration drive.

The terms and conditions contained in this letter agreement supersede all prior oral or written agreements and understandings between the parties and shall constitute the entire agreement between the parties with respect to the matters contained herein. This letter agreement shall not be modified or amended except by a writing duly executed by parties hereto.

According to the information that was furnished to us, your organization is qualified to be exempt under Code section 501(c)(3) and is still classified as a public charity pursuant to Code section 509(a)(1). Please inform us if there has been a change in your tax status since then.

Finally, we must ask that any funds not expended for the purposes described in Code section 170(c)(2)(B), which the grant is being made, be returned to us. Please indicate your agreement with these conditions by returning a signed copy of this letter to the Foundation, attention Grants Coordinator.

Sincerely,

Richard H. Fink
President

cc: Dr. Willie Soon

Acknowledged and Agreed to by the Smithsonian Institution
By: Thomas G. Bonnenfant
Print Name & Title: Thomas G. Bonnenfant
Contracting Officer
Date: 12/23/2010

Christine McNeil <cmcneil@cfa.harvard.edu>

From: Rigler, Charles [Exemption 6]
Sent: Wednesday, August 03, 2011 3:24 PM
To: Christine McNeil <cmcneil@cfa.harvard.edu>
Cc: Moore, Logan; Jorjani, Daniel; Thomas Bonnenfant <tbonnenfant@cfa.harvard.edu>
Subject: Re: Request for No-Cost Extension - Charles G. Koch Charitable Foundation Award Letter dated November 8, 2011

Follow Up Flag: Follow up
Flag Status: Flagged

Christine,

The Foundation is fine with the extension for Dr. Willie Soon and [Exemption 6] If you have any questions going forward please contact me directly. I handle the energy/environment policy area here at the Foundation.

Many thanks,

Charles Rigler

logged in PS:
rcvd 7/22
sent 7/28

Christine McNeil <cmcneil@cfa.harvard.edu>

From: Christine McNeil <cmcneil@cfa.harvard.edu>
Sent: Thursday, July 28, 2011 1:29 PM
To: Exemption 6
Cc: Thomas Bonnenfant <tbonnenfant@cfa.harvard.edu>
Subject: Request for No-Cost Extension - Charles G. Koch Charitable Foundation Award Letter dated November 8, 2011

Smithsonian Astrophysical Observatory

Mr. Logan Moore Exemption 6
Charles G. Koch Charitable Foundation
Courthouse Tower
1515 N. Courthouse Road, Suite 200
Arlington, VA 22201

Dear Mr. Moore:

The period of performance of the above referenced Grant will expire on 31 July 2011. It is requested that the completion date be extended to 31 January 2012 with no increase in the total amount of the Award.

We are hereby requesting a six-month no-cost extension of this project owing to the primary reason that the Principal Investigator, Dr. Willie Soon, Exemption 6 Exemption 6 However, he shall complete the goals of the project by 31 January 2012.

Progress thus far is summarized below:

(1) Publication of the invited paper "Avoiding Carbon Myopia: Three Considerations for policy makers concerning man made carbon dioxide" by Willie Soon and David R. Legates (2010) in Ecology Law Currents, vol. 37, 1-9.

(2) Publication of the scientific manuscript "Sea Level Changes in Bangladesh: Observational Constraints on Human, Geologic and Weather-Climate Variability Related Factors" by David R. Legates and Willie Soon (2011) (as a book chapter) in Understanding Climate Change Issues in Bangladesh, Rafique Ahmed et al. (editors), in press.

(3) Acceptance of the scientific manuscript "Temporal derivative of total solar irradiance and anomalous Indian Summer Monsoon: An empirical evidence for a sun-climate connection" by Rajesh Agnihotri, Koushik Dutta and W. Soon (2011) in the peer-reviewed journal Journal of Atmospheric and Solar-Terrestrial Physics.

(4) Submission of the scientific manuscript "Variation in surface air temperature of China during the 20th century" by Willie Soon, Koushik Dutta, David Legates, Victor Velasco, WeiJia Zhang (2011) in the peer-reviewed journal Journal of Atmospheric and Solar-Terrestrial Physics.

(5) Preparation of the scientific report "Research to date on forecasting for the manmade global warming alarm" by Scott Armstrong, Kesten Green and Willie Soon (as a supporting document for the Testimony of Professor Scott Armstrong to the Subcommittee on Energy and Environment on March 31, 2011).

Your favorable consideration and timely response would be greatly appreciated. Should you have any questions, please do not hesitate to contact Mr. Thomas G. Bonnenfant, Contract Administrator, at (617) 495-7317 or e-mail tbonnenfant@cfa.harvard.edu.

Christine McNeil for Thomas G. Bonnenfant

Christine M. McNeil
Staff Assistant
Sponsored Programs and Procurement (SPP) Department
Smithsonian Astrophysical Observatory
Phone: 617 496-7923
Fax: 617 496-7692

DonorsTrust

109 North Henry Street
Alexandria, VA 22314

voice 703.535.3563
fax 703.535.3564
www.donorstrust.org
DT Philanthropic Services, Inc.

November 18, 2010

Mr. Charles Alcock, Director
Harvard-Smithsonian Center for Astrophysics
60 Garden Street
Cambridge, MA 02138-1516

Dear Mr. Alcock:

On behalf of the Board of Directors of DonorsTrust, I am pleased to enclose a grant in the amount of $50,000.00 to the Smithsonian Institution for research to be conducted under the direction of Dr. Willie Soon at the Harvard-Smithsonian Center for Astrophysics. This gift was made possible through the generosity and recommendation of an account holder who wishes to remain anonymous. However, if you would like to acknowledge receipt of this grant, you may write DonorsTrust and we will forward your correspondence to the appropiate account holder.

*Because neither party is entitled to a deduction for tax purposes, please **DO NOT** send a gift receipt to the account holder or to DonorsTrust.* As far as the IRS is concerned, DonorsTrust is the donor of the grant, and as a 501(c)(3) tax-exempt organization we do not use charitable tax deductions.

By accepting this grant, your organization certifies that no goods, services, or more than incidental benefits may be provided to the recommending donor or other persons in connection with this grant. Additionally, your organization confirms (1) the funds provided will be used only for the stated grant purpose(s), (2) your organization is described within sections 501(c)(3) and 170(b)(1)(A)(i) through (vi) or (viii) and is not a private foundation described by section 170(b)(1)(A)(vii) of the Internal Revenue Code ('IRC'), and (3) this grant will not be used for lobbying or political campaign activities as defined by the IRC, applicable Treasury Regulations, and interpretative guidance. Please deposit the enclosed check within ten (10) days of receipt.

DonorsTrust is a philanthropic public charity formed to promote liberty through limited government, personal responsibility, and free enterprise. The Trust is designed to provide donors with a means of protecting and exercising their charitable intent through a variety of philanthropic services, including donor-advised funds. We are pleased to be able to assist you in your work. If you have any questions regarding this grant or would like to learn more about DonorsTrust, please feel free to call us our visit our website at www.donorstrust.org.

We wish you continued success in your work.

Sincerely,

Whitney L. Ball
President and CEO

Enclosures

UNDERSTANDING SOLAR RADIATION AND CLIMATE CHANGE: A RESEARCH PROGRAM INTO THE PHYSICAL LINKS BETWEEN SURFACE SUNSHINE HISTORY AND CHINESE TEMPERATURE RECORD

DONORS TRUST, INC.
Grant No. LTR 11/18/10

Final Report

for the period
1 January 2011 to 31 December 2011

Principal Investigator
Dr. Willie Soon

January 2012

Prepared for

Donors Trust, Inc.

Smithsonian Astrophysical Observatory
Cambridge, Massachusetts 02138

The Smithsonian Astrophysical Observatory is a member of the Harvard-Smithsonian Center for Astrophysics

Final Report
Period of Performance: 1/01/2011-12/31/2011

Understanding Solar Radiation and Climate Change: A Research Program Into the Physical Links Between Surface Sunshine History and Chinese Temperature Record

Willie Soon

The goals of this research project have been completely and successfully executed with the following list of deliverables:

(1) Publication of the scientific manuscript "Temporal derivative of total solar irradiance and anomalous Indian Summer Monsoon: An empirical evidence for a sun-climate connection" by Rajesh Agnihotri, Koushik Dutta and W. Soon (2011) in the peer-reviewed journal *Journal of Atmospheric and Solar-Terrestrial Physics*.

Abstract
Identifying the pattern of natural climate variability is of immense importance to delineate the effects of anthropogenic climate changes. Global and regional climates are suspected to vary, in unison or with delays, with the Total Solar Irradiance (TSI) at decadal to centennial timescales. Here we show that the Indian summer monsoon rainfall correlates well with the temporal derivative of TSI on multidecadal timescales. This linkage between the temporal derivative of TSI and the Indian summer monsoon is tested and corroborated both for the instrumental period (1871-2006) and for the last ~300 years using a speleothem $\delta^{18}O$ record representing rainfall in southwestern India. Our analyses indicate that both anomalously drier and wetter periods of the Indian monsoon record fall near negative and positive excursions in the TSI derivative, respectively. Our study thus demonstrates the potential of 'TSI derivative' as an important indicator of natural monsoon variability on an interdecadal timescale.

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Bangladesh is a nation prone to flooding due to its geographical location. Situated on the Bay of Bengal, Bangladesh is the floodplain of the Ganges River which is fed by other major rivers including the Meghna and the Brahmaputra Rivers. Since much of Bangladesh lies in the flat, coastal delta of the *Mouths of the Ganges*, it is easily susceptible to flooding from both coastal storms as well as spring meltwater. As Bangladesh does not have flood control structures on the Ganges River, the increase in river flow resulting from rain and snowmelt from the Himalayas of both India and Nepal often floods the country. Indeed, the Indian highlands are among the regions of the world with the heaviest annual precipitation. Moreover, tropical storms which frequent Indian Ocean during the high sun season – when highland rains are greatest and the flow of the Ganges is highest – often drive storm surges into the low-lying country.

It is well noted that current conditions in and around Bangladesh are harsh and unforgiving. The adverse impact of natural hazards is commonplace and this only serves to exacerbate the economic and social difficulties that plague the country. It has to be recognized, however, that floods and droughts, storm surges and high winds associated with tropical storms, and other naturally-caused catastrophes have always affected this region. Such variations have occurred despite any possible effects of anthropogenic CO_2 and indeed are likely to occur again in the future, regardless of any steps taken to mitigate the effects of anthropogenic CO_2 emissions.

The future of Bangladesh is not bleak as attention is paid to helping the Bangladeshi people develop realistic controls on river flow and discharge and provide timely dissemination of warnings of environmental hazards (*e.g.*, cyclones and flooding) while simultaneously protecting the Ganges-Brahmaputra-Meghna Delta landscape and preventing the continued destruction of the mangrove forest ecosystem. Only by properly addressing current problems can Bangladesh be prepared for future changes in the climate, regardless of the source – natural or anthropogenic.

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(4) The prominent participation of PI in the following list of scientific talks and discussion at both national and international forums of professional scientists: All power-point talks are available upon request.

(a) March 2-4, 2011: WSJ ECO:NOMICS conference discussion leader

(b) June 21, 2011: Invited talk at Climate Science session of the 104th International Air and Waste Management Conference Orlando, Florida

(c) July 16, 2011: Invited talk on "Solar Radiation, Indian Summer Monsoon, and Dragonfly (TransOceanic) Migration" at the 29th Doctors for Disaster Preparedness's Annual Meeting, Albuquerque, New Mexico

(d) October 11, 2011: Invited speaker in the session on "The Illusive Sea Level Threat in the Indian Ocean" at the 7th International Conference on Asian Marine Geology (ICAMG7) held at the National Institute of Oceanography in Goa, India. (Co-authoring two other scientific talks given by my colleagues, Dr. Rajesh Agnihotri of the National Physical Laboratory of India and Dr. Selvaraj Kandasamy of Xiamen University in China)

(e) October 14, 2011: Invited speaker at the Centre for Extra-Mural Studies at University of Mumbai entitled "Conference on Climate Change: Shifting Science and Changing Policy."

(f) November 11, 2011: University of Delaware, American Meteorological Society Student Chapter Seminar

SCS Contract No.: 20175

AGREEMENT
BETWEEN
SMITHSONIAN ASTROPHYSICAL OBSERVATORY
SOUTHERN COMPANY SERVICES, INC.

THIS AGREEMENT is entered into by and between the **Smithsonian Astrophysical Observatory**, located at 60 Garden Street, Cambridge, MA 02138-1516, hereinafter referred to as "Smithsonian"), and **Southern Company Services, Inc.**, having a place of business at 600 North 18th Street, Birmingham, Alabama 35203, on behalf of itself, its parent and its affiliate companies, (collectively referred to as " SCS").

WITNESSETH

WHEREAS, the Smithsonian is interested in conducting in-depth scientific research to explore the mechanism on how the Earth's climate system varies naturally on multi-decadal to multi-centennial timescales, as provided in the attached Proposal PS0182-9-11 dated September, 2011, (referred to as the "Project"); and,

WHEREAS, SCS, on behalf of itself, its parent and its affiliate companies is interested in furthering the research on the Project and in obtaining advance information and is therefore willing to fund this research.

NOW, THEREFORE, Smithsonian and SCS hereby agree as follows:

1. Scope of Work. The Scope of Work for this Project shall be conducted in accordance with the attached Proposal PS0182-9-11 entitled "Modulation of Equator-to-Pole Temperature Gradients", which is incorporated and made a part of this Agreement. In consideration of the Research to be provided by Smithsonian, SCS agrees to make an advance payment in the sum of Fifty Nine Thousand Nine Hundred Forty Two ($59,942.) and to reimburse Smithsonian for its costs in accordance with the Proposal in an amount not to exceed the advance sum.

2. Limited Nature of Parties Obligations.

The obligations of SCS and the Smithsonian hereunder shall be limited to payment of the amounts and the Project effort as specified in Article 1 above. SCS assumes no other obligation or responsibility of any kind to the Smithsonian or any other participants or sponsors, if any. SCS makes no warranties or Representations, Express or implied, of any kind.

3. Termination. Smithsonian understands and agrees that in the event the Project is terminated prior to completion or is not in accordance with the attached Proposal, SCS shall be entitled to a refund of the unexpended funds.

4. No Joint Venture. This Agreement is not intended to create nor shall it be construed to create any partnership, joint venture, employment or agency relationship between or among the parties, and no party shall be liable for the payment or performance of any debts, obligations, or liabilities of any other party, unless expressly assumed in writing.

5. Deliverables. In consideration to SCS for its one (1) year funding contribution to the Project, Smithsonian shall deliver to SCS a progress report of the findings including a detailed summary and analysis of the results and findings at the end of the one year period. SCS shall be entitled to a no-cost, non-exclusive irrevocable license to utilize the data and results of the Project for its internal purposes.

6. Authority. Each party represents and warrants to the other that as of the effective date of this Agreement: (a) it has all requisite power and authority to enter into and perform its obligations under this Agreement, and (b) there are no actions, suits, or proceedings pending, or to the best of its knowledge threatened, which may have a material adverse effect on its ability to fulfill its obligations under this Agreement or on its operations, business, properties, assets or condition.

7. **Assignment and Subcontracting Prohibited.** This Agreement shall not be assigned by Smithsonian nor its obligations subcontracted without the prior written consent of SCS, which shall not be unreasonably withheld. Any assignment or subcontracting in violation of this provision shall be deemed null and void and SCS shall be entitled to a refund of its contribution in full.

8. **Subsequent Changes in Agreement.** This Agreement may be modified only by an amendment executed in writing by a duly authorized representative for each party.

9. **Partial Invalidity.** If any provision of this Agreement is found to be unenforceable then, notwithstanding such unenforceability, this Agreement shall remain in effect and there shall be substituted for such unenforceable provision a like but enforceable provision which most nearly effects the intention of the parties. If a like but enforceable provision cannot be substituted, the unenforceable provision shall be deemed to be deleted and the remaining provisions shall continue in effect, provided that the performance, rights, and obligations of the parties hereunder are not materially adversely affected by such deletion.

10. **Successors and Assigns.** This Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns, if any, of the parties, provided that this provision shall not be construed to permit any assignment which would be unauthorized or void pursuant to any other provision contained herein.

11. **Non-Waiver.** No provision of this Agreement shall be deemed waived and no breach shall be deemed excused unless such waiver or consent is in writing and signed by the party claimed to have waived or consented. No consent by either party to, or waiver of, a breach by the other, whether express or implied, shall constitute a consent to, waiver of, or excuse for any different or subsequent breach.

12. **Force Majeure.** Neither party shall be deemed to be in default of any provision of this Agreement or liable for failures in performance resulting from acts or events beyond the reasonable control of such party. Such acts shall include but not be limited to acts of God, civil or military authority, civil disturbance, war, strikes, fires, other catastrophes, or other 'force majeure' events beyond a party's reasonable control.

13. **Survival of Representations.** The provisions contained in this Agreement that by their sense and context are intended to survive the performance hereof by either or both parties shall so survive the completion of performance and termination of this Agreement, including the making of any and all payments due hereunder.

14. **Notices.** All notices permitted or required to be given under this Agreement shall be in writing and shall be deemed duly given (i) upon personal delivery (against receipt) or (ii) on the third day following the date on which each such notice is deposited postage prepaid in the United States Mail, registered or certified, return receipt requested or (iii) on the second business day after being sent by a nationally recognized overnight courier service which provides proof of receipt. All notices shall be delivered or sent to the other party at the address(es) shown below or to any other address(es) as the party may designate by ten (10) days prior written notice given in accordance with this provision.

If to Smithsonian:

Smithsonian Astrophysical Observatory
60 Garden Street
Cambridge, MA 02138-1516
Attention: Dr. Willie Soon, Mail Stop 63 (for technical matters)
Attention: Mr. Thomas G. Bonnenfant, Mail Stop 23 (for contractual matters)

If to SCS:

Southern Company Services, Inc.
600 North 18th Street
Bin 14N-8195

Birmingham, Alabama 35203
Attention: Justin T. Walters, Bin 14N-8195 (for technical matters)
Attention: Joseph L. Coker, Bin 7N-8374 (for contractual matters)

15. **Publicity.** Smithsonian shall not publish and utilize the name or otherwise identify SCS or its affiliate companies in any publications or other advertisements without the express written consent of SCS. As further consideration to SCS, Smithsonian shall provide SCS an advance written copy of proposed publications regarding the deliverables for comment and input, if any, from SCS.

16. **Duplicate Originals.** Duplicate originals of this Agreement shall be executed, each of which shall be deemed an original but both of which together shall constitute one and the same instrument.

17. **Entire Agreement.** This Agreement contains the entire agreement of the parties and there are no oral or written representations, understandings or agreements between the parties respecting the subject matter of this Agreement which are not fully expressed herein.

IN WITNESS WHEREOF, each of the parties hereto acknowledge that they have caused this Agreement to be executed in duplicate originals by its duly authorized representative on the respective dates entered below.

SOUTHERN COMPANY SERVICES, INC.
("SCS")

By: _____
(Signature)

Name: John J. Jansen
(Typed or printed)

Title: Principal Scientist

Date: 10/30/2011

SMITHSONIAN ASTROPHYSICAL OBSERVATORY
("Smithsonian")

By: _____
(Signature)

Name: Thomas G. Bonnenfant
(Typed or printed)

Title: Contracting Officer

Date: 10/26/2011

PROPOSAL TO

SOUTHERN COMPANY

FOR

Solar Modulation of Equator-to-Pole Temperature Gradients

PS0182-9-11

For the period 01 December 2011 through 30 November 2012

September 2011

Smithsonian Institution
Astrophysical Observatory
Cambridge, Massachusetts 02138

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

PROPOSAL TO

SOUTHERN COMPANY

FOR

Solar Modulation of Equator-to-Pole Temperature Gradients

PS0182-9-11

For the period 1 December 2011 to 30 November 2012

Funds Requested: $59,942

Principal Investigator
Dr. Willie Soon

Associate Director of Solar, Stellar & Planetary Sciences
Dr. Nancy S. Brickhouse

September 2011

Smithsonian Astrophysical Observatory
Cambridge, Massachusetts 02138

Director: Dr. Charles Alcock

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

Solar Modulation of Equator-to-Pole Temperature Gradients

Science Justification/Statement of Work

The primary motivation for this in-depth scientific research proposal is to explore the mechanism on how the Earth's climate system varies naturally on multi-decadal to multi-centennial timescales. Establishing the reality of large natural climate change on the important timescales of decades to centuries is well supported by available climate proxy data, but has been one of the most difficult hurdles in arguing for any "controllable" or catastrophic man-made global warming or climate change. Thus, this scientific research proposal will be both timely and relevant for the current debate about the quantitative role of natural climate change as related to solar variability.

In Soon (2005), Soon (2009), Agnihotri *et al.* (2011) and Soon *et al.* (2011), a range of sun-climate connections on local, regional, and hemispheric scales were first postulated. The main physical mechanism involves solar variability, primarily in the visible light portion of the spectrum, modulating the equator-to-pole heat transport and affecting the heat and water budgets of the Arctic air-sea-ice system. Ultimately, the solar-Arctic changes modulate the Atlantic Ocean "conveyor-belt" circulation, which has significant climatic teleconnections to different parts of the world.

Figure 1 provides not only direct evidence for the important role of ground surface solar radiation to the regional sun-climate connection but also hints at the important inter-connection among regions through the so-called circum-global teleconnection (CGT) pattern that was discovered by Branstator (2002) and Ding and Wang (2005) for both winter and summer weather-climate regimes, respectively.

The physical mechanism involved in the CGT pattern, involving the seasonal variations in the position and intensity of the North African-Asian Jet Streams, is certainly relevant for discussing the various local and regional sun-climate evidence that have been found for surface air temperatures around Arctic, the conterminous United States, and China, as well as Indian summer monsoon rainfalls. What is still missing, however, is the evidence of a cause for such a broad coherence and inter-correlation on the large spatial scales.

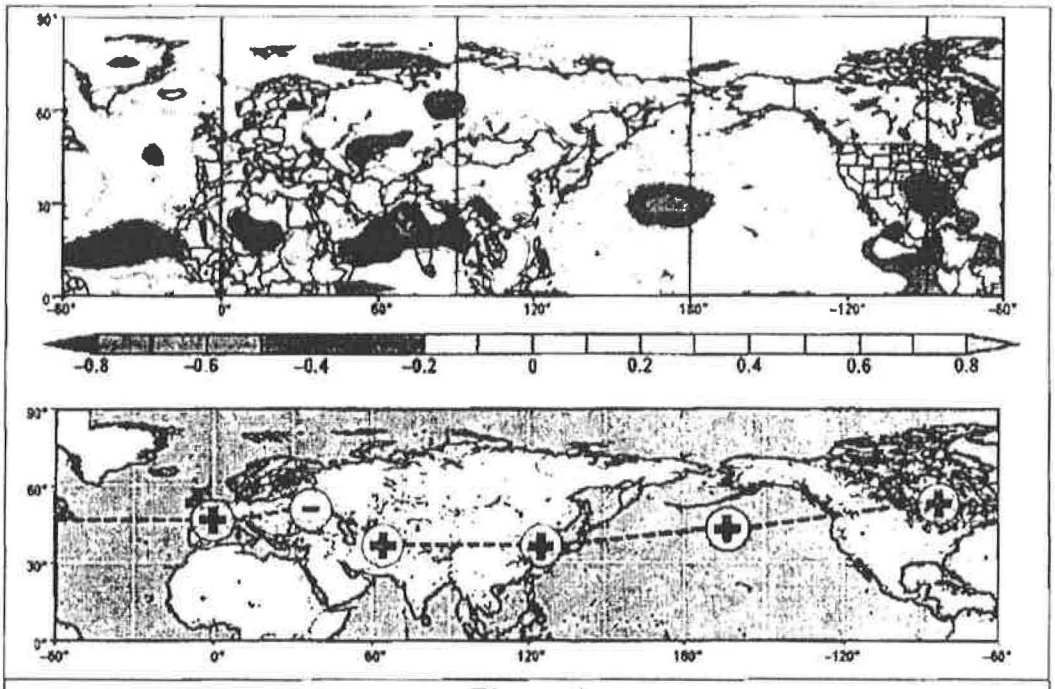

Figure 1

Figure 2 shows the exciting and promising indication that, on the largest spatial-scales, the total solar irradiance (TSI) time series is highly correlated with the so-called equator-to-pole (*i.e.*, Arctic) temperature gradient index as defined by Jain *et al.* (1999). My proposed research, therefore, would explore this empirical relationship and seek to find an appropriate underlying physical dynamic process that may best explain the observed empirical correlation. In this respect, it is interesting to note the identification of solar and lunar forcing responses in terms of the winter and summer latitudinal temperature gradients, respectively, by Davis and Brewer (2011).

The main sources of data for this proposed research (including those shown in Figures 1 and 2) will include:

(a) Composite total solar irradiance data (Hoyt and Schatten 1993; with updates and discussion by Scafetta and Willson 2009, Soon 2009, Kopp and Lean 2011, Shapiro et al. 2011[1]),

(b) The 5°x5° gridded surface temperature product from the Climatic Research Unit (CRU) at the University of East Anglia for the whole interval of 1856-present, and

[1] It is especially important to note that in Shapiro et al. (2011), it was determined that the amplitude of total solar irradiance change between present and the Maunder Minimum interval could be 6 ± 3 W/m²; a value significantly larger than estimates by several authors but in good agreement with the estimate by Zhang et al. (1994). This latest result supports the amplitude of total solar irradiance series shown in Figure 2.

(c) The 2.5°x2.5° gridded temperature product for lower troposphere derived from the University of Alabama Huntsville team (lead by Professor John Christy) for 1979-present interval [which can serves as a crucial test and verification of a robust equator-to-pole temperature gradient index that must be compared with the one derived from the CRU database].

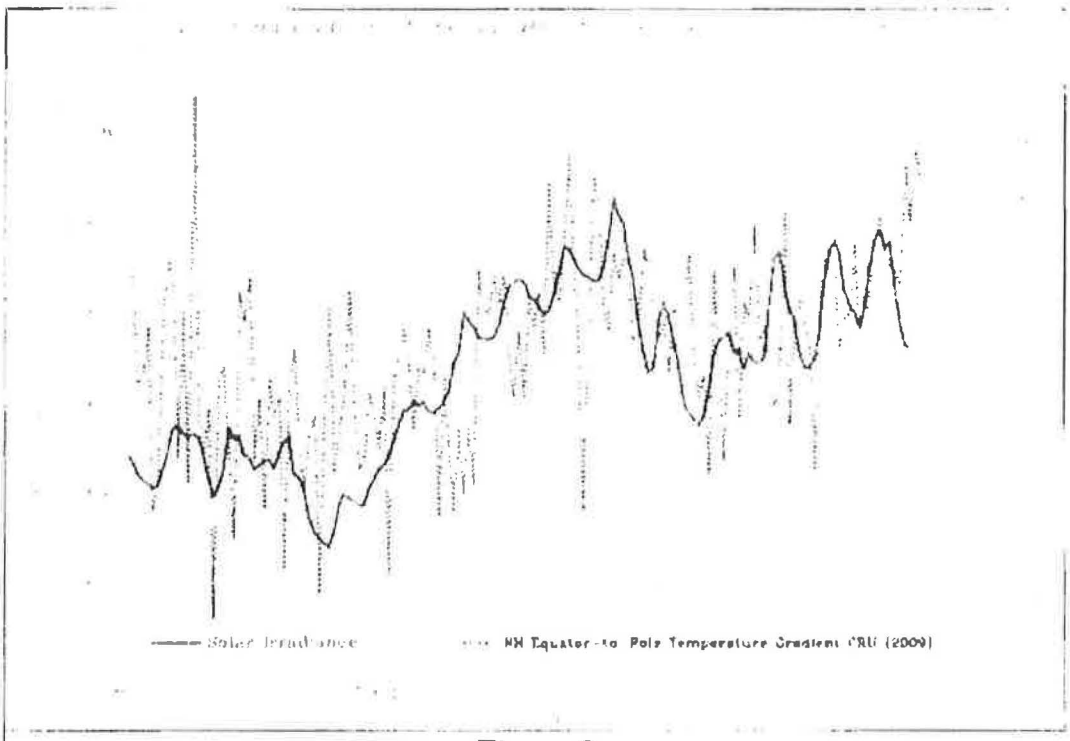

Figure 2

If a solid physical explanation using the dynamics of the natural Earth system can be found for the results shown in Figures 1 and 2, the dream of a physical theory for a predictable sun-climate connection, especially on multi-decadal and multi-centennial timescales as focused in this comprehensive research program, may soon be realized. Plausible physical lead times available from this new sun-climate connection framework will be explored and that may soon permit a true prediction of local and regional climatic variables such as temperature, rainfall and snowfall under the real weather-dominated climate system in which we live.

Research Team:

Dr. Willie Soon at the Smithsonian Astrophysical Observatory, which is part of the Harvard-Smithsonian Center for Astrophysics, will lead and direct this scientific research program. This research program will also involve a distinguished list of atmospheric scientists, oceanographers, climate modelers and geologists.

References:

Agnihotri, R., Dutta, K., and Soon, W. (2011) Temporal derivative of Total Solar Irradiance and anomalous Indian Summer Monsoon: An empirical evidence for a sun-climate connection. *Journal of Atmospheric and Solar-Terrestrial Physics*, accepted.

Branstator, G. (2002) Circumglobal teleconnections, the jet stream waveguide, and the North Atlantic Oscillation. *Journal of Climate* 15, 1893-1910.

Davis, B.A.S., Brewer, S. (2011) A unified approach to orbital, solar, and lunar forcing based onn the Earth's latitudinal insolation/temperature gradient. *Quaternary Science Reviews*, in press.

Ding, Q., and Wang, B. (2005) Circumglobal teleconnection in the Northern Hemisphere summer. *Journal of Climate* 18, 3483-3505.

Hoyt, D.V., and Schatten, K.H. (1993) A discussion of plausible solar irradiance variations, 1700-1992. *Journal of Geophysical Research* 98, 18895-18906.

Jain, S., Lall, U., and Mann, M.E. (1999) Seasonality and interannual variations of northern hemisphere temperature: Equator-to-pole and ocean-land contrast. *Journal of Climate* 12, 1086-1100.

Kopp, G., and Lean, J.L. (2011) A new, lower value of total solar irradiance: Evidence and climate significance. Geophysical Research Letters 38, L01706, doi:10.1029/2010GL045777.

Scafetta, N., and Willson R. (2009) ACRIM-gap and TSI trend issue resolved using a surface magnetic flux TSI proxy model. *Geophysical Research Letters* 36, doi:10.1029/2008GL036307.

Shapiro, A.T., Schmutz, W., Rozanov, E., Schoell, E., Haberreiter, M., Shapiro, A.V., and Nyeki, S.. (2011) A new approach to the long-term reconstruction of the solar irradiance leads to large historical solar forcing. *Astronomy and Astrophysics* 529, A67.

Soon, W. (2005) Variable solar irradiance as a plausible agent for multidecadal variations in the Arctic-wide surface air temperature record of the past 130 years. *Geophysical Research Letters* 32, L16712, doi:10.1029/2005GL023429.

Soon, W. (2009) Solar Arctic-mediated climate variation on multidecadal to centennial timescales: Empirical evidence, mechanistic explanation, and testable consequences. *Physical Geography* 30, 144-184.

Soon, W., Dutta, K., Legates, D.R., Velasco, V., and Zhang, W. (2011) Variation in surface air temperature of China during the 20th Century. *Journal of Atmospheric and Solar-Terrestrial Physics*, submitted.

Zhang, Q., Soon, W.H., Baliunas, S.L., Lockwood, G.W., Skiff, B.A., and Radick, R.R. (1994) A method of determining possible brightness variations of the Sun in past centuries from observations of solar-type stars. *The Astrophysical Journal Letters* 427, L111-L114.

BUDGET NARRATIVE

Solar Modulation of Equator-to-Pole Temperature Gradients

PI: Dr. Willie Soon

Period of Performance: 01 December 2011 – 30 November 2012

The budget includes 3.25 months of the PI's salary and benefits (work commitment given in units of percentage of a nominal full-time Work Year of 1,750 hours) and a minimal amount of grant specific administrative services.

Indirect rates applied are listed on the Estimate of Cost page and the contractual and cost section at the end of this document.

ESTIMATE OF COST

PI: SOON

Proposal ID: PS0182-9-11

Period of Performance: 01 December 2011 through 30 November 2012

	Hours	Dollars
SOON,WILLIE WEI HOCK	475.00	$26,467
Division Administrator	20.00	$1,210
Direct Labor	495	$27,677
Leave @ 19.3%		$5,342
Gov Fringe Non-NCR @ 26.8%		$8,849
SAO Direct Operating Overhead Base		$41,867
SAO Direct Operating Overhead @Rate 26.7%		$11,179
SAO General & Administrative Base		$53,046
SAO General & Administrative @Rate 13%		$6,896
TOTAL ESTIMATED COST		**$59,942**

CONTRACTUAL AND COST INFORMATION INCLUDING CERTIFICATIONS

The Smithsonian Institution, an independent trust establishment was created by an act of the Congress of 1846 to carry out the terms of the will of James Smithson of England, who had bequeathed his entire estate to the United States of America "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." After accepting the trust property for the United States, Congress vested responsibility for administering the trust in a Smithsonian Board of Regents.

The Smithsonian performs research, educational and other special projects supported by grants and contracts awarded under the cost principles of Title 2 of the Code of Federal Regulations (CFR) Part 230 [formerly the Office of Management and Budget (OMB) Circular A-122: *Cost Principles for Non-Profit Organizations*] and the Federal Acquisition Regulation, Subpart 31.7 *Contracts with Nonprofit Organizations.* It is audited by the Defense Contract Audit Agency, Landover, Maryland.

The Charter of the Smithsonian Institution carries a mandate for the "increase and diffusion of knowledge". Therefore, any grant or contract that may be awarded as a result of this proposal must be unclassified, in order not to abridge the Institution's right to publish, without restriction, findings that result from this research project.

Considering the nature of the proposed effort, it is requested that a Cost-Reimbursement (No Fee) Research and Development Contract with reimbursement via electronic funds transfer be awarded to cover the proposed project in accordance with Subpart C, Section 215.22(e) of Title 2 CFR Part 215 [formerly OMB Circular A-110: *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals and Other Non-Profit Organizations].*

Pursuant to Subpart C, Section 215.33 and 215.34 of Title 2 CFR Part 215 [formerly OMB Circular A-110], it is requested that title to all exempt property and equipment purchased or fabricated under the proposed contract be vested irrevocably in the Institution upon acquisition.

In accordance with an agreement between the Office of Naval Research and the Smithsonian, the Institution operates with predetermined fixed overhead rates with carry-forward provisions. The Indirect Cost and Fringe Benefits Rates are developed in accordance with Title 2 CFR Part 230 [formerly OMB Circular A-122]. The following approved rates, provided by ONR Negotiation Agreement dated 17 August 2011, shall be used for forward pricing and billing purposes for Fiscal Year 2011. The Fringe Benefits Rate will be applied to the Total Direct Labor Costs. The Material Overhead Rate will be applied to the cost of materials, equipment and subcontracts. The Direct Operating Overhead Rate will be applied to the Direct Labor and Benefits costs. The G&A Rate will be applied to the base consisting of total costs except the costs associated with the materials, equipment and subcontracts.

The following Approved Rates shall be used for forward pricing and billing purposes for Fiscal Year 2011:

Material Burden Rate (Cost of Materials, equipment and subcontracts)	4.9%
Personnel Leave Rate	19.3%
Fringe Benefits Rate (Full/Part Time Employees) (Total Direct Labor Costs)	26.8%
Fringe Benefits Rate (Intermittent Employees) (Total Direct Labor Costs)	8.4%
Direct Operating Overhead Rate (Total Direct Labor and Fringe Benefits Costs)	26.7%
General and Administrative Rate (G&A) (Base consists of Direct Operating Activities less Net Costs Associated with materials, subcontracts and equipment)	13.0%
Central Engineering Overhead Rate (Central Engineering Direct Labor and Benefits Costs)	24.6%

Rate verification can be made by contacting Ms. Linda Shipp, Office of Naval Research, Indirect Costs/ONR 242, 800 N. Quincy Street, Room 704, Arlington, Virginia 22217, telephone (703) 696-8559, or e-mail linda_shipp@onr.navy.mil.

Engineering services are provided by the Central Engineering Department as a Cost Center. Charges by the department to research projects are inclusive of Direct Labor, Fringe Benefits, and Central Engineering Overhead.

CERTIFICATIONS

Pursuant to FAR 52.204-8, ANNUAL REPRESENTATIONS AND CERTIFICATIONS (MAY 2011), for federally funded awards, the Smithsonian Astrophysical Observatory (SAO) is registered with the Online Representations and Certifications Application (ORCA). ORCA can be viewed at http://orca.bpn.gov, using SAO DUNS # 003261823.

SOLAR IRRADIANCE MODULATION OF EQUATOR-TO-POLE (ARCTIC) TEMPERATURE GRADIENTS

CONTRACT 20175

FINAL REPORT

FOR THE PERIOD 01 DECEMBER 2011 – 30 NOVEMBER 2012

PRINCIPAL INVESTIGATOR
Dr. Willie Soon

NOVEMBER 2012

PREPARED FOR

SOUTHERN COMPANY SERVICES

Smithsonian Astrophysical Observatory
Cambridge, Massachusetts 02138

The Smithsonian Astrophysical Observatory
is a member of the
Harvard-Smithsonian Center for Astrophysics

Final Report — Willie Soon

The goals of this research project have been successfully executed with the following list of deliverables:

(1) The submission of the scientific manuscript "Solar Irradiance Modulation of Equator-to-Pole (Arctic) Temperature Gradients: Empirical Evidence for Climate Variation on Multi-decadal Timescales" by Willie Soon and David R. Legates (2012) to *Journal of Atmospheric and Solar-Terrestrial Physics.*

Abstract
Using thermometer temperature records for the period 1850 to 2010, we present empirical evidence for a direct relationship between total solar irradiance (TSI) and the Equator-to-Pole (Arctic) surface temperature gradient (EPTG). Modulation of the EPTG by TSI is also shown to exist, in variable ways, for each of the four seasons. Interpretation of the positive relationship between the TSI and EPTG indices suggests that solar-forced changes in the EPTG may represent a hemispheric-scale relaxation response of the system to a reduced Equator-to-Pole temperature gradient, which occurs in response to an increasing gradient of incoming solar insolation. Physical bases for the TSI-EPTG relationship are discussed with respect to their connections with large-scale climate dynamics, especially a critical relationship with the total meridional poleward energy transport. Overall, evidence suggests that a net increase in the TSI, or in the projected solar insolation gradient which reflects any net increase in solar radiation, has caused an increase in both oceanic and atmospheric heat transport to the Arctic in the warm period since the 1970s, resulting in a reduced temperature gradient between the Equator and the Arctic. We suggest that this new interpretative framework, which involves the extrinsic modulation of the total meridional energy flux beyond the implicit assumptions of the Bjerknes Compensation rule, may lead to a better understanding of how global and regional climate has varied through the Holocene and even the Quaternary (the most recent 2.6 million years of Earth's history). Similarly, a reassessment is now required of the underlying mechanisms that may have governed the equable climate dynamics of the Eocene (35 to 55 million years ago) and late Cretaceous (65 to 100 million years ago), both of which were warm geological epochs. This newly discovered relationship between TSI and the EPTG represents the "missing link" that was implicit in the empirical relationship that Soon (2009) recently demonstrated to exist between multi-decadal TSI and Arctic and North Atlantic climatic change.

(2) The submission of the scientific manuscript "Indian Summer Monsoon Rainfall: Dancing with the Tunes of the Sun" by K. M. Hiremath, H. Manjunath, and W. Soon (2012) to *Journal of Atmospheric and Solar-Terrestrial Physics.*

Abstract
There is strong statistical evidence that solar activity influences the Indian summer Monsoon rainfall. To search for a physical link between the two, we consider the coupled cloud hydrodynamic equations, and derive an equation for the rate of precipitation that is similar to the equation of a forced harmonic oscillator, with cloud and rain water mixing ratios as forcing variables. Those internal forcing variables are parameterized in terms of the combined effect of external forcing as measured by sunspot and coronal hole activities with several well known solar periods (9, 13 and 27 days; 1.3, 5, 11 and 22 years). The equation is then numerically solved and the results show that the variability of the simulated rate of precipitation captures very well the actual variability of the Indian Monsoon rainfall, yielding vital clues for a physical understanding that has so far eluded analyses based on statistical correlations alone.

(3) The publication of the scientific manuscript "Temporal derivative of total solar irradiance and anomalous Indian Summer Monsoon: An empirical evidence for a sun-climate connection" by Rajesh Agnihotri, Koushik Dutta and W. Soon (2011) in the journal *Journal of Atmospheric and Solar-Terrestrial Physics*, vol. 73, 1980-1987.

Abstract
Identifying the pattern of natural climate variability is of immense importance to delineate the effects of anthropogenic climate changes. Global and regional climates are suspected to vary, in unison or with delays, with the Total Solar Irradiance (TSI) at decadal to centennial timescales. Here we show that the Indian summer monsoon rainfall correlates well with the temporal derivative of TSI on multidecadal timescales. This linkage between the temporal derivative of TSI and the Indian summer monsoon is tested and corroborated both for the instrumental period (1871-2006) and for the last ~300 years using a speleothem $\delta^{18}O$ record representing rainfall in southwestern India. Our analyses indicate that both anomalously drier and wetter periods of the Indian monsoon record fall near negative and positive excursions in the TSI derivative, respectively. Our study thus demonstrates the potential of 'TSI derivative' as an important indicator of natural monsoon variability on an interdecadal timescale.

(4) The publication of the scientific manuscript "Variation in surface air temperature of China during the 20th century" by Willie Soon, Koushik Dutta, David Legates, Victor Velasco, WeiJia Zhang (2011) in the journal *Journal of Atmospheric and Solar-Terrestrial Physics*, vol. 73, 2331-2344.

Abstract
The 20th Century surface air temperature (SAT) records of China from various sources are analyzed using data which include the recently-released Twentieth Century Reanalysis Project (20CRv2). Two key features of the Chinese records are confirmed: (1) significant 1920s and 1940s warming in the temperature records, and (2) evidence for a persistent multi-decadal modulation of the Chinese surface temperature records in covariation with solar radiation. New evidence is presented for this Sun-climate link for the instrumental record from 1880 to 2002. As well, two non-local, physical aspects of solar radiation-induced modulation of the Chinese SAT record are documented and discussed.

Teleconnections that provide a persistent and systematic modulation of the temperature response of the Tibetan Plateau and/or the tropospheric air column above the Eurasian continent (*e.g.*, 30-70°N; 0 to 120°E) are described. These teleconnections may originate from the solar irradiance-Arctic-North Atlantic Overturning Circulation mechanism proposed by Soon (2009). Also considered is the modulation of large-scale land-sea thermal contrasts, both in terms of meridional and zonal gradients, between the subtropical western Pacific and mid-latitude North Pacific and the continental landmass of China. The Circumglobal Teleconnection (CGT) pattern of summer circulation of Ding and Wang (2005) provides a physical framework for study of the Sun-climate connection over East Asia. Our results highlight the importance of solar radiation reaching the ground, and the concomitant importance of changes in atmospheric transparency or cloudiness or both, in motivating a true physical explanation of any Sun-climate connection. We conclude that solar radiation provides demonstrable forcing for Chinese SAT changes on multidecadal to centennial timescales. Therefore, a comprehensive view of local and remote factors of climate change in China must take account of this, as well as other natural and anthropogenic forcings.

DonorsTrust

109 North Henry Street
Alexandria, VA 22314

voice 703.535.3563
fax 703.535.3564
www.donorstrust.org

February 28, 2012

Mr. Thomas G. Bonnenfant
Contract Specialist
Mail Stop 63
Smithsonian Astrophysical Observatory
60 Garden Street
Cambridge, MA 02138-1516

Dear Mr. Bonnenfant:

On behalf of the Board of Directors of DonorsTrust, I am pleased to enclose a grant in the amount of $64,935.00 to the Smithsonian Institution for SAO Proposal ID #000000000000442-V101, A Circum-global Teleconnection View of Regional Sun-Climate Connections, performed under the direction of Dr. Willie Soon. This gift was made possible through the generosity and recommendation of an account holder who wishes to remain anonymous. However, if you would like to acknowledge receipt of this grant, you may write DonorsTrust and we will forward your correspondence to the appropiate account holder.

A gift receipt should not be provided to any party as a result of this grant. DonorsTrust has provided this grant. DonorsTrust does not require a gift receipt for tax purposes.

In accepting this grant, your organization agrees to use the grant for the purpose specified and to the conditions set forth below. If your organization is unable to accept this grant, you agree not to deposit the enclosed grant check or to return funds previously wired to you.

DonorsTrust is a philanthropic public charity formed to promote liberty through limited government, personal responsibility, and free enterprise. The Trust is designed to provide donors with a means of protecting and exercising their charitable intent through a variety of philanthropic services, including donor-advised funds. We are pleased to be able to assist you in your work. If you have any questions regarding this grant or would like to learn more about DonorsTrust, please feel free to call us or visit our website at www.donorstrust.org.

We wish you continued success in your work to promote liberty.

Sincerely,

Whitney L. Ball
President and CEO

Enclosures

Grant conditions. In addition to any separately stated conditions, your organization agrees to use the grant for the specified purpose and:

(1) certifies that no goods, services, or more than incidental benefits may be provided to the recommending donor or other persons in connection with this grant;
(2) is described within sections 501(c)(3) and 170(b)(1)(A)(i) through (vi) or (viii), is not a private foundation described by section 170(b)(1)(A)(vii) of the Internal Revenue Code ('IRC') and your tax-exempt status has not been revoked; and
(3) agrees the grant will not be used for lobbying or political campaign activities as defined by the IRC, applicable Treasury Regulations, and interpretative guidance.

9713863

SI-000106

Jill Robidoux <jrobidoux@cfa.harvard.edu>

From: Lauren VanderHeyden [redacted]
Sent: Thursday, February 21, 2013 10:28 AM
To: Jill Robidoux <jrobidoux@cfa.harvard.edu>
Cc: Nayla Rathle <nrathle@cfa.harvard.edu>; dtgrants
Subject: RE: Request for no-cost extension

Ms. Robidoux:

Thank you for double checking. Yes, September 30, 2013, works absolutely fine for us.

Best,

Lauren Vander Heyden
Donors Trust and Donors Capital Fund

109 N. Henry Street
Alexandria, VA 22314
(p) [redacted]
(f)
(w) www.donorstrust.org

From: jrobidoux@cfa.harvard.edu [mailto:jrobidoux@cfa.harvard.edu]
Sent: Thursday, February 21, 2013 9:20 AM
To: Lauren VanderHeyden
Cc: nrathle@cfa.harvard.edu; dtgrants
Subject: RE: Request for no-cost extension

Good Morning,

I apologize, I did not specify a requested end date to the new period of performance. We would like an end date of September 30, 2013. Is this amenable?

Best Regards,
Jill

Jill C. Robidoux
Contract Specialist
Sponsored Programs Section

Smithsonian Astrophysical Observatory

From: Lauren VanderHeyden [mailto:[redacted]
Sent: Wednesday, February 20, 2013 4:11 PM
To: Jill Robidoux <jrobidoux@cfa.harvard.edu>
Cc: Nayla Rathle <nrathle@cfa.harvard.edu>; dtgrants
Subject: RE: Request for no-cost extension

Dear Ms. Robidoux:

Thank you for your email. Considering the circumstances, DonorsTrust is willing to grant an extension for the SAO grant (DT grant # 9713863; SAO Proposal ID #442-V101).

Sincerely,

Lauren Vander Heyden
Donors Trust and Donors Capital Fund

109 N. Henry Street
Alexandria, VA 22314
(p) Exemption 6
(f)
(w) www.donorstrust.org

From: jrobidoux@cfa.harvard.edu [mailto:jrobidoux@cfa.harvard.edu]
Sent: Wednesday, February 20, 2013 11:47 AM
To: Lauren VanderHeyden
Cc: nrathle@cfa.harvard.edu
Subject: Request for no-cost extension

Good Morning,

SAO would like to request a no-cost extension to our award (letter dated 2/28/12, attached for your reference). The completion of the project has been slightly delayed due to the Exemption 6 Exemption 6 and more time needed to communicate and coordinate with collaborators and co-authors especially in terms of the quality re-assessment of the data records used in this study.

Thank you for your consideration.

Best Regards,
Jill

Jill C. Robidoux
Contract Specialist
Sponsored Programs Section

Smithsonian Astrophysical Observatory
60 Garden St MS 22
Cambridge MA 02138
Phone: 617-496-1667
Fax: 617-496-7692
jrobidoux@cfa.harvard.edu

PeopleSoft GL

Report ID: SIGL120R
Bus. Unit: SI000--Smithsonian Institution

STATEMENT OF FINANCIAL ACTIVITY DETAIL REPORT
As of FY 2008 / 12 - September (CLOSED)

Run Date 08/26/2013
Run Time 16:06:48

Department: 404S50 Solar, Stellar, and Planetary
Fund Code: 801 Contributions
Budget Reference: 0000
Designated Code: 301770 40 Exxon Mobil

Class / Account	A YTD Budget	B MTD Actuals	C YTD Actuals	D ITD Actuals	E PreEncumbrance	F Encumbrance	G C+E+F Total Actuals	A-G YTD Variance
REVENUE								
Contributions								
0302 Contributions Temp.Restrctd								
5602 Temporarily Restricted Con	0.00	0.00	76,106.00	76,106.00			76,106.00	76,106.00
Tot Maj Class: 03	0.00	0.00	76,106.00	76,106.00			76,106.00	76,106.00
TOTAL REVENUE:	0.00	0.00	76,106.00	76,106.00			76,106.00	76,106.00
EXPENSES								
Personnel Compensation								
1110 Salaries Regular								
6100 Operating Expenses/Prog.Co	0.00	6,940.08	11,022.48	11,022.48	0.00	0.00	11,022.48	-11,022.48
1185 SAO Non Worked Pool								
6100 Operating Expenses/Prog.Co	0.00	1,321.46	2,913.60	2,913.60	0.00	0.00	2,913.60	-2,913.60
1199 Accrued Salaries								
6100 Operating Expenses/Prog.Co	0.00	-163.30	3,919.10	3,919.10	0.00	0.00	3,919.10	-3,919.10
Tot Maj Class: 11	0.00	8,098.24	17,855.18	17,855.18	0.00	0.00	17,855.18	-17,855.18
Personnel Benefits								
1230 Pool Benefits								
6100 Operating Expenses/Prog.Co	0.00	2,197.75	3,490.54	3,490.54	0.00	0.00	3,490.54	-3,490.54
1299 Accrued Benefits								
6100 Operating Expenses/Prog.Co	0.00	-51.70	1,241.09	1,241.09	0.00	0.00	1,241.09	-1,241.09
Tot Maj Class: 12	0.00	2,146.05	4,731.63	4,731.63	0.00	0.00	4,731.63	-4,731.63
Sub Tot Personnel:	0.00	10,244.29	22,586.81	22,586.81	0.00	0.00	22,586.81	-22,586.81
Sub Tot Direct, Indirect, Other Costs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL EXPENSES:	0.00	10,244.29	22,586.81	22,586.81	0.00	0.00	22,586.81	-22,586.81
Net:	0.00	-10,244.29	53,519.19	53,519.19	0.00	0.00	53,519.19	53,519.19

End of Report

PeopleSoft GL

Report ID: SIGL120R
Bus. Unit: SI000--Smithsonian Institution

STATEMENT OF FINANCIAL ACTIVITY DETAIL REPORT
As of FY 2009 / 12 - September (CLOSED)

Run Date 08/26/2013
Run Time 16:07:59

Department: 404S50 Solar, Stellar, and Planetary
Fund Code: 801 Contributions
Budget Reference: 0000
Designated Code: 301770 40 Exxon Mobil

Class / Account	A YTD Budget	B MTD Actuals	C YTD Actuals	D ITD Actuals	E PreEncumbrance	F Encumbrance	G C+E+F Total Actuals	A-G YTD Variance
REVENUE								
Contributions								
0302 Contributions Temp.Restrctd								
5602 Temporarily Restricted Con	0.00	0.00	76,106.00	152,212.00			76,106.00	76,106.00
Tot Maj Class: 03	0.00	0.00	76,106.00	152,212.00			76,106.00	76,106.00
TOTAL REVENUE:	0.00	0.00	76,106.00	152,212.00			76,106.00	76,106.00
EXPENSES								
Personnel Compensation								
1110 Salaries Regular								
6100 Operating Expenses/Prog.Co	0.00	8,726.40	50,806.46	61,828.94	0.00	0.00	50,806.46	-50,806.46
1185 SAO Non Worked Pool								
6100 Operating Expenses/Prog.Co	0.00	1,390.27	10,125.81	13,039.41	0.00	0.00	10,125.81	-10,125.81
1199 Accrued Salaries								
6100 Operating Expenses/Prog.Co	0.00	-2,192.51	-2,871.93	1,047.17	0.00	0.00	-2,871.93	2,871.93
Tot Maj Class: 11	0.00	7,924.16	58,060.34	75,915.52	0.00	0.00	58,060.34	-58,060.34
Personnel Benefits								
1230 Pool Benefits								
6100 Operating Expenses/Prog.Co	0.00	2,916.67	16,981.36	20,471.90	0.00	0.00	16,981.36	-16,981.36
1299 Accrued Benefits								
6100 Operating Expenses/Prog.Co	0.00	-732.82	-959.90	281.19	0.00	0.00	-959.90	959.90
Tot Maj Class: 12	0.00	2,183.85	16,021.46	20,753.09	0.00	0.00	16,021.46	-16,021.46
Sub Tot Personnel:	0.00	10,108.01	74,081.80	96,668.61	0.00	0.00	74,081.80	-74,081.80
Supplies and Materials								
2611 Office Supplies								
6100 Operating Expenses/Prog.Co	0.00	0.00	396.00	396.00	0.00	0.00	396.00	-396.00
Tot Maj Class: 26	0.00	0.00	396.00	396.00	0.00	0.00	396.00	-396.00
Sub Tot Other:	0.00	0.00	396.00	396.00	0.00	0.00	396.00	-396.00
Sub Tot Direct, Indirect, Other Costs:	0.00	0.00	396.00	396.00	0.00	0.00	396.00	-396.00
TOTAL EXPENSES:	0.00	10,108.01	74,477.80	97,064.61	0.00	0.00	74,477.80	-74,477.80
Net:	0.00	-10,108.01	1,628.20	55,147.39	0.00	0.00	1,628.20	1,628.20

End of Report

Department: 404S50 Solar, Stellar, and Planetary
Fund Code: 801 Contributions
Budget Reference: 0000
Designated Code: 301770 40 Exxon Mobil

Class / Account	A YTD Budget	B MTD Actuals	C YTD Actuals	D ITD Actuals	E PreEncumbrance	F Encumbrance	G C+E+F Total Actuals	A-G YTD Variance
REVENUE								
Revenue from Services Provd								
0220 Reimbursements								
5200 Revenue from Services Prov	0.00	0.00	-19,620.16	-19,620.16			-19,620.16	-19,620.16
Tot Maj Class: 02	0.00	0.00	-19,620.16	-19,620.16			-19,620.16	-19,620.16
Contributions								
0302 Contributions Temp.Restrctd								
5602 Temporarily Restricted Con	0.00	0.00	0.00	152,212.00			0.00	0.00
Tot Maj Class: 03	0.00	0.00	0.00	152,212.00			0.00	0.00
TOTAL REVENUE:	0.00	0.00	-19,620.16	132,591.84			-19,620.16	-19,620.16
EXPENSES								
Personnel Compensation								
1110 Salaries Regular								
6100 Operating Expenses/Prog.Co	0.00	0.00	23,769.50	85,598.44	0.00	0.00	23,769.50	-23,769.50
1185 SAO Non Worked Pool								
6100 Operating Expenses/Prog.Co	0.00	0.00	4,203.62	17,243.03	0.00	0.00	4,203.62	-4,203.62
1199 Accrued Salaries								
6100 Operating Expenses/Prog.Co	0.00	0.00	-1,047.17	0.00	0.00	0.00	-1,047.17	1,047.17
Tot Maj Class: 11	0.00	0.00	26,925.95	102,841.47	0.00	0.00	26,925.95	-26,925.95
Personnel Benefits								
1230 Pool Benefits								
6100 Operating Expenses/Prog.Co	0.00	0.00	7,781.56	28,253.46	0.00	0.00	7,781.56	-7,781.56
1299 Accrued Benefits								
6100 Operating Expenses/Prog.Co	0.00	0.00	-350.00	-68.81	0.00	0.00	-350.00	350.00
Tot Maj Class: 12	0.00	0.00	7,431.56	28,184.65	0.00	0.00	7,431.56	-7,431.56
Sub Tot Personnel:	0.00	0.00	34,357.51	131,026.12	0.00	0.00	34,357.51	-34,357.51
Supplies and Materials								
2611 Office Supplies								
6100 Operating Expenses/Prog.Co	0.00	0.00	427.47	823.47	0.00	0.00	427.47	-427.47
Tot Maj Class: 26	0.00	0.00	427.47	823.47	0.00	0.00	427.47	-427.47
Sub Tot Other:	0.00	0.00	427.47	823.47	0.00	0.00	427.47	-427.47
Sub Tot Direct, Indirect, Other Costs:	0.00	0.00	427.47	823.47	0.00	0.00	427.47	-427.47
TOTAL EXPENSES:	0.00	0.00	34,784.98	131,849.59	0.00	0.00	34,784.98	-34,784.98
Net:	0.00	0.00	-54,405.14	742.25	0.00	0.00	-54,405.14	-54,405.14

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510161 The Suns Influence on Climate PI: Baliunas,S. PI Dept: 404S50 Project Mgr: Yorke,S.
Start: 01-SEP-2007 End: 31-DEC-2007 Post Award Analyst: Contract #: 10426
PA: 2626 Rev: 0 Sponsor: FREE TO CHOOSE MEDIA

Class	A Budget	B Actuals Prior Years	C Actuals Current Month	D Actuals Current Year	E ITD	F PreEncumbrance	G Encumbrance	E+F+G ITD PreEncumb Encumb & Act	YTD PreEncumb Encumb & Act
REVENUE									
Grants and Contracts									
0530 Non Federal Grants									
5900 Other Revenue	0.00	0.00	0.00	19,383.00	19,383.00			19,383.00	19,383.00
Tot Major Class: 05	0.00	0.00	0.00	19,383.00	19,383.00			19,383.00	19,383.00
TOTAL REVENUE:	0.00	0.00	0.00	19,383.00	19,383.00			19,383.00	19,383.00
EXPENSES									
Personnel Compensation									
1110 Salaries Regular									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	8,833.48	8,833.48	0.00	0.00	8,833.48	8,833.48
1185 SAO Non Worked Pool									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	1,722.53	1,722.53	0.00	0.00	1,722.53	1,722.53
1199 Accrued Salaries									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	0.00	0.00	10,556.01	10,556.01	0.00	0.00	10,556.01	10,556.01
Personnel Benefits									
1230 Pool Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	2,797.33	2,797.33	0.00	0.00	2,797.33	2,797.33
1299 Accrued Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	0.00	0.00	2,797.33	2,797.33	0.00	0.00	2,797.33	2,797.33
Sub Tot Personnel:	0.00	0.00	0.00	13,353.34	13,353.34	0.00	0.00	13,353.34	13,353.34
Indirect Costs									
3510 Indirect Cost CY G&A									
6606 OH Rec SAO Non-Fed Grts &	0.00	0.00	0.00	1,735.94	1,735.94	0.00	0.00	1,735.94	1,735.94
3520 Indirect Cost CY Overhead									
6606 OH Rec SAO Non-Fed Grts &	0.00	0.00	0.00	4,006.01	4,006.01	0.00	0.00	4,006.01	4,006.01
Tot Major Class: 35	0.00	0.00	0.00	5,741.95	5,741.95	0.00	0.00	5,741.95	5,741.95
Sub Tot Indirect Costs:	0.00	0.00	0.00	5,741.95	5,741.95	0.00	0.00	5,741.95	5,741.95

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510161 The Suns Influence on Climate PI: Baliunas,S. PI Dept: 404S50 Project Mgr: Yorke,S.
Start: 01-SEP-2007 End: 31-DEC-2007 Post Award Analyst: Contract #: 10426
PA: 2626 Rev: 0 Sponsor: FREE TO CHOOSE MEDIA

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
TOTAL EXPENSES:	0.00	0.00	0.00	19,095.29	19,095.29	0.00	0.00	19,095.29	19,095.29
GL SUMMARY:	19,383.00	0.00	0.00	19,095.29	19,095.29	0.00	0.00	19,095.29	19,095.29
Revenue - Expenses:	0.00	0.00	0.00	287.71	287.71				
Com Cntrl Summ for 802 / 510161	19,383.00	0.00	0.00	19,095.29	19,095.29	0.00	0.00	19,095.29	19,095.29

Summary:

Total ITD Expenses:	19,095.29	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	19,095.29	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510166 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404SS2 Project Mgr: Yorke,S.
Start: 15-JAN-2008 End: 15-JAN-2009 Post Award Analyst: Contract #: SOUTHCO-001
PA: 2694 Rev: 0 Sponsor: SOUTHERN COMPANY SERVICES

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 Non Federal Grants									
5900 Other Revenue	0.00	0.00	882.49	30,267.26	30,267.26			30,267.26	30,267.26
Tot Major Class: 05	0.00	0.00	882.49	30,267.26	30,267.26			30,267.26	30,267.26
TOTAL REVENUE:	0.00	0.00	882.49	30,267.26	30,267.26			30,267.26	30,267.26
EXPENSES									
Personnel Compensation									
1110 Salaries Regular									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	14,001.64	14,001.64	0.00	0.00	14,001.64	14,001.64
1185 SAO Non Worked Pool									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	2,730.32	2,730.32	0.00	0.00	2,730.32	2,730.32
1199 Accrued Salaries									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	0.00	0.00	16,731.96	16,731.96	0.00	0.00	16,731.96	16,731.96
Personnel Benefits									
1230 Pool Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	4,433.97	4,433.97	0.00	0.00	4,433.97	4,433.97
1299 Accrued Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	0.00	0.00	4,433.97	4,433.97	0.00	0.00	4,433.97	4,433.97
Sub Tot Personnel:	0.00	0.00	0.00	21,165.93	21,165.93	0.00	0.00	21,165.93	21,165.93
Printing and reproduction									
2410 Printing									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	514.89
Tot Major Class: 24	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	514.89
Sub Tot Other:	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	514.89
Indirect Costs									
3510 Indirect Cost CY G&A									

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510166 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404S52 Project Mgr: Yorke,S.
Start: 15-JAN-2008 End: 15-JAN-2009 Post Award Analyst: Contract #: SOUTHCO-001
PA: 2694 Rev: 0 Sponsor: SOUTHERN COMPANY SERVICES

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
6606 OH Rec SAO Non-Fed Grts & 3510 Indirect Cost CY G&A	0.00	0.00	0.00	2,751.55	2,751.55	0.00	0.00	2,751.55	2,751.55
6609 OH Rec SAO Other Encumbran 3520 Indirect Cost CY Overhead	0.00	0.00	0.00	0.00	0.00	0.00	51.49	51.49	51.49
6606 OH Rec SAO Non-Fed Grts &	0.00	0.00	0.00	6,349.78	6,349.78	0.00	0.00	6,349.78	6,349.78
Tot Major Class: 35	0.00	0.00	0.00	9,101.33	9,101.33	0.00	51.49	9,152.82	9,152.82
Sub Tot Indirect Costs:	0.00	0.00	0.00	9,101.33	9,101.33	0.00	51.49	9,152.82	9,152.82
TOTAL EXPENSES:	0.00	0.00	0.00	30,267.26	30,267.26	0.00	566.38	30,833.64	30,833.64
GL SUMMARY:	60,000.00	0.00	0.00	30,267.26	30,267.26	0.00	566.38	30,833.64	30,833.64
Revenue - Expenses:	0.00	0.00	882.49	0.00	0.00				
Com Cntrl Summ for 802 / 510166	60,000.00	0.00	0.00	30,267.26	30,267.26	0.00	566.38	30,833.64	30,833.64

Summary:

Total ITD Expenses:	30,267.26	Receivable Balance:	30,267.26
Total ITD Billed:	30,267.26	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	0.00	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510166 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 15-JAN-2008 End: 15-JAN-2010 Post Award Analyst: Contract #: SOUTHCO-001
PA: 2694 Rev: 2 Sponsor: SOUTHERN COMPANY SERVICES

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Acc	Encumb & Acc
REVENUE									
Grants and Contracts									
0530 Non Federal Grants									
5900 Other Revenue	0.00	30,267.26	4,665.26	92,468.90	122,736.16			122,736.16	92,468.90
0532 Non Federal Grants Overages									
5909 Contra Revenue	0.00	0.00	-2,736.16	-2,736.16	-2,736.16			-2,736.16	-2,736.16
Tot Major Class: 05	0.00	30,267.26	1,929.10	89,732.74	120,000.00			120,000.00	89,732.74
TOTAL REVENUE:	0.00	30,267.26	1,929.10	89,732.74	120,000.00			120,000.00	89,732.74
EXPENSES									
Personnel Compensation									
1110 Salaries Regular									
6100 Operating Expenses/Prog.Co	0.00	14,001.64	49.57	40,217.23	54,218.87	0.00	0.00	54,218.87	40,217.23
1185 SAO Non Worked Pool									
6100 Operating Expenses/Prog.Co	0.00	2,730.32	-318.67	8,485.85	11,216.17	0.00	0.00	11,216.17	8,485.85
1199 Accrued Salaries									
6100 Operating Expenses/Prog.Co	0.00	0.00	-1,559.84	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	16,731.96	-1,828.94	48,703.08	65,435.04	0.00	0.00	65,435.04	48,703.08
Personnel Benefits									
1230 Pool Benefits									
6100 Operating Expenses/Prog.Co	0.00	4,433.97	16.57	13,442.07	17,876.04	0.00	0.00	17,876.04	13,442.07
1299 Accrued Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	-521.36	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	4,433.97	-504.79	13,442.07	17,876.04	0.00	0.00	17,876.04	13,442.07
Sub Tot Personnel:	0.00	21,165.93	-2,333.73	62,145.15	83,311.08	0.00	0.00	83,311.08	62,145.15
Printing and reproduction									
2410 Printing									
6100 Operating Expenses/Prog.Co	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	0.00
Tot Major Class: 24	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	0.00
Sub Tot Other:	0.00	0.00	0.00	0.00	0.00	0.00	514.89	514.89	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 510166 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 15-JAN-2008 End: 15-JAN-2010 Post Award Analyst: Contract #: SOUTHCO-001
PA: 2694 Rev: 2 Sponsor: SOUTHERN COMPANY SERVICES

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
Indirect Costs									
3510 Indirect Cost CY G&A									
6606 OH Rec SAO Non-Fed Grts &	0.00	2,751.55	-315.28	8,395.56	11,147.11	0.00	0.00	11,147.11	8,395.56
3510 Indirect Cost CY G&A									
6609 OH Rec SAO Other Encumbran	0.00	0.00	0.00	0.00	0.00	0.00	53.55	53.55	2.06
3520 Indirect Cost CY Overhead									
6606 OH Rec SAO Non-Fed Grts &	0.00	6,349.78	-697.79	18,581.39	24,931.17	0.00	0.00	24,931.17	18,581.39
Tot Major Class: 35	0.00	9,101.33	-1,013.07	26,976.95	36,078.28	0.00	53.55	36,131.83	26,979.01
Sub Tot Indirect Costs:	0.00	9,101.33	-1,013.07	26,976.95	36,078.28	0.00	53.55	36,131.83	26,979.01
TOTAL EXPENSES:	0.00	30,267.26	-3,346.80	89,122.10	119,389.36	0.00	568.44	119,957.80	89,124.16
GL SUMMARY:	120,000.00	30,267.26	-3,346.80	89,122.10	119,389.36	0.00	568.44	119,957.80	89,124.16
Revenue - Expenses:	0.00	0.00	5,275.90	610.64	610.64				
Com Cntrl Summ for 802 / 510166	120,000.00	30,267.26	-3,346.80	89,122.10	119,389.36	0.00	568.44	119,957.80	89,124.16

Summary:

Total ITD Expenses:	119,389.36	Receivable Balance:	0.00
Total ITD Billed:	60,000.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	59,389.36	Unbilled Balance:	60,000.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501558 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 01-DEC-2009 End: 30-NOV-2011 Post Award Analyst: Contract #: C.G. Ltr 9/21/09
PA: 2969 Rev: 0 Sponsor: KOCH FOUNDATION

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 Non Federal Grants									
5900 Other Revenue	0.00	0.00	-15,113.60	-68,416.23	-68,416.23			-68,416.23	-68,416.23
0532 Non Federal Grants Overages									
5909 Contra Revenue	0.00	0.00	3,416.23	3,416.23	3,416.23			3,416.23	3,416.23
Tot Major Class: 05	0.00	0.00	-11,697.37	-65,000.00	-65,000.00			-65,000.00	-65,000.00
TOTAL REVENUE:	0.00	0.00	-11,697.37	-65,000.00	-65,000.00			-65,000.00	-65,000.00
EXPENSES									
Personnel Compensation									
1110 Salaries Regular									
6100 Operating Expenses/Prog.Co	0.00	0.00	2,117.36	29,952.58	29,952.58	0.00	0.00	29,952.58	29,952.58
1185 SAO Non Worked Pool									
6100 Operating Expenses/Prog.Co	0.00	0.00	391.71	5,541.22	5,541.22	0.00	0.00	5,541.22	5,541.22
1199 Accrued Salaries									
6100 Operating Expenses/Prog.Co	0.00	0.00	-3,744.38	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	0.00	-1,235.31	35,493.80	35,493.80	0.00	0.00	35,493.80	35,493.80
Personnel Benefits									
1230 Pool Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	692.50	9,796.25	9,796.25	0.00	0.00	9,796.25	9,796.25
1299 Accrued Benefits									
6100 Operating Expenses/Prog.Co	0.00	0.00	-1,917.34	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	0.00	-1,224.84	9,796.25	9,796.25	0.00	0.00	9,796.25	9,796.25
Sub Tot Personnel:	0.00	0.00	-2,460.15	45,290.05	45,290.05	0.00	0.00	45,290.05	45,290.05
Indirect Costs									
3510 Indirect Cost CY G&A									
6606 OH Rec SAO Non-Fed Grts &	0.00	0.00	-383.28	7,055.93	7,055.93	0.00	0.00	7,055.93	7,055.93
3520 Indirect Cost CY Overhead									
6606 OH Rec SAO Non-Fed Grts &	0.00	0.00	-681.46	12,545.36	12,545.36	0.00	0.00	12,545.36	12,545.36
Tot Major Class: 35	0.00	0.00	-1,064.74	19,601.29	19,601.29	0.00	0.00	19,601.29	19,601.29

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501558 Understanding Solar Variabilit PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 01-DEC-2009 End: 30-NOV-2011 Post Award Analyst: Contract #: C.G. Ltr 9/21/09
PA: 2969 Rev: 0 Sponsor: KOCH FOUNDATION

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
Sub Tot Indirect Costs:	0.00	0.00	-1,064.74	19,601.29	19,601.29	0.00	0.00	19,601.29	19,601.29
TOTAL EXPENSES:	0.00	0.00	-3,524.89	64,891.34	64,891.34	0.00	0.00	64,891.34	64,891.34
GL SUMMARY:	65,000.00	0.00	-3,524.89	64,891.34	64,891.34	0.00	0.00	64,891.34	64,891.34
Revenue - Expenses:	0.00	0.00	-15,222.26	-108.66	-108.66				
Com Cntrl Summ for 802 / 501558	65,000.00	0.00	-3,524.89	64,891.34	64,891.34	0.00	0.00	64,891.34	64,891.34

Summary:

Total ITD Expenses:	64,891.34	Receivable Balance:	0.00
Total ITD Billed:	65,000.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	-108.66	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501631 Understanding Solar Radiatio PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 01-MAY-2010 End: 30-APR-2011 Post Award Analyst: Contract #: 15670
PA: 3052 Rev: 0 Sponsor: SOUTHERN CO.

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 NFedGrant-5900 OthRevenue	0.00	0.00	0.00	-60,003.00	-60,003.00			-60,003.00	-60,003.00
Tot Major Class: 05	0.00	0.00	0.00	-60,003.00	-60,003.00			-60,003.00	-60,003.00
TOTAL REVENUE:	0.00	0.00	0.00	-60,003.00	-60,003.00			-60,003.00	-60,003.00
EXPENSES									
Personnel Compensation									
1110 SalRegular-6100 OpExpPrgCs	0.00	7,405.66	0.00	20,003.44	27,409.10	0.00	0.00	27,409.10	20,003.44
1185 SAONWkPool-6100 OpExpPrgCs	0.00	1,370.04	0.00	3,903.56	5,273.60	0.00	0.00	5,273.60	3,903.56
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1199 AccrSalInt-6100 OpExpPrgCs	0.00	891.52	0.00	-891.52	0.00	0.00	0.00	0.00	-891.52
Tot Major Class: 11	0.00	9,667.22	0.00	23,015.48	32,682.70	0.00	0.00	32,682.70	23,015.48
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	0.00	2,422.09	0.00	6,352.69	8,774.78	0.00	0.00	8,774.78	6,352.69
1299 AccrBenInt-6100 OpExpPrgCs	0.00	456.51	0.00	-457.10	-0.59	0.00	0.00	-0.59	-457.10
Tot Major Class: 12	0.00	2,878.60	0.00	5,895.59	8,774.19	0.00	0.00	8,774.19	5,895.59
Sub Tot Personnel:	0.00	12,545.82	0.00	28,911.07	41,456.89	0.00	0.00	41,456.89	28,911.07
Transportation of Things									
2212 Transptn-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supplies and Materials									
2611 OffcSupl-6100 OpExpPrgCs	0.00	497.40	0.00	0.00	497.40	0.00	0.00	497.40	0.00
Tot Major Class: 26	0.00	497.40	0.00	0.00	497.40	0.00	0.00	497.40	0.00
Sub Tot Other:	0.00	497.40	0.00	0.00	497.40	0.00	0.00	497.40	0.00
Indirect Costs									
3510 ICCYGA-6606 OHRSAONFGC	0.00	1,957.79	0.00	4,761.96	6,719.75	0.00	0.00	6,719.75	4,761.96
3520 ICCYOvrhd-6606 OHRSAONFGC	0.00	3,475.20	0.00	7,719.25	11,194.45	0.00	0.00	11,194.45	7,719.25
3530 ICCYMB-6606 OHRSAONFGC	0.00	26.36	0.00	0.00	26.36	0.00	0.00	26.36	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501631 Understanding Solar Radiatio PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 01-MAY-2010 End: 30-APR-2011 Post Award Analyst: Contract #: 15670
PA: 3052 Rev: 0 Sponsor: SOUTHERN CO.

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
Tot Major Class: 35	0.00	5,459.35	0.00	12,481.21	17,940.56	0.00	0.00	17,940.56	12,481.21
Sub Tot Indirect Costs:	0.00	5,459.35	0.00	12,481.21	17,940.56	0.00	0.00	17,940.56	12,481.21
TOTAL EXPENSES:	0.00	18,502.57	0.00	41,392.28	59,894.85	0.00	0.00	59,894.85	41,392.28
GL SUMMARY:	60,003.00	18,502.57	0.00	41,392.28	59,894.85	0.00	0.00	59,894.85	41,392.28
Revenue - Expenses:	0.00	18,502.57	0.00	-18,610.72	-108.15				
Com Cntrl Summ for 802 / 501631	60,003.00	18,502.57	0.00	41,392.28	59,894.85	0.00	0.00	59,894.85	41,392.28

Summary:

Total ITD Expenses:	59,894.85	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	59,894.85	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501670 Understanding Solar Radiatio PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Project Mgr:
Start: 01-AUG-2010 End: 31-JAN-2012 Post Award Analyst: Contract #: Koch Ltr. 11/08/20
PA: 3116 Rev: 1 Sponsor: KOCK FOUNDATION

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 NFedGrant-5900 OthRevenue	0.00	0.00	0.00	-55,000.00	-55,000.00			-55,000.00	-55,000.00
Tot Major Class: 05	0.00	0.00	0.00	-55,000.00	-55,000.00			-55,000.00	-55,000.00
TOTAL REVENUE:	0.00	0.00	0.00	-55,000.00	-55,000.00			-55,000.00	-55,000.00
EXPENSES									
Personnel Compensation									
1110 SalRegular-6100 OpExpPrgCs	0.00	0.00	0.00	10,363.88	10,363.88	0.00	0.00	10,363.88	10,363.88
1111 SalPT-6100 OpExpPrgCs	0.00	0.00	278.60	14,208.60	14,208.60	0.00	0.00	14,208.60	14,208.60
1185 SAONWkPool-6100 OpExpPrgCs	0.00	0.00	24.29	4,788.60	4,788.60	0.00	0.00	4,788.60	4,788.60
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	-699.01	0.00	0.00	0.00	0.00	0.00	0.00
1199 AccrSalInt-6100 OpExpPrgCs	0.00	0.00	-3,621.80	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	0.00	-4,017.92	29,361.08	29,361.08	0.00	0.00	29,361.08	29,361.08
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	0.00	0.00	114.89	7,810.33	7,810.33	0.00	0.00	7,810.33	7,810.33
1299 AccrBenInt-6100 OpExpPrgCs	0.00	0.00	-1,157.98	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	0.00	-1,043.09	7,810.33	7,810.33	0.00	0.00	7,810.33	7,810.33
Sub Tot Personnel:	0.00	0.00	-5,061.01	37,171.41	37,171.41	0.00	0.00	37,171.41	37,171.41
Supplies and Materials									
2611 OffcSupl-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	497.40	497.40	497.40
Tot Major Class: 26	0.00	0.00	0.00	0.00	0.00	0.00	497.40	497.40	497.40
Equipment (Do Not Use)									
3111 IT Equip-U-6100 OpExpPrgCs	0.00	0.00	0.00	1,006.00	1,006.00	0.00	0.00	1,006.00	1,006.00
Tot Major Class: 31	0.00	0.00	0.00	1,006.00	1,006.00	0.00	0.00	1,006.00	1,006.00
Sub Tot Other:	0.00	0.00	0.00	1,006.00	1,006.00	0.00	497.40	1,503.40	1,503.40
Indirect Costs									
3510 ICCYGA-6606 OHRSAONFGC	0.00	0.00	-833.60	6,128.93	6,128.93	0.00	0.00	6,128.93	6,128.93
3510 ICCYGA-6609 OHRecSAOOt	0.00	0.00	0.00	0.00	0.00	0.00	3.17	3.17	3.17

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501670 Understanding Solar Radiatio PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Project Mgr:
Start: 01-AUG-2010 End: 31-JAN-2012 Post Award Analyst: Contract #: Koch Ltr. 11/08/20
PA: 3116 Rev: 1 Sponsor: KOCK FOUNDATION

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
3520 ICCYOvrhd-6606 OHRSAONFGC	0.00	0.00	-1,351.29	9,924.78	9,924.78	0.00	0.00	9,924.78	9,924.78
3530 ICCYMB-6606 OHRSAONFGC	0.00	0.00	0.00	49.29	49.29	0.00	0.00	49.29	49.29
3530 ICCYMB-6609 OHRecSAOOt	0.00	0.00	0.00	0.00	0.00	0.00	24.37	24.37	24.37
Tot Major Class: 35	0.00	0.00	-2,184.89	16,103.00	16,103.00	0.00	27.54	16,130.54	16,130.54
Sub Tot Indirect Costs:	0.00	0.00	-2,184.89	16,103.00	16,103.00	0.00	27.54	16,130.54	16,130.54
TOTAL EXPENSES:	0.00	0.00	-7,245.90	54,280.41	54,280.41	0.00	524.94	54,805.35	54,805.35
GL SUMMARY:	55,000.00	0.00	-7,245.90	54,280.41	54,280.41	0.00	524.94	54,805.35	54,805.35
Revenue - Expenses:	0.00	0.00	-7,245.90	-719.59	-719.59				
Com Cntrl Summ for 802 / 501670	55,000.00	0.00	-7,245.90	54,280.41	54,280.41	0.00	524.94	54,805.35	54,805.35

Summary:

Total ITD Expenses:	54,280.41	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	54,280.41	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501670 Understanding Solar Radiatio PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Fund Mgr: RATHLE,NAYLA
Start: 01-AUG-2010 End: 31-JAN-2012 Post Award Analyst: Contract #: Koch Ltr. 11/08/20
PA: 3116 Rev: 1 Sponsor: KOCK FOUNDATION Award Amt: 55,000.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 NFedGrant-5900 OthRevenue	0.00	-55,000.00	0.00	0.00	-55,000.00			-55,000.00	0.00
Tot Major Class: 05	0.00	-55,000.00	0.00	0.00	-55,000.00			-55,000.00	0.00
TOTAL REVENUE:	0.00	-55,000.00	0.00	0.00	-55,000.00			-55,000.00	0.00
EXPENSES									
Personnel Compensation									
1110 SalRegular-6100 OpExpPrgCs	0.00	10,363.88	0.00	0.00	10,363.88	0.00	0.00	10,363.88	0.00
1111 SalPT-6100 OpExpPrgCs	0.00	14,208.60	0.00	0.00	14,208.60	0.00	0.00	14,208.60	0.00
1185 SAONWkPool-6100 OpExpPrgCs	0.00	4,788.60	0.00	0.00	4,788.60	0.00	0.00	4,788.60	0.00
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1199 AccrSalInt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	0.00	29,361.08	0.00	0.00	29,361.08	0.00	0.00	29,361.08	0.00
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	0.00	7,810.33	0.00	0.00	7,810.33	0.00	0.00	7,810.33	0.00
1299 AccrBenInt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	0.00	7,810.33	0.00	0.00	7,810.33	0.00	0.00	7,810.33	0.00
Sub Tot Personnel:	0.00	37,171.41	0.00	0.00	37,171.41	0.00	0.00	37,171.41	0.00
Supplies and Materials									
2611 OffcSupl-6100 OpExpPrgCs	0.00	0.00	0.00	497.40	497.40	0.00	0.00	497.40	0.00
Tot Major Class: 26	0.00	0.00	0.00	497.40	497.40	0.00	0.00	497.40	0.00
Equipment (Do Not Use)									
3111 IT Equip-U-6100 OpExpPrgCs	0.00	1,006.00	0.00	0.00	1,006.00	0.00	0.00	1,006.00	0.00
Tot Major Class: 31	0.00	1,006.00	0.00	0.00	1,006.00	0.00	0.00	1,006.00	0.00
Sub Tot Other:	0.00	1,006.00	0.00	497.40	1,503.40	0.00	0.00	1,503.40	0.00
Indirect Costs									
3510 ICCYGA-6606 OHRSAONPGC	0.00	6,128.93	0.00	4.01	6,132.94	0.00	0.00	6,132.94	4.01
3510 ICCYGA-6609 OHRecSAOOt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-3.17
3520 ICCYOvrhd-6606 OHRSAONPGC	0.00	9,924.78	0.00	0.00	9,924.78	0.00	0.00	9,924.78	0.00
3530 ICCYMB-6606 OHRSAONPGC	0.00	49.29	0.00	25.87	75.16	0.00	0.00	75.16	25.87
3530 ICCYMB-6609 OHRecSAOOt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-24.37
Tot Major Class: 35	0.00	16,103.00	0.00	29.88	16,132.88	0.00	0.00	16,132.88	2.34
Sub Tot Indirect Costs:	0.00	16,103.00	0.00	29.88	16,132.88	0.00	0.00	16,132.88	2.34

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501670 Understanding Solar Radiatio PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Fund Mgr: RATHLE,NAYLA
Start: 01-AUG-2010 End: 31-JAN-2012 Post Award Analyst: Contract #: Koch Ltr. 11/08/20
PA: 3116 Rev: 1 Sponsor: KOCK FOUNDATION Award Amt: 55,000.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
TOTAL EXPENSES:	0.00	54,280.41	0.00	527.28	54,807.69	0.00	0.00	54,807.69	2.34
GL SUMMARY:	55,000.00	54,280.41	0.00	527.28	54,807.69	0.00	0.00	54,807.69	2.34
Revenue - Expenses:	0.00	-719.59	0.00	527.28	-192.31				
Com Cntrl Summ for 802 / 501670	55,000.00	54,280.41	0.00	527.28	54,807.69	0.00	0.00	54,807.69	2.34

Total Summary:

Total ITD Expenses:	54,807.69	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	54,807.69	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501685 Understanding Solar Radiatio PI: Soon,W. PI Dept: 404S50 Project Mgr: Ratnle,N.
Start: 01-JAN-2011 End: 31-DEC-2011 Post Award Analyst: Contract #: DonorTrst 11/18/10
PA: 3172 Rev: 0 Sponsor: DONORSTRUST

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
EXPENSES									
Personnel Compensation									
1110 SalRegular-6100 OpExpPrgCs	0.00	0.00	0.00	947.24	947.24	0.00	0.00	947.24	947.24
1111 SalPT-6100 OpExpPrgCs	0.00	0.00	6,965.00	6,965.00	6,965.00	0.00	0.00	6,965.00	6,965.00
1185 SAONWkPool-6100 OpExpPrgCs	0.00	0.00	1,344.25	1,529.10	1,529.10	0.00	0.00	1,529.10	1,529.10
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	215.08	215.08	215.08	0.00	0.00	215.08	215.08
1199 AccrSalInt-6100 OpExpPrgCs	0.00	0.00	1,114.40	1,114.40	1,114.40	0.00	0.00	1,114.40	1,114.40
Tot Major Class: 11	0.00	0.00	9,638.73	10,770.82	10,770.82	0.00	0.00	10,770.82	10,770.82
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	0.00	0.00	2,226.87	2,527.70	2,527.70	0.00	0.00	2,527.70	2,527.70
1299 AccrBenInt-6100 OpExpPrgCs	0.00	0.00	356.30	356.30	356.30	0.00	0.00	356.30	356.30
Tot Major Class: 12	0.00	0.00	2,583.17	2,884.00	2,884.00	0.00	0.00	2,884.00	2,884.00
Sub Tot Personnel:	0.00	0.00	12,221.90	13,654.82	13,654.82	0.00	0.00	13,654.82	13,654.82
Printing and reproduction									
2410 Printing-6100 OpExpPrgCs	0.00	0.00	437.37	437.37	437.37	0.00	0.00	437.37	437.37
Tot Major Class: 24	0.00	0.00	437.37	437.37	437.37	0.00	0.00	437.37	437.37
Sub Tot Other:	0.00	0.00	437.37	437.37	437.37	0.00	0.00	437.37	437.37
Indirect Costs									
3510 ICCYGA-6606 OHRSAONFGC	0.00	0.00	2,069.93	2,305.94	2,305.94	0.00	0.00	2,305.94	2,305.94
3510 ICCYGA-6609 OHRecSAOOt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3520 ICCYOvrhd-6606 OHRSAONFGC	0.00	0.00	3,263.25	3,645.84	3,645.84	0.00	0.00	3,645.84	3,645.84
Tot Major Class: 35	0.00	0.00	5,333.18	5,951.78	5,951.78	0.00	0.00	5,951.78	5,951.78
Sub Tot Indirect Costs:	0.00	0.00	5,333.18	5,951.78	5,951.78	0.00	0.00	5,951.78	5,951.78
TOTAL EXPENSES:	0.00	0.00	17,992.45	20,043.97	20,043.97	0.00	0.00	20,043.97	20,043.97
GL SUMMARY:	50,000.00	0.00	17,992.45	20,043.97	20,043.97	0.00	0.00	20,043.97	20,043.97
Revenue - Expenses:	0.00	0.00	17,992.45	20,043.97	20,043.97				

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 501685 Understanding Solar Radiatio PI: Soon,W. PI Dept: 404S50 Project Mgr: Rathle,N.
Start: 01-JAN-2011 End: 31-DEC-2011 Post Award Analyst: Contract #: DonorTrst 11/18/10
PA: 3172 Rev: 0 Sponsor: DONORSTRUST

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
Com Cntrl Summ for 802 / 501685	50,000.00	0.00	17,992.45	20,043.97	20,043.97	0.00	0.00	20,043.97	20,043.97

Summary:

Total ITD Expenses:	20,043.97	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	-50,000.00
ITD Expenses - ITD Billed:	20,043.97	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 504336 Solar Modulation of PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Fund Mgr:
Start: 01-DEC-2011 End: 30-NOV-2012 Post Award Analyst: Contract #: 20175
PA: 0 Rev: 1 Sponsor: SOUTHERN COMPANY SERVICES Award Amt: 59,942.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 NFedGrant-5900 OthRevenue	0.00	0.00	0.00	-62,542.86	-62,542.86			-62,542.86	-62,542.86
0532 -5909 ContraReve	0.00	0.00	0.00	2,600.86	2,600.86			2,600.86	2,600.86
Tot Major Class: 05	0.00	0.00	0.00	-59,942.00	-59,942.00			-59,942.00	-59,942.00
TOTAL REVENUE:	0.00	0.00	0.00	-59,942.00	-59,942.00			-59,942.00	-59,942.00
EXPENSES									
Personnel Compensation									
1100 PersComp-6100 OpExpPrgCs	27,676.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1110 SalRegular-6100 OpExpPrgCs	0.00	0.00	0.00	1,240.90	1,240.90	0.00	0.00	1,240.90	1,240.90
1111 SalPT-6100 OpExpPrgCs	0.00	0.00	0.00	26,411.28	26,411.28	0.00	0.00	26,411.28	26,411.28
1131 AnnualLeav-6100 OpExpPrgCs	5,341.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1185 SAONWkPool-6100 OpExpPrgCs	0.00	0.00	0.00	4,534.98	4,534.98	0.00	0.00	4,534.98	4,534.98
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1199 AccrSalInt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 11	33,018.50	0.00	0.00	32,187.16	32,187.16	0.00	0.00	32,187.16	32,187.16
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	8,848.96	0.00	0.00	8,626.10	8,626.10	0.00	0.00	8,626.10	8,626.10
1299 AccrBenInt-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 12	8,848.96	0.00	0.00	8,626.10	8,626.10	0.00	0.00	8,626.10	8,626.10
Sub Tot Personnel:	41,867.46	0.00	0.00	40,813.26	40,813.26	0.00	0.00	40,813.26	40,813.26
Indirect Costs									
3510 ICCYGA-6606 OHRSAONFGC	6,895.93	0.00	0.00	8,021.43	8,021.43	0.00	0.00	8,021.43	8,021.43
3520 ICCYOvrhd-6606 OHRSAONFGC	11,178.61	0.00	0.00	10,937.95	10,937.95	0.00	0.00	10,937.95	10,937.95
Tot Major Class: 35	18,074.54	0.00	0.00	18,959.38	18,959.38	0.00	0.00	18,959.38	18,959.38
Sub Tot Indirect Costs:	18,074.54	0.00	0.00	18,959.38	18,959.38	0.00	0.00	18,959.38	18,959.38
TOTAL EXPENSES:	59,942.00	0.00	0.00	59,772.64	59,772.64	0.00	0.00	59,772.64	59,772.64
GL SUMMARY:	59,942.00	0.00	0.00	59,772.64	59,772.64	0.00	0.00	59,772.64	59,772.64
Revenue - Expenses:	-59,942.00	0.00	0.00	-169.36	-169.36				
Com Cntrl Summ for 802 / 504336	59,942.00	0.00	0.00	59,772.64	59,772.64	0.00	0.00	59,772.64	59,772.64

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 504336 Solar Modulation of PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Fund Mgr:
Start: 01-DEC-2011 End: 30-NOV-2012 Post Award Analyst: Contract #: 20175
PA: 0 Rev: 1 Sponsor: SOUTHERN COMPANY SERVICES Award Amt: 59,942.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act

Total Summary:

Total ITD Expenses:	59,772.64	Receivable Balance:	59,942.00
Total ITD Billed:	59,942.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	-169.36	Unbilled Balance:	0.00

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 504364 A Circum-global Tele PI: SOON,WILLIE WEI HOCK PI Dept: 404S50 Fund Mgr: RATHLE,NAYLA
Start: 01-APR-2012 End: 31-MAR-2013 Post Award Analyst: Contract #: Donors Ltr 02/28/2012
PA: 0 Rev: 2 Sponsor: DONORS TRUST Award Amt: 64,935.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
REVENUE									
Grants and Contracts									
0530 NFedGrant-5900 OthRevenue	0.00	0.00	0.00	-64,935.00	-64,935.00			-64,935.00	-64,935.00
Tot Major Class: 05	0.00	0.00	0.00	-64,935.00	-64,935.00			-64,935.00	-64,935.00
TOTAL REVENUE:	0.00	0.00	0.00	-64,935.00	-64,935.00			-64,935.00	-64,935.00
EXPENSES									
Personnel Compensation									
1100 PersComp-6100 OpExpPrgCs	29,109.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1110 SalRegular-6100 OpExpPrgCs	0.00	0.00	0.00	236.36	236.36	0.00	0.00	236.36	236.36
1111 SalPT-6100 OpExpPrgCs	0.00	0.00	2,228.80	6,797.84	6,797.84	0.00	0.00	6,797.84	6,797.84
1131 AnnualLeav-6100 OpExpPrgCs	5,618.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1185 SAONWkPool-6100 OpExpPrgCs	0.00	0.00	365.52	1,153.60	1,153.60	0.00	0.00	1,153.60	1,153.60
1189 SAOAccrRt-6100 OpExpPrgCs	0.00	0.00	91.38	91.38	91.38	0.00	0.00	91.38	91.38
1199 AccrSalInt-6100 OpExpPrgCs	0.00	0.00	557.20	557.20	557.20	0.00	0.00	557.20	557.20
Tot Major Class: 11	34,727.27	0.00	3,242.90	8,836.38	8,836.38	0.00	0.00	8,836.38	8,836.38
Personnel Benefits									
1230 PoolBenfts-6100 OpExpPrgCs	9,306.73	0.00	695.28	2,194.34	2,194.34	0.00	0.00	2,194.34	2,194.34
1299 AccrBenInt-6100 OpExpPrgCs	0.00	0.00	173.82	173.82	173.82	0.00	0.00	173.82	173.82
Tot Major Class: 12	9,306.73	0.00	869.10	2,368.16	2,368.16	0.00	0.00	2,368.16	2,368.16
Sub Tot Personnel:	44,034.00	0.00	4,112.00	11,204.54	11,204.54	0.00	0.00	11,204.54	11,204.54
Investment Trans/Rev Sharing									
3650 SAOMgmtFee-6200 SAOMgmt Fe	1,891.00	0.00	0.00	1,891.31	1,891.31	0.00	0.00	1,891.31	1,891.31
Tot Major Class: 36	1,891.00	0.00	0.00	1,891.31	1,891.31	0.00	0.00	1,891.31	1,891.31
Sub Tot Other:	1,891.00	0.00	0.00	1,891.31	1,891.31	0.00	0.00	1,891.31	1,891.31
Indirect Costs									
3510 ICCYGA-6606 OHRSAONFGC	7,252.87	0.00	808.17	2,202.14	2,202.14	0.00	0.00	2,202.14	2,202.14
3520 ICCYOvrhd-6606 OHRSAONFGC	11,757.13	0.00	1,102.02	3,002.82	3,002.82	0.00	0.00	3,002.82	3,002.82
3540 MgmtFee-6100 OpExpPrgCs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot Major Class: 35	19,010.00	0.00	1,910.19	5,204.96	5,204.96	0.00	0.00	5,204.96	5,204.96
Sub Tot Indirect Costs:	19,010.00	0.00	1,910.19	5,204.96	5,204.96	0.00	0.00	5,204.96	5,204.96
TOTAL EXPENSES:	64,935.00	0.00	6,022.19	18,300.81	18,300.81	0.00	0.00	18,300.81	18,300.81
GL SUMMARY:	64,935.00	0.00	6,022.19	18,300.81	18,300.81	0.00	0.00	18,300.81	18,300.81

Fund Code: 802 Grants & Contracts Non-Govt.
Designated Code: 504364 A Circum-global Tele PI: SOON,WILLIE WEI HOCK PI Dept: 404550 Fund Mgr: RATHLE,NAYLA
Start: 01-APR-2012 End: 31-MAR-2013 Post Award Analyst: Contract #: Donors Ltr 02/28/2012
PA: 0 Rev: 2 Sponsor: DONORS TRUST Award Amt: 64,935.00

	A	B	C	D	E	F	G	E+F+G	
		Actuals						ITD PreEncumb	YTD PreEncumb
Class	Budget	Prior Years	Current Month	Current Year	ITD	PreEncumbrance	Encumbrance	Encumb & Act	Encumb & Act
Revenue - Expenses:	-64,935.00	0.00	6,022.19	-46,634.19	-46,634.19				
Com Cntrl Summ for 802 / 504364	64,935.00	0.00	6,022.19	18,300.81	18,300.81	0.00	0.00	18,300.81	18,300.81

Total Summary:

Total ITD Expenses:	18,300.81	Receivable Balance:	0.00
Total ITD Billed:	0.00	Prepaid Balance:	0.00
ITD Expenses - ITD Billed:	18,300.81	Unbilled Balance:	0.00

Joe Walker

To: Global Climate Science Team
Cc: Michelle Ross; Susan Moya
Subject: Draft Global Climate Science Communications Plan

As promised, attached is the draft Global Climate Science Communications Plan that we developed during our workshop last Friday. Thanks especially to those of you who participated in the workshop, and in particular to Joh Adams for his very helpful thoughts following up our meeting, and Alan Caudill for turning around the notes from workshop so quickly.

Please review the plan and get back to me with your comments as soon as possible.

As those of you who were at the workshop know, we have scheduled a follow-up team meeting to review the plan person on Friday, April 17, from 1 to 3 p.m. at the API headquarters. After that, we hope to have a "plan champio help us move it forward to potential funding sources, perhaps starting with the global climate "Coordinating Counc That will be an item for discussion on April 17.

Again, thanks for your hard work on this project. Please e-mail, call or fax me with your comments. Thanks.

Regards,
Joe Walker

Global Climate Science Communications

Action Plan

Project Goal

A majority of the American public, including industry leadership, recognizes that significant uncertainties exist in climate science, and therefore raises questions among those (e.g. Congress) who chart the future U.S. course on global climate change.

Progress will be measured toward the goal. A measurement of the public's perspective on climate science will be taken before the plan is launched, and the same measurement will be taken at one or more as-yet-to-be-determined intervals as the plan is implemented.

Victory Will Be Achieved When

- Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom"
- Media "understands" (recognizes) uncertainties in climate science
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current "conventional wisdom"
- Industry senior leadership understands uncertainties in climate science, making them stronger ambassadors to those who shape climate policy
- Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.

Current Reality

Unless "climate change" becomes a non-issue, meaning that the Kyoto proposal is defeated and there are no further initiatives to thwart the threat of climate change, there may be no moment when we can declare victory for our efforts. It will be necessary to establish measurements for the science effort to track progress toward achieving the goal and strategic success.

April 3, 1998

Global Climate Sdence Communications

Action Plan

Situation Analysis

In December 1997, the Clinton Administration agreed in Kyoto, Japan, to a treaty to reduce greenhouse gas emissions to prevent what it purports to be changes in the global climate caused by the continuing release of such emissions. The so-called greenhouse gases have many sources. For example, water vapor is a greenhouse gas. But the Clinton Administration's action, if eventually approved by the U.S. Senate, will mainly affect emissions from fossil fuel (gasoline, coal, natural gas, etc.) combustion.

As the climate change debate has evolved, those who oppose action have argued mainly that signing such a treaty will place the U.S. at a competitive disadvantage with most other nations, and will be extremely expensive to implement. Much of the cost will be borne by American consumers who will pay higher prices for most energy and transportation.

The climate change theory being advanced by the treaty supporters is based primarily on forecasting models with a very high degree of uncertainty. In fact, it not known for sure whether (a) climate change actually is occurring, or (b) if it is, whether humans really have any influence on it.

Despite these weaknesses in scientific understanding, those who oppose the treaty have done little to build a case against precipitous action on climate change based on the scientific uncertainty. As a result, the Clinton Administration and environmental groups essentially have had the field to themselves. They have conducted an effective public relations program to convince the American public that the climate is changing, we humans are at fault, and we must do something about it before calamity strikes.

The environmental groups know they have been successful. Commenting after the Kyoto negotiations about recent media coverage of climate change, Tom Wathen, executive vice president of the National Environmental Trust, wrote:

"...As important as the extent of the coverage was the tone and tenor of it. In a change from just six months ago, most media stories no longer presented global warming as just a theory over which reasonable scientists could differ. Most stories described predictions of global warming as the position of the overwhelming number of mainstream scientists. That the environmental community had, to a great extent, settled the scientific issue with the U.S. media is the other great success that began perhaps several months earlier but became apparent during Kyoto."

Because the science underpinning the global climate change theory has not been challenged effectively in the media or through other vehicles reaching the American public, there is widespread ignorance, which works in favor of the Kyoto treaty and against the best interests of the United States. Indeed, the public has been highly receptive to the Clinton Administration's plans. There has been little, if any, public resistance or pressure applied to Congress to reject the treaty, except by those "inside the Beltway" with vested interests.

Moreover, from the political viewpoint, it is difficult for the United States to oppose the treaty solely on economic grounds, valid as the economic issues are. It makes it too easy for others to portray the United States as putting preservation of its own lifestyle above the greater concerns of mankind. This argument, in turn, forces our negotiators to make concessions that have not been well thought through, and in the end may do far more harm than good. This is the process that unfolded at Kyoto, and is very likely to be repeated in Buenos Aires in November 1998.

The advocates of global warming have been successful on the basis of skillfully misrepresenting the science and the extent of agreement on the science, while industry and its partners ceded the science and fought on the economic issues. Yet if we can show that science does not support the Kyoto treaty – which most true climate scientists believe to be the case – this puts the United States in a stronger moral position and frees its negotiators from the need to make concessions as a defense against perceived selfish economic concerns.

Upon this tableau, the Global Climate Science Communications Team (GCSCT) developed an action plan to inform the American public that science does not support the precipitous actions Kyoto would dictate, thereby providing a climate for the right policy decisions to be made. The team considered results from a new public opinion survey in developing the plan.

Charlton Research's survey of 1,100 "informed Americans" suggests that while Americans currently perceive climate change to be a great threat, public opinion is open to change on climate science. When informed that "some scientists believe there is not enough evidence to suggest that [what is called global climate change] is a long-term change due to human behavior and activities," 58 percent of those surveyed said they were more likely to oppose the Kyoto treaty. Moreover, half the respondents harbored doubts about climate science.

GCSCT members who contributed to the development of the plan are A. John Adams, John Adams Associates; Candace Crandall, Science and Environmental Policy Project; David Rothbard, Committee For A Constructive Tomorrow; Jeffrey Salmon, The Marshall Institute; Lee Garrigan, Environmental Issues Council; Lynn Bouchey and Myron Ebell, Frontiers of Freedom; Peter Cleary, Americans for Tax Reform; Randy Randol, Exxon Corp.; Robert Gehri, The Southern Company; Sharon Kneiss, Chevron Corp; Steve Milloy, The Advancement of Sound Science Coalition; and Joseph Walker, American Petroleum Institute.

The action plan is detailed on the following pages.

Strategies and Tactics

I. **National Media Relations Program: Develop and implement a national media relations program to inform the media about uncertainties in climate science; to generate national, regional and local media coverage on the scientific uncertainties, and thereby educate and inform the public, stimulating them to raise questions with policy makers.**

Tactics: These tactics will be undertaken between now and the next climate meeting in Buenos Aires, Argentina, in November 1998, and will be continued thereafter, as appropriate. Activities will be launched as soon as the plan is approved, funding obtained, and the necessary resources (e.g., public relations counsel) arranged and deployed. In all cases, tactical implementation will be fully integrated with other elements of this action plan, most especially Strategy II (National Climate Science Data Center).

- Identify, recruit and train a team of five independent scientists to participate in media outreach. These will be individuals who do not have a long history of visibility and/or participation in the climate change debate. Rather, this team will consist of new faces who will add their voices to those recognized scientists who already are vocal.

- Develop a global climate science information kit for media including peer-reviewed papers that undercut the "conventional wisdom" on climate science. This kit also will include understandable communications, including simple fact sheets that present scientific uncertainties in language that the media and public can understand.

- Conduct briefings by media-trained scientists for science writers in the top 20 media markets, using the information kits. Distribute the information kits to daily newspapers nationwide with offer of scientists to brief reporters at each paper. Develop, disseminate radio news releases featuring scientists nationwide, and offer scientists to appear on radio talk shows across the country.

- Produce, distribute a steady stream of climate science information via facsimile and e-mail to science writers around the country.

- Produce, distribute via syndicate and directly to newspapers nationwide a steady stream of op-ed columns and letters to the editor authored by scientists.

- Convince one of the major news national TV journalists (e.g., John Stossel) to produce a report examining the scientific underpinnings of the Kyoto treaty.

- Organize, promote and conduct through grassroots organizations a series of campus/community workshops/debates on climate science in 10 most important states during the period mid-August through October, 1998.

- Consider advertising the scientific uncertainties in *select* markets to support national, regional and local (e.g., workshops/debates), as appropriate

National Media Program Budget — $600,000 plus paid advertising

II. **Global Climate Science Information Source** Develop and implement a program to inject credible science and scientific accountability into the global climate debate, thereby raising questions about and undercutting the "prevailing scientific wisdom" The strategy will have the added benefit of providing a platform for credible, constructive criticism of the opposition's position *on* the science.

Tactics: As with the National Media Relations Program, these activities will be undertaken between now and the next climate meeting in Buenos Aires, Argentina, in November 1998, and will continue thereafter. Initiatives will be launched as soon as the plan is approved, funding obtained, and the necessary resources arranged and deployed.

- Establish a Global Climate Science Data Center. The GCSDC will be established in Washington as a non-profit educational foundation with an advisory board of respected climate scientists. It will be staffed initially with professionals on loan from various companies and associations with a major interest in the climate issue. These executives will bring with them knowledge and experience in the following areas:
  - Overall history of climate research and the IPCC process;
  - Congressional relations and knowledge of where individual Senators stand on the climate issue;
  - Knowledge of key climate scientists and where they stand.
  - Ability to identify and recruit as many as 20 respected climate scientists to serve on the science advisory board;
  - Knowledge and expertise in media relations and with established relationships with science and energy writers, columnists and editorial writers;
  - Expertise in grassroots organization; and
  - Campaign organization and administration.

  The GCSDC will be led by a dynamic senior executive with a major personal commitment to the *goals* of the campaign and easy access *to* business leaders at the CEO level. The Center will be run on a day-to-day basis by an executive director with responsibility for ensuring targets are met The Center will be funded *at* a level that will permit it to succeed. Including funding for research contracts that may be deemed appropriate to fill gaps in climate science (e.g., a complete scientific critique of the IPCC research and its conclusions).

- The GCSDC will become a one-stop resource on climate science for members of Congress, the media, industry and all others concerned. It will be in constant contact with the best climate scientists and ensure that their findings and views receive appropriate attention. It will provide them with the logistical and moral support they have been lacking. In short, it will be a sound scientific alternative to the IPCC. Its functions will include:
  - Providing as an easily accessible database (including a website) of all mainstream climate science information.
  - Identifying and establishing cooperative relationships with all major scientists whose research in this field supports our position.
  - Establishing cooperative relationships with other mainstream scientific organizations (e.g., meteorologists, geophysicists) to bring their perspectives to bear on the debate, as appropriate.
  - Developing opportunities to maximize the impact of scientific views consistent with ours with Congress, the media and other key audiences.
  - Monitoring and serving as and early warning system for scientific developments with the potential to impact on the climate science debate, pro and con.
  - Responding to claims from the scientific alarmists and media.
  - Providing grants for advocacy on climate science, as deemed appropriate.

Global Climate Science Data Center Budget — $5,000,000 (spread over two years minimum)

III. National Direct Outreach and Education: Develop and implement a direct outreach program to inform and educate members of Congress, state officials, industry leadership, and school teachers/students about uncertainties in climate science. This strategy will enable Congress, state officials and industry leaders will be able to raise such serious questions about the Kyoto treaty's scientific underpinnings that American policy-makers not only will refuse to endorse it, they will seek to prevent progress toward implementation at the Buenos Aires meeting in November or through other ways. Informing teachers/students about uncertainties in climate science will begin to erect a barrier against further efforts to impose Kyoto-like measures in the future.

Tactics: Informing and educating members of Congress, state officials and industry leaders will be undertaken as soon as the plan is approved, funding is obtained, and the necessary resources are arrayed and will continue through Buenos Aires and for the foreseeable future. The teachers/students outreach program will be developed and launched in early 1999. In all cases, tactical implementation will be fully integrated with other elements of this action plan.

- Develop and conduct through the Global Climate Science Data Center science briefings for Congress, governors, state legislators, and industry leaders by August 1998.

- Develop information kits on climate science targeted specifically at the needs of government officials and industry leaders, to be used in conjunction with and separately from the in-person briefings to further disseminate information on climate science uncertainties and thereby arm these influentials to raise serious questions on the science issue.

- Organize under the GCSDC a "Science Education Task Croup" that will serve as the point of outreach to the Notional Science Teachers Association (NSTA) and other influential science education organizations. Work with NSTA to develop school materials that present a credible, balanced picture of climate science for use in classrooms nationwide

- Distribute educational materials directly to schools and through grassroots organizations of climate science partners (companies, organizations that participate in this effort).

National Direct Outreach Program Budget — $300,000

IV. Funding/Fund Allocation: Develop and implement program to obtain funding, and to allocate funds to ensure that the program it is carried out effectively.

Tactics: This strategy will be implemented as soon as we have the go-ahead to proceed.

- Potential funding sources were identified as American Petroleum Institute (API) and its members; Business Round Table (BRT) and its members, Edison Electric Institute (EEI) and its members; Independent Petroleum Association of America (IPAA) and its members; and the National Mining Association (NMA) and its members.

- Potential fund allocators were identified as the American Legislative Exchange Council (ALEC), Committee For A Constructive Tomorrow (CFACT), Competitive Enterprise Institute, Frontiers of Freedom and The Marshall Institute.

Total Funds Required to Implement Program through November 1998 — $2,000,000 (A significant portion of funding for the GCSDC will be deferred until 1999 and beyond)

Measurements

Various metrics will be used to track progress. These measurements will have to be determined in fleshing out the action plan and may include:

- Baseline public/government official opinion surveys and periodic follow-up surveys on the percentage of Americans and government officials who recognize significant uncertainties in climate science.

- Tracking the percent of media articles that raise questions about climate science.

- Number of Members of Congress exposed to our materials on climate science.

- Number of communications on climate science received by Members of Congress from their constituents.

- Number of radio talk show appearances by scientists questioning the "prevailing

- Number of school teachers/students reached with our information on climate science.
- Number of science writers briefed and who report upon climate science uncertainties.
- Total audience exposed to newspaper, radio, television coverage of science uncertainties.

ENERGY PROUD

WSPA Priority Issues

November 11, 2014

The Best Of Times…

U.S. crude oil production has reached its highest point since 1997, due to production from shale and other tight rock formations, while reducing imports to their lowest level in more than 20 years.

American Petroleum Institute

ENERGY PROUD

The Worst Of Times…

ENERGY PROUD

The Worst Of Times…

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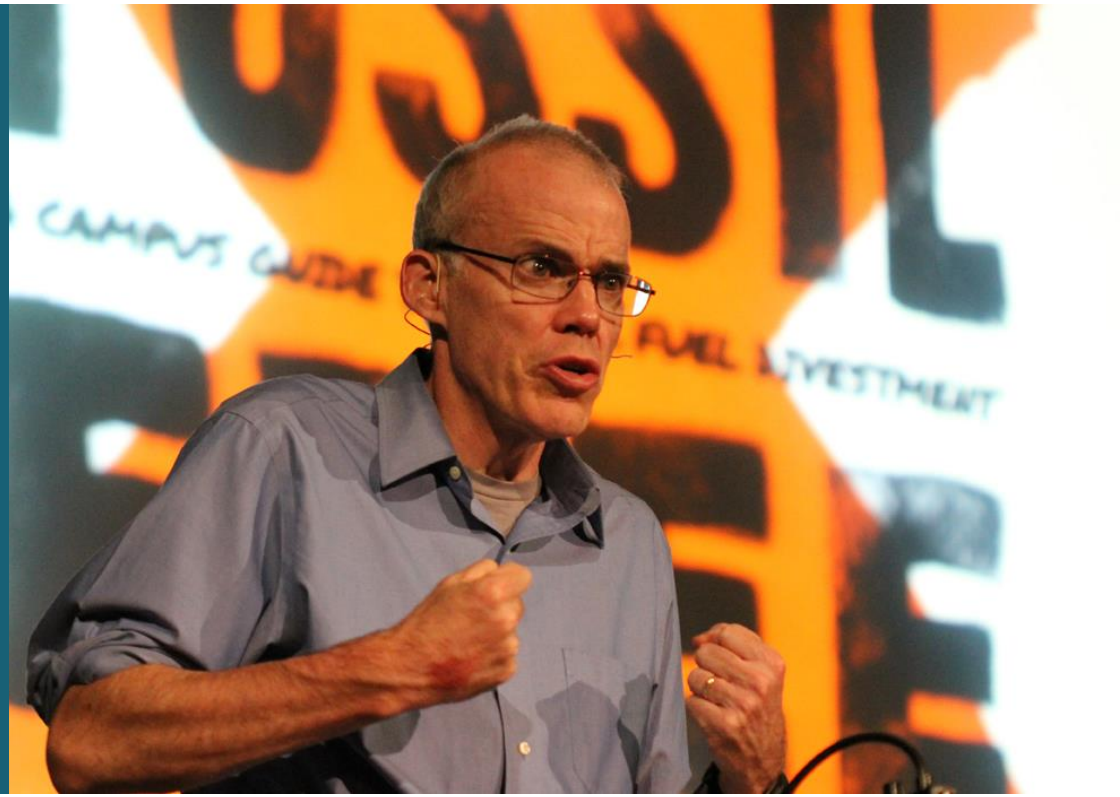
The Worst Of Times…

We need to go straight at the fossil fuel industry

Bill McKibben



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The Worst Of Times…

ENERGY PROUD

The Worst Of Times…

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The Worst Of Times…

The goal here is not to win. The goal here is to destroy these people, we want a smashing victory.

Tom Steyer

ENERGY PROUD

In 2014, WSPA has activated a significant number of campaigns and coalitions that have contributed to WSPA's advocacy goals and continue to respond to aggressive anti-oil initiatives in the West.

Each campaign was structured to address specific state or local issues and provide an excellent opportunity for the petroleum industry to educate consumers and voters in all of WSPA's five Western states.

WSPA has also invested in several coalitions that are best suited to drive consumer and grassroots messages to regulators and policymakers.

ENERGY PROUD

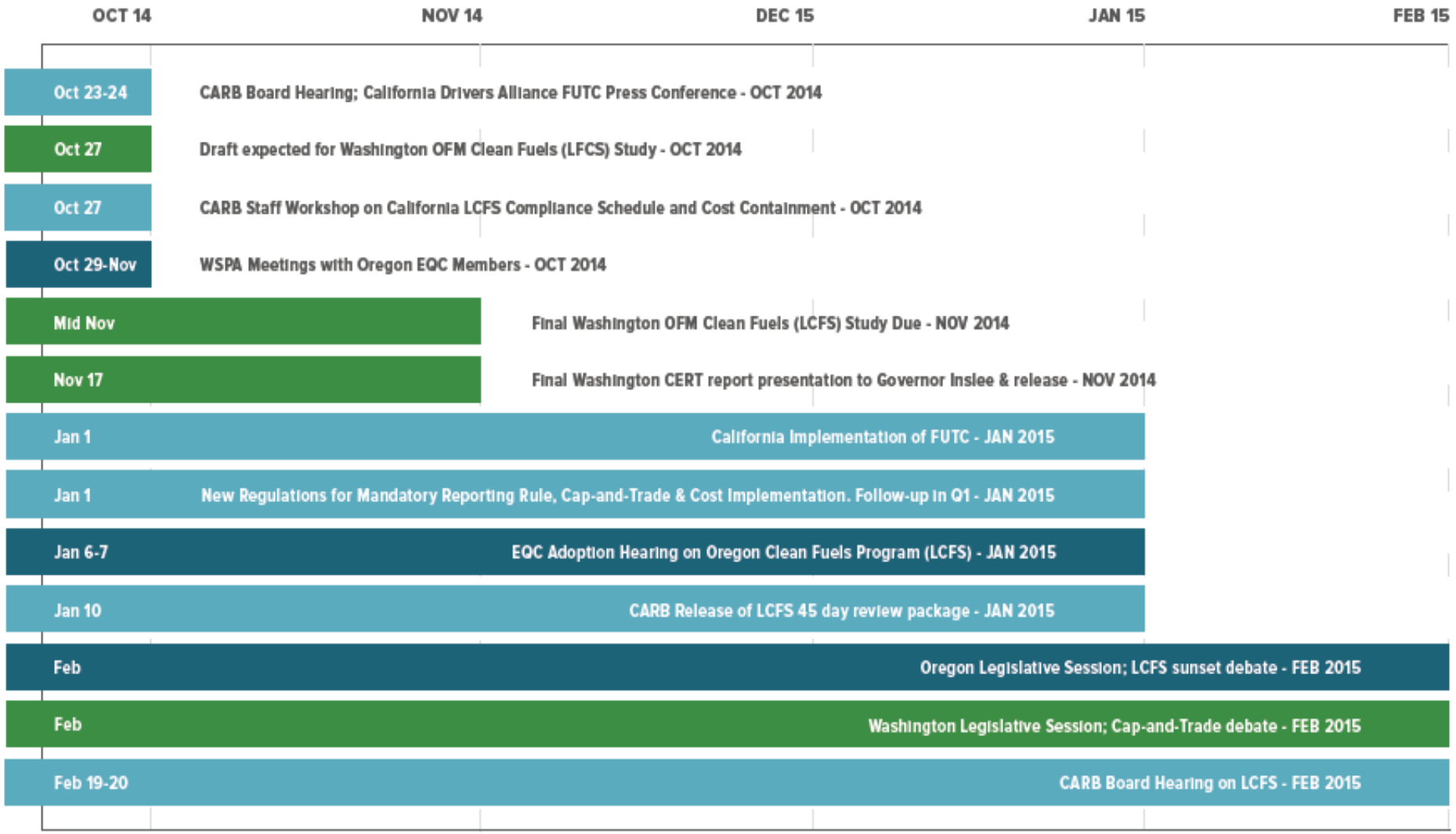
West Coast Climate Change Issues

- California
  - ✓ AB 32
  - ✓ Cap-and-trade for stationary sources
  - ✓ Cap-and-trade for fuels (January 1, 2014)
  - ✓ Low Carbon Fuel Standard
- Washington
  - ✓ Low Carbon Fuel Standard
  - ✓ Cap-and-trade
  - ✓ Carbon tax
- Oregon
  - ✓ Low Carbon Fuel Standard
  - ✓ Carbon tax

ENERGY PROUD

Upcoming Climate Change Milestones

Items and Deadlines from October 2014 to February 2015

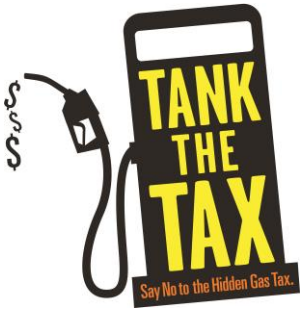


Deadlines are subject to change. The timeline and milestones included above will be udpated in January 2015.
California Items in Light Blue. **Oregon Items in Dark Blue.** Washington Items in Green.

California Climate Change Campaign

Engaging Business Allies

- Organized coalition activities
  - ✓ CIOMA (Fed Up at the Pump)
  - ✓ IWLA (Tank the Tax)
  - ✓ CAHT
  - ✓ CTA
  - ✓ NFIB
  - ✓ CARE



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California Climate Change Campaign

THE SAN FRANCISCO BAY GUARDIAN

How Big Oil is using front groups to attack global warming regulations

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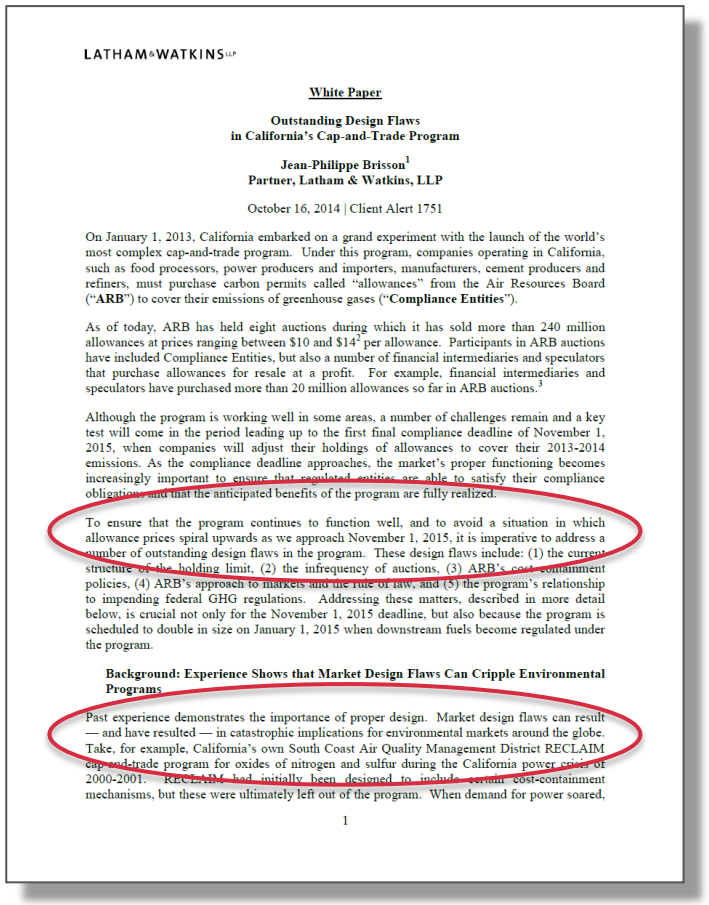
California Climate Change Campaign

Engaging Business Allies



LATHAM&WATKINS LLP

White Paper

Outstanding Design Flaws in California's Cap-and-Trade Program

Jean-Philippe Brisson[1]
Partner, Latham & Watkins, LLP

October 16, 2014 | Client Alert 1751

On January 1, 2013, California embarked on a grand experiment with the launch of the world's most complex cap-and-trade program. Under this program, companies operating in California, such as food processors, power producers and importers, manufacturers, cement producers and refiners, must purchase carbon permits called "allowances" from the Air Resources Board ("**ARB**") to cover their emissions of greenhouse gases ("**Compliance Entities**").

As of today, ARB has held eight auctions during which it has sold more than 240 million allowances at prices ranging between $10 and $14[2] per allowance. Participants in ARB auctions have included Compliance Entities, but also a number of financial intermediaries and speculators that purchase allowances for resale at a profit. For example, financial intermediaries and speculators have purchased more than 20 million allowances so far in ARB auctions.[3]

Although the program is working well in some areas, a number of challenges remain and a key test will come in the period leading up to the first final compliance deadline of November 1, 2015, when companies will adjust their holdings of allowances to cover their 2013-2014 emissions. As the compliance deadline approaches, the market's proper functioning becomes increasingly important to ensure that regulated entities are able to satisfy their compliance obligations and that the anticipated benefits of the program are fully realized.

To ensure that the program continues to function well, and to avoid a situation in which allowance prices spiral upwards as we approach November 1, 2015, it is imperative to address a number of outstanding design flaws in the program. These design flaws include: (1) the current structure of the holding limit, (2) the infrequency of auctions, (3) ARB's cost-containment policies, (4) ARB's approach to markets and the rule of law, and (5) the program's relationship to impending federal GHG regulations. Addressing these matters, described in more detail below, is crucial not only for the November 1, 2015 deadline, but also because the program is scheduled to double in size on January 1, 2015 when downstream fuels become regulated under the program.

Background: Experience Shows that Market Design Flaws Can Cripple Environmental Programs

Past experience demonstrates the importance of proper design. Market design flaws can result — and have resulted — in catastrophic implications for environmental markets around the globe. Take, for example, California's own South Coast Air Quality Management District RECLAIM cap-and-trade program for oxides of nitrogen and sulfur during the California power crisis of 2000-2001. RECLAIM had initially been designed to include certain cost-containment mechanisms, but these were ultimately left out of the program. When demand for power soared,

1

"To ensure that the program continues to function well, and to avoid a situation in which allowance prices spiral upwards as we approach November 1, 2015, it is imperative to address a number of outstanding design flaws in the program."

"Market design flaws can result — and have resulted — in catastrophic implications for environmental markets around the globe."

Source: Jean-Philippe Brisson, Latham & Watkins, Outstanding Design Flaws in Californians Cap-and-Trade Program, October 16, 2014

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California Climate Change Campaign

Engaging Business Allies

"On December 14, 2011 the Government of Québec adopted the Regulation respecting a cap-and-trade system for greenhouse gas emission allowances. Québec thus became the first Canadian partner to adopt its own regulation, placing it shoulder to shoulder with California.."

Canadian Fuels ASSOCIATION

"57 percent of Quebecers aren't even aware of the cap-and-trade program for GHG emissions. The program will require Quebec companies that produce or import fuels into the province, to buy credits in a carbon market involving Quebec and California, as of January 1, 2015."

Développement durable, Environnement et Lutte contre les changements climatiques
Québec

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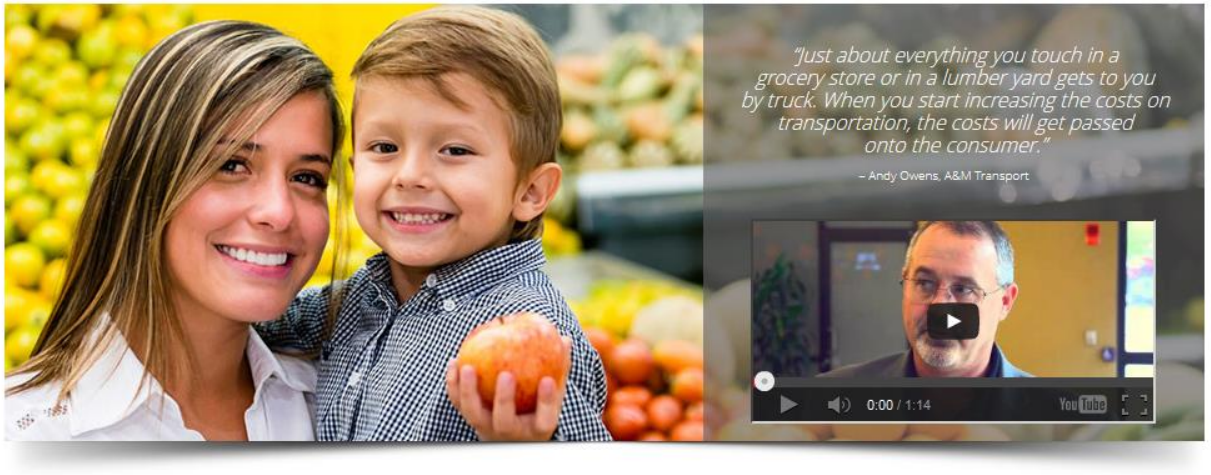
Oregon Climate Change Campaign

Engaging Consumers

Oregonians
FOR SOUND FUEL POLICY

About Members News Resources Take Action Contact



Oregonians for Sound Fuel Policy is a coalition of fuel users, consumers and business organizations opposed to the adoption of the proposed Clean Fuels Program in Oregon, also known as a Low Carbon Fuel Standard.

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Oregon Climate Change Campaign

Engaging Consumers

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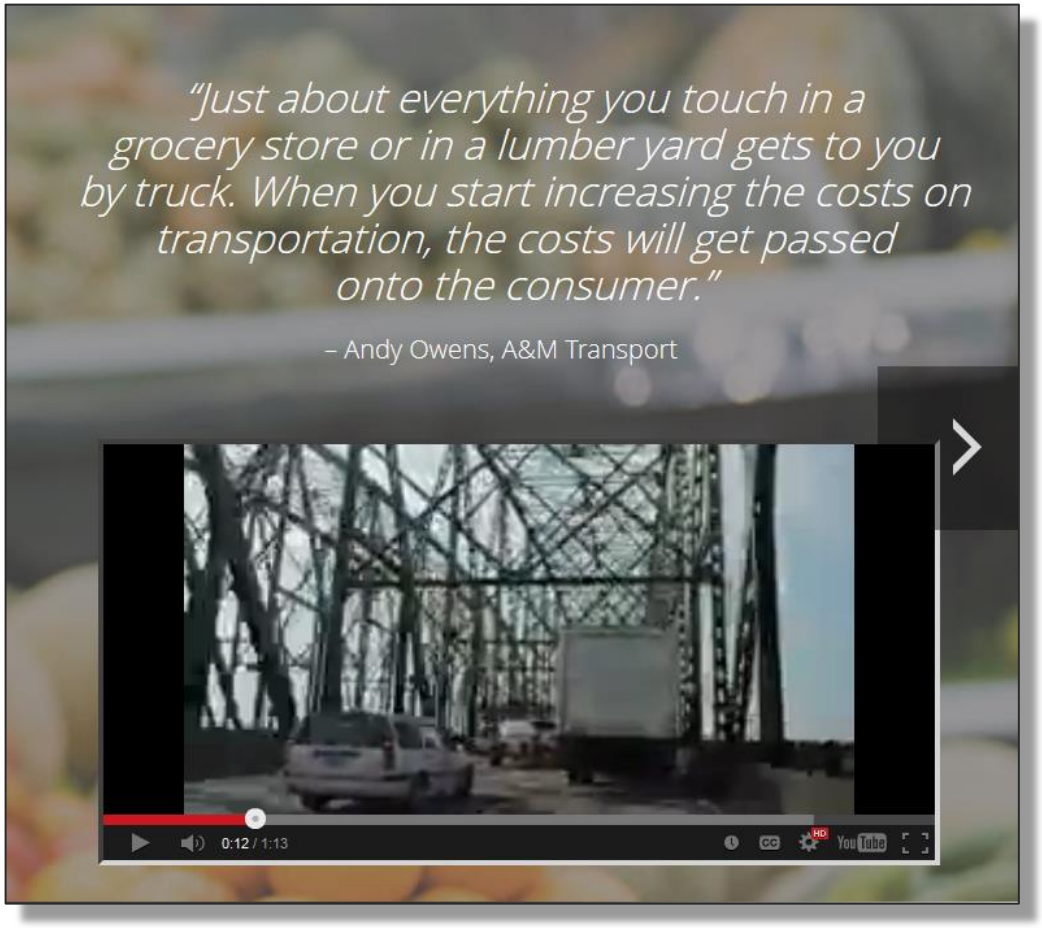
Engaging Consumers



Andy Owens video

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Oregon Climate Change Campaign

Engaging Consumers

Matt Miller video

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Washington Climate Change Campaign

Engaging Consumers

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Washington Climate Change Campaign

Washington Consumers
FOR SOUND FUEL POLICY

LOW CARBON FUEL STANDARD
An Infeasible Solution To A Serious Pro

As adopted elsewhere (California), a Low Carbon Fuel Sta
mandates the reduction of carbon intensity of conventiona
diesel – as a strategy to reduce greenhouse gas emissions

While the coalition supports appropriate and cost effectiv
fuel and energy policies, a LCFS has been shown to be an
that will likely result in fuel supply disruptions and extreme
volatility. At a time when job creation and economic growt
State should be Olympia's number one focus, regulations
address climate change must be carefully considered. As
a LCFS regulation could adversely impact the state's econ
markets.

The potential economic consequences of a California LCF
in a Boston Consulting Group report entitled *Understandi*
AB 32 dated June 2012 and updated in October 2013. If
implemented in Washington State we believe similar impa
occur here at home. More detailed Washington State mod
develop definitive impacts in Washington if a LCFS were t

LCFS Could Put Washington's Economy, Businesses, an
The Boston Consulting Group (BCG) report determined th
would likely result in the closure of up to half of California
In addition the report projected a loss of 28,000-51,000 jo
billion in lost tax revenue to state and local governments.

A LCFS could create fuel shortages if fuel providers are ur
the regulation, leaving them no choice but to reduce fuel
competition for scarce low-carbon biofuels could result in
costs, which could be passed along to businesses and cor
cost of doing business increases, employers are left with i
decisions which can lead to job loss, greater unemployme
economic growth.

According to a Charles River Associates study, a national L
to major compliance costs that could drastically increase f
Indeed, the study found consumer costs could rise betwe
within five years of adoption of a national LCFS regulation

Pointing to the further infeasibility of a LCFS, the Washing
Association warned in a 2010 letter that LCFS regulations
cost of consumer products because businesses often rely
deliver their goods to market.

www.wasou

Washington Consumers
FOR SOUND FU

**PROJECTED COSTS/IMPACTS OF A L
CARBON FUEL STANDARD**

*No one knows exactly how much a Low Carbon Fuel Standard (LCF
cost Washington State's economy but the estimates are high:*

- ✓ **Washington State Estimate – Climate Legislative and Execut
Workgroup (CLEW)** – Leidos (formerly Scientific Applications
International Corp.), the CLEW's expert consultants, estimate
that the cost of gas and diesel fuels would have to increase bet
$0.93 and $1.18 per gallon for a state LCFS to produce results.
LCFS program was identified as one of the most expensive
strategies for reducing greenhouse gas emissions.
- ✓ **California Estimate – Boston Consulting Group Analysis** – Th
proposal reviewed by the CLEW appears to be modeled after
program. The Boston Consulting Group (BCG) has estimated t
compliance costs there will be between $0.33 and $1.06 per g
analysis also shows that these costs are likely to climb as scarce
credits become more expensive and if other states impose sim
legislation.

*A variety of other potential costs and impacts have been identified
to a potential LCFS. These include:*

- ✓ **Potential loss of manufacturing jobs** – BCG projected that cu
California's refinery capacity as a result of the LCFS would resul
loss of 28,000 to 51,000 jobs in that state. This did not include
potential for job losses in other industries as the result of increa
costs or supply constraints. Washington State's refining industry
be similarly affected.
- ✓ **Potential loss of tax revenues** – The BCG report estimated tha
and local governments around California would lose $4 billion
in tax payments as a result of that state's LCFS. Again, critical ta
in Washington would be at risk.
- ✓ **Potential impact on transportation funding** – The Washingto
Association has already indicated that its members' support for
transportation funding package is waning in light of concern re
potential fuel cost impacts of a LCFS and other climate-related
that would likely impact fuel availability and costs.

*In addition to meeting the transportation and other needs of Wash
families and businesses, Washington's five refineries support more
jobs, create $1.7 billion in economic activity, and pay more than $2
in taxes each year. The costs of a state Low Carbon Fuel Standard
these economic benefits at risk.*

www.wasoundfuel

Washington Consumers
FOR SOUND FUEL POLICY

SUPPORT FORM:
Join Our Coalition

A low carbon fuel standard is not ready for prime time in Washington.

You may publicly list our organization as being opposed to a low carbon fuel standard for Washington, and list our group as a member of the Washington Consumers for Sound Fuel Policy.

(Please print.)

Organization or Business Name

Title *Printed Name*

Street Address

City *State* *Zip*

Phone *Fax* *Email*

Authorized Signature: _____ *Date* _____

Please return the form to Greg Hanon: greg@greghanon.com

Revised 06/18/2014

Our Members Include:

- Association of Washington Business
- Associated General Contractors
- Automotive United Trades Organization (AUTO)
- National Federation of Independent Businesses – Washington
- Northwest Pulp & Paper Association
- Washington Aggregates & Concrete Association
- Washington Asphalt Pavement Association
- Washington Construction Industry Council
- Washington Food Industry Association
- Washington Highway Users Federation
- Washington Oil Marketers Association
- Washington Trucking Associations
- Western States Petroleum Association
- Western Wood Preservers Institute

www.wasoundfuelpolicy.org

ENERGY PROUD

California Climate Change Campaign

Engaging Consumers

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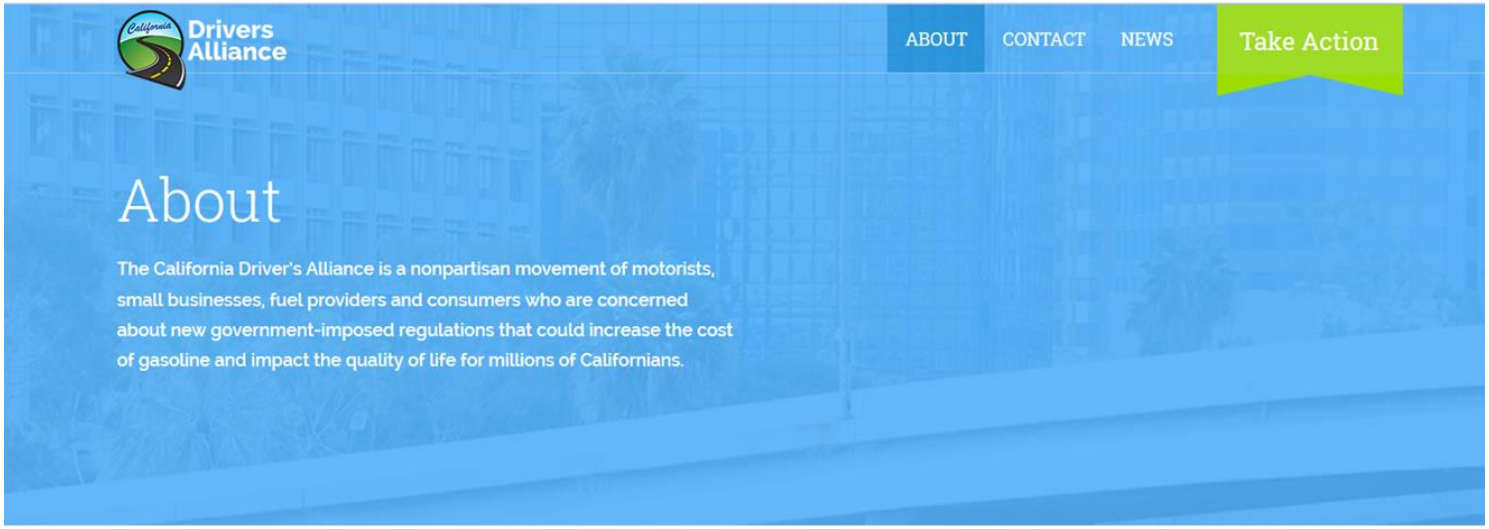
California Climate Change Campaign



About the Hidden Gas Tax Campaign

On January 1, 2015, the California Air Resources Board (CARB) will expand the state's cap-and-trade program to include gasoline and diesel fuels for the first time ever. This expansion could increase the cost of gasoline from 16 cents per gallon to as much as 76 cents per gallon or more, according to CARB.

CARB has made no effort to educate the public about the program expansion or its expected impact on gas prices. In fact, nearly 70 percent of Californians are unaware that it is coming. That's why motorists, small businesses and consumers are calling this program a "hidden gas tax."

This new gas tax will hurt the very people who can least afford to pay more at the pump – working families, small businesses, and lower income consumers. It will cost jobs. And it will create a "Greenhouse Gas Reduction Fund" worth billions of dollars for Sacramento lawmakers to spend at their discretion – with no input from those of us footing the bill.

> The cap-and-trade system should not be used to raise billions of dollars in new state funds at the expense of consumers who are struggling to get back on their feet after the recession.
>
> — Henry T. Perea, Assemblymember

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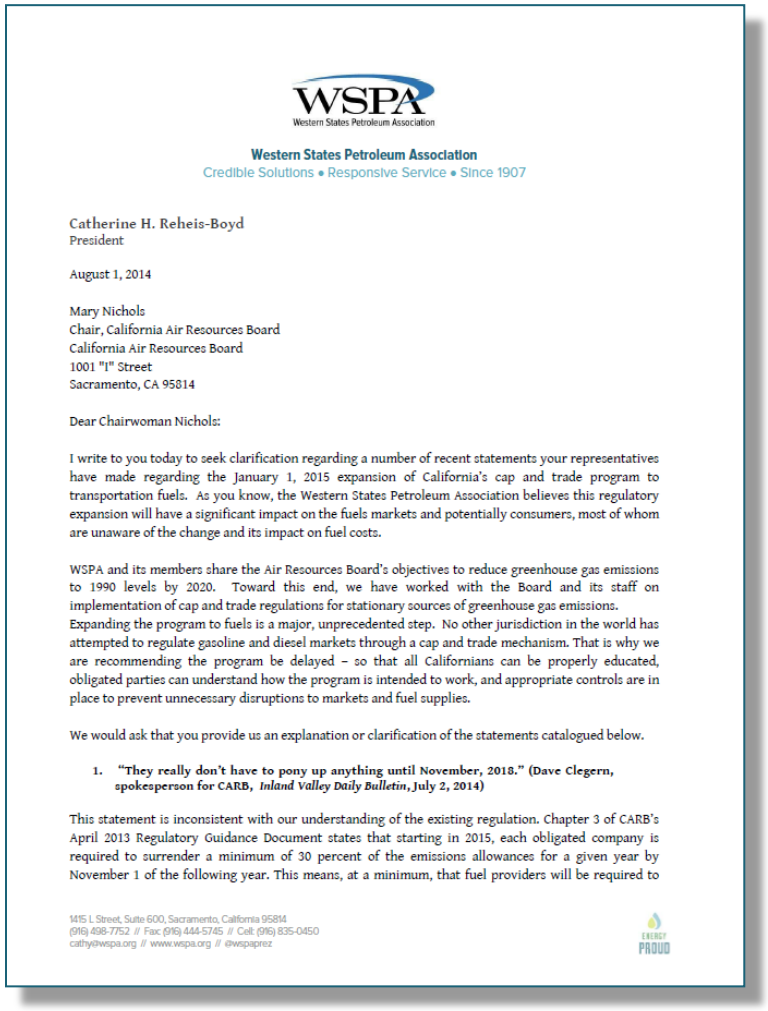
California Climate Change Campaign



WSPA
Western States Petroleum Association

Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Catherine H. Reheis-Boyd
President

August 1, 2014

Mary Nichols
Chair, California Air Resources Board
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Dear Chairwoman Nichols:

I write to you today to seek clarification regarding a number of recent statements your representatives have made regarding the January 1, 2015 expansion of California's cap and trade program to transportation fuels. As you know, the Western States Petroleum Association believes this regulatory expansion will have a significant impact on the fuels markets and potentially consumers, most of whom are unaware of the change and its impact on fuel costs.

WSPA and its members share the Air Resources Board's objectives to reduce greenhouse gas emissions to 1990 levels by 2020. Toward this end, we have worked with the Board and its staff on implementation of cap and trade regulations for stationary sources of greenhouse gas emissions. Expanding the program to fuels is a major, unprecedented step. No other jurisdiction in the world has attempted to regulate gasoline and diesel markets through a cap and trade mechanism. That is why we are recommending the program be delayed – so that all Californians can be properly educated, obligated parties can understand how the program is intended to work, and appropriate controls are in place to prevent unnecessary disruptions to markets and fuel supplies.

We would ask that you provide us an explanation or clarification of the statements catalogued below.

1. **"They really don't have to pony up anything until November, 2018." (Dave Clegern, spokesperson for CARB, *Inland Valley Daily Bulletin*, July 2, 2014)**

This statement is inconsistent with our understanding of the existing regulation. Chapter 3 of CARB's April 2013 Regulatory Guidance Document states that starting in 2015, each obligated company is required to surrender a minimum of 30 percent of the emissions allowances for a given year by November 1 of the following year. This means, at a minimum, that fuel providers will be required to

1415 L Street, Suite 600, Sacramento, California 95814
(916) 498-7752 // Fax (916) 444-5745 // Cell: (916) 835-0450
cathy@wspa.org // www.wspa.org // @wspaprez

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"This program, unless delayed or modified, will have a major impact on California fuel markets and very possibly, consumers. We believe the State has an obligation to Californians to provide widely available, accurate and consistent information."

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California Climate Change Campaign

SAN DIEGO - California already has the highest gas prices in the nation, and any further increase could adversely impact family budgets, our economy, and small businesses.

"Higher taxes, employer mandates, and generally anti business legislation seems to be the only thing that comes out of our elected officials," said Ann Kinner.

Ann Kinner is chair of the local chapter of the National Federation of Independent Business.

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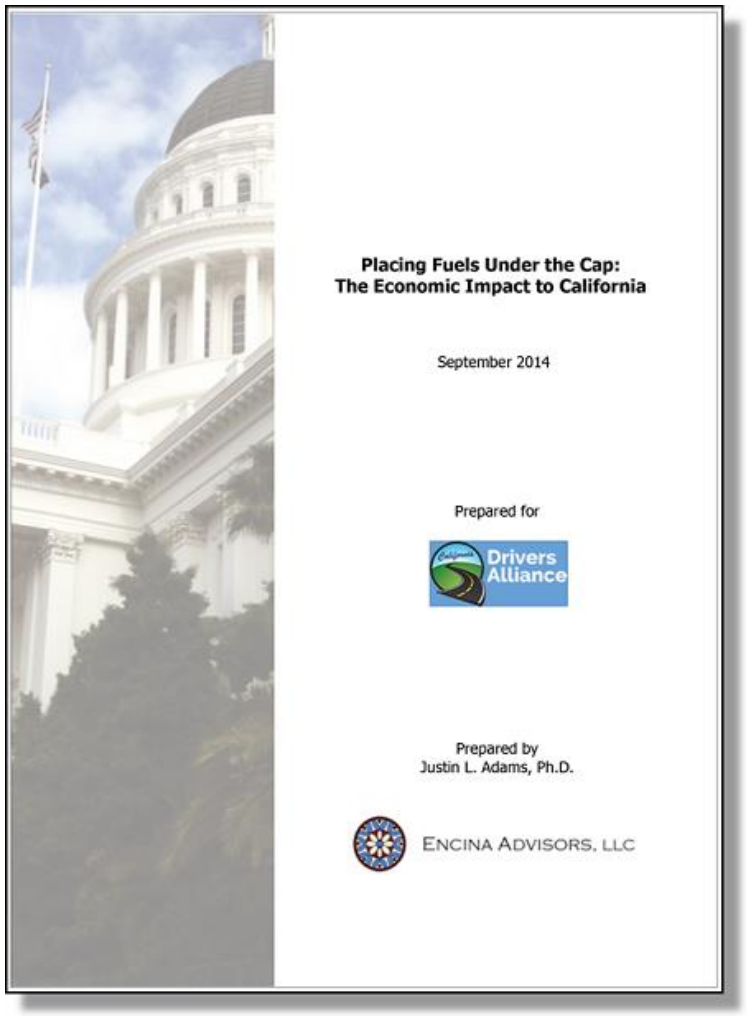
California Climate Change Campaign



"From our analysis, we anticipate a 76 percent likelihood of allowance prices adding around $0.10 per gallon of gasoline in 2015 and around $0.12 per gallon in 2020 (both in 2012 dollars). Here, allowance prices would be near the Auction Reserve Price (ARP). This would cause net job losses in California of 18,050 jobs in 2015 and a net reduction in economic output of $2.940 billion as households across the state cut back their spending to afford higher priced gas."

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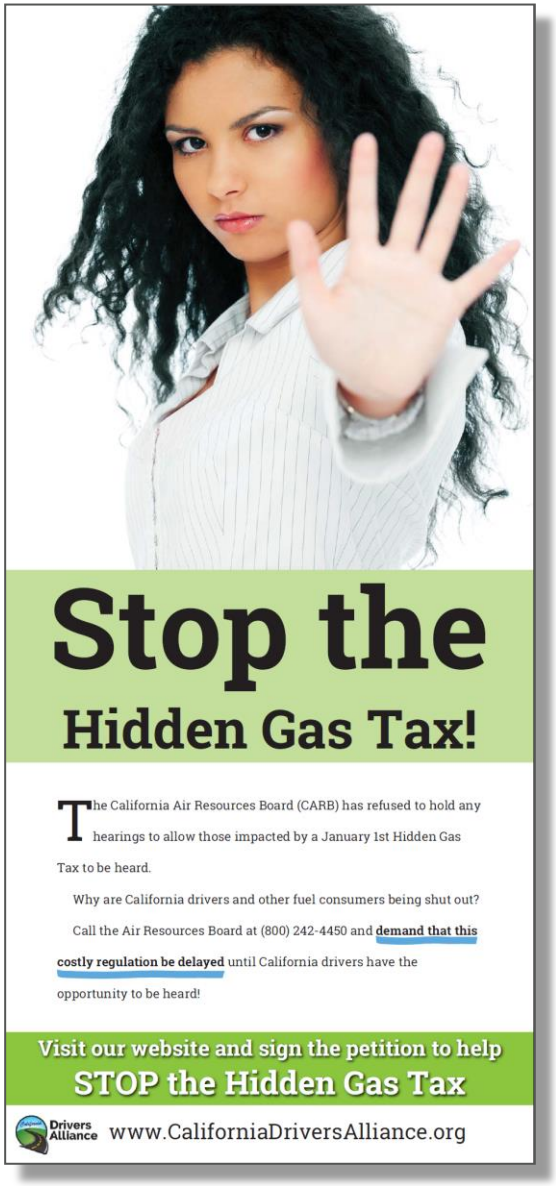
Washington Climate Change Campaign

Engaging Politically

California Climate Change Campaign

Engaging Politically



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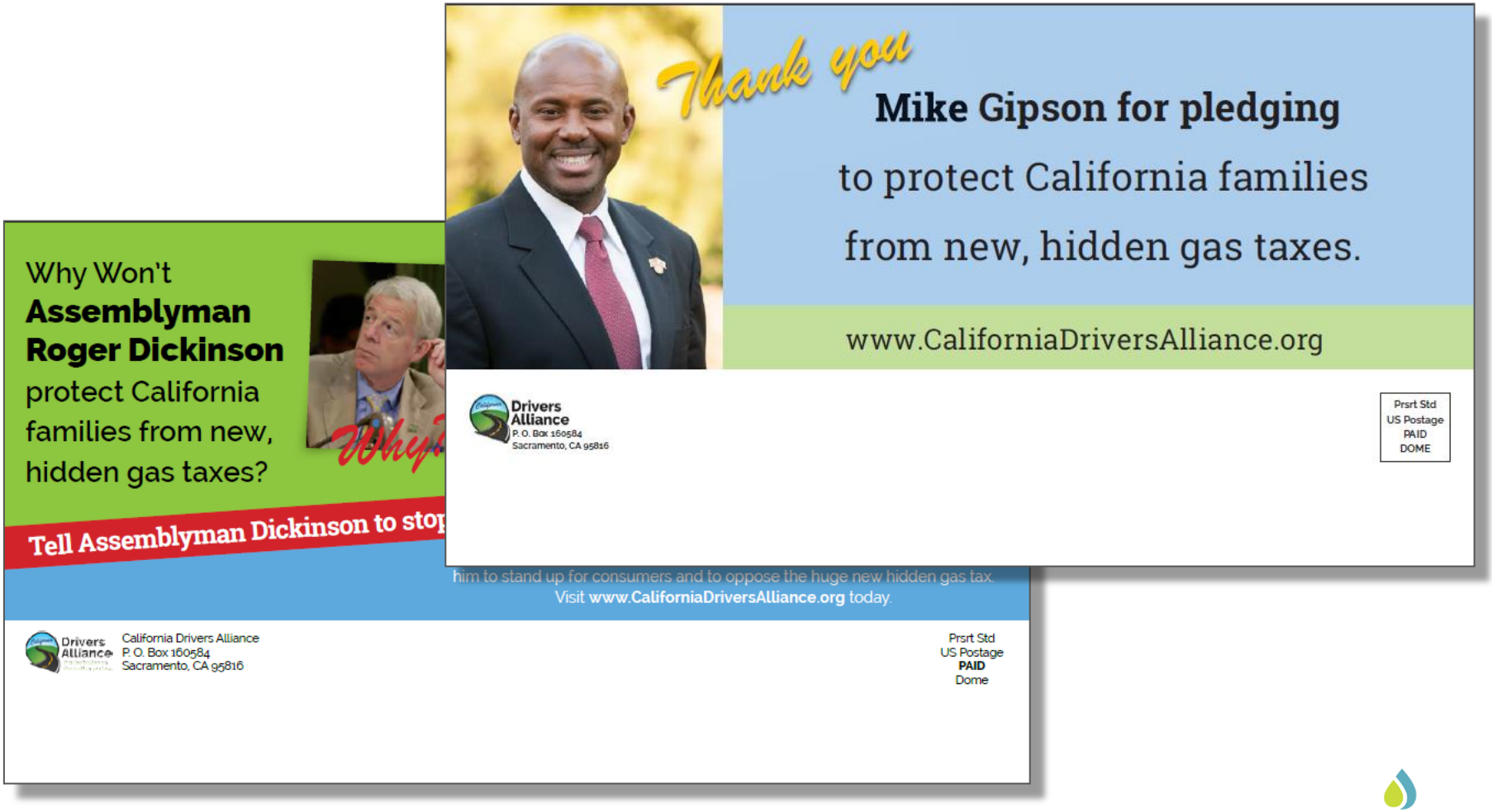
California Climate Change Campaign

Engaging Politically



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Oregon Climate Change Campaign

Engaging Politically

Take Action Now

Ask your legislator to oppose the hidden gas tax!

Join the conversation on Facebook

Follow us on Twitter

TAKE ACTION NOW: Ask your legislator to oppose the hidden gas tax!

Politicians in Oregon are considering a Low Carbon Fuel Standard (LCFS), otherwise known as the Clean Fuels Program. If implemented, it will become a new hidden gas tax designed to increase your cost of fuel.

These policies hurt poor and middle income families the most. And because these policies are not transparent, consumers often have no idea why their fuel costs are rising.

Gov. Kitzhaber has made it clear he plans to move forward with a LCFS – even without the support of the state's elected legislators.

Together, we can stop them.

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Follow along on Twitter

@WSPAPREZ

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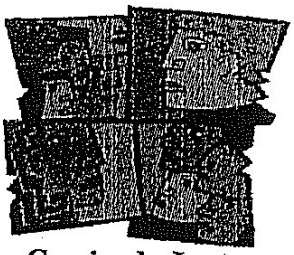

Creciendo Juntos
111 Monticello Avenue – Suite 104 – Charlottesville, VA 22902

June 16, 2009

The Honorable Congressman Tom Perriello
1520 Longworth HOB
Washington, DC 20515

Dear Congressman Perriello:

My organization Creciendo Juntos, represents minorities in your district. Creciendo Juntos has worked on behalf of the Latino and Hispanic Community in Charlottesville since 2005.

You are about to vote on important environmental legislation (the Waxman-Markey bill). We support making the environment cleaner, but the reason we are writing is that we are concerned about our electric bills. Many of our members are on tight budgets and the sizes of their monthly utility bills are important expense items. The cost to heat and cool our homes, run hot water and use other appliances is very important to those on a budget.

Our state gets 56% of its electricity from coal. We urge you to pass legislation that reduces greenhouse gases but at the same time protects consumers from unaffordable increases in the basic necessity of electricity.

We ask you to use your important position to help protect minorities and other consumers in your district from higher electricity bills. Please don't vote to force cost increases on us, especially in this volatile economy. We urge you to make pro-consumer changes in the Waxman-Markey bill to protect minorities and all of your constituents from unaffordable energy cost increases.

Respectfully,

Marisse K. Acevado, Asst Member Coordinator
Creciendo Juntos

703 – C Concord Avenue – Charlottesville, VA 22902

June 12, 2009

1520 Longworth HOB
Washington, DC 20515

Dear Congressman Perriello:

My organization, the NAACP- Charlottesville, represents minorities in your district. The NAACP has a long history of advocacy on behalf of all American citizens.

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William Ernst – Pro Temp
NAACP –Charlottesville

703 – C Concord Avenue – Charlottesville, VA 22902

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Respectfully,

Sheila Dowe

Sheila Dowe
NAACP –Charlottesville

703 – C Concord Avenue – Charlottesville, VA 22902

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We ask you to use your important position to help protect minorities and other consumers in your district from higher electricity bills. Please don't vote to force cost increases on us, especially in this volatile economy. We urge you to make pro-consumer changes in the Waxman-Markey bill to protect minorities and all of your constituents from unaffordable energy cost increases.

Respectfully,

T. J. Hudson

T.J. Hudson
NAACP –Charlottesville

703 – C Concord Avenue – Charlottesville, VA 22902

June 12, 2009

1520 Longworth HOB
Washington, DC 20515

Dear Congressman Perriello:

My organization, the NAACP- Charlottesville, represents minorities in your district. The NAACP has a long history of advocacy on behalf of all American citizens.

You are about to vote on important environmental legislation (the Waxman-Markey bill). We support making the environment cleaner, but the reason we are writing is that we are concerned about our electric bills. Many of our members are on tight budgets and the sizes of their monthly utility bills are important expense items. The cost to heat and cool our homes, run hot water and use other appliances is very important to those on a budget.

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Respectfully,

Marilyn Williams
NAACP –Charlottesville

703 – C Concord Avenue – Charlottesville, VA 22902

June 12, 2009

1520 Longworth HOB
Washington, DC 20515

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Respectfully,

Rebecka Shields
NAACP –Charlottesville

#2

Information
Council
for the Environment

May 15, 1991

(name)
(title)
(company)
(address)
(city), (state) (zip)

Thank you for requesting additional information on global climate change.

The science of global climate change is very complex. We are still learning how many of the components of our atmosphere interact with each other. We do know that years ago the Earth was warmer; vegetation thrived, and there was more carbon dioxide in the atmosphere than there is now. We also know that during the last ice age, carbon dioxide levels were lower than they are now.

We believe it is wrong to predict that higher levels of carbon dioxide will bring a catastrophic global warming.

The Information Council for the Environment was created to help foster better public understanding of global warming and to ensure that any legislation passed by Congress is based on scientific evidence.

The environment must be protected. We want a clean environment and we want a green Earth. *We also believe we must conduct more scientific research before we can accurately understand the complex forces of global climate change.*

Change often begins with one person. You can make a difference by sharing what you've learned with others.

Thank you for caring enough to request this additional information.

Dr. Patrick Michaels

P.O. Box 614908 / Kansas City, MO 64141-4908 / 1-800-346-6269

Information
Council
for the Environment

May 15, 1991

X
X
X
X

Thank you for requesting more information about global climate change. I've been asked to respond to your request as a member of the Information Council for the Environment's Science Advisory Panel.

I'll give you some background on my credentials. I am a professor at the University of Virginia. My area of expertise is environmental sciences. I am also one of many scientists who believe the vision of catastrophic global warming is distorted. I have enclosed a copy of a letter and a fact sheet to help you better understand why we believe we should not act in haste.

The enclosed letter, which was sent to President Bush in February, was co-written by Dr. Robert Balling of Arizona State University and myself. As you'll note, we urge the President not to support expensive legislation.

I'm sure you'll agree after you review the information I've enclosed, global warming is an issue we are still learning about. In fact, just two months ago, a panel of scientists who advise the United Nations suggested a 10-year research effort to answer the many uncertainties about global warming. To quote the article, "A 10-year delay in taking action to curb global warming would mean little further increase in the level of warming predicted by the end of the next century..."

But there's more to this issue. Right now, there are costly proposals in Congress--including one that would impose a new tax on energy. The intended purpose is to reduce carbon dioxide emissions and global warming.

What can you do?

1. Make sure you're informed. Your request for this information is a good first step.

2. If you'd like to know more, return the enclosed postcard and we'll send you more information on global climate change.

Thank you for caring enough to send for this information.

Dr. Patrick Michaels

#1

Information
Council
for the Environment

May 15, 1991

(name)
(title)
(company)
(address)
(city), (state) (zip)

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Thank you for caring enough to send for this information.

Dr. Patrick Michaels

P.O. Box 414998 / Kansas City, MO 64141-4998 / 1-800-346-6269

Information
Council
for the Environment

May 15, 1991

X
X
X
X

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#2

Information
Council
for the Environment

May 15, 1991

(name)
(title)
(company)
(address)
(city), (state) (zip)

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Dr. Patrick Michaels

P.O. Box 414998 / Kansas City, MO 64141-4998 / 1-800-346-6269

May 2, 1991

Bill Brier
Edison Electric Institute
701 Pennsylvania Avenue N.W.
Washington, DC 20004-2696

Information Council for the Environment Test Market Ad Materials

Enclosed are the newspaper and radio ads as they will be running in Fargo, Flagstaff, and Bowling Green when our test campaign begins on May 12. We are still in production on a Bob Balling radio ad titled "Kentucky Colder" to be run only in Bowling Green. That ad will be completed next week and we'll send you your copy when we receive it.

Here's a listing of what you'll find in this packet:

1. Five newspaper ads
2. Schedule of the radio spots and newspaper ads for each market
3. Four sixty-second radio commercials (on tape), two scripts
4. Public Relations tour schedule*
5. Copy of letters that respondents requesting information will receive

*Schedule includes Fargo and Flagstaff. Bowling Green schedule with Dr. Pat Michaels will be completed next week.

The advertising will begin with full-page newspaper ads in each of the markets on May 12. The campaign will conclude on Sunday, June 9. Three full-page, two-color newspaper ads will run each of the four weeks of this campaign.

The cassette tape contains the four radio ads that will run in Flagstaff. The first two weeks of the schedule will feature the Dr. Bob Balling commercials exclusively. The final two weeks of the radio campaign will be an equal rotation of Dr. Balling and Bruce Williams.

The commercial rotations in Fargo and Bowling Green will differ. The scripts of the Rush Limbaugh commercials apply only to Fargo. These commercials will air in only the Rush Limbaugh radio program (11 AM to 1 PM, Monday through Friday.) In Fargo, Bruce Williams commercials will also run in only his Monday through Friday, 6 PM to 9 PM program. Dr. Balling commercials will air in all other Fargo radio schedules. We will send you the tape of the Rush Limbaugh radio commercials next week.

In Bowling Green, we will rotate three Dr. Balling commercials for the entire length of the radio schedule. The "Kentucky Colder" commercial will receive increased scheduling during the first two weeks of the campaign. The radio schedule will reach approximately 85% of our adult 25-54 target audience approximately 19 times in the four weeks of this campaign. This is a four-week, 1,600 gross rating point radio schedule.

The combined newspaper and radio reach is estimated to be 97% of our adult 25-54 target audience, with a combined frequency of 35.

We will begin follow-up research on Saturday, June 15, to determine the results of this campaign. Those results will be reported to all of our sponsors by August 5, 1991.

We appreciate all the help you've provided to make this test possible. Don't hesitate to call me if we can be of further assistance.

Fred Lukens

FL/sm

cc: Gale Klappa

INFORMED CITIZENS FOR THE ENVIRONMENT

Mission

The mission of the Informed Citizens for the Environment is to develop an effective national communications program to help ensure that action by the Administration and/or Congress on the issue of global warming is based on scientific evidence.

Strategies

1. Reposition global warming as theory (not fact).

2. Target print and radio media for maximum effectiveness.

3. Achieve broad participation across the entire electric utility industry.

4. Start small, start well, and build on early successes.

5. Get the test concepts developed and implemented as soon as possible.

6. "Test market" execution in early 1991.

7. Build national involvement as soon as "test market" results are in hand — summer 1991.

8. Go national in the late fall of 1991 with a media program.

9. Use a spokesman from the scientific community.

Our Plan

1. Build support for the concept of the ICE strategy among our neighbors.

2. Match Southern Company's commitment by having four or five of our neighbors join us in raising $125,000 by January 31, 1991.

3. Raise total commitments of $525,000 by January 31, 1991 to allow the test market project to proceed on schedule.

PUBLIC RELATIONS TOUR

Monday, May 20, 1991

11:00 a.m.	Meet with editors and writers at the Arizona Daily Sun. Dr. Robert Balling from Arizona State University or Dr. Sherwood Idso from the U.S. Water Conservation Laboratory will replace Dr. Michaels for the Flagstaff meetings.
1:00 p.m.	Tape appearance on North Arizona Outlook, weekly public affairs program on KNAZ-TV.
3:00 p.m.	Appearance on KNAU-AM radio talk show.

Client: Information Council for the Environment

Subject: Rush Limbaugh/2

Media: Rush Limbaugh Show Length: 60

Contact: T. Helland/K. Olsen

COPY

simmons advertising, inc.
125 south 4th street / P.O. box 1457
grand forks, north dakota 58206
(701) 746-4573 / fax: (701) 746-8067

GLOBAL WARMING. I KNOW YOU'VE BEEN SEEING MORE AND MORE STORIES ABOUT THE GLOBAL WARMING THEORY. STORIES THAT PAINT A HORRIBLE PICTURE. STORIES THAT SAY THE POLAR ICE CAPS WILL MELT. STORIES THAT SAY WE SHOULD BE PREPARED FOR CATASTROPHE. WELL GET REAL! STOP PANICKING! I'M HERE TO TELL YOU THAT THE FACTS SIMPLY DON'T JIBE WITH THE THEORY THAT CATASTROPHIC GLOBAL WARMING IS TAKING PLACE. TRY THIS FACT ON FOR SIZE. MINNEAPOLIS HAS ACTUALLY GOTTEN COLDER. SO HAS ALBANY, NEW YORK. AND THE DEPARTMENT OF AGRICULTURE SAYS THAT ON BOTH COASTS OF THIS COUNTRY, WINTER TEMPERATURES ARE FIVE TO TEN DEGREES COOLER THAN PREVIOUSLY REPORTED. SO FOLKS, GRAB HOLD OF YOURSELVES AND GET THE WHOLE STORY BEFORE YOU MAKE UP YOUR MIND. RIGHT NOW, YOU CAN GET A FREE PACKET OF EASY-TO-UNDERSTAND MATERIAL ABOUT GLOBAL WARMING. JUST CALL THIS NUMBER: 1-800-346-6269 EXTENSION 505. THAT'S THE INFORMATION COUNCIL FOR THE ENVIRONMENT. AFTER YOU READ THE FREE MATERIALS THEY SEND YOU, YOU'LL HAVE A BETTER PICTURE OF WHAT THE FACTS ARE ALL ABOUT. THAT'S 1-800-346-6269 EXTENSION 505. CALL TODAY. BECAUSE THE BEST ENVIRONMENTAL POLICY IS BASED ON FACT.

May 2, 1991

Bill Brier
Edison Electric Institute
701 Pennsylvania Avenue N.W.
Washington, DC 20004-2696

Information Council for the Environment Test Market Ad Materials

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Fred Lukens

FL/sm

cc: Gale Klappa

This report summarizes results of a benchmark survey of public awareness and opinion on issues related to global warming conducted in Chattanooga, Tennessee, Fargo, North Dakota, and Flagstaff, Arizona.

Methodology

The survey is based on a total of 1500 interviews, 500 in each of the three cities included in the sample. All interviews were conducted by telephone between February 13 and February 22, 1991. Other important points include the following:

- For each sample of 500 the margin of error is +/-4.4 percentage points at the midpoint of the 95% confidence interval;
- All interviews were conducted by trained, professional interviewers under the supervision of the Cambridge Reports Field Department;
- After the interviewing was completed, a 10% sample of the interviews was independently validated to ensure that proper interviewing techniques were followed;
- All interviews were returned to Cambridge Reports for coding and data processing.

Objectives

The survey and analysis were conducted to identify the following:

- Current awareness of and familiarity with the global warming issue;
- Recent exposure to information concerning global warming, including the types of media and sources in which the information appeared;
- Responses to various messages concerning global warming;
- Assessments of the credibility of various spokespersons and groups on topics related to global warming;
- Key audiences and media for messages concerning global warming.

technical sources also favor choosing the title "Information Council on the Environment" as the title for ICE, since this organization is perceived as a technical source, while "Informed Citizens for the Environment" carries both technical and activist connotations.

As a general strategy, we recommend that ICE concentrate on comparing possible solutions to the global warming problem, focusing in particular on the proper role of government, the need for research, and the costliness of inappropriate or premature legislation. The audience for these messages needs to see its personal stake in the issue if they are to become actively engaged and committed.

More specifically, the results of this study point toward two possible target audiences. One possible target audience includes those who are most receptive to messages describing the motivations and vested interests of people currently making pronouncements on global warming--for example, the statement that some members of the media scare the public about global warming to increase their audience and their influence. People who respond most favorably to such statements are older, less-educated males from larger households, who are not typically active information-seekers, and are not likely to be "green" consumers. Members of this group are skeptical about global warming, predisposed to favor the ICE agenda, and likely to be even more supportive of that agenda following exposure to new information. They are not, however, accustomed to taking political action. They are good targets for radio advertisements.

Another possible target segment is younger, lower-income women. These women are more receptive than other audience segments to factual information concerning the evidence for global warming. They are likely to be "green" consumers, to believe the earth is warming, and to think the problem is serious. However, they are also likely to soften their support for federal legislation after hearing new information on global warming. These women are good targets for magazine advertisements.

A campaign strategy reaching out to these target groups can help to change attitudes where change is most likely to occur, and also to strengthen support among favorable members of the public.

- Overall, a plurality of respondents choose the most conservative role for the federal government. Over one-third (36%) of the total sample (three cities combined) say the government should finance more research, while 30% support passage of legislation, and 24% would pass some laws but avoid costly programs.

- Similar to responses on other measures, Flagstaff residents (39%) are more likely than residents of Chattanooga or Fargo (25% each) to back federal legislation without any qualification concerning cost.

Specific responses to an open-ended question indicate that depletion of the ozone layer dominates top-of-mind concerns about global warming.

- Asked to describe global warming in their own words, just over one-quarter of all respondents cite destruction of the ozone layer, followed closely by changes in the weather and rises in temperature caused by pollution.

- Only 6% of all respondents name the greenhouse effect when asked to describe what global warming means to them.

Audience profile

In addition to perceptual and attitudinal measures, we also asked respondents about certain behaviors which might make them more or less receptive to information on global warming, and may also indicate the likelihood that they might take action on global warming issues. These behavioral measures are included frequently in the analyses discussed in this report, and include political activism, environmental activism, and likelihood of information-seeking.

- Looking at results for one measure of political activism, just under one-quarter (24%) of all respondents either contacted an elected official, wrote to an editor, or worked for a political candidate during the last year. Political activism is more common in Flagstaff (31%) than in either Chattanooga (22%) or Fargo (18%).

- Overall, 36% of all respondents have contributed to or been active in an environmental cause during the past year, and 22% identify strongly with the label "environmentalist." Combining these two measures, we find that 13% of all respondents in this survey meet the Cambridge Reports definition for "green" consumers--very close to our most recent national figure of 12% (March 1991).

Finally, the two statements referring directly to scientists say that scientists don't know whether carbon dioxide is causing global warming, and that some of the scientists predicting global warming said twenty years ago that the earth was getting colder.

- On average, respondents are as likely to agree with statements about motivations behind public information on global warming as they are to agree with statements about the evidence for global warming.
- On average, respondents are less likely to agree with statements about scientists and their theories than they are to agree with statements about motivations for public information or statements about evidence for global warming.
- Respondents are most likely to agree with the statement that recent satellite data shows the earth is getting warmer.
- Percentages of "don't know" responses reveal that members of the public feel more comfortable expressing opinions on others' motivations and tactics than they do expressing opinions on scientific issues. Nearly all respondents provide ratings for statements on motivations, while somewhat fewer express opinions on evidence, and still fewer are willing to pass judgment on scientists.

To explore these three types of messages further, we calculated an index for each set of statements (motivation, evidence, and scientists), based on results of the factor analysis. We then divided the sample into low, medium, and high agreement with each index, or set of items, to identify groups most likely to agree or disagree with each type of message.

- A plurality of Chattanooga residents agrees strongly with motivational statements saying that some groups scare the public about global warming to promote their own economic interests, while Flagstaff residents are most likely to disagree with these statements, and Fargo residents most often take a moderate position.
- Based on results for the evidence index, Fargo residents are least likely to agree that current evidence supports global warming, while Flagstaff residents are more likely to accept the evidence. Chattanooga residents are closely divided between low, moderate, and high agreement, although they are more likely than others to give "don't know" responses.

A factor analysis performed on the fourteen credibility ratings indicates that respondents group information sources into four types: **industry spokespersons** (local electric company, coal industry, Electric Information Council, and Paul Harvey); **activist spokespersons** (Ralph Nader, Sierra Club, Carl Sagan, Informed Citizens for the Environment); **technical spokespersons** (Information Council for the Environment, federal environmental officials, environmental scientist, Informed Citizens for the Environment); and **individual spokespersons** (Bruce Williams, Steven Schneider, Rush Limbaugh). (The second title for ICE--Informed Citizens for the Environment--is perceived as combining attributes of activist and technical sources, and is treated as a member of both groups in the analysis.)

- Technical sources receive the highest overall credibility ratings, followed closely by activist sources.
- Industry sources and individual spokespersons receive lower overall credibility ratings than either activist or technical sources.

Results also include extreme variations in recognition among the different information sources in the list. In fact, combining responses for those who have not heard of a source, do not know the source's credibility on global warming, or cannot rate the source as credible or not credible, the percentage not rating individual sources ranges from 13% (local electric company) to 92% (Steven Schneider).

- Industry sources are rated by more respondents than other types of sources, with the local electric company receiving the most ratings, and Paul Harvey second.
- Individual spokespersons (Bruce Williams, Steven Schneider, Rush Limbaugh) have lower overall recognition than other types of sources, receiving ratings from an average of only 15% of all respondents.
- In general, recognition for activist and technical sources falls in between recognition for industry sources and recognition for individual spokespersons.

- Those who are most likely to find activists credible typically are already familiar with global warming issues, and are likely to seek further information on the topic. They believe the earth is warming, rate the problem as serious, and support action through federal legislation. Demographically, they are most likely to be male, between 36 and 45 years of age, from higher education and income groups, or to be "green" consumers.

- Technical sources receive highest credibility ratings from younger females (especially those from 18 to 25 years of age) with lower incomes and some college education. Members of this group are not familiar with global warming, although they are likely to seek further information, and they are good targets for television advertising. They believe in global warming and support immediate federal legislation. They tend to rate global warming as a serious problem, and to rate it as even more serious after exposure to information on the topic.

Attitude change

As we reported earlier in this report, majorities of respondents see global warming as a problem which is at least somewhat serious, while a plurality endorse a limited role for the federal government in dealing with the problem. To identify audience members who are most likely to undergo attitude change in response to new information, we repeated these two items late in the interview, after respondents had heard the series of statements concerning global warming.

Comparing results on these key attitude measures, we find that exposure to information about global warming, regardless of its slant, leads to increases in perceived seriousness of global warming as a problem--most of those who "switch" attitudes on seriousness of global warming rate the problem as more serious after hearing the statements in the interview. However, the same messages lead to attitude change in both directions on the proper role for the federal government in dealing with global warming--respondents are just as likely to switch to less extreme positions (advocating further research) as they are to switch to more extreme positions (advocating legislation). In general, Chattanooga residents are more likely to change their positions than are residents of either Fargo or Flagstaff.

- Overall, nearly two in ten respondents (19%) rate global warming as more serious after hearing the statements in the interview. Notably, Chattanooga residents (24%) are most likely to switch to a more serious rating, compared with Fargo (19%) or Flagstaff (14%).

Similarly, we looked at associations between attitude change during the interview and the types of messages with which respondents tend to agree.

- Across the board, perceived seriousness of global warming increases with exposure to the statements in the interview.
- The same respondents who express skepticism on global warming issues nevertheless tend to rate the problem as more serious after hearing the statements in the interview.
- Respondents who are most dubious about scientists are likely to change toward supporting research, and away from supporting legislation.
- Those who agree that some sources scare the public for their own ends are more likely to switch toward support of research, and away from support of legislation.
- Those who agree most strongly that the evidence supports global warming are nevertheless more likely to switch toward support of research, and less likely to increase their support for federal legislation on global warming.

Key media

As noted above, three in ten respondents (31%) have heard or seen something about global warming during the last 30 days. To identify existing sources for awareness of global warming, we asked this group to identify the medium that carried the information, as well as whether they saw a news story, a paid advertisement, or both.

- The most common medium for information on global warming is television. Nearly half of Chattanooga residents recalling recent information on global warming name television as a source, compared with fewer than four in ten in Fargo and Flagstaff.
- Residents of the three cities are equally likely to have heard something about global warming on the radio, or to have read something about global warming in a magazine or newspaper.
- Nearly nine in ten of those recalling recent information on global warming say they saw or heard a news story, while one in ten recall both a paid advertisement and a news story.

- Respondents who switch to a less serious rating of global warming are more likely to have received their own information from radio or newspapers, compared with those who switch to a more serious rating.
- Respondents who switch from favoring legislative solutions toward favoring research funding are slightly less likely to have gotten information on global warming from television, compared with those who switch toward favoring legislation.
- Respondents who switch positions either way--toward research, or toward legislation--are unlikely to have gotten information on global warming from radio.
- Those who switch toward research are more likely to receive information on global warming from magazines, compared with those who switch toward legislative solutions.
- Respondents who switch toward favoring research and respondents who switch toward favoring legislation are equally likely to have received information on global warming from newspapers.

Conclusion: communication strategies

The results reviewed above support a series of conclusions concerning the types of sources and messages to which audiences are likely to respond most favorably.

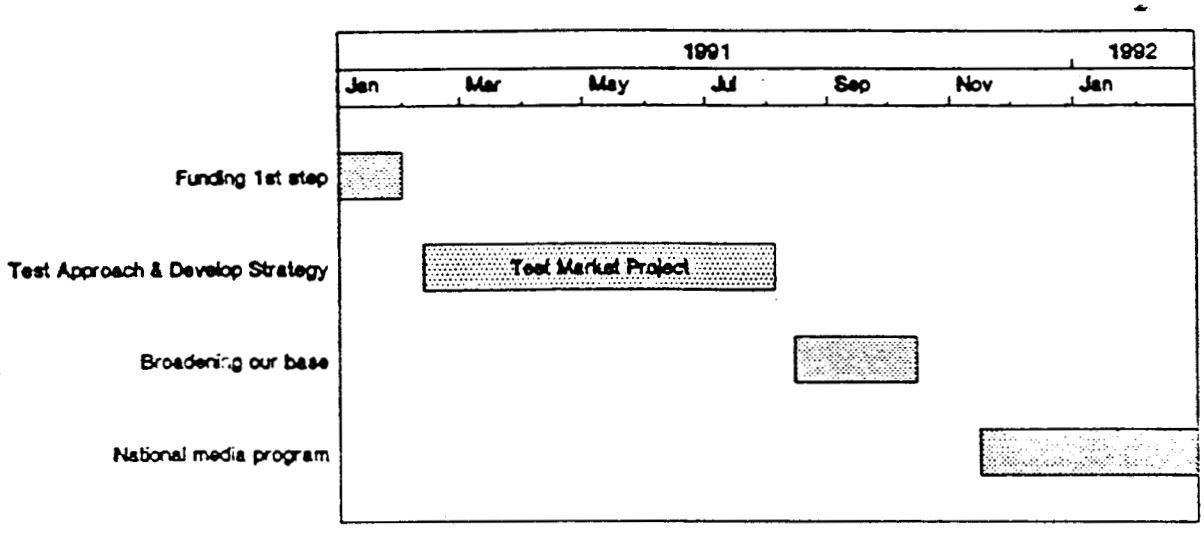
- Technical and expert sources have the highest credibility among a broad range of members of the public.
- The Information Council for the Environment can be seen as an expert technical source.
- Moderate credibility of expert or industry sources is associated with a shift toward the ICE agenda.

Therefore, an "approachable" technical expert can present a good case for a cost-effective solution that meets the joint economic and environmental interests of consumers and industry.

Informed Citizens for the Environment

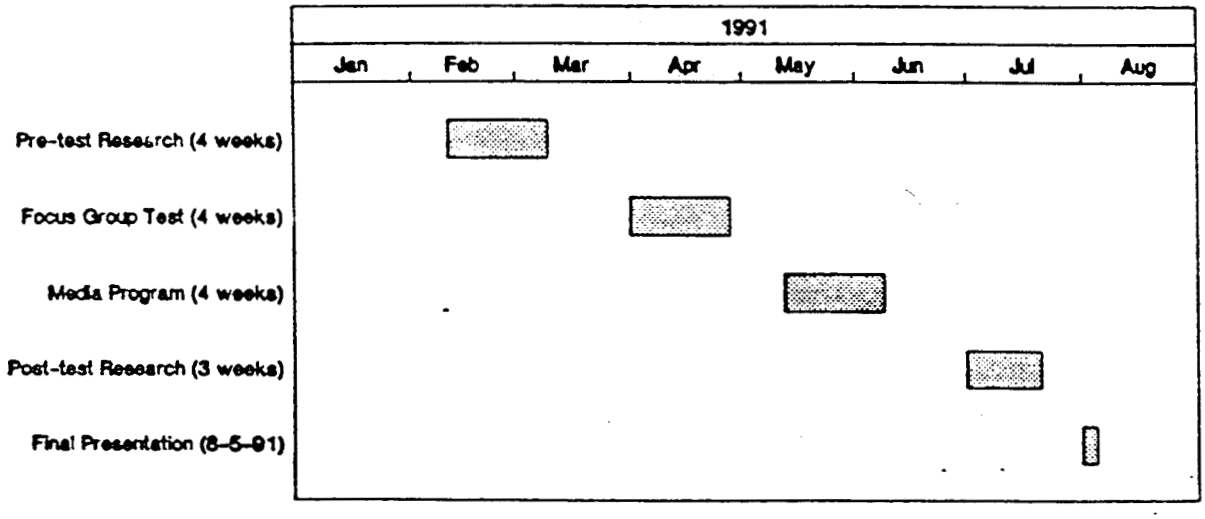
INFORMED CITIZENS FOR THE ENVIRONMENT

Timeline



INFORMED CITIZENS FOR THE ENVIRONMENT

Test Market Project Timeline



I.C.E.

Test Market Proposal

DATES: February, 1991 - August, 1991

OBJECTIVES:

1) Demonstrate that a consumer-based media awareness program can positively change the opinions of a selected population regarding the validity of global warming.

2) Begin to develop a message and strategy for shaping public opinion on a national scale.

3) Lay the solid groundwork for a unified national electric industry voice on global warming.

PROGRAM STRATEGIES:

1) Select test markets that meet the following criteria:

   a) market derives majority of electricity from coal

   b) market is home to a member of the House Energy & Commerce Committee or House Ways & Means Committee

   c) market is smaller than #50, which translates into lower media costs

2) Determine most advantageous population, within specific markets, to base media awareness program.

3) Pre-test opinions of selected population regarding global warming.

4) Focus Group test I.C.E. name and creative concepts.

5) Proceed with media awareness program, utilizing radio/newspaper advertising and a public relations campaign.

6) Post-test opinions of selected population regarding global warming.

7) Program evaluation.

8) If successful, implement program nationwide.

RESEARCH STRATEGY:

Determine most advantageous population, both attitudinally and demographically. Ascertain general level of understanding and measure degree of opinion shifts.

PUBLIC RELATIONS STRATEGY:

The public relations campaign will involve the research, writing and preparation of background materials for use with the media. A minimum of eight discussion points will be communicated to the media.

CREATIVE STRATEGY:

The radio creative will directly attack the proponents of global warming by relating irrefutable evidence to the contrary, delivered by a believable spokesperson in the radio broadcast industry.

The print creative will attack proponents through comparison of global warming to historical or mythical instances of gloom and doom. Each ad will invite the listener/reader to call or write for further information, thus creating a data base.

MEDIA STRATEGY:

A radio/newspaper execution is recommended for the following reasons:

a) believability

b) ability to use high frequency (radio) and detailed copy (newspaper)

c) cost effectiveness

d) production flexibility

FUNDING:

For the test markets, splitting costs evenly among five participating utilities is recommended. If the program is implemented on a national basis, it might be better to determine proportionate shares based on coal-produced kWh.

The test market funds will be collected as follows:

First 1/3 of commitment	*2/1/91*
Second 1/3 of commitment	*3/1/91*
Remainder of commitment	*4/1/91*

TIMELINE:	*Pre-test Research (4 weeks)*	*2/11/91 - 3/10/91*
	(3 weeks)	
	Focus Group Test (4 weeks)	*4/1/91 - 4/28/91*
	(2 weeks)	
	Media Awareness Program (4wks)	*5/13/91 - 6/9/91*
	(3 weeks)	
	Post-test Research (3 weeks)	*7/1/91 - 7/21/91*
	(2 weeks)	
	Final Presentation	*8/5/91*

BUDGET: *$510,000 (three markets)*

Chattanooga, Tennessee
Test Market

MEDIA (1200 GRPs/8 full-page ads)

$ 75,000

PUBLIC RELATIONS

$ 24,000

RESEARCH (500 interviews in each of two surveys/Focus Group)

$ 43,000

PRODUCTION (Radio/Newspaper/Phone Number/Brochure/Postage)

$ 54,000

TOTAL. $196,000

Champaign, Illinois
Test Market

Terry Bruce/House Energy & Commerce Committee

MEDIA (1200 GRPs/8 full-page ads)

$ 53,000

PUBLIC RELATIONS

$ 24,000

RESEARCH (500 interviews in each of two surveys)

$ 43,000

PRODUCTION (Radio/Newspaper/Phone Number/Brochure/Postage)

$ 54,000

TOTAL. $174,000

Flagstaff, Arizona
Test Market

MEDIA (1200 GRPs/8 full-page ads)

$ 25,000

PUBLIC RELATIONS

$ 24,000

RESEARCH (500 interviews in each of two surveys)

$ 43,000

PRODUCTION (Radio/Newspaper/Phone Number/Brochure/Postage)

$ 54,000

TOTAL. $146,000

Fargo, North Dakota
Test Market

Byron Dorgan/House Ways & Means Committee

MEDIA (1200 GRPs/8 full-page ads)

$ 47,000

PUBLIC RELATIONS

$ 24,000

RESEARCH (500 interviews in each of two surveys/Focus Group)

$ 43,000

PRODUCTION (Radio/Newspaper/Phone Number/Brochure/Postage)

$ 54,000

TOTAL. $168,000

Potential Program Names

Informed Citizens for the Environment

Information Council for the Environment

Intelligent Concern for the Environment

Informed Choices for the Environment

Climatic Record in Midwest States

Minnesota

Greg Spoden — 612/296-4214
State Climatologist

Dr. Dick Skaggs — 612/625-6643
Univ. of Minn.
Dept of Geography

Dr. Don Baker — 612/625-6235
Univ. of Minn.
Prof. of Soil Science

1990 was Minneapolis' 4th warmest year.
1991 has been above average
"It certainly did not show cooling" (GS)

Temperature record started in as pioneer date in the 1820s at Ft. Sneeling and up to current dates from a farm in Farmington.
Long time warming trend, statistically increasing climate temperature since 1867.

Temperature decrease from 1819 to 1867.
Increase from 1867 through present.
There was a cooling in 1940-1970, but it doesn't show statistically in the record. (DB)

The temperature record is a superior record in urban North America. (DB)

articles:

Journal of Climatic Change
Volume 7, 1985 p. 225-236

Journal of Climate Change
Volume 7, 1985 p. 403-414

Bulletin of American Meteorology
Volume 41, 1960 p. 18-27

Washington D.C. 20004-2696
Telephone 202-508-5300

EDISON ELECTRIC INSTITUTE

M. WILLIAM BRIER
Vice President, Communication

May 15, 1991

O. Mark De Michele
President & CEO
Arizona Public Service Company
P.O. Box 53999
Phoenix, AZ 85072-3999

Dear Mark:

I am writing to update you on some changes in the Information Council for the Environment's (ICE) advertising and promotional activities in the three test cities including Flagstaff. You will find the attached material similar to what I sent you earlier.

However, you should note changes in the "How Much . . ." ad which will be running Flagstaff. It is a revised version and contains no graphics -- it's straight copy.

If you have any questions, please let me know.

Sincerely,

Bill Brier

w/o enclosures
Gale Klappa
Vice President
Southern Company

INFORMATION COUNCIL FOR THE ENVIRONMENT

NEWSPAPER ROTATION

Flagstaff	Fargo	Bowling Green
1. Frost line	Mpls colder	Kent. colder
2. How much (?)	Frost line	Kent. colder
3. Frost line	Mpls colder	Frost line
4. How much (?)	Frost line	Kent. colder
5. Mpls colder	Mpls colder	Frost line
6. Serious problem	Serious problem	Serious problem
7. Mpls colder	How much (money bag)	Frost line
8. How much (?)	Serious problem	How much
9. Frostline	How much (money bag)	Serious problem
10. Serious problem	Serious problem	How much
11. Mpls colder	How much (money bag)	Serious problem
[illegible]	[illegible]	[illegible]

RADIO PLACEMENT

Flagstaff	Fargo	Bowling Green
Dr. Balling #1	Dr. Balling #1	Dr. Balling #1
Dr. Balling #2	Dr. Balling #2	Dr. Balling #2
Bruce Williams #1	Rush Limbaugh #1	Dr. Balling #3
Bruce Williams #2	Rush Limbaugh #2	
	Bruce Williams #1	
	Bruce Williams #2	

PUBLIC RELATIONS TOUR

TUESDAY MAY 14, 1991

10:45 a.m.	Appearance on WBKO-TV's "Midday" hosted by Beverly Kirk.
1:00 p.m.	Meet with editors and writers at the Bowling Green Daily News.
2:30 p.m.	Tape appearance on WKYU-TV's "Outlook" hosted by Barbara Deeb. Tape will also be broadcast on WKYU-FM's "Midday Edition."

PUBLIC RELATIONS TOUR

WEDNESDAY, MAY 15, 1991

12:30 p.m.	Meet with editors and writers at The Fargo Forum.
2:00 p.m.	Tape appearance on KX4 News Conference on KXJB-TV. Program is hosted by Kathy Coyle and airs on Sundays.
4:00 p.m.	Appear on KTHI-TV's On The Line hosted by Steve Poitras. Half-hour program.
5:00 p.m.	Meeting with editorial staff at WDAY-TV. Tape interview for evening news.

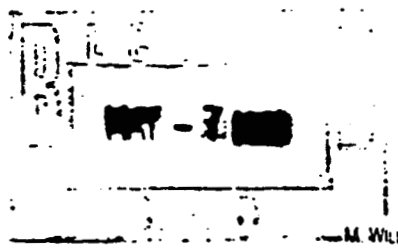
I.C.E.
FULFILLMENT MATERIALS

1st Request (Quantities of 5000)

* Dr. Michaels letter #1
* Postcard
* Bush letter
* Colder Minneapolis article
* The Greenhouse Effect..To What Degree?

2nd Request (Quantities of 2000)

* Dr. Michaels letter #2
* The Science of Global Warming



M. WILLIAM BRIER
Vice President Communication

FEDERAL EXPRESS

Arizona Public Service Company
400 North 5th Street
Phoenix, AZ 85004

Dear Mark:

As I promised, attached is information on the newspaper and radio ads that will begin appearing in three test markets including Flagstaff on May 12. You should also note that the campaign includes public relations activities involving the Arizona Daily Sun, KNAZ-TV and KNAU-AM on May 20.

Of perhaps greater interest is the pre-test telephone interviews with 500 adults in Flagstaff (the results are also attached). The data indicates that:

- 89% say that they have heard of global warming
- 82% claim some familiarity with global warming
- 80% claim the problem is somewhat serious while 45% claim it is very serious
- 39% back federal legislation without any qualification of cost
- 22% consider themselves "green" consumers

With this high level of awareness and concern in Flagstaff it will be interesting to see how the science approach sells. My concern is that the absence in the messages of reasonable approaches to solving the problems of global warming may reduce their effectiveness.

In any case the research results should be useful in providing data that will allow the industry to fine tune its messages. Hopefully we can share this information, in a meaningful way, with members of your policy committee at an appropriate time.

I have informed the Information Council for the Environment (ICE) that you reserve the right to distance yourself from these activities. If you have any questions, please let me know.

Sincerely,

E. Brier

Enclosures

cc w/o enclosures:
Gale Klappa
Southern Company

PUBLIC RELATIONS TOUR

WEDNESDAY, MAY 15, 1991

12:30 p.m.	Meet with editors and writers at The Fargo Forum.
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4:00 p.m.	Appear on KTHI-TV's On The Line hosted by Steve Poitras. Half-hour program.
5:00 p.m.	Meeting with editorial staff at WDAY-TV. Tape interview for evening news.

FARGO MARKET

May 1991

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
Forum: Minneapolis 12	KVOX FM 6x WDAY FM 5x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 13	KVOX FM 6x WDAY FM 5x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 14	Forum: Frost KVOX FM 6x WDAY FM 5x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 15	KVOX FM 6x WDAY FM 5x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 16	Forum: Pick-up Minneapolis KVOX FM 6x WDAY FM 5x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 17	18
Forum: Pick-up Frost 19	KVOX FM 5x WDAY FM 4x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 20	KVOX FM 5x WDAY FM 4x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 21	Forum: Minneapolis KVOX FM 5x WDAY FM 4x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 22	KVOX FM 5x WDAY FM 4x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 23	KVOX FM 5x WDAY FM 4x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 24	Forum: Serious Problem 25
Forum: Pick-up How Much 26	KVOX FM 4x WDAY FM 3x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 27	KVOX FM 4x WDAY FM 3x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 28	Forum: Pick-up Serious Problem KVOX FM 4x WDAY FM 3x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 29	KVOX FM 4x WDAY FM 3x KLTA FM 5x KQWB FM 3x KQWB AM 3x WDAY AM 4x 30	Forum: How Much KVOX FM 4x WDAY FM 3x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 31	

FLAGSTAFF MARKET

June 1991

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						KAFF FM 6x 1
Arizona Daily Sun: Serious Problem 2	KVNA AM 6x KVNA FM 6x KMGN FM 6x KAFF FM 7x 3	KVNA AM 6x KVNA FM 6x KMGN FM 6x KAFF FM 7x 4	Arizona Daily Sun: Minneapolis Colder KVNA AM 6x KVNA FM 6x KMGN FM 6x KAFF FM 7x 5	KVNA AM 6x KVNA FM 6x KMGN FM 6x KAFF FM 7x 6	KVNA AM 6x KVNA FM 6x KMGN FM 6x KAFF FM 7x 7	8
Arizona Daily Sun: How Much 9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

If you have any questions, please call Simmons Advertising, Inc. (701)-746-4573

FARGO MARKET

June 1991

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
Forum: Pick-up Serious Problem 2	KVOX FM 5x WDAY FM 4x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 3	KVOX FM 5x WDAY FM 4x KLTA FM 6x KQWB FM 3x KQWB AM 3x WDAY AM 4x 4	Forum: How Much KVOX FM 5x WDAY FM 4x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 5	KVOX FM 5x WDAY FM 4x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 6	KVOX FM 5x WDAY FM 4x KLTA FM 7x KQWB FM 3x KQWB AM 3x WDAY AM 4x 7	
Forum. Pick-up Serious Problem 9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

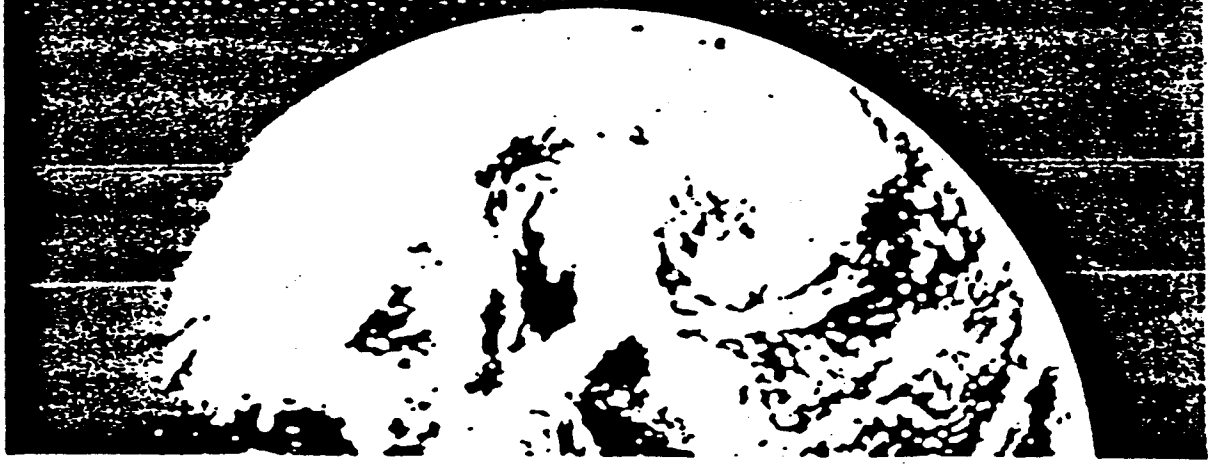
FLAGSTAFF MARKET

May 1991

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
Arizona Daily Sun: Frost 12	KVNA AM 6x KVNA FM 6x KMGN FM 7x KAFF FM 8x 13	KVNA AM 6x KVNA FM 6x KMGN FM 7x KAFF FM 8x 14	Arizona Daily Sun: How Much KVNA AM 6x KVNA FM 6x KMGN FM 7x KAFF FM 8x 15	KVNA AM 6x KVNA FM 6x KMGN FM 7x KAFF FM 8x 16	Arizona Daily Sun: Frost KVNA AM 6x KVNA FM 6x KMGN FM 7x KAFF FM 8x 17	18
Arizona Daily Sun: How Much 19	KVNA AM 5x KCNA FM 5x KMGN FM 6x KAFF FM 7x 20	KVNA AM 5x KVNA FM 5x KMGN FM 6x KAFF FM 7x 21	Arizona Daily Sun: Minneapolis KVNA AM 5x KVNA FM 5x KMGN FM 6x KAFF FM 7x 22	KVNA AM 5x KVNA FM 5x KMGN FM 6x KAFF FM 7x 23	Arizona Daily Sun: Serious Problem KVNA AM 5x KVNA FM 5x KMGN FM 6x KAFF FM 7x 24	25
Arizona Daily Sun: Minneapolis 26	KVNA AM 5x KVNA FM 5x KMGN FM 5x KAFF FM 6x 27	KVNA AM 5x KVNA FM 5x KMGN FM 5x KAFF FM 6x 28	Arizona Daily Sun: How Much KVNA AM 5x KVNA FM 5x KMGN FM 5x KAFF FM 6x 29	KVNA AM 5x KVNA FM 5x KMGN FM 5x KAFF FM 6x 30	Arizona Daily Sun: Frostline KVNA AM 5x KVNA FM 5x KMGN FM 5x KAFF FM 6x 31	

If you have any questions, please call Summers Advertising Inc (701)-746-4523

The most serious problem with catastrophic global warming is– it may not be true.



Some forecasters say the Earth's temperature is rising. They say that catastrophic global warming will take place in the years ahead.

But the U.S. Department of Agriculture—in the first update in 25 years of its "Plant Hardiness Report"—determined that on both coasts of this country, winter temperatures are 5 to 10 degrees cooler than previously reported.

The evidence can be seen in the increase in cold damage to Florida orange groves and California eucalyptus. And a moving frost line has led to a shorter growing season in some parts of the South.

Now, most of us aren't climatologists. But facts like these simply don't jibe with the theory that catastrophic global warming is taking place. Which seems to say we need more research. And more evidence

If you care about the Earth—but want to keep a cool head about it—now is your chance to get more facts.

Call the Information Council for the Environment, 1-800-346-6269 extension 522. We'll send you a free packet of information on global climate change. Or just mail us the coupon below.

Because the best environmental policy is a policy based on fact.

Please send me your FREE information packet on global climate change.

NAME _____

ADDRESS _____

CITY _____

Information Council for the Environment

1-800-346-6269

Who told you the earth was warming... Chicken Little?

Chicken Little's hysteria about the sky falling was based on a fact that got blown out of proportion.

It's the same with global warming. There's no hard evidence it is occurring. In fact, evidence the Earth is warming is weak. Proof that carbon dioxide has been the primary cause is non-existent. Climate models cannot accurately predict far-future global change. And the underlying physics of climatic change are still wide open to debate.

If you care about the earth, but don't want your imagination to run away with you, make sure you get the facts.

Write Informed Citizens for the Environment, P.O. Box 1513, Grand Forks, North Dakota 58206, or call toll-free 1-701-746-4573. We'll send today's

Informed Citizens

Doomsday is cancelled.

Again.

The twentieth century has seen many predictions of global destruction. In the 1930's, some scientists claimed we were in the middle of a disastrous warming trend. In the mid 1970's, others were sure we were entering a new Ice Age. And so on.

It's the same with global warming. There's no hard evidence it is occurring. In fact, evidence the Earth is warming is weak. Proof that carbon dioxide has been the primary cause is non-existent. Climate models cannot accurately predict far-future global change. And the underlying physics of the climatic change are still wide open to debate.

If you care about the environment, but don't care to be pressured into spending money on problems that don't exist, make sure you get the facts.

Write: Informed Citizens for the Environment, P.O. Box 1513, Grand Forks, North Dakota 58206 or call (701) 746-4573. We'll send you the facts about global warming.

Informed Citizens for the Environment

Special Report

"We as state legislators believe that the unique American Federal system requires close cooperation and consultation among Members of Legislatures in the several States and Members of Congress. That belief springs from a philosophical premise that nothing should be undertaken by a higher echelon of government which can be accomplished by a lower echelon, and that individual freedom demands strict limitations on the power of all levels of government.

"We further believe that state governments are vital to the continued success of our Federal Union and that the genius of our Constitution is summed up in the primacy clause which delegates residual powers to the States and to the People in those spheres not specifically delegated to the national government.

"We therefore establish the American Legislative Exchange Council ..."

ALEC Founding Charter, 1973

25th Anniversary Annual Meeting

August 18-22, 1998

Chicago

Ideas have power.

A quarter of a century ago, a small group of state legislators had an idea: establish a bipartisan membership association for conservative state legislators who shared a common belief in limited government, free markets, federalism and individual liberty. An association for people who believed that government closest to the people was fundamentally more effective, more just, and a better guarantor of freedom than the growing federal bureaucracy in Washington.

August 18-22, in its founding city of Chicago, the current members of ALEC will convene for its 25th Anniversary Annual Meeting. For five days, elected officials, policy experts, and private sector leaders will meet to discuss the issues challenging the states and the nation.

Yet it will be more than just a convention. More than what has been called "the largest gathering of conservatives held each year." More than the 25th anniversary of a successful membership association.

It will be a celebration of the power of ideas.

ALEC's 25th Anniversary Annual Meeting is living proof that when men and women who share a belief in the fundamental principles of American democracy work together,
the walls that can divide us can be razed.
The walls between the federal , state and local governments. The walls that separate the public and private sectors.
The walls that can divide the common interests of fifty states, two parties,
or the people of one nation.

Please join us as we celebrate the vision of the America of our Founding Fathers: A Country of Fifty States ... One Nation.

Annual Meeting Special Report

ALEC's 25th Anniversary Annual Meeting

The theme of this year's 25th Anniversary Annual Meeting is *50 States ... One Nation,* which captures the spirit of the American Legislative Exchange Council's mission to restore the principle of federalism to American government.

While much has changed on the American political landscape in the last quarter century, through it all ALEC has held firm to the fundamental Jeffersonian principles of free markets, limited government, federalism and individual liberty on which it was founded.

What Happens at the ALEC Annual Meeting

The Annual Meeting has grown to become one of the nation's most prestigious state level conferences and has been described as the "largest gathering of conservatives held each year." This year's 25th Anniversary Annual Meeting in its founding city of Chicago promises to be the biggest and best in ALEC's history!

More than 2,500 state legislators, business leaders, association executives and public policy experts will gather to discuss the issues challenging the states. Through more than 40 workshops, issue seminars and task force meetings, attendees will be briefed on the issues and legislation on the cutting edge of the public policy debate.

ALEC has planned numerous social events to celebrate this historic occasion, providing memories and friendships that will last a lifetime!■

CHICAGO

CHICAGO is not only the birthplace of the skyscraper (and ALEC) and the capital of America's heartland, but it's also home to some of the world's finest and most innovative art and architecture. You'll find Chicago an outdoor museum of world-famous architecture — and you can stroll through history just by walking through the Loop.

LIKE most world-class cities, Chicago is best seen on foot. With very little effort, you can cut a swath across its vibrant cultural landscape. And Chicago *is* a shopper's paradise! Whether you haunt the State Street, North Michigan Avenue, Oak Street or River North retail districts, or wander farther afield into the neighborhoods, you'll leave town with valuable "excess baggage."

DINING at its many fine restaurants ranks among the city's favorite forms of recreation — and Chicagoans take quality food and service seriously. It's a sophisticated melting pot of the world's cuisines, and you'll find the multitude of possibilities will satisfy every appetite.

MORE than jazz came up the Mississippi and settled in Chicago, as you can tell from a quick look at the nighttime offerings. From the world-famous Chicago Symphony Orchestra to blues and bluegrass — from improvisational theater to heavy metal rock concerts, you'll find a wealth of after-hours entertainment just minutes away.

CHICAGO — ALEC's original home and the perfect site for ALEC's 25th Anniversary Annual Meeting!

ALEC Host Hotels — Chicago Hilton and Towers

Overlooking the magnificence of Lake Michigan and Grant Park is the Chicago Hilton and Towers, the hotel that is in the midst of *all* that Chicago has to offer and host hotel for ALEC's 1998 Annual Meeting. Ideally located, the Hilton is just minutes away from McCormick Place, the Magnificent Mile shopping district and Water Tower Place.

The Chicago Hilton and Towers Hotel's elegant Grand Hall

Elegance from the past is preserved in this historic hotel that first opened in 1927. With more than 1,500 rooms, a Fun & Fitness center, a complete business center, atrium lounge, and four exciting new restaurants, the Chicago Hilton and Towers is one of the most vibrant places to stay in the world.

Palmer House Hilton Hotel

Known as "the Chicago hotel the world knows best," at 124 years old the Palmer House Hilton is famous for having the "longest period of continuous operation of any hotel in North America." Visited by luminaries such as President Ulysses S. Grant, Mark Twain and the royalty of Europe, the Palmer House has been recently renovated with all the modern conveniences and amenities a seasoned traveller seeks, while retaining the flamboyant elegance of its late 19th century origins.

American Legislative Exchange Council

Thomas Jefferson Freedom Award

Honoring America's Voices of Liberty

Today, we know that many of the challenges facing our sovereign nation will be met in the states.

The critical questions of our day will be decided by state legislators: How our children are educated, how we're protected from crime, how we safeguard our environment while building a strong and growing economy, how we end the scourge of drugs, how we care for those who are in need. So you have great responsibilities: great, but not too great. Throughout my administration, I knew I could count on ALEC's state legislators as we worked together, as soldiers in a common cause, to unleash the private sector, rebuild our economy, strengthen our defenses, and reaffirm our values. Now, with a new federalism firmly established and government re-focused on the states, you must carry on our work. The achievements of ALEC and the talents of your members convinces me that your are up to the challenge.

President Ronald Reagan, 1990

We have the new opportunity for the decade of the nineties to be our decade,

and the twenty-first century to be the Jeffersonian century that he dreamed of: In self-enlightenment, in educational reform, in opportunities for every man, woman and child in this country. And that, to me, is what ALEC stands for, and that is why this organization is growing so strong and can continue to be the dominant force for change in this country of ours.

I think we are at a very interesting time as we end this second millennium.

It is time to go back to Jefferson. It is time to remind ourselves of something that couldn't be clearer if we look at his writings. And that is that this country, this America, this republic is not an experiment in federal tutelage. It is not

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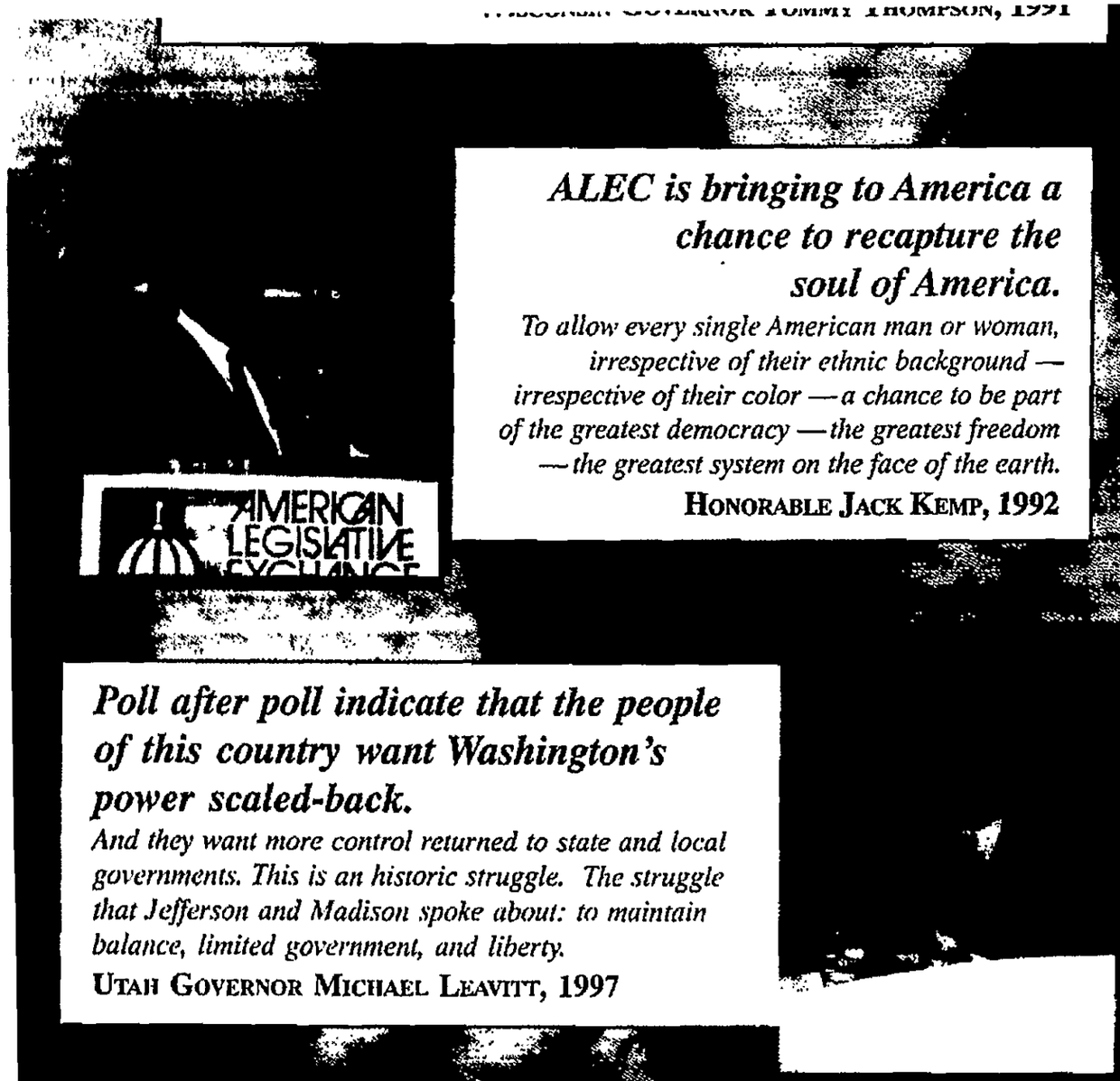


an experiment in government preemption. It is the most sublime experiment in the history of the world in ordered liberty and self-government.

HONORABLE WILLIAM J. BENNETT, 1994

ALEC is bringing to America a chance to recapture the soul of America.

To allow every single American man or woman, irrespective of their ethnic background — irrespective of their color — a chance to be part of the greatest democracy — the greatest freedom — the greatest system on the face of the earth.

HONORABLE JACK KEMP, 1992

I believe that each of you represents one more missionary for the kind of America we can be.

And I believe with your help across these fifty states and with the continued great work ALEC is doing, I believe that we, in fact, in 1996 and 1997, will truly have launched a revolution of freedom everywhere.

SPEAKER NEWT GINGRICH, 1995

Poll after poll indicate that the people of this country want Washington's power scaled-back.

And they want more control returned to state and local governments. This is an historic struggle. The struggle that Jefferson and Madison spoke about: to maintain balance, limited government, and liberty.

UTAH GOVERNOR MICHAEL LEAVITT, 1997

We will succeed in the battle to reinvent government, cut taxes and reform education.

Across the nation, because of the leadership of the men and the women in this room, we are winning the battle of ideas. We are taking our country back. ALEC has been in the front, leading the way for 20 years.

MICHIGAN GOVERNOR JOHN ENGLER, 1993

I think that all of America is yearning for an American renaissance.

And you, the leaders, the leaders of the American Legislative Exchange Council, are the leaders of that renaissance — in your home districts, in your home states. That is why this conference is so important, as you are charting America's future. You are charting it from the grassroots, where the decency and the common sense is reflected, not in the cold corridors of Washington, D.C., but in your home counties, your home towns, and in your state legislatures.

VIRGINIA GOVERNOR GEORGE ALLEN, 1996

TI16531449

ALEC 25th Annual Meeting Agenda

Agenda as of July 30, 1998

All locations are in the Hilton Hotel and Towers unless noted

Tuesday, August 18, 1998

Board of Directors Meeting ..... 9:00am - 5:00pm

Registration Opens ..... Noon - 6:00pm

State Chair Meeting ..... 10:00am - 3:00pm

Task Force Chair Meeting ..... 10:00am - 3:00pm

Leadership Dinner (Invitation Only) ..... 6:30pm - 10:30pm

Empire Room - Palmer House Hilton Hotel

"Scrap the Code Tour" ..... 5:00pm - 6:00pm

U.S. House Minority Leader Dick Armey (R - Texas) and Congressman Billy Tauzin (R - La)

Hear a debate on scrapping the current U.S. tax code in favor of either a flat tax or a national sales tax

Wednesday, August 19, 1998

Registration ..... 8:00am - 6:30pm

ALEC Exhibits '98 ..... 8:00am - 4:00pm

Youth Program ..... Noon - Midnight

Pre-School Program ..... Noon - 11:00pm

Opening Luncheon

Noon - 1:45pm

Speaker Bobby Hogue will open ALEC's 25th Anniversary Annual Meeting with one of its most distinguished alumni and America's best known small business entrepreneur.

Speaker Bobby Hogue
ALEC 1998 National Chairman

Illinois Governor Jim Edgar
ALEC 25th Annual Meeting Host Committee
Honorary Chairman

Dave Thomas
Founder and Senior Chairman of Wendy's Corporation

Complete Workshop Descriptions are on pages 20-22

Concurrent Workshops A ..... 2:00pm - 3:45pm

A1. Rights-of-Way Fees: How Municipalities are Delaying Competition and Economic Development in the Telecommunications Marketplace

A2. Disorder in the Court--Medicaid Liability

A3. Retirement Security I: Pension Reform

Concurrent Workshops B ..... 4:00pm - 5:45pm

B1. Status of the Electric Industry Restructuring/ Deregulation Revolution

B2. The Year 2000 Problem: State and Local Challenges

B3. Retirement Security II: Long-Term Care and Medicare Privatization

25th Anniversary Opening Reception

6:30pm - 9:30pm

Held in the elegant and historic Grand Ballroom of the Hilton Hotel and Towers, ALEC's 25th Anniversary Annual Meeting Opening Reception will combine the superb cuisine of multi-cultural Chicago with exciting entertainment.

ALEC Task Force Reception ..... 9:30pm - 11:00pm

Thursday, August 20, 1998

Registration ..... 7:00am - 5:00pm

Youth Program ..... 7:30am - Midnight

Pre-School Program ..... 9:00am - 11:00pm

Breakfast

7:30am - 9:15am

A real Chicago welcome is on hand with one of the nation's leading city chief executives and a leader of the business community.

Chicago Mayor Richard Daley
ALEC 25th Annual Meeting Host Committee
Honorary Chairman

Robert Barnett
Executive Vice President, Motorola Inc.

ALEC Exhibits '98 ..... 9:00am - 4:00pm

Concurrent Workshops C ..... 9:30am - 10:45am

C1. HIV/AIDS Education

C2. Animal Waste and Water Quality

C3. Open Skies: Airline Deregulation After 20 Years

Concurrent Workshops D ..... 11:00am - 12:30pm

D1. Emerging Internet Issues: Bandwidth, Encryption & Privacy

D2. Constitutional Protections for Taxpayers: A Blueprint for Fiscal Restraint

D3. Governing by Decree: Federalism Under Fire

TI16531450

Lunch

12:45pm - 2:15pm

The issues facing the states and the nation will be addressed by two speakers who are national leaders in both the public and private sectors.

Speaker Newt Gingrich*
1995 Thomas Jefferson Freedom Award

Ronald Yocum
President & CEO, American Plastics Council

Task Force Meetings ..... 2:30pm - 5:30pm

Task Force Agendas on pg. 26-27

Health and Human Services
Tax & Fiscal Policy
Civil Justice
Education
Commerce and Economic Development

ALEC Radiothon '98 Reception ..... 5:00pm - 6:30pm

Evening Free for State Delegation Night

Friday, August 21, 1998

Registration ..... 7:00am - 3:00pm

Youth Program ..... 7:30am - 6:00pm

Pre-School Program ..... 9:00am - 6:00pm

Breakfast

7:30am - 9:15am

Begin the day with insights from one of America's most dynamic and innovative governors, and a representative from one of the most important industries in the nation.

Wisconsin Governor Tommy Thompson
1991 Thomas Jefferson Freedom Award

Jim Monk
President, Illinois Energy Association

ALEC Exhibits '98 ..... 8:00am - 12:30pm

Concurrent Workshops E ..... 9:30am - 10:45am

E1. Improving Public Education: How to Legislate Catalytic Change

E2. A 100 Year Perspective – Trends in the Health of the Nation and the Status of the Environment

E3. The Yellow Pages Test: Competitive Contracting in State & Local Government

Concurrent Workshops F ..... 11:00am - 12:30pm

F1. Restraint of Trade: Unilateral Trade Sanctions

F2. Myths & Realities: Global Warming, Climate Change and the Kyoto Protocol

F3. Financial Services Modernization for the 21st Century

Founders Lunch

12:45pm - 2:15pm

ALEC's founding is commemorated with the presentation of the Pioneer Award to one of ALEC's founding members.

Congressman Henry Hyde
1998 Pioneer Award

Task Force Meetings ..... 2:30pm - 5:30pm

Task Force Agendas on pgs. 26-27

Criminal Justice
Energy, Environment, Natural Resources and Agriculture
Telecommunications and Information Technology
Trade and Transportation

Family Night Extravaganza

5:30pm - 8:30pm

Chicago's Navy Pier, with its exquisite rotunda, beautiful vistas of the lake and enchanting shops and amusement rides is the perfect site for a night with the family and colleagues!

Saturday, August 22, 1998

Youth Program ..... 7:30am - 1:00am

Pre-School Program ..... 9:00am - 11:00pm

Golf Tournament ..... Shotgun Starts at 8:30am
Indian Lakes Resort, Bloomingdale, Ill.

Tennis Round Robin Tournament ..... 1:00pm - 5:00pm
Mid-Town Tennis Club

Shooting Sports Event ..... 9:00am - 2:00pm
Aurora Sportsman's Club

Thomas Jefferson Freedom Award Banquet

6:30pm - 9:30pm

ALEC's 9th Thomas Jefferson Freedom Award Banquet will be its most elegant and dramatic in history! (See page 23)

Sunday, August 23, 1998

Prayer Breakfast ..... 8:00am - 9:30am

**Invited, not yet confirmed*

25th Annual Meeting Workshops

As of July 30, 1998

Wednesday, August 19, 1998

Concurrent Workshops A ..... 2:00pm - 3:45pm

A1. Rights-of-Way Fees: How Municipalities are Delaying Competition and Economic Development in the Telecommunications Marketplace

What is a municipality's proper role in managing the public rights-of-way, and what does it mean to your state's economy, your constituent's phone bill, and the advance of competition in the telecommunications marketplace?

Controversy surrounding implementation and interpretation of the *Telecommunications Act of 1996* is not news. One area receiving little media attention is the use by municipalities of a section of the Act intended to preserve local control of rights-of-way, to charge "rent" instead of only covering the costs associated with management of the right-of-way. The result is increased costs to consumers, a barrier to new entrants, and an adverse effect on economic development.

Speakers: N.D. Sen. David Nething*, Chair, Ad Hoc Committee on Regulatory Reform and Taxation, ALEC Telecommunications and Information Task Force; **Ron Binz,** President, Competition Policy Institute; **Russell Frisby,** President, Competitive Telecommunications Association; **Dorian Denberg,** BellSouth; **Richard Strom,** MCI

A2. Disorder in the Court–Medicaid Liability

Joe Camel may be gone, but tobacco remains. Not since prohibition has one industry been the subject of such scrutiny from lawmakers, public health officials and attorneys general. Somewhere in the all the rhetoric, the facts got lost. Many of the claims made against the tobacco industry are without merit, but these claims are likely to be the opening salvos in a war against other industries — a war waged and funded by a liberal life-style police. In Huntington Beach California, you can't smoke in your car or your backyard. A Yale professor has proposed a tax on fatty foods, and Philadelphia Mayor Ed Rendell wants to sue gun makers for his city's violence problem. Many expect the alcohol beverage industry will be sued next. What will be the next industry to be shaken down by the life-style police?

Speakers: Doug Bandow, Senior Fellow, Cato Institute; **Victor Schwartz, Esq.,** Crowel & Moring, Private Sector Chair of the Civil Justice Task Force; **Jacob Sullum,** Senior Fellow, The Reason Foundation

**Invited, not yet confirmed*

A3. Retirement Security I: Pension Reform

Lawmakers are seeking new ideas designed to encourage workers to save on their own for retirement, not depend only on the government. Public employers are moving toward this trend with defined contribution retirement plans, which are 401(k) type plans where employees are free to invest their funds themselves.

Speakers: Congressman John Porter*, (R-Ill.); **David Liebrock,** President, Fidelity Investments; **Chuck Robinson,** Vice President of National Markets, VALIC; **Luke Collins,** KPMG-Peat Marwick; and **Edwin Burton,** Professor, University of Virginia

Concurrent Workshops B ..... 4:00pm - 5:45pm

B1. Status of the Restructuring/Deregulation Revolution

The electric industry restructuring revolution is well underway in 1998. Upwards of 15 states have adopted restructuring legislation, and several others have moved with agency action. Now a track record exists that illustrates the many benefits of increased competition in the generation of electric power. This session will provide an overview of the benefits of competition, address federal activity, the status of restructuring in California, and provide the vantage point of a utility that is thriving in the era of competition.

Speakers: Congressman Tom Delay* (R-Tex.); **Congressman Bill Paxon*** (R-NY); **Congressman Steve Largent*** (R-Ok.); **Dr. Robert Michaels,** Cal State Fullerton; **Dr. Wayne Brough,** Citizens for a Sound Economy; **Scott Cisel,** Central Illinois Light Company

B2. The Year 2000 Problem: State and Local Challenges

The Year 2000(Y2K) problem is the most difficult information technology challenge ever. It threatens the data integrity of virtually every computer system in existence. Some predict this once seemingly innocuous problem will radically change our way of life. Litigation associated with Y2K could exceed all the costs spent trying to fix it. This workshop will explore issues of critical importance to state and local governments as we approach January 1, 2000.

Speakers: Victor Porlier, Center for Civic Renewal; **U.S. Senator Robert Bennett*** (R-Utah); **Congressman Steve Horn*** (R-Calif.); **Rick Cowles,** Digital Equip.

B3. Retirement Security II: Who Will Pay for the Health Care Needs of Baby Boomers?

By 2030 there will be an estimated 65 million people over the age of 65, a figure that will more than double from the 30 million in 1990. The financial impact of the baby-boomer generation retiring will be devastating to federal and state government revenues. Both Medicare and Medicaid programs are projected to be insolvent in the very near future.

This workshop will consist of a discussion of the failing

Medicare system, and recent reform efforts including managed care/Medicare and Medicare/Medical Savings Account options; the Medicare Commission; and more innovative free-market ideas to privatize Medicare. Also covered will be the issues of long-term care, Medicaid spend-down, and the need for long-term care insurance.

Speakers: Indiana State Rep. Dave Frizzell; Mark Litow, Consulting Actuary, Milliman & Robertson, Inc.; **Barbara Stucki,** PhD, Senior Research Analyst, American Council of Life Insurance; **Richard Merrill,** Senior Vice President, Golden Rule Insurance Co.; **Leila Wright,** Senior Vice President of Government Products and Services, BlueCross/BlueShield of Texas

Thursday, August 20, 1998

Concurrent Workshops C ..... 9:30am - 10:45am

C1. HIV/AIDS Education

This workshop will focus on recent advances in HIV/AIDS research and technology. Dr. Michael Saag, University of Alabama at Birmingham is a nationally renowned specialist in the treatment of infectious diseases and will provide an overview of how the disease originated and spread. He will discuss who HIV/AIDS is affecting today, how it is impacting our society, current treatment, the cost of not treating HIV, and various approaches to prevention.

Speakers: Miss. State Rep. Jim Barnett; Dr. Michael Saag, University of Alabama at Birmingham

C2. Agriculture and Water Quality

While states have the responsibility to protect groundwater and surface water, new regulations should not be imposed unless a proven danger exists to public health. High profile cases such as the Pfiesteria outbreak in the Chesapeake Bay, Hypoxia in the Gulf of Mexico, the debate over livestock production and other concerns regarding agricultural runoff have lead to federal government involvement. Many states have also acted with regulations on reducing agricultural runoff from buffer strips incentives to banning new confined animal feed operations.

Although many of these responses have been based on emotion rather than fact, it is important to learn how the agricultural community, with guidance from both the federal and state governments, has been able to pro-actively embrace voluntary partnership approaches to reduce agricultural runoff.

Speakers: U.S. Senator Wayne Allard* (R-Colo.); **Dave Juday,** Hudson Institute; **Andy Baumart,** National Pork Producers Council; **Kathleen Lawrence,** WLR Foods

C3. Open Skies: Airline Deregulation After 20 Years

The airline industry has seen many changes since the 1978 deregulation, including increased ridership and a 36 percent drop in airfares. This workshop will bring together representatives of the airline industry and public aviation officials to discuss changes over the past twenty years and the benefits consumers received as a result of unregulated competition.

Speakers: Mary Rose Luny, Commissioner, Chicago O'Hare International Airport; **David Swierenga,** Chief Economist, Air Transport Assoc.; **Illinois State Senator Walter Dudycz**

Concurrent Workshops D ..... 11:00am - 12:30pm

D1. Emerging Internet Issues

Encryption, privacy and bandwidth — these are just some of the issues we are bombarded with daily as the unprecedented growth of the Internet and related industries continues. The impact of these issues demands that policy makers at the local, state, federal and international levels of government understand them. If you feel you don't fully understand these issues, or, more importantly, their impact on you and your constituents, you are not alone. Come hear industry experts provide a comprehensive briefing on the need for sound, forward-looking policy in these critical areas.

Speakers: Maryland Delegate Martha S. Klima, Chair, ALEC Telecommunications and Information Task Force; **Link Hoewing,** Executive Director, External Relations, Bell Atlantic Corp.

D2. Constitutional Protections for Taxpayers: A Blueprint for Fiscal Restraint

Surging revenues from a booming economy, coupled with recent spending restraint, have allowed states to post surpluses averaging 7-8 percent of expenditures and pushed the federal budget to the brink of its first surplus in 30 years.

With state governments beginning to ratchet-up spending and the federal government already passing spending plans that blow through the caps set in last year's balanced budget agreement, there are ominous signs that this may be only a temporary phenomenon. This unprecedented opportunity to cut taxes and reduce the size of government may be squandered with a flurry of new spending

This workshop will examine what measures can be enacted to ensure that the federal and state governments restrain future spending. The panel will discuss and examine the effectiveness of: tax and expenditure limits, supermajority requirements, balanced budget requirements, line item vetoes, and other mechanisms.

Speakers: David Stanley, Chairman, National Taxpayers Union; **U.S. Senator Spencer Abraham*,** (R-Mich.); **Congressman John Shadegg*** (R-Ariz.); **Congressman John Boehner*** (R-Ohio); **Steve Forbes*,** President and CEO, Forbes, Inc. and former Presidential candidate; **Dr. Barry Poulson,** University of Colorado.

D3. Governing by Decree: Federalism Under Fire

President Clinton's new decree on federalism threatened to derail the "devolution-revolution," until it was rescinded

under pressure. Executive Order 13083 would have redefined the relationship between federal bureaucracies and states. It revoked President Reagan's E.O. 12612 to respect federalism and Clinton's own 1993 E.O. to end unfunded mandates. Like the executive orders it would have replaced, it had guidelines on the issues of jurisdiction, state sovereignty, and federal intervention in state affairs. However, the new initiative was not engineered to help officials empower the states, but to establish criteria for when to abrogate those powers. This workshop will explore the damage to federalism the Clinton initiative would have inflicted, and what should be done when he attempts to revive it in the future.

Speakers: Arizona Senate President Brenda Burns*; **George Allen***, former Governor of Virginia; **Becky Norton Dunlop,** Vice President, Heritage Foundation; **Byron Lamm**, President, State Policy Network.

Friday, August 21, 1998

Concurrent Workshops E ..... 9:30am - 10:45am

E1. Improving Public Education: How to Legislate Catalytic Change

Education continues to be one of the most important and controversial issues state lawmakers face today. And while common sense ideas like choice, vouchers, charter schools and teacher accountability have generally met with success in the states that have enacted them, meaningful education reform has been one of the most difficult issues to push through state legislatures. The enemies of reform are strong in number and determined to protect the status quo. This panel of national experts have witnessed and participated in many legislative battles and will share their knowledge of how to pass education reform that will make a difference.

Speakers: Jeanne Allen, President, Center for Education Reform; Tom Carrol, Empire Foundation; Panelists TBD.

E2. A 100 Year Perspective — Trends in the Health of the Nation and the Status of Our Environment.

While headlines focus on the latest threat to the environment or our health, what are the facts? Experts will discuss the latest trends on the health of the environment and the status of the health of the nation, and identify coming challenges for elected state officials in both arenas.

Speakers: Dr. Steven Hayward, Heritage Foundation; **Kip Howlett**, Chlorine Chemistry Council; **Dr. William Robertson,** Univ. of Washington School of Medicine.

E3. The Yellow Pages Test: Competitive Contracting in State & Local Government

Public policy makers have an obligation to provide the highest quality services at the lowest possible cost to the taxpayers. However, it is impossible for efficiency to be achieved when government is allowed to act as a monopoly. This workshop will study the vast opportunities states have for privatization and the various methods that have been utilized in creating a competitive market in the public service area.

Speakers: Mayor Steve Goldsmith*, Indianapolis; **Mayor Susan Golding***, San Diego; **Congressman David McIntosh*** (R-Ind.), **Congressman Scott Klug** (R-Wis.); **Maurice McTigue***, former Cabinet Member, New Zealand; **Mayor Richard Daley***, Chicago.

Concurrent Workshops F ..... 11:00am - 12:30pm

F1. Restraint of Trade: Unilateral Trade Sanctions

State and local governments are increasingly considering and enacting their own unilateral trade sanctions which create an administrative nightmare for companies seeking to expand their business. Over one-third of the recent economic growth in the U.S. is directly attributable to expanded trade; a proliferation of trade sanctions at the state and local level will jeopardize this growth. This workshop will examine the economic impact that unilateral trade sanctions have on the targeted country as well as the impact on the imposing state.

Speakers: U.S. Senator Richard Lugar* (R-Ind.); **U.S. Senator Phil Gramm*** (R-Tex.); **N.C. State Rep. David Miner**

F2. Myths & Realities of the Global Climate Change Debate: Global Warming, Climate Change, the Kyoto Protocol

There are four main facets to the global warming debate: science, jobs and the economy, international relations, and domestic politics. The traditional scientific method has *not* proven the assertion that human activity has caused any overall warming of the planet. Additionally, with the Kyoto treaty's exemption of 132 designated developing nations, those nations would be the beneficiaries of tremendous competitive advantages over the participating countries. Finally, there are great concerns about the methods of implementing the treaty – a treaty that has never been ratified by the United States.

Speakers: Congressman David McIntosh*, (R-Ind.); **U.S. Senator John Ashcroft***, (R-Mo.); **Dr. Allan Moghessi,** Institute for Regulatory Science; **Dr. Sallie Baliunas,** Harvard Center for Astrophysics; **William Hall**, Dominion Resources

F3. Financial Services Modernization for the 21st Century

Panelists will discuss issues of regulation, federalism and consumer welfare in the integration of industries offering financial services products.

Speakers: Roger Pilon, Cato Institute; **Congressman Jim Leach***, (R-Iowa); **Neil Levin**, Insurance Commissioner, New York; Professor **George Kaufman,** Loyola University

Thomas Jefferson Freedom Award

E. Benjamin Nelson

Governor of Nebraska

The American Legislative Exchange Council is proud to announce that Nebraska Governor E. Benjamin Nelson has been named the ninth recipient of ALEC's highest honor, the *Thomas Jefferson Freedom Award*. Governor Nelson has a long and exemplary record as one of the country's most effective state executives and a common sense fiscal conservative

He has also been a leader of the movement to restore the proper balance between the states and the federal government. Along with Utah Governor Michael Leavitt, the 1997 recipient of the *Thomas Jefferson Freedom Award*, Nelson has called for a conference of the states to develop the constitutional and statutory mechanisms needed to rectify the current imbalance between the states and the national government.

Governor Nelson is a leader who exemplifies the purpose and spirit of the *Thomas Jefferson Freedom Award*, and joins a distinguished list of previous recipients who do honor both to ALEC and the nation through their accomplishments.

Previous Thomas Jefferson Freedom Award Recipients

1990	President Ronald Reagan	1994	Honorable William J. Bennett
1991	Wisconsin Governor Tommy Thompson	1995	Speaker Newt Gingrich
1992	Honorable Jack Kemp	1996	Virginia Governor George Allen
1993	Michigan Governor John Engler	1997	Utah Governor Michael O. Leavitt

Elegant Dress for an Elegant Evening

Black Tie and Gowns!

In honor of Governor Nelson and ALEC's 25th Anniversary Annual Meeting, this year's banquet will be a black tie optional event.

Don't have formal wear on hand? *Not to worry.*

For the gentlemen, ALEC has arranged with Desmonds Tuxedos to be on hand to offer rentals for this special night. Their wares will be on display in the exhibit hall near the Registration booth to meet all of your fashion needs. Order by Thursday — Saturday delivery guaranteed!

DESMONDS FORMAL WEAR

For the ladies, Chicago's finest department store, the renowned Marshall Fields, will have a personal shopper available for consultation in the Exhibit Hall. And early on Thursday evening, this shoppers' paradise will open its doors for an exclusive, private reception for the ladies attending the ALEC Annual Meeting to peruse their exquisite offerings of fashionable finery.

Marshall Field's

Featured Events

ALEC Hospitality Suites

After a long day of issue sessions, relax with fellow attendees at ALEC's Hospitality Suites. The suites will offer open bars and light hors d'oeuvres, sparkling conversation and generous helpings of conviviality.

ALEC Exhibits '98

For this year's Annual Meeting ALEC will assemble the most extensive exhibit hall in its history. Nearly 100 exhibitors representing leading public policy organizations, major corporations and companies, and legislative service providers will fill the 120 booths for *ALEC Exhibits '98.*

Daily special events and giveaways are planned, including ALEC's "Exhibit Passport" program, which will offer three major prizes!

ALEC Radiothon '98

Once again ALEC will be holding a "talkfest" over the airwaves with five to eight local and national talk radio shows broadcasting live from the Annual Meeting!

Be sure to stop by and watch some of America's leading talk radio hosts in action as they interview the news makers and legislative leaders who will be at the ALEC Annual Meeting.

Who knows, it may be you!

And be sure to join us for the ALEC Radiothon '98 reception on Thursday night from 5:00 to 6:30 p.m. to meet some of the nation's leading talk radio hosts in person!

Sponsored by

The Washington Times
National Weekly Edition

Mike Siegel of KVI in Seattle interviews North Carolina Speaker Harold Brubaker at ALEC's last Annual Meeting Radiothon

Letters Congratulating ALEC on its 25th Anniversary

All letters will be on display at a special exhibit at the Annual Meeting in Chicago. If your company or organization is interested in submitting a letter or proclamation commemorating ALEC on its 25th Anniversary, please contact David Wargin at (202) 466-3800 ext. 258.

Letters from Governors
Governor Jane Dee Hull, Arizona
Governor Philip Batt, Idaho
Governor Terry Branstad, Iowa
Governor Paul Patton, Kentucky
Governor George Pataki, New York
Governor David Beasley, South Carolina
Governor George Bush, Texas
Governor Tommy Thompson, Wisconsin

Letters from Congressional Alumni
U.S. Senator Michael Enzi (R-Wyoming)
Congressman Pat Danner (R-Missouri)
Congressman John Kasich (R-Ohio)

State Proclamations
Indiana
Kentucky
Massachusetts
New York
Oklahoma
Tennessee

Letters From Chief Executive Officers of Corporations and Trade Associations
Steve Case, America Online
David Parker, American Gas Association
Francis Mallon, American Physical Therapy Association
Larry Fuller, Amoco
Dick DeVos, Amway
C.T. "Kip" Howlett, Chlorine Chemistry Council
Robert Skaggs, Columbia Gas of Ohio
Doctor Grants, Corrections Corporation of America
David Lack, Council for Affordable Health Insurance
David Liebrock, Fidelity Investments
J. Patrick Rooney, Golden Rule Insurance Co.
Robert Ingram, Glaxo Wellcome
William Barr, GTE Corporation
Patrick Zenner, Hoffman-La Roche
John Ellis, Independence Mining Co.
Don DeBolt, International Franchise Association
Jerald Holleman, Johnson & Johnson
Edgar Bronfam, Joseph Seagrams & Sons
Brian Nairin, National Assoc. of Bail Insurance Companies
Jack Ramiz, National Association of Independent Insurers
Jack Faris, National Federation of Independent Business
Jonathan Kempner, National Multi Housing Council
Alan Holmer, Pharmacuetical Research and Manufactueres of America
J. E. Pepper, Proctor & Gamble
Andrew Schindler, RJ Reynolds
James Kelly, UPS

Letters from Public Policy and Membership Organizations
Paul Weyrich, Free Congress Foundation
Joseph Bast, The Heartland Institute
Edwin Feulner, The Heritage Foundation
Charlton Heston, National Rifle Association
David Stanley, National Taxpayers Union

Discount Travel to the ALEC Annual Meeting

For *Fast*, *Easy* and *Accurate* travel arrangements, discounts and frequent flyer mileage credit, call **Forest Travel**, ALEC's official Annual Meeting travel service, toll-free at:

1-800-734-0730

Or FAX your travel request to Forest Travel at 1-800-559-8715!

Regular, Express or Electronic Ticket Delivery!

In most cases, Forest Travel will provide you with an electronic ticket—just show your i.d. at the airport and you're on your way! If an electronic ticket isn't available, Forest Travel will mail you your ticket or, if you need it quickly, will send it free by express service to anywhere in the U.S.!

United Airlines ALEC's Official Carrier

United Airlines is offering special meeting fares for all attendees of ALEC's 25th Anniversary Annual Meeting who use the Special Meeting Desk to book their reservations. Book early and take advantage of the promotional fares that give you the greatest savings! Earn a 5% discount off the lowest applicable fare, including First Class, or 10% off the mid-week coach fare. Simply call Forest Travel, or you or your travel agent can call United at 1-800-521-4041, and refer to ALEC's Annual Meeting ID Number 524WL. Mileage Plus members receive full credit for all miles flown to the meeting. Tickets can be mailed by United, picked up at your local travel agency or United Airlines ticket office. Call now because seats may be limited!

***Call* 1-800-521-4041**
United Airlines code #524WL

Auto Rental

While in Chicago, take advantage of ALEC's Annual Meeting discount auto rental rates with Hertz. Reference the discount number in order to receive the ALEC rate:
Hertz: #41881

Airport Transportation

Airport Transportation. Though many shuttle services are available between the hotels and O'Hare and Midway airports, ALEC recommends *Continental Airport Express*.

From O'Hare the fare is $15.50 one-way, $28.00 round-trip. From Midway the fare is $11.00 one-way, $20.00 round-trip. A $1.00 coupon for Annual Meeting attendees is available from Continental Airport Express at their Internet site at www.airportexpress.com.

Taxicabs. One-way taxicab fares run $35.00 from O'Hare and $22.00 from Midway.

General Information

Weather and What to Bring

The average daily temperature range for August in Chicago is 61° - 82°F. Light sweaters and wind breakers are advisable for casual evening attire.

As one of the most picturesque cities in America with world renowned architecture, Chicago is a paradise for photographers, so bring your camera and plenty of film. And very comfortable walking shoes are a must!

Dressing for the Annual Meeting

We encourage attendees to wear comfortable, casual attire for all activities except for the Leadership Dinner (invitation only) and the Thomas Jefferson Freedom Award Banquet (black tie optional.)

OmniCom Message Center

The OmniCom Communications Center, located in the Exhibit Hall, gives you a place to introduce yourself to a first-timer, leave a message for a friend, and pick up messages from outside callers. OmniCom features a voice mail center, electronic bulletin board and personal networking service. A personalized access card will be in your registration packet.

ALEC Shuttle Bus Service

Shuttle buses will run continuously between the Chicago Hilton and Towers and the Palmer House Hilton. Both hotels also have shuttle bus services to other parts of the city.

Photography

ALEC's photographer will be on hand once again to help you capture your memories of the ALEC Annual Meeting. Be sure to have your State Chair make a reservation for your state delegation photo!

Security/Badges

Your Annual Meeting badge is required for admittance to all meal sessions, workshops and social events. Badges **MUST** be shown to gain admittance.

Those with "Exhibitor Floor Badges" will not be admitted to meal sessions and workshops.

Task Force Meeting Preview

Described below are the topics and legislation to be discussed at Task Force Meetings during ALEC's 25th Annual Meeting in Chicago.

Civil Justice Task Force

Thursday, Aug. 20 — 2:30-5:00 p.m.

The Civil Justice Task Force will convene its summer meeting in the Waldorf Room of the Hilton & Towers. In addition to an update of Task Force Activities, the Task Force will consider legislation to extend the self-critical analysis privilege to insurance services, and two model bills ensuring that state attorneys general are accountable to the legislature when promulgating new rules and when soliciting contracts.

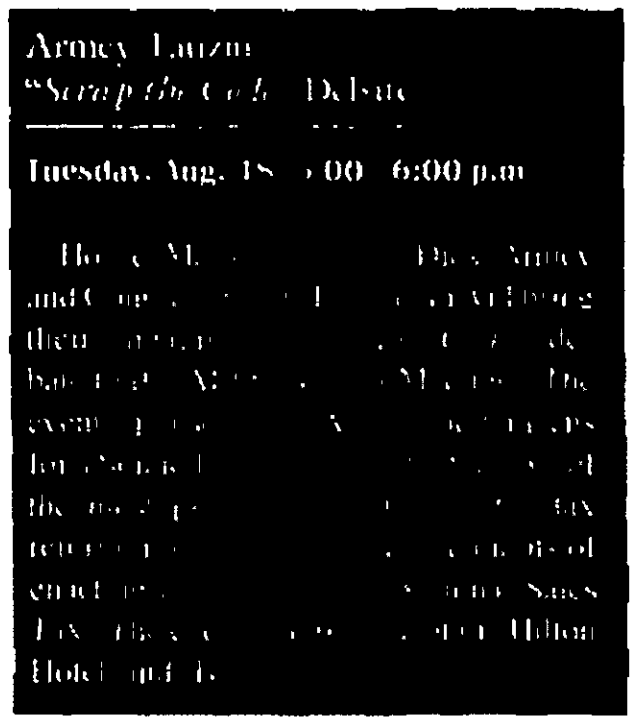
The task force will also discuss possible legislative solutions to the liability issues surrounding the Year 2000 computer problem.

Commerce & Economic Development Task Force

Thursday, Aug. 20 — 2:30-5:30 p.m.

The traditional union practice of using membership dues for politics was a hotly debated issue this year in California and many state legislatures. Although California's Proposition 226, a ballot measured designed to end this practice was defeated in June, this remains an important issue. The Task Force will turn its attention to public sector unions, such as the NEA, AFT and AFSCME when it hosts a discussion by Dr. Myron Lieberman. These unions are among the most politically influential in the nation, and frequently use member dues for politics without permission. Dr. Lieberman will argue for model legislation aimed at curtailing this practice by these unions.

The Task Force will also hear from Dr. Richard Vedder, an expert from Ohio University on the minimum wage and other issues. Dr. Vedder recently completed an ALEC *State Factor* on the minimum wage. Dr. Merrill Matthews from the National Center for Policy Analysis will be on hand to talk to the Task Force about his work on Social Security reform, which has gained momentum on Capitol Hill. ATM surcharges and socially conscious investing will also be on the agenda.



Criminal Justice Task Force

Friday, Aug. 21 2:30 to 5:30 p.m.

The centerpiece of the agenda will be two bills establishing standards for the private corrections industry, such as when states place inmates in facilities outside of the state in which they were sentenced. ALEC's private corrections subcommittee will also review and revamp ALEC's *Private Correction Facilities Act* — the enabling legislation for private corrections. Also on the agenda is child gun safety legislation and legislation that would regulate inmate workers' access to sensitive information, such as credit card and social security numbers

Education Task Force

Thursday, Aug. 20 2:30-5:30 p.m.

The Education Task Force will discuss formation of an Executive Committee to help the Task Force identify issues and potential private sector members, and develop operating and program budgets. The Task Force will also discuss the creation of subcommittees to develop model legislation and educational products. Issues and projects for 1999 will also be discussed. The Task Force will accept nominations for new Public and Private Chairs for the new two year term beginning January 1, 1999. Model legislation on choice, academic standards, and teacher standards will be discussed and voted on.

National experts will brief the Task Force on the issues of school choice, charter schools, vouchers, academic standards, teacher training, the Wisconsin Supreme Court decision on vouchers, and school-to-work.

Energy, Environment, Natural Resources, and Agriculture Task Force

Friday, Aug. 21 2:30 to 5:30 p.m.

Many of the current issues addressed by this Task Force have already become law in Virginia under the recent administration of Gov. George Allen. During his term, over a dozen market-oriented and incentive based bills were adopted. Moreover, Gov. Allen's Secretary of Natural Resources, Becky Norton Dunlop, introduced an element of sanity into several regulations in where market and property rights had initially been given short shrift. Secretary Dunlop, now Vice President of Public Affairs at the Heritage Foundation, joins ALEC's Energy, Environment, Natural Resources, and Agriculture Task Force to discuss Virginia's successes in promoting sound stewardship of natural resources based on incentives and the free market rather than on more government regulations and bureaucracies. Also joining the Task Force meeting to discuss issues related to the continuing battle for ALEC's model Environmental Audit Privilege legislation are Dr. Elizabeth Geltman, Johns Hopkins University; Kinnan Goleman, ALEC EENRA Task Force Advisor; and Rep. Clyde Bradley, chief sponsor of this legislation in Iowa. Barbara Bruin, from the Pennsylvania Public Utilities Commission, will share her insights on the evolving marketplace for electric energy and her experience in Pennsylvania.

The Task Force will also discuss amendments to the Environmental Justice Principles, a resolution on the issue of Environmental Justice, and an update on Waste Tire abatement.

Task Force Reception

Wednesday, Aug. 19 9:30 - 11:00 p.m.
All ALEC's nine Task Forces will co-host a reception to give new members the opportunity to learn more about the task forces. The event will begin at 9:30 p.m. giving members the chance to stop by following the opening reception.

Health & Human Services Task Force

Thursday, Aug. 20 2:30-5:30 p.m.

The Task Force will address a wide range of topics including: privatization of child welfare and welfare programs; long-term care; and unfair federal treatment of health insurance issues. The Task Force will vote on the *Privatization of Foster Care Services Act; the Privatization of Welfare-to-Work Programs Act*; and the *Resolution Urging Congress to Create Private Financing of the Medicare Program.* It will also consider for a vote two resolutions addressing equity in the tax deductibility of health insurance for the self-employed and the principles to be included in the development of any law on the privacy and confidentiality of patient identifying medical information.

Following will be a series of discussions from leaders in the health and welfare arena who will provide insight on issues including patient protection accounts, child welfare, and long-term solutions for Medicare. Congressman Bill Archer (R-Tex.) is invited to speak on a new concept of Medical Savings Accounts or Patient Protection Accounts. A recent study by the Pacific Research Institute will be presented by Naomi Lopez, Director of Health and Welfare Studies. An overview of a study examining solutions for Medicare and a study analyzing state-mandated benefits will be given by Mark Litow of Milliman & Robertson, Inc.

Trade & Transportation Task Force

Thursday, Aug. 20 2:30-5:30 p.m.

The Task Force will vote on several pieces of legislation, which were reviewed this spring by the Surface and Air subcommittee. Votes are expected on two resolutions on truck weight and size restrictions and unilateral trade sanctions. The Task Force will also consider The *Passenger Transportation Deregulation Act*, which eliminates the monopoly currently held by municipal bus services by allowing multi-passenger van services to compete in the transit market. The *Creation of a Common Port of Entry Act* authorizes a state to enter into agreements with contiguous states to jointly locate, construct, staff and operate permanent and portable weight scales or ports of entry. Allowing two states to jointly enforce certain laws enables the states to share resources and eliminate one of their inspection facilities. The Task Force will also consider the *Competitive Contracting of the Department of Motor Vehicles Act* which institutes a plan requiring a state's DMV to develop a competitive environment for the production of goods and services.

Task Force Advisor Adrian Moore of the Reason Foundation will give a presentation on the benefits of full cost accounting and the Task Force will discuss the development of model legislation in this area. Other presentations will be given on airline deregulation and state blood alcohol concentration levels.

Tax & Fiscal Policy Task Force

Federal and State Tax Reform Panel Discussion

Thursday, Aug. 20 2:30-4: 00 p.m.

All conference attendees are invited to a lively and compelling panel discussion on the urgent need for comprehensive state and federal tax reform. Panelists will include: Dr. Arthur Laffer; Ohio State Treasurer Ken Blackwell; and Task Force Advisors Dr. Richard Vedder, Ohio University and Stephen Moore, Director of Fiscal Studies, Cato Institute. The full Task Force meeting immediately follows the panel.

Tax & Fiscal Policy Task Force Meeting

Thursday, Aug. 20 4:00 -5:30 p.m.

The full Task Force will meet immediately following the Tax Reform panel discussion. Chief on the Task Force's agenda will be a discussion of the *Fiscal Report Card of the State*, which will be released during the Annual Meeting. The Task Force will also vote on several model bills related to the following issues: dynamic scoring; taxpayer advocates; burdens of proof in tax cases; revenue department employee compensation; repeal of "pay-to-play" provisions; and, confidentiality rights of taxpayer representatives.

Telecommunications & Information Technology Task Force

Friday, Aug. 21 2:30 to 5:30 p.m.

The Ad Hoc Committee on Regulatory Reform and Taxation will report on its activity in 1998, including its two hearings on public rights-of-way. Their findings and recommendations have been documented in a *State Factor* which will be voted on at the meeting. The committee will also announce its plans to address new regulatory and tax issues and projects.

The Ad Hoc Committee on Electronic Commerce and the Internet will report on its activities in 1998. The committee continues to be active in the federal Internet tax debate in Congress and has managed to get ALEC appointed to serve on the Electronic Commerce Commission. The committee will also announce its plans to address Internet and electronic commerce issues, such as electronic authentication, security, privacy, bandwidth and encryption. Industry representatives and staff will brief the Task Force on federal and state legislative and regulatory activity including: copyright legislation, universal service, wiretapping and Internet gambling.

The Task Force will receive a presentation on human-computer interaction in virtual environments. Dr. Frank Biocca , director of the Media Interface and Network Design Lab, has been invited to provide a look at the cutting edge of information technology. His research focuses on how to design virtual environment technologies and telecommunications services to help people absorb more information from computers, work better in distributed teams, and better find, use and understand information.■

ALEC American Legislative Exchange Council

LIMITED GOVERNMENT • FREE MARKETS • FEDERALISM

ENERGY, ENVIRONMENT AND AGRICULTURE TASK FORCE MEETING

2014 ANNUAL MEETING
DALLAS, TEXAS
JULY 31, 2014
2:30PM – 5:30PM

TENTATIVE AGENDA

2:30 Call to Order, Welcome, and Introductions
Rep. Tom Lockhart, Wyoming
Paul Loeffelman, American Electric Power

2:35 Presentation: The Implications of the Proposed "Waters of the U.S." Rule on the Energy Industry

2:50 Model Policy: Resolution Regarding Clean Water Act Regulations and EPA's Definition of "Waters of the U.S."

3:05 Presentation: Nuclear Matters

3:25: Presentation: Current State of Transmission Pipeline System

3:40 Model Policy: Weights and Measures and Standards for Dispensing CNG and LNG Motor Fuels

3:55 Presentation: Nongovernmental International Panel on Climate Change (NIPCC) Update

4:15 Model Policy: Resolution Concerning EPA's Proposed Guidelines for Existing Fossil Fuel-Fired Power Plants

4:30 Presentation: Liquefied Natural Gas (LNG) Exports

4:45 Model Policy: Resolution in Support of Expanded LNG Exports

5:00 Presentation: Property Assessed Clean Energy (PACE) Programs

5:15 New Member Introduction

5:25 For the Good of the Order

5:30 Adjournment

Nongovernmental International Panel on Climate Change

Update

The debate over global warming is **the most consequential public policy debate** taking place today in the United States and around the world. The stakes are enormous.

The Intergovernmental Panel on Climate Change (IPCC), a project of the United Nations, **is not a credible source of science or economics.**

IPCC Bias #1:

Climate change is "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."

The Framework Convention on Climate Change, 1994, Article 1.2

IPCC Bias #2:

"We are an intergovernmental body and we do what the governments of the world want us to do. ... If the governments decide we should do things differently and come up with a vastly different set of products, we would be at their beck and call."

Rajendra Pachauri, in *The Guardian*, September 20, 2013

NIPCC

Nongovernmental International Panel on Climate Change

* Formed in 2003 by Prof. S. Fred Singer
* Partnership of three organizations:
  * The Center for the Study of Carbon Dioxide and Global Change
  * Science and Environmental Policy Project
  * The Heartland Institute

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* Partnership of three organizations:
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  * Science and Environmental Policy Project
  * The Heartland Institute

What the NIPCC scientists found:

* There is **no scientific consensus** on the human role in climate change.

* Future warming due to human greenhouse gases will be much less than IPCC forecasts.

* Carbon dioxide has not caused weather to become more extreme, polar ice and sea ice to melt, or sea level rise to accelerate. These were all **false alarms**.

* The likely benefits of man-made global warming exceed the likely costs.

THE HEARTLAND INSTITUTE

What this means for public policy:

* Global warming **is not a crisis**. The threat was exaggerated.

* There is no need to reduce carbon dioxide emissions and no point in attempting to do so.

* It's time to repeal **unnecessary and expensive policies.**

* Future policies should aim at fostering economic growth to adapt to natural climate change.

THE HEARTLAND INSTITUTE

Rein in EPA

"I have come to believe that the national EPA must be systematically dismantled and replaced by a Committee of the Whole of the 50 state environmental protection agencies."

Jay Lehr, Ph.D.
Science Director
The Heartland Institute

THE HEARTLAND INSTITUTE

Oppose Carbon Pricing

* Oppose carbon taxes

* Oppose cap and trade schemes

* Oppose Obama's plan to regulate CO_2 as a pollutant

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Resolution in Opposition to a Carbon Tax

* Resolution Concerning EPA Proposed Greenhouse Gas Emission Standards for New and Existing Fossil-Fueled Power Plants

* Resolution in Response to EPA's Plan to Regulate Greenhouse Gases under the Clean Air Act

THE HEARTLAND INSTITUTE

Stop Subsidizing Alternative Energy

* Repeal renewable power mandates

* Repeal renewable energy subsidies

* Oppose net metering provisions that burden consumers

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Electricity Freedom Act
* The Market-Power Renewables Act
* Updating Net Metering Policies Resolution

THE HEARTLAND INSTITUTE

Lift Obstacles to Conventional Energy

* Oppose heavy regulation of hydraulic fracturing
* Approve new oil and gas pipelines
* Allow exploration and development on public lands
* Lift regulations on nuclear power

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Resolution to Retain State Authority over Hydraulic Fracturing
* Resolution in Support of the Keystone XL Pipeline
* Resolution Urging Quick Congressional Action on the Recommendations of the Blue Ribbon Commission on America's Nuclear Future

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Pipeline Replacement and Infrastructure Modernization and Enhancement Act
* Resolution Urging the President and Congress to Act Expeditiously in Procuring a Site or Sites for the Storage of High-Level Radioactive Waste

THE HEARTLAND INSTITUTE

Get the Feds out of Forestry and Land Use

* Roll back federal management of public lands
* Empower states to protect endangered species
* Oppose Agenda 21-style land use restrictions

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Resolution Demanding that Congress Convey Title of Federal Public Lands to the States
* State Standards for Federal Resource Management Act
* The Right to Practice Forestry Act
* State-Based Healthy Forest Plan

THE HEARTLAND INSTITUTE

ALEC Model Bills

* Endangered Species Resolution
* Protecting Property Rights to Facilitate Species Conservation

Get the Feds Out of Transportation

* Repeal fuel economy standards (CAFE)
* Repeal ethanol mandates
* Repeal electric vehicle subsidies

ALEC Model Bills

* Restrictions on Participation in Low-Carbon Fuel Standards Programs
* Resolution on Alternative Fuels

Look Under the Hood!

www.climatechangereconsidered.org
www.heartland.org/issues/environment

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

MEMORANDUM

TO: ENERGY, ENVIRONMENT AND AGRICULTURE TASK FORCE MEMBERS
FROM: CLINT WOODS, TASK FORCE DIRECTOR
DATE: October 27, 2010
RE: 35-DAY MAILING—STATES AND NATION POLICY SUMMIT

The American Legislative Exchange Council will host its **States and Nation Policy Summit (SNPS) on December 1 – 3 in Washington, DC at the Grand Hyatt.** If you have not yet registered for this meeting, please go to www.alec.org.

The following meetings are of interest to members of the Energy, Environment and Agriculture Task Force:

Wednesday, December 1

- Energy Subcommittee (8:30am – 10:00am)
- Environmental Health & Regulation Subcommittee (10:15am – 11:45am)

Thursday, December 2

- Workshop VI – EPA's Regulatory Assault: Higher Prices, Fewer Jobs, Less Energy (11:00am – 12:15pm)
- Energy, Environment and Agriculture Task Force meeting (2:30pm – 5:30pm)

Friday, December 3

- Workshop IX – A Tax in Sheep's Clothing: How Extended Producer Responsibility Mandates can Hurt Consumers and Business (11:00am – 12:15pm)

The following materials are attached:

- Agenda for the Energy, Environment and Agriculture Task Force Meeting (1 page)
- Agenda for Subcommittee Meetings (2 pages)
- Annual Meeting Agenda-at-a-Glance (2 pages)
- Workshop Advertisements (2 pages)
- Energy, Environment and Agriculture Task Force Roster (6 pages)
- Annual Meeting Task Force Meeting Minutes (2 pages)
- Scholarship Policy by Meeting (1 page)
- ALEC Task Force Operating Procedures (12 pages)
- ALEC Mission Statement (1 page)
- Attendee Registration Housing Form (1 page)
- Spouse/Guest Registration Housing Form (1 page)
- Model Legislation

Hotel information: The **Grand Hyatt Washington** is located at 1000 H Street NW, Washington, D.C. Telephone: (202) 582-1234. Website: www.grandwashington.hyatt.com

(Continued on next page)

I am also happy to inform you of the following updates to the Task Force leadership:

Energy, Environment and Agriculture Task Force

- Rep. David Wolkins, Indiana, Public Sector Chair
- Martin Shultz, Pinnacle West Capital Corporation, Private Sector Co-Chair
- Tom Moskitis, American Gas Association, Private Sector Co-Chair

Energy Subcommittee

- Rep. Tom Lockhart, Wyoming, Public Sector Chair
- Mike McGarey, Nuclear Energy Institute, Private Sector Chair

Environmental Health & Regulation Subcommittee

- Rep. Ralph Watts, Iowa, Public Sector Chair
- Jennifer Mendez, Carpet and Rug Institute, Private Sector Chair

Agriculture & Rural Development Subcommittee

- Rep. Larry Powell, Kansas, Public Sector Chair
- Jeff Case, CropLife America, Private Sector Chair

I look forward to seeing all of you here in DC. If you have any questions or concerns regarding the meeting, please contact me at (202) 742-8542 or by e-mail cwoods@alec.org.

Sincerely,
Clint Woods

ALEC ENERGY, ENVIRONMENT AND AGRICULTURE TASK FORCE MEETING

2010 STATES AND NATION POLICY SUMMIT
WASHINGTON, DC
DECEMBER 2, 2010
2:30PM – 5:30PM

TENTATIVE AGENDA

Call to Order, Welcome, and Introductions
Representative David Wolkins, Indiana
Martin Shultz, Pinnacle West Capital Corporation
Tom Moskitis, American Gas Association

Energy and Environment in the Wake of the Collapse of Cap and Trade
Steven F. Hayward, American Enterprise Institute

Natural Gas & Public Opinion
Chris Wilson, Wilson Research Strategies

The EPA Threat to American Agriculture
Speaker TBA

Update on Power Plant Cooling Water Regulation
Speaker TBA

MODEL RESOLUTIONS:

- RESOLUTION TO RETAIN STATE SOVEREIGNTY OVER INTRASTATE WATER RESOURCES *(Rep. Pete Illoway, Wyoming)*
- RESOLUTION ON BEST AVAILABLE CONTROL TECHNOLOGY FOR COAL-BASED ELECTRIC GENERATION (*Peabody)*

A Fresh Start on the Environment: Good Science and Good Policy for New Majorities
Todd Myers, Washington Policy Center

Beat the Peak: Consumers and Energy Efficiency
Rob Book, Delaware Electric Cooperative

MODEL LEGISLATION:

- THE AGRICULTURAL SUSTAINABILITY ACT (*CropLife America)*
- THE CAPITAL RECOVERY FOR CLEAN ENERGY GENERATING PLANTS ACT *(Nuclear Energy Institute)*

For the Good of the Order

Adjourn

ENERGY SUBCOMMITTEE

2010 STATES AND NATION POLICY SUMMIT

WASHINGTON, DC

WEDNESDAY, DECEMBER 1, 2010

8:30AM – 10:00AM

TENTATIVE AGENDA

8:30 a.m.	Welcome and Introductions *Rep. Tom Lockhart, Wyoming* *Michael McGarey, Nuclear Energy Institute*
8:40 a.m.	Model Legislation: THE CAPITAL RECOVERY FOR CLEAN ENERGY GENERATING PLANTS ACT
9:00 a.m.	Model Legislation: RESOLUTION ON BEST AVAILABLE CONTROL TECHNOLOGY FOR COAL-BASED ELECTRIC GENERATION
9:20 a.m.	The War on Western Jobs *Cody Stewart, Congressional Western Caucus*
9:40 a.m.	The Emerging Technology of Small Nuclear Reactors *Speaker TBA*
9:55 a.m.	For the Good of the Order
10:00 a.m.	Adjournment

ENVIRONMENTAL HEALTH & REGULATION SUBCOMMITTEE

2010 STATES AND NATION POLICY SUMMIT

WASHINGTON, DC

WEDNESDAY, DECEMBER 1, 2010

10:15AM – 11:45AM

TENTATIVE AGENDA

10:15 a.m.	Welcome and Introductions *Rep. Ralph Watts, Iowa* *Jenn Mendez, Carpet and Rug Institute*
10:25 a.m.	Model Legislation: RESOLUTION TO RETAIN STATE SOVEREIGNTY OVER INTRASTATE WATER RESOURCES
10:40 a.m.	Federal Electronic Waste Legislation *Speaker TBA*
11:00 a.m.	Discussion: State Framework Extended Producer Responsibility Laws
11:20 a.m.	Coal Ash Update
11:40 a.m.	For the Good of the Order
11:45 a.m.	Adjournment

2010 States & Nation Policy Summit Agenda*

Tuesday, November 30th		
Joint Board of Directors Meetings	8:00 a.m. - 5:30 p.m.	Farragut/Lafayette
Registration	12:00 p.m. - 5:00 p.m.	Independence Foyer
ALEC Joint Board Reception and Dinner	6:30 p.m. - 9:30 p.m.	Off-site

Wednesday, December 1st		
Registration	7:30 a.m. - 5:00 p.m.	Independence Foyer
Task Force Subcommittee Meetings	8:00 a.m. - 11:45 a.m.	
Exhibit Hall	9:00 a.m. – 3:00 p.m.	Independence Foyer
State Chairs Meeting	9:00 a.m. – 11:45 a.m.	Willson/Roosevelt
New Legislator Orientation	10:30 a.m. – 11:30 a.m.	Franklin Square
Opening Plenary Luncheon	**12:00 p.m. - 2:00 p.m.**	Independence A
Task Force Chairs Meeting	2:15 p.m. – 3:15 p.m.	Franklin Square
Workshop I: Comparative Effectiveness Research: Rationing Care or Improving Quality?	2:15 p.m. – 3:30 p.m.	Farragut/Lafayette
Workshop II: Higher Education	3:45 p.m. – 5:00 p.m.	Farragut/Lafayette
National Chairman's Reception, *by invitation only*	5:30 p.m. – 6:30 p.m.	Independence IH
Hospitality Suite	9:00 p.m. - 11:00 p.m.	Congressional Parlor

Thursday, December 2nd		
Registration	7:30 a.m. - 5:00 p.m.	Independence Foyer
Plenary Breakfast	**8:00 a.m. - 9:15 a.m.**	Independence A
Exhibit Hall	9:00 a.m. - 3:00 p.m.	Independence Foyer
Workshop III: Show Me the Money: Budget Transparency in the States	9:30 a.m. - 10:45 a.m.	Farragut Square
Workshop IV: Delivering Justice to Rape Victims while Minimizing Taxpayer Cost	9:30 a.m. - 10:45 a.m.	Lafayette Park
Workshop V: Cutting Crime and Budgets: The National Movement	11:00 a.m. - 12:15 p.m.	Farragut Square
Workshop VI: EPA's Regulatory Assault: Higher Prices, Fewer Jobs, and Less Energy	11:00 a.m. - 12:15 p.m.	Lafayette Park
Plenary Luncheon	**12:30 p.m. - 2:15 p.m.**	Independence A
Task Force Meetings	2:30 p.m. - 5:30 p.m.	
• Energy, Environment, and Agriculture		Farragut/Lafayette
• Health and Human Services		
• Public Safety and Elections		Independence CDE
• Tax and Fiscal Policy		Independence FG
		Independence IH
Gala Holiday Reception	6:00 p.m. - 8:00 p.m.	Constitution AB
Hospitality Suite	9:00 p.m. - 11:00 p.m.	Congressional Parlor

Friday, December 3rd		
Registration	7:30 a.m. - 2:00 p.m.	Independence Foyer
Plenary Breakfast	**8:00 a.m. - 9:15 a.m.**	Independence A
Exhibit Hall	9:00 a.m. - 3:00 p.m.	Independence Foyer
Workshop VII: Federalism I	9:30 a.m. - 10:45 a.m.	Farragut Square
Workshop VIII: Overcriminalization	9:30 a.m. - 10:45 a.m.	Lafayette Park
Workshop IX: A Tax in Sheep's Clothing: How Extended Producer Responsibility Mandates Can Hurt Consumers and Business	11:00 a.m. - 12:15 p.m.	Farragut Square
Workshop X: Federalism II	11:00 a.m. - 12:15 p.m.	Lafayette Park
Plenary Luncheon	**12:30 p.m. - 2:15 p.m.**	Independence A
Task Force Meetings	2:30 p.m. - 5:30 p.m.	
• Civil Justice		Farragut/Lafayette
• Commerce, Insurance and Economic Development		Independence GHI
• Education		Independence CDE
• Telecommunications and Information Technology		Constitution A
• International Relations		Constitution B
Louisiana Preview Reception for 2011 Annual Meeting	5:30 p.m. - 6:30 p.m.	Franklin Square
State Delegation Night	Beginning at 6:30 p.m.	See Your State Chair

* Agenda subject to change.

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

A Tax in Sheep's Clothing

How Extended Producer Responsibility Mandates can Hurt Consumers and Business

This workshop will provide a basic introduction to both product-specific and framework Extended Producer Responsibility (sometimes called Product Stewardship) laws that are likely to confront legislators in the upcoming session. This panel will examine state and international initiatives and how these mandates can backfire and cost consumers, as well as provide more information on market-driven and government-mandated recycling programs.

Friday, December 3 at 11:00 AM

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

EPA's Regulatory Assault

Higher Prices, Fewer Jobs, and Less Energy

Join us to learn about the economic, legal, and social consquences of EPA's expanding regulatory portfolio. Speakers include:

Peter Glaser, Troutman Sanders

Paul Cicio, Industrial Energy Consumers of America

Harry Alford, National Black Chamber of Commerce

Thursday, December 2, 11:00-12:15

	First	Last	Organization	Title	City	St	Phone	Email	Member
Sen.	Sylvia	Allen	Arizona Legislature	Senator	Snowflake	AZ	(602) 926-5219	sallen@azleg.gov	Legislative Member
Sen.	Denny	Altes	Arkansas General Assembly	Senator	Little Rock	AR	(501) 682-6107	altessanitation@yahoo.com	Legislative Member
Rep.	John	Anders	Louisiana Legislature	Representative	Vidalia	LA	(225) 342-6945	larep021@legis.state.la.us	Alternate
Rep.	Eric	Anderson	Idaho Legislature	Representative	Priest River	ID	(208) 332-1000	eanderso@house.idaho.gov	Legislative Member
Ms.	Bette	Arial	EnergySolutions	Vice President, Legislative and Community Affairs	Salt Lake City	UT	801-649-2127	barial@energysolutions.com	Private Sector Member (M1)
Rep.	Richard	Arnold	Iowa Legislature	Representative	Russell	IA	(515) 281-3221	richard.arnold@legis.state.ia.us	Legislative Member
Sen.	Vernon	Asbill	New Mexico Legislature	Senator	Carlsbad	NM	(505) 986-4393	vernon@asbillforsenate.com	Legislative Member
Mr.	Daren	Bakst	John Locke Foundation	Legal & Regulatory Policy Analyst	Raleigh	NC	(919) 828-3876	dbakst@johnlocke.org	Private Sector Member (M1)
Rep.	Paul	Bandy	New Mexico Legislature		Aztec	NM	(505) 986-4214	paul@paulbandy.org	Legislative Member
Rep.	Roger	Barrus	Utah Legislature		Centerville	UT	(801) 538-1029	rogerbarrus@utah.gov	Legislative Member
Mr.	Joseph	Bast	Heartland Institute	President	Chicago	IL	(312) 377-4000	jbast@heartland.org	Private Sector Member (Info)
Sen.	Eli	Bebout	Wyoming Legislature		Riverton	WY	(307) 777-7711	senbebout@wyoming.com	Legislative Member
Mr.	Jason	Begger	Cloud Peak Energy	Manager of Government Affairs	Gillette	WY	(307) 640-2373	Jason.begger@cldpk.com	Private Sector Member (M1)
Rep.	Wesley	Belter	North Dakota Legislature	Representative	Mapleton	ND	(701) 328-2916	wbelter@nd.gov	Legislative Member
Mr.	Roger	Bernstein	American Chemistry Council, Inc.	Managing Director, State Government Affairs & Grassroots	Arlington	VA	(703) 741-5590	roger_bernstein@americanchemistry.com	Private Sector Member (M1)
Sen.	Brian	Bingman	Oklahoma Legislature	Senator	Oklahoma City	OK	(405) 521-5528	bingman@oksenate.gov	Legislative Member
Rep.	Walter	Bivins	Missouri Legislature	Representative	Saint Louis	MO	(573) 751-9766	w.bivins@sbcglobal.net	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Rep.	Curtis	Blackwood	North Carolina General Assembly	Representative	Matthews	NC	(919) 733-2406	Curtisb@ncleg.net; blackwoodla@ncleg.net	Legislative Member
Ms.	Sano	Blocker	Energy Future Holdings	Sr. Vice President, Public Affairs	Dallas	TX	(214) 812-4720	sblocker@energyfutureholdings.com	Private Sector Member (M1)
Mr.	Robert	Blue	Dominion	Managing Director, State Affairs	Richmond	VA	(804) 771-4517	Robert.m.blue@dom.com	Private Sector Member (M2)
Mr.	Kevin	Boardman	PacifiCorp	Government Affairs	Salt Lake City	UT	(801) 220-6818	Kevin.Boardman@PacifiCorp.com	Private Sector Member (M1)
Rep.	Brian	Bosma	Indiana Legislature		Indianapolis	IN	(317) 232-9604	H88@in.gov	Legislative Member
Rep.	Bill	Callegari	Texas Legislature	Representative	Houston	TX	(512) 463-0528	bill.callegari@house.state.tx.us	Legislative Member
Mr.	Chad	Calvert	BP	Director, Government and Public Affairs	Denver	CO	(303) 830-3254	chad.calvert@bp.com	Private Sector Member (M2)
Mr.	Mike	Cantrell	Continental Resources, Inc.	Director of Government Affairs	Ada	OK	(405) 206-4444	sheilaholmes@contres.com	Private Sector Member (M1)
Mr.	Jeff	Case	CropLife America	Senior Director, Government Affairs	Washington	DC	(202) 368-2560	jcase@croplifeamerica.org	Private Sector Member (M1)
Rep.	Pat	Childers	Wyoming Legislature	Representative	Cody	WY		childers@house.wyoming.com	Alternate
Rep.	Warren	Chisum	Texas Legislature		Pampa	TX	(512) 463-0736	warren.chisum@house.state.tx.us	Legislative Member
Mr.	Chuck	Claunch	Duke Energy Corporation	Regional Director, South Carolina	Columbia	SC	(803) 370-2339	Chuck.Claunch@duke-energy.com	Private Sector Member (M2)
Mr.	Joseph	Cleary	Bayer HealthCare	Director, State Government Affairs	Braintree	MA	(781) 356-0164	joseph.cleary.b@bayer.com	Private Sector Member (M1)

	First	Last	Organization	Title	City	St	Phone	Email	Member
Mr.	Alan	Cobb	Americans for Prosperity	National Director of State Operations	Arlington	VA	(785) 354-4237	acobb@afphq.org	Private Sector Member (M1)
Sen.	Richard	Colburn	Maryland Legislature		Annapolis	MD	(410) 841-3590	Richard.Colburn@senate.state.md.us	Alternate
Sen.	Lee	Constantine	Florida Legislature		Altamonte Springs	FL	(850) 487-5050	constantine.lee.web@flsenate.gov	Legislative Member
Rep.	Marian	Cooksey	Oklahoma Legislature	Representative	Edmund	OK	(405) 557-7342	mcooksey3@cox.net	Legislative Member
Rep.	Brandon	Creighton	Texas Legislature	Representative	Austin	TX	(512) 463-0726	brandon.creighton@house.state.tx.us	Alternate
Rep.	Betty	De Boef	Iowa Legislature	Representative	Des Moines	IA		betty.deboef@legis.state.ia.us	Alternate
Rep.	Dave	Deyoe	Iowa Legislature		Des Moines	IA	(515) 281-3221	dave.deyoe@legis.state.ia.us	Alternate
Sen.	Merton	Dierks	Nebraska Unicameral Legislature	Senator	Ewing	NE	(402) 471-2801	mdierks@unicam.state.ne.us	Alternate
Mr.	Henry	Dixon	Shell Oil Company		Washington	DC	(202) 466-1473	henry.dixon@shell.com	Private Sector Member (M1)
Mr.	Nick	Dranias	Goldwater Institute		Phoenix	AZ	(602) 462-5000	ndranias@goldwaterinstitute.org	Private Sector Member (M1)
Rep.	Jeffrey	Duncan	South Carolina Legislature	Representative	Clinton	SC	(803) 734-2974	jeffduncan22@gmail.com	Legislative Member
Mr.	Mark	Dunn	J.R. Simplot Company	Vice President, Government Affairs	Boise	ID	(208)389-7377	madunn@simplot.com	Private Sector Member (M1)
Rep.	Laurence	Ehrhardt	Rhode Island Legislature		Providence	RI	(401) 222-2259	rep-ehrhardt@rilin.state.ri.us	Legislative Member
Rep.	Jim	Ellington	Mississippi Legislature	Representative	Raymond	MS	(601) 359-2431	jellington@house.ms.gov	Legislative Member
Rep.	Terry	England	Georgia General Assembly		Auburn	GA	(404) 656-0183	englandhomeport2@windstream.net	Alternate
Rep.	John	Faber	Kansas Legislature	Representative	Brewster	KS	(785) 296-7500	jfab@st-tel.net	Legislative Member
Sen.	Walter	Felag	Rhode Island Legislature		Providence	RI	(401) 276-5530	sen-felag@rilin.state.ri.us	Legislative Member
Rep.	Barney	Fisher	Missouri Legislature		Jefferson City	MO	(573) 751-5388	barney.fisher@house.mo.gov	Alternate
Sen.	Paul	Fogarty	Rhode Island Legislature		Providence	RI	(401) 276-5589	sen-fogarty@rilin.state.ri.us	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Rep.	Clay	Ford	Florida Legislature	Representative	Pensacola	FL	(850) 488-0895	clay.ford@myfloridahouse.gov	Legislative Member
Rep.	Tim	Freeman	Oregon Legislature	Representative	Salem	OR	(503) 986-1402	rep.timfreeman@state.or.us	Legislative Member
Rep.	Roy	Fund	Kansas Legislature	Representative	Topeka	KS	(785) 296-7671	rocky.fund@house.ks.gov	Alternate
Mr.	Brent	Gale	PacifiCorp	Senior Vice President	Portland	OR	(307) 577-6901		Private Sector Member (M1)
Mr.	Juan	Garcia	Chevron Corporation		Brea	CA	(714) 671-3457		Private Sector Member (M2)
Ms.	Donna	Gehlhaart	International Paper	Sr. Manager - State Gov't Relations	Washington	DC	(202) 628-7258	donna.gehlhaart@ipaper.com	Private Sector Member (M1)
Sen.	Thomas	Gollott	Mississippi Legislature	State Senator	Jackson	MS	228 374 1431	tgollott@senate.ms.gov	Alternate
Mr.	Santana	Gonzalez	Chevron Corporation	Public Affairs Manager	Bellaire	TX	(713) 432-3883	santanagonzalez@chevron.com	Private Sector Member (M1)
Rep.	Bruce	Goodwin	Ohio Legislature	Representative	Columbus	OH	(614) 644-5091	district74@ohr.state.oh.us	Legislative Member
Rep.	William	Gray	New Mexico Legislature		Artesia	NM	(505) 986-4211	wjgray@pvtnetworks.net	Alternate
Mr.	Robert	Greco	American Petroleum Institute	Director, Global Climate Programs	Washington	DC	(202) 682-8000		Private Sector Member (Info)
Mrs.	Molly	Greene	Salt River Project	Sr. Gov't Relations Rep.	Phoenix	AZ	(602) 236-5263	molly.greene@srpnet.com	Private Sector Member (M2)
Sen.	John	Griesheimer	Missouri Legislature	Senator	Jefferson City	MO	(573) 751-3678	jgriesheimer@senate.mo.gov	Legislative Member
Mr.	Hugo	Gutierrez	Marathon Oil Company	Government Affairs	Houston	TX	(713) 296-4145	hagutierrez@marathonoil.com	Private Sector Member (M1)
Rep.	Jimmie	Hall	New Mexico Legislature	Representative	Albuquerque	NM	(505) 986-4216	jimmie.hall@nmlegis.gov	Alternate

	First	Last	Organization	Title	City	St	Phone	Email	Member
Mr.	Harold	Hamm	Continental Resources, Inc.	Chairman and CEO	Enid	OK	(580) 233-8955	haroldhamm@contres.com	Private Sector Member (M2)
Rep.	Rick	Hardcastle	Texas Legislature	Representative	Austin	TX	(512) 463-0526	rick.hardcastle@house.state.tx.us	Alternate
Rep.	Michael	Harden		State Representative	Atlanta	GA	(404) 656-0305		Legislative Member
Mr.	Russel	Harding	Mackinac Center for Public Policy	Director of Property Rights Network	Midland	MI	989-631-0900	harding@mackinac.org	Private Sector Member (M1)
Mr.	Simon	Hare	National Rural Electric Cooperative Association		Arlington	VA	(703) 907-5500	simon.hare@nreca.coop	Private Sector Member (M2)
Sen.	Ernie	Harris	Kentucky Legislature		Frankfort	KY	(502) 564-8100	ernie.harris@lrc.ky.gov	Legislative Member
Ms.	Kathleen	Hartnett White	Texas Public Policy Foundation	Director of the Center for Natural Resources	Austin	TX	(512) 472-2700	khwhite@texaspolicy.com	Private Sector Member (M1)
Sen.	Brian	Hatfield	Washington Legislature	Senator	Olympia	WA	(360) 786-7636	bhatfield@willapabay.org	Legislative Member
Rep.	David	Hawk	Tennessee Legislature	Representative	Nashville	TN	(615) 741-7482	rep.david.hawk@capitol.tn.gov	Alternate
Rep.	Robert	Helm	Vermont Legislature	Representative	Fair Haven	VT	(802) 828-2247	bob_helm@cbwatson.net	Legislative Member
Rep.	Gordon	Hendrick	Montana Legislature	Representative	Helena	MT	(406) 444-4800	hendrickhd14@yahoo.com	Legislative Member
Rep.	Charles	Hoffman	South Dakota Legislature	State Representative	Pierre	SD	(605) 773-3251	rep.hoffman@state.sd.us	Alternate
Rep.	Roy	Hollandsworth	Montana Legislature	Representative	Helena	MT	(406) 444-4800	hgrain@3riversdbs.net	Alternate
Sen.	Dennis	Hollingsworth	California Legislature		Sacramento	CA	(916) 651-4036	cheryl.mclachlan@sen.ca.gov	Legislative Member
Rep.	Carl	Holmes	Kansas Legislature	Representative	Liberal	KS	(785) 296-7670	repcarl@aol.com	Legislative Member
Sen.	Janea	Holmquist	Washington Legislature	Senator	Olympia	WA	(360) 786-7624	holmquist.janea@leg.wa.gov	Legislative Member
Rep.	Michael	Huebsch	Wisconsin Legislature	Representative	Madison	WI	(608) 266-0631	Rep.Huebsch@legis.wisconsin.gov	Legislative Member
Mr.	Frank	Hurd	The Carpet and Rug Institute	Vice President & Chief Financial Officer	Dalton	GA	(706) 428-2136	fhurd@carpet-rug.org	Private Sector Member (M2)

	First	Last	Organization	Title	City	St	Phone	Email	Member
Rep.	Scott	Hutchinson	Pennsylvania Legislature	Representative	Harrisburg	PA	(717) 783-8188	shutchin@pahousegop.com	Legislative Member
Sen.	Cindy	Hyde-Smith	Mississippi Legislature	Senator	Brookhaven	MS	(601) 359-3246	chydesmith@senate.ms.gov	Legislative Member
Sen.	Tom	Jensen	Kentucky Legislature		London	KY	(502) 564-8100	tom.jensen@lrc.ky.gov	Legislative Member
Mr.	Bruce	Johnson	BP	Director, Government Affairs Ohio	Columbus	OH	614-227-5805	BruceC.Johnson@bp.com	Private Sector Member (M1)
Mr.	Russell	Jones	American Petroleum Institute		Washington	DC		jonesr@api.org	Private Sector Member (Info)
Rep.	Kris	Jordan	Ohio Legislature	State Representative	Columbus	OH	(614) 644-6711	kris.jordan@ohr.state.oh.us	Legislative Member
Mr.	Christian	Josi	Dezenhall Resources	Senior Vice President	Washington	DC	(202) 296-0263	cjosi@dezenhall.com	Private Sector Member (M1)
Sen.	Ron	Justice	Oklahoma Legislature	Senator	Oklahoma City	OK	(405) 521-5537	justice@oksenate.gov	Alternate
Ms.	Tammy	Kelch	National Rural Electric Cooperative Association	Manager, Legislative Outreach	Arlington	VA	(703) 907-5879	tammy.kelch@nreca.coop	Private Sector Member (M1)
Sen.	Bill	Ketron	Tennessee Legislature	Senator	Murfreesboro	TN	(615) 741-6853	sen.bill.ketron@capitol.tn.gov	Legislative Member
Mr.	Timothy	Kichline	Edison Electric Institute	Manager, State & Local Government Affairs	Washington	DC	(202) 508-5466	tkichline@eei.org	Private Sector Member (M1)
Rep.	Ric	Killian	North Carolina General Assembly	Representative	Charlotte	NC	(919) 733-5886	rick@ncleg.net	Legislative Member
Rep.	Bryan	King	Arkansas General Assembly	Representative	Green Forest	AR	(501) 682-5211	kingb@arkleg.state.ar.us	Legislative Member
Rep.	Tracy	King	Texas Legislature		Austin	TX	(512) 463-0194	district80.king@house.state.tx.us	Alternate
Sen.	Mike	Kopp	Colorado Legislature	Senator	Denver	CO	(303) 866-2638	mike.kopp.senate@state.co.us	Legislative Member
Sen.	Michael	Lamoureux	Arkansas General Assembly	Senator	Russellville	AR	(479) 968-7300	annc@arkleg.state.ar.us	Alternate
Sen.	Chris	Langemeier	Nebraska Unicameral Legislature		Lincoln	NE	(402) 471-2719	clangemeier@leg.ne.gov	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Sen.	Grant	Larson	Wyoming Legislature	Senator	Jackson	WY	(307) 777-7711	senlarson@senate.wyoming.com	Legislative Member
Sen.	Perry	Lee	Mississippi Legislature	Senator	Mendenhall	MS	(601) 359-3250	plee@senate.ms.gov	Alternate
Mrs.	Stephanie	Linn	ALEC	Policy Coordinator	Washington	DC	(202) 466-3800	Slinn@alec.org	Staff
Rep.	Rebecca	Lockhart	Utah Legislature		Provo	UT	(801) 538-1029	blockhart@utah.gov	Legislative Member
Rep.	Thomas	Lockhart	Wyoming Legislature	State Representative	Casper	WY	(307) 777-7852	tlockh1617@aol.com	Legislative Member
Rep.	Dwight	Loftis	South Carolina Legislature		Columbia	SC	(803) 734-3101	dloftis@yahoo.com	Legislative Member
	Bonnie	Loomis	Duke Energy Corporation	Regional Director, State Government Affairs	Columbia	SC	803-261-3280	bonnie.loomis@duke-energy.com	Private Sector Member (M1)
Sen.	LeRoy	Louden	Nebraska Unicameral Legislature		Ellsworth	NE	(402) 471-2725	llouden@leg.ne.gov	Legislative Member
Mr.	Kelly	Mader	Peabody Energy	Vice President, State Government Affairs	Saint Louis	MO	(314) 342-7564	kmader@peabodyenergy.com	Private Sector Chair
Sen.	Francis	Maher	Rhode Island Legislature	State Senator	Providence	RI	(401) 222-2708	frank.maher@yahoo.com	Alternate
Ms.	Laura	Marshall Schepis	National Rural Electric Cooperative Association	Principal, Legislative Affairs	Arlington	VA	(703) 907-5829	laura.marshall@nreca.coop	Private Sector Member (M2)
Rep.	Richard	McClain	Indiana Legislature		Indianapolis	IN	(317) 232-9600	richmcclain@comcast.net	Legislative Member
Rep.	Joe	McCord	Tennessee Legislature	Representative	Nashville	TN	(615) 741-5481	rep.joe.mccord@capitol.tn.gov	Legislative Member
Mr.	Michael	McGarey	Nuclear Energy Institute	Director, State Outreach	Washington	DC	(202) 739-8118	mfm@nei.org	Private Sector Member (M1)
Mr.	Mike	McGraw	Occidental Petroleum Corporation	Vice President, Government Affairs	Sacramento	CA	(916) 503-1409	mike_mcgraw@oxy.com	Private Sector Member (M1)
Sen.	Lesil	McGuire	Alaska Legislature	Senator	Anchorage	AK	(907) 465-2995	Senator_Lesil_McGuire@legis.state.ak.us	Legislative Member
Rep.	Betsy	McKinney	New Hampshire Legislature	Representative	Concord	NH	(603) 271-3125	betsy.mckinney@leg.state.nh.us	Legislative Member
Sen.	Michael	McLachlan	Connecticut General Assembly	Senator	Hartford	CT	(860) 240-0068	michael.mclachlan@cga.ct.gov	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Rep.	James	McNeil	Vermont Legislature		Rutland Town	VT	(802) 828-2247	jmcneil@leg.state.vt.us	Legislative Member
Rep.	Frank	McNulty	Colorado Legislature	State Representative	Highlands Ranch	CO	(303) 866-2936	frank@frankmcnulty.com	Legislative Member
Ms.	Jennifer	Mendez	The Carpet and Rug Institute	Director, Government Relations	Arlington	VA	(703) 875-0634	jmendez@carpet-rug.org	Private Sector Member (M1)
Rep.	Ray	Merrick	Kansas Legislature	House Majority Leader	Topeka	KS	(785) 296-7662	ray.merrick@house.ks.gov	Alternate
Del.	Carol	Miller	West Virginia Legislature	State Representative	Huntington	WV	(304) 340-3176	carolmil@mail.wvnet.edu	Legislative Member
Rep.	Lawrence	Miller	Connecticut General Assembly	Representative	Stratford	CT	(860) 240-8700	Lawrence.Miller@housegop.state.ct.us	Legislative Member
Mr.	Craig	Mischo	Bayer HealthCare	Sr. Regional Manager, SGA	Woodbury	MN	(651) 714-0316	craig.mischo.b@bayer.com	Private Sector Member (M2)
Sen.	Tommy	Moffatt	Mississippi Legislature	Senator	Jackson	MS	(601) 359-3232	sen52@cableone.net	Legislative Member
	Julie	Moore	Occidental Oil & Gas Co.	Vice Pres., Gov't Affairs	Austin	TX		julie_moore@oxy.com	Private Sector Member (M2)
Rep.	Robert	Moore	Arkansas General Assembly	State Representative	Little Rock	AR	(501) 682-2920	moorer@arkleg.state.ar.us	Legislative Member
Mr.	Michael	Morgan	Koch Companies Public Sector, LLC	Consultant	Andover	KS	(316) 207-8900 (c)	m.morgan33@cox.net	Private Sector Member (M1)
Mr.	Thomas	Moskitis	American Gas Association	Managing Director, External Affairs	Washington	DC	(202) 824-7031	tmoskitis@aga.org	Co-Chair
Mrs.	Carolyn	Moss	Dominion Resources Services Inc.	Managing Director, Mid Atlantic State & Local Affairs	Herndon	VA	(703) 375-5960	carolyn.moss@dom.com	Private Sector Member (M1)
Mr.	Andrew	Moylan	National Taxpayers Union	Director of Government Affairs	Alexandria	VA	703-683-5700	amoylan@ntu.org	Private Sector Member (M2)
Ms.	Charlene	Murdock	MDU Resources Group, Inc.	WY Government Affairs Representative	Gillette	WY	(307) 670-3961	charlene.murdock@mduresources.com	Private Sector Member (M2)

	First	Last	Organization	Title	City	St	Phone	Email	Member
Mr.	Kevin	Murphy	ExxonMobil Corporation	U.S. Government Relations Manager	Irving	TX	(972) 444-1117	kevin.murphy@exxonmobil.com	Private Sector Member (M1)
Mr.	Todd	Myers	Washington Policy Center	Director of Environmental Policy	Seattle	WA	(206) 963-3409	tmyers@washingtonpolicy.org	Private Sector Member (M1)
Rep.	Frank	Niceley	Tennessee Legislature	Representative	Nashville	TN	(615) 741-4419	rep.frank.niceley@capitol.tn.gov	Legislative Member
Mr.	Nick	Nichols	Dezenhall Communications Mgmt. Group, LTD	Chair/CEP/founder	Washington	DC			Private Sector Member (M2)
Sen.	Tom	Niehaus	Ohio Legislature		New Richmond	OH	(614) 466-8082	SD14@senate.state.oh.us	Legislative Member
Rep.	Kristi	Noem	South Dakota Legislature		Pierre	SD	(605) 881-2526	rep.noem@state.sd.us	Legislative Member
Ms.	Tracey	Norberg	Rubber Manufacturers Association	Senior Vice President	Washington	DC	(202) 682-4839	tnorberg@rma.org	Private Sector Member (M2)
Rep.	Darrell	Nottestad	North Dakota Legislature	Representative	Grand Forks	ND	(701) 328-3373	dnottestad@nd.gov	Legislative Member
Sen.	Ralph	Okerlund	Utah Legislature	State Senator	Salt Lake City	UT	(801) 538-1035	rokerlund@live.com	Legislative Member
Rep.	Betty	Olson	South Dakota Legislature	Representative	Prairie City	SD	(605) 855-2824	bets_reva@hotmail.com	Alternate
Rep.	Steven	Olson	Iowa Legislature		De Witt	IA	(515) 281-3221	steven.olson@legis.state.ia.us	Legislative Member
Sen.	Ralph	Ostmeyer	Kansas Legislature	Senator	Grinnell	KS	(785) 296-7399	rkostmey@st-tel.net	Legislative Member
Mr.	Mark	Ourada	American Coalition for Clean Coal Electricity (ACCCE)	Vice President for External Affairs	Buffalo	MN	(703) 302-1213	mourada@cleancoalusa.org	Private Sector Member (M1)
Rep.	Stephen	Palmer	New Hampshire Legislature	Representative	Concord	NH	(603) 271-3125	SPalmer_Peanuts@msn.com	Legislative Member
Rep.	Ruth Ann	Palumbo	Kentucky Legislature	Representative	Lexington	KY	(502)564-8100	ruthannpalumbo@qx.net	Alternate
Sen.	Patricia	Pariseau	Minnesota Legislature	Senator	Saint Paul	MN		sen.pat.pariseau@senate.mn	Legislative Member
Mr.	Gregory	Pauley	American Electric Power Company Inc.	Director of Public Policy	Columbus	OH	614-716-2345	ggpauley@aep.com	Private Sector Member (M1)

	First	Last	Organization	Title	City	St	Phone	Email	Member
Sen.	William	Payne	New Mexico Legislature		Albuquerque	NM	(505) 986-4276	william.payne@nmlegis.gov	Legislative Member
Sen.	Joey	Pendleton	Kentucky Legislature		Frankfort	KY	(502) 564-2470	joey.pendleton@lrc.ky.gov	Legislative Member
Rep.	Brandon	Phelps	Illinois Legislature	Representative	Harrisburg	IL	(217) 782-5131	bphelps@yourclearwave.com	Legislative Member
Sen.	Steve	Pierce	Arizona Legislature	Senator	Phoenix	AZ	(602) 926-5584	spierce@azleg.gov	Legislative Member
Rep.	John	Piscopo	Connecticut General Assembly	Representative	Hartford	CT	(860) 240-8700	john.piscopo@housegop.state.ct.us	Legislative Member
Rep.	Larry	Powell	Kansas Legislature	Representative	Topeka	KS	(785) 296-7694	lpowell18@cox.net	Alternate
Rep.	Lee	Randall	Montana Legislature		Broadus	MT	(406) 444-4800	LeeRandall_2003@hotmail.com	Legislative Member
Sen.	Leonidas	Raptakis	Rhode Island Legislature	Senator	Providence	RI	(401) 276-5567	sen-raptakis@rilin.state.ri.us	Alternate
Rep.	Phillip	Richardson	Oklahoma Legislature	Representative	Oklahoma City	OK	(405) 557-7401	philrichardson@okhouse.gov	Legislative Member
Sen.	Dorsey	Ridley	Kentucky Legislature		Henderson	KY	(502) 564-8100	dorsey.ridley@lrc.ky.gov	Alternate
Rep.	Beverly	Rodeschin	New Hampshire Legislature		Newport	NH	(603) 271-3165	rodys@comcast.net	Legislative Member
Rep.	Carl	Rogers	Georgia General Assembly	Representative	Atlanta	GA	(404) 463-2247	carl.rogers@house.ga.gov	Alternate
Mr.	David	Roznowski	LyondellBasell Industries	Manager, State Government Affairs	Houston	TX	(713) 309-7346	david.roznowski@lyondellbasell.com	Private Sector Member (M1)
Rep.	Ruth	Samuelson	North Carolina General Assembly		Raleigh	NC	(919) 715-3009	ruths@ncleg.net	Legislative Member
Rep.	Howard	Sanderford	Alabama Legislature		Huntsville	AL	(334) 242-4368	hs1989@aol.com	Legislative Member
Rep.	Mike	Sanders	Oklahoma Legislature	Representative	Oklahoma City	OK	(405) 557-7407	mike.sanders@okhouse.gov	Alternate
Rep.	Bill	Sandifer	South Carolina Legislature	Representative	Seneca	SC	(803) 734-3015	wes@schouse.org	Legislative Member
Mr.	Ronald	Scheberle	ALEC	PEB Chairman Emeritus	Irving	TX	(214) 557-6769	ronscheberle@sbcglobal.net	Staff
Rep.	Joe	Schmick	Washington Legislature	State Representative	Olympia	WA	(360) 786-7844	schmick.joe@leg.wa.gov	Legislative Member
Rep.	Shane	Schoeller	Missouri Legislature	Representative	Jefferson City	MO	(573) 751-2948	shane.schoeller@house.mo.gov	Legislative Member
Sen.	Kel	Seliger	Texas Legislature	Senator	Austin	TX	(512) 463-0131	kel.seliger@senate.state.tx.us	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Mr.	Richard	Shelby	American Gas Association		Washington	DC	202-824-7210	rshelby@aga.org	Private Sector Member (M2)
Del.	Tanya	Shewell	Maryland Legislature		Westminster	MD	(410) 841-3371	tanya.shewell@house.state.md.us	Legislative Member
Mr.	Jonathan	Shore	American Petroleum Institute	Manager, External Moblization	Washington	DC	(202) 682-8116	shorej@api.org	Private Sector Member (M1)
Mr.	Rob	Shrum	ALEC	Director of Corporate & Non-Profit Relations	Washington	DC	(202) 466-3800	rshrum@alec.org	Staff
Mr.	Martin	Shultz	Pinnacle West Capital Corp.	Vice President, Government Affairs	Phoenix	AZ	(602) 250-2866	martin.shultz@pinnaclewest.com	Co-Chair
Mr.	Geoff	Simon	MDU Resources Group, Inc.	Director, State Government Affairs	Bismarck	ND	(701) 530-1086	geoff.simon@mduresources.com	Private Sector Member (M1)
Sen.	Douglas	Smith	Maine Legislature	Senator	Dover-Foxcroft	ME	(207) 287-1505	dsmith@kynd.net	Legislative Member
Rep.	Lynn	Smith	Georgia General Assembly		Atlanta	GA	(404) 656-7149	lynn.smith@house.ga.gov	Legislative Member
Mr.	Russell	Smoldon	Salt River Project	Manager State Government Relations	Phoenix	AZ	(602) 236-2834	Russell.Smoldon@srpnet.com	Private Sector Member (M1)
Sen.	V.	Sosnowski	Rhode Island Legislature	State Senator	Providence	RI		sen-sosnowski@rilin.state.ri.us	Alternate
Del.	Richard	Sossi	Maryland Legislature		Annapolis	MD	(410) 841-3543	richard.sossi@house.state.md.us	Legislative Member
Mr.	Scott	Spendlove				CO			Private Sector Member (M2)
Mr.	John	Stephenson	National Taxpayers Union	State Gov't Affairs Manager	Alexandria	VA	703-683-5700	jstephenson@ntu.org	Private Sector Member (M1)
Rep.	John	Stevenson	Idaho Legislature		Rupert	ID	(208) 334-2475	jstevenson@house.idaho.gov	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Ms.	Judy	Stokey	NV Energy, Inc.	Director, Government Affairs	Las Vegas	NV	(702) 402-5646	jstokey@nevp.com	Private Sector Member (M1)
Mr.	James	Taylor	Heartland Institute	Manging Editor, Environment and Climate News	Parrish	FL	312-377-4000	nikki@heartland.org	Private Sector Member (M1)
Rep.	Matt	Teeters	Wyoming Legislature		Cheyenne	WY	(307) 777-7852	mteeters@wyoming.com	Alternate
Sen.	Francis	Thompson	Louisiana Legislature	Senator	Delhi	LA	(225) 342-2040	thompsof@legis.state.la.us	Legislative Member
Rep.	Michael	Thompson	Oklahoma Legislature	Representative	Oklahoma City	OK		mikethompson@okhouse.gov	Alternate
Sen.	Ross	Tolleson	Georgia General Assembly	Senator	Atlanta	GA	(404) 656-0081	ross.tolleson@senate.ga.gov	Legislative Member
Rep.	Gerald	Uglem	North Dakota Legislature	Representative	Northwood	ND	(701) 328-2916	guglem@nd.gov	Alternate
Rep.	Karl	Van Roy	Wisconsin Legislature	Representative	Green Bay	WI	(608) 266-0616	Rep.VanRoy@legis.wisconsin.gov	Legislative Member
Rep.	Kim	Vanneman	South Dakota Legislature		Pierre	SD	(605) 773-3251	rep.vanneman@state.sd.us	Legislative Member
Rep.	Don	Vigesaa	North Dakota Legislature	Representative	Cooperstown	ND		dwvigesaa@nd.gov	Legislative Member
Sen.	Frank	Wagner	Virginia General Assembly	Senator	Virginia Beach	VA	(804) 698-7507	fwagner@davisboat.com	Legislative Member
Rep.	Wendy	Warburton	Montana Legislature	Representative	Havre	MT	(406) 444-4800	wendywarburton@gmail.com	Legislative Member
Del.	Lee	Ware	Virginia General Assembly	Delegate	Powhatan	VA	(804) 698-1011	DelOWare@house.virginia.gov	Legislative Member
Mr.	Matthew	Warner	Atlas Economic Research Foundation	Director of U.S. Programs	Washington	DC	202-449-8454	matt.warner@atlasnetwork.org	Private Sector Member (Info)
Rep.	Ralph	Watts	Iowa Legislature	Representative	Des Moines	IA	(515) 281-3221	ralph.watts@legis.state.ia.us	Legislative Member
	Bryan	Weynand	ALEC	Legislative Assistant, Civil Justice & Natural Resources Task Force	Washington	DC	(202) 466-3800	bweynand@alec.org	Staff
Rep.	Jack	Williams	Alabama Legislature		Montgomery	AL	(334) 242-7600	jack@jackwilliams.org	Legislative Member

	First	Last	Organization	Title	City	St	Phone	Email	Member
Ms.	Rosemary	Wilson	American Coalition for Clean Coal Electricity (ACCCE)	Vice President - Policy	Ballwin	MO	(703) 302-1216	rwilson@cleancoalusa.org	Private Sector Member (M2)
Rep.	David	Winters	Illinois Legislature	Representative	Rockford	IL		repwinters@aol.com	Legislative Member
Rep.	David	Wolkins	Indiana Legislature	Representative	Winona Lake	IN	(317) 232-9600	daw8144@gmail.com	Task Force Chair
Mr.	Clint	Woods	ALEC	Director, Energy, Environment and Agriculture Task Force	Washington	DC	(202) 466-3800	cwoods@alec.org	Staff
Mr.	Josh	Young	American Chemistry Council, Inc.	Director, State Affairs & Grassroots	Arlington	VA	(703) 741-5569	josh_young@americanchemistry.com	Private Sector Member (M2)
Mr.	Dan	Zielinski	Rubber Manufacturers Association		Washington	DC	(202) 682-4846	dzielinski@rma.org	Private Sector Member (M1)
Rep.	Henry	Zuber	Mississippi Legislature	State Representative	Jackson	MS	(601) 576-2508	hank1@cableone.net	Alternate

Energy, Environment and Agriculture Task Force Meeting
ALEC's 2010 Annual Meeting
August 7, 2010
Meeting Minutes

In attendance:

Rep. Jim Ellington, MS
James Taylor, Heartland
Rep. Tom Lockhart, WY
Carolyn Moss, Dominion
Nick Dranias, Goldwater
Rep. Paul Bandy, NM
Rep. James Strickler, NM
Todd Myers, WPC
John Stevenson, NTU
Sen. Ralph Okerlund, UT
Sen. Tom Niehaus, OH
Rep. Betty De Boef, Iowa
Rep. Bette Grande, ND
Sen. Bob Marshall, KS
Rep. Brenda Heller, ND
Jeanelle McCain, Progress Energy
Rep. Frank Pratt, AZ
Rep. Rebecca Lockhart, UT
David Roznowski, LyondellBasell
Rep. Randy Weber, TX
Rep. Larry Miller, CT
Donna Gelhart, International Paper
Jenn Mendez, Carpet and Rug
Russell Smoldon, Salt River Project
Rep. Russ Jones, AZ
Mike McGarey, NEI
Rep. Harvey Morgan, VA
Rep. Larry Powell, KS
Sen. Ralph Ostmeyer, KS
Sen. Tommy Moffatt, MS
Sen. Perry Lee, MS
Mario Loyola, TPPF
Sen. Michael Lamoureux, Arkansas

Myron Ebell of CEI spoke on "The Politics of EPA Regulation of Greenhouse Gas Emissions"

Dr. Wallace Walrod of Fueling California spoke on "Energy Policy and Fuel Prices in California"

Assemblyman Dan Logue (CA) spoke on "The Effort to Suspend California's Global Warming Law (Proposition 23)"

Phil Powell of Dominion spoke on Dominion's Smart Meters

Eminent Domain Authority for Federal Lands Act, State Sovereignty through Local Coordination Act, and *Decentralized Land Use Regulation for Rural Counties* passed by unanimous vote.

John Indall of Uranium Producers of America spoke on "Uranium Supply and Production"

David Asti of Southern California Edison spoke on "Adverse Regulation of Power Plant Water Use"

ATTENDEE
REGISTRATION / HOUSING FORM

American Legislative Exchange Council

Early registration deadline: November 10, 2010
Housing cut-off date: November 04, 2010

December 1-3, 2010

Grand Hyatt Washington Hotel
1000 H Street, NW
Washington, DC 20001

Online www.alec.org | **Fax** *(credit cards only)* 202.331.1344 | **Phone / Questions** • Mon-Fri, 9am-5:30 pm Eastern Registration: 202.742.8538 / Housing: (800) 221-3531 | **Mail** • ALEC Registration & Housing P.O. Box 96754 • Washington, DC 20090-6754

ATTENDEE INFORMATION

Prefix *(required)* ☐ Sen ☐ Rep ☐ Del ☐ Mr ☐ Mrs ☐ Ms ☐ Other _____

Last Name _____ First Name _____ Middle Initial ____ Badge Nickname _____

Title _____

Organization *(required)* _____

Address _____ Suite # _____

City _____ State/Province _____ Country _____ ZIP/Postal code _____

Daytime phone _____ Fax _____ Alternate phone _____

Email *(confirmation will be sent by email)* _____

Spouse / Guest: If registering a spouse or guest, please complete the spouse/guest registration form.

REGISTRATION INFORMATION

****Save $50 on registration by booking your hotel room in ALEC's headquarter hotel****

DISCOUNTED REGISTRATION FEES are extended only to registrants booking ALEC's headquarter hotel. Your $50 savings will become valid when accommodations are confirmed.

Note: Member fees are subject to verification	***Early*** **Until 11/10**	***On-Site*** **Begin 11/11**	***Amount***
☐ I have already registered # _____			
☐ ALEC Legislative Member	$ 375	$ 475	$ _____
☐ Legislator / Non-Member	$ 475	$ 575	$ _____
☐ Newly Elected Legislator (2010 Election Cycle)	$ 375	$ 475	$ _____
☐ ALEC Private Sector Member	$ 725	$ 875	$ _____
☐ Private Sector Non-Member	$ 925	$ 1100	$ _____
☐ ALEC Non-Profit Member (501(c)(3) status required)	$ 525	$ 625	$ _____
☐ Non-Profit Non-Member (501(c)(3) status required)	$ 675	$ 825	$ _____
☐ Legislative Staff / Government	$ 400	$ 500	$ _____
☐ ALEC Legacy Member	$ 0	$ 0	$ _____

Promo Code _____ **TOTAL REGISTRATION FEES:** $ _____

METHOD OF REGISTRATION PAYMENT

Credit Card: Credit cards will be charged immediately. Please fax to the above number for processing.

☐ Amer Express ☐ Visa ☐ MasterCard

Card # _____

Cardholder *(please print)* _____

Exp Date *(mm/yy)* _____ Security Code _____

Signature _____

Checks: Payment must be in U.S. currency drawn on a U.S. bank. Please make check payable to ALEC Registration and send to above address.

Note: Registration forms with enclosed payments must be postmarked by November 10, 2010 to be eligible for early registration rates. Forms and/or payments received after November 10 will be subject to the on-site registration rate. If registering after November 10, please bring completed form and payment to register on-site.

REGISTRATION CONFIRMATION INFORMATION

Online registrants will receive immediate email confirmation. If registering by form, confirmation will be emailed, faxed, or mailed within 72 hours of receipt of payment.

REGISTRATION CANCELLATION / REFUND INFORMATION

Registrations cancelled prior to 5pm *Eastern* November 10, 2010 are subject to a $100 cancellation fee. Registrations are non-refundable after 5pm *Eastern* November 10, 2010.

HOUSING — RESERVATION CUTOFF FOR ALEC DISCOUNTED RATE IS NOVEMBER 4, 2010

****Save $50 on registration by booking your hotel room in ALEC's headquarter hotel****

☐ I do not require a reservation at this time.

Arrival Date _____ **Departure Date** _____

☐ Sharing room with _____

Room type

☐ Single	(1 person – 1 bed)	$ 269
☐ Double	(2 persons – 1 bed)	$ 294
☐ Dbl/Dbl	(2 persons – 2 beds)	$ 294
☐ Triple	(3 persons – 2 beds)	$ 319
☐ Quad	(4 persons – 2 beds)	$ 344
☐ Government rate		Not Available

** All rates DO NOT include sales tax 14.5 % (subject to change)*

Suites and upgraded accommodations are available upon request. Please call ALEC Housing at the number listed above for additional information.

Special requests

☐ ADA room required:
____ Audio ____ Visual ____ Mobile

☐ Rollaway / crib: _____

☐ Other: _____

_____

METHOD OF HOUSING PAYMENT

☐ Please use the same method of payment as above.

Credit Card: Credit Cards will be used to guarantee the reservation.

☐ Amer Express ☐ Visa ☐ MasterCard ☐ Discover

Card # _____

Cardholder *(please print)* _____

Exp Date *(mm/yy)* _____ Security Code _____

Signature _____

Checks: Payment must be in U.S. currency drawn on a U.S. bank. Please make check payable to ALEC and send to above address.

Note: Cutoff for reservations at the ALEC rate is November 4, 2010. After November 4, 2010, every effort will be made to accommodate new reservations, based on availability and rate.

HOUSING CONFIRMATION INFORMATION

Online reservations will receive immediate email confirmation. Reservations received by form will be confirmed via email, fax, or mail within 72 hours of receipt.

HOUSING CANCELLATION / REFUND INFORMATION

Credit cards will be charged one night room and tax in the event of a no show or if cancellation occurs within 72 hours prior to arrival. Departures prior to the departure date confirmed by the hotel at check-in will result in a charge of one night room and tax. Please obtain a cancellation number when your reservation is cancelled.

SPOUSE / GUEST
REGISTRATION / HOUSING FORM

December 1-3, 2010

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

Grand Hyatt Washington Hotel
1000 H Street, NW
Washington, DC 20001

Grand Hyatt Washington

Online www.alec.org | **Fax** *(credit cards only)* 202.331.1344 | **Phone / Questions** • Mon-Fri, 8am-5:30 pm *Eastern* 202.742.8538 | **Mail** • ALEC Registration & Housing P.O. Box 96754 • Washington, DC 20090–6754

ATTENDEE INFORMATION IS REQUIRED TO REGISTER A SPOUSE OR GUEST

Prefix *(required)* ☐ Sen ☐ Rep ☐ Del ☐ Mr ☐ Mrs ☐ Ms ☐ Other _____

Last Name _____ First Name _____ Middle Initial ____ Badge Nickname _____

Title _____

Organization *(required)* _____

Address _____ Suite # _____

City _____ State/Province _____ Country _____ ZIP/Postal code _____

Daytime phone _____ Fax _____ Alternate phone _____

Email *(confirmation will be sent by email)* _____

SPOUSE / GUEST REGISTRATION

SPOUSE / GUEST REGISTRATION GUIDELINES

1. Spouse / guest registration is meant to accommodate legal spouse and immediate family members.
2. Attendees from the same organization must register independently. No exception will be made.
3. Spouse / guest designation will be clearly visible on name badge.
4. Spouse / guest registrants are not eligible to attend ALEC Task Force meetings.

Last Name _____ First Name _____ Middle initial ____ Badge Nickname _____

Last Name _____ First Name _____ Middle initial ____ Badge Nickname _____

Last Name _____ First Name _____ Middle initial ____ Badge Nickname _____

SPOUSE / GUEST REGISTRATION FEES	*Number of Spouse/Guest(s)*	*Early Until 11/10*	*On-Site Begin 11/11*	*TOTAL*
☐ Spouse / Guest *please note name(s) above*	_____	$ 150	$ 150	$ _____

METHOD OF SPOUSE / GUEST REGISTRATION PAYMENT

Credit Card: Credit cards will be charged immediately. Please fax to the above number for processing.

☐ Amer Express
☐ Visa
☐ MasterCard

Card # _____
Cardholder *(please print)* _____
Exp Date *(mm/yy)* _____ Security Code _____
Signature _____

Checks: Payment must be in U.S. currency drawn on a U.S. bank. Please make check payable to ALEC Registration and send to above address.

Note: If registering after November 10, please bring completed form and payment to register on-site.

REGISTRATION CONFIRMATION INFORMATION

Online registrants will receive immediate email confirmation to the address provided above. If registering by form, confirmation will be emailed, faxed, or mailed within 72 hours of receipt of payment.

REGISTRATION CANCELLATION / REFUND INFORMATION

Registrations cancelled prior to 5pm *Eastern* November 10, 2010 are subject to a $100 cancellation fee. Registrations are non-refundable after 5pm *Eastern* November 10, 2010.

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

ALEC

Mission Statement

The American Legislative Exchange Council's mission is…

To advance the Jeffersonian Principles of free markets, limited government, federalism, and individual liberty through a nonpartisan public-private partnership among America's state legislators, concerned members of the private sector, the federal government, and the general public.

To promote these principles by developing policies that ensure the powers of government are derived from, and assigned to, first the People, then the States, and finally the Federal Government.

To enlist state legislators from all parties and members of the private sector who share ALEC's mission.

To conduct a policy making program that unites members of the public and private sector in a dynamic partnership to support research, policy development, and dissemination activities.

To prepare the next generation of political leadership through educational programs that promote the principles of Jeffersonian democracy, which are necessary for a free society.

AMERICAN LEGISLATIVE EXCHANGE COUNCIL

SCHOLARSHIP POLICY BY MEETING

ALEC Spring Task Force Summit:

1. ***Spring Task Force Summit Reimbursement Form:*** ALEC Task Force Members are reimbursed by ALEC up to a predetermined set limit for travel expenses. Receipts must be forwarded to the ALEC Policy Coordinator and approved by the Director of Policy.
2. ALEC Task Force Members' room & tax fees for a two-night stay are covered by ALEC.
3. *Official Alternate Task Force Members* (chosen by the State Chair and whose names are given to ALEC more than 35 days prior to the meeting to serve in place of a Task Force Member who cannot attend) are reimbursed in the same manner as Task Force Members.
4. ***State Scholarship Reimbursement Form***: Any fees above the set limit, or expenses other than travel and room expenses can be submitted by Task Force Members for payment from their state scholarship account upon the approval of the State Chair. Receipts must be submitted to the State Chair, who will submit the signed form to the Director of Membership.
5. *Non-Task Force Members* can be reimbursed out of the state scholarship fund upon State Chair approval. Receipts must be submitted to the State Chair, who will submit the appropriate signed form to the Director of Membership.

ALEC Annual Meeting:

State Scholarship Reimbursement Form: State scholarship funds are available for reimbursement by approval of your ALEC State Chair. Expenses are reimbursed after the conference, and may cover the cost of travel, room & tax, and registration. Receipts are to be submitted to the State Chair, who will then submit the signed form to the Director of Membership.

ALEC States & Nation Policy Summit:

1. ***States & Nation Policy Summit Reimbursement Form***: ALEC offers two scholarships per state to cover the cost of travel, room & tax, and registration not to exceed $1,000.00 per person for a total of $2,000.00 per state. ALEC scholarship recipients must be named by the ALEC State Chair. Expenses are submitted to the State Chair and reimbursed after the conference. The State Chair submits the signed form to the Director of Membership.
2. ***State Scholarship Reimbursement Form***: Any other fees or payments must come out of the state scholarship account, with the approval of the State Chair. Receipts must be submitted to the State Chair, who submits the signed form to the Director of Membership.

ALEC Academies:

Academy Reimbursement Form: Attendees of ALEC Academies are reimbursed by the Task Force Committee hosting the Academy. Attendees will receive a form at the Academy, and will be reimbursed up to $500.00 for travel, and room & tax fees for a two-night stay by ALEC. Receipts must be forwarded to the appropriate Task Force Director and approved by the Director of Policy.

American Legislative Exchange Council
TASK FORCE OPERATING PROCEDURES

I. MISSION OF TASK FORCES

Assume the primary responsibility for identifying critical issues, developing ALEC policy, and sponsoring educational activities which advance the Jeffersonian principles of free markets, limited government, federalism, and individual liberty. The mission will be accomplished through a non-partisan, public and private partnership between ALEC's legislative and private sector members in the specific subject areas assigned to the Task Force by the Board of Directors.

II. TASK FORCE RESPONSIBILITIES

A. Task Forces have the primary responsibility for identifying critical issues and developing ALEC's official policy statements and model legislation appropriate to the specific subject areas of the Task Force.

B. Task Forces serve as forums for an exchange of ideas and sharing of experiences between ALEC's state legislator and private sector members.

C. Task Forces are responsible for developing and sponsoring the following educational activities appropriate to the specific subject area of the Task Force:

- publications that express policy positions, including, but not limited to State Factors and Action Alerts;
- educational communication and correspondence campaigns;
- issue specific briefings, press conferences and press campaigns;
- witness testimony and the activities of policy response teams;
- workshops at ALEC's conferences; and
- specific focus events.

D. The Executive Director is to ~~Task Forces are responsible for~~ develop~~ing~~ an annual budget~~s,~~ which shall include expenses associated with Task Force meetings and educational activities. A funding mechanism to finance all meetings and educational activities proposed by Task Forces must be available before they can be undertaken.

III. GENERAL PROCEDURES

A. Requests from ALEC members for policy statements, model legislation and educational activities shall be directed by the Executive Director to the appropriate Task Force, or the Board of Directors if the issue does not fall within the jurisdiction of any Task Force. The appropriate Public and Private Sector Task Force Co-Chairs determine the agenda for each Task Force meeting, and the meetings will be called and conducted in accordance with these Operating Procedures.

The Director of Policy with the consent of the Executive Director assigns a model bill or resolution to the most appropriate Task Force based on Task Force content and prior jurisdictional history 35 days before a Task Force Meeting. All Task Force Co-Chairs will be provided an email or fax summary of all model bills and resolutions 35 days before the Task Force meeting

If both the Co-Chairs of a Task Force are in agreement that they should have jurisdiction on model legislation or a resolution, the legislation or resolution will be considered by the Task Force. If the other Task Force Co-Chairs believe they should have jurisdiction or if the author of the model bill or resolution does not agree on the jurisdictional assignment of the bill, they will have 10 days after the 35-day mailer deadline to submit in writing or by electronic appeal to the Director of Policy their intent to challenge the jurisdiction assignment. The Director of Policy will notify the Executive Director who will in turn notify the National Chair and the Private Enterprise Board Chair. The National Chair and the Private Enterprise Board Chair will in turn refer the matter in question to the Board of Directors Task Force Board Committee. The Director of Policy will establish a conference call for the Task Force Board Committee co- chairs, the author, the affected Task Force Co-Chairs and the Director of Policy at a time convenient for all participants.

The Task Force Board Committee Co-Chairs shall listen to the jurisdictional dispute by phone or in person within 10 days of the request. If both Task Force Board Committee Co-Chairs are in agreement that the Director of Policy made an incorrect jurisdictional referral, only then will the model bill or resolution be reassigned to a committee as they specify once agreed upon by the National Chair and the Private Enterprise Board Chair. The bill or model resolution is still eligible to be heard in whatever Task Force it is deemed to be assigned to as if submitted to the correct Task Force for the 35-day mailer. The National Chair and the Private Enterprise Board Chair decision is final on this model bill or resolution.

Joint referral of model legislation and/or resolutions are allowed if all the affected Task Force Co-Chairs agree. All model legislation and resolutions that have been referred to, more than one Task Force must pass the identical language in both Task Forces within two consecutive Task Force meetings. It is at the Task Force

Co-Chairs discretion how they will handle the hearings of the model legislation or resolution. Both sets of co-chairs have the ability to call a working group, subcommittee, or simply meet consecutively or concurrently if necessary.

If the Task Force co-chairs both agree to waive jurisdiction, they may do so as long as another Task Force still has jurisdiction.

The National Chair and the Private Sector Board Chair will rely upon the Task Force Board Committee Co-Chairs for advice and recommendations on model legislation or resolutions when no jurisdiction in any of the existing Task Forces in operation can be found. The Task Force Board Committee Co-Chairs will work with the Executive Director and the Director of Policy to identify public and private sector Task Force members (not alternates) from the existing Task Forces should their expertise be of assistance to the Task Force Board Committee in reaching a determination and recommendation for approval by the National Chair and the Private Enterprise Board Chair.

B. The National Chair and the Private Sector Board Chair will rely upon the Task Force Board Committee Co-Chairs for advice and recommendations on model legislation or resolutions when no jurisdiction in any of the existing Task Forces in operation can be found. The Task Force Board Committee Co-Chairs will work with the Executive Director and the Director of Policy to identify public and private sector Task Force members (not alternates) from the existing Task Forces should their expertise be of assistance to the Task Force Board Committee in reaching a determination and recommendation for approval by the National Chair and the Private Enterprise Board Chair.

C. The Board of Directors shall have ultimate authority over Task Force procedures and actions including the authority to create, to merge or to disband Task Forces and to review Task Force actions in accordance with these Operating Procedures. Nothing in these Operating Procedures prohibits the Board of Directors from developing ALEC policy; however, such a practice should be utilized only in exceptional circumstances. Before the policy is adopted by the Board of Directors, it should be sent to the Public and Private Sector Task Force Co-Chairs under whose jurisdiction the matter falls for review and comment back to the Board of Directors.

D. The operating cycle of a Task Force is two years. A new operating cycle begins on January 1 of each odd numbered year and ends on December 31 of the following even numbered year. Task Force activities shall be planned and budgeted on an annual basis within each two-year operating cycle.

E. ~~At the ALEC Annual Meeting, each Task Force will be responsible for determining an operating budget for the succeeding calendar year. The Executive Director will notify the Task Force Co-Chairs, at the ALEC Annual Meeting, what inflation factor will be used by the Task Force to determine the operating~~

~~and programming budgets. Task Force membership and budget information will be reported to the Executive Director by the Public and Private Sector Task Force Co-Chairs. The Executive Director will present this information to the Board of Directors at its regular fall meeting.~~

F. If a Task Force is unable to develop an operating budget, the Board of Directors will determine whether to continue the operations of the Task Force. This determination will be made according to: (1) the level of membership on the Task Force, and (2) the need for continued services developed by the Task Force for ALEC.

G. The Board of Directors shall have the authority to allocate limited general support funds to finance the annual operating budget of Task Forces that meet the requirements prescribed in Section III (E). The Executive Director shall determine, and report to the Board of Directors, the amount of general support funds available to underwrite such Task Forces.

IV. MEMBERSHIP AND MEMBER RESPONSIBILITIES

A. The membership of a Task Force consists of legislators who are members in good standing of ALEC and are duly appointed to the Task Force, in accordance with Section VI (A) and private sector organizations that are full members of ALEC, contribute to the assessment for the Task Force operating budget, and are duly appointed to the Task Force, in accordance with Section VI (B). Private sector organizations that were full members of ALEC and contributed the assessment for the Task Force's operating budget in the previous year, can be appointed to the Task Force for the current year, conditional upon renewal of full ALEC membership and receipt of the current year's assessment for the Task Force operating budget prior to March 31st, unless an alternative date has been approved by the Executive Director.

B. Each Task Force shall have <u>least</u> two Co-Chairs; a Public Sector Task Force Co-Chair and a Private Sector Task Force Co-Chair. The Public Sector Task Force Co-Chair must be a member of the Task Force and appointed in accordance with Section VI (A). The Private Sector Co-Chair must represent a private sector member of the Task Force and be appointed in accordance with Section VI(B). The Co-Chairs shall be responsible for:

(1) calling the Task Force and the Executive Committee meetings to order, setting the agenda and co-chairing such meetings;
(2) appointing and removing legislators and private sector members to and from the Task Force Executive Committee and subcommittees;
(3) creating subcommittees, and determining each subcommittee's mission, membership limit, voting rules, deadlines, and term of service; and

(4) selecting Task Force members to provide support for and against Task Force policies during formal Board reviews.

C. Each Task Force shall have an Executive Committee appointed by the Public and Private Sector Task Force Co-Chairs that is appropriate in number to carry out the work product and strategic plan of ALEC and the Task Force. The Executive Committee shall consist of the Public Sector Task Force Co-chair, the Private Sector Task Force Co-Chair, the subcommittee co-chairs, and the remainder will be an equal number of legislative and private sector Task Force members. The Executive Committee will be responsible for determining the operating budget and proposing plans, programs and budgets for the succeeding year in accordance with (Section V (B); determining if a proposed educational activity conforms to a previously approved model bill, resolution or policy statement in accordance with (Section IX (F); and determining if an emergency situation exists that justifies waiving or reducing appropriate time limits in accordance with (Section VIII (H)).

D. Each Task Force may have any number of subcommittees, consisting of Task Force members and advisors to focus on specific areas and issues and make policy recommendations to the Task Force. The Task Force Co-chairs, shall create subcommittees and determine each subcommittee's mission, membership limit, voting rules, deadlines, and term of service. Any model bill, resolution or policy statement approved by a subcommittee must be approved by the Task Force before it can be considered official ALEC policy.

E. Each Task Force may have advisors, appointed in accordance with Section VI (G). Advisors shall assist the members and staff of the Task Force. They shall be identified as advisors on official Task Force rosters, included in all official Task Force mailings and invited to all Task Force meetings. Advisors may also have their expenses paid at Task Force meetings covered by the Task Force operating budget with the approval of the Task Force Co-Chairs. An advisor cannot be designated as the primary contact of a private sector Task Force member, cannot be designated to represent a private sector Task Force member at a Task Force, Executive Committee, or subcommittee meeting, and cannot offer or vote on any motion at a Task Force, Executive Committee, or subcommittee meeting.

V. Task Force Budgets

A. Each Task Force shall develop and operate a yearly budget to fund meetings.

B. The operating budget shall be used primarily to cover expenses for Task Force meetings, unless specific funds within the budget are authorized for other use by the Task Force. The operating budget shall be assessed equally among the private sector members of the Task Force. The Executive Director, in consultation with the Task Force Co-Chairs shall determine which costs associated with each meeting will be reimbursed from the operating budget. Any funds remaining in a

Task Force's operating budget at the end of a year are transferred to ALEC's general membership account.

C. The operating budget shall not be used to cover Task Force meeting expenses associated with alternate task force members' participation, unless they are appointed by their State Chair to attend the Spring Task Force Summit with the purpose to serve in place of a Task Force Member who is unable to attend. Task Force meeting expenses of alternate task force members shall be covered by their state's scholarship account.

D. The programming budget shall be used to cover costs associated with educational activities. Contributions to the programming budget are separate, and in addition to operating budget contributions and annual general support/membership contributions to ALEC. The Executive Director shall determine the contribution required for each educational activity.

VI. PROCESS FOR SELECTING TASK FORCE MEMBERS, CHAIRS, COMMITTEES AND ADVISORS

A. Prior to February 1 of each odd-numbered year, the current and immediate past National chairman will jointly select and appoint in writing three legislative members and three alternates to the Task Force who will serve for the current operating cycle, after receiving nominations from ALEC's Public and Private State Chairs, the Executive Director and the ALEC Public and Private Sector members of the Board. At any time during the year, the National Chairman may appoint in writing new legislator members to each Task Force, except that no more than three legislators from each state may serve as members of any Task Force, no legislator may serve on more than one Task Force and the appointment cannot be made earlier than thirty days after the new member has been nominated. In an effort to ensure the nonpartisan nature of each Task Force, it is recommended that no more than two legislators of any one political party from the same state be appointed to serve as members of any Task Force. A preference will be given to those ALEC legislator members who serve on or chair the respective Committee in their state legislature. A preference will be given to legislators who sponsor ALEC Task Force model legislation in the state legislature.

B. Prior to January 10 of each odd-numbered year, the current and immediate past National Chairman will jointly select and appoint in writing the Task Force Chair who will serve for the current operating cycle, after receiving nominations from the Task Force. Nominations will be requested by the outgoing Task Force Chair and may be placed in rank order prior to transmittal to the Executive Director no later than December 1 of each even-numbered year. No more than five names may be submitted in nomination by the outgoing Task Force chair. The current and immediate past National Chairmen will jointly make the final selection, but

should give strong weight to the recommendations of the outgoing Task Force Chair. In an effort to empower as many ALEC leaders as possible, State Chairs and members of the Board of Directors will not be selected as Task Force Chairs. Task Force Chairs shall serve for one operating cycle term. Where special circumstances warrant, the current and immediate past National Chairmen may reappoint a Task Force Chair to a second operating cycle term.

C. Prior to February 1 of each odd numbered year, the Public and Private Sector Task Force Co-Chairs will select and appoint in writing the legislative and private sector members of the Task Force Executive Committee, who will serve for the current operating cycle. The Public and Private Sector Task Force Co-Chairs will select and appoint in writing the legislative and private sector members and advisors to any subcommittee.

D. Prior to February 1 of each year, the Private Enterprise Board Chair and the immediate past Private Enterprise Board Chair will select and appoint in writing the private sector members to the Task Force who will serve for the current year. The appointment letter shall be mailed to the individual designated as the primary contact for the private sector entity. At any time during the year, the Chair of the Private Enterprise Board may appoint in writing new private sector members to each Task Force, but no earlier than thirty days after the new member has qualified for full membership in ALEC and contributed the assessment for the appropriate Task Force's operating budget.

E. Prior to January 10 of each odd-numbered year, the Chair of the Private Enterprise Board and the immediate past Private Enterprise Board Chair will select and appoint in writing the Task Force Private Sector Co-Chair who will serve for the current operating cycle, after receiving nominations from the Task Force. Nominations will be requested by the outgoing Task Force Private Sector Chair and may be placed in rank order prior to transmittal to the Chair of the Private Enterprise Board. The Chair and the immediate past Chair of the Private Enterprise Board will make the final selection, but should give strong weight to the recommendations of the outgoing Private Sector Task Force Co-Chair. In an effort to empower as many ALEC private sector members as possible, Private Enterprise State Chairs and members of the Private Enterprise Board will not be selected as Private Sector Task Force Co-Chairs. Private Sector Task Force Co-Chairs shall serve for one operating cycle term. Where special circumstances warrant, the current and immediate past Chair of the Private Enterprise Board may reappoint a Task Force Private Sector Chair to a second operating cycle term.

F. Prior to February 1 of each odd-numbered year, the Task Force Private Sector Co-Chair will select and appoint in writing the private sector members of the Task Force Executive Committee, who will serve for the current operating cycle. The Task Force Private Sector Co-Chair shall select and appoint in writing the private sector members of any subcommittees.

G. The Public and Private Sector Task Force Co-Chairs, may jointly appoint subject matter experts to serve as advisors to the Task Force. The National Chair and the Private Enterprise Board Chair may also jointly recommend to the Task Force Co-Chairs subject matter experts to serve as advisors to the Task Force.

VII. REMOVAL AND VACANCIES

A. The National Chair may remove any Public Sector Task Force Co-Chair from his position and any legislative member from a Task Force with or without cause. Such action will not be taken except upon thirty days written notice to such Chair or member whose removal is proposed. For purposes of this subsection, cause may include failure to attend two consecutive Task Force meetings.

B. The Public Sector Task Force Co-Chair may remove any legislative member of an Executive Committee or subcommittee from his position with or without cause. Such action shall not be taken except upon thirty days written notice to such member whose removal is proposed. For purposes of this subsection, cause may include failure to attend two consecutive meetings.

C. The Chairman of the Private Enterprise Board may remove any Private Sector Task Force Co-Chair from his position and any private sector member from a Task Force with cause. Such action shall not be taken except upon thirty days written notice to such Chair or member whose removal is proposed. For purposes of this subsection, cause may include but is not limited to the non-payment of ALEC General Membership dues and the Task Force dues. .

D. The Private Sector Task Force Co-Chair may remove any private sector member of an Executive Committee or subcommittee from his position with cause. Such action shall not be taken except upon thirty days written notice to such member whose removal is proposed. For purposes of this subsection, cause may include but is not limited to the non-payment of ALEC General Membership dues and the Task Force dues.

E. The Public and Private Sector Task Force Co-Chairs may remove an advisor from his position with or without cause. Such action shall not be taken except upon thirty days written notice to such advisor whose removal is proposed.

F. Any member or advisor may resign from his position as Public Sector Task Force Co-Chair, Private Sector Task Force Co-Chair, public or private sector Task Force member, Task Force advisor, Executive Committee member or subcommittee member at any time by writing a letter to that effect to the Public Sector and Private Sector Task Force Co-Chairs. The letter should specify the effective date of the resignation, and if none is specified, the effective date shall be the date on which the letter is received by the Public and Private Task Force Co-Chairs.

G. All vacancies for Public Sector Task Force Co-Chair, Private Sector Task Force Co-Chair, Executive Committee member and subcommittee member shall be filled in the same manner in which selections are made under Section VI. All vacancies to these positions must be filled within thirty days of the effective date of the vacancy.

VIII. MEETINGS

A. Task Force meetings shall only be called by the joint action of the Public and Private Sector Task Force Co-Chairs. Task Force meetings cannot be held any earlier than thirty-five days after being called, unless an emergency situation has been declared pursuant to Section VIII(H), in which case Task Force meetings cannot be held any earlier than ten days after being called. It is recommended that, at least once a year, the Task Forces convene in a common location for a joint Task Force Summit. Executive Committee meetings shall only be called by the joint action of the Public and Private Sector Task Force Co-Chairs and cannot be held any earlier than three days after being called, unless the Executive Committee waives this requirement by unanimous consent.

B. At least forty-five days prior to a task force meeting any model bill, resolution or policy must be submitted to ALEC staff that will be voted on at the meeting. At least thirty-five days prior to a Task Force meeting, ALEC staff shall distribute copies of any model bill, resolution or policy statement that will be voted on at that meeting. This requirement does not prohibit modification or amendment of a model bill, resolution or policy statement at the meeting. This requirement may be waived if an emergency situation has been declared pursuant to Section VIII(H).

C. All Task Force meetings are open to registered attendees and invited guests of ALEC meetings and conferences. Only regular Task Force Members may introduce any resolution, policy statement or model bill._ Only Task Force members will be allowed to participate in the Task Force meeting discussions and be seated at the table during Task Force meetings, unless otherwise permitted by the Public and Private Sector Task Force Co-Chairs.

D. ALEC private sector member organizations may only be represented at Task Force and Executive Committee meetings by the individual addressed in the appointment letter sent pursuant to Section VI(D) or a designee of the private sector member. If someone other than the individual addressed in the appointment letter is designated to represent the private sector member, the designation must be submitted in writing to the Public and Private Sector Task Force Co-Chairs before the meeting, and the individual cannot represent any other private sector member at the meeting.

E. All Task Force and Executive Committee meetings shall be conducted under the guidelines of Roberts Rules of Order, except as otherwise provided in these Operating Procedures. A copy of the Task Force Operating Procedures shall be included in the briefing packages sent to the Task Force members prior to each meeting.

F. A majority vote of legislative members present and voting and a majority vote of the private sector members present and voting, polled separately, are required to approve any motion offered at a Task Force or Executive Committee meeting. A vote on a motion to reconsider would be only with the sector that made the motion. Members have the right, in a voice vote, to abstain and to vote present by roll-call vote. In all votes a member can change their vote up until the time that the result of the vote is announced. Only duly appointed members or their designee as stated in Section VIII (D) that are present at the meeting may vote on each motion. No proxy, absentee or advance voting is allowed.

G. The Public Sector Task Force Co-Chair and the Private Sector Task Force Co-Chair, with the concurrence of a majority of the Executive Committee, polled in accordance with Section VIII (F), may schedule a Task Force vote by mail or ~~fax~~ any form of electronic communication on any action pertaining to policy statements, model legislation or educational activity. The deadline for the receipt of votes can be no earlier than thirty-five days after notification of the vote is mailed or ~~faxed~~ notified by any form of electronic communication, unless an emergency situation is declared pursuant to Section VIII (H), in which case the deadline can be no earlier than ten days after notification is mailed or ~~faxed~~ notified by any form of electronic communication. Such votes are exempt from all rules in Section VIII, except: (1) the requirement that copies of model legislation and policy statements be mailed or ~~faxed~~ notified by any form of electronic communication with the notification of the vote and (2) the requirement that a majority of legislative members voting and a majority of the private sector members voting, polled separately, is required to approve any action by a Task Force.

H. For purposes of Sections VIII(A), (B) and (G), an emergency situation can be declared by:

(1) Unanimous vote of all members of the Task Force Executive Committee present at an Executive Committee meeting prior to the meeting at which the Task Force votes on the model bill, resolution or policy statement; or

(2) At least three-fourth majority vote of the legislative and private sector Task Force members (voting in accordance with Section VIII (F)) present at the meeting at which the members vote on the model bill, resolution or policy statement.

I. Ten Task Force members shall constitute a quorum for a Task Force meeting. One-half of the legislative and one-half of the private sector members of an Executive Committee shall constitute a quorum for an Executive Committee meeting.

IX. *REVIEW AND ADOPTION PROCEDURES*

A. All Task Force policy statements, model bills or resolutions shall become ALEC policy either: (1) upon adoption by the Task Force and affirmation by the Board of Directors or (2) thirty days after adoption by the Task Force if no member of the Board of Directors requests, within those thirty days, a formal review by the Board of Directors. General information about the adoption of a policy position may be announced upon adoption by the Task Force.

B. The Executive Director shall notify the Board of Directors of the approval by a Task Force of any policy statement, model bill or resolution within ten days of such approval. Members of the Board of Directors shall have thirty days from the date of Task Force approval to review any new policy statement, model bill or resolution prior to adoption as official ALEC policy. Within those thirty days, any member of the Board of Directors may request that the policy be formally reviewed by the Board of Directors before the policy is adopted as official ALEC policy.

C. A member of the Board of Directors may request a formal review by the Board of Directors. The request must be in writing and must state the cause for such action and a copy of the letter requesting the review shall be sent by the National Chairman to the appropriate Task Force Chair. The National Chairman shall schedule a formal review by the Board of Directors no later than the next scheduled Board of Directors meeting.

D. The review process will consist of key members of the Task Force, appointed by the Task Force Chair, providing the support for and opposition to the Task Force position. Position papers may be faxed or otherwise quickly transmitted to the members of the Board of Directors. The following is the review and adoption procedures:

- Notification of Committee: Staff will notify Task Force Chairs and the entire task force when the Board requests to review one of the Task Forces' model bills or resolutions.

- Staff Analysis: Will be prepared in a neutral fashion. The analyses will include:
  - History of Task Force action
  - Previous ALEC official action/resolutions
  - Issue before the board
  - Proponents arguments

- Opponents arguments

- Standardized Review Format: To ensure fairness, a set procedure will be used as the format to ensure the model bill/resolution has a fair hearing before the Board.
  - Task Force Chair(s) will be invited to attend the Board Review
  - Task Force Chair(s) will decide who will present in support and in opposition for the model bill/resolution before the Board.
  - Twenty minutes that is equally divided will be given for both sides to present before the Board.
  - It is suggested that the Board not take more than twenty minutes to ask questions of the presenters.
  - Presenters will then be excused and the Board will have a suggested twenty more minutes for discussion and vote.
  - All votes will be recorded for the official record.

- Notification of Committee: The Director of Policy will notify presenters immediately after the vote. If the Board votes to send the model bill/resolution back to the task force, the Board will instruct the Director of Policy or another board member what to communicate.

E. The Board of Directors can:

(1) Vote to affirm the policy or affirm the policy by taking no action, or
(2) Vote to disapprove the policy, or
(3) Vote to return the policy to the Task Force for further consideration providing reasons therefore.

F. Task Forces may only undertake educational activities that are based on a policy statement, model bill or resolution that has been adopted as official ALEC policy, unless the Task Force votes to undertake the educational activity, in which case the educational activity is subjected to the same review process outlined in this Section. It is the responsibility of the Task Force Executive Committee to affirm by three-fourths majority vote conducted in accordance with Section VIII that an educational activity conforms to a policy statement, model bill or resolution.

X. EXCEPTIONS TO THE TASK FORCE OPERATING PROCEDURES.

Exceptions to these Task Force Operating Procedures must be approved by the Board of Directors.

RESOLUTION TO RETAIN STATE SOVEREIGNTY OVER INTRASTATE WATER RESOURCES

WHEREAS, the 10th Amendment of the United States Constitution preserves powers not delegated to the federal government for the states, establishing federalism and state sovereignty as integral founding principles of American government; and

WHEREAS, the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (2001)* and *Rapanos v. United States (2006)* held that the Federal Water Pollution Control Act (The Clean Water Act) did not intend to grant federal authority over intrastate waters, and that these waters were not subject to regulation under the interstate commerce clause of the United States Constitution; and

WHEREAS, Senate Bill 787 and House Bill 5088 (2009) would expand the Clean Water Act's jurisdiction from "navigable waters of the United States" to "waters of the United States," and define "waters of the United States" to mean "all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds;" and

WHEREAS, this definition grants the United States Environmental Protection Agency broad and vague flexibility to interpret federal jurisdiction expansively, which they attempted to do under the current law and with which the Supreme Court disagreed; and

WHEREAS, these bills represent a clear attempt by the federal government to deprive states of their jurisdiction over intrastate waters and place all water resources under the control of the federal government; and

WHEREAS, this would severely diminish state sovereignty over its natural resources, and it would detrimentally involve the federal government in an inefficient and cumbersome effort to regulate highly localized water resources such as abandoned pits and ponds; and

WHEREAS, jurisdiction over intrastate water resources is a role traditionally held by individual state governments in order to promote efficient and effective usage;

THEREFORE BE IT RESOLVED THAT:

{insert state} supports the continued sovereignty and jurisdiction of the states to regulate intrastate water resources and opposes any attempt by the federal government to diminish this jurisdiction unnecessarily.

RESOLUTION ON BEST AVAILABLE CONTROL TECHNOLOGY FOR COAL-BASED ELECTRIC GENERATION

WHEREAS, the United States Environmental Protection Agency (EPA) will shortly begin regulating greenhouse gas emissions under the federal Clean Air Act; and

WHEREAS, as a result of EPA's action, major new sources of electric generation will be mandated to obtain Prevention of Significant Deterioration (PSD) permits setting forth Best Available Control Technology requirements for greenhouse gases; and

WHEREAS, major uncertainty exists because trial technologies, such as carbon capture and sequestration or integrated gasification combined cycle power plants, which hold significant prospect to reduce greenhouse gas emissions, are still years away from being proven to be economically practicable or commercially available; and

WHEREAS, this uncertainty could paralyze the long-term planning and development of new electric generating units in the state at a time when the economy faces a critical void in the coming years of the electric power needed to support economic recovery and growth; and

WHEREAS, highly efficient power technologies, such as super-critical and ultra super-critical coal-fired electric generating units, represent a significant advancement over earlier generation coal units in terms of efficient use of coal and in reductions of emissions, and are compatible with carbon capture and sequestration systems when they become commercially viable, which will lead to even further greenhouse gas reductions; and

WHEREAS, these super-critical technologies are already demonstrated to serve the dual purpose of reducing the overall emissions profile of the electricity generation unit while providing efficient, affordable, and available power today and into the future; and

WHEREAS, it is in the state's interest to support the use of these advanced and available technologies that take advantage of existing coal reserves to offer the state significant environmental and economic advantages, rather than delay development of critically needed baseload electricity supply or resort fully to less efficient or more expensive technologies:

NOW THEREFORE BE IT RESOLVED that the members of the legislature of **{insert state}** hereby urge the **{insert state department}**, in issuing
PSD permits for new conventional coal-fueled electric generating units, and consistent with otherwise applicable law, to fully consider:

(1) The need to act expeditiously in accordance with the state's need to develop new electric generation; and

(2) The use of commercially available technologies that are designed to be as efficient as is economically practicable, including advanced super-critical pulverized coal, ultra super-critical pulverized coal, and that are designed to be carbon capture and sequestration-compatible, as potential Best Available Control Technology; and

BE IT FURTHER RESOLVED that this resolution does not amend any state law to which the **{insert state department}** is subject in the PSD process, and shall be interpreted to be consistent with any requirements of such state or federal law.

AGRICULTURAL SUSTAINABILITY ACT

Summary: The Agricultural Sustainability Act is intended to serve as a model for states in defining sustainable agriculture in legislation or regulations. The definition recognizes the social, economic, environmental and long term benefits of modern agriculture production technologies.

Sustainability: For purposes of this sections, references to "sustainable," "sustainable agriculture," "sustainability" or "sustainability grown" include science-based practices supported by research, including the use of technology, demonstrated to lead to broad outcomes-based improvements to meet the needs of the present and improve the ability for future generations to meet their own needs, while advancing progress toward environmental, social, and economic goals and the well-being of agricultural producers and rural communities. Utilizing continuous improvement principles, critical outcomes to consider include increasing agricultural productivity; improving human health through access to safe, nutritious and affordable food; and enhancing agricultural and surrounding environments, including water, soil and air quality, biodiversity and habitat preservation.

THE CAPITAL RECOVERY FOR CLEAN ENERGY GENERATING PLANTS ACT

Summary: The purpose of of this legislation is to provide for the recovery of prudently incurred costs associated with new clean energy generation facilities, while at the same time protecting customers of investor-owned electric utilities from responsibility for imprudent financial obligations or costs.

The legislation defines clean energy generating facility as any new electric generating station designed to avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, including but not limited to nuclear energy, wind energy, solar energy, biomass and geothermal energy.

The legislation authorizes a state public service commission to approve development and construction of a new clean energy generating plant in two distinct steps:

- On application by a company, a public service commission may issue a clean energy project development order, which establishes the prudence of a utility's decision to incur preconstruction costs associated with a clean energy plant. A clean energy project development order allows a utility to recover all preconstruction costs, absent a specific finding of imprudence.

- On application by a company, a public service commission may issue a clean energy project construction order, which establishes that, if a plant is constructed in accordance with an approved construction schedule, approved capital cost estimates, and approved projections of in-service expenses, the plant is considered to be used and useful for utility purposes such that its capital costs are prudent utility costs and can be included in rates. During construction, the company may recover through revised rates its weighted average cost of capital applied to construction work in progress.

If the company decides to abandon a project after issuance of a clean energy project development order or a clean energy project construction order, preconstruction costs and capital costs related to that project may be recovered, although the utility will bear the burden of proving that the decision to abandon the plant was prudent. Recovery of capital costs and the utility's cost of capital associated with them may be disallowed only to the extent that the failure by the utility to anticipate or avoid the allegedly imprudent costs was imprudent, considering the information available to the utility at the time.

The legislation includes substantial protections for consumers, including provisions for the Office of Regulatory Staff to review and audit revised rates and the information supporting them, and propose changes for the commission's consideration.

THE CAPITAL RECOVERY FOR CLEAN ENERGY GENERATING PLANTS ACT

Section I. Purpose and findings

A) The purpose of of this Act is to provide for the recovery of the prudently incurred costs associated with new clean energy generation plants when constructed by investor-owned electrical utilities, while at the same time protecting customers of investor-owned electrical utilities from responsibility for imprudent financial obligations or costs.

The Legislature finds that it is the policy of the State to:

1. Promote and foster the prudent construction of clean energy generating capacity by electric utilities;
2. Take advantage of advances in clean energy technology to avoid or reduce regulated air emissions, including sulfur dioxide, nitrogen oxides and carbon dioxide;
3. Protect the economic interests of the ratepayers of the State by providing stable and predictable rates associated with construction of electric generating facilities employing clean energy technology, through a predetermination of need as indicated by the utility's integrated resource planning process and prudence, and assurance of recovery of pre-construction and construction costs for those facilities.

Section II. Definitions

A) The following terms, when used in this Act, shall have the following definitions, unless another meaning is clearly apparent from the context:

1. "AFUDC" means the allowance for funds used during construction of a plant calculated according to regulatory accounting principles.
2. "Clean energy generating plant," "plant," "clean energy generating facility," or "facility" means a new electric generating station that will use electric generation technology designed to avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, including but not limited to nuclear energy, wind energy, solar energy, biomass and geothermal energy.
3. "Clean energy project construction application" or "application" means an application for the construction of a clean energy generation plant under the terms of this Act.
4. "Clean energy project construction order" means an order issued by the Public Service Commission establishing that, if a plant is constructed in accordance with an approved construction schedule, approved capital cost estimates, and approved projections of in-service expenses, as defined herein, the plant is considered to be used and useful for utility purposes such that its capital costs are prudent utility costs and are properly included in rates.
5. "Capital costs" or "plant capital costs" means costs associated with the design, siting, selection, acquisition, licensing, construction, testing, and placing into

service of a clean energy generating plant, and capital costs incurred to expand or upgrade the transmission grid in order to connect the plant to the transmission grid, and includes costs that may be properly considered capital costs associated with a plant under generally accepted principles of regulatory or financial accounting, and specifically includes AFUDC associated with a plant and capital costs associated with facilities, project contingency reserves or investments for the transportation, delivery, storage, and handling of fuel.

6. "Commission" means the state Public Service Commission.
7. "Construction work in progress" means capital costs as defined above associated with a clean energy generating plant which have been incurred but have not been included in the utility's plant-in-service.
8. "General rate proceeding" means a rate case proceeding and other applicable provisions for the establishment of new electric rates and charges, and where orders in general rate proceedings are referenced in this Act, these orders include rate orders issued in proceedings under this Act.
9. "In-service expenses" means reasonably projected expenses recognized under generally accepted principles of regulatory and financial accounting as a result of a clean energy generating plant commencing commercial operation, including:
    a. expenses associated with operating and maintaining a plant, as well as taxes and governmental charges applicable to the plant, including taxes other than income taxes;
    b. depreciation and amortization expenses related to the plant;
    c. revenue requirements related to the utility's cost of capital applied to the investment in supplies, inventories, and working capital associated with the plant; and
    d. other costs determined by the commission to be appropriate for ratemaking purposes. In-service expenses include, but are not limited to, labor, supplies, insurance, general and administrative expenses, and the cost of outside services, but do not include costs recovered as fuel costs through other rate provisions.
10. "Person" means any individual, group, firm, partnership, or corporation.
11. "Preconstruction costs" means all costs associated with a potential plant incurred before issuance of a final state certificate including, without limitation, the costs of evaluation, design, engineering, environmental and geotechnical analysis and permitting, contracting, other required permitting including early site permitting and combined operating license permitting, initial site preparation costs and related consulting and professional costs, and use of project contingency reserves associated with these activities, and shall include AFUDC associated with those costs. For potential plants located in other states, the costs must be those incurred before issuance of a certificate by the host state under comparable statutes.
12. "Proceeding" means the proceeding to consider an application pursuant to this Act.

13. "Office of Regulatory Staff" is a state government entity responsible for auditing public utilities in the state and represents the public interest in matters before the Public Service Commission.

14. "Clean energy project development application" means an application for a clean energy project development order.

15. "Clean energy project development order" means an order establishing the prudence of a utility's decision to incur preconstruction costs associated with a clean energy plant.

16. "Return on equity" means the return on common equity established in the clean energy project construction order for a plant. A project-specific return on equity set hereunder shall apply exclusively to the establishment of the weighted average cost of capital under this Act and shall not be used for reporting or any other purpose.

17. "Revised rates" means a revised schedule of electric rates and charges reflecting a change to the utility's then current nonfuel rates and charges to add incremental revenue requirements related to a clean energy plant as authorized in this Act. For a plant under construction, until it enters commercial operation the rate adjustments related to the plant shall include recovery of the weighted average cost of capital applied to the outstanding balance of capital costs of that plant only and shall not include depreciation or other items constituting a return of capital to the utility. In lieu of revised rates, a rider may be used to streamline the ratemaking process and to provide additional certainty to the project developer.

18. "Revised rates order" means an order issued by the commission approving, modifying, or denying the utility's request to charge revised rates under this Act, which revised rates order an aggrieved party may contest in an adversarial hearing before the commission.

19. "Revised rates proceedings" means all proceedings to consider an application for revised rates or review of a revised rates order.

20. "Utility" means a person owning or operating equipment or facilities for generating, transmitting, or delivering electricity to state retail customers for compensation but it shall not include a person furnishing electricity only to himself, itself, its residents, employees, or tenants when the electricity is not resold or used by others.

21. "Weighted average cost of capital" or "cost of capital" means the average cost of debt and equity capital for the project:

    a. incorporating the allowed return on equity for the project;

    b. incorporating the project's weighted average cost of debt;

    c. weighting (a) and (b) according to the project's capital structure for ratemaking purposes, as established in the order and

    d. adjusting the result for the effect of income taxes.

Section III. Clean Energy Project Development

A) The provisions of this Section apply to the preconstruction costs of a clean energy generating facility.

B) At any time before the filing of an application under this Act related to a specific plant, a utility may file a clean energy project development application with the commission.

C) In a clean energy project development application, the utility shall:

1. describe the plant being considered and shall designate:

   a) the anticipated generation capacity (or range of capacity) of the plant; and

   b) the projected annual capacity factors or range of factors of the plant;

2. provide information establishing the need for the generation capacity represented by the potential plant and the need for generation assets with the indicative annual capacity factors of the potential plant;

3. provide information establishing the reasonableness and prudence of the potential fuel sources and potential generation types that the utility is considering for the plant; and

4. provide such other information as may be required to establish that the decision to incur preconstruction costs related to the potential plant is prudent (as indicated by the utility's integrated resource plan) considering the information known to the utility at the time and considering the other alternatives available to the utility for supplying its generation needs.

D) The commission shall issue a clean energy project development order affirming the prudency of the utility's decision to incur preconstruction costs for the plant specified in the application if the utility demonstrates by a preponderance of evidence that the decision to incur preconstruction costs for the plant is prudent. In issuing its clean energy project development order, the commission may not rule on the prudency or recoverability of specific items of cost, but shall rule instead on the prudency of the decision to incur preconstruction costs for the plant based on the utility's integrated resource plan.

E) Unless the record in a subsequent proceeding shows that individual items of cost were imprudently incurred, or that other decisions subsequent to the issuance of a project development order were imprudently made considering the information available to the utility at the time they were made, then all the preconstruction costs incurred for the potential plant must be properly included in the utility's plant-in-service and must be recoverable fully through rates in future proceedings under this Act.

F) To the extent that a party in a general rate proceeding or revised rates proceeding establishes the imprudence of specific items of cost or of specific decisions made subsequent to the issuance of a clean energy project development order, then the commission may disallow the resulting costs but only to the extent that a prudent utility would have avoided those costs considering the information available to

the utility at the time when they were incurred or the decisions at issue were made.

G) If the utility decides to abandon the project after issuance of a prudency determination under this Section, then the preconstruction costs related to that project may be deferred, with AFUDC being calculated on the balance, and may be included in rates in the utility's next general rate proceeding or revised rates proceeding, provided that as to the decision to abandon the plant, the utility shall bear the burden of proving by a preponderance of the evidence that the decision was prudent. Recovery of capital costs and the utility's cost of capital associated with them may be disallowed only to the extent that the failure by the utility to anticipate or avoid the allegedly imprudent costs, or to minimize the magnitude of the costs, was imprudent considering the information available at the time that the utility could have acted to avoid or minimize the costs. Pending an order in the general rate proceeding or revised rates proceeding, the utility, at its discretion, may commence to amortize to cost of service the balance of the preconstruction costs related to the abandoned project over a period equal to the period during which the costs were incurred, or five years, whichever is greater.

H) Prudency determinations may not be challenged or reopened in any subsequent proceeding and other applicable provisions of this Act.

I) At any time after an initial clean energy project development order has been issued, a utility may file an amended clean energy project development application seeking a determination of the prudency of the utility's decision to continue to incur preconstruction costs considering changed circumstances or changes in the type or location of the clean energy generating plant that the utility is pursuing or considering other characteristics or decisions related to the plant. The amended clean energy project development application must be considered in a separate docket; however, the testimony and other evidence of the prior docket must be considered to be part of the new docket.

J) The commission shall enter an order granting or denying a clean energy project development order or amended clean energy project development order within six months of the filing of the application. If the commission fails to issue an order within the period prescribed in this Section, a party may move that the commission issue an order granting or denying the application. If the commission fails to issue an order within ten days after the motion is served, the application will be considered granted.

Section IV. Office of Regulatory Staff

A) Any utility proposing to construct a plant, individually or jointly with other parties, may elect to come under the terms of this Act by filing an application with the commission, and by serving a copy of that application on the Office of Regulatory Staff.

B) An application may be combined with a general rate proceeding application at the utility's option.

C) The Office of Regulatory Staff shall safeguard the public interest in all matters arising under this Act. It shall have full audit rights related to all matters arising under this Act and shall review the reasonableness and necessity of all costs to be recovered under this Act.

Section V. Proceedings

A) Except as otherwise specified in this Act, all procedural requirements that apply to general rate proceedings by law or regulation shall apply to proceedings, to revised rates proceedings, and to the judicial review of orders issued under this Act. The requirements related to the form and content of applications in general rate proceedings, however, only shall apply to proceedings which include an application for new electric rates.

B) In proceedings to review revised rates orders, no further notice to the public, customers, and others is required additional to that provided upon filing of the proceeding. In proceedings to review revised rates orders, the utility's revised rates filing shall serve as the application and the utility must be considered to be the applicant.

C) In proceedings, the utility shall have the burden of proving that the decision to build the plant was prudent (as demonstrated by the results of the utility's integrated resource planning process), and shall have the burden of proof as to all matters on which the commission is required to enter findings under Section VII of this Act. Without in any way limiting the conclusive effect of determinations under Sections III and VIII of this Act, in cases where this statute allows a party to challenge the prudency of any transaction, cost, or decision of the utility, that party shall be required to make a *prima facie* case establishing imprudence, and thereafter the burden of proof shall shift to the utility to demonstrate the prudence of the transaction cost or decision by a preponderance of the evidence.

D) When the proposed changes relate to rates or tariffs, the commission must rule and issue its order approving or disapproving the changes within nine months after the date the schedule is filed.

Section VI. Applications

A) The application for a clean energy project construction order under this Act shall include as a minimum:

1. information showing the anticipated construction schedule for the plant;
2. information showing the anticipated components of capital costs and the anticipated schedule for incurring them;
3. information showing the projected effect of investment in the plant on the utility's overall revenue requirement for each year during the construction period;
4. information identifying:
    a) the specific type of generating technology selected for the plant;
    b) the suppliers of the major components of the plant; and

c) the basis for selecting the generating technology, major components, and suppliers;

5. information detailing the qualification and selection of principal contractors and suppliers, other than those listed in item (4)(c) above, for construction of the plant;
6. information showing the anticipated in-service expenses associated with the plant for the twelve months following commencement of commercial operation adjusted to normalize any atypical or abnormal expense levels anticipated during that period;
7. information required by Section II of this Act;
8. information identifying risk factors related to the construction and operation of the plant;
9. information identifying the proposed rate design and class allocation factors to be used in formulating revised rates;
10. information identifying the return on equity proposed by the utility pursuant to Section II; and
11. the revised rates, if any are requested, that the utility intends to put in place after issuance of the resulting clean energy project construction order.

Section VII. Clean Energy Project Construction Orders

A) After the hearing, the commission shall issue a clean energy project construction order approving rate recovery for plant capital costs if it determines that the utility's decision to proceed with construction of the plant is prudent and reasonable considering the information available to the utility at the time.

B) The clean energy project construction order shall establish:

1. the anticipated construction schedule for the plant including contingencies;
2. the anticipated components of capital costs and the anticipated schedule for incurring them, including specified contingencies;
3. the return on equity established in conformity with Section II of this Act;
4. the choice of the specific technology and major components of the plant;
5. the qualification and selection of principal contractors and suppliers for construction of the plant; and
6. the inflation indices used by the utility for costs of plant construction, covering major cost components or groups of related cost components. Each utility shall provide its own indices, including: the source of the data for each index, if the source is external to the company, or the methodology for each index which is compiled from internal utility data, the method of computation of inflation from each index, a calculated overall weighted index for capital costs, and a five-year history of each index on an annual basis.

C) If revised rates are requested, the clean energy project construction order shall specify initial revised rates reflecting the utility's current investment in the plant which must be determined using the standards set forth in Section X of this Act and implemented according to Section X of this Act.

D) The clean energy project construction order shall establish the rate design and class allocation factors to be used in calculating revised rates related to the plant.

E) As circumstances warrant, the utility may petition the commission, with notice to the Office of Regulatory Staff, for an order modifying any of the schedules, estimates, findings, class allocation factors, rate designs, or conditions that form part of any clean energy project construction order issued under this Section. The commission shall grant the relief requested if, after a hearing, the commission finds:

1. as to the changes in the schedules, estimates, findings, or conditions, that the evidence of record justifies a finding that the changes are not the result of imprudence on the part of the utility; and
2. as to the changes in the class allocation factors or rate designs, that the evidence of record indicates the proposed class allocation factors or rate designs are just and reasonable.

F) The commission shall consider a request under Section VII(e) of this Act in a new docket which, pursuant to Section V of this Act, must be subject to the requirement that the relief requested in this Act is considered granted if not denied by order within six months of the date of filing. If the commission fails to issue an order within the period prescribed in this Section, a party may move that the commission issue an order granting or denying the application. If the commission fails to issue an order within ten days after the motion is served, the application will be considered granted.

G) The commission promptly shall schedule a hearing to consider any settlement agreement entered into between the Office of Regulatory Staff, as the party representing the public interest in the proceedings, and the utility applicant, provided that all parties shall have been given a reasonable opportunity to conduct discovery in the docket by the time the hearing is held. The commission may accept the settlement agreement as disposing of the matter, and issue an order adopting its terms, if it determines that the terms of the settlement agreement comport with the terms of this Act.

Section VIII. Final Determinations

A) A clean energy project construction order shall constitute a final and binding determination that a plant is used and useful for utility purposes, and that its capital costs are prudent utility costs and expenses and are properly included in rates so long as the plant is constructed or is being constructed within the parameters of:

1. the approved construction schedule, including contingencies; and
2. the approved capital costs estimates, including specified contingencies.

B) Determinations under this Section may not be challenged or reopened in any subsequent proceeding, including general rate and tariff case proceedings and other applicable provisions, and Section X and other applicable provisions of this Act.

C) So long as the plant is constructed or being constructed in accordance with the approved schedules, estimates, and projections set forth in Section VII, as adjusted by the inflation indices set forth therein, the utility must be allowed to recover its capital costs related to the plant through revised rate filings or general rate proceedings.

D) Changes in fuel costs will not be considered in conducting any evaluation under this Section.

E) In cases where a party proves by a preponderance of the evidence that there has been a material and adverse deviation from the approved schedules, estimates, and projections set forth in Section VII, as adjusted by the inflation indices set forth therein, the commission may disallow the additional capital costs that result from the deviation, but only to the extent that the failure by the utility to anticipate or avoid the deviation, or to minimize the resulting expense, was imprudent considering the information available at the time that the utility could have acted to avoid the deviation or minimize its effect.

Section IX. Reports

A) After issuance of a clean energy project construction order approving rate recovery for capital costs related to the plant, the utility will file reports with the Office of Regulatory Staff quarterly until the plant begins commercial operation. These reports must be filed no later than forty-five (45) days after the close of a quarter, shall not be combined with any other filing, and shall contain the following information:

1. the progress of construction of the plant;
2. updated construction schedules;
3. schedules of the capital costs incurred including updates to the information required by Section VII;
4. updated schedules of the anticipated capital costs; and
5. other information as the Office of Regulatory Staff may require.

B) The Office of Regulatory Staff shall conduct on-going monitoring of the construction of the plant and expenditure of capital through review and audit of the quarterly reports under this Act, and shall have the right to inspect the books and records regarding the plant and the physical progress of construction upon reasonable notice to the utility.

Section X. Revising Rates

A) No earlier than one year after filing the application, and no more frequently than annually thereafter, the utility may file with the commission and serve on the Office of Regulatory Staff requests for the approval of revised rates subsequent to those approved in the clean energy project construction order.

B) A utility must be allowed to recover through revised rates its weighted average cost of capital applied to all or, at the utility's option, part of the outstanding balance of construction work in progress, calculated as of a date specified in the filing. A utility must also be allowed to recover through revised rates the capital associated with all, or at the utility's discretion, part of the outstanding balance of preconstruction capital costs that have been incurred prior to issuance of a final state certificate. Any construction work in progress or preconstruction capital costs not included in any specific filing for revised rates shall continue to earn AFUDC and may be included in rates through future filings. The revised rates filing shall include the most recent monitoring report filed under Section IX of this Act updated to reflect information current as of the date specified in the filing.

C) Written comments to the commission and the Office of Regulatory Staff concerning the revised rates and the information supporting them shall be allowed within one month of the revised rates filing.

D) The Office of Regulatory Staff shall review and audit the revised rates and the information supporting them to determine their compliance with the terms of this Act. No later than two months after the date of the revised rates filing, the Office of Regulatory Staff shall serve on the commission and all intervenors and parties of record a report indicating the results of its review and audit and proposing any changes to the revised rates or the information supporting them that the Office of Regulatory Staff determines to be necessary to comply with the terms of this Act.

E) Written comments related to the report may be filed with the commission within one month from the date of the filing of the report. Comments must be served on the Office of Regulatory Staff and simultaneously mailed or electronically transmitted to the utility and to all intervenors and parties of record who previously appeared and filed comments. The Office of Regulatory Staff may revise its report considering comments filed.

F) No later than four months after the date of the revised rates filing, the commission shall issue a revised rates order granting, modifying, or denying revised rates as filed by the utility. In the absence of such a revised rates order, the revised rates shall be considered to be approved as filed. If the commission fails to issue an order within the period prescribed in this Section, a party may move that the commission issue an order granting or denying the application. If the commission fails to issue an order within ten days after the motion is served, the application will be considered granted.

G) Where both Office of Regulatory Staff and the utility agree in writing on the revised rates to be implemented, the commission shall give substantial weight to the agreement in issuing its revised rates order.

H) If the utility is granted a rate increase in the revised rates order, the utility shall provide notice to its customers with the next billing. The utility may implement revised rates for bills rendered on or after a date selected by the utility, which may not be sooner than thirty days after revised rates are approved.

I) Upon implementation of revised rates under this Act, the utility will cease to accrue AFUDC on that component of its construction work in progress on which it is recovering its weighted average cost of capital through revised rates.

J) Other provisions of this Act notwithstanding:

1. The utility may file a final set of revised rates for a plant to go into effect upon commercial operation of the plant, the filing to be made no sooner than seven months before the projected date that the plant is to commence commercial operations. In the final revised rates the utility may include recovery of the weighted average cost of capital applied to all or part of the capital costs associated with the plant. In all cases, the decision to seek recovery in revised rates of less than the full amount of its cost must be at the utility's sole discretion. Rate adjustments to reflect the revenue requirements related to in-service expenses must be included in the final revised rates and shall be based on the utility's most current budget estimates of those expenses for the succeeding twelve-month period at the time the final revised rates are filed or actual expenses, if available.

2. If the commission rejects a revised rate filing on grounds that may be corrected in a subsequent filing, or if the utility withdraws a revised rate filing before a revised rates order is issued, the utility may file a subsequent request for revised rates at any time thereafter.

3. The utility may seek to recover any capital costs, in-service expenses, or other costs not included in revised rates through future general rate proceedings.

K) Where a plant is abandoned after a clean energy project construction order approving rate recovery has been issued, the capital costs and AFUDC related to the plant shall nonetheless be recoverable under this Act provided that the utility shall bear the burden of proving by a preponderance of the evidence that the decision to abandon construction of the plant was prudent. Without limiting the effect of Section VIII, recovery of capital costs and the utility's cost of capital associated with them may be disallowed only to the extent that the failure by the utility to anticipate or avoid the allegedly imprudent costs, or to minimize the magnitude of the costs, was imprudent considering the information available at the time that the utility could have acted to avoid or minimize the costs. The commission shall order the amortization and recovery through rates of the investment in the abandoned plant as part of an order adjusting rates under this Act.

L) After completion of a plant that is subject to a clean energy project construction order, the Office of Regulatory Staff shall conduct an audit of the utility revenues, expenses, and rates consistent with the audits conducted of filings for new electric rates. The audit must be based on a twelve-month test period ending no later than December thirty-first of the calendar year following the year in which the plant entered commercial operation and must be filed with all parties to the proceeding within four months of the conclusion of the test period.

Section XI. Interventions

A) Within thirty days of the issuance of a revised rates order pursuant to Section X of this Act, or within thirty days of the failure by the commission to issue a revised rates order as required pursuant to Section X of this Act, any aggrieved party may petition the commission for review of the revised rates order or of the failure to issue a revised rates order.

B) The Office of Regulatory Staff and the utility must be automatic parties to any proceedings under this Section.

C) In filing for intervention under this Section, intervenors shall identify with particularity the specific issues they intend to raise with regard to the revised rates order.

D) The party seeking review of the revised rates order shall serve a copy of such petition on the Office of Regulatory Staff and the utility on the same day and by the same means as it is provided to the commission.

E) Any filing under this Section must be considered a new proceeding subject to the provisions of Section V. The commission shall open a single new docket for all filings related to any one set of revised rates filed under this Act.

Section XII. Petitions for Review

A) The commission shall issue its order ruling upon a petition for review of a revised rates order within six months. If the petition for review has been resolved among the parties by settlement agreement, the commission shall consider and accept or reject any settlement agreement entered into by the parties within forty-five days. If a settlement agreement is reached between some but not all parties, then the settlement agreement, if approved by the commission, must be deemed to dispose of any issues resolved in it that have not been raised by other parties to the proceeding pursuant to Section XI.

B) Proceedings pursuant to Section XI are limited to issues related to whether the revised rates filed by the utility comply with the terms of the commission order issued pursuant to Section VII and with the specific requirements of Section X.

C) In proceedings pursuant to Section XI, the commission shall allow limited discovery, and restrict the issues for discovery and hearing to whether the revised rates comply with the terms of the commission order issued pursuant to Section VII and compliance with the specific requirements of Section X.

D) The commission shall issue such motions to strike, protective orders, motions to quash, motions for costs and sanctions, and other rulings as are necessary to enforce the terms of this limitation.

E) The commission shall dismiss as a party any intervenor who, after notice, fails to abide by the limitations contained in this Section.

F) The failure of the commission to enforce the terms of this Section may be remedied by petition for writ of mandamus or supersedeas in the state court, which petition the court shall advance over all other matters on its docket and hear

on an emergency basis, without the requirement of a formal answer or other return, such hearing to be held as soon as practicable upon twenty-four hours notice to the party against whom relief is sought. Proceedings related to the petitions may not serve to stay or delay proceedings before the commission.

G) The commission shall issue a final order that:

1) sets forth any changes that are required to the rates approved in the revised rates order;

2) determines the amount of any overcollection or undercollection of the revenues by the utility that resulted from application of the rates authorized in the revised rates order as compared to the rates authorized in the final order issued under this Section; and

3) establishes a credit to refund the amount of an overcollection or a surcharge to collect the amount of an undercollection of revenues that arose during the time that the rates approved in the revised rates order, or imposed due to a failure of the commission to issue a revised rates order, were applicable and requires the utility to apply the credit or surcharge until such time as the overcollection or undercollection is exhausted.

H) If the final order increases the amount of capital costs for which the utility may recover its weighted average cost of capital through revised rates, the AFUDC booked on those capital costs between the issuance of the revised rates order and the final order shall remain on the books of the utility and shall not be reversed or adjusted. Surcharges related to undercollection of costs must be calculated without consideration of AFUDC amounts recognized on the capital costs during this period.

I) If the final order reduces the amount of capital cost for which the utility may recover its weighted average cost of capital through revised rates for reasons other than the conclusive finding that the capital costs were imprudently incurred, then the utility may resume accrual of AFUDC on any capital costs that were not included in rate recovery and may book an amount of AFUDC equal to the AFUDC not recognized during the time the rates approved in the revised rates order were in effect.

Section XIII. Reapplication

The denial of a clean energy project development application, or clean energy project construction application, under this Act shall not preclude the utility from filing a new or amended clean energy project development application or clean energy project construction application at any time. A utility may proceed to construct a plant even if assurance of prudency or cost recovery under this Act is not sought or is denied, and the failure to seek or obtain such an assurance may not be used as evidence or precedent in any future proceeding.

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TECH-96-29
1/18/96

TO: AIAM Technical Committee

FROM: Gregory J. Dana
Vice President and Technical Director

RE: **GLOBAL CLIMATE COALITION (GCC) - Primer on Climate Change Science - Final Draft**

Enclosed is a primer on global climate change science developed by the GCC. If any members have any comments on this or other GCC documents that are mailed out, please provide me with your comments to forward to the GCC.

GJD:ljf

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December 21, 1995

To: Members of GCC-STAC

Attached is what I hope is the final draft of the primer on global climate change science we have been working on for the past few months. It has been revised to more directly address recent statements from IPCC Working Group I and to reflect comments from John Kinsman and Howard Feldman.

We will be discussing this draft at the January 18th STAC meeting. If you are coming to that meeting, please bring any additional comments on the draft with you. If you have comments but are unable to attend the meeting, please fax them to Eric Holdsworth at the GCC office. His fax number is (202) 638-1043 or (202) 638-1032. I will be out of the office for essentially all of the time between now and the next STAC meeting.

Best wishes for the Holiday Season,

Lenny

L. S. Bernstein

APPROVAL DRAFT

Predicting Future Climate Change: A Primer

In its recently approved Summary for Policymakers for its contribution to the IPCC's Second Assessment Report, Working Group I stated:

> ...the balance of evidence suggests that there is a discernable human influence on global climate.

The Global Climate Coalition's Science and Technical Advisory Committee believes that the IPCC statement goes beyond what can be justified by current scientific knowledge.

This paper presents an assessment of those issues in the science of climate change which relate to the ability to predict whether human emissions of greenhouse gases have had an effect on current climate or will have a significant impact on future climate. It is a primer on these issues, not an exhaustive analysis. Complex issues have been simplified, hopefully without any loss of accuracy. Also, since it is a primer, it uses the terminology which has become popular in the climate change debate, even in those cases where the popular terminology is not technically accurate.

Introduction and Summary

Since the beginning of the industrial revolution, human activities have increased the atmospheric concentration of CO_2 by more than 25%. Atmospheric concentrations of other greenhouse gases have also risen. Over the past 120 years, global average temperature has risen by 0.3 - 0.6°C. Since the Greenhouse Effect can be used to relate atmospheric concentration of greenhouse gases to global average temperature, claims have been made that at least part of the temperature rise experienced to date is due to human activities, and that the projected future increases in atmospheric concentrations of greenhouse gases (as the result of human activities) will lead to even larger increases in future temperature. Additionally, it is claimed that these increases in temperature will lead to an array of climate changes (rainfall patterns, storm frequency and intensity, etc.) that could have severe environmental and economic impacts.

This primer addresses the following questions concerning climate change:

1) Can human activities affect climate?

   The scientific basis for the Greenhouse Effect and the potential impact of human emissions of greenhouse gases such as CO_2 on climate is well established and cannot be denied.

2) Can future climate be accurately predicted?

   The climate models which are being used to predict the increases in temperature which might occur with increased atmospheric concentrations of greenhouse gases are limited at present both by incomplete scientific understanding of the factors which affect climate and

by inadequate computational power. Improvements in both are likely, and in the next decade it may be possible to make fairly accurate statements about the impact that increased greenhouse gas concentrations could have on climate. However, these improvements may still not translate into an ability to predict future climate for at least two reasons:

- limited understanding of the natural variability of climate, and
- inability to predict future atmospheric concentrations of greenhouse gases.

The smaller the geographic area considered, the poorer the quality of climate prediction. This is a critical limitation in our ability to predict the impacts of climate change, most of which would result from changes in a local or regional area.

3) Have human activities over the last 120 years affected climate, i.e. has the change been greater than natural variability?

Given the limitations of climate models and other information on this question, current claims that a human impact on climate has already been detected, are unjustified. However, assessment of whether human activities have already affected climate may be possible when improved climate models are available. Alternatively, a large, short term change in climate consistent with model predictions could be taken as proof of a human component of climate change.

4) Are there alternate explanations for the climate change which has occurred over the last 120 years?

Explanations based on solar variability, anomalies in the temperature record, etc. are valid to the extent they are used to argue against a conclusion that we understand current climate or can detect a human component in the change in climate that has occurred over the past 120 years. However, these alternative hypotheses do not address what would happen if atmospheric concentrations of greenhouse gases continue to rise at projected rates.

Can Human Activities Affect Climate?

The Sun warms the Earth and is the source of energy for the climate system. However, as shown in Figure 1, the process by which this occurs is complicated. Only about half of the incoming radiation from the Sun is absorbed by the Earth's surface. About a quarter is absorbed by the atmosphere, and the remainder is reflected back into space by clouds, dust and other particulates without being absorbed, either by the surface or atmosphere.

The energy absorbed by the Earth's surface is reradiated to space as longwave radiation. A fraction of this reradiated energy is absorbed by greenhouse gases, a phenomenon known as the Greenhouse Effect. Greenhouse gases are trace gases - such as water vapor, CO_2, methane, etc. - which have the ability to absorb longwave radiation. When a greenhouse gas molecule absorbs longwave energy, it heats up, then radiates energy in all directions, including back down to the Earth's surface. The energy radiated back to the Earth's surface by greenhouse gas molecules is the Greenhouse Effect that further warms the surface. The warmer the surface of the Earth, the more energy it reradiates. The higher the concentration of greenhouse gases, the more energy they will absorb, and the more they will warm the Earth. The average temperature of the Earth depends on the balance between these two phenomena. Naturally occurring greenhouse gases, predominantly water vapor, account for 95-97% of the current Greenhouse Effect. They raise the average temperature of Earth's surface by about 30°C. Without this natural Greenhouse Effect, the Earth would probably be uninhabitable. The science of the Greenhouse Effect is well established and can be demonstrated in the laboratory.

Human activities can affect the energy balance at the Earth's surface in three ways:

- combustion, agriculture and other human activities emit greenhouse gases and can raise their concentration in the atmosphere, which would directionally lead to warming;

- combustion emits particulates, and gases such as sulfur dioxide which form particulate matter in the atmosphere, which would directionally lead to cooling; and

- changes in land-use, such as removing forests, can change the amount of energy absorbed by the Earth's surface, the rate of water evaporation, and other parameters involved in the climate system, which could result in either warming or cooling.

These three factors create the potential for a human impact on climate. The potential for a human impact on climate is based on well-established scientific fact, and should not be denied. While, in theory, human activities have the potential to result in net cooling, a concern about 25 years ago, the current balance between greenhouse gas emissions and the emissions of particulates and particulate-formers is such that essentially all of today's concern is about net warming. However, as will be discussed below, it is still not possible to accurately predict the magnitude (if any), timing or impact of climate change as a result of the increase in greenhouse gas concentrations. Also, because of the complex, possibly chaotic, nature of the climate system, it may never be possible to accurately predict future climate or to estimate the impact of increased greenhouse gas concentrations.

The usual approach to discussing the impact of the increased atmospheric concentrations of greenhouse gases on climate is to convert them to an equivalent amount of CO_2, then discuss

the effect of some fixed increase in equivalent CO_2. Most of the discussion is about doubled equivalent CO_2. The conversion to equivalent CO_2 introduces a number of errors, because the effects of some greenhouse gases depend on their location in the atmosphere, but since the convention is well established, it will be used in this discussion. A more accurate approach is to refer to increased radiative forcing, which is the increase in energy radiated to the Earth's surface, taking into account all of the complexities in the physics of greenhouse gases.

Can Future Climate Be Accurately Predicted?

Climate models, called General Circulation Models (GCMs), are used to predict the change in temperature, rainfall, cloud cover and other climate parameters that would result from a change in equivalent CO_2 and sometimes aerosols. The estimates of climate parameters are then used to predict impacts of climate change, such as frequency and severity of tropical storms, effects on agriculture and biodiversity, etc. While most discussions of models focus on their predictions of changes in average temperature, factors such as changes in maximum and minimum temperature, soil moisture content, and prevalence of conditions which favor the formation of tropical storms are far more important in determining potential climate change impacts.

GCMs are three-dimensional grid models which cover the whole Earth, the atmosphere to a sufficient height to include all climate processes, and the oceans in multiple depth layers. GCMs are also referred to as coupled atmosphere-ocean climate models. Most of the debate about the prediction of climate change centers around the quality of both the models and the input data they use, and the degree to which both can be improved. The concerns about these models can be grouped into five categories:

(1) limits in scientific understanding of climate processes,

(2) how they model "feedbacks,"

(3) how they describe the initial conditions, i.e., the current state of the climate,

(4) how well we understand the natural variability of climate, including the possibility that the climate system is chaotic, and

(5) the computational power required to accurately model climate.

A sixth concern, not directly related to GCMs, but important to the question of whether future climate can be accurately predicted, is whether future atmospheric concentrations of greenhouse gases can be accurately predicted. The problem has two components, economic and scientific. The economic question is whether we can accurately predict both the future

level of global economic activity and the technology which will be employed. Past predictions in both areas have been highly inaccurate. The scientific question is whether we understand the fate of greenhouse gases well enough to accurately predict the effect their emissions will have on atmospheric concentrations. For example, only about half of the CO_2 emitted from human activities ends up in the atmosphere. The remainder is believed to be absorbed by increased plant growth or in the oceans. Estimates of the amount of CO_2 absorbed by these two sinks are highly uncertain. There is also a great deal of scientific debate on what, if any, impact higher temperatures and related climate change will have on the rate of CO_2 absorption by plants and the ocean.

Limited Scientific Understanding of Climate Processes

Quantifying what we don't know about climate processes is an impossible task. However, the huge volume of important new findings about the processes that are critical to climate generated over the past few years make it obvious that there is a great deal more to be learned about the basic science of climate. For example, in 1995, Prof. Cess and his co-workers at the State University of New York published a paper on the energy balance around clouds which indicated that the values being used in climate models were incorrect by 25%. Cess *et al.* were unable to identify the physical processes which led to this different estimate of energy absorption. Since clouds are a critical part of the climate system, a correct characterization of their properties is essential. Other recent studies indicate that vegetation may be absorbing much more CO_2 than previously believed, allowing less of it to accumulate in the atmosphere.

Feedbacks

Climate models predict that the direct effect of doubling equivalent CO_2 from pre-industrial levels is relatively small. Global average temperature would rise by 0.5 - 1°C, an amount which is not generally considered to represent a problem. However, even that rise in temperature would cause a variety of changes, some of which would act to further increase temperature, others of which would act to decrease temperature. These secondary changes are called "feedbacks." The popular usage is that a positive feedback is one which acts to further increase temperature, and a negative feedback is one which acts to decrease temperature. The technical definition is that a positive feedback is one which exaggerates the initial perturbation, which could either increase or decrease temperature, and a negative feedback is one which decreases the initial perturbation. Since the popular usage is so common, it will be used in this paper.

The most important positive feedback is the impact which rising temperatures will have on the amount of water vapor in the atmosphere. Water vapor is the most important natural greenhouse gas in the atmosphere, accounting for the majority of the natural Greenhouse

Effect. As temperature increases, more water evaporates, the concentration of water vapor in the atmosphere rises, the Greenhouse Effect is enhanced, and temperatures rises further. An example of a negative feedback is that more evaporation of water results in the formation of more clouds. Low level clouds reflect sunlight, preventing its energy from reaching the Earth's surface, thus providing a cooling effect. As noted below, high level clouds provide a positive feedback.

Modeling feedbacks is one the major challenges in developing accurate climate models. The role of clouds is a particularly difficult modeling task. Low level clouds reflect sunlight and therefore are a negative feedback. However, clouds are made up of water vapor and therefore also absorb radiation. For high level clouds the absorption of radiation is more important than the reflection of radiation; they provide a positive feedback. Better estimates of the energy balance around clouds are becoming available, and preliminary modeling results indicate that the use of these better estimates improves the ability of GCM's to match current conditions.

Prediction of Current Conditions

GCMs are supposed to be theory-based models, not empirical models. As such they should be able to match current climate conditions using only the independent variables that determine climate (solar radiation, greenhouse gas concentrations, the current temperature of the oceans, etc.) as inputs. GCMs fail this test because they do not accurately predict the transfer of energy from the oceans to the atmosphere, a critical climate parameter. To correct this error, most GCMs are adjusted with "flux corrections," that on a point-by-point basis adjust the amount of heat being transferred from the oceans to the atmosphere to match actual conditions. The "flux corrections" can be quite large, as much as 10 - 20 times the effect of doubling equivalent CO_2. Having to make this large a correction to obtain model results which provide a reasonable description of the baseline is a cause for serious concern.

Flux corrections are correcting for one of two possible errors: missing climate processes, or errors in the description of the climate processes used in the model. New data, such as a better description of the energy balance around clouds, should lead to improvements in models and a reduction in the flux corrections.

Whether modeling capability will improve to the point where the flux corrections can be eliminated or reduced to a more reasonable level is an open question. To eliminate the flux corrections it is necessary to accurately model all climate processes and have an accurate description of initial conditions. Distribution of heat in the oceans is poorly understood, and the cost of collecting the necessary data makes it unlikely that a better understanding will be developed anytime soon.

Natural Variability and the Possibility that Climate is Chaotic

Thus far, GCMs have been described as relatively mechanical models - plug in the right processes and initial conditions and the model will describe climate. However, climate has natural variability, on both long and short time scales. The existence of Ice Ages and the warm periods between them is proof of climate's natural variability on very long time scales. But climate is also naturally variable on shorter time scales. For example, the milder temperatures in the North Atlantic at about 1000 AD allowed the Vikings to settle Iceland and Greenland, and explore the North American coast. The colder temperatures of the Little Ice Age after 1400 wiped out the Viking settlement in Greenland and nearly did the same to Iceland. This was climate variability on a time scale of several centuries. To accurately model future climate, we need an good estimate of the natural variability of climate on still shorter periods, decades to a century, which is currently unavailable.

Understanding the natural variability of climate on a decadal time scale and its causes would greatly improve our understanding of current climate data. Reasonable temperature records exist for only the last 120 years. Data on factors which could be causes for the variability of climate, such as changes in ocean circulation, is either non-existent or available for much shorter time periods. Until we have a better understanding of natural variability, it will be impossible to determine whether a part of the rise in average temperature experienced over the past century is due to human activities.

In addition, climate may be a chaotic system, which is extremely sensitive to very small changes in initial conditions. Weather is known to be chaotic, and since climate is the long-term average of weather, it, too, may be chaotic. In discussing the ability of GCMs to simulate climate, IPCC WG I, in section 6.2.6 of its Second Assessment Report, does not use the term chaotic, but states

> The models produce a high level of internal variability, as observed (Chapter 5), leading to a spread of possible outcomes for a given scenario, especially at the regional level.

This is a functional definition of chaotic behavior. The reference to Chapter 5 is to a discussion of the ability of models to describe observed climate over the last 120 years. If climate is chaotic, our ability to predict future climate or the effect of anthropogenic changes such as the increase in greenhouse gas emissions will be limited.

Computational Limits

GCMs are huge models which require supercomputers to run in any reasonable time. Computational limitations require that they use large grid sizes, typically 500 km. on a side. These cells are larger than many of the important physical features in the system they are trying to model, for example, the width of the Gulf Stream. Computational limits also mean

that some critical factors, such as the atmospheric interactions between greenhouse gases and the chemistry of aerosol formation, are not included in the model. The rapid increase in computational power may make it possible to overcome these limitations in the future, but at present they severely limit the quality of GCM predictions.

Capabilities of GCMs

Even with flux corrections, GCMs still cannot describe climate features on a 1000 mile scale which are critical to any discussion of the impacts of climate change. Also, there is considerable concern about the ability of GCMs to predict future climate because the flux correction is constant with changing equivalent CO_2. There is no reason to assume that the flux correction should remain the same if climate changes in response to increased CO_2. As a result, statements such as: "Doubling CO_2 will lead to x°C. increase in temperature." do not seem justified.

While climate models currently are incapable of accurate predictions of future climate, rapid improvement in their capability is possible. Better understanding of climate processes, such as the role of clouds, could significantly improve the models as could the ever increasing power of computers. Whether we can ever accurately predict future climate is still uncertain because of two problems. First, as mentioned above, climate may be chaotic. Second, even if climate is not chaotic, a model's predictions are only as good as the input data used. Our ability to predict future greenhouse gas emission rates depends on being able to predict the future level of global economic activity and the technology which will be used to generate that activity. Past predictions in both areas have been highly inaccurate.

A critical problem in climate modeling is the prediction of regional climate change. Most of the impacts of climate change will be felt on the regional or local level. The change in global average temperature and rainfall will not help predict the effect of climate change on farmers in the mid-West. The ability to predict regional climate change is poorer than the ability to predict global climate change. The IPCC sums up the situation as follows:

> Confidence is higher in hemispheric-to-continental scale projections of coupled atmospheric-ocean models than in the regional projections, where confidence remains low.

Have Human Activities Over the Last 120 Years Affected Climate?

As part of its contribution to the IPCC (Intergovernmental Panel on Climate Change, the UN body charged with assessing the peer-reviewed literature on the science, impacts and economics of climate change) Second Assessment Report, WG I (Working Group I, the sub-group assessing science), after considering the uncertainties in the scientific information,

concluded:

> Nevertheless, the balance of evidence suggests that there is a discernable human influence on global climate.

This statement is stronger than those which appeared in the draft of the underlying report, where the authors stated:

> Any claims of positive detection and attribution of significant climate change are likely to remain controversial until uncertainties in the total natural variability of (the) total climate system are reduced.

As used by the IPCC,

> "Detection of change" is the process of demonstrating that an observed change in climate is highly unusual in a statistical sense, but does not provide a reason for the change. "Attribution" is the process of establishing cause and effect relations, including the testing of competing hypotheses.

At the conclusion of the WG I Plenary Session that approved the statement on a human impact on climate, the authors of the underlying report were instructed to modify their report to bring it into agreement with the summary statement. This process is the reverse of what is called for by the IPCC rules of procedure and normal scientific practice.

WG I considered four types of information in evaluating whether the observed change in climate was in fact "highly unusual in a statistical sense," and whether it could be attributed to human influences. A discussion of each type of information follows. Specific scientific studies are mention in three cases; they are the studies which have received the most publicity, but are not the only studies in the category.

1) Model-based estimates of natural variability - The Max Planck Institute (MPI), a German government laboratory and developer of one of the GCMs, ran their model for 1000 years into the future with only random perturbations to assess "natural" variability of temperature. They then determined, with 95% confidence, that the changes in temperature observed over the last 100 years could not be explained by their measure of "natural" variability. German politicians and press have reported this result as meaning that there is 95% confidence that the temperature changes of the last 100 years have been caused by human emissions of greenhouse gases, a significant overstatement of the scientific finding.

   The MPI finding does not prove that the temperature changes of the last 100 years are

due to human greenhouse gas emissions for two reasons:

- o Models are simplifications and therefore less variable than the real world. Actual "natural" variability of temperature is almost certain to be larger than the estimate from the MPI computer study.

- o The temperature change of the past 100 years may be due to natural changes in climate. Changes of this magnitude have occurred naturally in the past without any human influence. Section 3.6.3 of IPCC WG I's contribution to the Second Assessment Report states:

  "The warming of the late 20th century appears to be rapid, when viewed in the context of the last millennium. But have similar, rapid changes occurred in the past? That is, are such changes a part of the natural climate variability? Large and rapid changes did occur during the last ice age and in the transition toward the present Holocene period which started about 10,000 years ago. Those changes may have occurred on the time scale of a human life or less, at least in the North Atlantic, where they are best documented. Many climate variables were affected: atmospheric temperature and circ, precipitin patterns and hydrological cycle, temperature and circulation of the ocean."

2) Pattern-based studies - The Hadley Centre, a U.K. government laboratory and the developer of another GCM, has added sulfate aerosol effects to its model and calculated temperature from 1860 to 2050. The addition of aerosol effects provides an improved, but still relatively poor, match for observed temperature from 1860 to the present, and addresses one of the key concerns about climate models, their inability to "backcast" the temperature record. The study ties the increase in temperature over the past 100 years to emissions of greenhouse gases and aerosols.

There are two concerns about the Hadley Centre's work:

- o They considered only the direct effect of sulfate aerosols, i.e., their scattering of incoming sunlight. They did not consider the indirect effects of the aerosols - their impact on cloud formation - which could have an equally large impact on temperature.

- o Adding historical sulfate aerosol effects to the model requires a large number of assumptions about fuel usage rates and emission factors which cannot be tested. The validity of this approach is suspect.

The draft IPCC report discussed the Hadley Centre study and similar work and concluded:

> While some of the pattern-based studies discussed here have claimed detection of a significant climate change, no study to date has positively attributed all or part of that change to anthropogenic causes. Nor has any study quantified the magnitude of a greenhouse gas effect or aerosol effect in the observed data ...

This statement may also change as a result of the instructions given to authors to bring their report into agreement with the summary statement.

3) Studies of the vertical temperature profile of the atmosphere - Climate models predict that an increase in greenhouse gases should lead to a warmer troposphere but a cooler lower stratosphere. The fact that this pattern has been observed is being used to argue for the fundamental correctness of climate models and for the validity of their predictions that human emissions of greenhouse gases will cause changes in climate. However, the effect may be due to stratospheric ozone depletion rather than to the buildup of greenhouse gases in the troposphere. IPCC WG I's part of the Second Assessment Report (Section 8.4.2.1) cites two studies which could be interpreted as supporting this conclusion. If stratospheric ozone depletion is the cause it is "a human forcing of climate" but a different one from the buildup of greenhouse gases in the troposphere. Model agreement with the stratospheric ozone effect does not "prove" that the model is correct in predicting the effects of greenhouse gases in the troposphere.

4) Statistical models fitted to observations - T. R. Karl and three other researchers at National Climatic Data Center (NCDC) evaluated U.S. climate data since 1910 using an index of specific weather events which included: above normal minimum temperatures, above normal precipitation from October to April, below normal precipitation from May to September, and a greater than normal proportion of precipitation coming from heavy rainfalls. These are the types of climate "signature" that many scientists believe will be the first indication of climate change. Karl *et al.* concluded that there is a 90 - 95% probability that climate in the U.S. since 1976 has been affected by the increase in greenhouse gases in the atmosphere.

MIT researchers question the choice of factors included in the NCDC index, since the index is strictly empirical and has not been developed from basic principles. However, the parameters in the index are variables which other researchers have claimed could change as the result of climate change. As in the case of the other studies claiming to show that there has already been a human impact on climate, one can question whether the observed changes are the result of greenhouse gases or other climate influences.

The limitations which prevent climate models from accurately predicting future climate also limit their ability to assess whether a human impact on climate has already occurred. Claims that human activities have already impacted climate are currently unjustified. However, the improvements in climate models could make an assessment of human impacts on climate possible. Alternatively, a sufficiently large, short term change in climate consistent with model predictions could be used as proof of a human impact on climate.

Are There Alternate Explanations for the Climate Change Which Has Occurred Over the Last 120 Years?

Several arguments have been put forward attempting to challenge the conventional view of greenhouse gas-induced climate change. These are generally referred to as "contrarian" theories. This section summarizes these theories and the counter-arguments presented against them.

Solar Variability

Contrarian Theory

Solar radiation is the driver for the climate system. Any change in the intensity of the solar radiation reaching the Earth will affect temperature and other climate parameters. Dr Robert Jastrow, Director of the Mt. Wilson Observatory, and others have shown a close correlation between various sun spot parameters, which they believe are a measure of solar intensity, and global average temperature for the past 120 years, the period for which reasonable quality data exist for both sun spots and global average temperature. The correlation has been pushed back to about 1700 using less accurate data for both temperature and sun spots. In addition, observations of Sun- like stars indicate that they show the amount of variability in radiation intensity needed to account for recent changes in the Earth's climate.

More recently, Tinsley and Heelis at the Univ. of Texas have proposed a mechanism by which changes in solar activity can impact on climate in by a mechanism other than the direct change in the intensity of solar radiation impacting on the Earth's atmosphere.

Counter-arguments

Direct measures of the intensity of solar radiation over the past 15 years indicate a maximum variability of less than 0.1%, sufficient to account for no more than 0.1°C temperature change. This period of direct measurement included one complete 11 year sun spot cycle, which allowed the development of a correlation between solar intensity and the fraction of the Sun's surface covered by sun spots. Applying this correlation to sun spot data for the past 120 years indicates a maximum variability on solar intensity of 0.1%, corresponding to a maximum temperature change of 0.1°C, one-fifth of the temperature change observed during that period.

If solar variability has accounted for 0.1°C temperature increase in the last 120 years, it is an interesting finding, but it does not allay concerns about future warming which could result from greenhouse gas emissions. Whatever contribution solar variability makes to climate change should be additive to the effect of greenhouse gas emissions.

The Tinsley and Heelis proposed mechanism may revive the debate about the role of solar variability. To date is has not entered the climate change debate.

Role of Water Vapor

Contrarian Theory

In 1990, Prof. Richard Lindzen of MIT argued that the models which were being used to predict greenhouse warming were incorrect because they predicted an increase in water vapor at all levels of the troposphere. Since water vapor is a greenhouse gas, the models predict warming at all levels of the troposphere. However, warming should create convective turbulence, which would lead to more condensation of water vapor (i.e. more rain) and both drying and cooling of the troposphere above 5 km. This negative feedback would act as a "thermostat" keeping temperatures from rising significantly.

Counter-arguments

Lindzen's 1990 theory predicted that warmer conditions at the surface would lead to cooler, drier conditions at the top of the troposphere. Studies of the behavior of the troposphere in the tropics fail to find the cooling and drying Lindzen predicted. More recent publications have indicated the possibility that Lindzen's hypothesis may be correct, but the evidence is still weak. While Lindzen remains a critic of climate modeling efforts, his latest publications do not include the convective turbulence argument.

Anomalies in the Temperature Record

Contrarian Argument	Counter-arguments
The temperature record of the last 120 years cannot be explained by greenhouse gas emissions, which rose steadily through that period. If greenhouse gases were the explanation for recent climate, one would have expected temperature also to have risen steadily through the period. However, temperature rose from 1870 to 1930, then the leveled off to 1940, dropped between 1940 and 1970, and has been rising since 1970.	While atmospheric concentrations of greenhouse gases have risen steadily since 1870, their total increase has been too small for greenhouse warming to be distinguishable above the cooling effect of aerosols and the variability caused by all of the other factors which affect climate (volcanic eruptions, solar variability, random variability possibly due to the chaotic nature of climate, etc.). This does not mean that a further increase in greenhouse gas concentrations will not add to measurable warming.
Satellite measurements covering over 98% of the globe indicate that global average temperature has decreased slightly over the past 15 years, during a time when land-based temperature measurements indicated a series of record high temperatures.	Satellites measure the average temperature of a column of air from the surface to about 6 km. above the surface, while the land-based measurements are surface measurements. Also, the land-based measurements are for land only. The oceans, which cover 70% of the Earth's surface, are not included. The oceans would be expected to warm more slowly than the land surface, lowering global average temperature. While raw data from the satellite measurements indicate a cooling of 0.06°C/decade, correcting the raw data for known effects (volcanos and periodic warming of the Eastern tropical Pacific Ocean as part of the El Nino cycle), yields 0.09°C/decade warming. The corrected satellite measurements still do not agree with the land-based temperature record, but they both show warming.

Detailed temperature records do not agree with predictions about greenhouse warming. Prof. Patrick Michaels of the University of Virginia presented a series of hypotheses about how greenhouse warming should affect temperature. Only two will be discussed in detail.

First, if greenhouse gases were responsible for the increase in global average temperature, one would expect daytime maximum temperatures to increase. What is actually happening is that daytime maximum temperatures are staying constant, while nighttime temperatures are increasing. Michaels argues that the increase in nighttime temperatures is due to the urban heat island effect.

Second, one would also expect Northern Hemisphere temperatures to have increased more than Southern Hemisphere temperatures, since greenhouse gas concentrations are higher in the Northern Hemisphere. However, Southern Hemisphere temperatures have increased more than Northern Hemisphere temperatures. Michaels argues that the smaller increase in the Northern Hemisphere is due to cooling by aerosols, a position which is now becoming generally accepted.

While some scientist argue that greenhouse warming has already occurred, most say that it cannot be separated from all of the other factors affecting climate, including the urban heat island effect and aerosol cooling. Thus, the fact that the recent temperature record does not agree in detail with a greenhouse gas warming scenario does not diminish the potential threat from substantially higher atmospheric concentrations of greenhouse gases.

Conclusions about the Contrarian Theories

The contrarian theories raise interesting questions about our total understanding of climate processes, but they do not offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change. Jastrow's hypothesis about the role of solar variability and Michaels' questions about the temperature record are not convincing arguments against any conclusion that we are currently experiencing warming as the result of greenhouse gas emissions. However, neither solar variability nor anomalies in the temperature record offer a mechanism for off-setting the much larger rise in temperature which might occur if the

atmospheric concentration of greenhouse gases were to double or quadruple.

Lindzen's hypothesis that any warming would create more rain which would cool and dry the upper troposphere did offer a mechanism for balancing the effect of increased greenhouse gases. However, the data supporting this hypothesis is weak, and even Lindzen has stopped presenting it as an alternative to the conventional model of climate change.

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BACKGROUNDER

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Science and Global Climate Change: What Do We Know? What are the Uncertainties?

About This Backgrounder

In the past two decades, many scientists have raised concerns about the future of the earth's climate. In 1971, several leading scientists raised concerns about global cooling, leading to predictions of a coming ice age. Some scientists still recognize a cooling potential.

In the mid-1980's, the concern shifted to global warming, with a number of scientists stating their belief that the earth was warming as a result of an increasing concentration of greenhouse gases in the atmosphere. Some scientists predicted dramatic increases in temperature, which would lead to the melting of polar ice-caps, rising of sea levels, and other catastrophic results. Today, after several years of investigation, many of these dire predictions are moderating.

Global climate policy decisions must be made with the benefit of an adequate scientific understanding of how and why climate changes. Scientists remain divided on a number of climate change issues: Are increases of man-made gases contributing to global warming? Have global temperatures increased over the century? How accurate are forecasts based on computer modeling? Are sea levels rising? and How will increases in carbon dioxide (a greenhouse gas) affect the world's plant life?

This backgrounder responds to these questions, which are being debated in the scientific community today, and provides a resource section for additional reading.

Are increases of man-made greenhouse gases contributing to global warming?

Scientists agree that the greenhouse effect is a real, naturally occurring phenomenon. Greenhouse gases trap the sun's warmth in the lowest layers of the atmosphere, keeping Earth warm enough to sustain life. Without the natural greenhouse effect, the average surface temperature on Earth would fall below zero Fahrenheit. Indeed, in the natural greenhouse effect, atmospheric water vapor and clouds play a far greater role than other greenhouse gases. To put this in perspective, even if all other greenhouse gases were to disappear, water vapor and clouds would still leave us with 98 percent of the current greenhouse effect.

Scientists also agree that atmospheric levels of greenhouse gases (such as CO2) are increasing as a result of human activity. But scientists differ on whether the increase in the concentrations of these gases will cause an "enhanced greenhouse effect," or warming of the planet, because the role of greenhouse gases in climate change is not well understood.

As an example of this uncertainty, a recent Gallup poll of climate scientists in the American Meteorological Society and the American Geophysical Union asked whether there has been any identifiable, human-induced global warming to date. Forty-nine percent of respondents said no; 33 percent said they did not know, and only 18 percent thought some warming has occurred.

Have global temperatures increased over the last century?

Average surface air temperature readings appear to have increased about 1 degree Fahrenheit during the last century. Just as the greenhouse effect is a natural phenomenon, so are climate cycles. While temperature records do not extend much beyond the century mark, making it difficult to view the observed temperature change in the context of an overall trend, many scientists believe the observed increase in temperature within the last 100 years is a result of natural fluctuations in climate. Notably, almost all of the temperature increases in this century occurred before 1940, well before any significant increase in man-made CO2 emissions. The effects of man-made gases and natural factors may more completely explain this temperature record.

Analysis of the temperature data records for the last 100 years are subject to several uncertainties, including the urban heat island effect, which can raise temperatures around measurement stations as urban areas expand. Urbanization increases everything from lighting, automobile exhaust and retained heat from buildings and roads. Some scientists say this "heat island" effect must be considered when looking at the long-term temperature record.

Satellite measurements, which have been made for the last 14 years, which are relatively free from the distortions resulting from location, have shown no global temperature trend. The satellite techniques offer the future promise of comparing observational records with global climate model projections.

How accurate are forecasts based on computer modeling?

Computer models are used to project future temperature and climate change scenarios. The fact is, however, that computer modeling is inexact and uncertain. Many of the world's foremost climate modelers concede that insufficient data are available to represent the complex interactions that determine temperature and climate. At this time, modeling is unable to resolve how, where, or even whether potential global climate change can affect specific regions of the planet.

Many scientists believe current climate models are an inadequate basis for policy decisions. The manner in which these models account for water vapor (the major greenhouse gas) and cloud cover, is among their greatest shortcomings. Even small modifications in these factors can dramatically alter model projections. Current climate models cannot credibly predict CO2-induced climate changes. The Intergovernmental Panel on Climate Change (IPCC) was formed in 1988 by the United Nations Environment Programme and the World Meteorological Organization to evaluate the science, potential impacts and potential policies for climate change. Presenting its findings, the IPCC stated, "Climate models are only as good as our understanding of the processes which they describe, and this is far from perfect."

Are sea levels rising?

There has been a great deal of speculation about a potential sea level rise if the global climate gets warmer. Since even the most dire predictions of a warming trend would still leave the polar regions well below freezing, some scientists question the notion of a dangerous melting of the polar ice caps. Several recent studies suggest that warmer air temperatures will increase snowfall, resulting in more, not less, snow cover. While most scientists agree there has been some observed rise in sea level over the last century, there are questions on the accuracy of sea level measurements. Taken primarily through tide gauge records, sea level measurements are difficult to assess because of vertical land movements, atmospheric pressure, winds, ocean currents and lunar cycles.

How will increases in CO2 affect the world's plant life?

While scientists disagree on the link between CO2 increases and any global warming, there is strong scientific evidence pointing to the link between CO2 increases and plant productivity. Plant life "breathes" CO2 as humans do oxygen. Recent studies have suggested, and many agricultural experts believe, that increasing atmospheric CO2 levels may in fact accelerate plant growth, given adequate nutrients in the soil.

In summary

Sound policy making rests on resolving scientific uncertainty. Focused research is critically needed to address the outstanding scientific uncertainties that surround global climate change. The relevance of on-going research will depend in large part on how well it can scientifically clarify answers to the questions facing policy-makers. The research must resolve the questions raised above as well as other key uncertainties such as: 1) What is the role of cloud cover, the oceans, polar ice caps, soil and forests and their interactions? and 2) How can we differentiate natural climate variations from changes attributable to man-made emissions? If the research fails to address these and other issues, the result may be stacks of good scientific articles, but little progress in translating data into information that policy makers can use to make effective decisions.

Recommended Reading

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Singer, S. Fred. "Warming Theories Need Warning Label." The Bulletin of Atomic Scientists (June 1992): 34-39.

Science and Global Climate Change: What Do We Know? What Are the Uncertainties?

About this backgrounder

In the past two decades, many scientists have raised concerns about the future of the earth's climate. In the 1970s, leading scientists raised concerns about global cooling, leading to predictions of a coming ice age. A few scientists still recognize a cooling potential.

In the mid-1980s, concern shifted to global warming, with a number of scientists stating their belief that the Earth was warming as a result of an increasing concentration of greenhouse gases in the atmosphere. Some scientists predicted dramatic increases in temperature, which would lead to the melting of polar ice-caps, rising of sea levels, and other catastrophic events. Today, after several years of investigation, many of these dire predictions have been moderated.

Global climate policy decisions must be made with the

Global climate policy decisions must be made with the benefit of an adequate scientific understanding of the how and why of climate changes. Scientists remain divided on a number of climate change issues: Are increases of man-made gases contributing to global warming? What are the causes of global temperature change over the past century? How accurate are forecasts based on computer modeling? Will sea levels continue to rise? How will increases in carbon dioxide (CO2), a greenhouse gas, affect the world's plant life?

This backgrounder responds to these questions, which are being debated in the scientific community today, and provides a resource section for additional reading.

Are increases of man-made greenhouse gases contributing to global warming?

Scientists agree that the greenhouse effect is a real, naturally occurring phenomenon. Greenhouse gases trap the sun's warmth in the lowest layers of the atmosphere, keeping Earth warm enough to sustain life. Without the natural greenhouse effect the average surface temperature on Earth would fall to about zero degrees Fahrenheit (-18c). The earth's average temperature is about 60 degrees Fahrenheit (F), but in the natural greenhouse effect, atmospheric water vapor and clouds play a far greater role than other greenhouse gases. To put this in perspective, even if all man-made greenhouse gases were to disappear, water vapor and clouds would still leave us with almost all of the current greenhouse effect.

Scientists also agree that atmospheric levels of greenhouse

Scientists also agree that atmospheric levels of greenhouse gases (such as CO2) are increasing as a result of human activity. But scientists differ on the rate and magnitude of the "enhanced greenhouse effect" (warming) that will result due to the increase in the concentrations of these gases or warming of the planet, because the role of greenhouse gases in climate change is not well understood.

As an example of this uncertainty, a 1992 Gallup poll of climate scientists in the American Meteorological Society and the American Geophysical Union asked whether there has been any identifiable, human-induced global warming to date. Forty-nine percent of respondents said no; 33 percent said they did not know; and only 18 percent thought some warming has occurred.

What are the causes of global temperature change over, the last century?

Average surface air temperature readings appear to have increased about I degree Fahrenheit during the past 100 years. Just as the greenhouse effect is a natural phenomenon, so are climate cycles. While temperature records do not extend much before about 100 years ago, making it difficult to view the observed temperature change in the context of an overall trend, many scientists believe the observed increase in temperature within the last 100 years could be a result of natural fluctuations in climate. Notably, almost all the temperature increase in this century occurred before 1940, well before the majority of the increase in man-made C02 emissions.

Analysis of the temperature data records for the last 100

Analysis of the temperature data records for the last 100 years are subject to several uncertainties, including the urban heat island effect, which can raise temperatures around measurement stations as urban areas expand. Urbanization increases everything from lighting to automobile exhaust and retained heat from buildings and roads. This heat island effect must be considered when looking at the long-term temperature record and may explain some of the global temperature increase. Land-based temperature records show a warming trend in the 1980's. On the other hand, though not statistically distinguishable, satellite measurements have shown no global temperature trend over the past 14 years. The satellite techniques, which are relatively free from the distortions due to the relatively limited number of land-based measurement locations, offer the future promise of comparing observational records with global climate model projections.

How accurate are forecasts based on computer modeling?

Computer models, called General Circulation Models (GCM), are used to project future temperature and climate change scenarios. The fact is, however, that computer modeling is inexact and uncertain. All of the world's foremost climate modelers concede that today's models can not fully represent the complex interactions that determine temperature and climate. At this time, modeling is unable to resolve how, where, or even whether potential global climate change can affect specific regions of the planet.

climate change can affect specific regions of the planet. Many scientists believe current climate models are an inadequate basis for policy decisions that could adversely effect our economy. The manner in which these models account for cloud cover and oceanic effects is among their greatest shortcomings. Even small modifications in these factors can dramatically alter model projections. Current climate models cannot credibly predict C02-induced climate changes. Today's models are only beginning to take into account the radiative effects of phenomena which counteract warming (such as sulfur dioxide emissions). The Intergovernmental Panel on Climate Change (IPCC) was formed in 1988 by the United Nations Environment Programme and the World Meteorological Organization to evaluate the science, potential impacts and potential policies for climate change. Presenting its findings, the IPCC stated, "Climate models are only as good as our understanding of the processes which they describe, and this is far from perfect."

Are sea levels rising?

There has been a great deal of speculation about a potential sea level rise if the global climate gets warmer. Since even the most dire predictions of warming trends over the next 1 or 2 centuries would still leave the polar regions well below freezing, most scientists question the predictions of a dangerous melting of the Greenland or Antarctic ice caps. While most scientists agree there has been some observed rise in sea level over the last century, there are questions about the accuracy of sea level measurements. Taken

about the accuracy of sea level measurements. Taken primarily through tide-gauge records, sea level measurements are difficult to assess because of vertical land movements, atmospheric pressure, winds, ocean currents and lunar cycles. With regard to the future, several recent studies suggest that warmer air temperatures could increase snowfall, decreasing the likelihood of sea level rise due to polar ice cap melting.

How will increases in C02 affect the world's plant life?

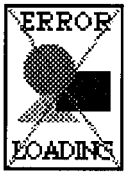
While scientists disagree on the link between C02 increases and any global warming, there is strong scientific evidence pointing to the link between C02 increases and improved plant productivity. Plant life "breathes" C02 as humans do oxygen. Recent studies have suggested, and most agricultural experts believe, that increasing atmospheric C02 levels may in fact accelerate plant growth, given adequate nutrients in the soil.

In summary

Sound policy-making rests on reducing scientific uncertainty. Focused research is critically needed to address the outstanding scientific uncertainties that surround global climate change. Although the U.S. federal research program is large, there has been debate over its focus. The usefulness of ongoing research will depend in large part on how well it can scientifically clarify answers

large part on how well it can scientifically clarify answers to the questions facing both scientists and policymakers. The research must resolve the questions raised above as well as other key uncertainties such as: 1) What are the roles of cloud cover, the oceans, polar ice caps, soil and forests and their interactions? and 2) How can we differentiate natural climate variations from changes attributable to man-made emissions? If the research fails to address these and other issues, the result may be stacks of good scientific articles, but little progress in translating data into information that policy-makers can use to make effective decisions.

The Global Climate Coalition is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on global climate change.



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