



State Policy Options for Renewable Energy

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September 2003





Organization

- The Idaho context
- Policies for Idaho to consider



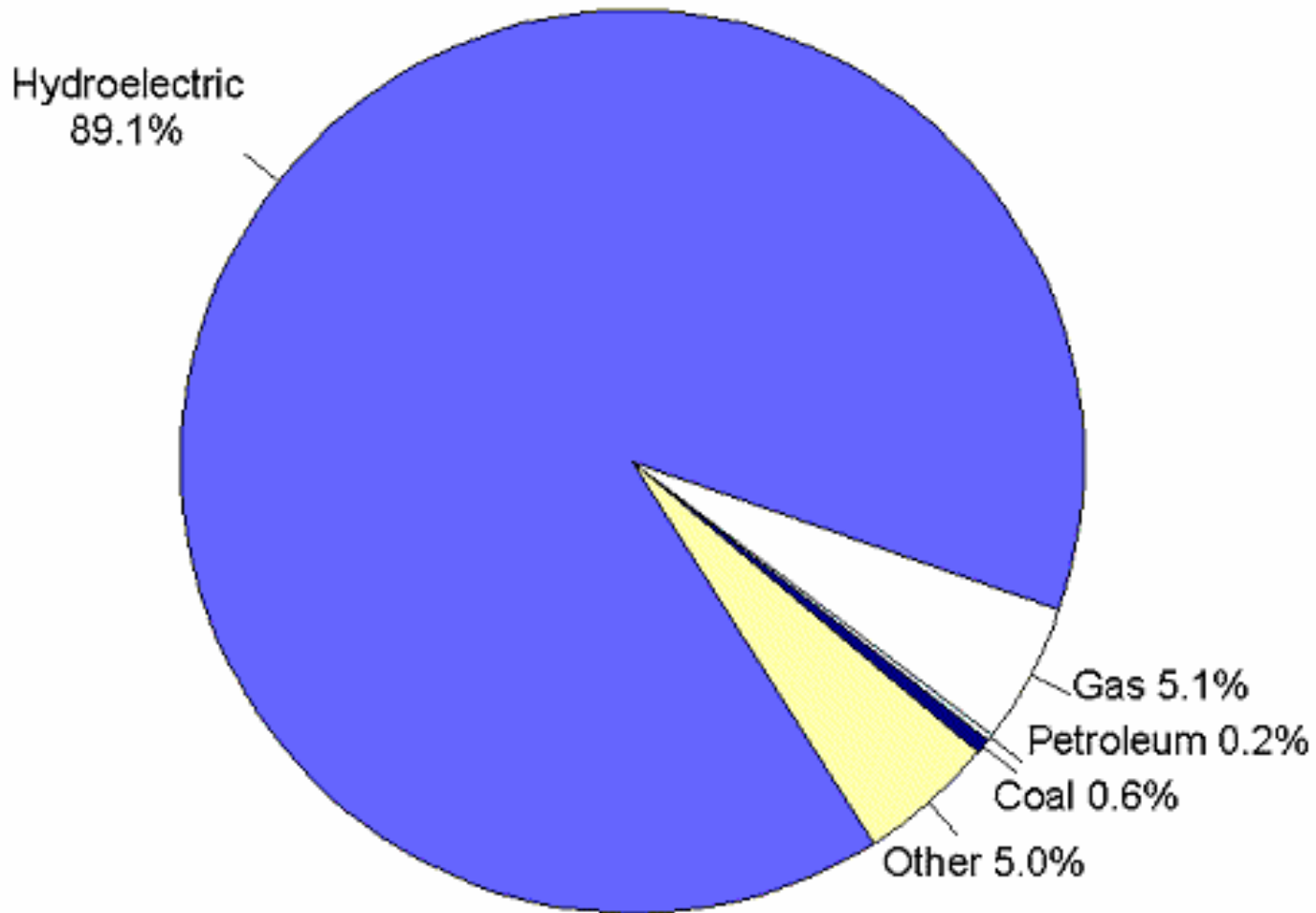


The Importance of This Committee

- In general, other bodies of government like the PUC will wait for direction from the legislature on what to do, especially with renewables. The legislature's decisions are critical.



Idaho Power Generation





Despite the fact that Idaho generation is overwhelmingly hydro, retail power rates have fluctuated considerably in the past five years.

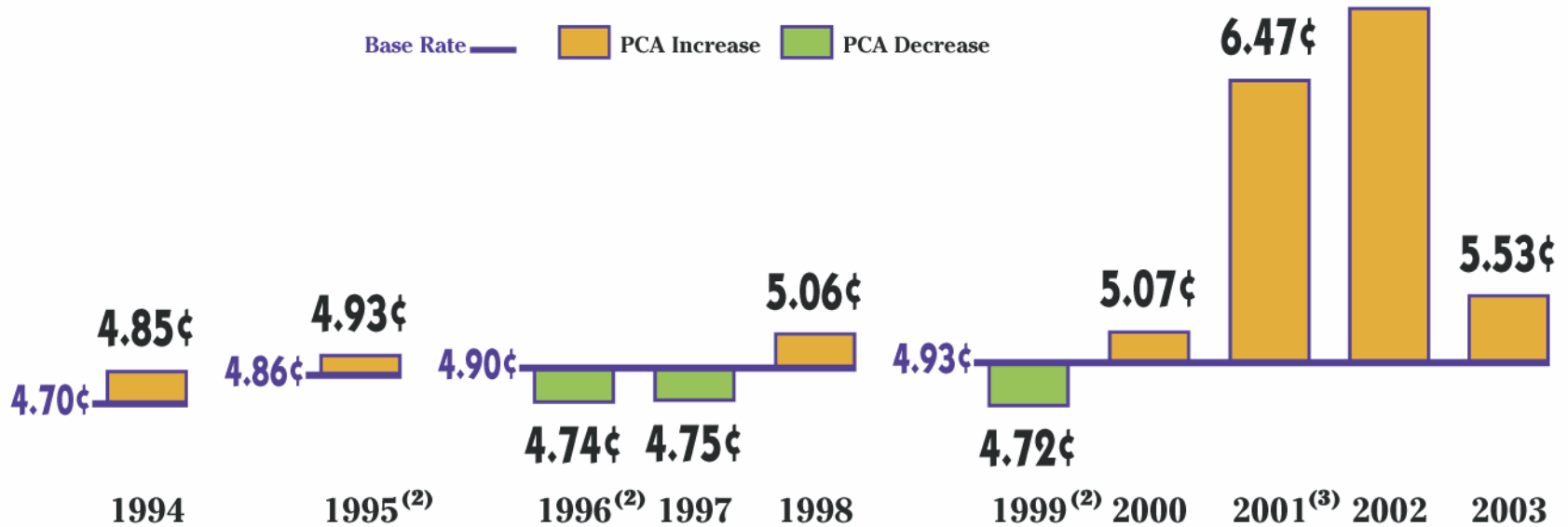
This has happened in large part because Idaho utilities have needed to purchase power from more volatile regional power markets.

Natural gas prices drive many of these markets.



Annual Residential Rate

Cents per kilowatt-hour (kWh) ⁽¹⁾



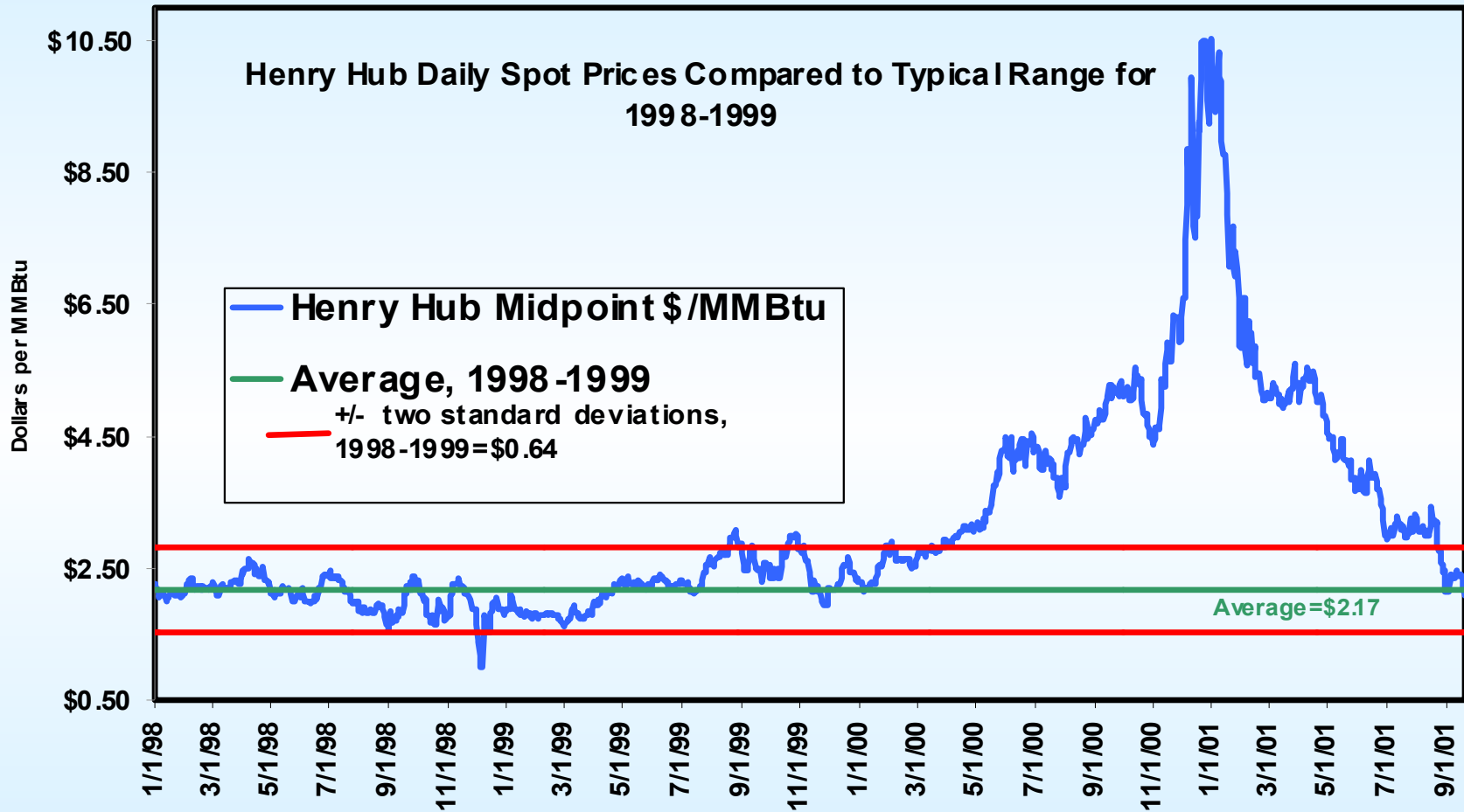
1) Pertains only to energy usage and does not include monthly customer charge of \$2.51.

2) Base price (shown in purple) increases due to: general rate case implemented in February 1995, Twin Falls Power Plant costs included in December 1995, and recovery period for conservation program costs changed from 24 to 12 years in 1999.

3) Reflects average of two adjustments in 2001.

Source: Idaho Public Utilities Commission

Natural Gas Spot Prices in September 2001 Are Within the 1998-1999 range



Source: Financial Times Energy, Gas Daily

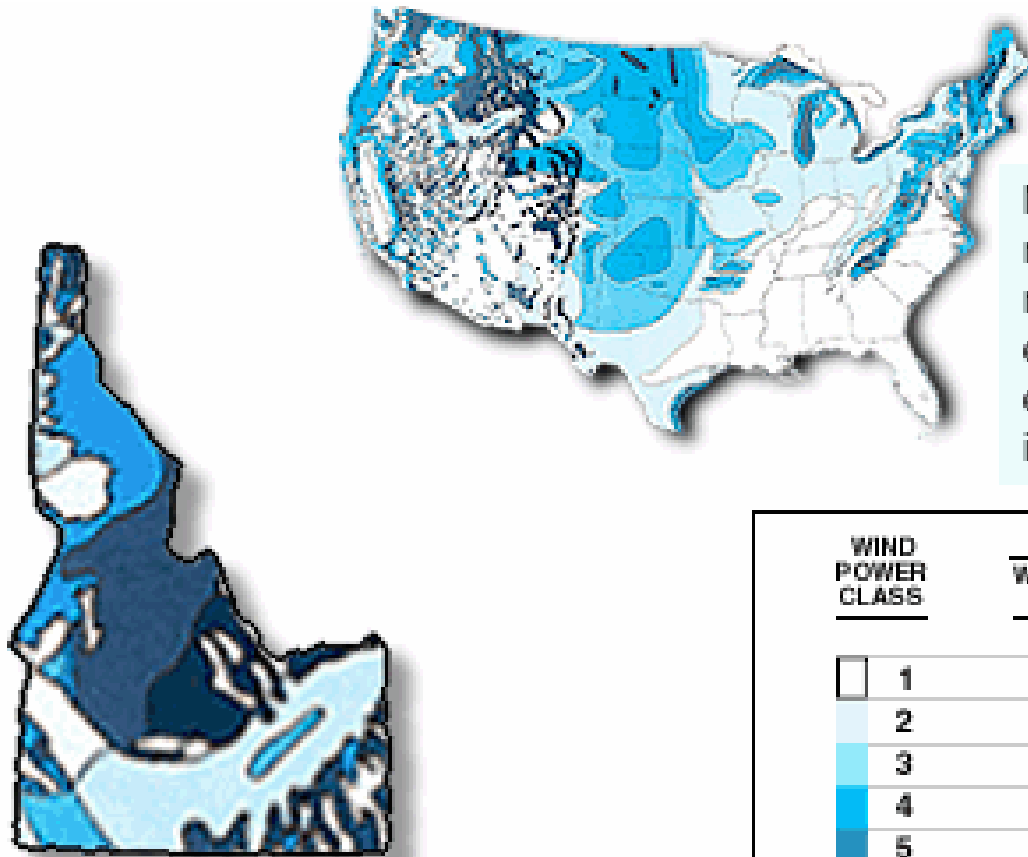


Idaho has good undeveloped renewable resources from wind, geothermal and even solar power.

Idaho also has considerable potential biomass-based resources (including anaerobic digestion).



Idaho Wind Resource



Note that these general maps may not show all of the available resources. Some terrain and meteorological effects can result in excellent localized wind resources in areas not shown here.

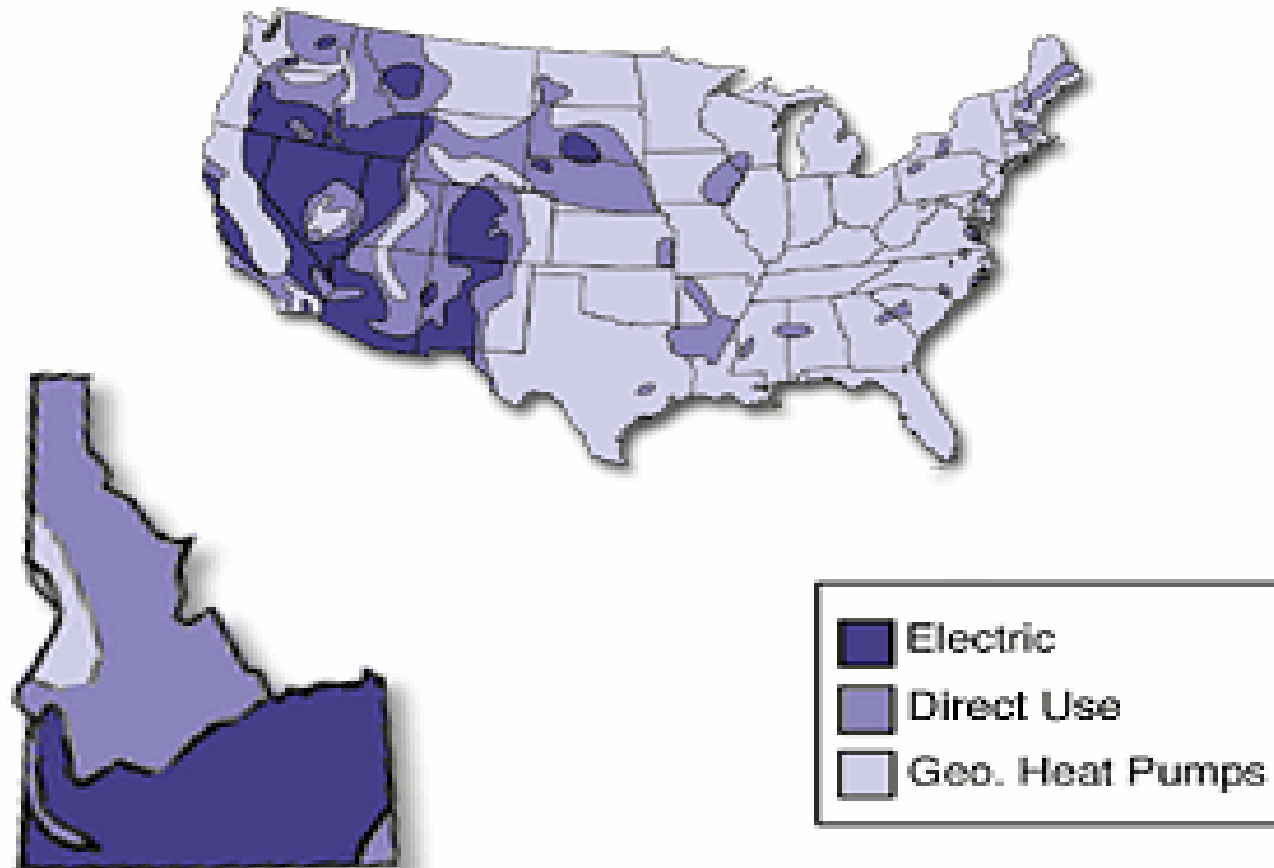
Idaho annual average wind power

WIND POWER CLASS	50m (164 ft)		
	WIND POWER W/m ²	SPEED	
		m / s	mph
1	0	0	0
2	200	5.6	12.5
3	300	6.4	14.3
4	400	7.0	15.7
5	500	7.5	16.8
6	600	8.0	17.9
7	800	8.8	19.7
	2000	11.9	26.6

RIDGE CREST ESTIMATES (LOCAL RELIEF > 1000 FT)



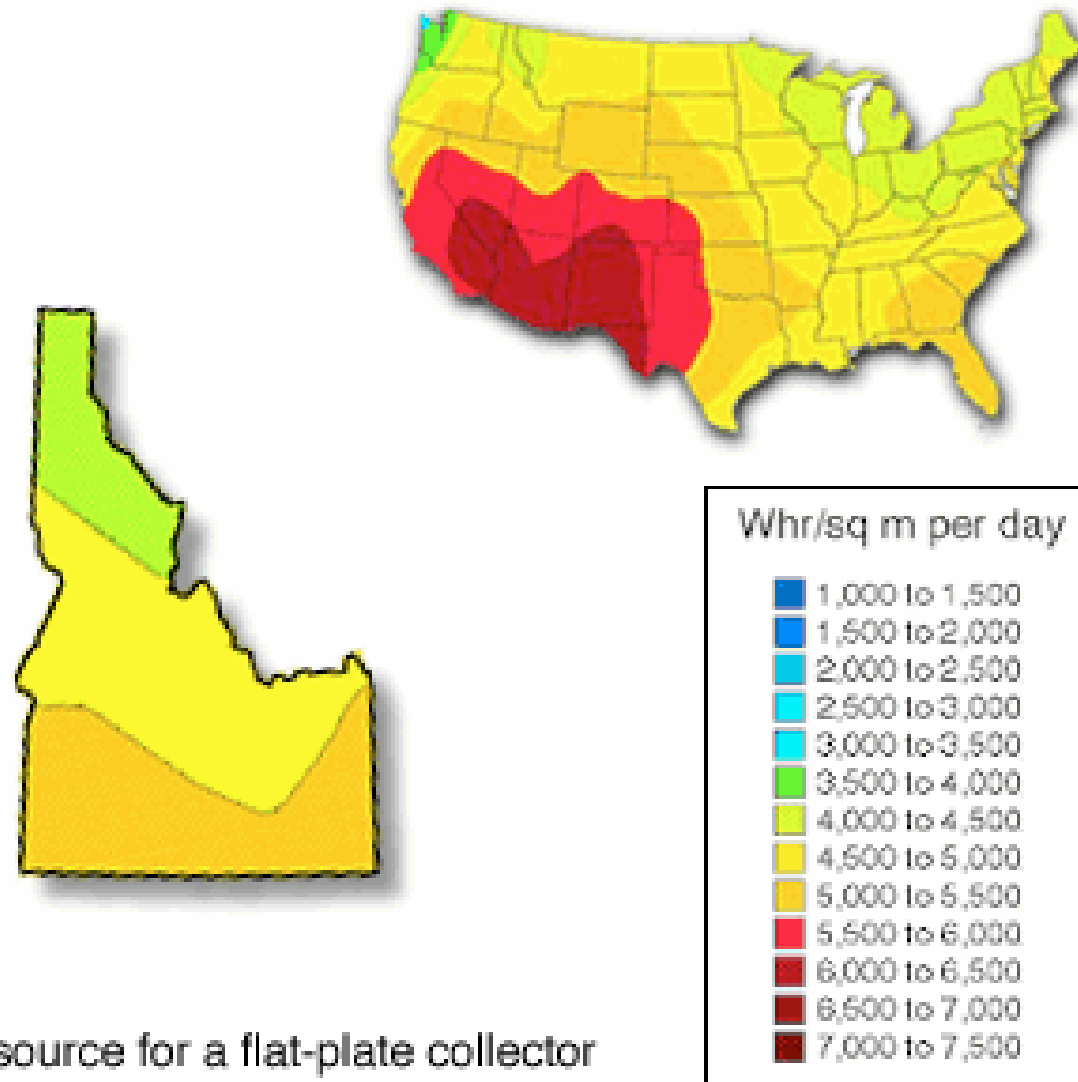
Idaho Geothermal Resources



Idaho geothermal resource



Idaho Solar Resource



Solar resource for a flat-plate collector





Idaho Incentives

- Two primary incentives now exist :
 - Solar, wind and geothermal tax deduction capped at \$5,000 per year, \$20,000 total.
 - » Usual usage is around \$250,000 per year.
 - Low interest loans for renewable projects
 - » Hardly used at all (perhaps 1-2 per year)
 - Utilities have green pricing programs
 - Utilities have net metering programs
- Previously had \$75,000 grant program for solar energy: very successful per IDWR.





The Bottom Line

- Idaho has significant, varied renewable resources.
- Idaho has continuing exposure to regional power markets and price risks.
- Idaho incentives for renewables thus far appear to have had minimal impact.
- Limited experience shows potential for incentives to have an effect.
- Changes to existing rate structures may have a real effect, even without explicit incentives.





*What Can Idaho's Legislature Do?
Or*

*In the energy business, it's all about
the money.*





\$\$ Characteristics of Renewables

- Most renewables cost a little more than traditional electricity sources at the outset.
- Most renewables don't have volatile prices; their fuel costs nothing.
- Most renewables carry with them other benefits which might not show up in rates.
 - Environmental benefits
 - Waste management benefits
 - Economic development benefits





Why are states pursuing renewables?

- Economic development.
- Fuel diversity to increase reliability.
- Price stability.
 - Austin Energy signed 10 year fixed-price contracts for wind energy, to hedge against price volatility.
- Environmental benefits.





Renewable Policies

- To be effective, renewable energy policies need to address:
 - pricing
 - term/length of contracts
 - rules for interconnecting with the power grid
- There are many policies to address each of these issues.





Renewable Energy Policies

- PURPA rates
- Green pricing with revenues to support Idaho projects
- System benefit fund with revenues supporting Idaho projects
- Production tax credit/ other tax advantages
- Interconnection rules





Policies continued

- Renewable portfolio standard
- State green purchases





Current Idaho Power contracts will pay between 4.7 cents to about 5 cents per kWh for small renewables.

Two other pieces are critical:

what other charges or fees are assessed.

What other agreements are required?





Green Pricing



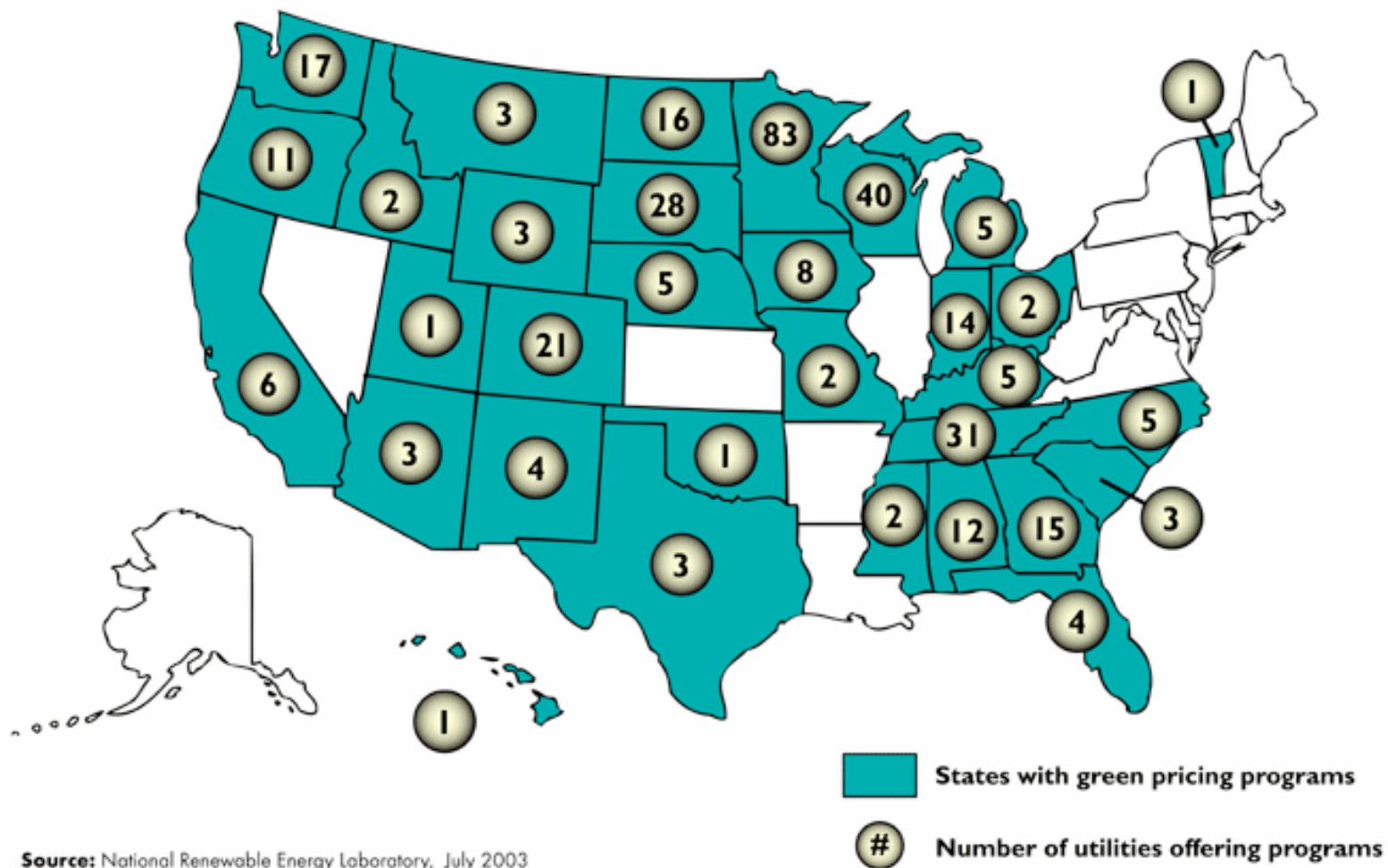


Green Pricing

- “Green pricing” programs are utility programs through which the utility sells “green” power. All three investor owned utilities in Idaho have such programs.
- These voluntary programs allow Idaho citizens to support renewables in the region.
- Around 1,500 customers participate in Idaho Power’s program -- <1%. This is just slightly lower than the national average.



Utility Green Pricing Activities



Source: National Renewable Energy Laboratory, July 2003





Green Pricing

- Idaho Power's program relies on a third party, Bonneville Environmental Foundation, to supply its green products.
- This results in "green" power being generated in the region although limited production in Idaho at this point. (New Idaho projects are contemplated by BEF).





Green Pricing

- Is there a way to encourage use of these voluntary green contributions from Idaho customers for Idaho developments?





A Variant on Green Pricing

- A new policy and a new model to allow customers to buy renewable energy.
- Utilities offer a choice of products, like a storefront.
- Marketers sell their products through the utility storefront.
- Customers have do have choice of product.





A Variant on Green Pricing

- Oregon currently runs this program with a great deal of success.
- The Rhode Island House passed similar legislation in 2002.
- New York has a similar program.





System Benefit Funds





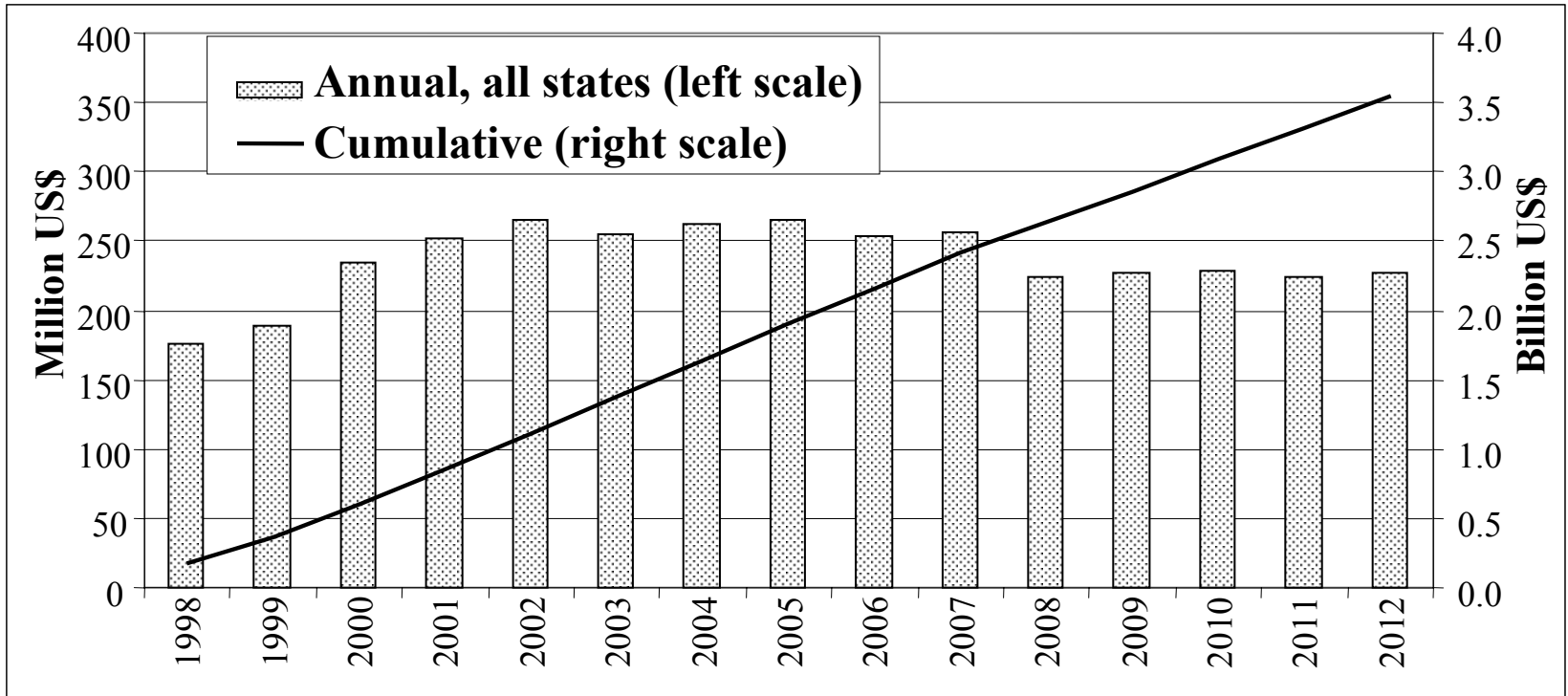
Systems Benefit Funds (SBF)

- A fee paid by all electricity consumers used to fund:
 - renewable energy,
 - energy efficiency,
 - low-income energy assistance
- Utilities collect these funds. Either the utility, a state agency or a third party spends the money.
- Significant state spending on SBFs:
 - 15 states, \$3.5 billion through 2012





Funding Levels are Substantial



**Cumulative funding of \$3.5 billion
through 2012**





State Funding Levels Vary

State	Annual Funding (\$ million)	Per-Capita Annual Funding	Funding Duration
CA	\$135	\$4.0	1998 – 2012
CT	\$15 → \$30	\$4.4	2000 – indefinite
DE	\$1 (maximum)	\$1.3	10/1999 – indefinite
IL	\$5	\$0.4	1998 – 2007
MA	\$30 → \$20	\$4.7	1998 – indefinite
MT	\$2	\$2.2	1999 – July 2003
NJ	\$30	\$3.6	2001 – 2008
NM	\$4	\$2.2	2007 – indefinite
NY	\$6 → \$14	\$0.7	7/1998 – 6/2006
OH	\$15 → \$5 (portion of)	\$1.3	2001-2010
OR	\$8.6	\$2.5	10/2001 – 9/2010
PA	\$10.8 (portion of)	\$0.9	1999 – indefinite
RI	\$2	\$1.9	1997 – 2003
WI	\$1 → \$4.8	\$0.9	4/1999 – indefinite





Incentives for Large Projects

- **Total Obligated Funds:** \$262 million from 6 states
- **Funding Types:** Various forms of grants and production incentives (CT and PA have also used loans and equity vehicles)
- **Total RE Capacity:** 1,446 MW potential
 - 1130 MW wind
 - 157 MW geothermal
 - 101 MW landfill gas
- **Incentive Levels:** 0.11 - 6.75 cents/kWh on equivalent 5-year production incentive basis



Incentives for Large Projects

State	Form of Fund Distribution	Level of Funding	Results	Discounted ¢/kWh Inc. over 5 Yrs
CA	5-yr prod. inc.	\$162 million	543 MW (assorted)	1.20
		\$40 million	471 MW (assorted)	0.59
		\$40 million	300 MW (assorted)	0.75
PA	grant/prod. inc.	\$6 million	67 MW wind	1.00
MT	3-yr prod. inc.	\$1.5 million	3 MW wind	3.63
NY	grant	\$6 million	33.5 MW wind	2.00
		\$4 million	6.6 MW wind	6.75
IL	grant	\$0.55 million	3 MW landfill gas	0.57
		\$1 million	3 MW hydro	1.86
		\$0.352 million	1.2 MW hydro	1.63
		\$0.55 million	15 MW landfill gas	0.11
RI	refundable grant	\$0.15 million	unclear MW wind	unclear





Incentives for Small Projects

- Capital cost “buy-downs” are the primary type of subsidy for small renewables in the U.S.
- Numerous states are using this model
 - Examples
 - » California - \$4.5/watt or 50% of project costs
 - » Rhode Island - \$1.5/watt





System Benefit Funds

- Could system benefit funds be used to support renewables development in Idaho?





State Green Purchases

- State government can purchase green energy, therefore serving as a model for the rest of the state.
- Such purchases can be done through existing green pricing programs or in some cases through negotiation with the power supplier.





Renewable Portfolio Standard



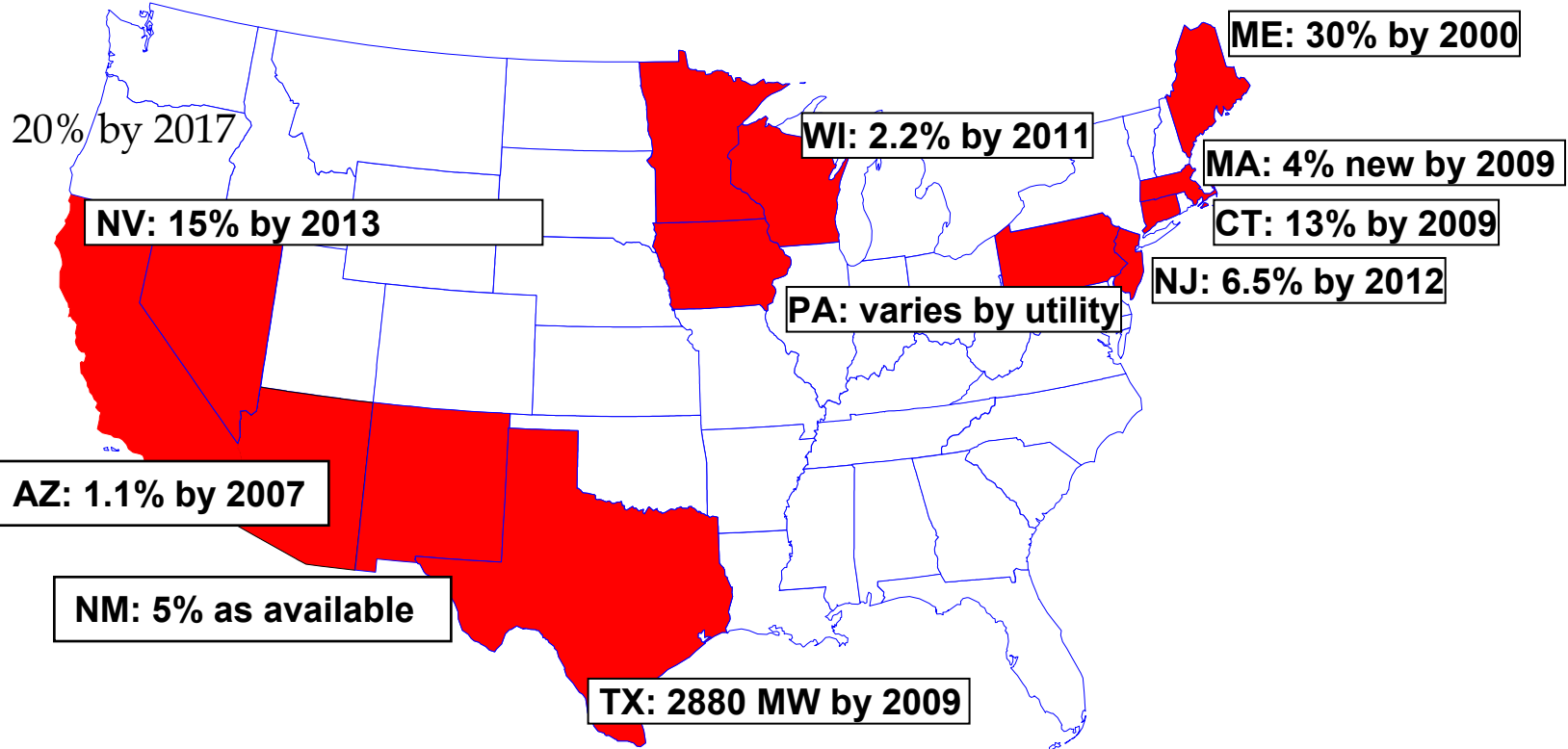


Renewable Portfolio Standard

- The RPS imposes a requirement on utilities, stating that a certain amount of the power they sell must come from specified renewable sources.
- The RPS is probably the most powerful renewable energy policy.
- All state RPSs will add 12,400 megawatts of new renewable capacity in the country, serving 7.6 million homes.



Renewable Portfolio Standards





Renewable Portfolio Standard (RPS)

- Requires all electricity retailers in a state to provide a specific amount of total power from renewable energy (commonly 5-7 percent)
- Restructuring not a prerequisite:
 - NV: RPS bill separate from Restr. Bill
 - WI, MN, IA: have RPS but not restructured
 - CO, UT: considering RPS but not Restructured





Renewable Portfolio Standard

- The RPS is a mandate. But it can be flexible and uses market mechanisms to meet its goals.
- Flexibility: can be designed to encourage specific resources, phased in, and over long or short time periods.
- Market based: is usually designed to allow the utilities to trade with one another to meet obligations.





Renewable Portfolio Standard

- Is there a version of the RPS that makes sense in Idaho?





Power Purchase Prices and Interconnection Issues





Interconnection Rules

- Interconnection rules can make -- or break -- a project.
- If small projects need to pay large fees to connect with the power company's grid, the fees can overwhelm the economics of the project.
- Policy Option: Examine Idaho's interconnection rules in light of those of other states. Do they hinder development for either large or small renewables?





Power Purchase Prices

- Idaho, following federal law, sets up pricing standards for utilities buying power non-utilities.
- Current rates are established for small generators: a bit below 5 cents per kWh. These rates make a difference for anaerobic digestors (although are too low to justify construction in and of themselves).
- Wind projects are often too big to qualify so rates would be on project by project basis.





Power Purchase Prices

- If federal PURPA requirement goes away, as is likely, what happens to Idaho PURPA purchase requirements?
- Idaho law/regulations must conform to existing federal PURPA laws.
- It may be difficult to craft a state power purchase requirement law that conforms to current federal requirements.





Other States

- Minnesota & Iowa

- pioneering states for wind power in U.S.
- most development in Buffalo Ridge & Lake Benton areas, over 700 MW installed
- both have a combination of RPS, property tax and sales tax incentives

- Colorado & Wyoming

- WY: 140 MW, soon near 300 MW; CO: soon to be near 200 MW
- RPS very close to passing in CO in '02 and '03
- WY just passed a wind sales tax exemption





Other States

- North Dakota: 3 bills passed in 2001
 - essentially to put taxes on par with MN
 - HB 1221, 1222, 1223
 - » sales tax & property tax reduction
 - » income tax credit for leasing land
- Kansas
 - Property tax exemption put in place in 2001
 - 105 MW project now installed





Other States

- Oklahoma

- SB 440: state production tax credit

- Montana

- Legislature very interested in wind economic development benefits
- Corporate tax credit to lure equipment manufacturers; (Vestas in OR=1000 jobs)
- Property tax exemption
- System Benefit Fund

- WA and OR: 228 MW, 182 MW of wind





Tax Incentives

- Production or investment tax incentives
 - PTC: No experience by states; federal PTC is effective
 - ITC: A number of states use ITCs for smaller projects
 - Issues: State tax credits reduce federal PTC, making them less effective for large projects; ITC for small projects should be considered
- Sales tax reduction
 - Several states exempt or reduce sales tax for small or large projects
 - Impact on costs is modest: 6% exemption reduces costs by 0.3 ¢/kWh
- Property tax reduction
 - Several states exempt or reduce property tax for small or large projects
 - Impact on costs can be as high as 1 ¢/kWh, but will typically be much lower: 0.2 to 0.4 ¢/kWh





Conclusion

- Consider:
 - Link of green pricing to Idaho investment.
 - System benefit funds to support renewables in Idaho.
 - Renewable portfolio standards.
 - Examine/study barriers to renewables such as interconnection rules and fees.
 - State green purchases.

