Idaho's Current Energy Picture

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Energy, Environment and Technology Interim Committee
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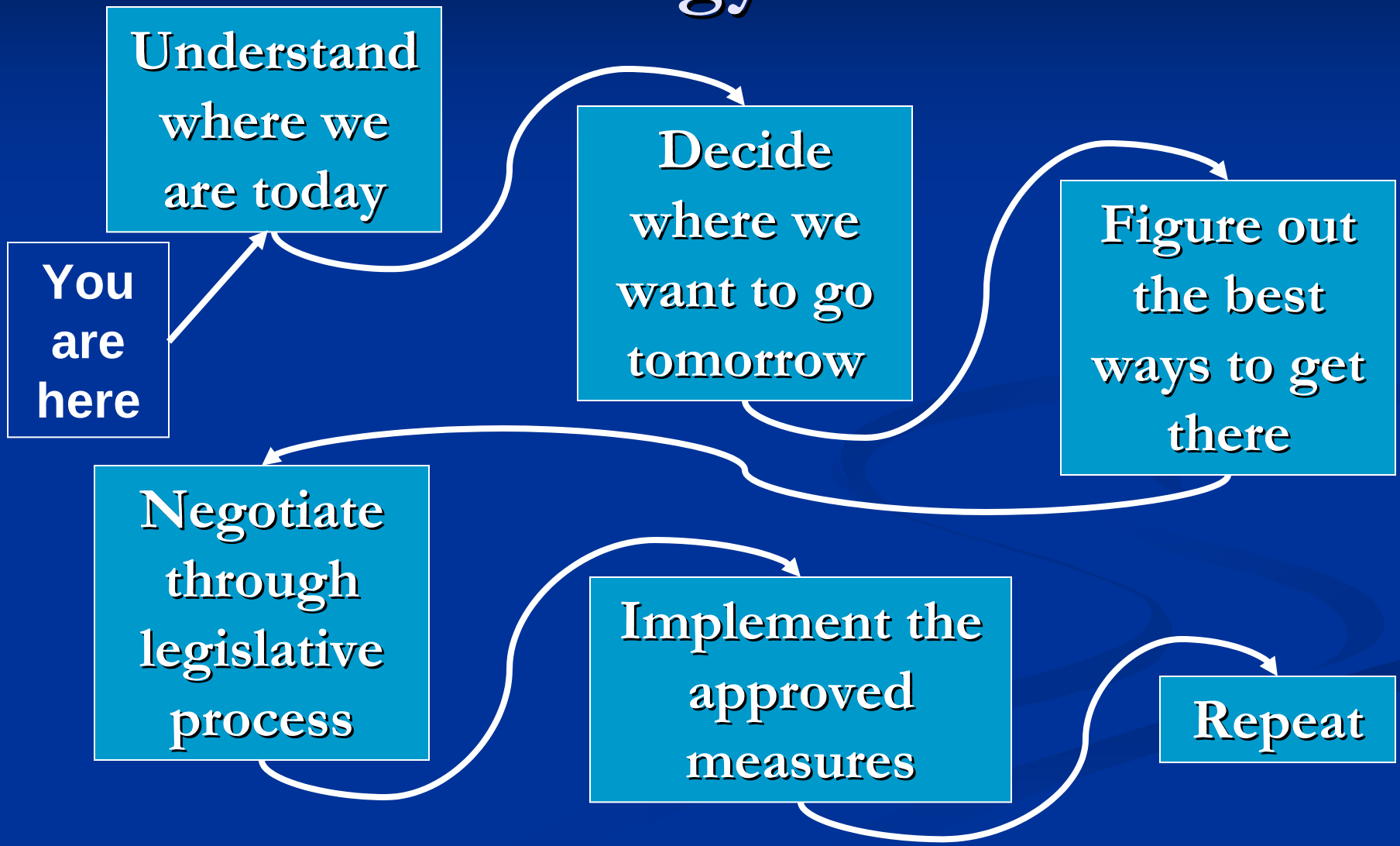
Agenda

- Basics about the energy industry
- Statewide energy demand and prices
- Electricity
- Energy Facility Siting
- Natural Gas
- Petroleum/Transportation Fuels

Roadmap for Developing the Energy Plan

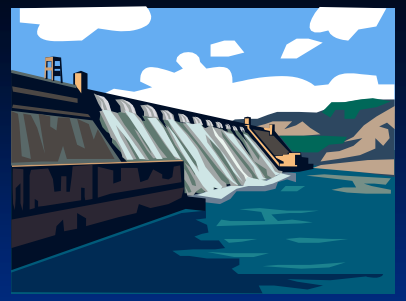


Goals for Today's Session

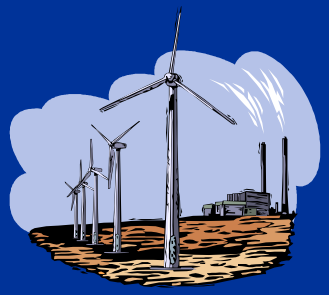
- Get a reasonable understanding of the physical and institutional workings of Idaho's energy systems
- Understand the "do-nothing" case
- Begin understanding where the state has leverage
- Understand Idaho's situation compared to other states

Energy Policy Levers: What Can the State Do?

- The state as a *taxing* authority
- The state as a *spending* authority
- The state as a *regulator* (utility regulation, codes and standards, environment and safety, water rights)
- The state as an energy *consumer*
- The state as an energy *producer*
- The state as a *participant* in regional and federal processes
- The state as a *moral* authority



Basics About the Energy Industry



Basics about Energy Industry

- Necessity for public health, safety and welfare
- Players and playing field
- Highly capital intensive
- Idaho has limited indigenous energy resources
- Consequences of state regulation
- Sizing of energy infrastructure

Energy is More Than Just Another Commodity

- Affordable, reliable energy is a necessity for public health and safety
- Affordable, reliable energy is a necessity for the functioning of a modern economy
- Extraction, generation, and delivery of energy involves facilities with a large "footprint"
- The nature of energy necessitates a strong degree of public oversight

"Energy is imbued with the public interest."

Roger Hamilton, former Oregon Commissioner

Who are the Players?

- **Investors**: Shareholders, bondholders, investment banks, lenders
- **Energy Suppliers**: Independent power producers, oil & gas exploration and production companies, electric utilities
- **Bulk Energy Transporters**: Pipelines, transmission owners
- **Local Energy Deliverers**: Electric and gas utilities, oil distributors, service stations
- **Energy Consumers**: Households, businesses, farms, public agencies
- **Federal Regulators**: FERC, EPA, FTC, SEC, OSHA
- **State Regulators**: PUC, DEQ, IDWR
- **"The Public"**: As generally represented by NGOs

What is the Playing Field?

The Energy Industry is Highly Capital-Intensive

- Large facilities (generators, refineries, transmission lines, pipelines) require large upfront investments
- Access to capital markets is critical for timely development of energy infrastructure
- Energy, like all commodities, tends to go through "boom-bust" cycles

Idaho has Limited Indigenous Energy Resources

- No oil, gas or coal resources
- Hydropower resources have all been developed
- Some good wind and geothermal resources in various locations
- Most of the energy Idaho consumes is imported
- Energy prices are driven by events outside Idaho

Most of the dollars that Idahoans spend on energy go out of state and do not benefit the local economy!

Regulation and Competition

- Some energy facilities are competitive
  - Oil & gas production, petroleum refining, gasoline distribution, electric generation
- Some energy facilities are regulated as monopoly franchises
  - Electricity and natural gas distribution systems
- Some energy facilities are regulated as monopolies but are subject to some competition
  - Oil and gas pipelines, electric transmission lines, electric generation

State Regulation of Electric and Gas Utilities

- "Regulatory compact" took shape in the 1920s and 1930s
  - Utility has the obligation to serve to all customers
  - Utility has the opportunity to earn a fair return on prudent investments
- Utilities earn profits by investing in facilities for which they receive a regulated rate of return
- PUC sets rates to recover utility's cost of service plus return on prudent investments
  - Evidentiary hearings with multiple participants

Economic Incentives of Utilities under State Regulation

- Because return is based on investment, utilities have the incentive to make *capital investments*
- Because their rate of return is regulated, utilities have the incentive to *minimize risk*
- Utilities have little incentive to encourage conservation, because lower sales means less revenue
- Incentive to reduce costs is muted because cost savings must eventually be shared with customers

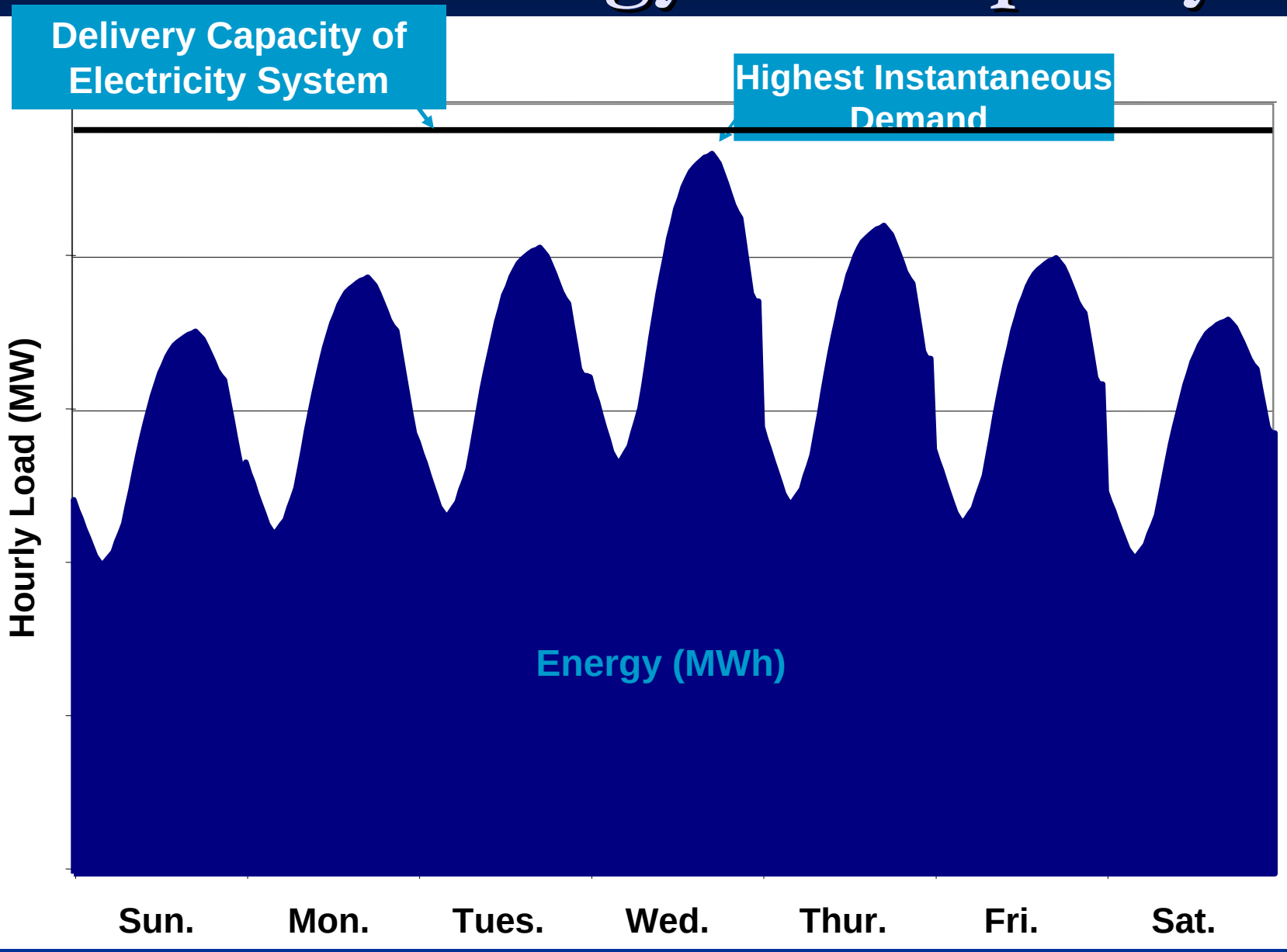
"Democracy is the worst form of government, except for all those others that have been tried."

Sir Winston Churchill

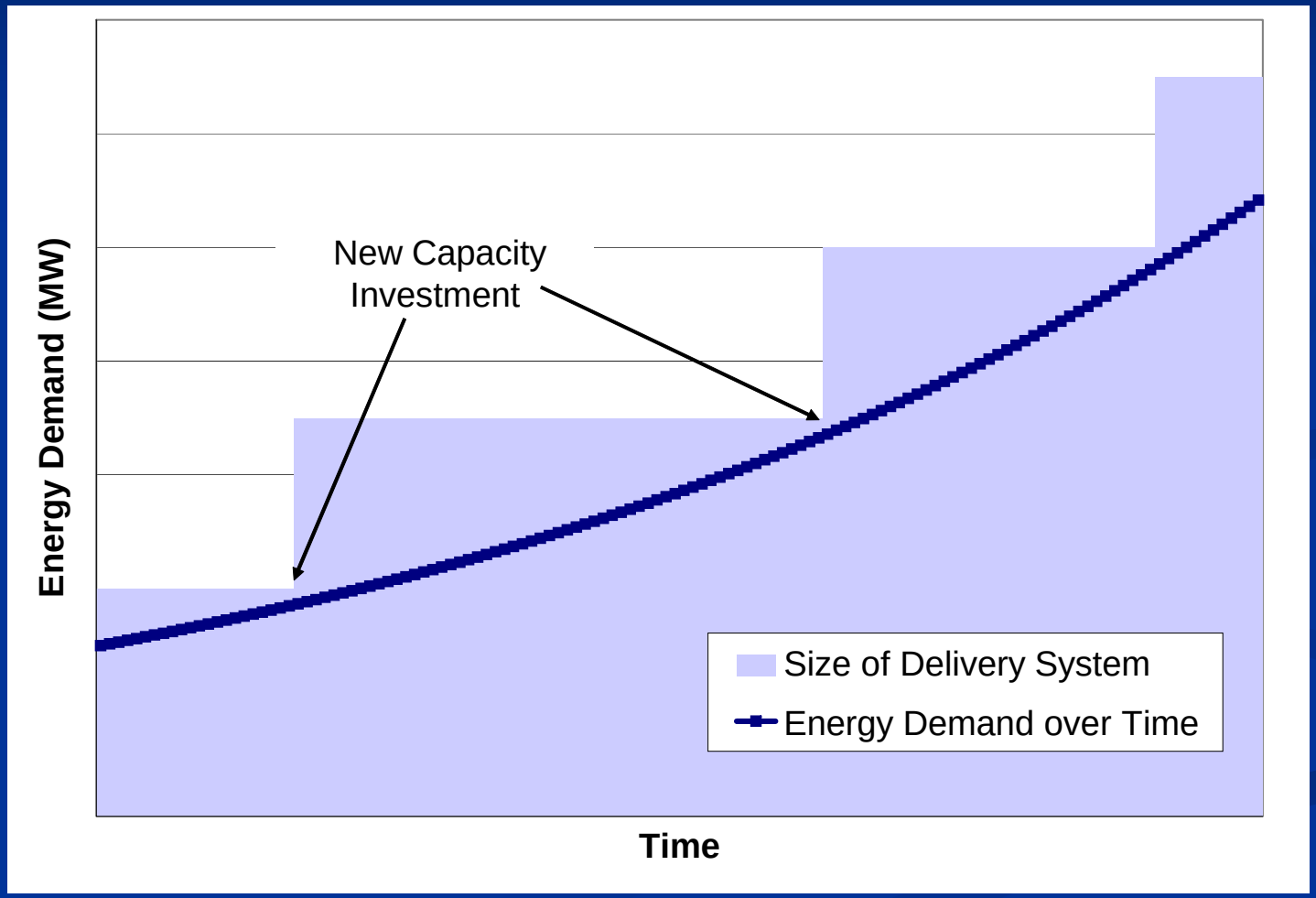
Sizing of Energy Infrastructure

- Energy systems have limited capability to store energy
- This means that suppliers must plan based on how much energy must be delivered in a short period of time
- Peak demand for energy occurs during extreme events:
  - Summer heat wave (Electricity "Critical Peak")
  - Winter cold snap (Natural Gas "Design Day")
  - 4th of July weekend (Gasoline)

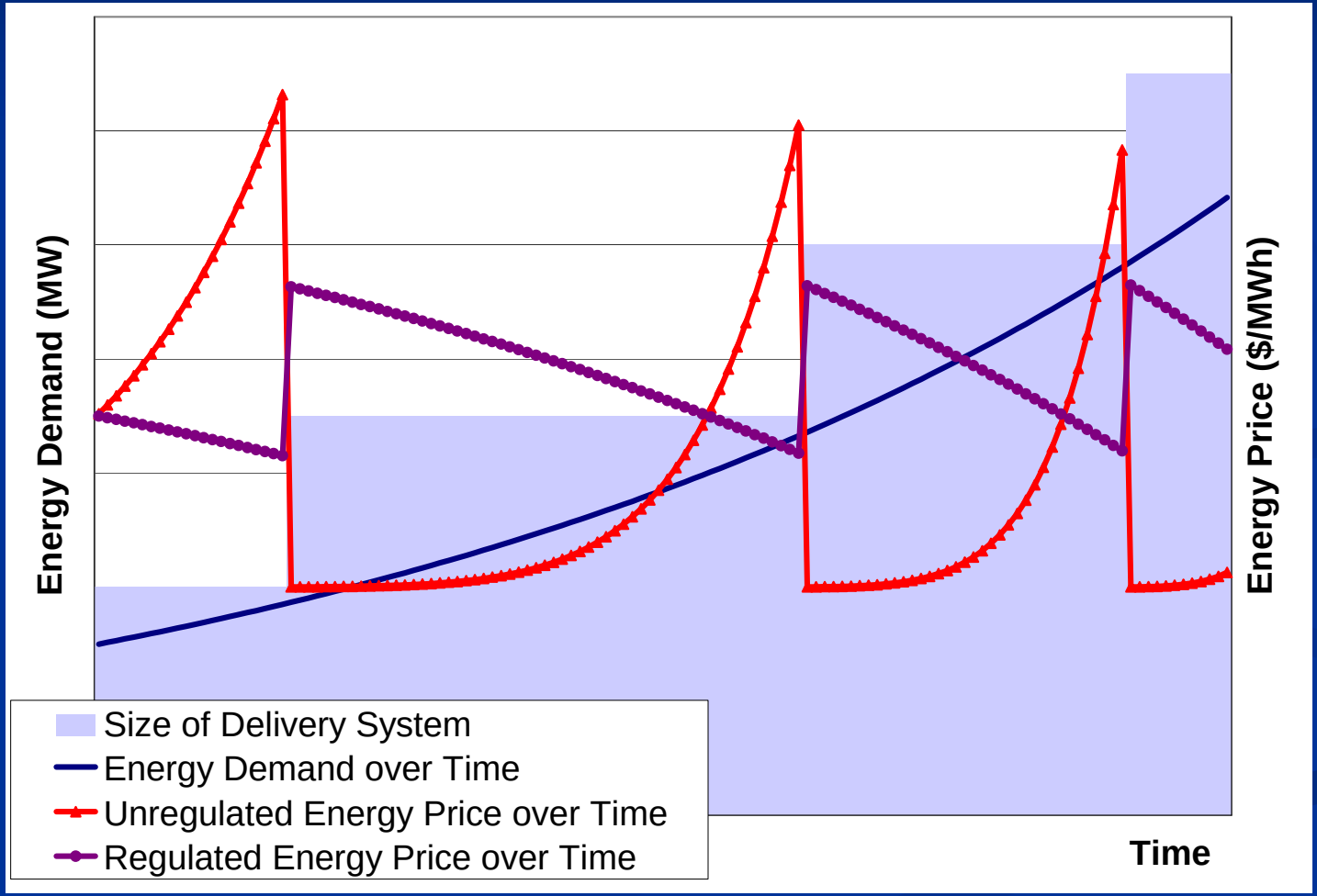
Electric Energy and Capacity



Capacity Investments over Time



Energy Pricing is *Not* Driven by Marginal Costs



Units of Measure

Energy Units

Electricity

- kWh, MWh

Natural Gas

- Therms, Dekatherms, MMBtu, Mcf

Petroleum

- Gallons, barrels

Demand Units

Electricity

- kW, MW

Natural Gas

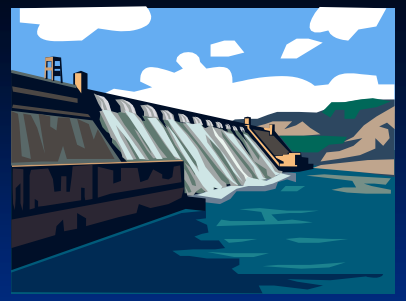
- Dth/day

Petroleum

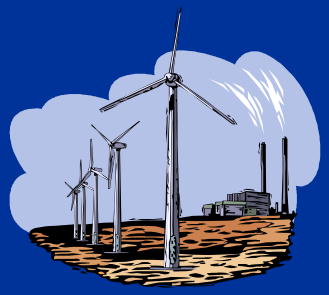
- bbl/day

Summary

- Energy is a necessity for public health, safety and welfare
- The energy industry is highly capital intensive because of the need to meet peak demands
- Most energy dollars leave the state
- System of regulated utilities provides incentives that are different from other industries



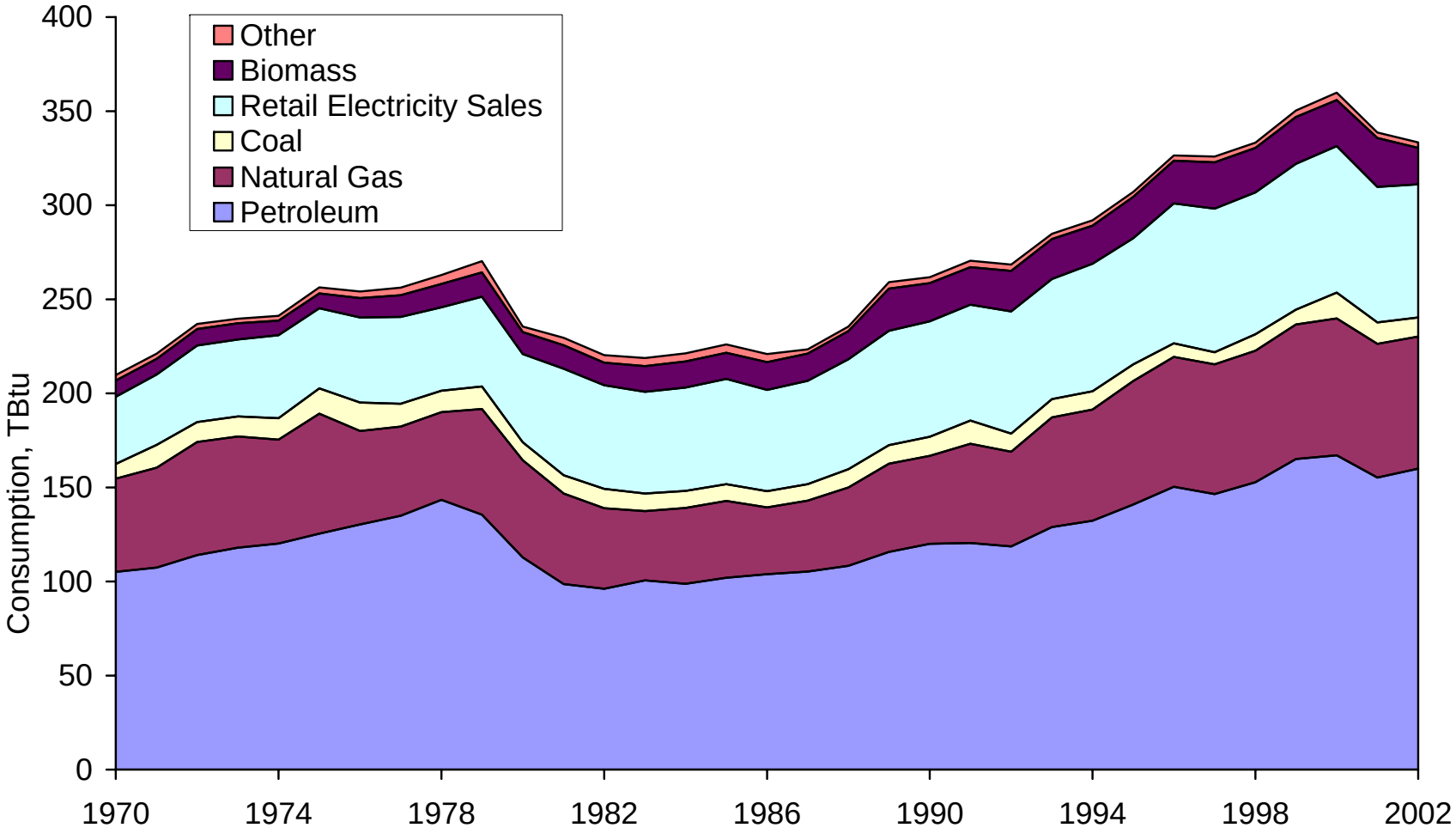
Statewide Energy Demand and Prices



Statewide Energy Demand and Prices

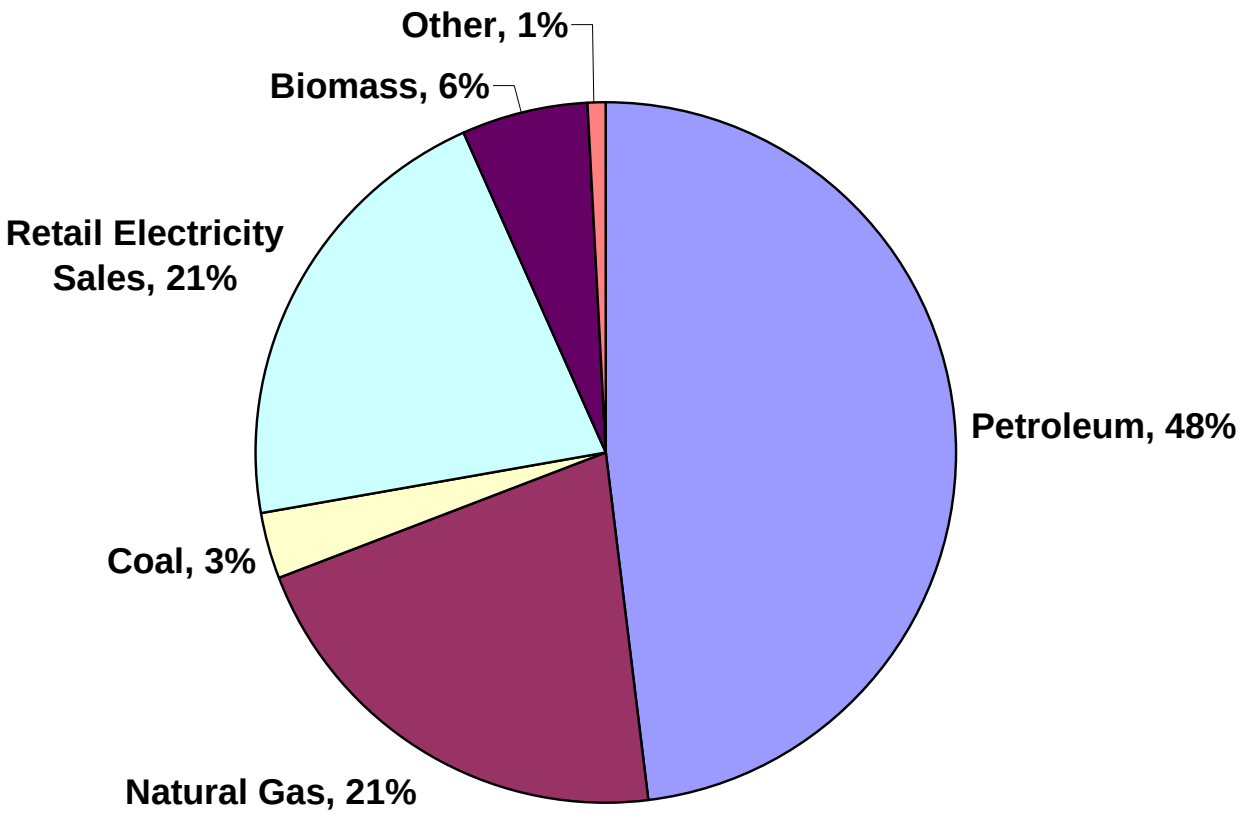
- Statewide energy use by type and over time
- Energy use per capita and per $ of state GSP
- Energy prices over time and compared to other states
- Household energy bills compared to other states

Total End-Use Energy Consumption by Energy Source
Idaho, 1970–2002



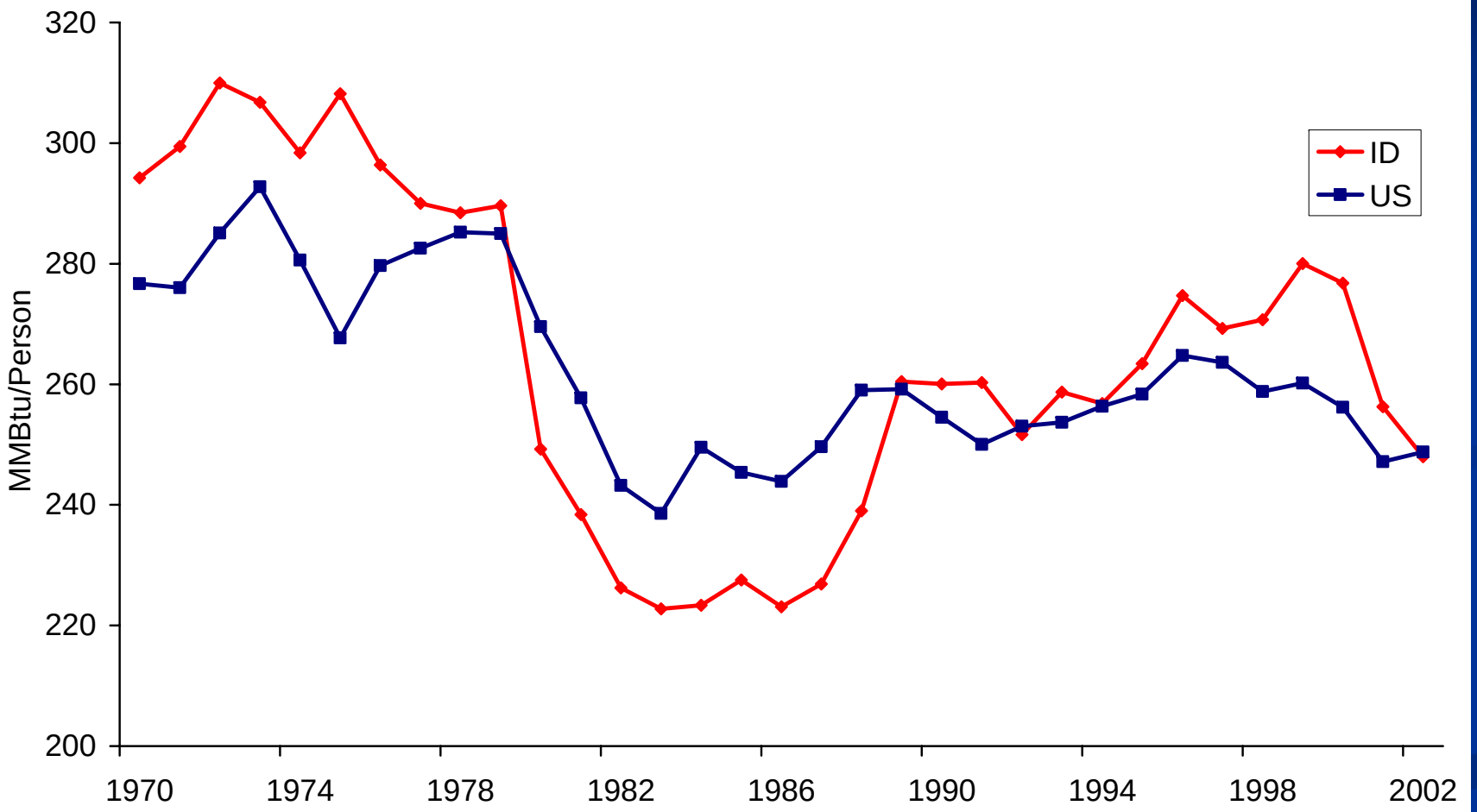
Note: "Other" consists of Wood, Geothermal and Ethanol.

Idaho 2002 End-Use Energy Consumption by Fuel Source



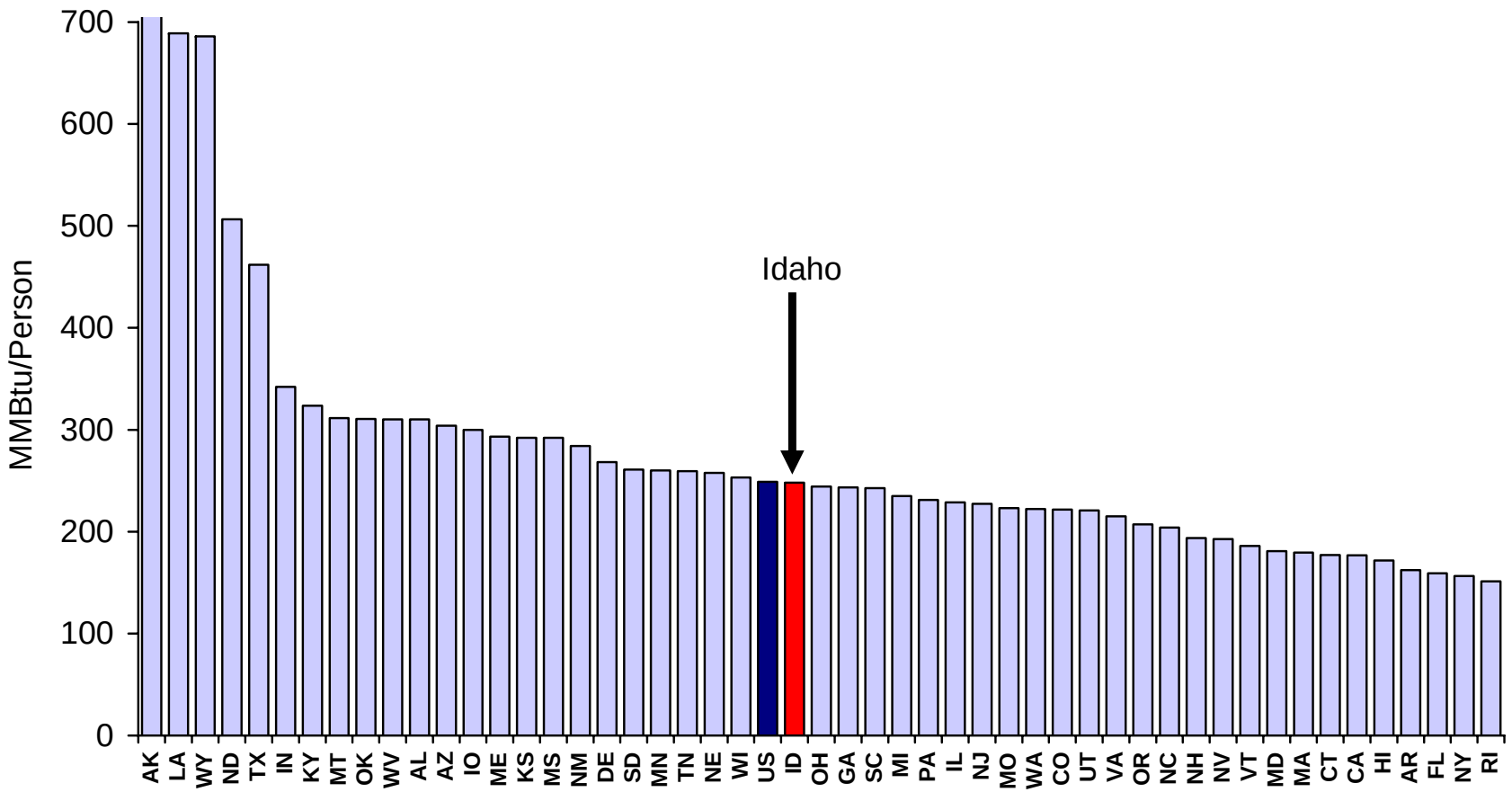
Note: "Other" consists of Wood, Geothermal and Ethanol.

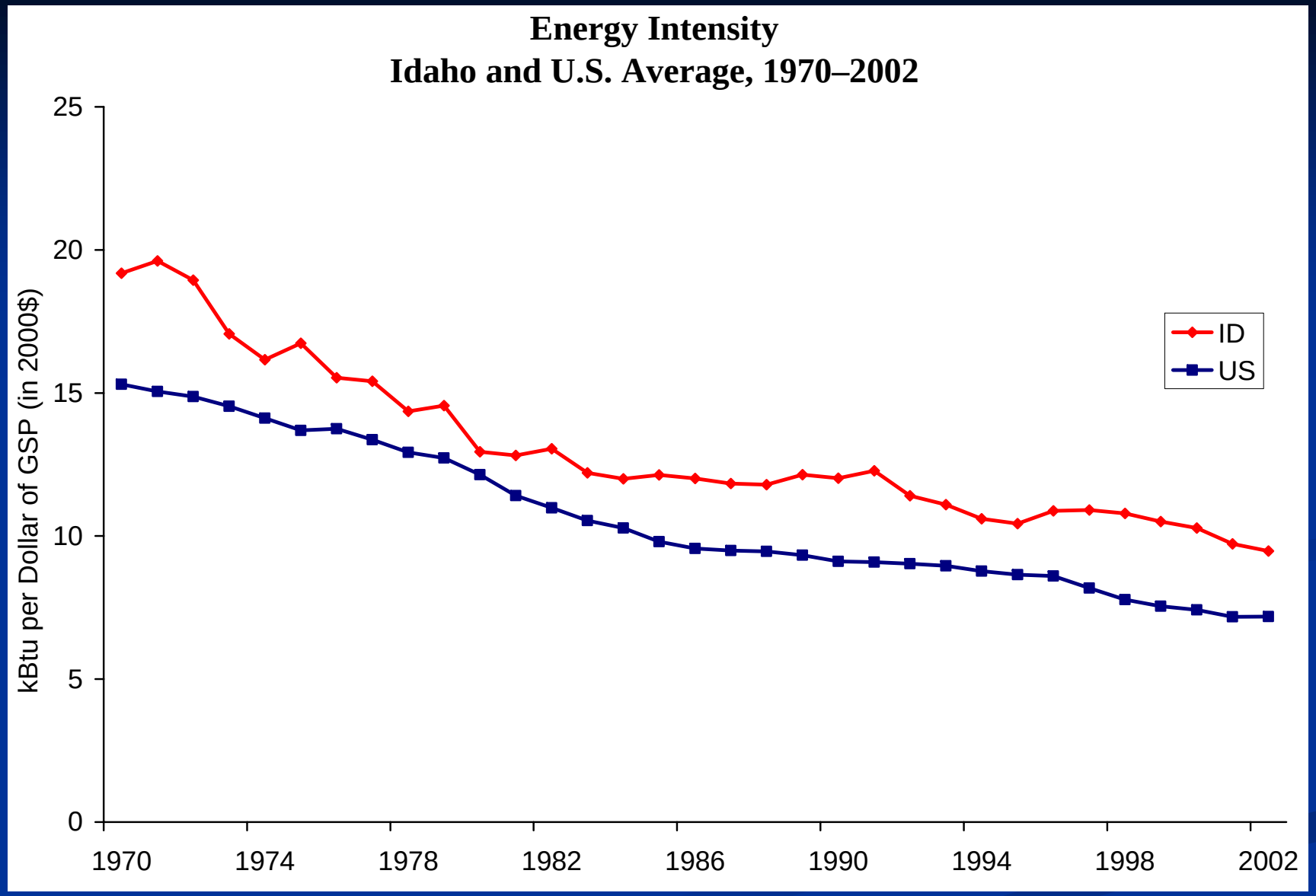
Energy Use per Capita
Idaho and U.S. Average, 1970–2002



In 2002, Idaho Had the 24th Highest Energy Use Per Capita

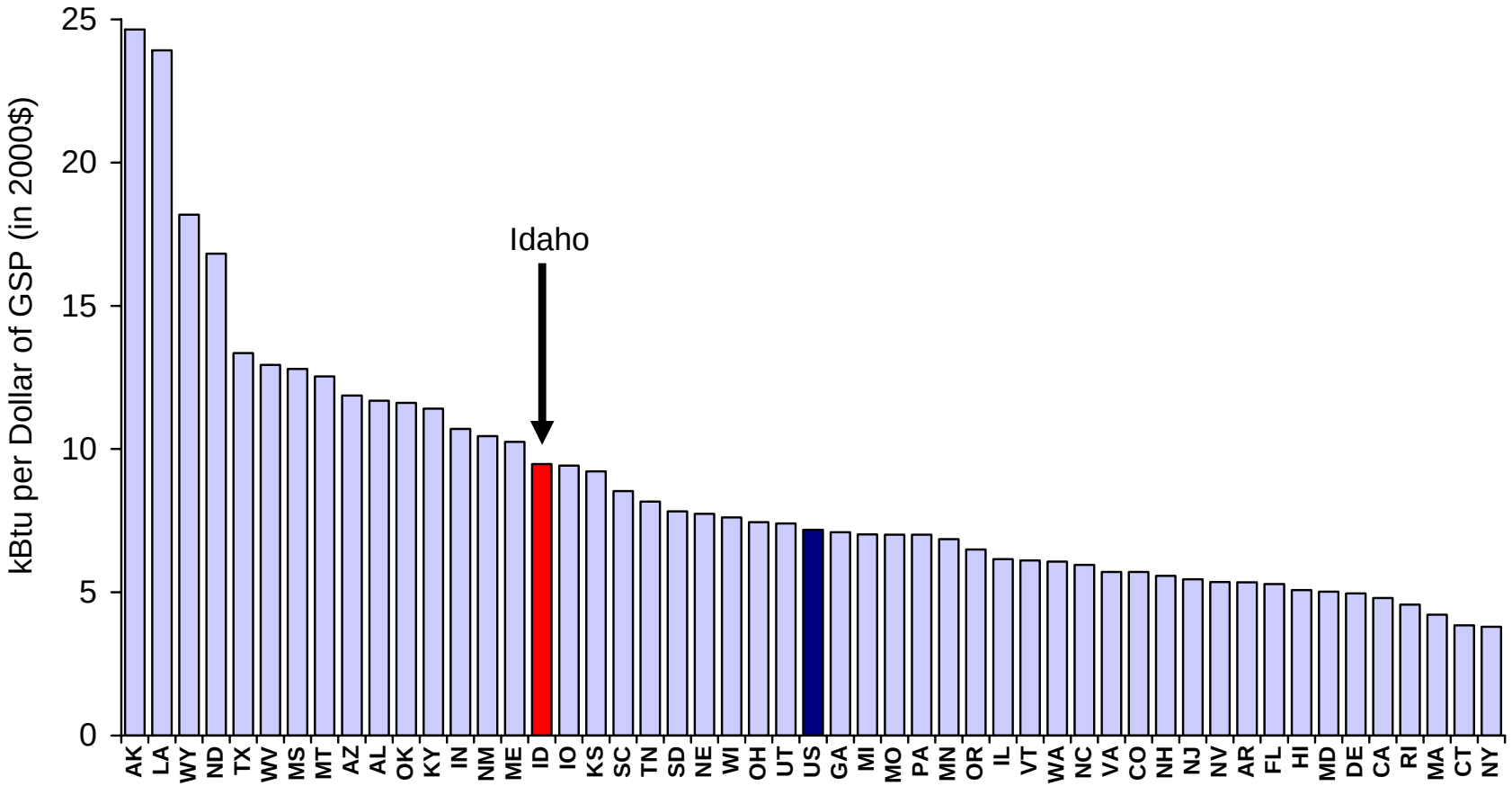
(In MMBtu per Person)



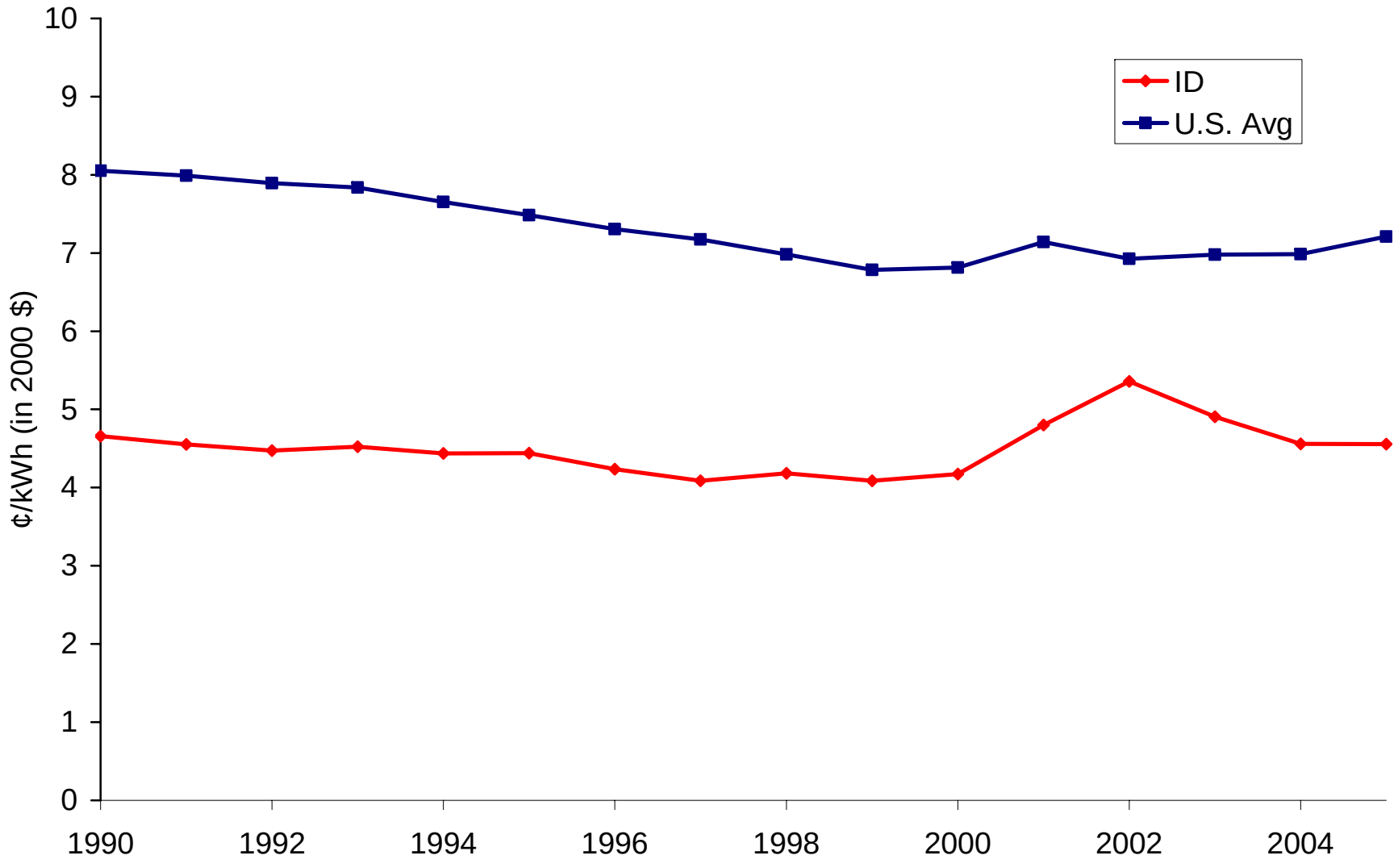

Energy Intensity
Idaho and U.S. Average, 1970–2002
kBtu per Dollar of GSP (in 2000$)
25
20
15
10
5
0
1970
1974
1978
1982
1986
1990
1994
1998
2002
ID
US

In 2002, Idaho Had the 16th Highest Energy Intensity in the U.S.

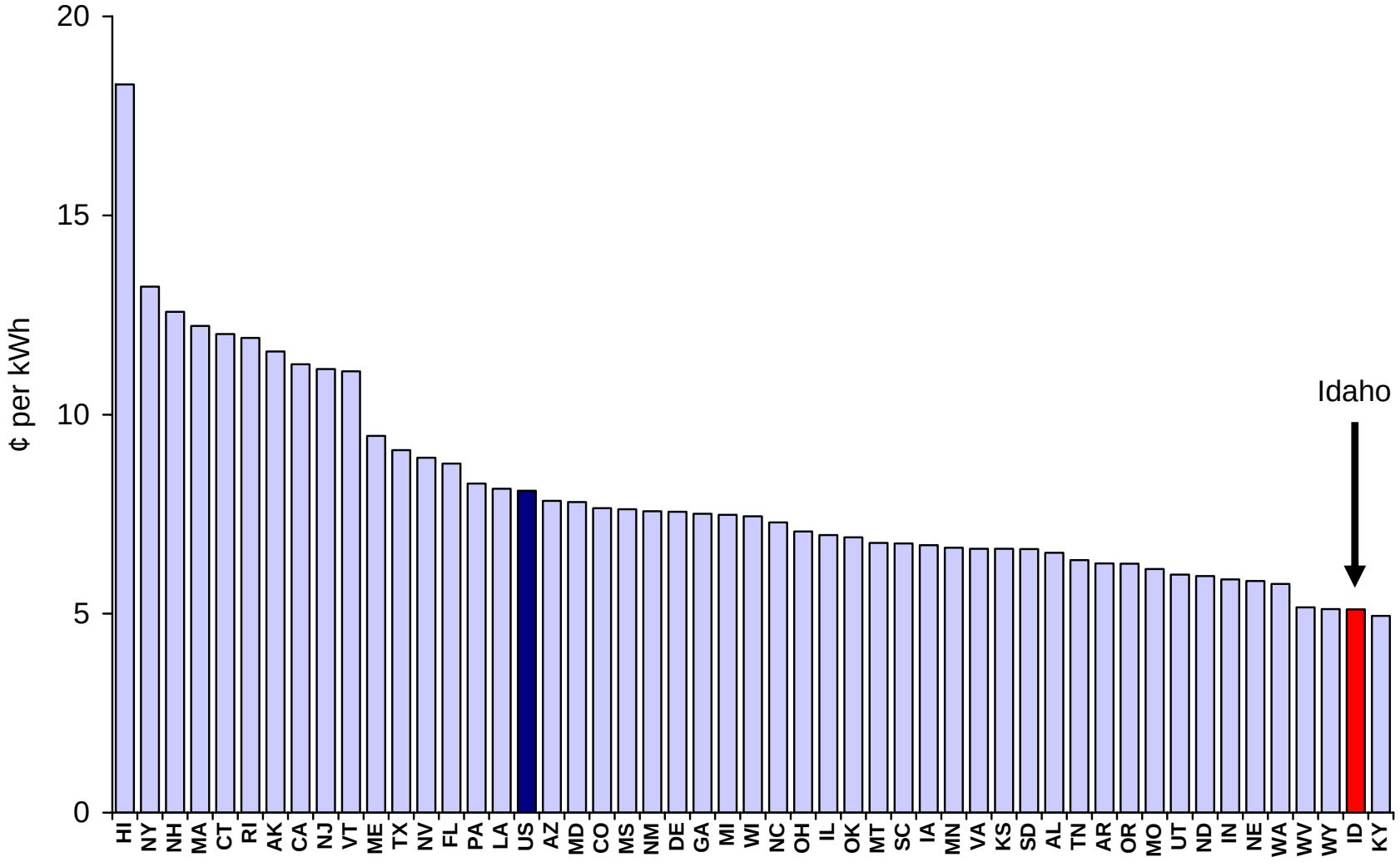
(In kBtu per Dollar of Gross State Product)

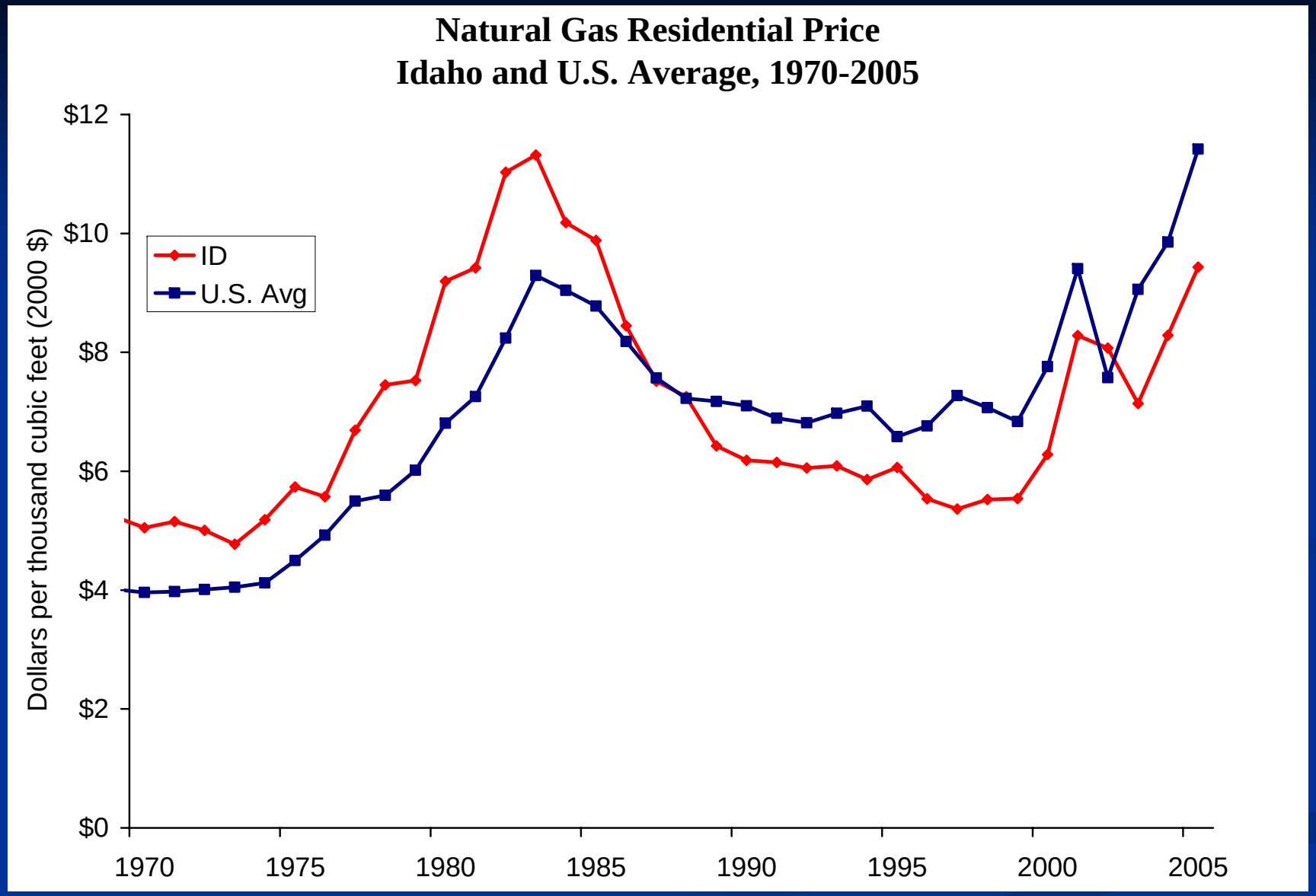


Electricity Average Retail Price (for All Sectors)
Idaho and U.S. Average, 1990 – 2005

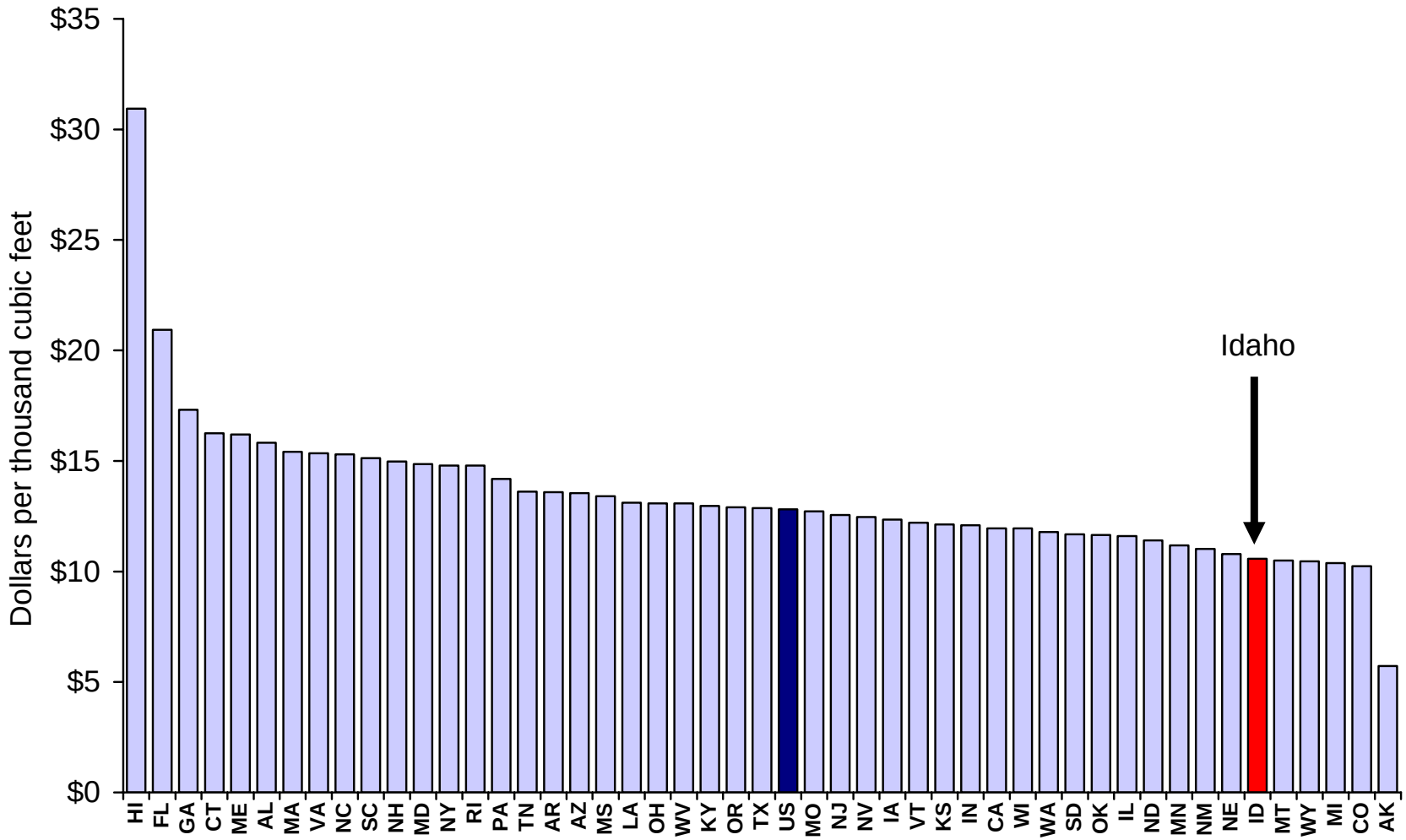


In 2005, Idaho Had the 2nd Lowest Electricity Average Retail Price (for All Sectors)



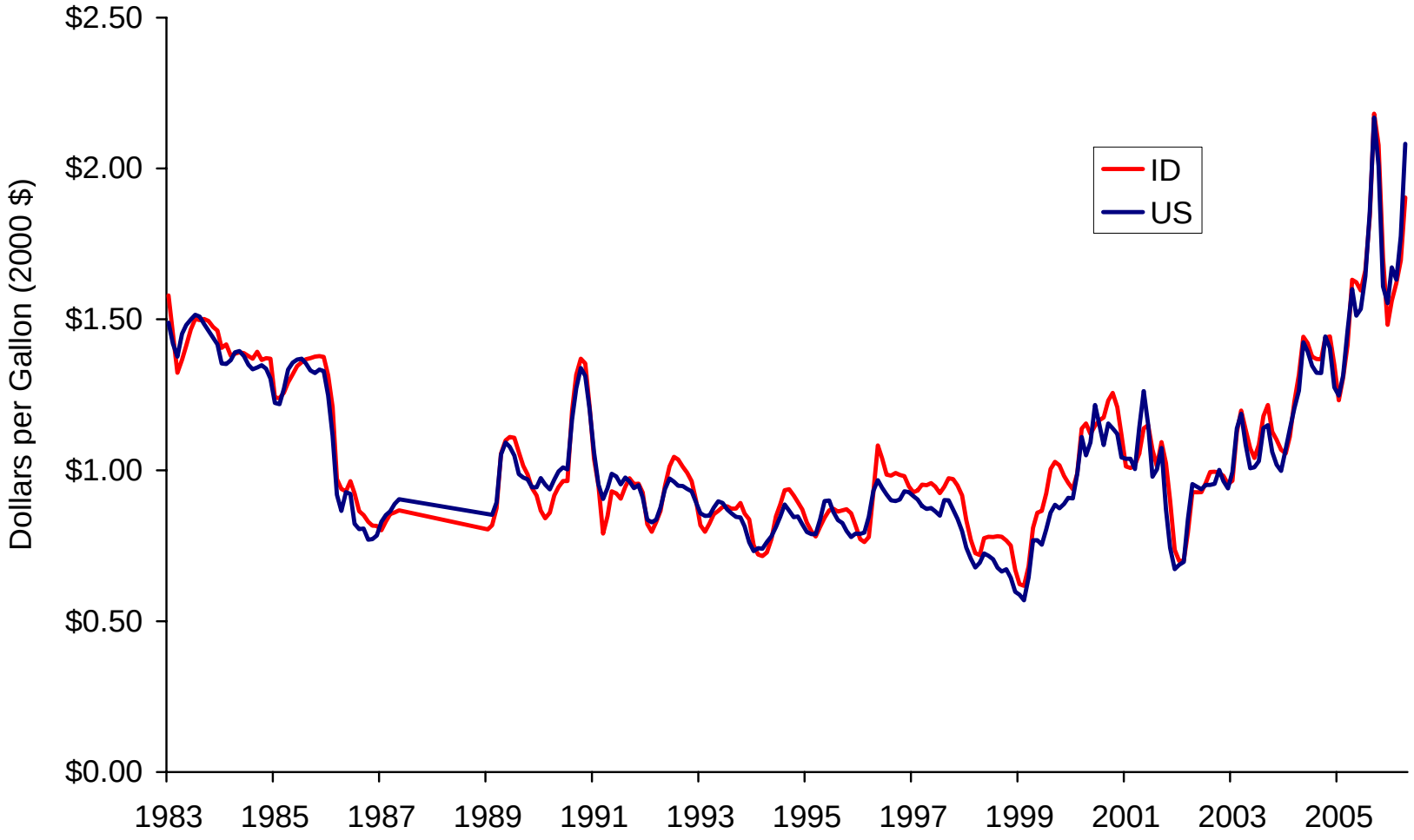

Natural Gas Residential Price
Idaho and U.S. Average, 1970-2005
Dollars per thousand cubic feet (2000 $)
$12
$10
$8
$6
$4
$2
$0
ID
U.S. Avg
1970
1975
1980
1985
1990
1995
2000
2005

In 2005, Idaho Had the 6th Lowest Natural Gas Residential Retail Price



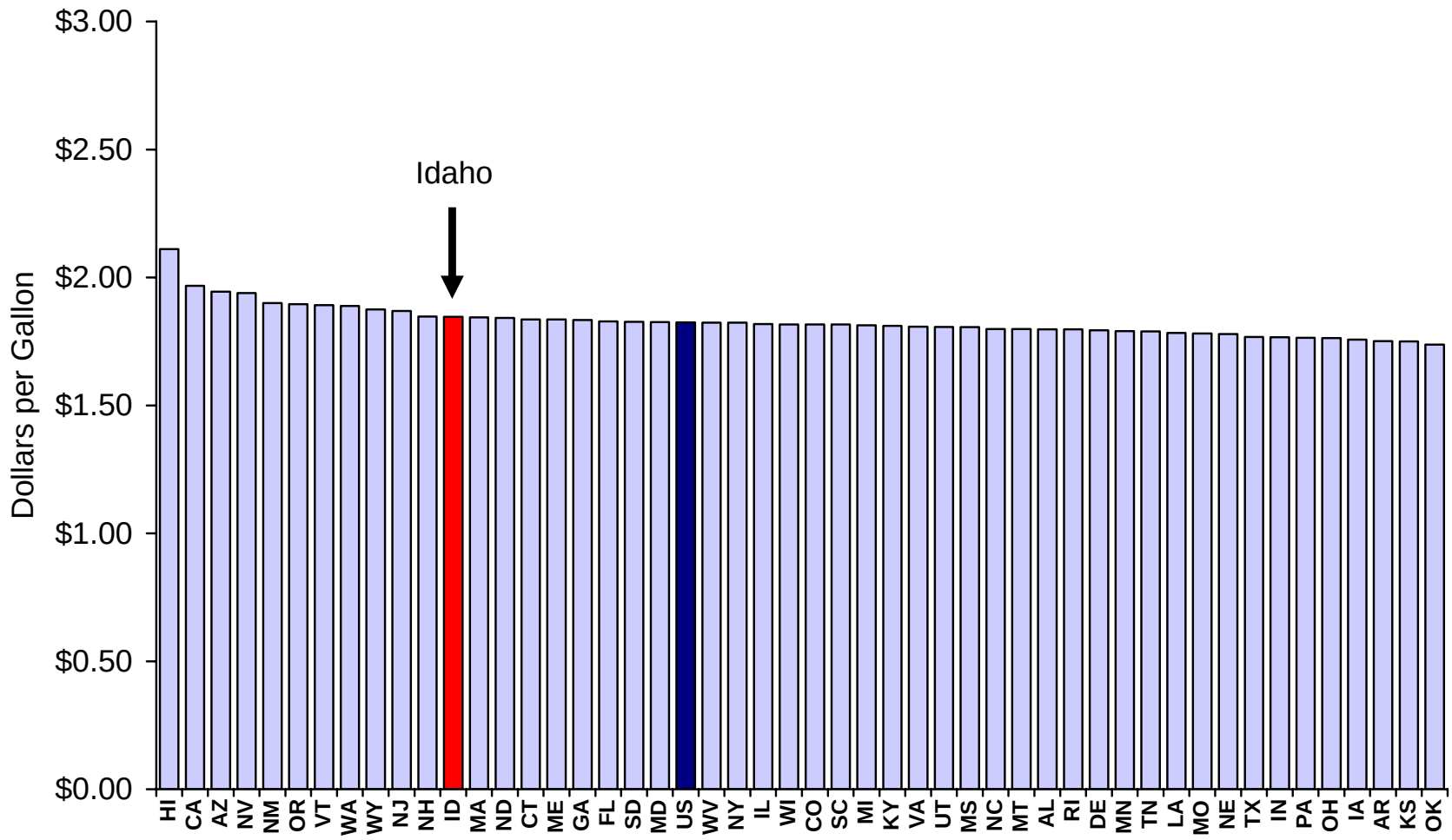
Note: Price data were not available for DE and UT in 2005.

Gasoline Retail Sales Price
Idaho and U.S. Average, Jan 1983 – April 2006



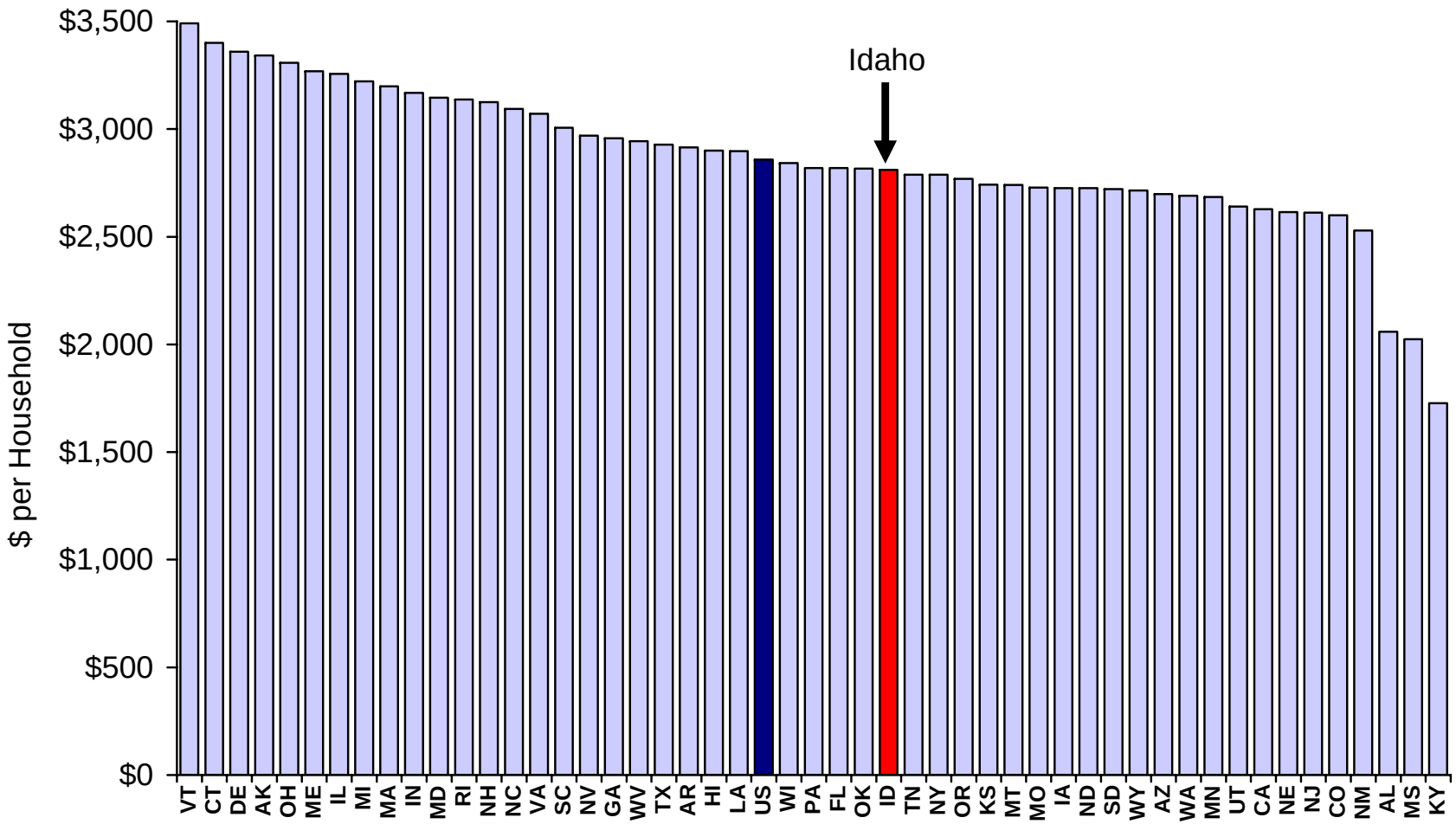
Note: Data not available for 7/1987 through 12/1988. 2006 prices are deflated using GDP deflator for 2005.

In 2005, Idaho Had the 12th Highest Gasoline Retail Sales Price



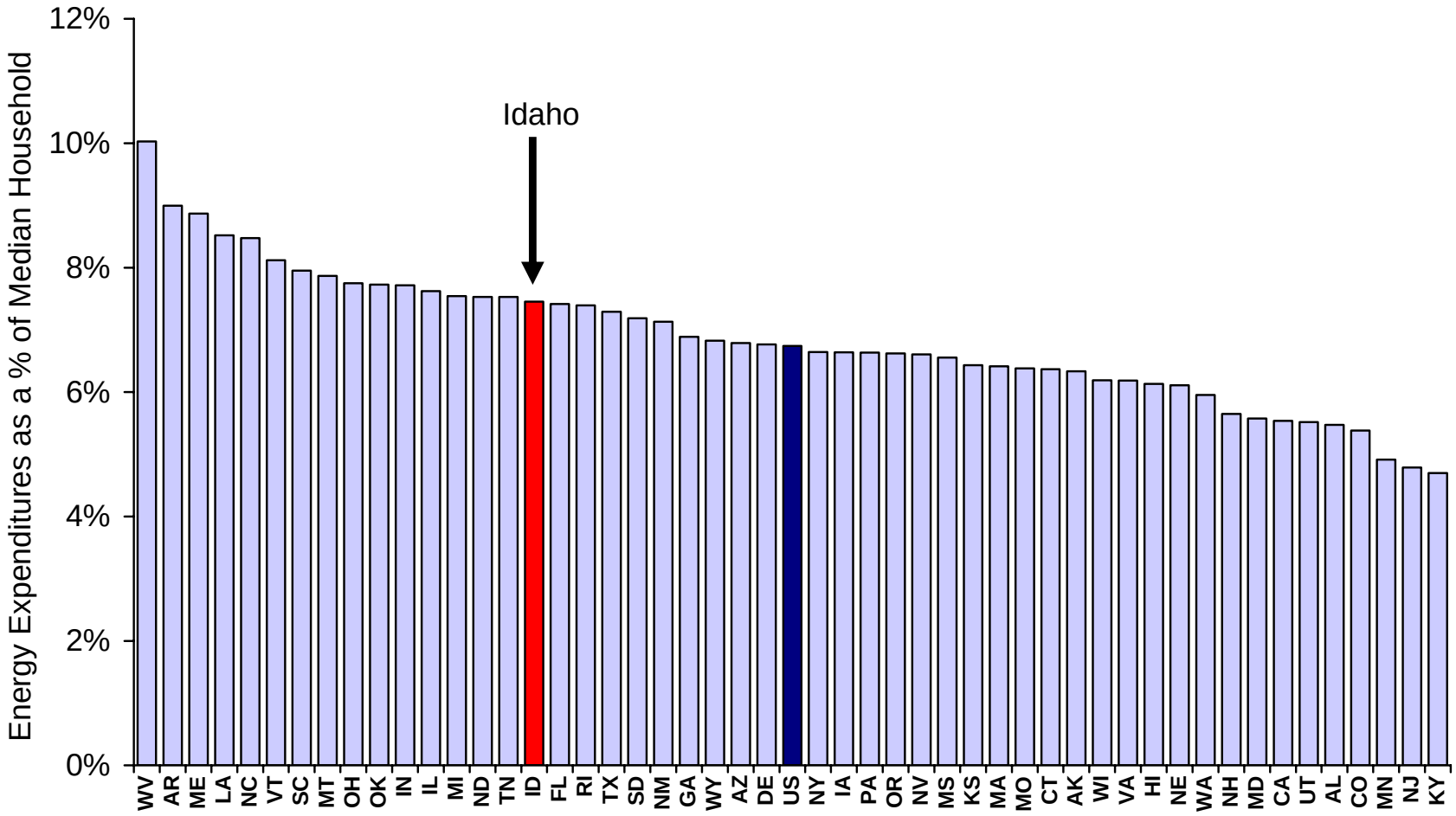
Note: Data is calculated as simple average of price in the 12 months of 2005. Alaska is excluded because price was not available for July 2005.

In 2002, Idaho had the 28th Highest Average Household Energy Bill



Note: Transportation expenditures per household for each state were estimated using 2001 household consumption by Census division and 2002 energy prices.

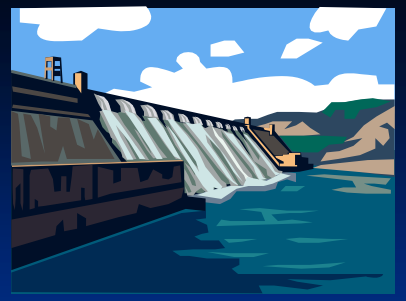
In 2002, Idaho's Average Energy Bill as a % of Median Household Income Was the 16th Highest in the U.S.



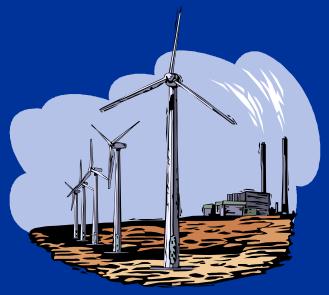
Note: Transportation expenditures per household for each state were estimated using 2001 household consumption by Census division and 2002 energy prices.

Summary of Statewide Energy Demand and Prices

- Idaho energy prices tend to be lower than US average
- Despite the lower prices, energy is a larger burden for Idaho households than in most other states
- Gas and oil prices are near early 1980s levels in real (inflation-adjusted) terms
- High energy prices are probably here to stay



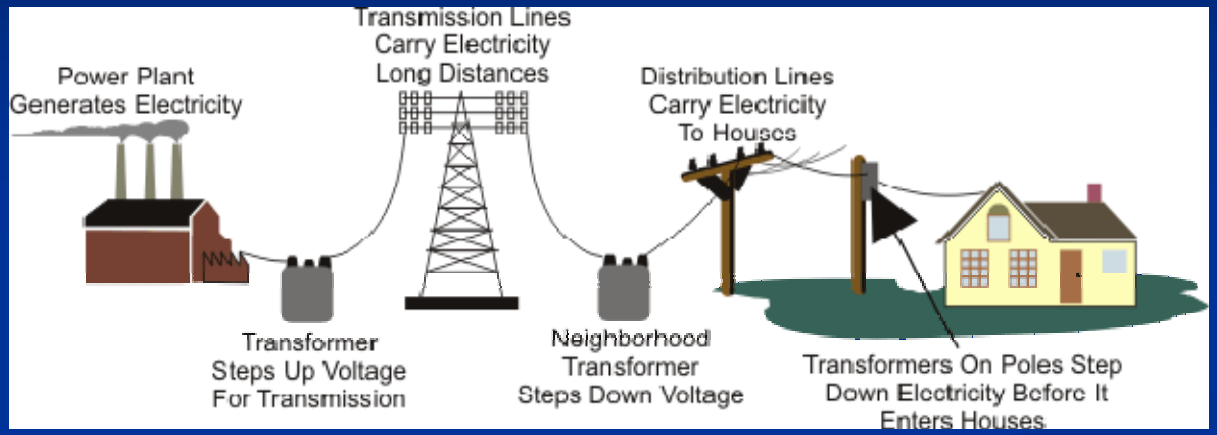
Electricity



Electricity

- Who are the players
- Western Interconnection
- Utility resource planning
- Characteristics of the different resource types
- Current Idaho utility resource plans
- IPPs and PURPA
- Transmission

The Electric Grid

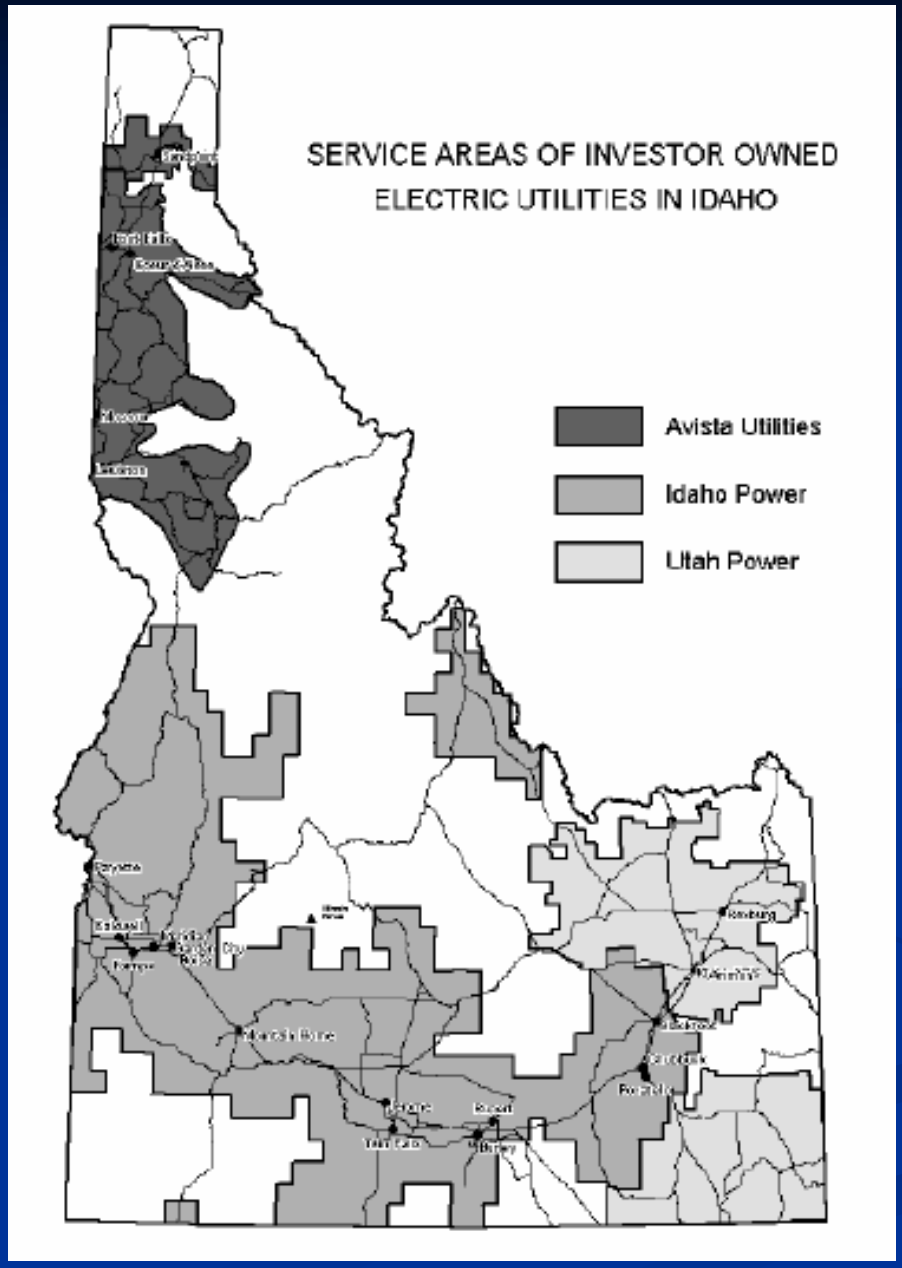


- **Generation:** Can be owned by utility or by independent power producer (IPP)
- **Transmission:** Generally owned by utility, federal rules allow access by third parties (FERC Order 888)
- **Distribution:** Owned by utility, regulated by the states

Electricity: Who are the Players?

- Investor-Owned Utilities: Avista, Idaho Power, PacifiCorp (88% of load, 92% of customers)
- Municipal Utilities and Rural Electric Cooperatives served by BPA
- Electricity consumers (both large and small)
- Independent power producers/qualifying facilities
- Other interested parties (environmentalists, water users)
- State PUC, FERC and other government agencies

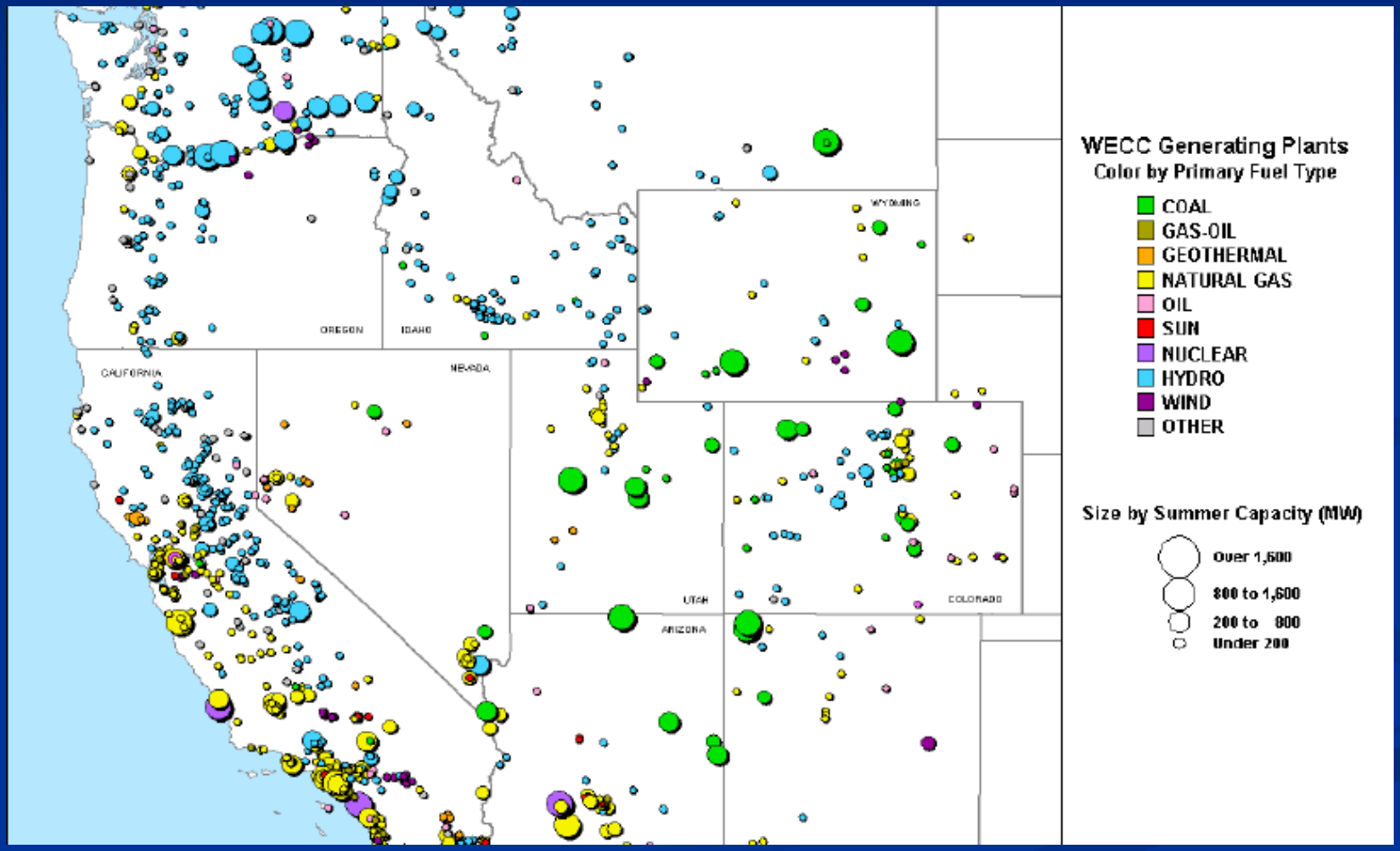
Idaho utilities are still "vertically integrated", i.e., they still own generation, transmission and distribution.


SERVICE AREAS OF INVESTOR OWNED
ELECTRIC UTILITIES IN IDAHO
Avista Utilities
Idaho Power
Utah Power

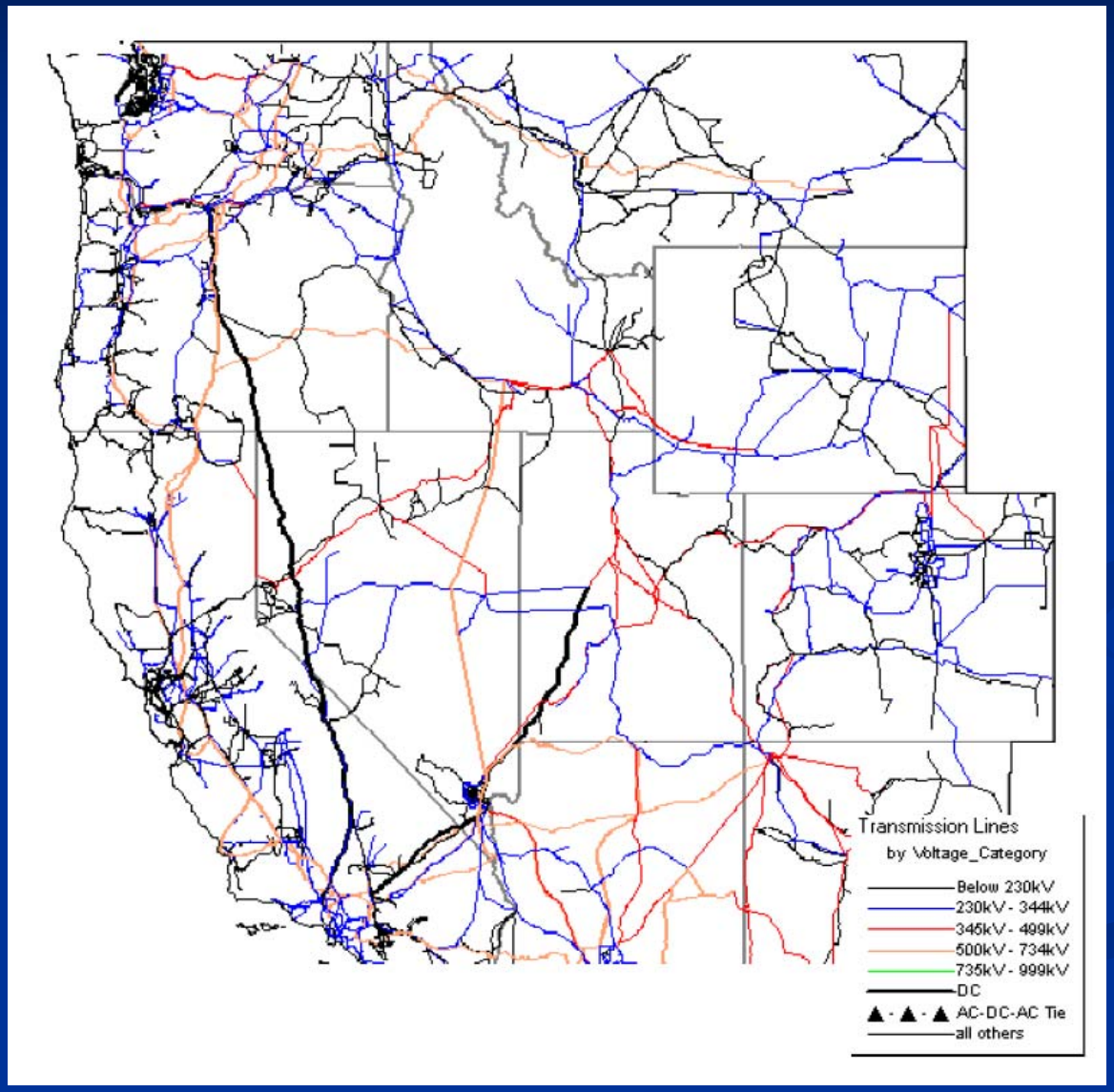
Major Uses of Electricity in Idaho

- Idaho has a relatively large industrial sector with several very large individual users
  - Monsanto, Potlatch, Simplot, Micron, Idaho Engineering Laboratory
- South Idaho irrigators use a lot of electricity during the summer months
- Increased saturation of residential air conditioning is driving summer peak loads in southern Idaho

Existing Generating Resources in the Western Interconnection



Western Transmission Grid



Utility Resource Planning

- Utilities need to acquire resources to meet growing loads
- Generally use three criteria to evaluate resources
  - Reliability/Needs Determination
  - Cost
  - Risk
- "Integrated" Resource Planning (IRP) considers conservation as resource on the same terms as generation
- All the utilities conduct stakeholder processes
- IRPs filed with IPUC along with stakeholder comments

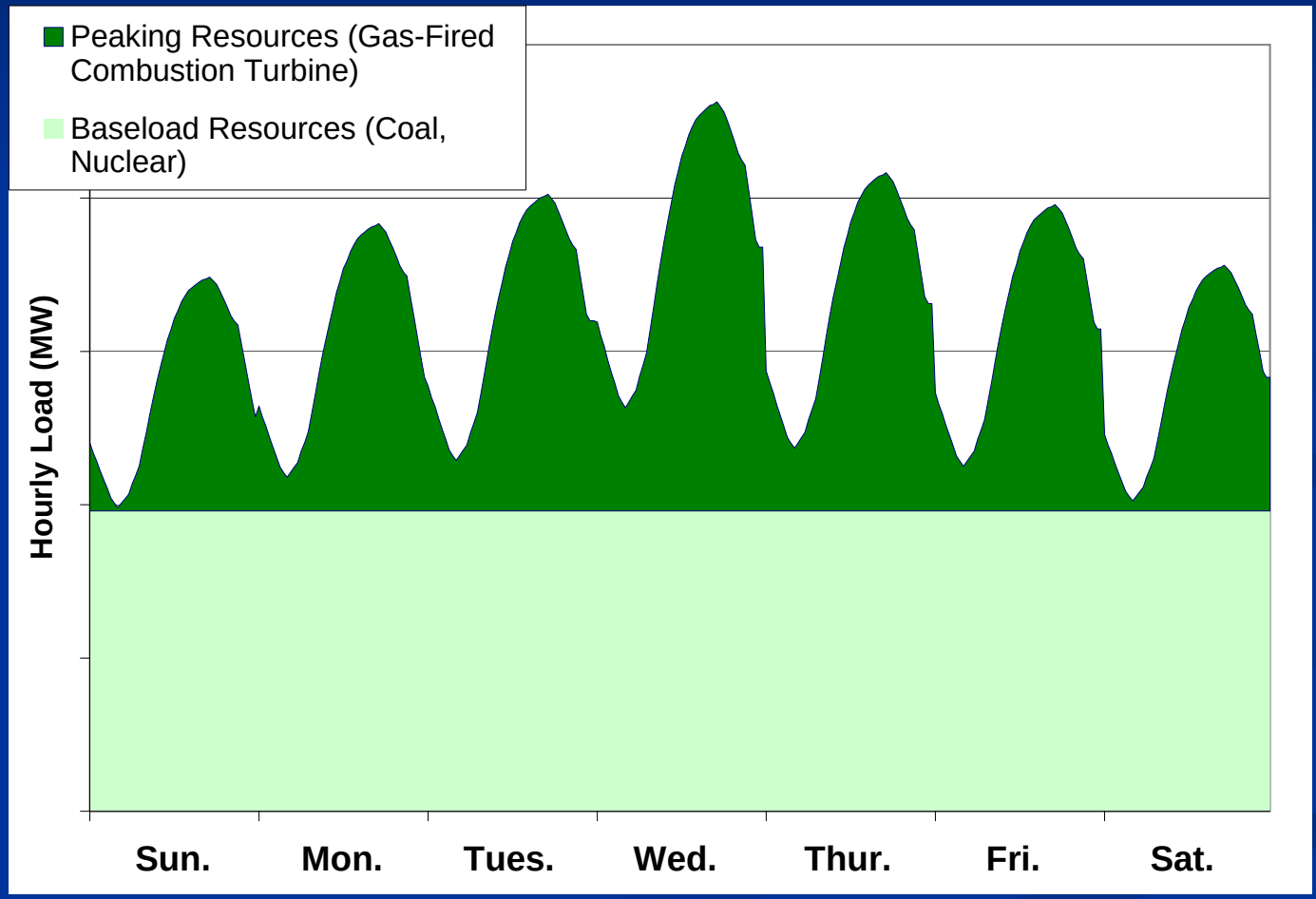
Reliability/Needs Determination

- There is no rule or single standard in use across the country to determine resource needs
- In thermal systems, utilities plan to meet peak loads
  - E.g., forecasted peak load plus 15% reserve margin
- Hydro systems with lots of peaking capacity can plan on an energy basis
  - E.g., sufficient energy to meet annual needs under "critical water" conditions
- Neighboring systems may be able to lend a hand
- Various processes are going on at NWPCC, WECC, NERC and FERC to develop "resource adequacy" standards

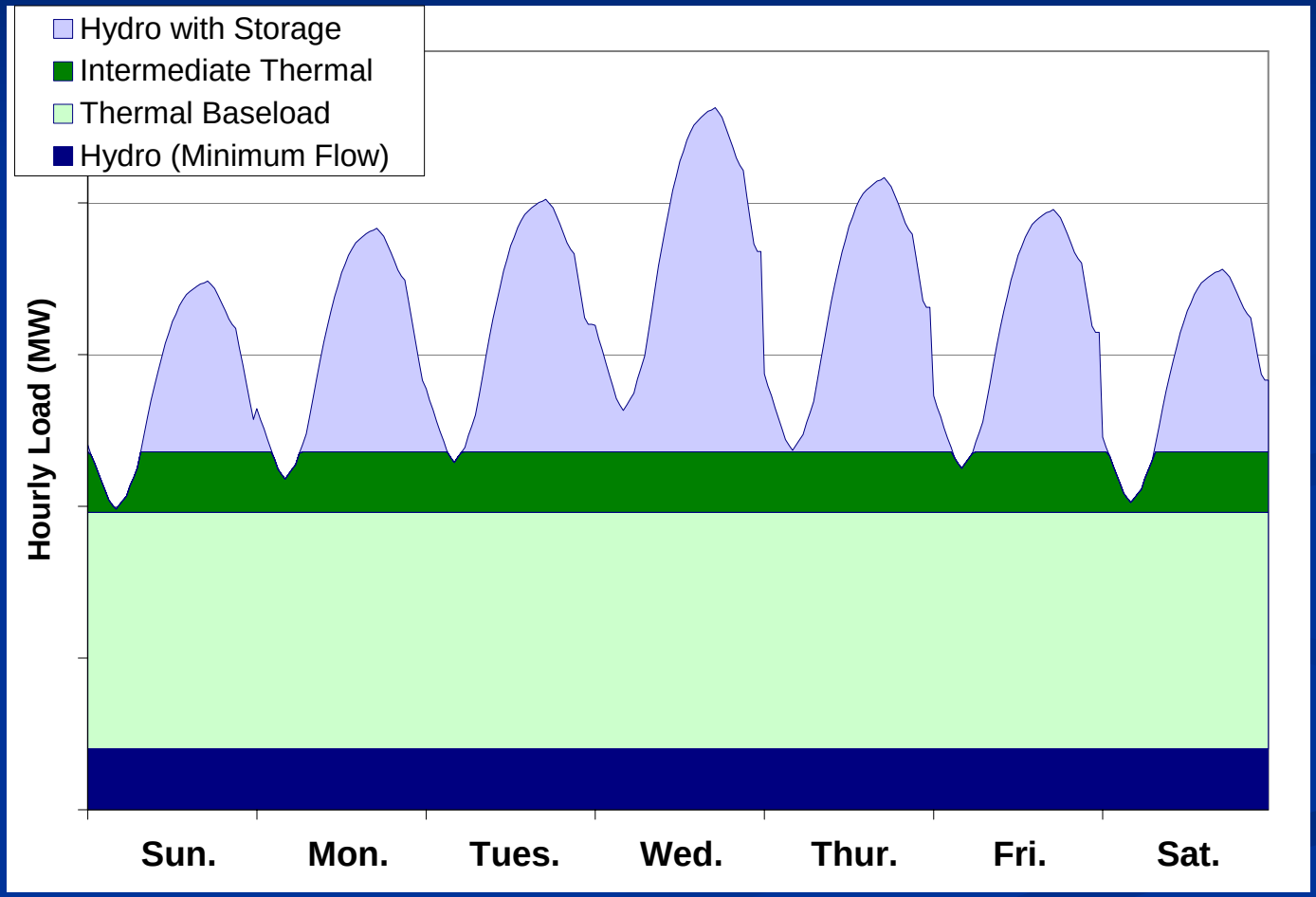
Risk and Resource Diversity

- Gas-fired resources are most variable
  - Natural gas prices are highly volatile
  - 20% of cost is fixed, 80% of cost is variable
- Coal-fired resources are less variable
  - Coal prices are less volatile than gas, but rail transportation requires volatile diesel fuel
  - 80% of cost is fixed, 20% is variable
- Conservation and renewable resources have no fuel price volatility, but may have availability/timing issues
- A diversified resource portfolio will be less risky than a portfolio that relies heavily on a particular resource

Meeting Daily Electric Loads with an All-thermal System



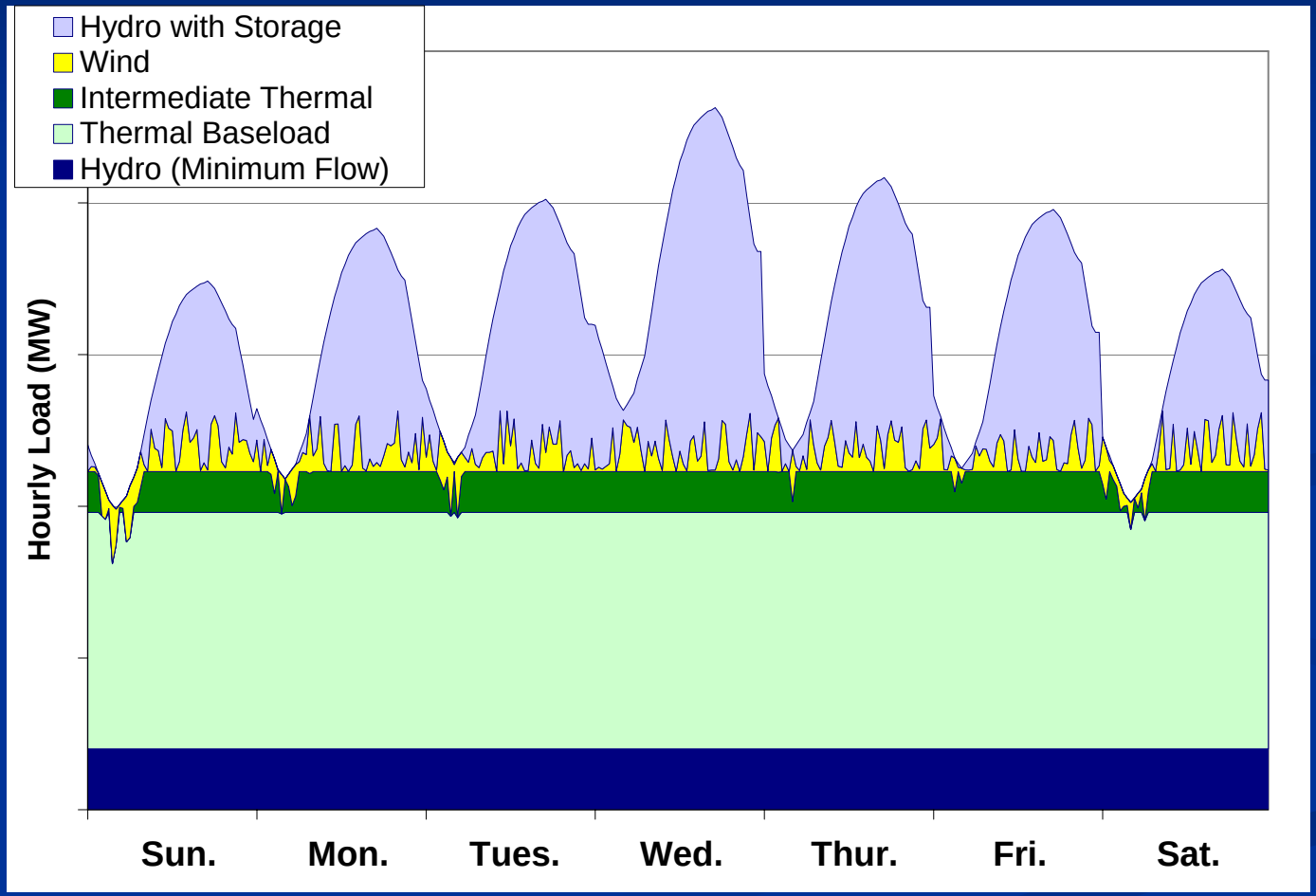
Meeting Daily Electric Loads with a Mixed Hydro-Thermal System



Value of Intermittent Resources

- Intermittent resources generate energy only when the resource is available
- Wind fluctuates from hour to hour and even from minute to minute
  - "Integration" costs additional $5-15/MWh

Meeting Daily Electric Loads with Hydro-Thermal Resources and Wind



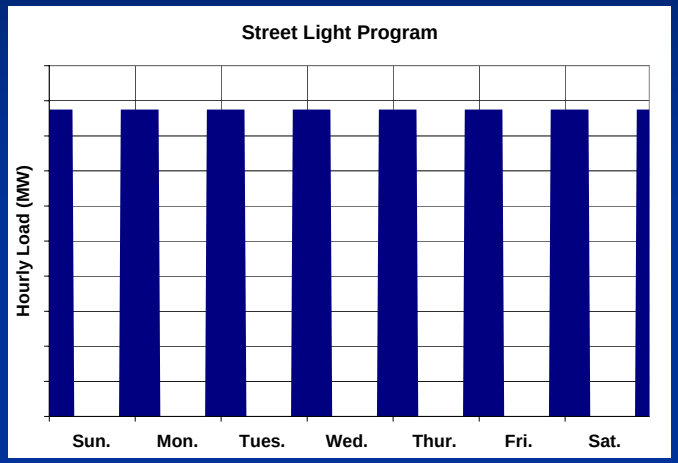
Characteristics of Different Resource Types

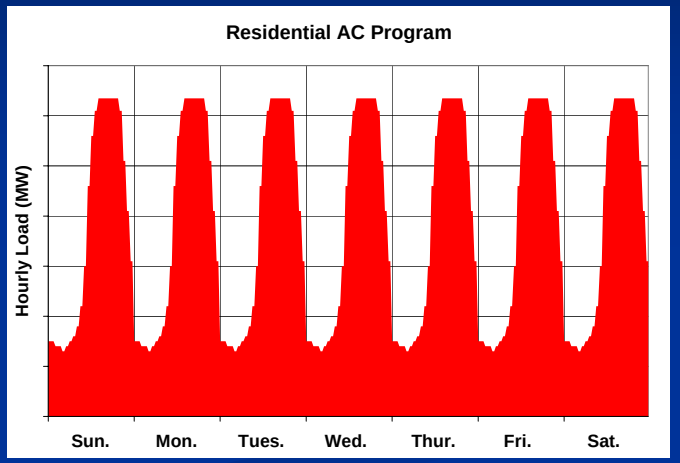
Resource Type	Gas Combined Cycle	Coal	Nuclear	Wind	Geothermal	Energy Efficiency
Cost	Med-High Depending on Gas Prices	Low	High	High	Site-specific	Measure-specific
Fuel Price Variability	High	Medium	Low	Low	Low	Low
Operations	Flexible	Baseload	Baseload	Intermittent	Baseload	Measure-specific
Environmental Impact	Medium	High	High	Low	Medium	Low or Net positive
Jobs and Tax Base	Small	Medium	Large	Medium	Medium	Large

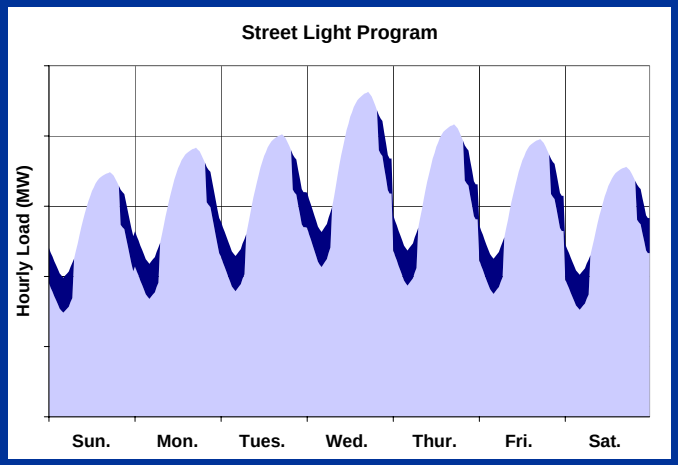
Conservation, Energy Efficiency and Demand Side Management

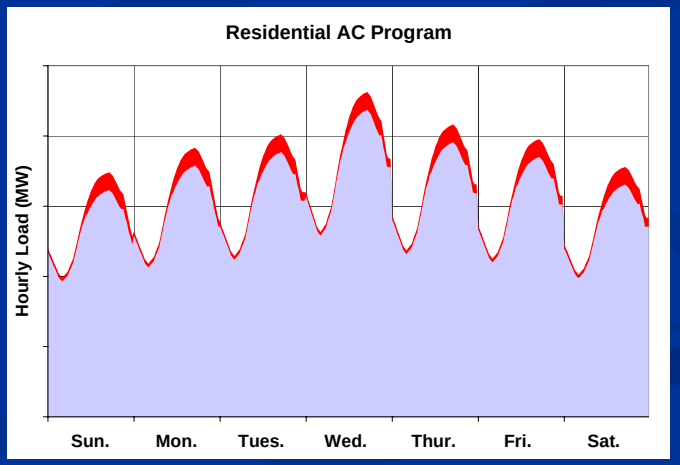
- Another way to meet customer electricity needs
- Can be a long-term persistent "resource"
- Popular in jurisdictions with high retail rates or strong environmental concerns
- Could have negative rate or shareholder impacts

Value of DSM Programs Depends on Timing of Savings

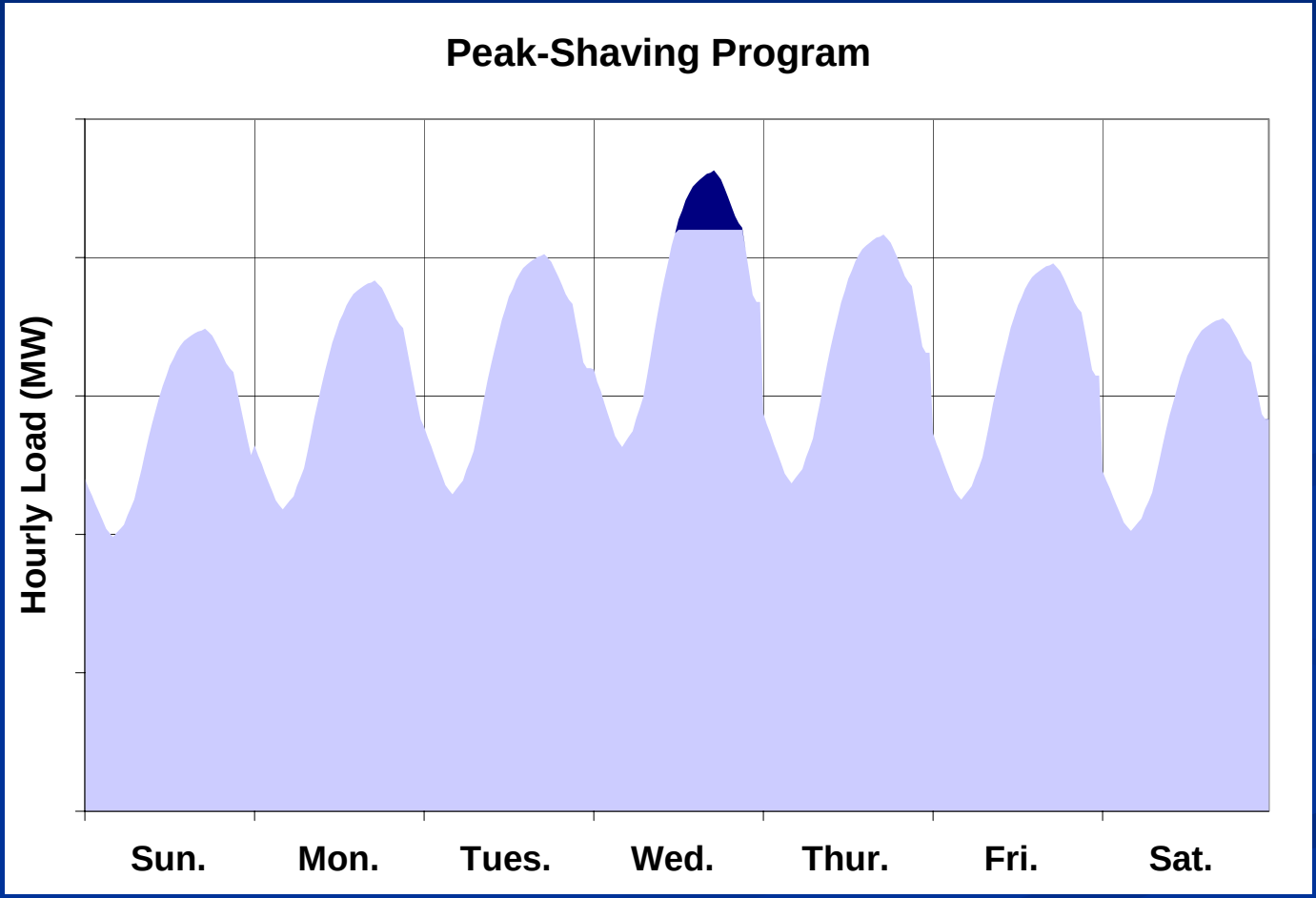








"Peak-Shaving" Programs Aimed at Reducing Peak Demand



Demand-Side Momentum

- High fuel costs
- Energy crises of the recent past
- California $2 billion commitment (3 yrs)
- NYSERDA $874 million Energy Smart program (5 yrs)
- Avista increased 2005 IRP by 50% over 2003
- July 31st roll out of the National Action Plan for Energy Efficiency
  - Endorsed by more than 20 state commissions

DSM Comes in Many Flavors

- Different types of DSM could be promoted, depending upon value objectives.
- PacifiCorp DSM types
  1: Fully dispatchable or scheduled firm
  2: Energy efficiency
  3: Price responsive
  4: Behavioral changes

Energy Efficiency Delivery Mechanisms

- Market Transformation
- Codes and Standards
- Low interest rate loans
- On-bill financing
- Direct install and incentives

- Delivery Agents (IOU, NYSERDA, IDWR)

DSM – Other Issues

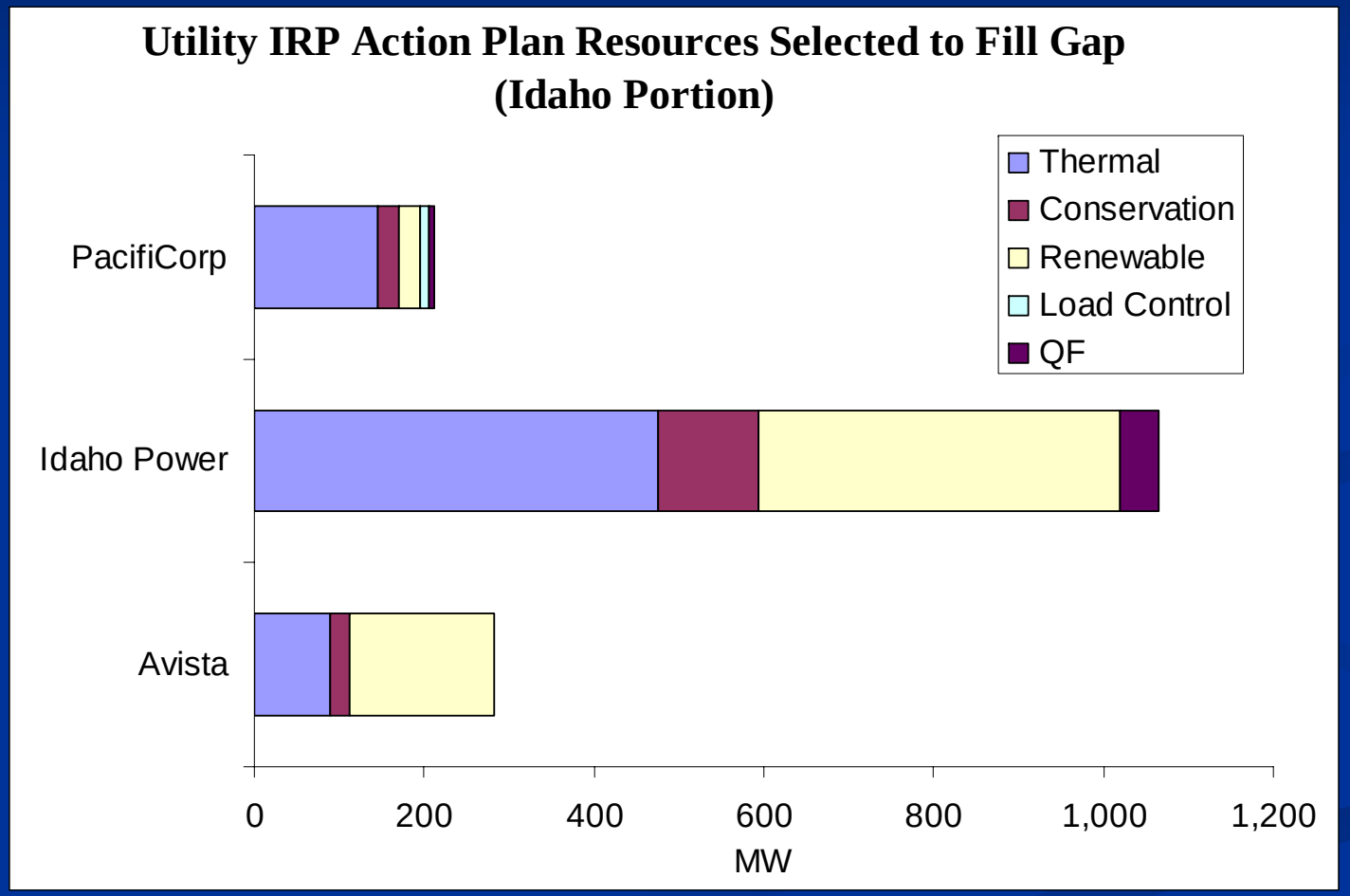
- Some jurisdictions provide shareholder incentives to spur implementation.
- Benefits accrue in the future for investments funded today.
- Revenue – Sales decoupling can reduce utility disincentive to implement EE.
- Even EE that is "cost effective" can result in customer rate increases.
  - Fewer sales for spreading costs
  - Lost returns from reduced sales
  - Average customer BILLS go down, but the RATE increases

Idaho Resource Needs over the Next Ten Years

- Idaho load is growing relatively rapidly, particularly peak demand in southern Idaho
- Total resource gap of ~**1200 MW** on peak in 10 years
- Wide range of resources in play, including added transmission and even nuclear in 2022

	Annual Load Growth		MW short in 10 years (for	Resources to Fill Gap (MW) for Idaho				
	Energy	Peak		Thermal	Conservation	Renewable	Load Control	QF
Avista	2.1%	2.1%	180	88	24	170	-	-
Idaho Power	2.3%	2.5%	892	475	118	428	-	46
PacifiCorp	2.3%	3.0%	156	146	25	25	10	6

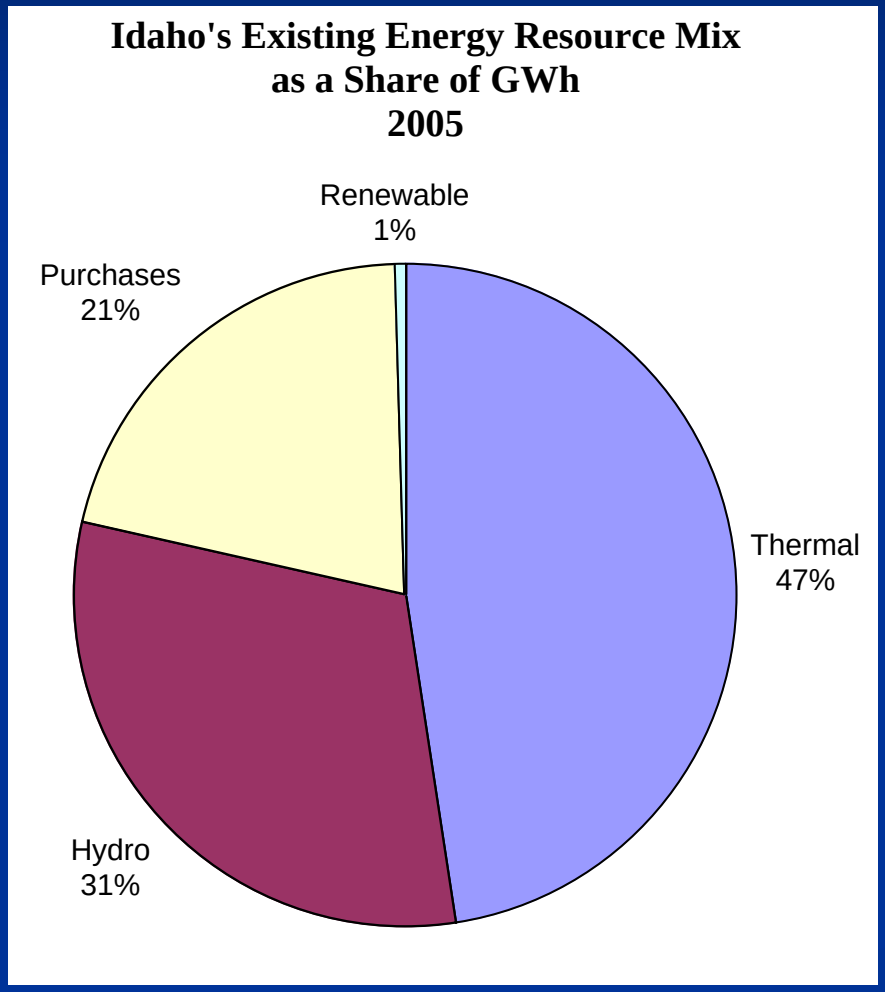
New Resources in Utility IRPs

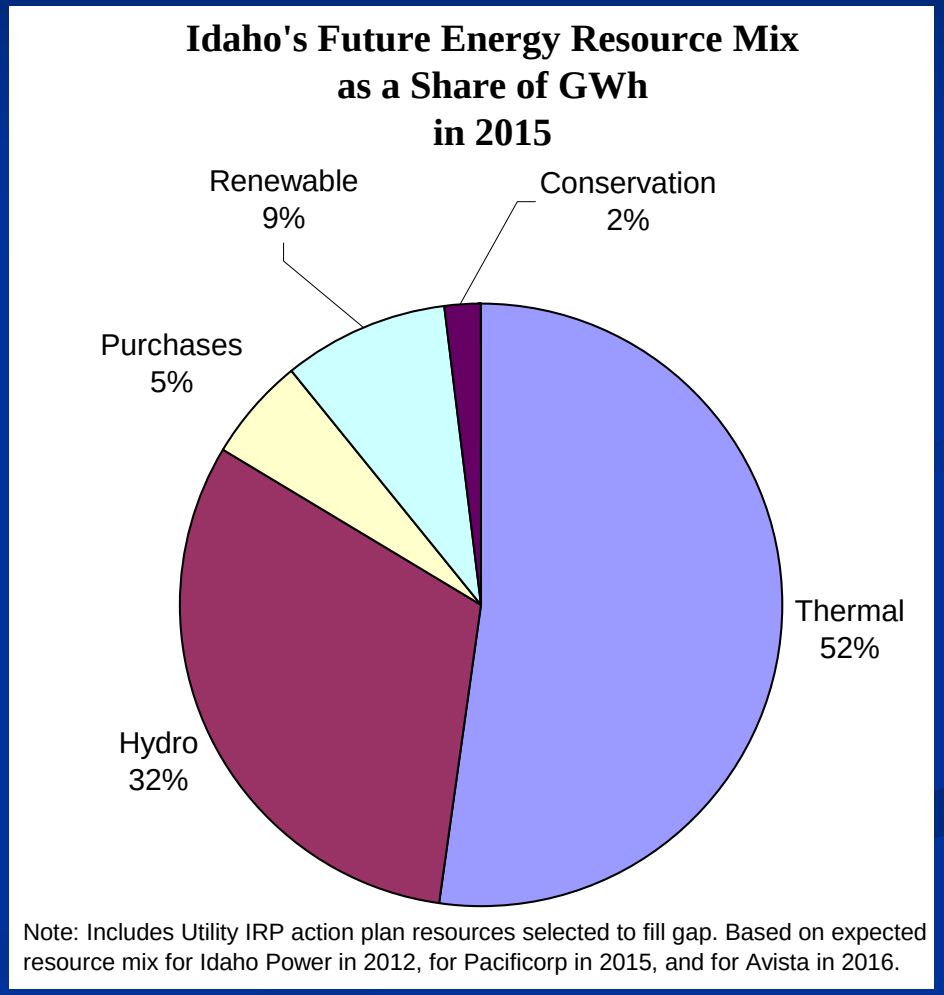


Energy Efficiency in Idaho Utility Resource Plans

- Avista:
  - Conservation identified in IRP: 24 aMW
  - Share of Power Council target: 55 aMW
- Idaho Power:
  - Conservation identified in IRP: 48 aMW
  - Share of Power Council target: 242 aMW
- PacifiCorp:
  - Conservation identified in IRP: 25 aMW
  - Share of Power Council target: 60 aMW

Idaho Fuel Mix Now and in 10 years





Planned Renewables Investments Over the Next 10 years

- Under utility preferred resource strategies, approximately 9% of Idaho's load would served by new renewables in 2015
- Total investment of approximately 260 aMW
- This is composed of the following:
  - Avista: 13% of retail load by 2016
  - Idaho Power: 9% of retail load by 2012
  - Pacificorp: 3% of retail load by 2015

Independent Power Producers

- Independent power producers (IPPs) gained a foothold with passage of Public Utility Regulatory Policy Act (PURPA) in 1978
- Momentum accelerated after EPACT 92 and FERC Order 888 (1996)
- Today, IPPs generate around 35% of U.S. power
- Another possible source of supply for Idaho utilities

Merchant vs. Utility Facilities

Utility Facilities

- Developed under state regulation in conjunction with obligation to serve
- PUC reviews prudency and sets returns
- Risks and returns shared among utility shareholders and ratepayers

Merchant Facilities

- No obligations other than those spelled out in contract
- Physical output is consumed locally, but economic benefits may accrue elsewhere
- Risks and returns borne by merchant shareholders

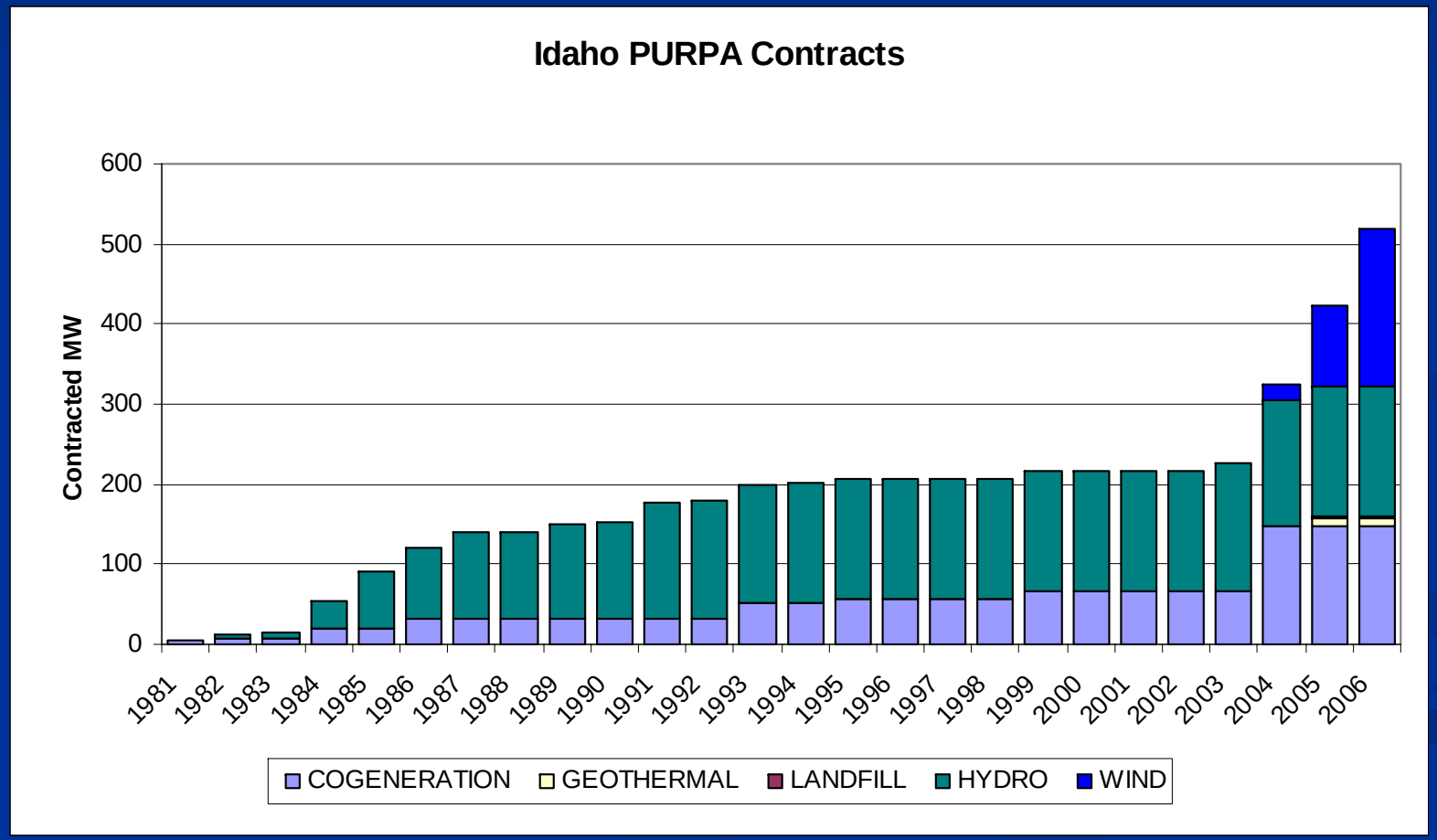
PURPA and QFs

- PURPA passed by Congress in 1978 to:
  - Lessen dependence on foreign gas and oil
  - Alleviate inflation
  - Improve the balance of payments
  - Preserve nation's nonrenewable resources
- Utilities must buy power from Qualifying Facilities (QFs) at their "avoided costs"
- QFs include cogeneration and small renewables
- Rates, terms, and conditions set by state commissions

PURPA In Idaho

- Idaho was one of the first states to adopt PURPA and has been one of the most QF-friendly
- Rates, terms, and conditions for QF's have changed several times over the past 25 years
- The fuel types of QFs have varied over the past 25 years
- Current PURPA rates around $60/MWh
- Utilities would prefer to acquire renewables through IRPs rather than PURPA

Cumulative PURPA Contracts by Resource Type



Transmission

- FERC "Open Access" policies have enabled competitive generation market but have made transmission planning more challenging
  - Standards of conduct limit contact between generation and transmission staff
- Transmission is still getting built to serve load pockets, but not for interregional transfers
- Northwest tried for 10 years to form regional transmission operator, but could not overcome challenge of including BPA

Transmission Planning Efforts in the WECC

- Since 2000, western states and utilities have co-sponsored transmission planning efforts
- A variety of plans for long-distance lines have been drawn up and are seeking support
  - "Frontier Line" from WY to CA
  - "Northern Lights" from Fort McMurray to Mid-C or AZ
  - "Navajo" from Four Corners to Palo Verde
  - Undersea cable from Northwest to Bay Area
- No major facilities committed to yet

Conservation Subcommittee Issues

- Are utilities and other entities achieving enough DSM in Idaho?
- Are penalties or incentives needed to spur more implementation?
- Are parties implementing the right mix of DSM (in the near term and over the long term)?
- To what extent should environmental costs and benefits factor into DSM decisions?

What is the Do-Nothing Case?

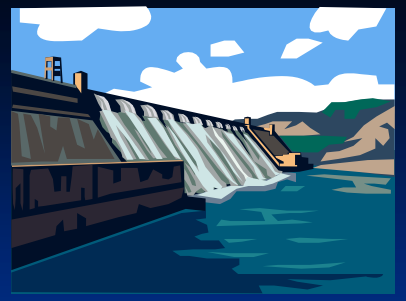
- The lights stay on!
- Utilities invest in a mix of thermal resources, renewables and conservation, with most of the new energy coming from thermal resources
- Unclear whether thermal resources will be built in-state
- High cost of new resources leads to rate increases over time
- Idaho utilities acquire less conservation than estimated share of Power Council target
- PURPA issues played out in front of PUC

What are the Leverage Points?

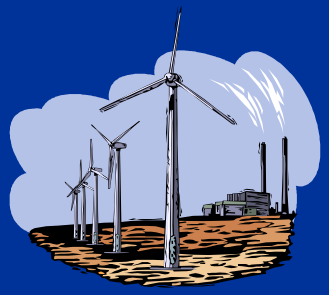
- PUC decisions:
  - Certificate of Public Convenience and Necessity (CPCN)
  - Prudency review and retail rates
  - Terms and conditions for QFs
  - Treatment of utility revenues lost due to conservation
- Utility resource acquisition
- Use of electricity in state facilities
- Taxation of generation facilities
- Conservation and low-income assistance through appropriations process

Where Does Idaho Sit Relative to Other States?

- Idaho electricity rates are lower than other states
- Idaho uses more electricity than other states
- Idaho does more for QFs than other states
- Idaho will likely have less renewables than states with portfolio standards, but more than states without



Energy Facility Siting



Energy Facility Siting

- Energy facilities have a large "footprint"
- Pipelines and transmission lines cross multiple jurisdictions
- Most states have some form of energy facility siting authority
- EPACT 2005 gets feds involved in facility siting through national corridors initiative

Energy Facility Siting: Current Process

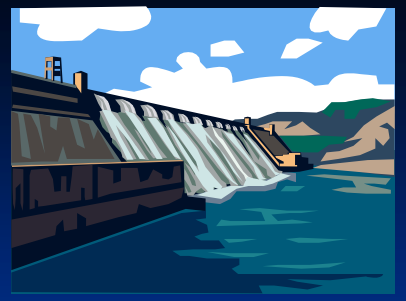
- Land-use decisions made by local jurisdictions
- State agencies conduct separate permitting processes (air emissions, wastewater discharge, occupational health & safety, etc.)
- Utility-owned facilities: IPUC issues Certificate of Pubic Convenience and Necessity (CPCN)
- Non-utility-owned facilities: No CPCN

Energy Facility Siting: Many (But Not All) Other States

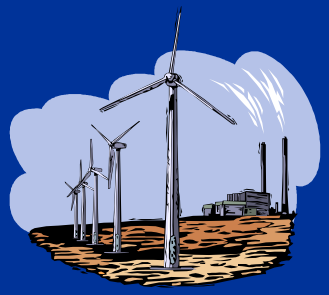
- Separate state government agency
  - Permanent commission
  - Staffed by state employees
  - Local officials sometimes included on commission
- "One-stop shopping":
  - Siting agency holds all the hearings, conducts environmental impact statement, issues permits
  - Must follow state agency regulations and local ordinances
- Limited or no need standard for merchant facilities

Key Points for Siting Subcommittee

- What is the do-nothing case?
  - Continued local siting and strong likelihood of another train wreck
- Where does the state have leverage?
  - State has wide latitude to establish siting processes
  - Most, but not all, other states have state-level energy facility siting



Natural Gas



Natural Gas

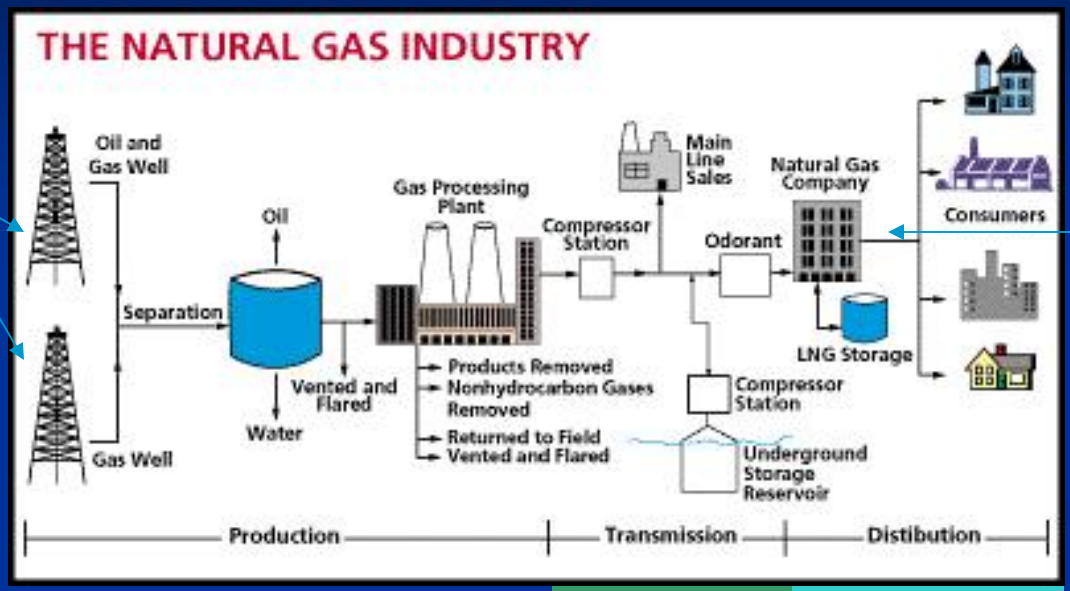
- Natural Gas and Electricity
- From supply basin to end use customer
  - Supply – Transport – Distribution – Consumption
- Supply and Demand Outlook
- Leverage Points for Idaho

Natural Gas and Electricity

- Prices less volatile than electricity due to availability of storage
  - Except around hurricanes
- Historically managed on a daily rather than hourly basis
- Electric generation to account for over 54% of natural gas demand growth in PNW
- Close relationship between wholesale prices of gas and electricity

Who are the Players?

"Upstream" segments: exploration, production



"Downstream: LDC systems

FERC | PUC

Producers Suppliers

Marketers Traders

Interstate Pipelines

Utility (LCD)

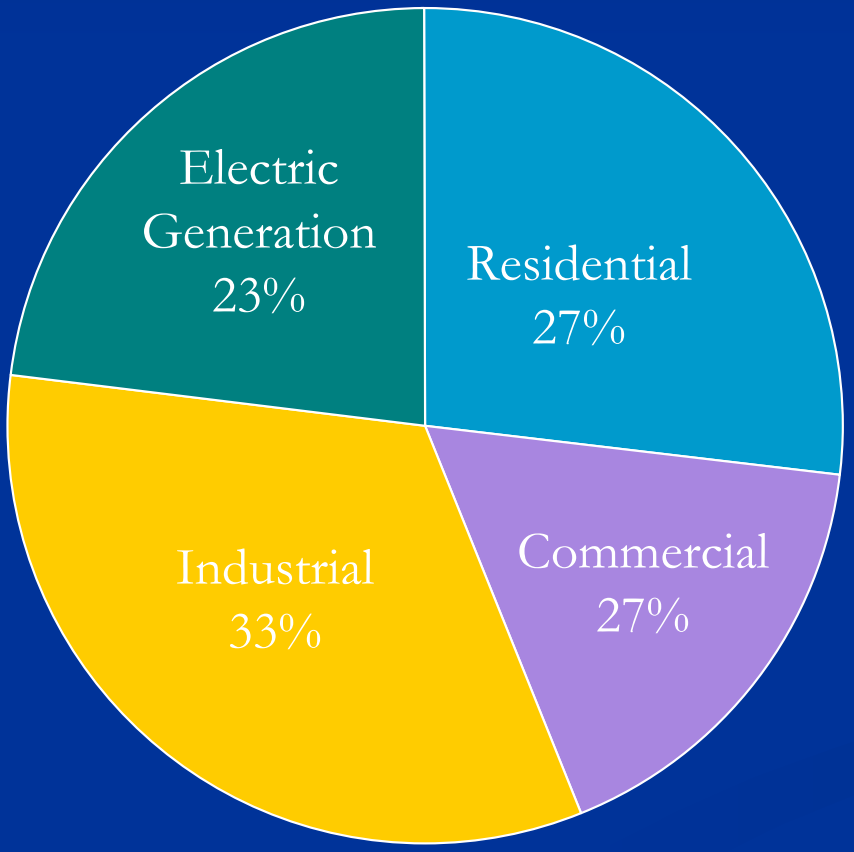
Storage

End Use Customers

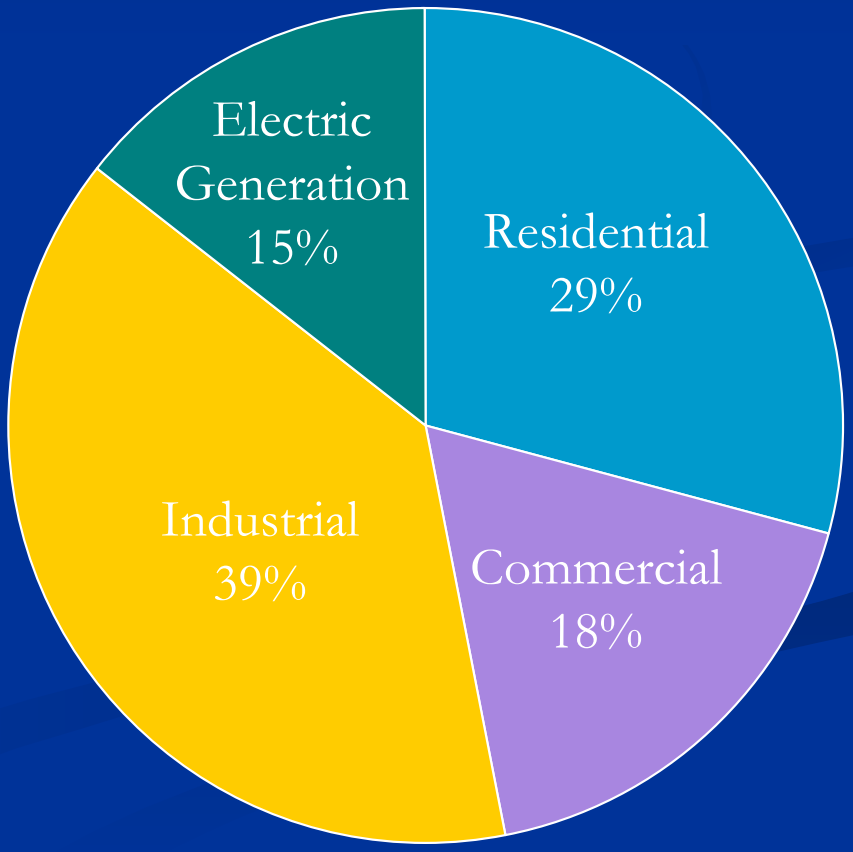
Idaho Natural Gas Utilities

Gas Demand by Sector

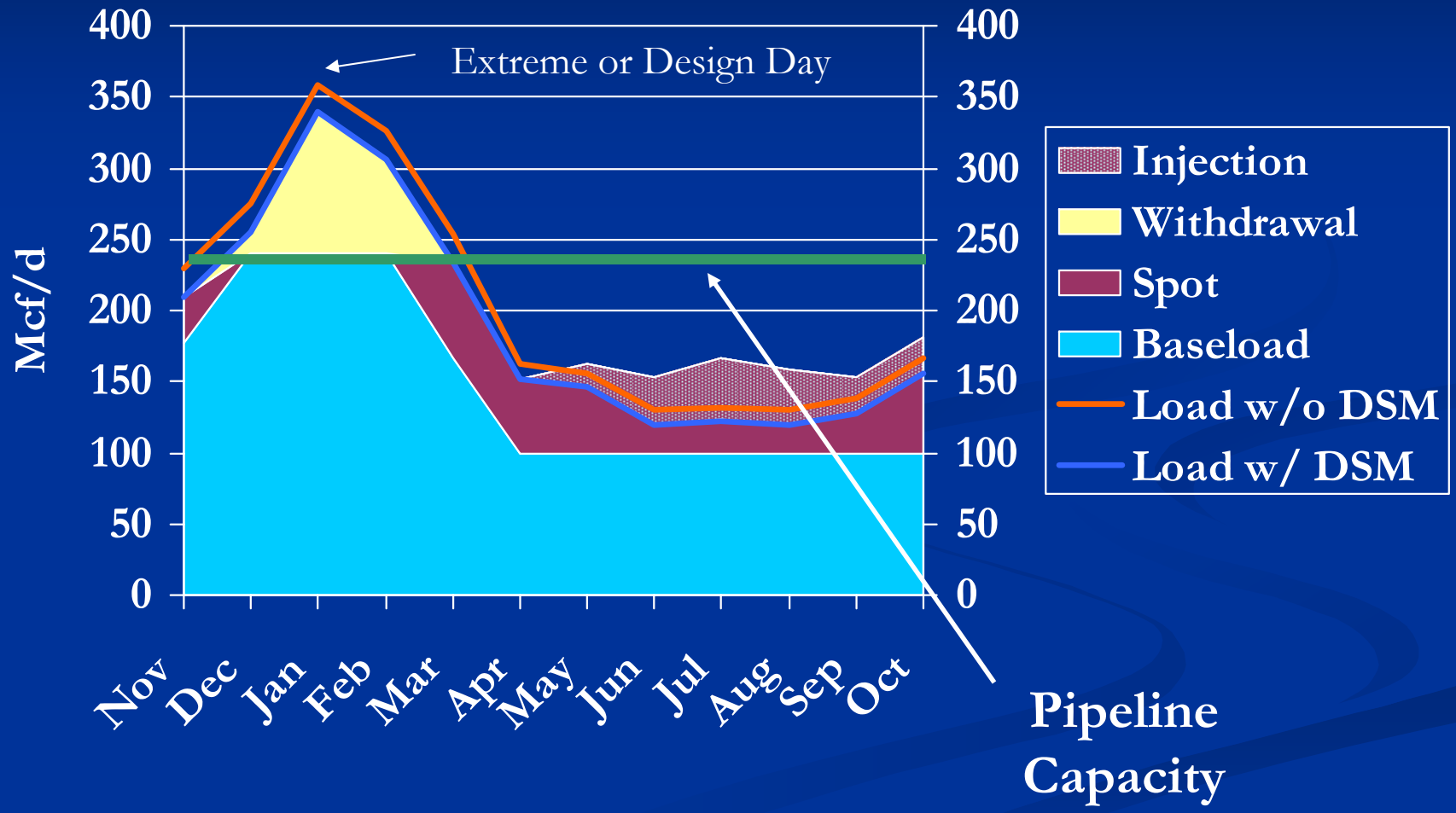
Pacific Northwest



Idaho



Serving Natural Gas Load



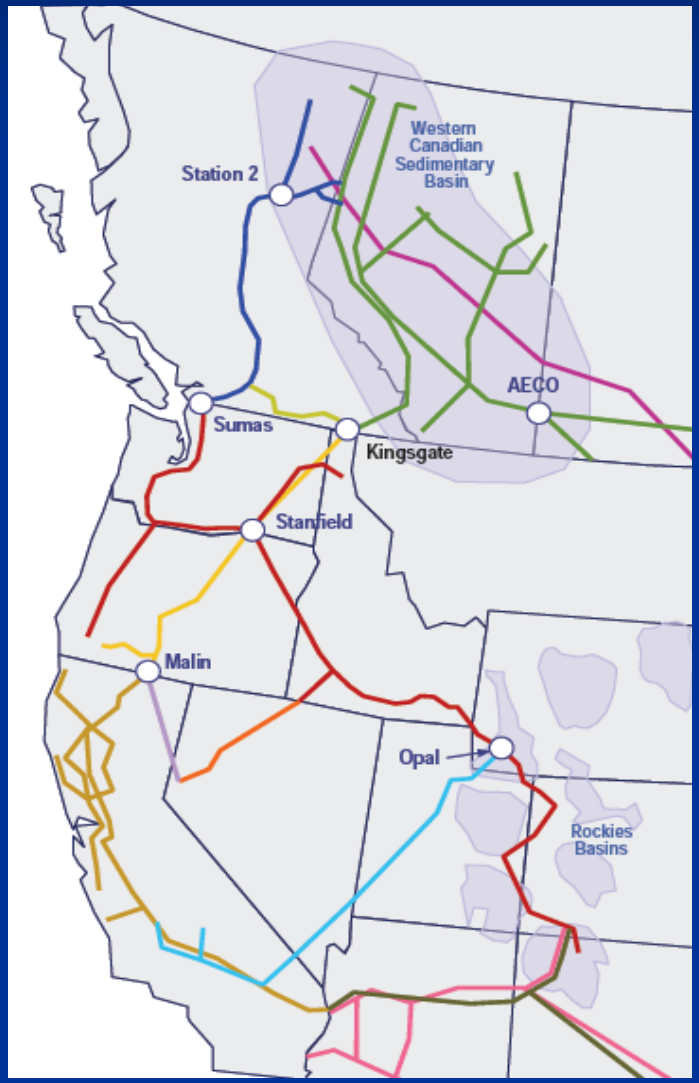
State Regulation of Gas Utilities

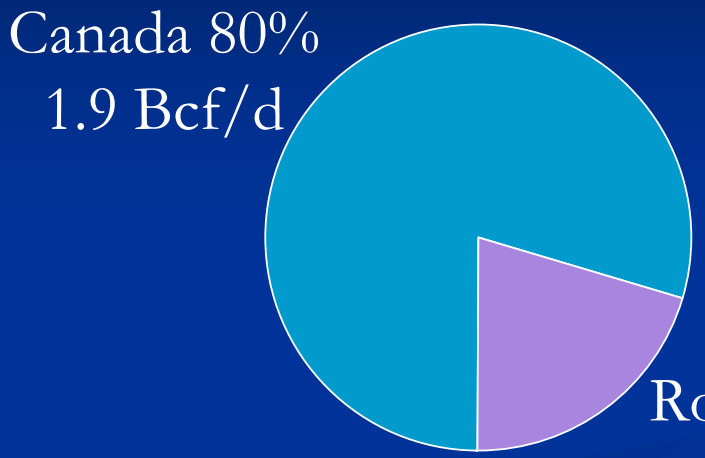
- Gas commodity purchased on the open market and passed through (utility makes no margin)
- Large users buy their own gas and pay utility for transportation service
- Some states allow choice for smaller customers
- Resource plans mostly weigh pipe against storage for meeting design day demand
- "Decoupling" of revenues from flows helps solve conservation incentive problem

FERC Regulation

- FERC Order 636 in 1992 led to "unbundling" of pipelines from supply
- Secondary market for "released" capacity
- Encourages supply basin competition
- Pipeline rates regulated under "just and reasonable" standard
- "Let the market decide" pipeline expansions (subscription)

Idaho Natural Gas Supply





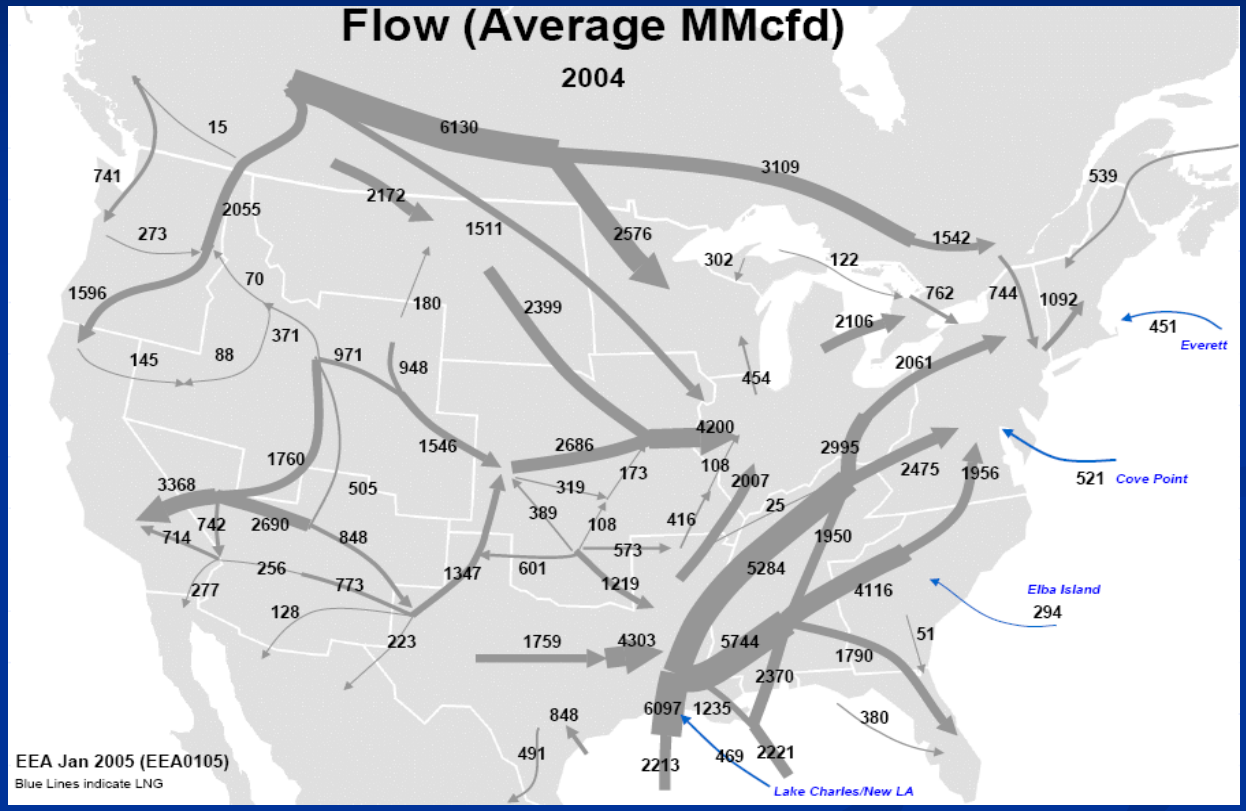
- Canadian and US markets well integrated
- Utilities purchase supply on open market

Natural Gas Supply Issues

- High, volatile prices expected to continue
- Increasing competition for western gas
  - Demand continues to grow
  - Big increases in gas-fired generation and oil sands
  - Expansion of pipelines eastbound out of Rockies
- Possibility of new supplies from Arctic "Frontier Gas" and LNG

Natural Gas Flows

- Canadian and Rockies gas wants to flow East for better prices
- Canadian and US "conventional" gas declining
- Must be replaced by new sources: coalbed methane, Frontier gas, LNG

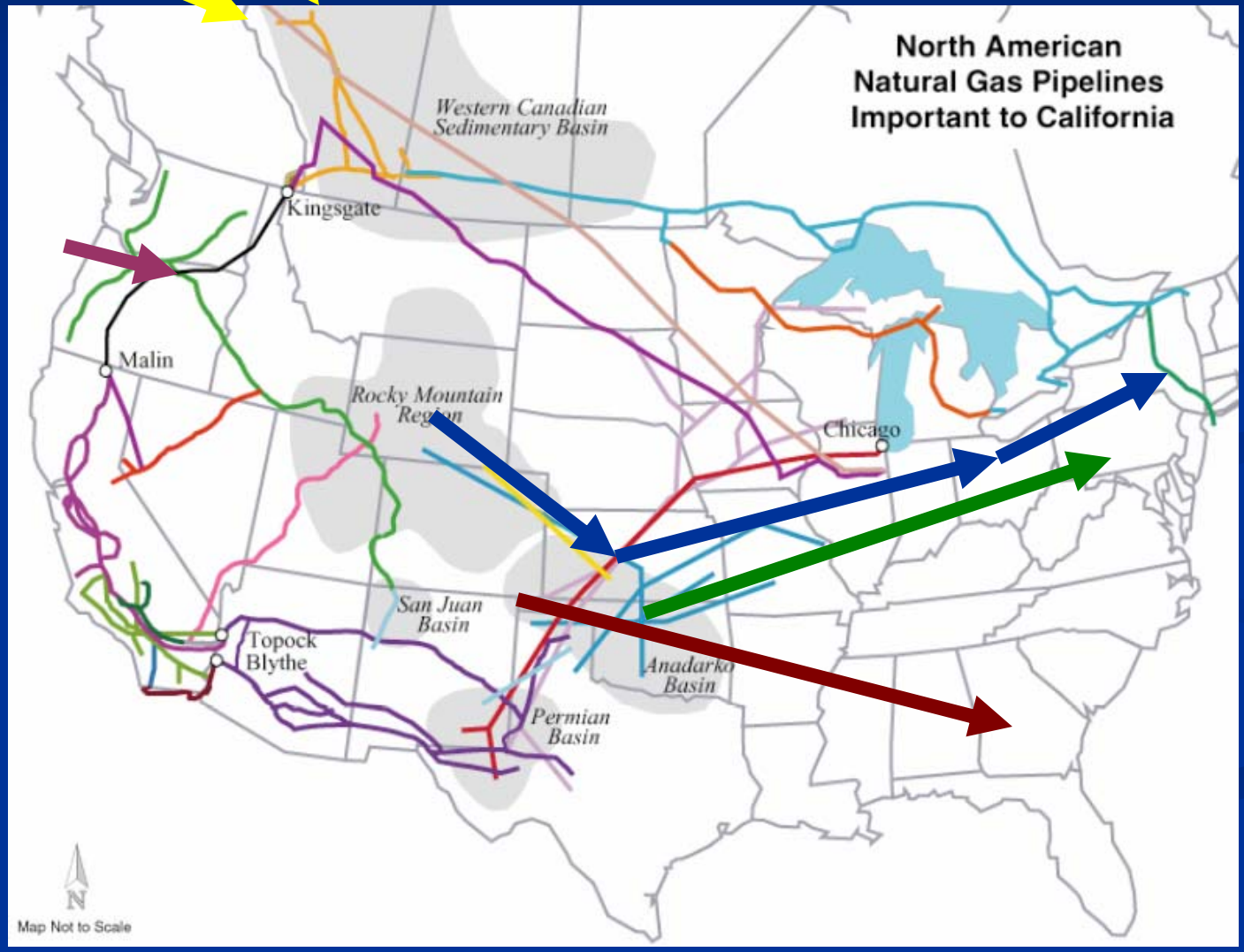


Pipeline Expansions

Alaska Highway
6.0 Bcf/d

Mackenzie Valley
1.9 Bcf/d

Pacific Connector
1.0 Bcf/d



Rockies Express
2.0 Bcf/d

Mid-Continent Crossing
1.75 Bcf/d

Continental Connector
1.0 Bcf/d

LNG Costs




EXPLORATION & PRODUCTION	LIQUEFACTION	SHIPPING	REGASIFICATION & STORAGE
$0.5-$1.0/MMBtu	$0.8-$1.20/MMBtu	$0.4-$1.0/MMBtu	$0.3-$0.5/MMBtu

$2.50 – 3.70/MMBtu

Center for Energy Economics

State Natural Gas Programs

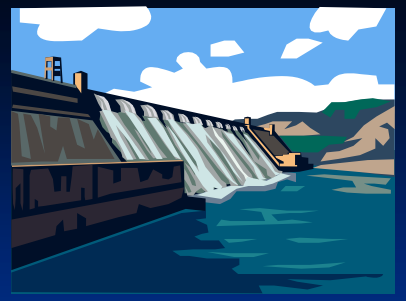
	ID	CA	OR	WA	UT	CO	MO	WY
Decoupling		✓	✓	✓				
System Benefits Charge	✓	✓		✓		✓		
Public Purpose Org.			✓					
Customer Choice		✓				✓	✓	✓
Advanced Metering		✓	✓					
Building Codes	✓	✓	✓		✓	✓		

What is the Do-Nothing Case?

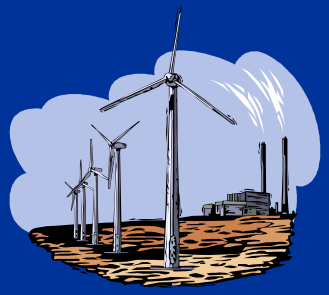
- Continue to send lots of dollars to out-of-state natural gas suppliers
- Tariff rider helps to pay for conservation but utilities still lose revenue

Where are the Leverage Points?

- PUC policies:
  - Utility procurement (spot vs. forward purchases)
  - Customer choice
  - Decoupling
  - Tariff rider for conservation
  - Promote direct use of natural gas for water and space heating
- Use of natural gas in state facilities



Petroleum & Transportation Fuels

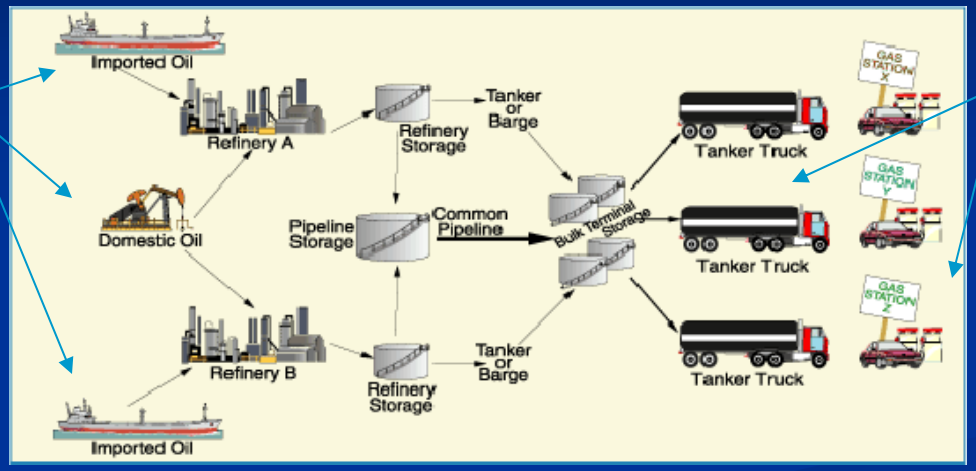


Petroleum

- Petroleum product prices are tied closely to the global market for crude oil
- All segments of the petroleum industry are competitive, but increasingly concentrated
- Public involvement in infrastructure planning is limited to facility siting
- State has few leverage points

Petroleum Industry

"Upstream" segments: exploration, production

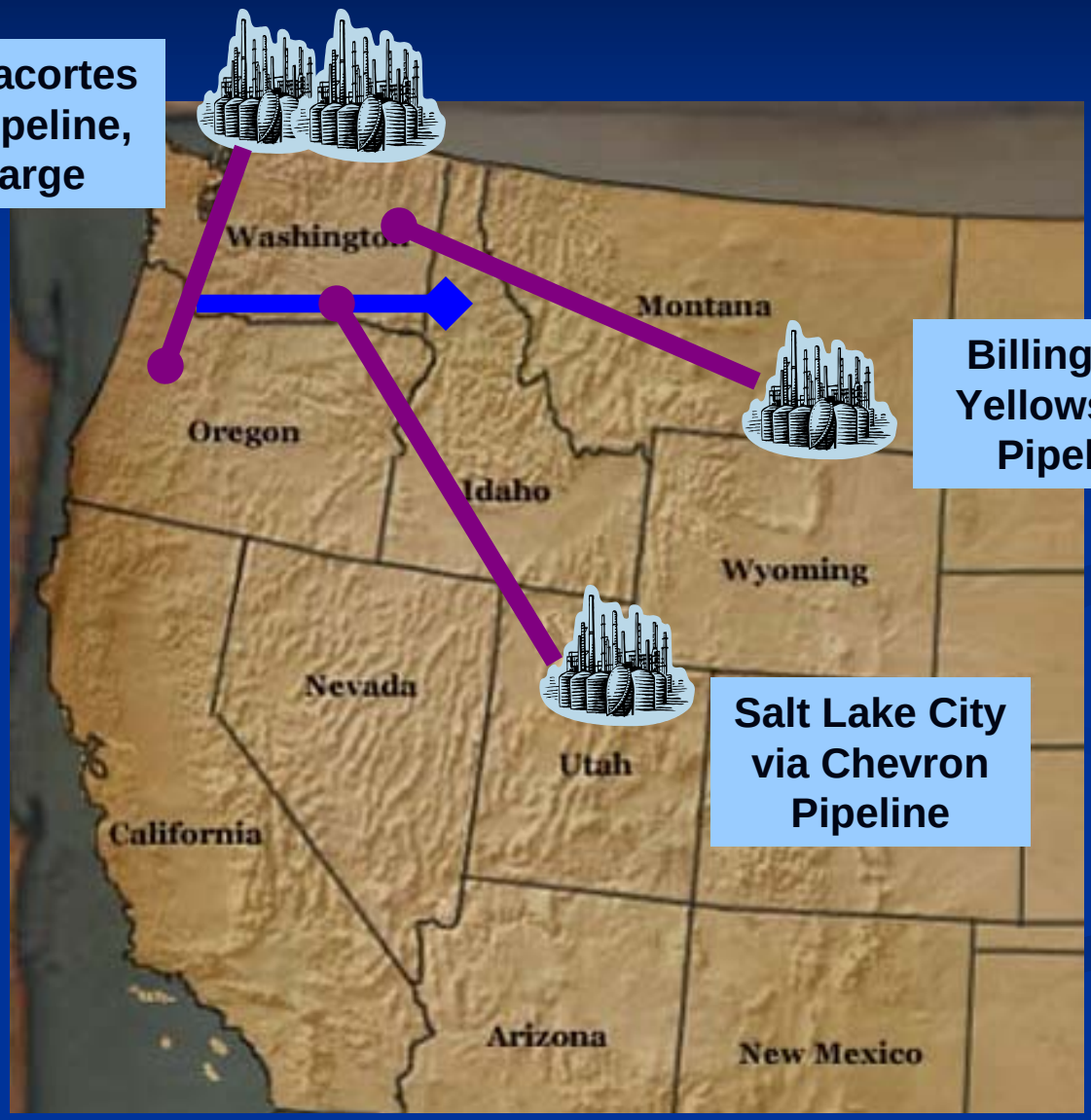


"Downstream" segments: distribution, service stations

- Upstream investments based on conditions in global crude oil market
- Downstream investments based on conditions in local markets
- Oil industry is competitive and earns speculative returns

Sources of Idaho Petroleum Products

Ferndale & Anacortes via Olympic Pipeline, Tidewater Barge



Billings via Yellowstone Pipeline

Salt Lake City via Chevron Pipeline

Vertical Integration of Petroleum Industry

- "Majors" integrate production, refining and distribution
- Variety of wholesale – retail relationships

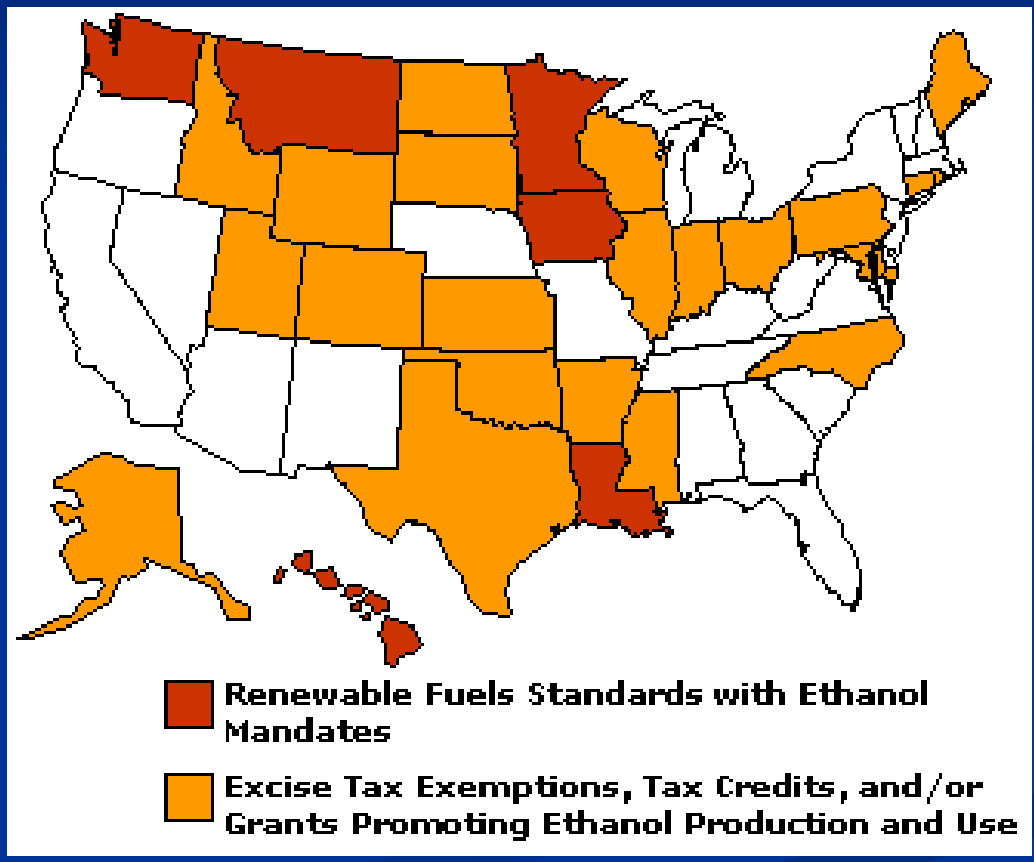
Branding	Station Ownership	Management Control	Wholesale Distribution
Branded	Refiner Owned	Pricing	Direct supplied (refiner)
Unbranded	Leasee-dealer	Supply contract	Self supplied (Rack)
	Independent	Incentives & Discounts	Independent (Jobber)

Leverage Points for Transportation Fuels Subcommittee

- Biodiesel & ethanol production
- Biodiesel & ethanol demand
- Fleet regulations or incentives
- Home heating oil assistance (mainly NE states)
- Gasoline regulation
  - Limits on station ownership
  - Regulate retail margins
  - Open access to wholesale supply

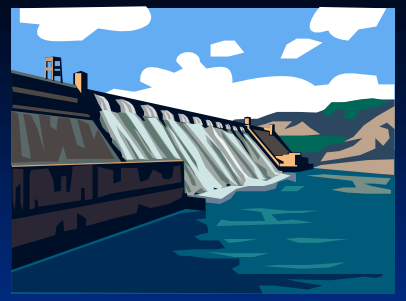
Ethanol & Biodiesel Programs

- 22 States provide ethanol production and use incentives
  - Tax incentives
  - State fleet purchases
- 6 states have renewable fuels standards
  - 2-10%
  - Price and production targets

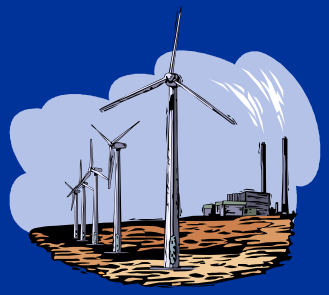


Summary on Petroleum/ Transportation Fuels

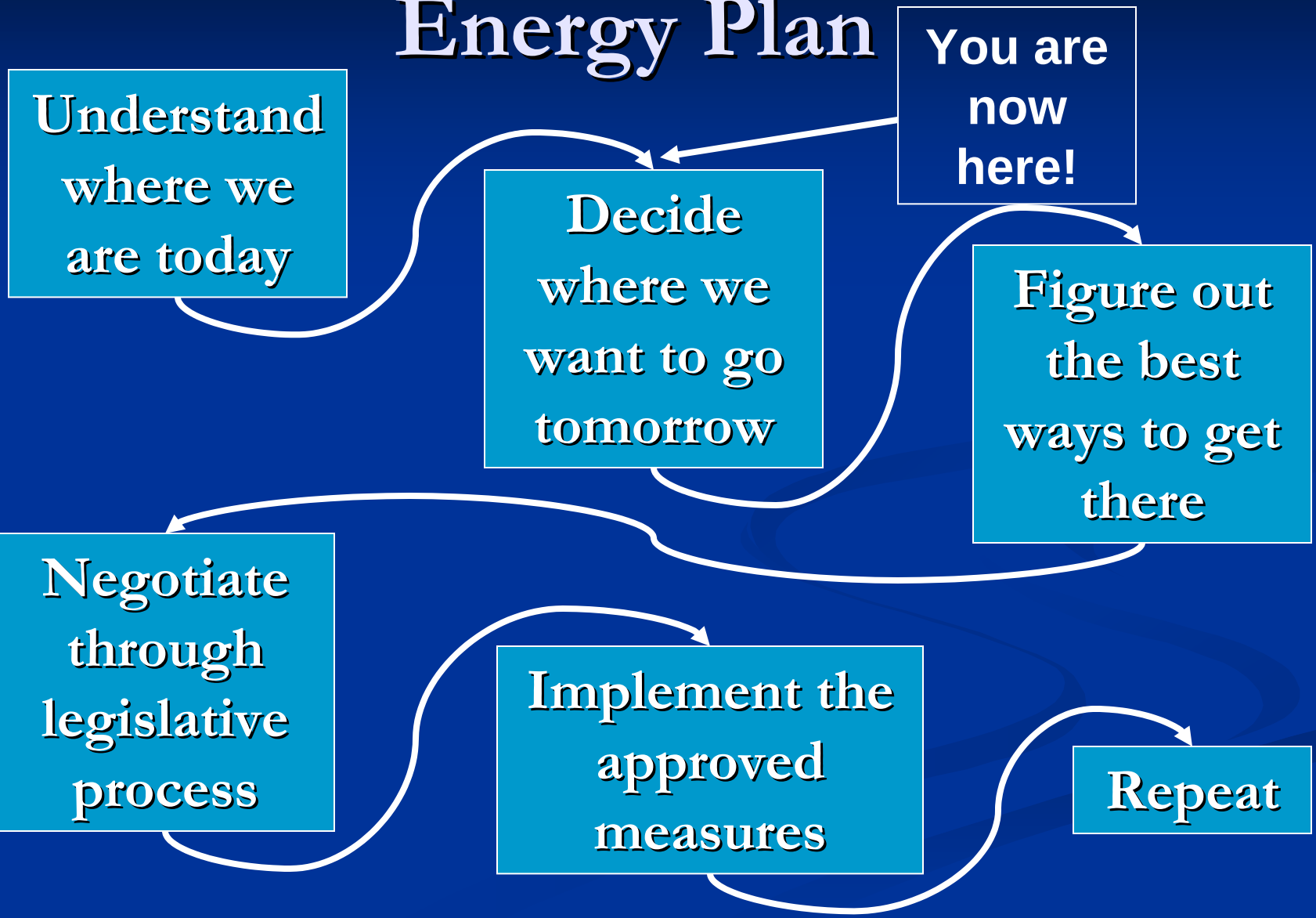
- What is the do-nothing case?
  - Continue to send lots of dollars to out of state oil companies
- Where does the state have leverage?
  - Promoting alternative fuels, state fleets
- Where does Idaho sit relative to other states?
  - Idaho is more vulnerable to oil price shocks because it (a) has no oil industry and (b) uses more oil per capita than other states



Concluding Thoughts



Roadmap for Developing the Energy Plan



Energy Policy Case Study: Oregon vs. Wyoming

Oregon

- Very little conventional energy resources
- Policy principles:
  - Maximize conservation & efficiency
  - Support renewables: hydro, wind, biomass, biofuels, solar, geothermal, ocean wave
  - Promote alternative transportation fuels
- Oregon Energy Trust created to administer public benefits fund

Wyoming

- Abundant oil, gas and coal resources
- Policy principles:
  - Promote energy development: coal, coal beneficiation, coal gasification, clean coal, electricity, deep gas, coal bed natural gas, wind power, ethanol, conventional oil, enhanced oil recovery and uranium
- Wyoming Infrastructure Authority created to help develop transmission projects

Policies from 1982 Energy Plan

- High priority on conservation, renewables, and high fuel efficiency generation before others. High priority to hydroelectric projects.
  - Carefully consider impacts on agriculture
  - Favor conversion to natural gas heating
  - Review and update curtailment plans
  - Consider coal and nuclear
  - Promote cogeneration and wood fuel.
  - Encourage development of municipal solid waste power.
  - Identify potential for wind development
- Promote petroleum and gas conservation, exploration
- Encourage and support local governments in their efforts to promote energy awareness, efficiency and resource development.

Thank you for your patience!