

**PROPOSAL TO THE  
IDAHO INTERIM COMMITTEE ON  
ENERGY, ENVIRONMENT AND TECHNOLOGY FOR  
THE DEVELOPMENT OF A STATE ENERGY PLAN**



***Jerome S. Paige & Associates, LLC***

**In association with:**

***State Service Program, Stateline Energy, LLC and InterEnergy  
Solutions***

**May 17, 2006**

# PRESENTATION OVERVIEW

- Who we are.
- What we propose to do.
- How we propose to do it.
- When we will deliver.
- A bit on why we believe this is so important, and key issues to address.

# WHO WE ARE:

- Jerome S. Paige & Associates, LLC, State Service Program, Stateline Energy, LLC, and InterEnergy Solutions, LLC, have joined together to offer energy planning and policy services for public, non-profit and private organizations.
- We offer a group of energy and economics professionals with extensive experience in state energy policy development, state energy resource and management planning, as well as energy emergency preparedness planning.

# WHO WE ARE: Energy Experience

- We are energy specialists. Our group includes former staff leaders from the National Conference of State Legislatures (NCSL), the National Association of Regulatory Utility Commissions (NARUC), the National Association of State Energy Officials (NASEO), a former director of a state energy administration, a Distinguished Professor of Government and Public Administration, and a well-known energy economist.
- We have extensive experience in developing workable energy plans for regional, state and local jurisdictions. Our various plans are currently in use in seven states, municipalities, and regional government organizations.
- We are highly experienced in gathering energy data and information, interpreting it, and translating it into useful state, regional and national policy.
- We have wide experience in advising states on energy infrastructure, energy regulation, transportation fuels, renewable energy/energy efficiency and the nexus of energy and environmental policy.
- We are authors of widely recognized publications addressing utility regulation, transmission, coal technology, alternative vehicle fuels, renewable energy and energy security.

# OUR TEAM'S: Distinguishing Characteristics

- Extensive experience in developing state energy plans: we know what does and does not work.
- Knowledge in all areas of energy policy, and in the relationships of those policy areas. We are not just a fossil energy, renewable energy, or transmission group.
- Skills in working directly with state policymakers.
- Understanding of both domestic and international energy markets and policy.

# WHO WE ARE: Key Clients

- Arkansas State Energy Office
- Oklahoma Dept. of Commerce
- District of Columbia Energy Office
- Metropolitan Washington Council of Governments
- State of New Jersey
- Michigan Public Service Commission Energy Data, Security and Marketing
- National Association of State Energy Officials
- Governors' Ethanol Coalition
- Alabama Energy Office
- Arkansas State Energy Office
- Georgia Environmental Facilities Authority – Energy Division
- New York State Energy Research & Development Authority
- North Carolina State Energy Office
- National Emergency Management Academy
- EcoLogix Group and AES Corporation

# WHO WE ARE: Related Projects

- District of Columbia Energy Office  
Comprehensive Energy Plan III (2003-2007)
- State of New Jersey  
Comprehensive Energy Plan
- Metropolitan Washington Council of Governments  
Comprehensive Energy Plan (2005)
- Metropolitan Washington Council of Governments  
Regional Energy Emergency Plan (2005)
- Oklahoma Energy Assurance Plan (2004)
- U.S. Department of Energy  
Review of Ten State Energy Plans (2005)
- North Carolina Department of Administration, State Energy Office  
North Carolina Energy Emergency Plan
- National Emergency Management Academy  
Energy and Utility Component of the National Incident Plan

# WHAT WE PROPOSE TO DO: Partner with Idaho Interim Committee

- Our approach to this project is to support the Idaho Interim Committee on Energy, Environment and Technology (Interim Committee) in its efforts to develop a state energy plan. The plan needs to reflect the particular needs and situation of Idaho's citizens.
- Our primary role is to:
  - Bring to Idaho our extensive experience from other states about what works best in state energy plans.
  - Bring to Idaho a comprehensive perspective of energy markets, energy policy and how their interaction affects the current and future energy needs of the state.
  - Gather and synthesize information and policy and help the committee to write a useful state energy plan based on the Idaho's specific needs and priorities and in a format that has been successful in other states.
- The final product, an energy plan in a useful format that takes into account Idaho's specific needs and priorities.



# WHAT WE PROPOSE TO DO: The Format of an Energy Plan

- A typical energy plan has three major components:
  1. Background on energy use, production trends and major challenges in the state.
  2. A policy section, discussing and addressing policies that are related to those trends.
  3. The Plan itself.
- Our effort will focus on these areas as we work closely with the Interim Committee at each step.

# WHAT WE PROPOSE TO DO: Comprehensive Energy Plan

- Final product will be a “living document.”
- The plan will inform policy-makers while
  - Explaining energy supply and demand and attendant economic consequences.
  - Highlighting significant infrastructure and related issues such as pipeline capacity, electric transmission capacity, facility growth and expansion and siting.
  - Providing information on local energy operation and practices that reflect back into state-wide issues.
  - Providing guidance for selecting viable alternatives with realistic time frames.
    - Considering such alternatives as: solar, wind, wood, CHP, geothermal, new technologies, energy efficiency, biofuels and conservation
- The plan will assist Idaho policy-makers and planners in asking the right questions when energy issues arise.
- The plan will provide guidance to planners and implementers in selecting best practices to suit present and future energy needs.

# WHAT WE PROPOSE TO DO: Framing Idaho's Energy Plan

- Framing an energy plan begins with national templates but our approach stresses sensitivity to the State of Idaho's needs: f2
- We have worked with such models as The State Assurance Guidelines developed by National Association of State Energy Officials for the DOE.
  - These guidelines take advantage of best practices in energy planning from across the nation, and were developed by some of the parties to this proposal.
  - Guidelines go only so far. The plan we develop will be specific to the situation and needs of Idaho.
  - Review the Idaho Energy Plan of 1982 and follow with an extensive examination of energy supply, consumption and issues in Idaho.
  - Discuss energy with local stakeholders.
    - Conduct interviews in Idaho with public and private energy stakeholders (including concerned citizen groups) to understand the true picture of energy production and consumption in the state.

# WHAT WE PROPOSE: Key Elements of the Plan

- Energy goals for the state
- Can the state articulate particular goals, for example:
  - Energy reliability
  - Environmentally beneficial
  - Fuel diversity
  - Beneficial to the state economy
  - Promoting in-state resources
  - Addressing needs of Idaho industry
  - Promoting export of power as economic development
  - Protecting low rates
  - Protecting state water resources
  - Promoting renewable technology
  - Encouraging efficiency
  - Promoting clean fossil resources

# WHAT WE PROPOSE: Key Elements of the Plan

- A Risk Analysis and Explanation
  - What risks does Idaho face in its energy future?
    - For instance: air or water quality concerns, potential electricity supply disruptions or insufficient generation capacity, increased exposure to higher or consistently high gas prices, dry years resulting in low hydro productivity, insufficient transmission system investment, high gasoline prices.
- Means through which Idaho can address those risks through the plan.
  - Given the combination of goals and risks, this section will describe the policies that Idaho may wish to adopt to meet its energy goals.

# HOW WE WILL WORK: The Plan Development Process

- How we gather information:
  - We will work with the committee early on to receive guidance on specific goals for the energy plan. For instance:
    - Will the energy plan be a “guiding” document?
    - Will the energy plan be a “prescriptive” document?
    - Should it have policy recommendations, or simply lay out choices?
    - Once the energy plan is drafted, then what happens? Does anyone read it? What influence should it have on other policies? How long will it be effective and how frequently updated? Will reporting requirements be included?
  - We will examine and define relevant authorities over energy infrastructure.
  - We will examine relevant policies affecting energy systems, identifying both the policies within Idaho AND national policies that will affect Idaho.

# HOW WE WILL WORK: The Plan Development Process

- We will gather data from all Idaho energy stakeholders by industry, and locality as needed
  - E.g. electricity, coal, natural gas, transportation fuels, other products
  - State integrated resource planning process (IRP), BPA and regional institutions such as NWPCC.
- We will examine energy system operational issues
  - Illuminate how energy fuels and various industry components in Idaho interact and affect one another.
- We will gather data from multi-level governmental sources including national, regional, state and local stakeholders
  - EIA and Iowa's recent Idaho National Laboratory Study
  - We will also incorporate international trends regarding oil and natural gas supply and prices.
- We will enhance and balance data gathering with on-site interviews.

# HOW WE WILL WORK:

## The Plan Development Process

- We will work closely with the committee to help to define goals that the committee would like to lay out in the energy plan.
- We will identify the major risks to the state.
- We will describe the means to meet the goals laid out by the committee, given the risks we identify.
- It is the committee's job to decide whether to make this final element of the plan a guiding document or a prescriptive document, or whether to give it force of law in some respect.
  - We can offer models to describe how to give the plan real impact.



# HOW WE WILL WORK: Information Gathering

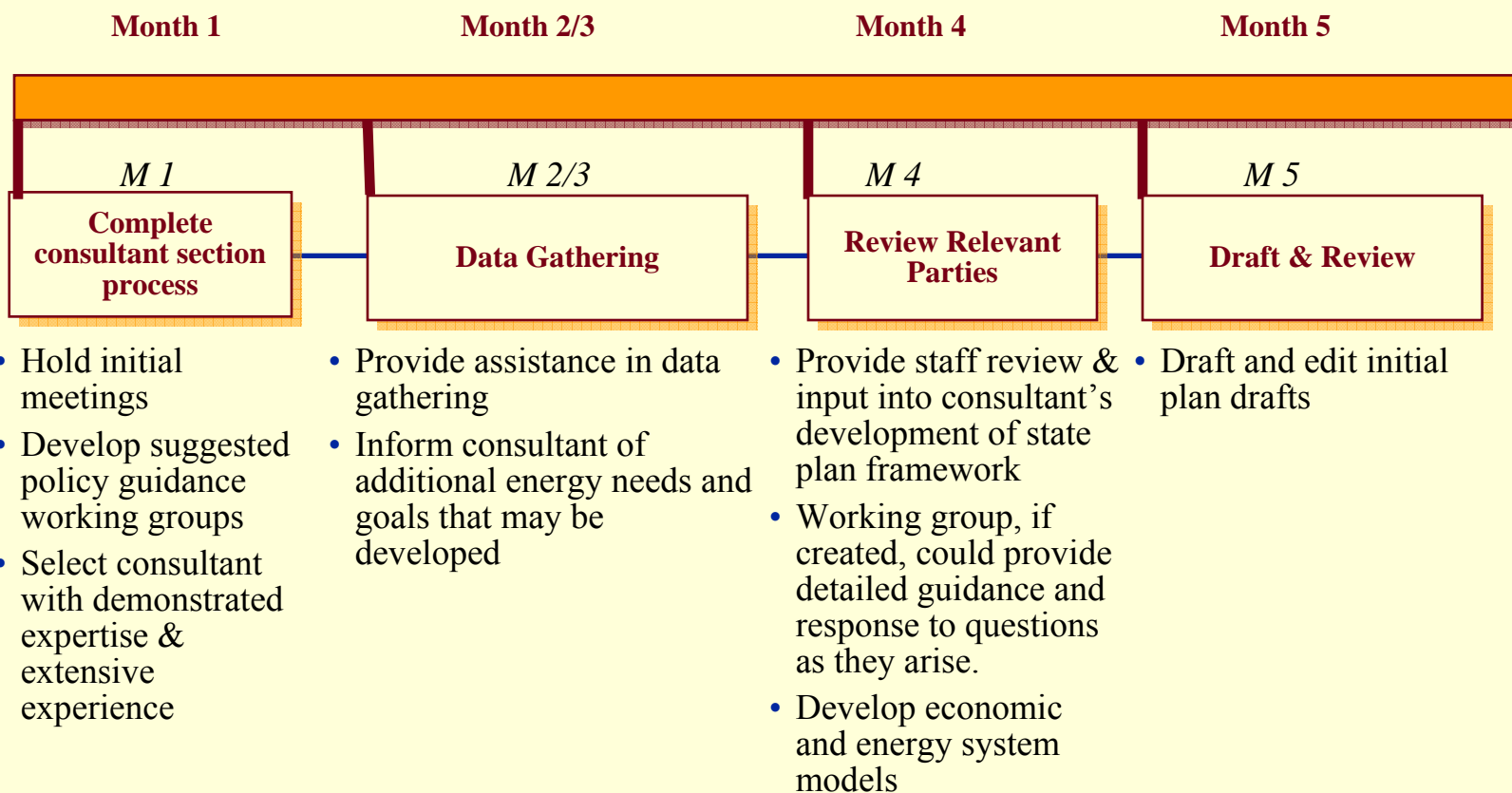
- We have strength and experience in obtaining data from ready and reluctant sources
  - Sensitivity to the state and local officials and stakeholder proprietary concerns
  - Use of our experience and guidelines that bring best practices to bear on Idaho's needs
  - Understanding Idaho's energy concerns
    - Paying attention to recent studies and previously gathered information
  - Working to connect Idaho's energy concerns to a system perspective that helps guide future efforts

# HOW WE WILL WORK: Partner with the State

- Maintain close ties with Energy Committee team leaders.
- Suggest creation of Energy Working Group with whom we would be in regular (a minimum of weekly) contact.
- Interview Idaho stakeholders on site and follow-up with telephone and written questions.
- Follow-up data gathering visits as needed.
- Attending Energy Committee meetings as requested.
- On-going electronic exchange of progress in developing data, conducting evaluations, and preparing plan sections and documents.
- Plan close out visit upon completion of plan.

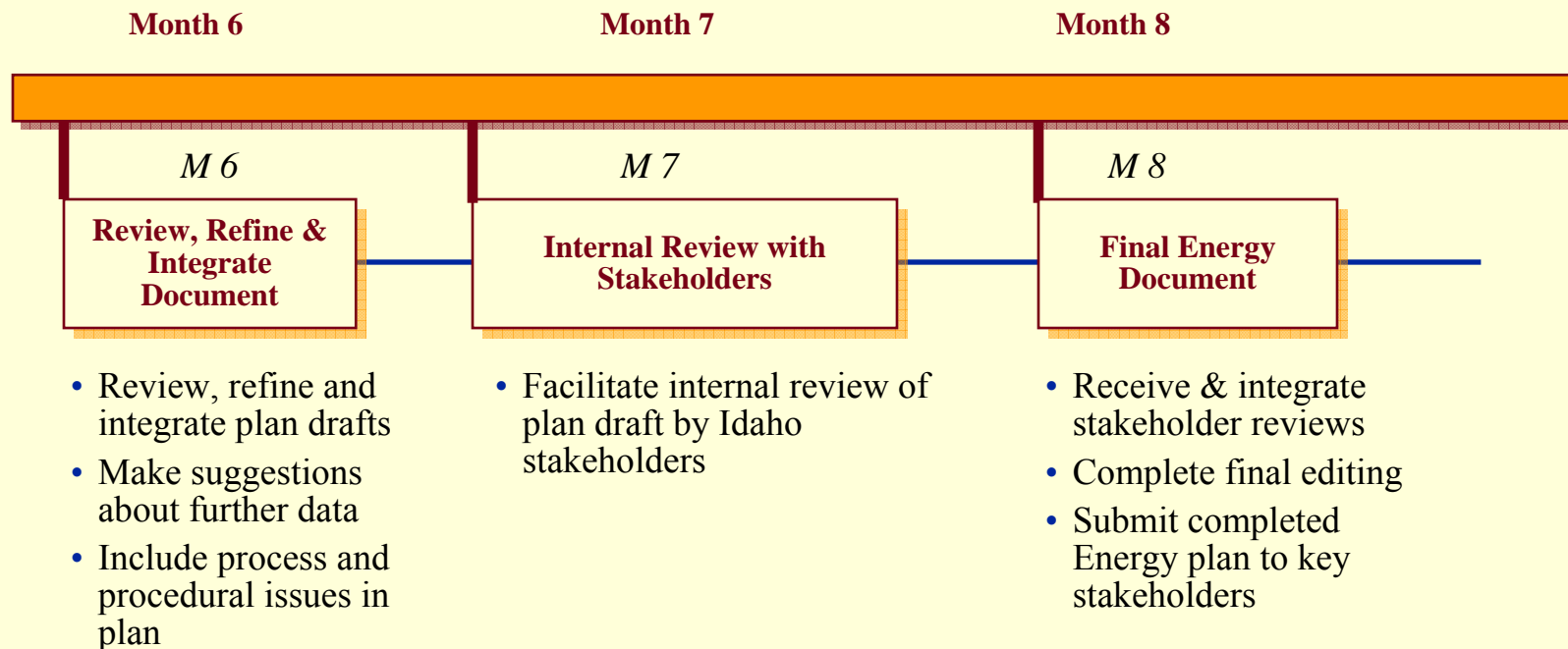
# WHEN WE WILL DELIVER: Project Timeline

*The project was designed around 8 months. Months 1-5*



# WHEN WE WILL DELIVER: Project Timeline

***The project was designed around 8 months. Months 6-8***

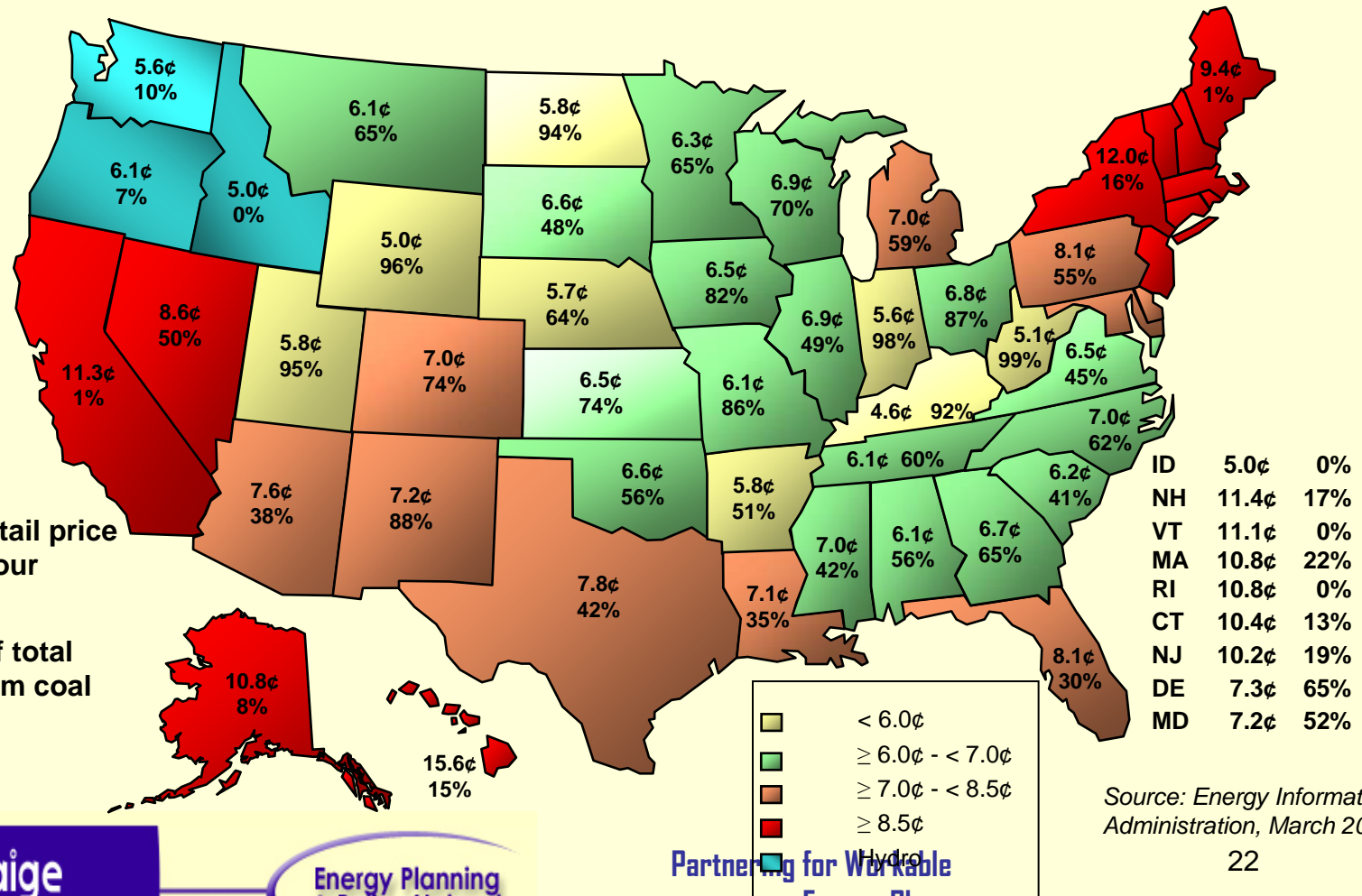


# MAJOR ISSUES TO CONSIDER

- Demand growth in Idaho
  - Fourth highest population growth rate in the nation
- Internal price advantage: Retaining relative price advantage enjoyed by all Idaho consuming sectors through current low rates
- Impact of hydro supply and markets in Idaho:
  - Supply of hydro-based generation
  - Impact of western energy market prices when hydro generation is not sufficient
  - Implications of new fossil fuel generation on Idaho water supplies.
- Air quality concerns:
  - Preventing Idaho from “slipping” into non-attainment as demand increases
  - Mercury

# RETAIL COST OF ELECTRICITY

## Retail Cost Per kWh & Percent of Coal Generation



# MAJOR ISSUES TO CONSIDER

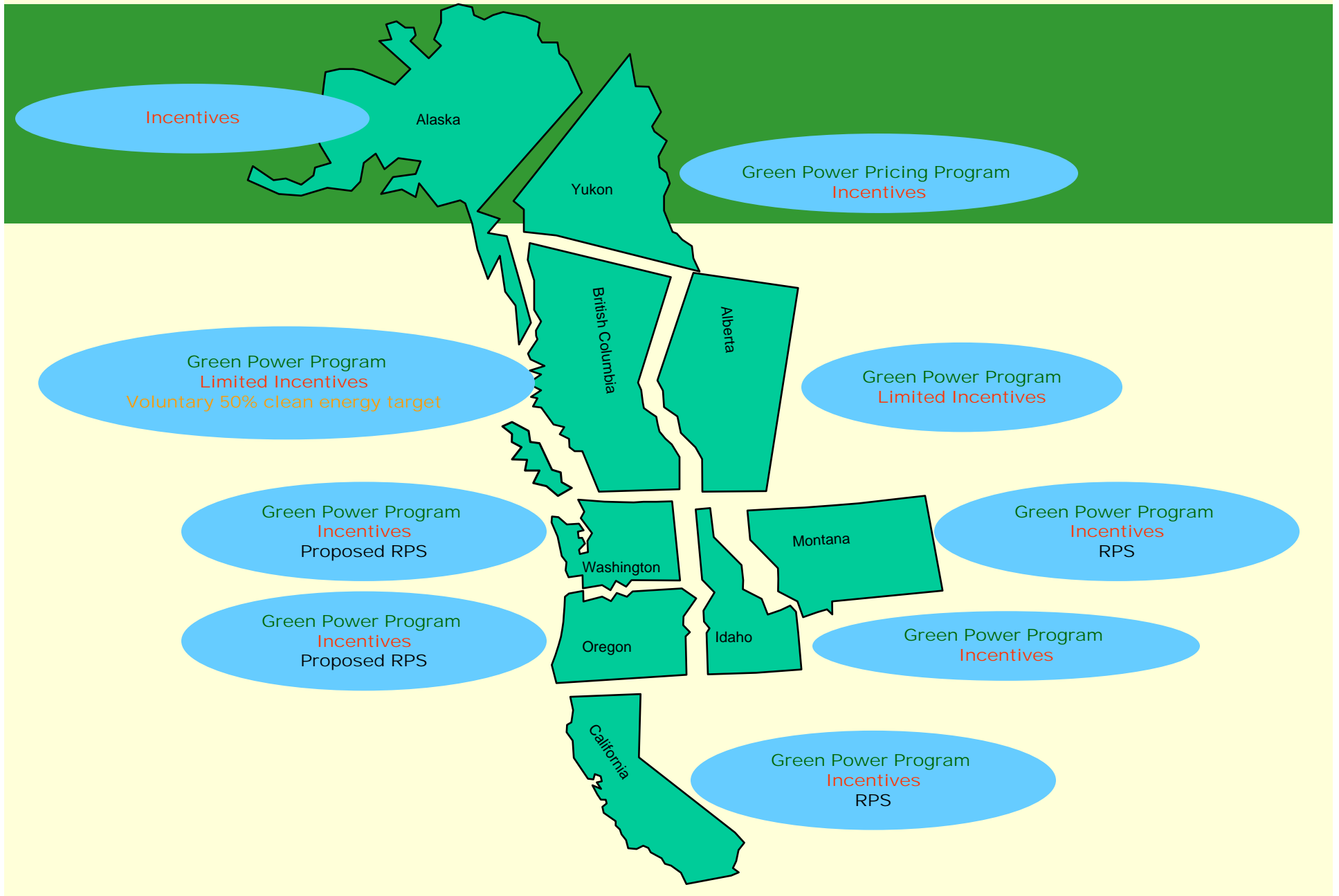
- Fuel diversity in Idaho: the role of renewable energy in economic development, and environmental policy.
- Is there a role in Idaho for nuclear capacity? What issues does this raise?
- The role of new and clean coal facilities in Idaho. Impact of coal policies on investment in new power plants.
- Power plant siting. Transmission facility siting.
- Significance of petroleum as imported fuel operating in international commodity markets. Potential of new biomass facilities in Idaho.
- Natural gas pipeline capacity, external market demand for both gas and petroleum.

# POTENTIAL STATE CONCERNS

- The need to consider forces and influences outside of Idaho:
  - Commodity fuel markets
  - National and regional electric transmission policies. FERC activity, US DOE activity, and congressional action
  - The need to work on a regional basis with other states and provinces
  - Integration of Idaho policy with that of other states, through efforts of organizations such as WGA, NWPCC, BPA or PNWER
- Opportunities in energy.
  - How well is Idaho taking advantage of its opportunities to reduce costs through energy efficiency and use of in-state resources?



# SNAPSHOT OF RENEWABLE ACTIVITIES



# To Conclude

- Our goals are:
  - To bring our understanding and experience in developing energy plans to Idaho.
  - To bring our broad understanding of energy markets, regulation, policy and economics to Idaho.
  - To bring our understanding of fuels and fuel markets -- whether oil, coal, renewable, gas or hydro.
  - To bring our understanding of the interactions of regional, national and state policy Idaho.

Thank You!

Jerome S. Paige  
& Associates, L.L.C.

Energy Planning  
& Policy Network

# EXTRA SLIDES

- *Jerome S. Paige & Associates, LLC*  
In association with:
- *State Service Program, Stateline Energy, LLC and InterEnergy Solutions*
  - May 17, 2006

# PUBLICATIONS ON ENERGY: Key Journals & Essays

- Energy Economics
- The Journal of Peace
- The National Civic Review
- The International Journal of Public Administration
- The Public Administration Review
- Fordham Environmental Law Review

# JSP'S ENERGY TEAM

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# ALL ENERGY USERS EXPERIENCE: A New Energy Era

Rising global demand	World demand for energy is growing at a rate of 2% per year.
Tight energy supplies	The large economies of world are beginning to compete more openly to ensure energy is available to meet their economic growth goals.
High energy prices	High and volatile energy prices are the result of the global demand-supply relationship, and high energy prices are necessary to expand energy supplies.
“Peak Oil Debate”	Worldwide discussion, debate and analysis is underway as to whether, the world will reach its highest capacity to produce oil starting 20 years from now. Evidence is being mounted to both prove and disprove whether the world is about to enter into a period of “peak oil”. Regardless of how the debate is resolved, new sources of oil will require increasingly expensive investments and thus higher prices to sustain those investments.

# WHY ENERGY POLICYMAKERS IN ALL STATES ARE UP AT NIGHT

Areas	Challenges
Economic Development	To keep dollars from following away from other regional consumption and services into energy and flowing out of the regional economy into the international economy
Energy Security	To reduce the effects of potential supply disruptions
Emergency Planning	To enhance "homeland security"
Economic Assistance	To assist low and moderate income households
Provision of Public Services	To maintain public service delivery while energy costs are rising and energy tax revenues may be falling
Environmental Quality	To improve the environment
Locational Decisions	To promote living and working locations and activity that are energy efficient; Smart Growth



# ENERGY EFFICIENCY & CONSERVATION

## Supply Side Best Practices

	<b>Areas</b>	<b>Best Practices</b>
Electricity	Renewable Energy	Long-term contracts by governments to purchase wind energy
Fuel sources: Hydroelectric Coal Natural Gas Petroleum	Supply side continuity Market economics Challenge to state economy	Guidelines for defining most viable alternate options such as coal fired gas turbine or renewable fuels.

# ENERGY EFFICIENCY & CONSERVATION

## Demand Side Best Practices

	<b>Areas</b>	<b>Best Practices</b>
Vehicles	Fuel Efficiency Standards	Fuel efficiency standards that meet or exceed the federal standards
Appliances		
	Appliance Efficiency Standards	Appliance Efficiency Standards that meet or exceed the federal standards
Buildings		
Behavior	Building Efficiency	Increase number of Green Buildings, in general, and the number of LEED Certified Building, particular. Consider codes and such techniques as demand side management.
	Prices as a Conservation Incentive	
	Informed Energy Choices	Proposals and recommendations to use tax policy to maintain energy prices at levels that encourage a reduction in demand
		Energy Education Programs that encourage consumers to make wise energy choices
		Potential consumption pattern changes, peak shaving, time-of-day management, load reduction strategies

# A POLICY FRAMEWORK

## To Think About the Challenges

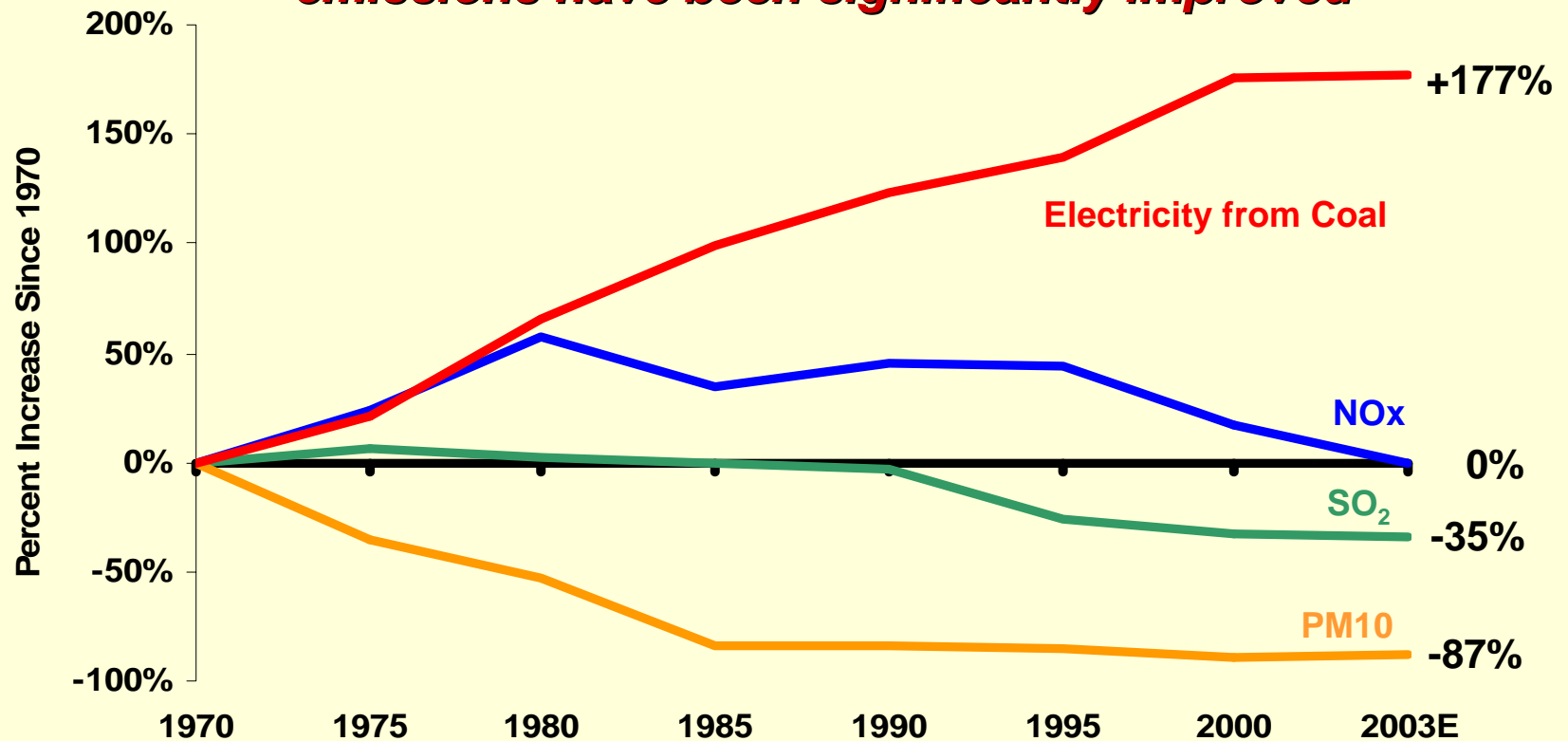
<b>Area</b>	<b>Policy Actions</b>
Behavior	Guiding energy consumption choices
Consumption Levels	Reducing demand
Consumption Efficiency	Improving efficiency
Source Variety	Promoting a variety of sources and of distribution networks
Assistance	Mitigating the effect of high prices on low and moderate income households
Contingency Planning	Managing crises
Implications of hydropower and its sustainability	Assuring long-term supply. Determine appropriate alternative supplies. Managing price risk of natural gas as a national commodity when need arises.
Impact of population growth	Planning to meet future demand

# POTENTIAL ENERGY NEEDS: Transportation Fuels

- Critical role of transportation within Idaho's geographic reality
- Implications of an importing state
- Potential of new “alternatives” such as E-85, hybrid, Fischer Tropsch technologies and other technologies f1
- Non-fuel alternatives including behavioral modification
- Economic, health, environmental and social implications

# COAL USE GROWS: While Emissions Decline

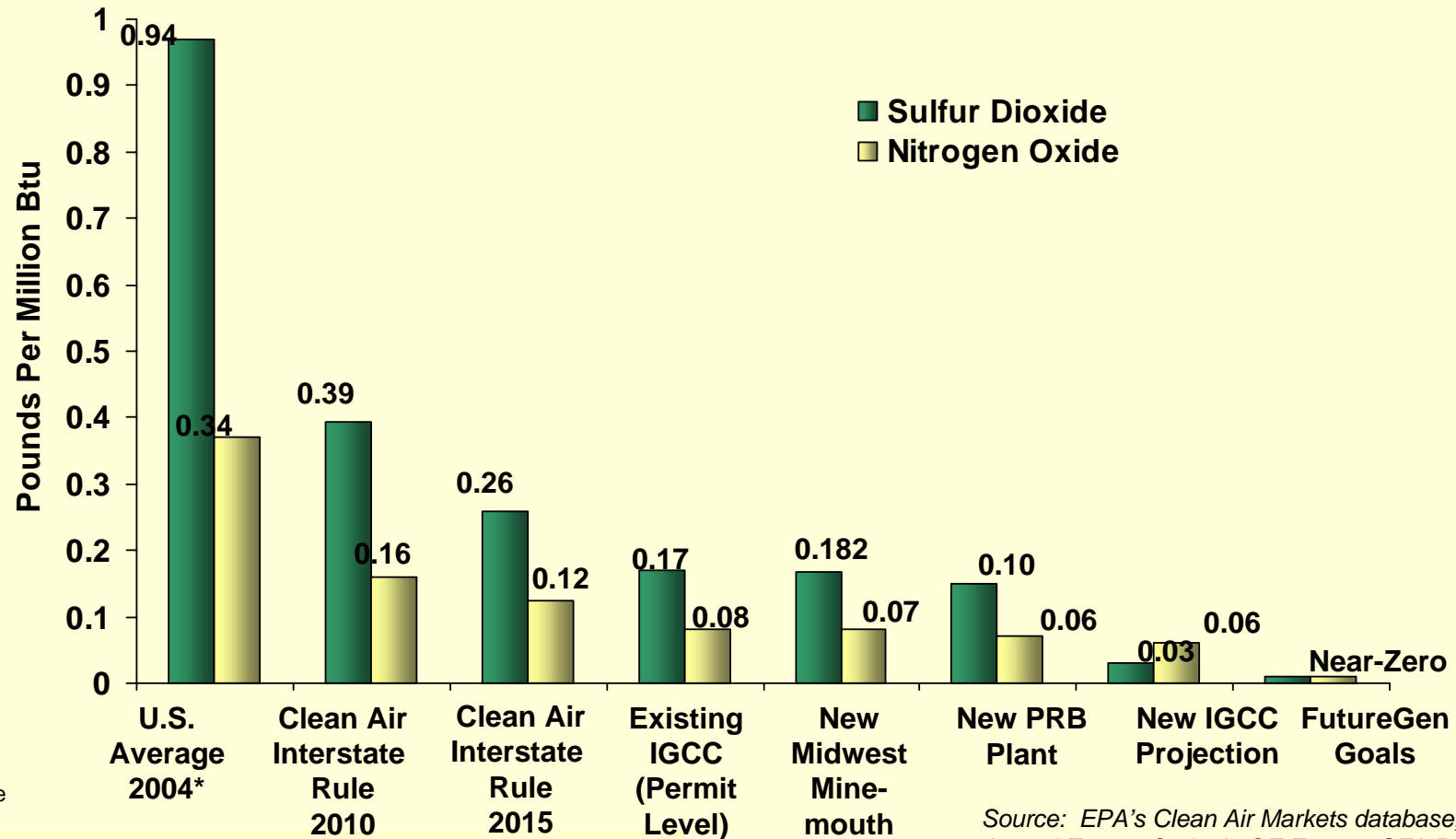
***Coal used for electricity has tripled since 1970 while emissions have been significantly improved***



Source: EPA National Air Pollutant Emission Trends, EIA Annual Energy Review 2002 (October 2003).

# THE PATH TOWARDS:

## *Emissions from Coal-Fueled Generating Plants*



\* Estimate

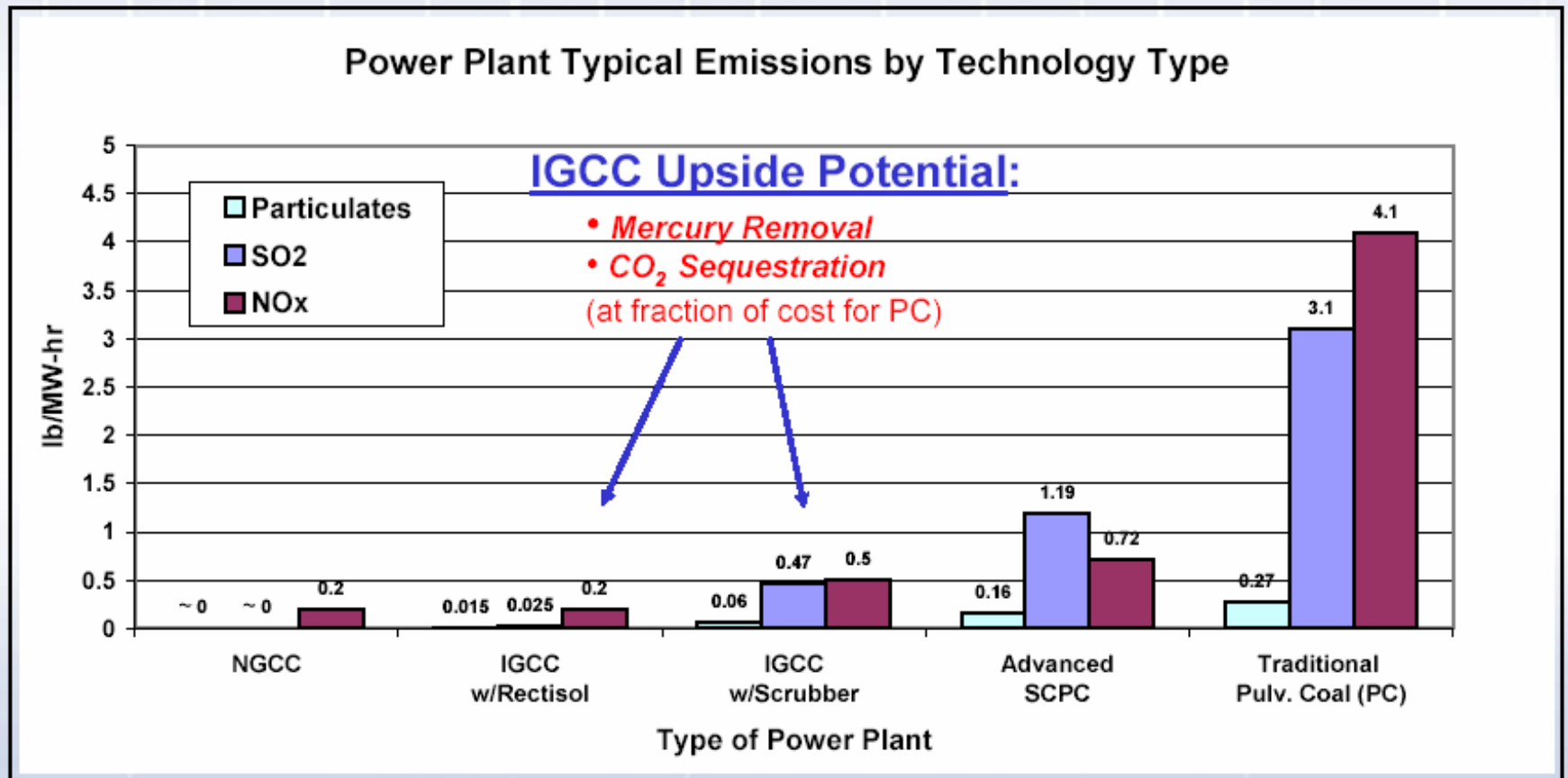
Source: EPA's Clean Air Markets database; EIA 2004 Annual Energy Outlook; GE Energy; SFA Pacific.

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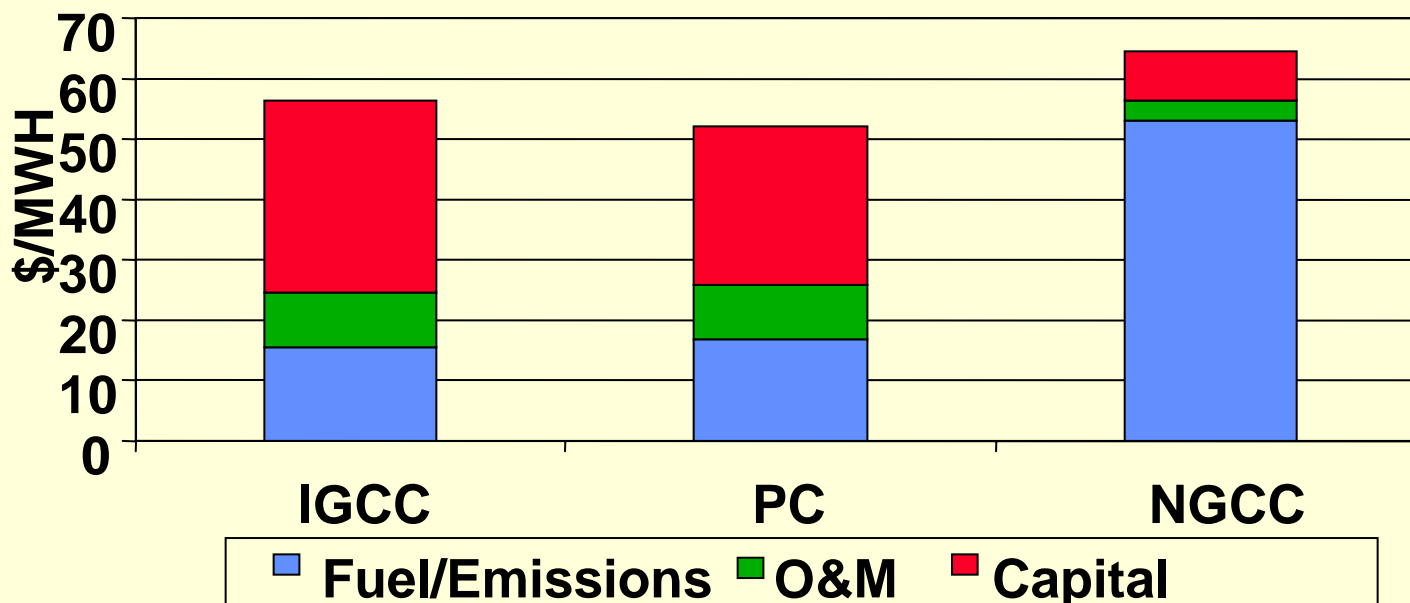
Partnering for Workable  
Energy Plans

# IGCC – Superior Environmental Performance



**Take away: IGCC's emissions are the lowest of any coal-based technology.**

# CURRENT ECONOMICS Of New Baseload Generation

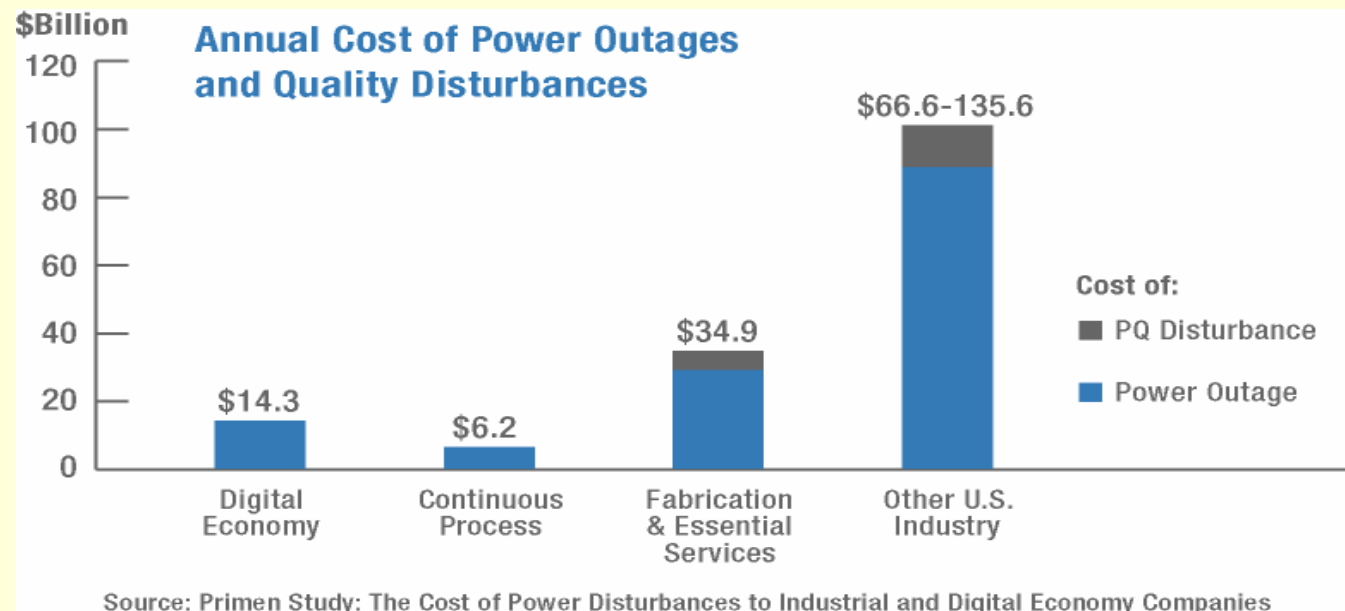


New Baseload Technical Parameters			
	IGCC	PC	NGCC
Total Plant Capital (\$/KW)	\$1550	\$1290	\$440
O&M (\$/MWH)	\$9.1	\$8.9	\$3.5
Heat Rate (BTU/KWH)	8,700	8,690	7,200

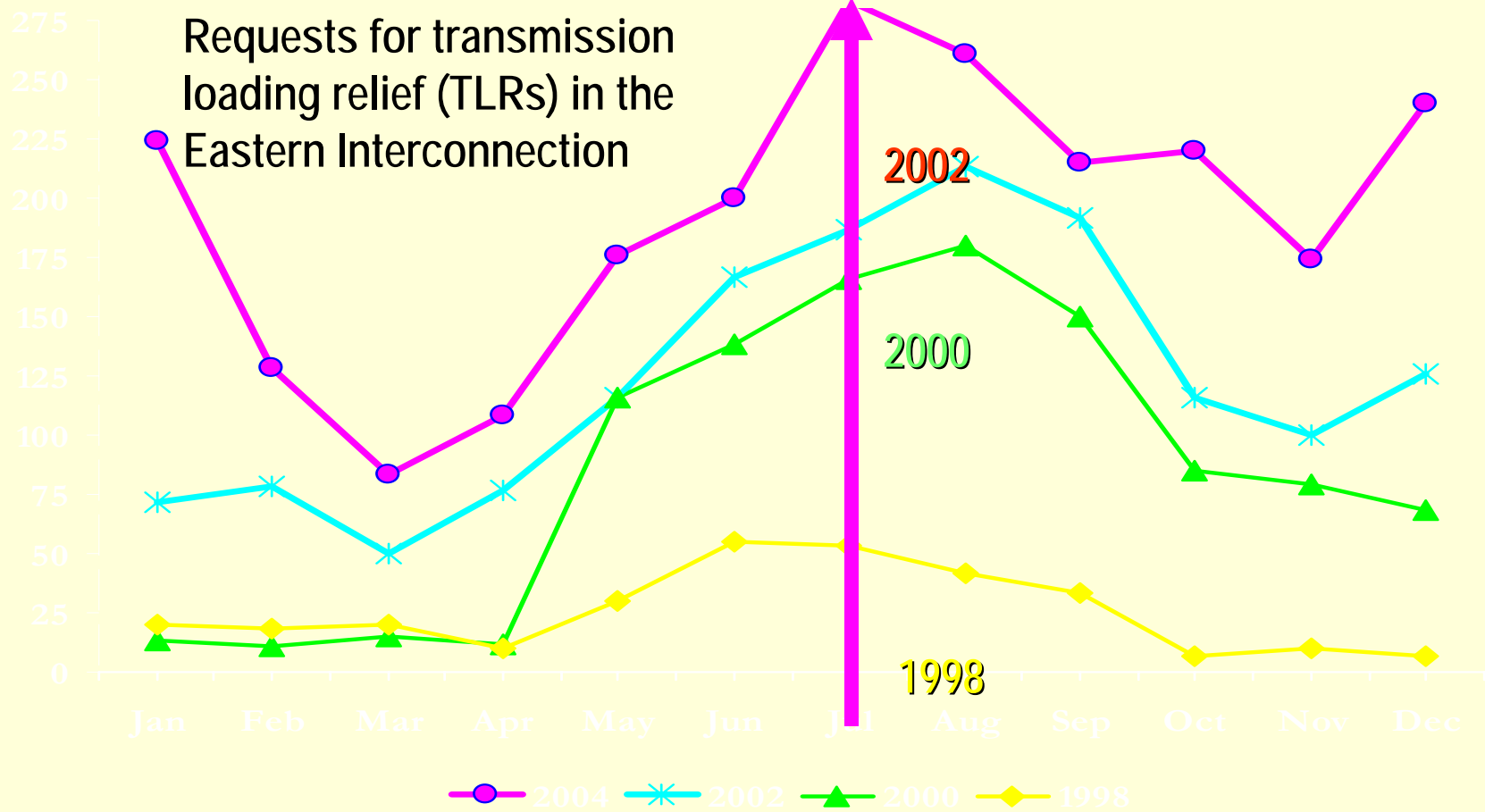


# ECONOMIC EFFECTS of Power Outages

- More than \$100 billion in annual costs to businesses – including many already struggling
- Competitive disadvantages and impacts on local economies



# TRANSMISSION CONGESTION: Has Increased Dramatically



Source: NERC Transmission Loading Relief Procedure Logs