Securing Idaho's Energy Future:
The Role of Energy Efficiency and Renewables

Securing Idaho's Energy Future: The Role of Energy Efficiency and Natural Resources

RECOMMENDATIONS

July 16, 2008

RECOMMENDATIONS TO BUILD A NEW IDAHO ENERGY ECONOMY

While transitioning the energy system in Idaho represents challenges, growing interest in renewable energy and energy security stands to be harnessed. The following section offers a series of recommendations for the state to reduce its reliance on imported energy and develop its natural resource and efficiency opportunities in ways that benefit the economy. More detailed proposals are clustered under three high level recommendations:

- Create a statewide Energy Security Plan with clear targets and accountability for results
- Align state legislative and regulatory policies, and state agency activity under the Energy Security Plan
- Build Idaho's clean energy industry and workforce, and invest in innovation

1. CREATE A STATEWIDE ENERGY SECURITY PLAN WITH CLEAR STRATEGIES, TARGETS AND ACCOUNTABILITY

It is critical for the policymakers in the executive and legislative branch of Idaho to continue to provide direction and oversight for long-term energy security for the state, and to do so in a way that demonstrates bold leadership in the face of tough, complex and sometimes contentious problems. The Idaho Energy Plan is a solid start toward a coordinated energy policy. The next generation of the plan should lay out further action- and results-oriented goals and objectives, addressing a number of key issues:

- Performance goals and criteria around the desired resource mix to reduce exposure to rising fuel costs and increase capture of in-state opportunities
- Incentives and policies to accelerate investments in residential, commercial, industrial, agricultural and municipal efforts on efficiency, renewable power and transportation
- A strong link between energy and transmission capacity planning, identifying opportunities to cluster resource development or link new generation to transmission projects underway
- Targets around grid advances to support integration, reduce system losses and further support demand-side management
- Policies and guidance to ensure state government facilities, fleets and energy investments lead the way
- Promotion and education strategies to raise public awareness of the need for energy efficiency and the value of developing our resources

In addressing these issues, a good plan should also have a number of other key characteristics:

Establishes Clear Responsibility and Accountability. This strategy needs to be developed as a collaborative effort between legislators, regulators, community leaders and the utilities. But ultimately, successful implementation will require clear leadership that is accountable for delivering results. It is critical that the executive and legislative branches provide a united front and agree on who will 'own' the responsibility for developing an energy security strategy for Idaho, overseeing and updating that strategy, coordinating that strategy with key regulators (e.g. PUC), and reporting the results. In 2007 the Governor created the Office of Energy Resources and the 2008 Idaho Legislature approved a reliable funding mechanism to enable the Office to coordinate the state's energy efforts. Responsibility for delivering on the goals and

objectives of the Statewide Energy Security Plan would likely go to the Director of the Office of Energy Resources. The Governor has appointed a 25 X '25 committee to represent the major state organizations and other entities in a cohesive effort around building a portfolio of 25 percent renewables by 2025. This group could play a vital role in building out a transition plan. The Governor also appointed a seven member board of the Idaho Energy Resources Authority (IERA) to provide more opportunity for transmission investment, although there is not yet state funding to serve the mission of the organization. These groups can play a role in advancing the statewide energy strategy, but if individualized efforts continue in absence of a larger coordinated strategy that also values in-state developed renewables, Idaho will continue to invest in other states' efforts to modernize and transform their energy systems, instead of bringing those jobs and revenues to the state.

Ongoing Updates. Energy planning is a process that takes a number of iterations before the state will have a level of competency in working through the real differences of opinion and political issues that will emerge. And market conditions change in ways that should be leveraged into new initiatives and targets. It is critical for the long-term energy security of the state that this is done frequently. The Idaho Energy Plan itself states, "We strongly recommend that the Legislature and other state policy-makers maintain vigilant oversight of the implementation of this Idaho Energy Plan and stay abreast of energy issues by frequently revisiting these recommendations to ensure that they continue to advance Idaho's interests." A reasonable frequency would be to require a report to be delivered every other year from the leader responsible for implementing the statewide Energy Security Plan to the Legislature and Governor. The report could measure results, highlight important changes in energy markets and recommend adjustments to the statewide plan.

Links to and Improves Other Planning Efforts. The energy plan should be leveraged to align other key planning activities, primarily those at the utility and municipality level:

- **Strengthen Utility-Level Integrated Resource Planning.** While the investor-owned utilities do biannual integrated resource plans (IRP), Idaho should consider requiring *all* load serving entities to generate integrated resource plans on this biannual schedule. These IRPs, in turn should look at generation sources, delivery adequacy, and conservation in a manner that is consistent with the statewide energy security plan.

- **Ask Counties and Communities to Collaborate and Produce Energy Plans.** The state should encourage counties to develop their own energy plans that outline how they are going to implement goals for energy efficiencies and local generation. Individual communities and counties hold many of the key policy pieces to develop a robust market for energy and energy efficiency in the form of local code, land-use policies and more. They also stand to gain from the taxes and jobs these projects represent. At critical mass, they can also provide additional political support for the legislative and regulatory initiatives that may be required.

Anticipates Future Federal Legislation. The Idaho Energy Plan should responsibly prepare for a future in which fossil fuel emissions carry a price. Corporations have due diligence responsibilities to anticipate future risks and many are anticipating a future in which carbon emissions carry a cost per ton. Regardless of the state position on global warming, a national policy to limit carbon emissions appears increasingly certain, with many analysts predicting it as

soon as 2009. Additionally, a national "Renewable Portfolio Standard" requiring utilities to meet targets for inclusion of renewable energy in their electricity portfolios is a distinct possibility in the next few years, as is further legislation to reduce U.S. dependence on foreign oil. The Idaho Energy Plan should position Idaho to maximize benefits and minimize risks as such federal policies add further cost advantages to clean energy over fossil energy.

2. Align State Legislative and Regulatory Policies, and state agency activity, with the Plan

The value of a plan is in its ability to guide actions, and the statewide Energy Security Plan should serve as the prime vehicle for the executive and legislative branches, regulators, and agency directors to align initiatives and policies. Strong alignment will powerfully communicate to the market Idaho's intention to develop in-state renewable resources and energy efficiency opportunities. In addition to clear and accountable leadership, and strong commitment to the plan from top policymakers, this involves a number of activities:

- Providing resources for the plan
- Establishing initiatives around transmission, state lands and facilities
- Making state government a leader
- Exploring aggressive incentives and policies to encourage adoption

Provide Resources and Clear Expectations to the Energy Efforts. The statewide energy security plan needs to be recognized as the chief coordinating vehicle for energy policy in the state and it needs to be resourced adequately to serve essential functions-- for example, research and interagency coordination. It will be important that a collaborative link between state-level agencies (Energy, Agriculture, Water Resources, Commerce and Labor, and Environmental Quality) are married with community level planning and industry parties. It will also be important to ensure this coordination extends to the 25X'25 Renewable Energy Council, as well as other initiatives that touch on energy. Establishing the various efforts is not nearly as powerful as setting expectations and identifying what resources might be available under the right circumstances.

Establish a Statewide Initiative Around Transmission Capacity, Smart Grid and T&D Efficiency. Idaho needs to build the capacity of the grid to transmit energy from wind farms, geothermal plants and other renewable power generation. The Office of Energy Resources should evaluate the merits of a renewable energy transmission corridor to bring the wind in the southern part of the state on-line. Developing out transmission capacity in a one-off approach is not necessarily more economically sound, and it adds significant time to the production schedules for bringing plants on line. The state and counties play a large role in transmission siting, and should use that oversight to facilitate development of appropriately-sited renewable energy projects by establishing effective state and local siting and zoning policies. The state can explore ways to provide low-cost financing for new transmission projects that benefit Idaho and support regional efforts to improve the western transmission grid. Utility regulators could require utilities to develop a plan for building transmission capacity in a staged manner consistent with reaching the state's energy security goals. Building new transmission lines is not the only answer, however. New smart grid technologies can help open space on the existing

transmission system to integrate intermittent wind and solar power at lower costs than new construction.

Make the state government an energy leader. Idaho should build markets for new renewable electricity generation by committing to run state government facilities on new renewables, setting a target date by which state facilities will be powered 100 percent by renewables. State government offices should also work with their utilities and the industry to immediately move to realize all cost-effective energy efficiency opportunities. The commitment to leadership should extend to transportation – for example, purchasing 'flex fuel' and plug-in hybrid vehicles.

Leverage State Lands as Key Resources for Renewable Energy Siting. Some of the power and transmission opportunities are located on federal or state lands. The state should be aggressive in evaluating its own lands for environmentally-sound opportunities to contribute to the state's energy security and economic development goals.

Continue to Pursue Legislative Action. Idaho needs to enact aggressive incentives and policies to ensure it can compete with other states for private investment in clean energy projects. The legislature needs to continually enhance its initiatives to economically incentivize key development opportunities. Incentives could include sales tax exemptions, income tax credits, and other investment incentives. Examples of specific economic incentives and policies that might be considered are outlined in Table 19 below.

Table 1: Example of Potential Policies

		Potential Policies/Incentives
Renewable Generation	Small-Scale Distributed Generators	▪ Production payments ▪ Low cost financing ▪ Tax incentives ▪ Increase limits on allowed residential generating capacity from 25 kW to 125 kW ▪ Create premium value paid to grid-tied systems that feed power to the grid during peak demand times. ▪ Uniform standards and practices on interconnect to reduce costs
	Larger-scale Distributed Generation	▪ Add an agriculture and industry tariff that allows larger generators and sets payments for surplus at a substantial percentage of market prices ▪ Upgrade loan amounts and loan guarantees to support larger project-specific bond sales ▪ Create business energy tax credits up to 35% of project costs on projects up to $10 million ▪ Exempt purchases of clean energy generators and equipment from sales tax ▪ Adopt production and investment tax incentives for qualifying renewable energy projects
	Utility-scale Installations	▪ Consider incentives in PUC proceedings that provide improved returns to shareholders of investor-owned utilities that invest in renewables

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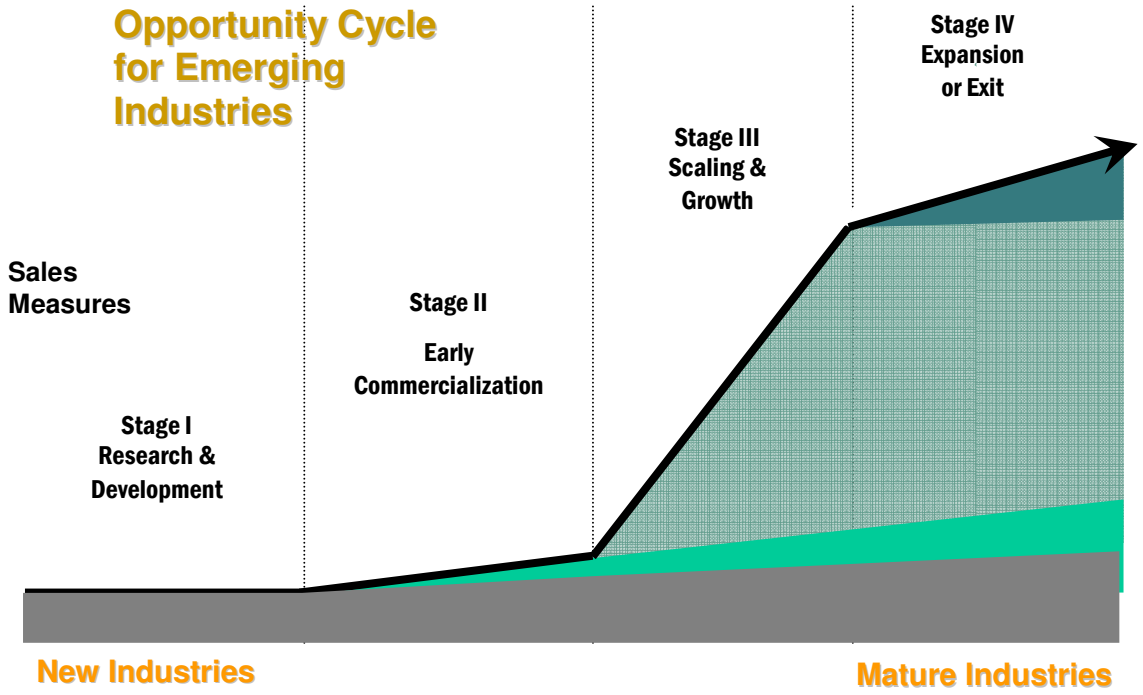
		Potential Policies/Incentives
		▪ Implement Renewable Energy Standards to require monopoly utilities to meet minimum standards of renewable content in their power portfolio. Successfully adopted in 25 states.
Energy Efficiency	Residential	▪ A residential tax credit for energy efficiency retrofits, equipment and appliances to capture cost effective efficiency potentials.
	Business	▪ A business tax credit of 35 – 50% of project costs for select efficiency measures to kick-start adoption
Renewable Transportation	Advanced Technology Vehicles	▪ Offer tax incentives for private purchases advanced flex-fuel and hybrid vehicles ▪ Make significant public fleet purchases
	Renewable Fuels	▪ Production incentives to launch use of in-state feedstocks by the biofuels industry
	Vehicle Infrastructure	▪ Offer sales and use tax exemptions, income tax credit and grants to fuel retailers and wholesalers who deploy pumps and other infrastructure to supply high-percentage blend biofuels such as E85 and B20. ▪ Offer incentives to deploy smart charging infrastructure (when available) for plug-in hybrids ▪ Tax credits or rebates for truck stop electrification

Critics will likely argue that the efforts laid out here are only a fraction of what is possible or desirable. There are certainly other more aggressive, innovative things that Idaho could do to move forward renewables and energy efficiency. But even with the activities reflected here, Idaho could send a strong signal inside and outside the state, and could accelerate adoption along the path toward more energy independence.

3. Build Idaho's Clean Energy Industry and Workforce and Invest in Innovation

To fully gain the benefits from these energy initiatives, Idaho should also develop strategies to grow a vibrant 'clean tech' sector, supporting companies to innovate and grow and preparing workers with the skills needed by industry.



The figure above shows the stages of development for companies moving technology into the marketplace. Resources and support can help technology companies be successful at each stage:

- **Research and Development**--Investments in research and centers of excellence can aid at this first stage
- **Early Commercialization**--Industry outreach and state initiatives can support efforts by firms to establish their initial customer base and find the other enabling technologies and infrastructure necessary to commercialize their products
- **Market Growth**—Providing access to larger markets, both in-state and nationally, and ensuring that companies can recruit locally the talent necessary to grow, can help firms move through market growth and stay in Idaho as they find success
- **Expansion or Exit**—Retaining or attracting companies at this stage means having more to offer down the road, like unique access to research and development through some of the same investments that were made to start the pipeline.

The following recommendations could have industry development and job creation value across multiple stages of growth, including R&D centers of excellence, clean energy jobs training, firm recruitment, and pilot projects.

Fund and Promote Energy Centers of Excellence and Encourage University and Industry Collaboration with Idaho National Lab.

Identify Center of Excellence opportunities for Idaho around key research and development efforts. Idaho is in a strong position to build R&D capability in a few of key areas, such as waste to energy for the agriculture sector, advanced biofuels (including cellulosic ethanol and

renewable diesel), and smart grid technologies and applications. For example, a biogas technology center has been suggested to evaluate technologies and outputs from regional pilots, and then disseminate this information to Idaho dairies to implement on-farm dairy anaerobic digesters. The state should strategically invest in efforts that leverage existing industry strengths and that engages Idaho National Lab and Idaho state university assets, as well as R&D initiatives in adjacent states.

Target Funding for Pilot Efforts in Key Technology Areas

Demonstration projects enable industry, entrepreneurs, utilities and others to partner to try out innovative new approaches with minimal risk. While successful projects can be replicated on a larger scale, even projects that prove less successful generate valuable data and lessons. The state should establish **"Renewable Energy Enterprise Zones"** to encourage innovative demonstration projects, providing seed funding that can be leveraged to attract federal grants and private investment. Targeted projects should engage partners capable of taking successful models to a larger scale, and should advance Idaho expertise in clean tech sectors identified as holding promise for the state to build competitive advantage. For example:

- **Dairy Waste to Energy Initiative.** The Idaho Dairy Waste Conversion to Electricity Pilot Program would demonstrate biogas technology and economically viable electricity generation and likely will require grant funding. These efforts should also incorporate new technologies wherever viable.
- **Biomass Initiatives.** A four-county partnership (Adams, Boise, Gem and Valley) is being organized, and other partnerships are forming in Salmon, Northern Idaho and Western Montana to develop and promote biomass. It is a $100,000 year program, 75 percent funded by grants and each county contributes $6,000 per year for the other 25 percent of the program.

Ridgeline

Ridgeline Energy started as a small, two man operation and has grown to 10 utility-scale wind projects in development in Idaho—leveraging the growing interest in renewable energy into clean energy, jobs and financial opportunities for rural Idaho.

Ninety-eight to ninety-nine percent of Ridgeline Energy's permitted projects in Idaho are sited on private lands. Ridgeline staff prides themselves on the relationships they have built with Idaho farmers and ranchers and have spent many hours around kitchen tables ensuring that they do right by their partners in wind development.

Through wind development, landowners can make use of marginal land and supplement their agricultural income. But the benefits of wind go beyond the financial for Idaho communities.

For instance, growing the wind industry will create a demand for more workers that could help keep young Idahoans in their communities. And these job skills will be in high demand. In neighboring states, technical and community college programs geared for the specialized training that these jobs require already have waiting lists.

Ridgeline Energy is workingwith policymakers to create an environment that will attract wind and other renewable energy developers to the state and allow Idahoans to enjoy all the benefits that clean energy can bring.

Clean Energy Jobs Training

As the electric industry faces significant retirements over the next 3 – 5 years and the prospects for clean energy technologies increase, the demand for talent in the energy and efficiency industry will be significant. The state should aggressively support industry and educational institutions to collaborate to establish training programs that will help cultivate the workforce necessary to make this sector successful. Engineers, specialty information technologists, wind and other renewable technicians and various trade positions are just a few of the opportunities for training that would support the growth of this industry.

Recruit Energy and Energy Technology Firms and Help Existing Firms to Expand

Energy and clean tech represent an opportunity for Idaho, just as they do for most major areas in this region. Global revenues for solar photovoltaic, wind power, biofuels and fuels cells grew 40 percent between 2006 and 2007, to $77.3 billion. New investments in such energy technologies grew 60 percent, from $92.6 billion in 2006 to $148.4 billion in 2007, according to Clean Edge, which tracks global markets for clean technologies. As awareness grows that clean tech is a serious and substantial growth industry, the competition to attract the companies and jobs in this particular sector stands to get relatively fierce. Idaho economic development professionals at the Department of Commerce and in local communities should ramp up proactive outreach to the clean tech community to promote Idaho as a great state to site a business in their sector. Vigorous in-state development of renewable resources and advanced efficiency technologies, along with comprehensive incentives for the sector and a skilled workforce, will help make Idaho an attractive place for growing clean tech companies to do business.

CONCLUSION

A shift to emphasize local renewable resources and energy efficiency is an absolute must to keep Idaho economically prosperous and secure, and to secure more of the job growth and tax revenue gains that result from the development of local energy resources. With state and local leadership, with a commitment to strong policies and incentives, and with specific initiatives to accelerate deployment and grow the state's clean energy workforce, Idaho can maximize and leverage the economic benefits from these important resources in Idaho's energy future.