

Synopses

The Energy Council 2010 Federal Energy and Environmental Matters Conference

March 4 – 7, 2010

**The Madison Hotel and Conference Center
Washington, D.C.**

An IOGCC Briefing on Unconventional Gas Production

Mr. J. Scott Roberts
Deputy Secretary, Mineral Resources Management
Pennsylvania Department of Environmental Protection

Marcellus Shale Gas resource development provides Pennsylvania with the chance to shake the “rust” from the economy. However, in keeping with the Commonwealth’s strong conservation tradition, development must not occur at the expense of the state’s land, water or other natural resources.

Report from the U.S. Department of Energy

Mr. Christopher A. Smith
Deputy Assistant Secretary for Oil and Natural Gas
U.S. Department of Energy

America’s energy challenges are closely linked with national security and economic prosperity. The price of oil will increase in coming decades, and we will live in a carbon constrained world. The Department of Energy is partnering with industry and with local government to develop policies and technological solutions that will move America towards energy independence. That means tapping domestic resources like renewables, clean coal and natural gas.

Clean Energy Program Deployment

Mr. Jonathan Silver
Executive Director, Energy Loan Programs
U.S. Department of Energy

The Department of Energy's Loan Guarantee Programs Office manages the nation's green energy loan portfolio. The LGP is committed to financing a new generation of technologies across the full spectrum of energy resources. The program was recently redesigned to be more responsive, transparent and efficient as evidenced by the increased number of announced transactions in 2010. Included in these announcements was more than \$8 billion in conditional loan guarantees for what will be the first U.S. nuclear power plant to break ground in nearly three decades. We also expect to support many more projects over the next three years, resulting in tens of thousands of high-paying construction and manufacturing jobs.

Smart Grid Implementation

Mr. Stan Mark Kaplan
Specialist in Energy & Environmental Policy
Congressional Research Service

The smart grid concept is sometimes not well defined or understood. There are many implementation issues, involving technology, electric rates, and costs. While the promise of the smart grid concept is immense, much work remains to effectively tap this potential.

Panel Discussion on Fossil Energy

Alberta's Investments in Cleaner Fossil Energy
Ms. Sandra Locke
Executive Director
Carbon Capture and Storage Development
Alberta Department of Energy

Alberta has undertaken a challenging plan for the reduction of greenhouse gas emissions, including a significant investment in carbon capture and storage (CCS) technology. Alberta's strategy, as it relates to heavy oil and coal resources, includes projects that will demonstrate CCS technologies involving upgrading, insitu coal gasification and enhanced oil recovery.

Federal Lands Moratoria Impacts - - the NARUC – NEMS Model

Mr. Rick Irby
Project Manager
SAIC

The National Association of Regulatory Utility Commissioners (NARUC) Moratoria Study Group on the *Analysis of the Social, Economic and Environmental Effects of Maintaining Oil and Gas Exploration and Production Moratoria On and Beneath Federal Lands* 1) updates the nation's onshore and offshore natural gas and oil resource base in moratoria and non-moratoria areas (Conducted by the Gas Technology Institute); and, 2) in combination with the updated resource estimates, assesses the social, economic and environmental impacts to the nation of maintaining the moratoria in the upcoming decades. The analysis was conducted by SAIC using a modified, project-specific version of the U.S. government's National Energy Modeling System (NARUC-NEMS) covering a timeframe extending the 2030. The findings reveal an energy future for the nation that increases the cost and restricts the availability of domestic oil products and natural gas.

Smart Grid Implementation

Mr. Jay A. Morrison
Senior Regulatory Counsel
National Rural Electric Cooperative Association

Smart grid is a useful concept. Tools are being developed that will help utilities better serve consumers. These tools should be deployed "at the pace of value" and not all of them are ready for prime time. It is important to follow the debate to make sure that "smart grid" is not a jurisdictional Trojan horse. All decisions on Smart Grid policy should first and foremost be all about consumers.



Oklahoma Senator
Brian Bingman
Chairman

Lori Cameron
Executive Director

5400 LBJ Frwy.
Suite 985
Dallas, Texas 75240

email:
energy@theenergycouncil.org
Phone: (972) 243-7788
Fax: (972) 243-7722

Final Agenda

The Energy Council's
2010 Federal Energy & Environmental Matters Conference
Meeting Jointly with the
Interstate Oil and Gas Compact Commission (IOGCC)
and the Leadership of
The Pacific NorthWest Economic Region (PNWER)
March 4 - March 7, 2010

The Madison Hotel and Conference Center
Washington, D.C.
Phone: (800) 424-8577

Thursday, March 4, 2010

6:00 p.m. **Congressional Reception**
(Montpelier)

Friday, March 5, 2010

7:30 a.m. **Welcoming Remarks**
(Mt. Vernon)

The Honorable Brian Bingman
Oklahoma Senate and
Chairman, The Energy Council

The Honorable Tom Wagoner
Alaska Senate and
Chairman, CLEER

The Honorable Lesil McGuire
Alaska Senate and
Vice President, Pacific NorthWest Economic Region (PNWER)

Mr. Lynn Helms, Director
North Dakota Department of Natural Resources and
Vice Chairman, Interstate Oil and Gas Compact Commission (IOGCC)

Induction of North Dakota

Breakfast Address: Western Hemisphere Energy Relations

Mr. Douglas C. Hengel
Deputy Assistant Secretary for Energy, Sanctions & Commodities
U.S. Department of State

9:00 a.m. **Opening Address: Report from Congress**
(Dolley Madison)

The Honorable Harry Teague
U.S. House of Representatives

Friday, March 5, 2010 (Cont'd)

9:30 a.m. **National Security and Energy**

Mr. Al Hegburg
Sr. Fellow, Energy & National Security Program
Center for Strategic & International Studies

10:00 a.m. Break

10:15 a.m. **An Invitation to Newfoundland and Labrador**

Mr. Harry Harding
Member, House of Assembly
Newfoundland and Labrador

10:30 a.m. **Canada and the U.S. - - Bilateral Federal Energy Relations**

Mr. Marc LePage
Special Advisor for Energy & Climate Change
Canadian Embassy, Washington, D.C.

11:00 a.m. **Update on National Programs Addressing Clean Coal**

Mr. Paul Bailey
Senior Vice President, Federal Affairs
American Coalition for Clean Coal Electricity (ACCCE)

11:30 a.m. **Report from the Department of Interior**

Ms. Wilma Lewis
Assistant Secretary for Land & Minerals Management
U.S. Department of Interior

Noon
(Mt. Vernon) **Luncheon Address: An IOGCC Briefing on Unconventional Gas Production**

Chairman Victor Carrillo
Texas Railroad Commission

Mr. J. Scott Roberts
Deputy Secretary, Mineral Resources Management
Pennsylvania Department of Environmental Protection

2:00 p.m. **Field Trip to Federal Energy Regulatory Commission's Market Monitoring Center**

Welcome to FERC
Chairman Jon Wellinghoff

Saturday, March 6, 2010

7:30 a.m. **Breakfast Address: Report from the U.S. Department of Energy**
(*Mt. Vernon*)

Mr. Christopher A. Smith
Deputy Assistant Secretary for Oil and Natural Gas
U.S. Department of Energy

9:00 a.m. **Clean Energy Program Deployment**
(*Dolley Madison*)

Mr. Jonathan Silver
Executive Director, Energy Loan Programs
U.S. Department of Energy

9:30 a.m. **Smart Grid Implementation**

Mr. Stan Mark Kaplan
Specialist in Energy & Environmental Policy
Congressional Research Service

Mr. Jay A. Morrison
Senior Regulatory Counsel
National Rural Electric Cooperative Association

10:15 a.m. Break

10:30 a.m. **Panel Discussion on Fossil Energy**

Report on Western Hemisphere Oil Roundtable
Dr. Robert J. Johnston
Director, Energy and Natural Resources
Eurasia Group

Alberta's Investments in Cleaner Fossil Energy
Ms. Sandra Locke
Executive Director
Carbon Capture and Storage Development
Alberta Department of Energy

11:15 a.m. **Federal Lands Moratoria Impacts - - the NARUC – NEMS Model**

Mr. Dave Harbour (By Teleconference)
NARUC Commissioner Emeritus and Study Group Vice Chair

Mr. Rick Irby
Project Manager, SAIC

Commissioner Dan Seamount, Jr.
Alaska Oil and Gas Conservation Commission

Mr. Michael Whatley
Consumer Energy Alliance – Southeast

Noon Adjourn

Saturday, March 6, 2010 *(Cont'd)*

12:15 p.m. **CLEER University Advisory Board Seminar:
(Montpelier) Assessing Policy Options Regarding Carbon**

Facilitator: Dr. Carol E. Lewis
Dean & Director
School of Natural Resources and Agricultural Sciences
University of Alaska Fairbanks

Presenter: Roberta Hotinski
CMI Information Officer
Princeton University

Sunday, March 7, 2010

8:30 a.m. **Working Breakfast and Energy Council and CLEER Business Sessions
(Montpelier)**

9:00 a.m. **CLEER Program Advisory Board Planning Session for
2010 State and Provincial Trends in Energy and the Environment
Conference**

10:30 a.m. **Adjourn**

THE Energy Council Quarterly

SPRING

2010

Global Conference Features Energy Economics, Environmental Impacts and Security Concerns of Four Continents

The Energy Council's 2009 Global Energy and Environmental Issues Conference lived up to its billing. The meeting tied conventional and alternative energy sources to economic, environmental and security concerns across four continents. Held December 10-13 at the Broadmoor Hotel and Conference Center in Colorado Springs, the conference participants heard from experts from Canada, Venezuela, Mexico, the United Kingdom and China, as well as the United States.

Welcoming participants on Friday morning, December 11, were Oklahoma Senator Brian Bingman,

Chairman of the Energy Council and Alaska Senator Tom Wagoner, Chairman of the Center for Legislative Energy and Environmental Research (CLEER). Joining the Chairmen, in a special welcome to Colorado, was The Honorable Brandon Shaffer, President of the Colorado Senate. A specific welcome was extended to a delegation of six members of the Mexican Congress House of Deputies, including two members of the House Energy Committee. The six members of Congress represented five different parties and six states in Mexico.

Dr. Wenran Jiang, Mactaggart Research Chair at the University of

Alberta's China Institute and Special Advisor on China to the Energy Council, opened the conference with the Breakfast Address on Friday, December 11, entitled "Fueling the Dragon or Ignoring the Dragon?" Dr. Jiang noted a number of mega-trends in China, including urbanization, a dramatic increase in the domestic consumption and service industry, an infrastructure and construction boom, an explosion of energy demand, emergence as an auto industry superpower and dramatic growth of the tourism industry.

See GLOBAL CONFERENCE
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The 2009 Global Energy and Environmental Issues Conference, which covered ground from China to Mexico, and Venezuela to Canada, opened with a welcome by Colorado Senate President Brandon Shaffer (right) and a Breakfast Address on China by Dr. Wenran Jiang (left) of the University of Alberta (The Energy Council's China Advisor). Also, during the Opening Session, the Chairman of the Energy Council, Oklahoma Senator Brian Bingman, (center) and the Chairman of CLEER, Alaska Senator Tom Wagoner (center left), called on The Council's Mexico Advisor, Mr. Max Yzaguirre (center right), to introduce a distinguished delegation of members of the Mexican Congress.

The Energy Council

The Energy Council Quarterly is the official publication of the Energy Council, a legislative organization comprised of eleven member states and six international affiliates, drawn from the major energy producing regions of the United States, Canada and Venezuela. It provides a forum for discussing government policies regarding energy and the environment.

Executive Director: *Lori Cameron*

Editor: *Evy Richards, CMP*

For information regarding the *Energy Council Quarterly* or the Energy Council, please contact:

The Energy Council

5400 LBJ Freeway, Suite 985

Dallas, Texas 75240

Phone: (972) 243-7788

Fax: (972) 243-7722

E-mail: energy@theenergycouncil.org

OFFICERS

Senator Brian Bingman
Oklahoma
Chairman

Lori Cameron
Secretary, Treasurer and Executive Director

STAFF

Evy Richards, CMP
Team Member - Meeting Planning/Publications

Jane Taylor
Team Member - Financial/IT

Isela Vera
Team Member - Administrative

Tell us what you think!

We welcome your suggestions and feedback. Please email erichards@theenergycouncil.org

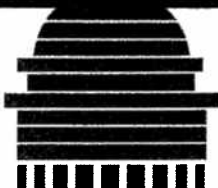
The 2010 Federal Energy and Environmental Matters Conference to be Held in Washington, D.C. with IOGCC and PNWER Leadership

The 2010 Federal Energy and Environmental Matters Conference will be held in Washington, D.C. at the Madison Hotel March 4-7. Attendees from the Interstate Oil and Gas Compact Commission (IOGCC) and Pacific NorthWest Economic Region (PNWER) will again participate in this year's conference. The meeting takes on special significance, with the induction of North Dakota as an Energy Council member state.

The Energy Council's Federal Conference will begin with a congressional reception on Thursday evening. Friday morning will kickoff with a breakfast presentation and general session followed by a luncheon presentation. Later that afternoon, participants will have an opportunity to participate in a field trip to the Federal Energy Regulatory Commission (FERC) Market Monitoring Center.

On Saturday, March 6, in addition to a breakfast presentation and general session presentations, the day will culminate with the CLEER University Advisory Board (UAB) Seminar. The conference will wrap up on Sunday, March 7 with The Energy Council and CLEER business sessions and the planning session for the 2010 State and Provincial Trends in Energy and the Environment Conference. Some of the topics to be discussed at the 2010 Federal Energy and Environmental Matters Conference in Washington, D.C. will include:

- Report from Congress
- Western Hemisphere Energy Relations
- National Security and Energy
- Natural Gas Policy
- Report from the Department of Interior
- Report from the U.S. Department of Energy
- Clean Energy Program Deployment
- Smart Grid Implementation
- CLEER University Advisory Board Seminar
- CLEER Program Advisory Board Planning Session for 2010 State and Provincial Trends in Energy and the Environment Conference





The Chairman of the Energy Council, Oklahoma Senator Brian Bingman (right), listens as Mr. T. Boone Pickens, CEO of BP Capital, makes a point during his Keynote Address to the Energy Council's 2009 Global Energy and Environmental Issues Conference.

Global Conference

Continued from page 1

He stated that the China Commerce Ministry expects overseas direct investment by Chinese companies to reach almost 60 billion dollars in 2009, with some of the largest foreign deals relating to natural resources (e.g. the proposed \$17 billion acquisition of YPF.)

Looking to the future, Dr. Jiang sees opportunities for energy development in the areas of oil, gas, nuclear, renewables and alternative energy. He said China has \$2 trillion in foreign reserves, is the world's largest potential market and may well embrace new technologies, "leapfrogging" forward.

"A Report from the 2009 World Heavy Oil Conference" was given by Alabama Representative Mike Hill, the Immediate Past Chairman of The Energy Council; and Mr. Carlos Figueredo, Minister Counselor for Environment, Petroleum and Energy at Embassy of Venezuela in Washington, D.C.

Representative Hill stated that The Energy Council and CLEER were honored to be invited by Venezuelan Ambassador Bernardo Alvarez to participate in the 2009 World Heavy Oil Congress (WHOC) in Venezuela in early November. Representative Hill served as moderator, on behalf of the Energy Council, of a plenary panel discussing markets and economics, related to heavy oil.

The WHOC panel discussion covered heavy oil in California, oil sands production in Canada, and the role of partnership relationships in developing such resources. Hill also explained that, in addition to participating in the WHOC, he and CLEER's Vice Chairman, Texas Representative Warren Chisum, were briefed by the U.S. Ambassador to Venezuela, Mr. Patrick Duddy. According to Hill, Ambassador Duddy recognized the Energy Council as an important avenue of dialogue between energy leaders of the U.S. and Venezuela. In closing, Hill said that he and Representative Chisum were also honored to meet with the Venezuela National Assembly's Permanent Commission on Energy and Mines, and invited the Commission's participation in the Energy Council.

Mr. Figueredo noted that the third WHOC was hosted by The Bolivarian Republic of Venezuela. According to Figueredo, 112 companies from 22 countries participated and more than 180 technical papers on the value chain, and the environment, as well as the cultural and social perspectives of heavy oil development, were presented. Figueredo felt that the presentations underscored the importance of heavy oil development as a key factor in meeting the global oil supply challenge: demand growth versus production decline. He also told Energy Council attendees that conservative forecasts suggest that global heavy oil production could double from 9 million barrels of oil

production per day (mbopd) to 18 mbopd by 2025. This would mean heavy oil would increase from 12 to 18 percent total oil production share of total world oil production.

"Approximately 80 percent of the world's heavy oil reserves are located in North and South America, with Venezuela and Canada leading, in terms of reserves," Figueredo said. "Therefore, a very important production increase is expected from this region, and one scenario pointed to an increase from 6.2 mbopd to 10.6 mbopd for year 2025."

Mr. Figueredo concluded that Venezuela's comprehensive and well orchestrated development plan aims to produce 3.6 mbopd of heavy oil crude from the Orinoco Belt, (2.8 mbopd from new developments) in 10 years. Special importance is being attached to environmental, cultural, social, human resources and technological issues related to increasing heavy oil production.

"The United Kingdom's Perspective on Global Energy and Climate Change" was the subject for Consul General Kevin Lynch, British Consul General in Denver. "This is a key moment for climate change issues. Renewable energy and energy security are two themes which will help solve the complex problems surrounding climate change. The outcomes from the Copenhagen summit will also be key factors in resolving climate change," Lynch stated.

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Global Conference

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Mr. T. Boone Pickens delivered the Keynote Address, speaking about the Pickens Plan, to replace foreign oil imports with domestic natural gas.

The Pickens Plan and related legislation in Congress, H.B. 1835 and S. 1408, focus on replacing half of OPEC's daily oil exports to the U.S. with domestic natural gas. This would be accomplished by converting the American fleet of heavy duty vehicles (18 wheelers) to LNG. Building on the success of California's South Coast Air Quality Management District, the Pickens Plan legislation would grant a \$65,000 tax incentive per vehicle to owners, as they replaced existing 18 wheelers with new, natural gas-fueled ones.

Mr. Pickens noted that nationally, natural gas fuel infrastructure challenges would be much easier to meet for heavy duty vehicles, than for personal transportation vehicles. In his discussion, which ranged from Middle Eastern oil to Chinese energy markets, Pickens recognized Canadian oil sands as an important supply component for future U.S. transportation markets.

Mr. Jose Carlos Pacheco, Vice Manager for New Business, Vice Presidency for New Strategic Contracts, Pemex Exploration and Production discussed "Mexico's Energy Outlook."

Mr. Pacheco began by saying that Mexico's hydrocarbon potential is still at 43 billion barrels of oil equivalent (BBOE). He explained that Pemex, the only Mexican petroleum company, will lead efforts to reach production goals, developing main projects such as Chicontepec, and deepwater and focusing on brownfield projects. He surmised that the new Mexican legal framework will change contractual models, in order to increase execution capabilities.

Following the morning's presentations, a field trip to Pueblo, Colorado highlighted alternate energy and business development. The group was hosted for lunch at Colorado State University - Pueblo where a briefing was held on the CSU-P's large scale solar array. The solar facility, built by BP Solar and managed by Black Hills Electric, supplies about 10 percent of campus power.

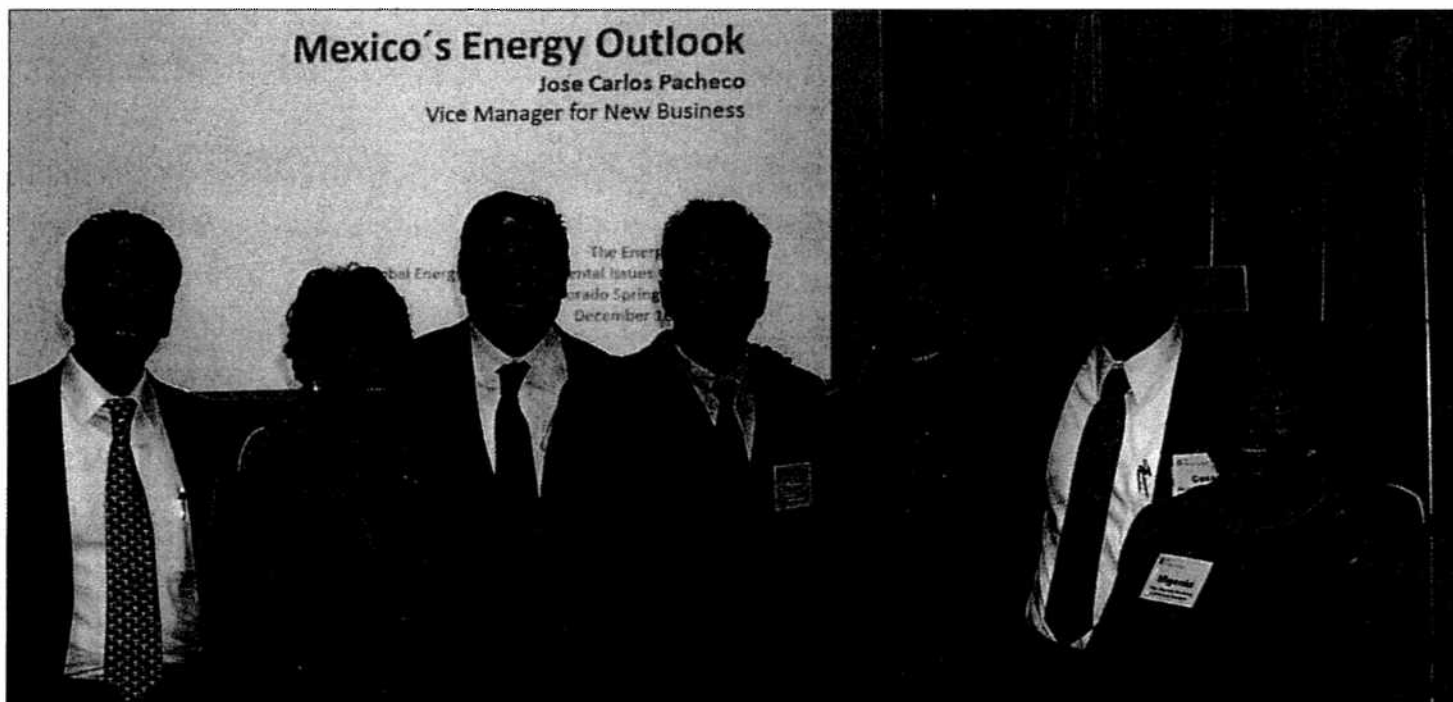
From there, the participants traveled to Pueblo Community College (PCC), which has developed a workforce training program to prepare employees

who will be constructing wind turbine towers at Vestas Americas' new plant in Pueblo. PCC has outfitted four state-of-the-art mobile training units to bring training to all parts of Colorado. The PCC visit concluded with a briefing by the Vestas Americas' executive in charge of developing the new wind tower manufacturing facility.

Saturday Morning's Breakfast Address was a "Report from the National Renewable Energy Laboratory" given by Mr. Dale Gardner, Associate Lab Director for Renewable Fuels and Vehicle Systems, National Renewable Energy Laboratory (NREL). According to Mr. Gardner, the Department of Energy (DOE) is addressing numerous research and development challenges in Golden, Colorado. This work is associated with the renewable energy and energy efficiency goals of the United States, and recent increases in companion programs aimed at commercializing and deploying these technologies more rapidly and at larger scales.

"Decreasing national petroleum usage and imports, along with emerging U.S. announcements to dramatically reduce greenhouse gas emissions, are

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Following his presentation at the 2009 Global Energy and Environmental Issues Conference, Jose Carlos Pacheco (left), Pemex Vice Manager for New Business, got a great vote of support from a delegation of members of the Mexican Congress. Standing next to Mr. Pacheco, from left to right are Diputada Federal Maria Teresa R. Ochoa Mejia; Diputado Federal Ramon Ramirez Valtierra; Diputado Federal Oscar Lara Salazar; Diputada Federal Ivideliza Reyes Hernandez; Diputado Federal Cesar Francisco Burelo Burelo; and Diputada Federal Ifigeneia Martinez.

New Members from North Dakota Join Executive Committee

In anticipation of North Dakota's induction into The Energy Council at the 2010 Federal Energy and Environmental Matters Conference, four members of the Legislature have been appointed to the Council's Executive Committee, according to the Honorable Al Carlson, Chairman of the North Dakota Legislative Management Committee.

Senator Randel Christmann has been a member of the North Dakota Senate since 1995 and served as Assistant Senate Majority Leader since 2001. He is a member of Appropriations, as well as the Rules Committee. During the Interim, Senator Christmann serves on the Legislative Procedure and Arrangements Committee; the Budget Section; Legislative Audit and Fiscal Review; and the Information Technology Committee. Senator Christmann and his wife, Beth, live in Hazen.



Randel Christmann

North Dakota Senator



Rich Wardner

North Dakota Senator

Senator Rich Wardner has served in the North Dakota legislative for more than 20 years. He began his service in the Senate in 1999. Senator Wardner is a member of the Appropriations Committee. Additionally, he chairs the Interim Energy and Transmission Committee and sits on the Interim Budget Section, as well as Information Technology, and Workers' Compensation Interim Committees. Senator Wardner and his wife, Kayleen, make their home in Dickinson.



Todd Porter

North Dakota Representative



Bob Skarphol

North Dakota Representative

Representative Todd Porter has served as a member of the North Dakota House since 1999. He chairs the Natural Resources Committee and also sits on the Human Services Committee. Representative Porter is Vice Chair of the Interim Natural Committee and serves, as well, on the Interim Energy Development & Transmission Committee and the Interim Public Safety and Transportation Committee. Representative Porter and his wife, Shirley, call Mandan home.

Representative Bob Skarphol initially served in the North Dakota House from 1993 to 1997. Recently, he has served since 2001 to the present. Representative Skarphol chairs the Education and Environment Division of the House Appropriations Committee. As a member of the 2009-2010 Legislative Management Committee, Representative Skarphol chairs the Higher Education Committee and sits on the Budget Section; Legislative Audit and Fiscal Review Committee; and Information Technology Committee. Representative Skarphol and his wife, Diana, reside in Tioga.

Of Special Interest

Congratulations to **Alaska Senator John Coghill** on his appointment to the Alaska Senate by Governor Sean Parnell. Senator Coghill served on the Energy Council's Executive Committee from the Alaskan House for a number of years.

Senator Coghill filled a vacancy created by the governor's appointment of former Senator **Gene Therriault** as Senior Policy Advisor to the Governor on Alaskan energy. Former Senator Therriault also served on the Energy Council's Executive Committee, and the Council offers him our best wishes and congratulations, as well.

More professional recognition – another member of the Energy Council's Executive Committee, the **Honourable Frank Oberle** of Alberta, has been named by Premier Ed Stelmach as Solicitor General and Minister of Public Security. All our best to Minister Oberle!



Canadian cooperation with the United States was discussed, both in reference to NORAD and the Canadian oil sands. The Energy Council's Chairman, Oklahoma Senator Brian Bingman (left), and the Chairman of CLEER, Alaska Senator Tom Wagoner (right), welcomed Canadian Major General Pierre "Pete" Forgues, Director of Operations at the North American Aerospace Defense Command and Ms. Patricia Nelson, Vice Chair of the In Situ Oil Sands Alliance, both of whom spoke at the Energy Council's Global Conference.

Global Conference

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providing new impetus and funding for these efforts," Gardner said. He added that the established fossil fuel-based energy infrastructure displays huge inertia, which must be countermanded if the technologies to reduce oil and carbon dioxide are to have a meaningful impact.

"NORAD, A Bilateral Partnership" was the topic of discussion by Major General Pierre "Pete" Forgues, Director

of Operations, North American Aerospace Defense Command.

General Forgues began the discussion by giving meeting attendees a brief overview of NORAD's history and command structure. NORAD has been in operation for 51 years, and its theater of operations is divided into three regions: Alaska, Canada and the Continental United States. "Unity of Command" is the number one principle of war. Having one commander look at North America as one theater is the original reason why NORAD was founded and continues

today. The primary purpose of NORAD is to defend against air threats.

General Forgues explained that NORAD's commander is bi-national and is accountable to both the Prime Minister of Canada and the President of the United States. NORAD acts as a goal-tender for a number of agencies that can detect anomalies, such as the TSA, FBI and FAA, to name a few. "A close and long-standing trust exists between Canada and the U.S., and in terms of what each country holds valuable, both countries are culturally and socially the same," General Forgues said. "This core value system allows for trust in each other and a binational commander to defend what we hold most dear, and that is our freedom."

"Changing Perspectives from the Canadian Oil Sands" was addressed by Ms. Patricia Nelson, Vice Chair, In Situ Oil Sands Alliance (IOSA). Ms. Nelson explained that the future of the oil sands development will be through innovation and technological enhancements. She stated that in situ technology will be used to develop over 80 percent of the oil sands in an environmentally-responsible manner, making in situ development the future of the industry.

Dr. Bryan Willson, Director, Engines and Energy Conversion Laboratory,

New CLEER Program Advisory Board Member

The Center for Legislative Energy and Environmental Research (CLEER) welcomes the newest member of the Program Advisory Board (PAB), Apache Corporation

An independent energy company, Apache Corporation explores for, develops and produces natural gas, crude oil and natural gas liquids.

Business Address: 2000 Post Oak Blvd., Ste. 100
Houston, Texas 77056-4400

Business Phone: 713-296-6150

E-mail: obie.obrien@apachecorp



**Urban "Obie"
O'Brien**

Vice President –
Governmental &
Regulatory Affairs and
Corporate Outreach

Colorado State University discussed "Energy from Algae." According to Dr. Willson, only four to five years ago, the concept of producing cost-competitive biofuels from microalgae, was believed by most to be unlikely. However, advances in algal biology and production technology have changed this view, and many traditional oil companies have now established strategic partnerships to facilitate the development of algae biofuels.

Dr. Willson said that scaleup facilities are being developed, and the prognosis appears sound for algae biofuels to be cost competitive with petroleum within five years. The algae approach avoids concerns about competition for arable land and fresh water that apply to traditional biofuel production, Willson concluded.

Dr. James Conca, Director, Carlsbad Environmental Monitoring and Research Center, New Mexico State University, briefed participants on "Energy, Geopolitics and Security."

Dr. Conca began by saying that most energy growth estimates predict that world consumption will top 30 trillion kilowatt-hours per year by mid-century. He feels that an alternative, ethical and sustainable mix to achieve that level is a third fossil fuel, a third renewable and a third nuclear. He pointed out that the total cost to

produce 1260 tkWhrs between 2010 and 2060 using this mix is \$62.3 trillion in 2009 dollars, or about 2 percent of global GDP annually.

Dr. Conca noted that the cost of this alternative mix is about 20 percent lower than the \$75.4 trillion to produce the same amount of energy from the more anticipated expectations of energy growth and distribution that will still have fossil fuels producing about 60 percent of world power.

Mr. Rich Halvey, Program Director for Energy, Western Governors' Association spoke on the topic of "Western Renewable Energy Zones." According to Mr. Halvey, the biggest obstacle to installing large amounts of new renewable energy generation is the siting of new transmission lines. Western Governors' Association and the Department of Energy began the Western Renewable Energy Zones project in May of 2008 to help overcome the transmission obstacle.

Unfortunately, the best renewable energy resources in the West are not near existing transmission lines, which were built to carry electricity from fossil fuel-burning power plants.

"From a regional perspective, there is tremendous competition between states and project developers. It is critical not to see individual projects in isolation, but, to understand the larger

implications of not doing a project," Halvey said. He also added that if a regional perspective is taken, there may not be limitless combinations to meet greenhouse gas emission limits; maintain reliability; meet demand; keep prices reasonable; and protect natural resources and wildlife.

The CLEER University Advisory Board Seminar on Saturday afternoon, entitled "The North American Natural Gas Resource Base" was presented by Dr. Dag Nummedal, Director of Colorado Energy Research Institute, Colorado School of Mines.

Dr. Nummedal gave attendees a comprehensive review of the natural gas resource base. He explained that the significance of natural gas is increasing dramatically in the global energy picture. Dr. Nummedal went on to add that this is driven in part by the magnitude of the resource base, in which shale gas now accounts for 43 percent of total US gas, and continues to grow at a fast pace.

"Additionally, we now recognize that natural gas releases much less carbon dioxide per unit of energy produced than does any other fossil energy resource," Nummedal said. Finally, unconventional gas resources, which include shale gas, tight (sandstone) gas,

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Wyoming Representative Charles "Pat" Childers pauses during a field trip visit to Colorado State University-Pueblo. The Energy Council's field trip, a part of the 2009 Global Energy and Environmental Issues Conference, visited CSU-Pueblo for a briefing on a large scale solar power project, built by BP Solar and managed by Black Hills Energy, which supplies power to the University. The group also visited Pueblo Community College for a tour of workforce training facilities and a briefing by a Vestus Americas' executive on a Vestus wind tower manufacturing facility, currently being built in Pueblo.

SAVE- THE- DATE

**The Energy Council's
State and Provincial
Trends in Energy and
the Environment
Conference**

June 17-20, 2010

St. John's,
Newfoundland and
Labrador

•
Sheraton Hotel
Newfoundland, St. John's

The Energy Council's 2009 Global Energy and Environmental Issues Conference

December 10 – 13, 2009

The Broadmoor Hotel and Conference Center
Colorado Springs, Colorado

Welcoming Remarks

The Honorable Brian Bingman
Oklahoma Senate and
Chairman, The Energy Council

The Honorable Tom Wagoner
Alaska Senate and
Chairman, CLEER

The Honorable Brandon Shaffer
President of the Colorado Senate

Breakfast Address: China's Perspective on Global Energy

Dr. Wenran Jiang
Mactaggart Research Chair of the China Institute
University of Alberta and
Public Policy Scholar
Woodrow Wilson International Centre for Scholars

Report from the World Heavy Oil Conference

The Honorable Mike Hill
Alabama House of Representatives and
Immediate Past Chairman, The Energy Council

Mr. Carlos Figueredo
Energy Minister Counselor
Embassy of Venezuela

The United Kingdom's Perspective on Global Energy and Climate Change

Consul General Kevin Lynch
British Consulate in Denver

Keynote Address: Prioritizing Our Energy Future

Mr. T. Boone Pickens
Chief Executive Officer
BP Capital

Mexico's Energy Outlook

Mr. Jose Carlos Pacheco, Vice Manager for New Business
Vice Presidency for New Strategic Contracts
Pemex Exploration and Production

Field Trip on Large Scale Solar, Wind Power Manufacturing and Workforce Development for Alternate Energy

Colorado State University – Pueblo
Pueblo Community College

Breakfast Address: "Report from the National Renewable Energy Laboratory"

Mr. Dale Gardner
Associate Lab Director for Renewable Fuels
and Vehicle Systems
National Renewable Energy Laboratory

NORAD, A Bilateral Partnership

Major General Pierre "Pete" Forgues
Director of Operations
North American Aerospace Defense Command

Changing Perspectives from the Canadian Oil Sands

Ms. Patricia Nelson
Vice Chair
In Situ Oil Sands Alliance (IOSA)

Energy from Algae

Dr. Bryan Willson
Director, Engines and Energy Conversion Laboratory
Colorado State University

Energy, Geopolitics and Security

Dr. James Conca, Director
Carlsbad Environmental Monitoring and Research Center
New Mexico State University

Western Renewable Energy Zones

Mr. Rich Halvey
Program Director - Energy
Western Governors' Association

CLEER University Advisory Board Seminar on The North American Natural Gas Resource Base

Dr. Dag Nummedal
Director of Colorado Energy Research Institute
Colorado School of Mines

Working Breakfast: The Energy Council and CLEER Business Sessions

Global Conference

Continued from page 7

coal bed methane gas, and gas obtained from induced gasification of coal, are very widespread across the globe." Moreover, their accelerated

development will reduce the pressure on the traditional fossil energy resources of the Middle East, and contribute to increased energy security for all nations.

The conference concluded on Sunday with the Energy Council Business Session. The Energy Council voted unanimously to admit North Dakota as a

member and then to change the Energy Council's Bylaws to add North Dakota to the list of member states. Following the votes, Oklahoma Senator Brian Bingman announced that North Dakota would be inducted at the 2010 Federal Energy and Environmental Matters Conference in Washington, D.C.



Economic consequences to the US refining industry of the American Clean Energy and Security Act (ACES), H.R. 2454, also known as the Waxman-Markey (W-M) energy and climate bill, are profound, according to an evaluation by Energy Policy Research Foundation Inc. The legislation calls for controlling emissions of greenhouse gasses (GHGs) by placing a price on them. The bill passed the House of Representatives on June 26, 2009, and companion legislation is under discussion in the US Senate.

Under the W-M bill, manufacturers (refiners) and importers of transportation and other fuels derived from crude oil would be required to purchase allowances to account for the carbon dioxide emitted into the atmosphere as a result of combustion of these fuels beginning in 2012, 2 years before any free allowances are distributed. Allowances could be bought and sold under the legislation's cap-and-trade program.

US refiners would be responsible for approximately 45% of all emissions covered by the W-M bill, which would regulate 86% of all US emissions by 2016. US refiners, but not importers, would have to purchase allowances for stationary source emissions (emissions released at the refinery). US refiners would receive some free allowances beginning in 2014 and ending in 2026 to assist in transitioning to a higher cost operating environment, but these allowances are small compared to the total obligations under the program (Table 1).

Rising costs

The cap-and-trade program as outlined in the W-M legislation will require the US refining industry to adjust to a new set of cost structures and a new regulatory program. This program will not be applied in a vacuum but within the structure of an industry already facing rising competition from foreign refiners and a rising mandate to increase sales of biofuels.

The US possesses 20% of the world's refining capacity (17.5 million b/d of the world's 86 million b/d

of capacity) and is the world's largest consumer of oil, making it one of the most important markets in determining product trade flows.

In recent years the US has imported 10-12% of its gasoline and gasoline blending components (1 million b/d), an increase from approximately 6% in 2000. Imports' share of supply has held steady as gasoline demand has declined over the past 2 years and as the supply of ethanol has tripled in under 5 years. Ethanol production was barely over 200,000 b/d in 2004 and has averaged 672,000 b/d through the first 8 months of 2009.

Gasoline imports are and will be a firmly integrated part of US petroleum supply. The US imports the majority of its gasoline from Canada, the Virgin Islands, and Europe, where the dieselization of passenger cars has left refiners with surplus gasoline.¹ Fig. 1 shows gasoline imports' share of US gasoline supply.

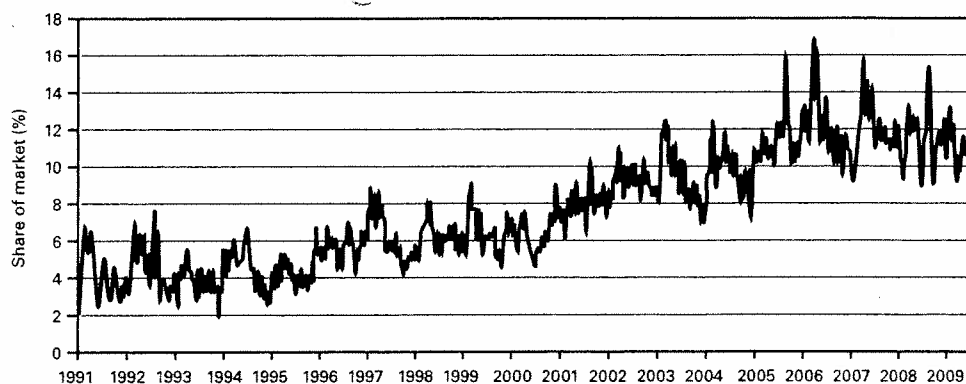
Because refineries vary widely in complexity, product mix, and access to markets, no single production function (or supply curve) can fully capture the cost of producing the entire slate of refined products for the US economy. However, it is possible to approximate the cost of

Study: Waxman-Markey bill costly to US refiners

Larry Goldstein
Ben Montalbano
Lucian Pugliaresi
Pravin S. Sheth
Energy Policy Research Foundation Inc.
Washington, DC

This article is adapted from a report available on EPRINC's web site at <http://www.eprinc.org/pdf/refiningindustry-waxmanmarkey.pdf>.

IMPORTS' SHARE OF US GASOLINE SUPPLY*



*Total gasoline imports as share of finished motor gasoline product supplied.
Source: EPRINC calculations from Energy Information Administration data

alternative regulatory programs (e.g., biofuels mandates, tax treatment, cap-and-trade legislation) on the entire refining sector by standardizing different segments of the industry to a common product slate and then evaluating the relative cost of producing the standard product slate across all units.

While such a calculation may not yield a precise competitive metric for an individual unit, this approach does permit an estimate of the average cost of alternative regulatory programs and what those

programs are likely to do to the cost of producing the standard product slate for the entire economy. Estimating this shift in the cost of producing the product slate is essential for estimating how much

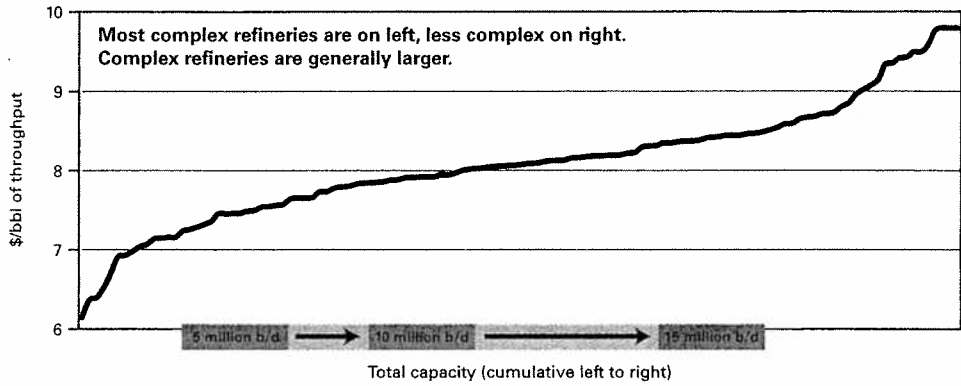
of the rising cost can be passed through to consumers as well as subsequent adjustments (losses) in market share to foreign refineries.

Fig. 2 shows EPRINC's estimate of the cost of production for the entire US processing fleet for 2015-30 under the Energy Information Administration's Annual Energy Outlook 2009 reference scenario—prior to any capacity reductions resulting from rising costs from pending legislative and regulatory programs (blend wall, removal of Section 199 from the tax code, and cap-and-trade legislation) or as a result of competitive pressures from emerging and expected growth in world refining capacity likely to take place in the period.

In this "business as usual" scenario the US production function remains relatively stable with real operating costs reflecting the EIA forecast for modestly rising feedstock prices.

US REFINERS' EFFECTIVE COST OF PRODUCTION—2015-30*

Fig. 2



*Some lubricant and small niche refineries have been excluded.
Source: EPRINC calculations

EMISSION ALLOWANCES UNDER WAXMAN-MARKEY BILL*

Table 1

Year	Total CO ₂ emissions permitted for US economy	US refiners' emissions stationary (source)	US refiners' emissions (product combustion) Million tonnes/year of CO ₂	Refiners' total emission compliance obligation	Emission allowances provided at no cost	Net emission allowance purchase requirement
2015	5,003	256	2,029	2,285	100	2,185
2020	5,056	250	1,980	2,230	101	2,129
2025	4,294	248	1,964	2,212	86	2,126
2030	3,533	249	1,973	2,222	0	2,222

*Actual emissions for the entire US will be higher as ACES covers only 86% of the US economy. Does not include allowances allotted to small business refiners, 0.25% of the free allowance pool. All estimates are prior to trade flow adjustments from higher cost of US refinery operations under the Waxman-Markey bill
Source: HR 2454, EPA Data, EIA W-M Basic Case Projected Refinery Crude Throughputs, and EPRINC Calculations.

This scenario also assumes no substantial capacity expansion as the US faces essentially flat demand for transportation fuels for the forecast period. In EIA's reference case, liquid fuels consumption remains virtually flat throughout the forecast period, rising at 0.1%/year, and fuel prices rise at 2.6%/year.²

The EPRINC estimate heading into the 2015-30 timeframe has operating costs

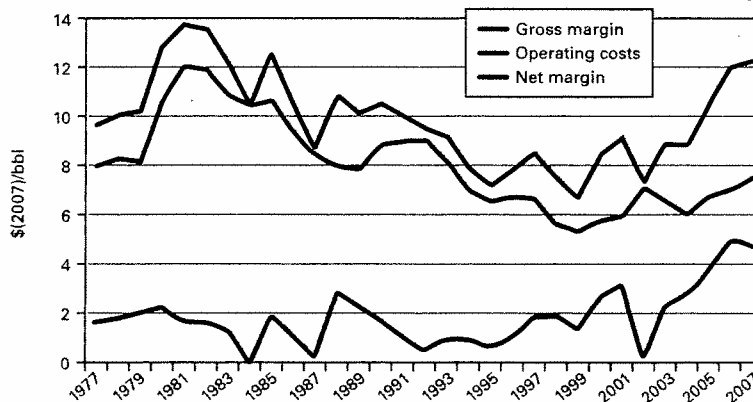
(fixed and variable) of approximately \$6/bbl, rising to over \$9/bbl depending on complexity, without any major commitments to capacity expansion. The 50 most complex US refineries account for 10 million b/d of capacity, meaning nearly 60% of total US refining capacity is found in 40% of its refineries.

According to EIA's Financial Reporting System, operating costs shown in

Fig. 3 have remained relatively steady in recent years, within their historical range of \$6-8/bbl, and are consistent with EPRINC's estimates in Fig. 2. Net margins were strong during the refining "golden era" from 2004 to 2007, but more recent data, shown in Fig. 4, suggest net margins have likely returned to their historical level around \$2/bbl.

US PRODUCT MARGINS AND COSTS*

Fig. 3



*Per barrel of product sold for EIA Financial Reporting System companies.
Source: EIA

LOSSES FROM PRODUCT AND STATIONARY ALLOWANCE COSTS WITH...

Table 2

	Low foreign supply case	Medium foreign supply	High foreign supply case
	Capacity at risk of closure (Million b/d, except job losses)		
...CO₂ cost of \$15/ton			
Product emission costs - 90% passthrough	0.80	1.50	2.4
Stationary emission costs	0.75	1.50	2.25
Total capacity losses	1.55	3	4.65
Total job losses	80,000	160,000	240,000
...CO₂ cost of \$30/ton			
Product emission costs - 90% passthrough	1.3	2.3	3.0
Stationary emission costs	2.1	4.2	5.0
Total capacity losses	3.4	6.5	8.0
Total job losses	180,000	275,000	350,000-400,000

Fig. 4 below shows gross margins for refined products accounting for 85% of the barrel. Gross margins have returned to their historical levels near \$10/bbl after several years at or over \$15/bbl beginning in 2004. Composite margins shown in Fig. 4 do not include bottom-of-the-barrel products, which generally sell below crude cost.

Regulatory cost

The industry is likely to face a range of cost pressures in the coming years from both existing regulatory programs and new legislation. EPRINC has estimated the cost of the following regulatory and legislative initiatives and divided the cost outcomes into two categories: 1. costs faced by US refiners but not by many foreign suppliers, and 2. costs faced by both US and foreign suppliers.

With regard to cost of operations borne by US refiners alone, the cost of acquiring allowances for stationary emissions of GHGs at the refinery site, and adjustments in tax rates (such as removal of Section 199 in the US tax code) are the most prominent. Although refined products entering the US from some foreign sources may have a cost penalty from CO₂ control costs from stationary emissions, a large volume of processing capacity now in place abroad as well as new capacity scheduled to come on line will be free of a higher cost structure from carbon controls of stationary source emissions and will also not be subject to the higher proposed cost tax structure faced by US

refiners.

In some cases, national governments may decide to participate in an international agreement to reduce GHGs but may select control strategies that do not raise the cost of industrial operations and instead focus on strategies to promote efficiency and reduce consumption by end-users, as the European Union is attempting. The potential for widely differing cost structures for refining in international markets is especially important in the near to medium term.

EPRINC has identified substantial foreign refining capacity with open access to the US market that faces neither stationary emission costs for controlling GHGs nor corporate tax levels which would raise their cost structure to levels comparable to the cost structure of US refiners. Fig. 5 shows IEA's forecast for worldwide refin-

ing capacity additions expected to come online between 2009 and 2014. The IEA forecast does not include three 400,000 b/d projects in Saudi Arabia which now appear to be moving forward and are all scheduled to start up by 2014, although the completion of any one refinery cannot be guaranteed. China is set to be the largest source of new capacity.

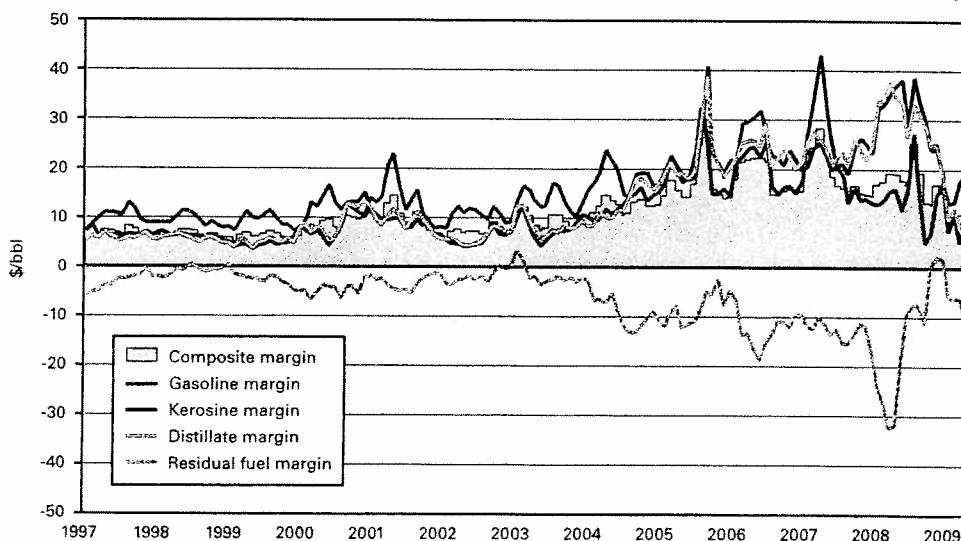
Depending upon the cost of allowances and whether Section 199 provisions are repealed, the incremental cost of operating the US refining fleet will rise by \$1-2/bbl in 2015 as a result of Section 199's repeal and stationary emission costs.

The cost imposed on refiners for their stationary emissions is 75¢/bbl, based on the typical amount of refinery emissions per barrel of throughput (0.05 tons/bbl) and the average price of CO₂ allowances in the Environmental Protection Agency's core scenario for 2015 (\$15/ton of CO₂ equivalent) to \$1.50/bbl in the same scenario without international offsets. EPA further estimates that real carbon prices would rise at a rate of approximately 5% per annum.

The repeal of the Section 199 manufacturers' tax credit will add about 25¢/bbl to production costs with refinery runs at an annual average of 15 million b/d. Section 199 was enacted to provide all US manufacturers, not only oil refiners, with a tax treatment that is more competitive with foreign manufacturers. The proposed repeal of the credit would

GROSS MARGINS BY PRODUCT

Fig. 4



Source: EPRINC calculations from EIA data

affect only oil refiners and oil and gas companies; it would remain in place for all other domestic industries.³

The new \$1-2/bbl cost does not include product allowance costs which are also imposed on imports. It represents an increase in operating costs of 12.5-25% for a refinery with operating costs of \$8/bbl and would wipe out 50-100% of net margins for a refiner earning \$2/bbl should the refiner be unable to pass this cost to consumers. Inclusion of free allowances granted between 2014 and 2026 lowers the cost to 75¢-\$1.50/bbl. Pass-through of such costs to consumers will be difficult because imported fuels will not be subject to them. After 2015 operating costs will rise further as allowance prices become more costly. It is also worth noting that in EIA's analysis of W-M, basic case allowance prices are 70-130% higher than those in EPA's "core" scenario during 2015-30.

Allowances distributed to refineries will provide some financial relief, but "free" allowances cover less than half of all stationary emissions.

Allowance purchases

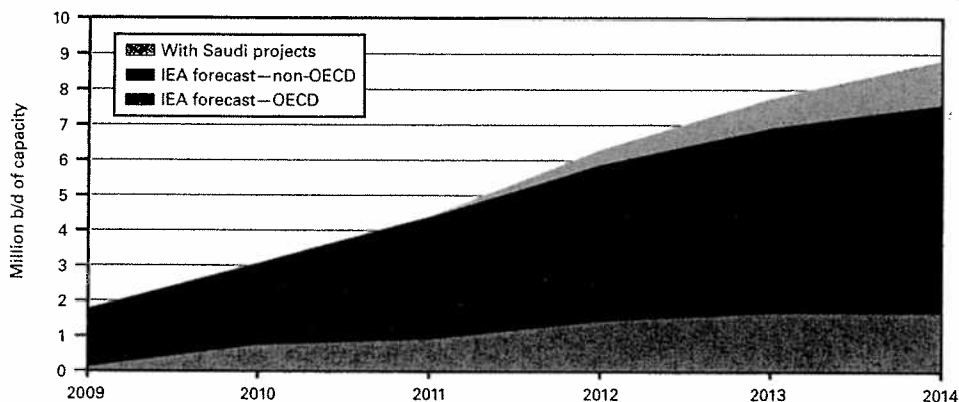
US refiners and product importers must purchase allowances for the emissions released from consumption of the fuels they produce or import. W-M assumes that domestic refiners will be able to pass through 100% of these costs to consumers and will therefore be protected from trade flow risks. However, pass-through of increases in taxes and feedstock prices is often less than 100%.⁴

Although pass-through has at times been 100%, and sometimes greater, in an environment of excess worldwide capacity 100% pass-through is unlikely. Foreign refiners selling in the US market will likely find opportunities to spread allowance costs (paid by importers) among the portion of their product slate not subject to such costs.

Because the scale of product allowances is so large, over \$30

PROJECTED REFINING CAPACITY ADDITIONS

Fig. 5



Source: EIA Medium-Term Oil Market Report; EPRINC data and calculations

billion/year at \$15/ton of CO₂ for 15 million b/d of product sales, sub-100% pass-through of product allowance costs will pose a huge risk to refiner profitability and will likely force many to idle or close capacity.

Even at a rather optimistic pass-through rate of 90% and an allowance price of \$15/ton, refiners must absorb 60¢/bbl of product (30% of a \$2/bbl net margin). At \$30/ton, a price closer to EIA estimates of allowance prices, 90% pass-through would force refiner to absorb \$1.20/bbl, over half of a typical refiner's net margin.

Likely adjustments

EPRINC evaluated the extent to which the W-M legislation would raise operating costs and the likely adjustments that would take place both to domestic operating capacity and to direct and indirect employment throughout the refining sector. The major conclusions of EPRINC's

report are that with enactment of the W-M legislation:

- The market environment will be characterized by Rising Regulatory Costs and Excess Capacity Abroad

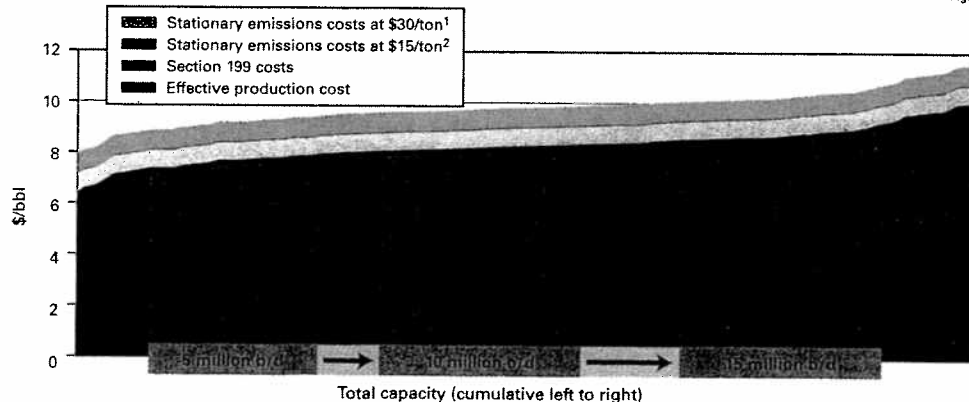
The GHG provisions, i.e., the required purchase of stationary source and combustion allowances under W-M, will take place in an environment in which the US refining industry must simultaneously adjust to:

1. Rising costs of production from recently enacted environmental and regulatory requirements.

2. Rising competition from foreign competitors as 7.6-8.8 million b/d of new refining capacity comes online by 2015-80% of which will be built outside the Organization for Economic Cooperation and Development. Based on EIA's projected estimate of world petroleum demand through 2015, there is likely to be as much as 18 million b/d of excess crude distillation capacity worldwide.

OPERATING COSTS WITH STATIONARY EMISSIONS, SEC. 199 REPEAL

Fig. 6



¹Average EPA scenario for 2015—no international offsets. ²Average EPA core scenario for 2015. Source: EPRINC

3. Flat or declining demand for transportation fuels in the US market.

The emergence of major new centers of global refining combined with rising production costs for domestic operations due to environmental regulations, rising taxes, and biofuel mandates will further shrink margins and place 2.5 million b/d of the current 17.5 million b/d of domestic operable capacity at high risk of permanent closure early in the 2015-30 forecast period, even without any accounting for the increased costs associated with allowance purchases beginning in 2012 as called for in the W-M legislation.

- Stationary-source allowance costs alone will idle additional US capacity.

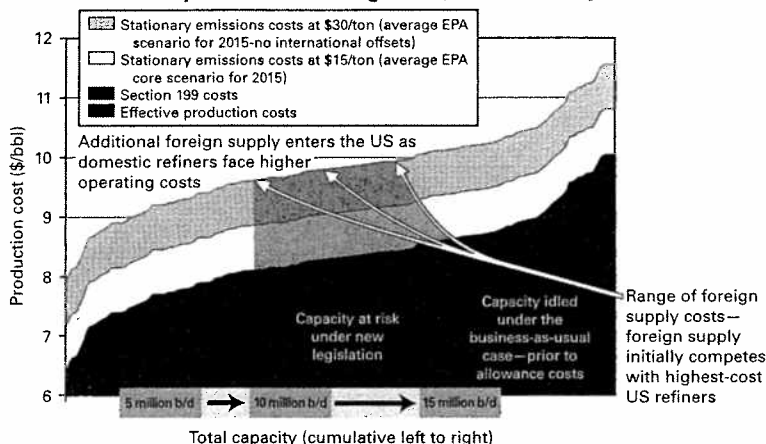
The GHG allowance costs associated with stationary emissions, a cost not placed on imported fuels, represent a large increase in refiners' cost of production. This cost alone will put the profitability of many refiners at risk. Full pass-through of such costs is unlikely considering the amount of excess worldwide capacity.

Constraints on pass-through for stationary emission costs alone will erase 25-50% of a typical refinery's net margins in the program's first few years, inclusive of free allowances allotted to refiners. As shown in Fig. 7a, some capacity will be idled or permanently shut down. The volume of lost capacity is highly dependent upon the availability of foreign capacity, but much of this capacity is coming online now, and even under the most optimistic case, US capacity losses will be substantial: 750,000-2.25 million b/d with allowance prices at just \$15/ton. At an allowance cost of \$30/ton of CO₂, capacity losses rise to 2.1-6.3 million b/d.

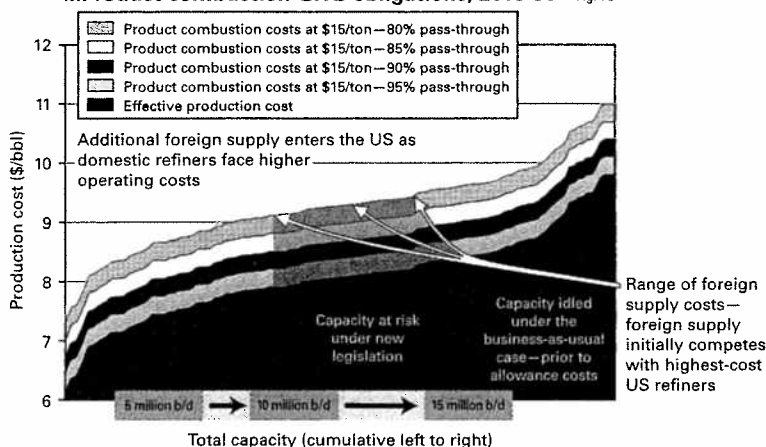
- Pass-through of product emission allowance costs is unlikely at a \$15/ton

US CAPACITY AT CLOSURE RISK FROM COST INCREASES FROM...

...Stationary-source GHG obligations, 2015-30



...Product combustion GHG obligations, 2015-30



Source: EPRINC

allowance cost.

Full pass-through of product emission costs will also be unlikely. EPRINC has identified sustained periods when refiners have been limited to passing through increases in feedstock prices and taxes to as low as 50-75%. In a market environment of substantial excess capacity (both in the US and abroad) opportunities for 100% pass-through will be rare as lower-cost refiners seek to shift costs among the product slate to maintain operating capacity. The scale of GHG allowance costs for product emissions is so large that a pass-through rate of 80% or even 90% will force a large segment of the industry to idle capacity.

Failure to achieve full pass-through of product allowance costs will place large segments of the industry at risk of closure—in addition to capacity threatened by stationary emission costs. As shown in

the EPA.

Gasoline, and all other petroleum-based transportation fuels, could rise by over \$1/gal under some CO₂ allowance cost forecasts by the EIA.

- Carbon leakage remains a severe trade risk to the US refining industry.

The purpose of the W-M bill is to curtail GHG emissions, but the cap-and-trade program poses severe risks to the structure of the US refining industry, and instead of reducing GHGs as intended the legislation will replace domestically produced fuels with imported fuels. In addition, the hundreds of products made from petroleum would see price increases as refiner operating costs rise.

The W-M bill and its companion legislation in the Senate, the Boxer-Kerry climate bill, specifically exclude petroleum refiners from receiving free emission allowances set aside for

Fig. 7

Fig. 7b and Table 2, the range of potential capacity losses relating solely to product emission costs would be 800,000-2.4 million b/d at 90% pass-through even under the more optimistic scenario of an allowance cost of \$15/ton of CO₂.

- Pass-through of product emission allowance costs is unlikely at a \$30/ton allowance cost.

In a scenario where allowance costs reach \$30/ton with 90% pass-through of product emission costs, total capacity losses could rise to as much as 8 million b/d, and job losses could approach 400,000.

- In the 2015-2030 forecast period evaluated by EPRINC, gasoline prices could rise by an average of 20-40¢/gal under the carbon costs calculated by

trade-vulnerable industries. However, in the European Union's Emission Trading System (EU ETS), the world's only functioning GHG cap-and-trade system, the refining industry has been designated as a trade-vulnerable industry under the program's "carbon leak" criteria, and a review is under way to determine what amount of additional free allowances the industry will be allotted to cover its stationary emissions. Refiners operating under the EU ETS are not responsible for their products' emissions.

A complex tariff structure could be implemented to rebalance costs to reflect the cost of their carbon content in all products imported by the US, but implementing such a complex tariff raises many technical, legal, and trade risks. Also, some countries may even adhere to international agreements on carbon controls but do so in a manner that that does not alter costs of production at major industrial facilities. ♦

References

1. US Imports by Country of Origin, US Energy Information Administration, http://tonto.eia.doe.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbb1_m.htm.
2. <http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf>.
3. "Do Higher Oil and Gas Taxes Pose a Threat to US Energy Security," EPRINC, 2009, <http://eprinc.org/pdf/administra->

[tiontaxesy2010.pdf](http://www.eia.doe.gov/oiaf/aeo/pdf/administrationtaxesy2010.pdf).

4. "The Pass-through of Oil Prices to Gasoline Prices," Federal Reserve Bank of

Cleveland, <http://www.clevelandfed.org/research/trends/2008/0208/04ecoact.cfm>.

The authors

Larry Goldstein is a Trustee of EPRINC and director of special projects and previously was president. He has extensive advisory relationships with energy companies, research institutes, and government agencies. He has testified before numerous congressional committees and regulatory bodies and has been appointed to the National Petroleum Council (NPC) by every secretary of energy. He was a founder and president of the PIRA Energy Group, an energy consulting firm that is currently retained by nearly 400 companies.



Ben Montalbano (benm@eprinc.org) is a senior research analyst at EPRINC. He is a recent graduate of the University of Colorado at Boulder, where he studied economics. Montalbano joined EPRINC in January 2008 and earlier provided research support to the foundation during his college years, covering world energy markets and oil and gas production developments. He speaks Russian, and in addition to his research efforts in the oil and gas market, he has worked in the information technology industry.



Lucian (Lou) Pugliaresi (loup@eprinc.org) has been president of EPRINC since February 2007

and managed the transfer of its forerunner, Petroleum Industry Research Foundation Inc. (PIRINC), from New York to Washington, DC. He served on the board of trustees of PIRINC before assuming the presidency. Since leaving government service in 1989,

Pugliaresi worked as a consultant on a wide range of domestic and international petroleum issues. His government service included posts at the National Security Council at the White House; Departments of State, Energy, and the Interior; and the Environmental Protection Agency.



Pravin S. Sheth is a refinery and chemical engineering consultant to EPRINC and an independent consultant. Pravin has over 28 years of experience in the refining industry in the areas of operations, technology development, asset support, technical training, and technical service. He worked in the industry from 1980 through 2007, serving as lead asset support engineer responsible for providing technical support to ExxonMobil's worldwide FCC units and, before that, as complex operation supervisor with Gulf-Chevron at the Philadelphia refinery. Pravin has a master's degree in chemical engineering from the University of Missouri at Rolla.



EPRINC

www.eprinc.org

Energy Policy Research Foundation, Inc. | 1031 31st St. NW, Washington, DC 20007 | 202-944-3339
contact@eprinc.org | www.eprinc.org

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Background Info- Arctic Policy Roundtable

3/1/10

Council on Foreign Relations

58 E. 68th Street

New York, NY 10065

This memo is meant to provide an overview of the actors and perspectives being represented at the roundtable. It seems to me that the serious policy wonks are truly concerned about preserving coastal ecosystems and combating pollution. That stance puts them at odds with coastal drilling proponents, though, and draws issues of marine spatial planning into the larger debate over carbon use and climate change.

-TR

White House Ocean Policy Task Force

“On June 12, 2009, President Obama sent a memorandum to the heads of executive departments and federal agencies establishing an Interagency Ocean Policy Task Force, led by the White House Council on Environmental Quality. The Task Force is charged with developing a recommendation for a national policy that ensures protection, maintenance, and restoration of oceans, our coasts and the Great Lakes. It will also recommend a framework for improved stewardship, and effective coastal and marine spatial planning. The Task Force is comprised of 24 senior policy-level officials from executive departments, agencies, and offices across the Federal Government, and is chaired by the Chair of the Council on Environmental Quality (CEQ). The Task Force established a Working Committee comprised of senior officials from these executive departments and agencies.” - Press Release from the White House Website

For me, the burning question for the President’s Ocean Policy Task Force is “What policies are you going to set forth?” All of the publically available information on the task force focuses on structure and process, not policy. Are they still completely occupied with putting this Task

Force together and establishing its purview? Or, are there policy recommendations on the horizon that will affect Alaska's coasts? Do they support caps on carbon emissions or fuel taxes for vehicles on our waterways? Would they accept expanded offshore drilling that was conducted in an environmentally responsible manner? These aren't just obstructionist questions. As with the recent Supreme Court decision on campaign finance, the Legislature could help the state weather a significant shift in federal policy.

The Task Force has espoused two main concerns regarding America's oceans, coasts, and Great Lakes.

CLIMATE CHANGE

- "Climate change is impacting the ocean, our coasts, and the Great Lakes. Increasing water temperatures are altering habitats, migratory patterns, and ecosystem structure and function. Coastal communities are facing sea-level rise, inundation, increased threats from storms, erosion, and significant loss of coastal wetlands. The ocean's ability to absorb carbon dioxide from the atmosphere buffers the impacts of climate change, but also causes the ocean to become more acidic, threatening not only the survival of individual species of marine life, but also entire marine ecosystems. The ocean buffers increased global temperatures by absorbing heat, but increasing temperatures are causing sea levels to rise by expanding seawater volume and melting land-based ice. Increased temperatures may eventually reduce the ocean's ability to absorb carbon dioxide. Conversely, climate change is predicted to lower the water levels of the Great

Lakes, thereby altering water cycles, habitats, and economic uses of the lakes.” *Interim Report of the Interagency Ocean Policy Task Force*, pg. 10-11.

- “[policy] would be guided by the precautionary approach as defined in Principle 15 of the Rio Declaration, ‘Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.’ [policy] would be adaptive and flexible to accommodate changing environmental conditions and impacts, including those associated with global climate change.” *Interim Framework for Effective Coastal and Marine Spatial Planning- Interagency Ocean Policy Taskforce*, pg. 8

COMMERCIALIZATION

- “Along many areas of our coasts and within the Great Lakes, biological diversity is in decline due to overfishing, introduction of invasive species, and loss and degradation of essential habitats from coastal development and associated human activities...Human and marine ecosystem health are threatened by a range of challenges, including increased levels of exposure to toxins from harmful algal blooms and other sources, and greater contact with infectious agents. Areas in numerous bays, estuaries, gulfs, and the Great Lakes are now consistently low in or lacking oxygen, creating dead zones along our bays and coasts. Unsustainable fishing (e.g., overfishing) remains a serious concern...our

industries, agricultural and transportation operations, cities, and suburbs generate various forms of pollution. Industrial operations emit pollutants, such as nitrogen and mercury, into the atmosphere that often find their way into the ocean and Great Lakes. Rain washes residues, chemicals, and oily runoff from our roadways into our estuaries and coastal waters. Heavy rainfall events can wash sediment, pesticides, and nutrients from our fields, lawns, and agricultural operations into our waters.” *Interim Report of the Interagency Ocean Policy Task Force*, pg. 10-11

- “Human uses of the ocean, coasts, and Great Lakes are expanding at a rate that challenges our ability to plan and manage them under the current sector-by-sector approach...Recent scientific and ocean policy assessments have demonstrated a fundamental change in our current management system is required to achieve the long-term health of our ocean, coasts, and Great Lakes...the present way we manage these areas cannot properly account for the cumulative effects [of human use].” *Interim Framework for Effective Coastal and Marine Spatial Planning- Interagency Ocean Policy Task Force*, pg. 1-2

As per usual for the federal bureaucracy, the IOPTF’s work has focused on the organizational structure the government should utilize in addressing problems along our waterways, instead of advancing actual solutions to solve those problems. For the most part, the task force offers vague, toothless suggestions such as:

- “The United States should develop an improved awareness of changing environmental conditions and trends, and their causes, and of human activities that take place in the ocean, coastal, and Great Lakes environments.” *Interim Report*, pg. 16
 - “[The U.S. government should] better coordinate and support federal, state, tribal, local, and regional management of the ocean, our coasts, and Great Lakes.” *Interim Report*, pg 26
 - “Multiple existing uses...and emerging uses...would be managed in a manner that reduces conflict, enhances compatibility among uses...and increases certainty and predictability for economic investments.” *Interim Framework*, pg. 7
 - “[policy] development and implementation would ensure frequent and transparent...engagement of partners, the public, and stakeholders, including...underserved communities.” *Interim Framework*, pg. 7
- There is room for some substantive discussion, though, based upon the Task Force’s repeated commitment to using the “best available science.”
- “Decisions affecting the ocean, our coasts, and the Great Lakes should be informed by and consistent with the best available science.” *Interim Report*, pg. 14

- “In the last several years...science has significantly evolved and advanced, and our capacity to respond to environmental and technological changes...has improved substantially.” *Interim Report*, pg. 27-28
 - “Scientific understanding and information are central to achieving an integrated and transparent planning process...Built on the foundation of sound science, this new system for planning should facilitate maintenance of essential ecosystem services.” *Interim Framework*, pg. 2
 - “Development, implementation, and evaluation of [policy] plans would be informed by the best available science-based information, including the natural and social sciences.” *Interim Framework*, pg. 8
- Are these commitments to scientific decision making just lip service? If not, then how can the Task Force justify a policy framework based on the supposed threat of climate change, despite the questionable nature of global warming science?
- Climate forecasting is tremendously inaccurate. Since the 1920s, climate scientists have bounced back and forth between predictions of global warming and global cooling. Also, multiple studies of policy experts (from electrical engineers to economists) suggest these experts often engage in “judgmental forecasting” that may draw upon empirical studies and emerging research but are ultimately routed

in the expert's pre-established professional opinion. *Global Warming: Forecasts by Scientists versus Scientific Forecasts*, pg. 1000-1001

- Six independent analyses of international climate models found that despite the models' use in policy making, they did not accurately enough reflect real-world conditions to effectively forecast changes in the global climate. Also, research institutions like the International Panel on Climate Change often discuss both research methods and policy prescriptions when defining their organizational process. This injects politics into what should be unbiased, scientific planning. (*Global Warming: Forecasts by Scientists versus Scientific Forecasts*, pg. 1004-1009)

The IPCC's 2007 report predicted destruction of the Himalayan glaciers and Amazon rainforests, African famine, rapid rises in sea-level, and an increased incidence of droughts, hurricanes, and heat waves—all assertions that have been found to be overstated or based upon questionable scientific data. These are not mere oversights in a 3,000 page document, but sensational warnings that were deliberately included in the report and have been prominently used to scare policy makers into consensus over supposed global warming. *A Perfect Storm is Brewing for the IPCC.*

Federal Legislative Initiatives

Of course, executive branch action is not limited to the Interagency Ocean Policy Task Force. In recent months, the EPA has increasingly asserted its authority over climate change issues due to a finding that “greenhouse gases endanger human health and welfare,” and therefore their regulation is the purview of the EPA under the Clean Air Act. Both houses of Congress have balked at this assertion of unprecedented executive authority, and each body is currently considering legislation to bar the EPA from unilaterally setting climate change policy.

Representatives Collin Peterson (D-MN), Ike Skelton (D-MO), Jo Ann Emerson (R-MO), Travis Childers (D-MS), and Charlie Wilson (D-OH) have offered a resolution in the House to disavow the EPA’s power grab and instruct the agency to leave climate change regulation to Congress. Sen. Murkowski has offered a similar resolution in the Senate, along with 40 co-sponsors. –“Two Key House Dems Move to Block EPA Regulatory Authority”

The U.S. House has exerted its own regulatory authority to narrowly pass “cap-and-trade” legislation under which companies buy and sell permits for a certain proportion of the total carbon emissions allowed nationally by Congress (House Passes Climate-Change Bill). The Senate has not been as willing to sign off on climate change initiatives, consistently opposing global climate change treaties and recently declaring “cap-and-trade is dead” (Senators to Propose Abandoning Cap-and-Trade). Senators Lindsey Graham (R-SC), Joe Lieberman (I-CT), and John Kerry (D-MA) have been working on an alternative proposal to cap-and-trade they plan to introduce this month. The bill would cap emissions from power plants, tax motor

vehicle fuels, and phase in some emission restrictions for industrial facilities after several years, while also allowing for expanded offshore drilling and construction of new nuclear plants.

Yet again, the debate comes down to environmental protection versus economic growth.

The President's Interagency Ocean Policy Task Force opposes resource development and commercialization along the nation's "fragile" coast lines and the EPA staunchly supports alternative energies and emissions reductions, all in the name of combating climate change (and, in the case of coastal management, other harmful effects of industrialization). The Democratic Majority in the House also opposes increased petroleum development, both through cap-and-trade and its 2008 opposition to offshore drilling. The Senate is more deferential to the economic concerns of oil and coal producing states and through the new Graham-Lieberman-Kerry proposal would recognize our unavoidable dependence on fossil fuels for the near future (while also reducing emissions). ***As long as offshore drilling is offered as an alternative to climate change hysteria, marine spatial planning will be at least tangentially connected to the climate change and cap-and-trade debates.*** (On a purely political note, aren't the Democrats the party of "it's the economy, stupid?" Are this President and his cohorts in Congress ever going to drop their pet causes to address America's worsening economic plight?)

All the concerned federal parties support greater exploration and study in the Arctic.

Representative Young and Senator Murkowski have both introduced legislation (H.R. 2846, S. 1515) to expand hydrographic study in the Arctic and Representative James Oberstar and

Senator Begich have similarly suggested Arctic assessments (*H.R. 3619, S. 1562*) ***The parties disagree, though, on how to use such information.*** House and Senate Republicans like Representative Young and Senator Murkowski want to use geological and hydrographic data from the Arctic to develop environmentally conscious, safe coastal drilling practices (*H.R. 49, S. 503*). The EPA and Congressional Democrats like Representative Edward Markey and Senator Begich want to use Arctic research to “better weather climate change” and further protect Arctic lands from commercial development (*H.R. 39, S. Amdt 903 to S. Con. Res. 13*).

Senator Begich espouses a duty to remind the Obama Administration that an Alaskan gas line is “a critical component to an energy policy” *Begich: Looks to Long Term*. He has dismissed questions about cap-and-trade due to its unlikely success in the Senate and stresses the importance of “good energy legislation” but consistently references the impending ecological doom of climate change. Senator Murkowski has introduced legislation supporting expanded drilling and has joined Republican opposition to cap-and-trade legislation, but she also argues “we’re seeing changes in [the climate]...I’ve got villages in Alaska that are literally on the edge of the ocean and dropping in” *Murkowski Walks a Delicate Line as Ranking Member*

State and Local Adaptation Efforts

Obviously your primary role in the roundtable is to advance Alaska’s position on Arctic preservation and development.

- ***Governor Parnell argues that IOPTF’s Interim Framework would supersede existing programs that involve local stakeholders.*** In particular, oil and natural gas

development and commercial fishing are vital pieces of Alaska's economy and currently utilize frameworks that have been developed by a myriad of stakeholders over a matter of decades. To alter or abandon these environmentally responsible, economically essential activities based on IOPTF recommendations would be ignoring the needs of real Alaskans in favor of one-size-fits-all policies proposed by Washington bureaucrats.

State Objects to Federal Ocean Zoning Policy

- ***The Alaska Climate Impact Assessment Commission highlighted “cheaper waterborne transportation” as crucial to economically feasible oil production on the North Slope.***

According to the Commission, “no near term changes to statute or regulations have been identified as crucial for [oil & gas adaptation].” *Final Commission Report- Alaska Climate Impact Assessment Commission*, pg. 16

- ***Roughly 70% of Alaskans support increased drilling in the Arctic, as do the North Slope Borough, the Northwest Arctic Borough, and the Inupiat/Kaktovik communities.***

- Even the climate change alarmists on the House Committee on Energy and Commerce recognize the importance of independent, state-level policy-making in the formulation of a successful national framework for resource development (*Appropriate Roles for Different Levels of Government*, pg. 19). Particularly in the case of native peoples, federal restrictions on resource development and water use raises questions as to who ultimately controls the land. Alaska's unique constitutional provisions affording direct

ownership of the land to the people are directly at odds with federal overreach regarding resource development and land use.

Private Sector Development

- Conoco-Philips and BP Alaska, two of the major private sector stakeholders in Alaskan resource management, recently pulled out of a business group pushing for climate change legislation (*Three Major Firms Pull Out of Climate Change Alliance*). Climate change is a main concern of the President’s Task Force and the basis for many proposed changes to federal marine spatial planning. ***Specifically in the Arctic, how will federal policymakers reconcile their espoused commitment to “combating climate change” with significant private sector concerns about onerous government regulation?***
- Ocean, coasts, and Great Lakes policy makers could engender considerable support from the private sector and free market conservatives by adopting “no regrets” environmental policies. These emission, pollution, and waste reduction policies would make sense even if climate change forecasts are not ultimately accurate. They include
 - **Removing Regulatory Barriers to Innovation:** The current pollution-control tax regime often increases the cost of facility and equipment upgrades and purchases, thus raising the cost of innovating safer, cleaner resource development technologies. Also, federal regulations impose “technology-based” emissions limits which ordain a given technology, thus disincentivizing

the development of alternative methods and products. *Greenhouse Policy Without Regrets*, pg. 9

- **Eliminate Subsidies for Fuel Use:** We can all agree that fossil fuels are a diminishing resource. It is in America's best interest to develop natural gas, nuclear, solar, wind, and hydrogen power as we head into the future.

Eliminating subsidies for fossil fuel use would remove a barrier to free market development of alternative energies while inserting free market forces into the energy sector. *Greenhouse Policy Without Regrets*, pg 13-14.

- **Take on Monopolies in Public Utilities:** Breaking up local and regional electricity monopolies would allow for free market development of hydroelectric, solar, wind, and natural gas. Alaska's unique climate and resources could support all of these alternative energies. With a deregulated utilities market, Alaska could become a national leader in alternative energy *and* fossil fuel production. *Greenhouse Policy Without Regrets*, pg. 15-16