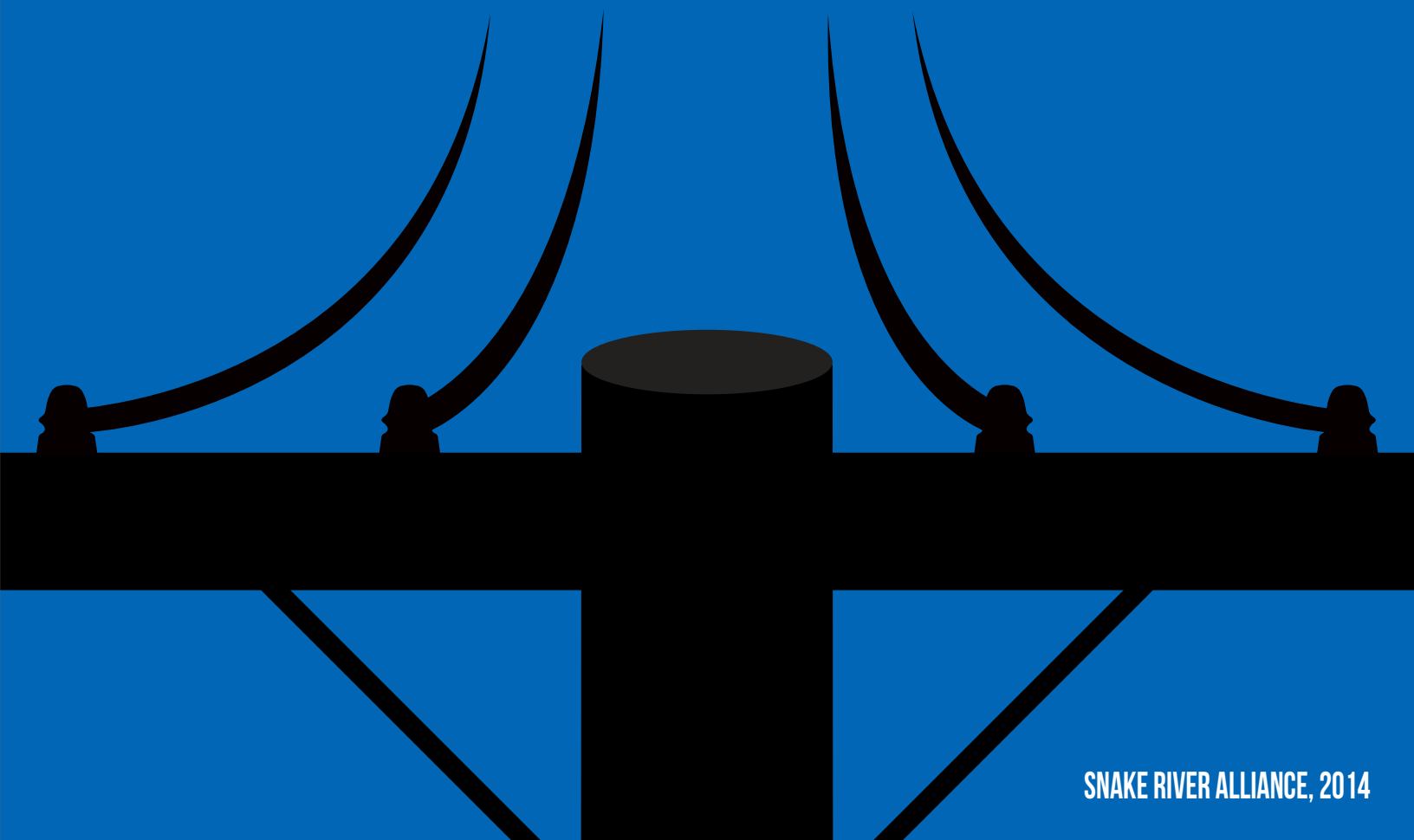
MAKING A DIFFERENCE

HOW IDAHOANS CAN WORK TOWARD A CLEAN ENERGY FUTURE



SNAKE RIVER ALLIANCE, 2014

The Snake River Alliance is pleased to present **this 3rd edition of its Idaho's Clean Energy Future – An Activist's Guide to a Sustainable Energy Future.**

Much has happened in Idaho's energy world since the Alliance first introduced our Energy Guide in 2011. Utility regulations have evolved, as have the ways Idaho's utilities generate and distribute electricity. Idaho's political landscape has also changed. And subsequent to our initial report the Idaho Legislature in 2012 updated the Idaho Energy Plan, which was first produced in 2007. What hasn't changed is the desire among Idahoans to participate in decisions affecting our electricity sector. In fact, more Idahoans than ever are venturing into regulatory meetings, utility planning sessions, and having their voices heard.

It remains our hope that this Guide will help demystify energy issues and policies as Idaho moves toward a cleaner and affordable energy future. Our goal is to help empower Idahoans to participate in decisions and planning as our utilities and state agencies determine how we will meet our future electricity needs. This Guide examines key issues confronting electricity consumers, our utilities, our utility regulators, our Legislature and our state Administration as we work collectively to replace Idaho's dirty 20th Century energy resources with clean and affordable energy generation and energy efficiency to adapt to the new world of carbon-free electricity resources.

Idaho electricity consumers spoke resoundingly in 2013 and 2014 on behalf of clean energy. They filled the Public Utilities Commission hearing room to oppose a plan by Idaho Power that would have curtailed customer installations of solar photovoltaic panels on their homes and businesses. And they packed the PUC meeting room again to voice concerns about Idaho Power's proposed coal plant investments.

This Guide will help us penetrate the bewildering world of energy planning and regulation. Most important, it will equip us with the tools to have our voices heard by those who decide whether we receive "green" or "brown" electricity. As with the state's Idaho Energy Plan, we want this Guide to be a living document, evolving with inevitable changes in energy technologies, environmental imperatives, and of course the increasing demand by Idahoans to reshape our electricity resources through investments in home-grown, affordable, Idaho-based energy solutions that are attainable today.

This Guide and its updates are made possible by the generous support of the Edwards Mother Earth Foundation, which has supported the Snake River Alliance's energy efficiency programs since 2008. It was coordinated by Alliance Clean Energy Program Director Ken Miller with assistance from Alliance Outreach and Organizing staffers Lisa Young and Jonnathan Wight, as well as Alliance intern Robin Leonard.

Updated August 2014

The Snake River Alliance

Boise, ID

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INTRODUCTION

Planning for Idaho's Clean Energy Future

Idahoans take pride in our independent spirit, our unending creativity and resourcefulness, and perhaps most important our boundless determination that no challenge is bigger than our ability to find answers to our most vexing problems.

So it is with energy. Like our neighbors in the Pacific Northwest, and for that matter in most every other state in the country, Idaho faces important and sometimes difficult challenges in meeting our future electric energy needs. We hear a lot these days about the need for Idaho to become more "energy independent" or "energy secure." Truth is, when it comes to electricity to light our homes, to irrigate our farms, and to power the schools, hospitals, factories, and businesses in our towns, we'll never truly be "energy independent" as a state. Just like we'll never be "energy independent" in producing all the fuel we need to power our cars, trucks, tractors, school buses, and airplanes. Or in heating our homes and businesses with natural gas. That's because, other than hydropower, renewable energy, and energy efficiency and conservation, most of Idaho's electricity is shipped in from other states – some of it from big coal plants as far as 500 miles away. Nearly half our electricity comes from dirty coal-fired plants in Oregon, Nevada, Wyoming, Montana, and Utah. According to the Idaho Governor's Office of Energy Resources, five of our state's 10 largest electricity generation facilities are hydroelectric, including the nation's largest privately owned hydropower facility, the Idaho Power Hells Canyon Complex on the Snake River. Most of our natural gas comes from Canada or from another state via huge pipelines. Gasoline and oil flow into Idaho from refineries in neighboring states or far beyond. Idaho has no oil resources, so as long as we use cars powered by gasoline, independence cannot happen. Idaho also has minimal amounts of natural gas, so our homes and businesses will rely on imports as long as we burn gas for heat or electricity generation. All told, three-fourths of the energy used in Idaho comes from somewhere else, the great thing is, we can start making our own energy. Starting now.

When it comes to electricity, modern electric distribution networks, or "grids," are indifferent when it comes to states' political boundaries. Electricity in the form of electrons flows where it's needed and when it's needed and in the amounts in which it's needed – usually in ways that are transparent to us as utility customers. Almost all utilities in the West have electricity generators and power lines that they own, but those electrons are constantly flying around this part of the West wherever they're needed at darn near the speed of light. Our regional grid isn't absolutely seamless, but it's also not made up of isolated and discrete state grids, so being "independent" may be a laudable goal when we're talking about producing as much of our energy here at home as possible, but in practice we're far more interconnected than that, just as we rely on utilities in faraway places to help satisfy our electricity needs, and vice-versa.

Combining Idaho's reliance on electricity and natural gas imports, as well as our thirst for transportation fuels such as gasoline, diesel, and aviation fuel, all of which come from out of state, Idahoans spend about $3 billion on energy each year. Most of those energy dollars are shipped out of state, creating an even greater sense of urgency for Idaho to step up with energy efficiency and conservation to keep more of these dollars at home, but also to develop renewable energy resources that can be tapped to meet our energy needs while doing far less damage to the environment and to human health than we do when we rely on such toxic resources such as coal to keep our lights on.

Meeting Our New Needs with Efficiency & Renewables

That's the beauty of electricity. Study after study, including the region's guiding four-state Power Plan by the Northwest Power and Conservation Council that we'll discuss later, chart a course for Idaho and our neighbors to meet our future electricity needs with renewable energy and by reducing our demand through energy efficiency and conservation. Think about that: It is not only possible but undeniably doable for Idaho to satisfy its growing electricity demand by using less electricity in ways we haven't yet dreamed of; and also by marshalling the natural resources under our feet in scalding geothermal formations, blowing by us in all that confounded wind, beamed to us from the biggest nuclear reactor ever some 90 million miles away, and even growing in our fields and forests. We in Idaho have abundant, affordable, and clean energy resources all around us, we just need to summon our

collective will to plug into it and wean ourselves off the dirty old energy resources of the past.

Armed with this new 21st Century Energy Roadmap, at least for electricity, we can not only grow our own electricity right here in Idaho, we can go a step further and begin shutting down those coal plants that represent one of Idaho's biggest contributions to the climate changes that are steadily and provably changing the way our planet functions, and that are already affecting everything from agriculture to recreation here at home.

This guide is designed to explain how that can happen. More important, it will help explain how you can be a part of it. Not just by switching out those old 20th Century incandescent light bulbs and doing more of the things we're already doing, but by taking it to the very places where energy decisions must be made to propel Idaho into the changing energy world already taking shape around it. Places like your utility's boardrooms or that most mysterious of state agencies, the Idaho Public Utilities Commission. As you'll see, it's not nearly as daunting as it might seem, and it's time for Idahoans to take control over the kinds of energy we want and where it will come from – to push our reluctant utilities on to a more responsible energy future.

After all, this is really about you seizing from your power company the control over your own electricity use and where it comes from. We saw that in 2013 when scores of utility customers and businesses stood up to Idaho's largest power company to defend the policies that enable us as utility customers to install solar panels on our homes and businesses. We'll see the same efforts played out with utilities across Idaho as we tap into true "people power" like never before.

The answers to our future electricity needs will come from Idaho's indomitable can-do ethic and home-grown solutions that are attainable and that will provide thousands of home-grown jobs and support our state and local economies. This new Green Economy won't just give us healthier sources of electricity, it will also provide new dollars for our schools and services that in some parts of Idaho are already benefitting from new clean energy investments.

Idaho *can* and *must* satisfy our energy needs in ways that are sustainable and that do not continue to inflict harm to our natural environment and the health of our people. Despite what we hear from some utilities, from would-be developers of speculative power plants, and from some who remain moored to traditional and discredited ways of looking at energy, we in Idaho are ideally suited to meeting our energy needs in ways that are more environmentally benign – and also no more expensive than the old-style energy sources we've relied on for far too long.

You may have heard these solutions be dismissed, even by some in our own utilities, as pie-in-the-sky feel-good solutions to a far more complex problem. That renewable energy can't be counted on when it's most needed. That these solutions will send energy bills higher. That the grid isn't ready for it. Nonsense! We hope this Guide helps to arm you with the facts you need to counter these and other tired excuses for not moving forward.

The Northwest Power Plan: A Good Roadmap

The Northwest Power and Conservation Council, which we mentioned earlier and which from now on we'll just call the Power Council, helps plan for the energy future for Idaho, Montana, Oregon and Washington. It's the gold standard for regional power planning in the United States, and it is already proving the naysayers wrong. In its Sixth Power Plan for the Pacific Northwest, the Council projects our region can meet 85 percent of our new electricity needs over the coming 20 years through energy efficiency alone. Almost all of the rest of those needs will be met by wind and other renewable energy resources, the Council reports. But wait! There's more! Aggressive deployment of energy efficiency measures and renewables will also help the region embark on the systematic decommissioning of its coal fleets and even help replace the nominal amount of power that is currently being generated by the four Lower Snake River hydropower dams that for more than a generation have threatened the very existence of Idaho's beloved salmon populations. The Power Council is now preparing its 7th five-year regional energy plan, and we are confident that with your participation this plan will be even more forward-looking than the six that preceded it. The days of our utilities throwing up their hands and telling us that the job of building a clean energy future is too hard are over.

The advantages of developing native energy resources are clear: Rather than ship billions of energy dollars out of state each year, we will keep those dollars at home, in our communities where they will be put to work for Idahoans. Local counties and school districts are already benefitting from taxes, royalty payments, increased business and employment from Idaho wind farms and geothermal power plants. Renewable energy projects can deliver huge economic benefits to cash-strapped rural economies. Energy efficiency and conservation initiatives will bring a wave of new "green collar" jobs as a workforce grows to retrofit homes and businesses with energy-saving measures. All it requires is a renewed sense of dedication among our state and local leaders to seize the

moment and join our neighboring states in recognizing the value of developing a sustainable and affordable energy economy. The voyage is under way elsewhere as Idaho's neighbors lead the race to embrace an evolving green economy that means dramatically reduced carbon dioxide emissions; achievable but aggressive efforts to meet energy conservation goals; transforming our markets by requiring efficient appliances, electronics, and other energy-consuming devices; and in general incentivizing smart energy policies and behaviors.

We are nothing if not pragmatic: Anyone who has lived in Idaho for any amount of time knows that changes like the ones we just described will not come swiftly nor easily. Idaho is not California, never will be, and shouldn't be. As Legislatures and governor's offices go, Boise is not Salem or Olympia or even Helena. Progressive energy policies that succeed elsewhere can be difficult to implement in Idaho. Our hill can be a bit steeper to climb. Climate change science enjoys pervasive if inexplicable skepticism in arenas of power here, and because of that there has been less motivation to implement sound energy policies. And, of course, Idahoans enjoy the lowest electric rates in the United States, so acting to reduce consumption can be less compelling for some whose motivation to act is tied to the size of their monthly power bill.

The 2012 Idaho Energy Plan: Efficiency First, then Renewables

It was nonetheless with a sense of urgency that the Idaho Legislature adopted the state's second Energy Plan in 2007, and then revised it in 2012. The Plan, which serves as Idaho's roadmap to a more sustainable energy future, says our electricity needs should be met first with energy efficiency and conservation. Then comes renewables. And then, only if necessary, traditional fossil fuel resources.

> *"This Energy Plan recommends increasing investments in energy conservation and in-state renewable resources. Conservation and in-state renewables offer a number of important benefits. Conservation lowers the energy bills of Idaho households and businesses and reduces the flow of dollars outside the state. Conservation and renewables diversify the state's resource base, reducing its dependence on imported fossil fuels and providing insurance against increasing fuel prices."*
>
> *From the Preamble of Idaho's 2007 Energy Plan*

The state's 2007 Energy Plan was the product of a year's worth of meetings by multiple legislative committees formed just for this purpose. It was packed with recommendations on everything from energy efficiency and conservation to renewable energy, natural gas, transportation fuels, and the siting of energy facilities. Many of the recommendations haven't been implemented, but some have in whole or in part. In 2011-2012, the Legislature conducted its five-year review of the Plan, although the process was not nearly as open or comprehensive as with the 2007 Plan, and as a result the current 2012 version has been watered down, lacks needed policy recommendations, and instead is a compendium of what "might" or "could" be done on energy issues. As discussed more fully in Chapter 9, a big part of the problem was that the Energy Plan revisions were essentially turned over to a committee consisting primarily of utility representatives, as can be seen in its lack of ambition and vision. But it is the only thing that passes as a state energy policy, so it falls on us as clean energy advocates to reject lowered expectations and instead demand today that our policy makers and our utilities reflect our values and our insistence that we adopt true energy policy reforms, reduce and eliminate our addiction to dirty energy, and demonstrate the inventiveness that makes Idaho and Idahoans so special.

Implementation of Idaho's energy policies, such as they are, has been entrusted to various entities such as the governor's underfunded Office of Energy Resources and the Public Utilities Commission, which more often than not looks to the Idaho Legislature which has taken a hands-off approach to setting state energy policies and guidance. Never before has the need for leadership in energy policies been so urgent as it is today.

The energy policy vacuum at the state level is a mixed bag: Some argue that the lack of state involvement in energy policy isn't a bad thing, since the state has proven more likely to yield to utility interests rather than those of us as utility customers. On the other hand, that has also made it more important for Idahoans to step up and push for policies to promote clean and affordable energy alternatives rather than the business-as-usual policies that have resulted in utilities clinging to their coal plants, utilities engaging in battles against wind and solar advocates and businesses, and, now, a state Public Utilities Commission that was sued by the U.S. Federal Energy Regulatory Commission (FERC) over the way the PUC has handled the long-running dispute between electric utilities and renewable energy developers.

Flash forward to 2014, and we see an energy landscape ready for reform and implementation of new, progressive policies. If we fail to act, the exodus of clean energy businesses to surrounding states will continue, setting Idaho back further in the race to the inevitable new clean energy frontier.

Utility intransigence aside, it is clear that the days of polluting, carbon-emitting coal plants are numbered. Proposed coal plants are being scrapped almost by the week across the country as utilities calculate the massive cost of paying for their pollution. Two plants in the Northwest, the Boardman plant in Oregon and the Centralia plant in Washington, will be shut down early – in the next decade - because the people in those two states have demanded cleaner energy from their utilities. This talk of decommissioning older coal plants comes as we prepare for federal action to place a high cost on the climate-changing emissions from coal-fired power plants, making those plants uneconomic to operate. But something must take the place of those dinosaur power plants, and we in the Pacific Northwest now know that something is a combination of energy saving measures and renewable energy.

We hope this report helps point us in the direction that Idahoans have come to expect from their utilities, their elected officials, and from others whose job it is to provide Idahoans with forms of energy that are not only realistic, but that also will make Idaho part of the global clean energy solution. Thanks to the participation by scores of energy experts in Idaho and beyond, we believe this formula for a cleaner energy future for Idaho is practical, affordable, achievable, and above all in the best interest of Idahoans and our environment.

This document will continue to evolve along with the promising new energy technologies and with Idahoans' commitment and dedication to clean energy. It's our hope that as more Idahoans become better acquainted with where our energy comes from, how it finds its way to our homes and businesses, and ultimately how it is used, we will all become stronger advocates for energy policies that will meet our future needs while also protecting our health and environment.

Most important, we want to introduce you to some of the tools Idahoans need to participate in the often-complex world of energy policy in Idaho. We'll demystify the befuddling world of how our utilities are regulated, where their power comes from, and how decisions are made on whether they sell you "green" or "brown" energy.

As we become more comfortable in taking these issues to our utilities and to those who regulate them and to those who write and implement our energy laws, we will become a force for change from the business-as-usual energy world and join others in pursuing a more sustainable energy future.

CHAPTER 1

IDAHO AND CLIMATE CHANGE

Believe it or Not, Impacts are Real

Driving the Idaho Energy Discussion: Climate Change Impacts are Already Impacting Energy Choices

An energy guide may seem an odd place to begin with a discussion about climate change. But as we're about to demonstrate, energy and climate are so intertwined that understanding how greenhouse gas-induce climate change is so central to how we approach decisions, a roadmap through Idaho's energy world by necessity needs to begin here. At the Snake River Alliance, much of our clean energy work is viewed through the prism of climate change and its now-recognized impacts in so many parts of life in Idaho. Agree with it or not, the urgency and the pressures to act to do our share to address climate change will force changes in where our electricity comes from.

Much has happened on the issue of climate change since the Alliance first produced "Idaho's Clean Energy Future" in 2011. The role that our energy choices in Idaho play in feeding into climate change mechanisms is far better understood, and the impacts of climate change in Idaho are becoming increasingly visible, making the need for action more urgent. Utilities outside of Idaho have quickened their responses to climate issues and anticipated greenhouse gas emissions restrictions out of rightly placed concerns that their viability going forward is at risk if they do not clean up their energy acts. And, finally, a realization is settling in back in Washington, D.C., even among one-time climate change skeptics, that something will happen soon to regulate greenhouse gases such as carbon dioxide, and when it does it will reshape America's electric utility sector more than has already occurred in the past decade. Greenhouse gas emissions and the climate impacts they are having are already, dramatically, reshaping the traditional electric utility business model. Utilities must adapt to this new reality if they are to survive.

We said in 2011 and believe even more today that whether you believe Earth's climate is changing or whether you believe it isn't, or whether you believe it's changing but also believe humans are having no impact, or whether you believe it's changing but that we'll all be better off for it, the simple fact is that climate change will soon alter the way Idaho consumes energy and how much we all pay for it. The corollary to that simple fact is that the reality of climate change and the threat of its future impacts in Idaho and around the world is one of the core reasons we are demanding low-carbon and carbon-free energy resources and an end to such carbon-intensive energy resources as coal-fired power plants.

We needn't get into the specifics of the climate change debate here, because whatever one believes doesn't change the fact that Idaho must react to it, or forces outside the state will do it for us, as is already happening. It's perhaps noteworthy that the gulf between those who believe climate change is occurring and that we should take action to stop and reverse its impacts, and those who believe melting glaciers and rising temperatures and sea levels is a natural, cyclical phenomenon, is more pronounced in Idaho than most places. In short, a lot of people in Idaho are not convinced that climate change is taking place. And since many of those people occupy positions that for now at least will have a disproportionate impact in determining Idaho's role in dealing with it, that presents clean energy advocates not just with a huge challenge, but also an opportunity.

Whether Idaho policy-makers believe in climate change or the reasons behind it becomes less relevant by the year, because Idaho can no longer try to shield itself from the global, national, and regional policy shifts occurring to combat climate change. The fact is, the federal government will join our neighboring Pacific Northwest states in taking action to reduce our energy-related carbon emissions, and Idaho will be part of the solution whether it wants to or not. Carbon emissions will be constrained and a price will be placed on them, even in Idaho. Idaho is surrounded by states that have mandates requiring growing amounts of carbon-free renewable energy, and as a result the days of our reliance on traditional coal generation are numbered if for no other reason than that our three primary electric utilities happen to do business in states where climate issues are being addressed, meaning our utilities have no choice but to either take a greater leadership role – or go along for the ride. Idaho has no choice but to participate in a cleaner energy economy that dramatically reduces its greenhouse gas emissions. Even if it wanted to, Idaho cannot "opt out" of a carbon-reduction strategy forever: Its energy future is inextricably tied to evolving energy and climate policies elsewhere in the Greater Pacific Northwest and across the nation that are being planned by decision-makers (including utilities) that Idaho interests cannot control.

Sounds harsh, but it is today's energy reality. Idaho has tip-toed around the climate change issue and avoided making binding commitments to reduce its greenhouse emissions ever since climate change became an issue. Even as Idaho dodges regional compacts that would commit the state to making actual greenhouse gas (GHG) emissions reductions, Gov. C.L. "Butch" Otter

issued an Executive Order on May 16, 2007, that said, in part:

> *WHEREAS, human activities contribute to creation of greenhouse gases; and*
>
> *WHEREAS, greenhouse gases are believed to trap heat in the atmosphere and have been linked by the U.S. National Academy of Sciences to drought, reduced snow pack, altered precipitation patterns, more severe forest and rangeland fires, and forest disease; and*
>
> *WHEREAS, the Western Governors' Association projects that rising levels of greenhouse gases in the atmosphere could have economic and environmental impacts on the West in coming decades and;*
>
> *WHEREAS, the causes and effects of rising greenhouse gases, to the degree they are understood, may extend to the Western United States and the State of Idaho, and it is incumbent upon states to take a leadership role in developing responsive state-level policies and programs to reduce greenhouse gas emissions, develop alternative energy sources and use energy efficiently…."*

So according to the governor, humans are contributing to the warming of our planet. Climate change and associated global warming is actually occurring and is affecting Idaho; and Idaho needs to join the Fight Climate Change Club yesterday.

That message has yet to translate into legislation, policy, or regulatory directives from the Idaho Legislature or, for that matter, anywhere else in state government that would put a dent in Idaho's GHG emissions, but the Idaho Public Utilities Commission, in a refreshing burst of acknowledgment, went on record in 2013 as being concerned about the regulatory future when it comes to climate issues. Commissioners delivered this sobering assessment of the perils of continued coal plant operations while issuing an order in an Idaho Power case in which the utility sought to place the risk of massive environmental upgrades to its Bridger coal plant in Wyoming on the backs of customers:

> *"We acknowledge the public's concerns about unnecessarily extending the life of the Bridger coal plant. The detrimental effects of long-term coal use on human health, the climate, wildlife, land and water are well documented.*
>
> *While we find that present circumstances require the proposed upgrades to allow Bridger Units 3 and 4 to continue providing reliable energy to Idaho Power's customers, we recognize that the future of coal-fired generation in the United States is uncertain at best."*

Commissioners sounded a similar theme in a 2013 PacifiCorp energy resource planning case. Never before have Idaho utility regulators spoken so bluntly about the impacts of large fossil fuel power plants and the probability that those plants will continue to face ever tighter regulations:

> *"The Commission also acknowledges that recent history has demonstrated that attempts by energy analysts to predict carbon pricing is fraught with failure and uncertainty. However, it seems more likely than not that the EPA will move forward and enact additional regulations of fossil fuels under the Clean Air Act."*

When Idaho utilities and the Legislature re-wrote the Idaho Energy Plan in 2012, they couldn't avoid the issue of climate change and greenhouse gas emissions altogether, but that didn't stop them from giving an homage to coal power:

> *"The Baseload coal plants built in neighboring states in the 1970s and 1980s have provided a constant source of reliable, low-cost power to Idaho utilities. Coal-based electrical generation offers the advantage of a known technology that can produce electricity at a low and stable cost. Coal plants are best suited to baseload operation, where their electricity output is stable from hour-to-hour and day-to-day. However, new investments in this type of resource are becoming problematic, as coal combustion emissions are increasingly associated with the impacts of global climate change and other environmental concerns."*

However:

> *"Large energy facilities can have significant and complex environmental impacts. Generating plants fired by fossil fuels consume large volumes of water and emit carbon dioxide and mercury as well as regulated pollutants such as carbon monoxide, sulfur dioxide, particulate, and oxides of nitrogen. Nuclear power plants create radioactive waste that must be safely stored for thousands of years. Even renewable resources can have significant environmental impacts: large hydroelectric facilities can alter stream flows and degrade habitat; wind energy farms can have visual and noise impact and can cause avian mortality; and geothermal energy projects can emit sulfur dioxide gas and have been located in culturally or environmentally sensitive areas. As such , the Committee establishes as one of the Energy Plan Objectives the protection of Idaho's public health, safety, and natural environment."*

You can see the problem. When it comes to energy, Idaho is nothing if not conflicted. If utilities even in Idaho have given up on

building new coal plants because they are "problematic" because their "emissions are increasingly associated with the impacts of global climate change," how then can the same utilities insist it is good business to keep the existing plants operating regardless of the kinds of environmental upgrades built into the plants, especially since they would presumably operate dirtier than newer models?

For Idaho to meaningfully participate in national and global greenhouse gas reduction efforts to slow down and ultimately begin reversing the impacts of climate change, it must also make meaningful reductions in greenhouse gas emissions from its electric sector. Why? Because as we'll see later, despite all the upgrades that will be required to keep existing coal plants operating legally, *none of them can reduce climate-changing carbon dioxide emissions because that technology does not yet exist for utility-scale power plants.*

Idaho's governor deserves credit for ordering state agencies to get more energy-wise and to put a priority on clean vehicles when adding to their motor pools. But Idaho continues to resist setting reduction targets and trying to meet them. Without a current GHG inventory and reduction targets, it is impossible to know whether the state is making real progress and where its attention needs to be focused.

And that is where you, the Clean Energy Advocate, can become more involved!

Our policy-makers must come to terms with the understanding that Idaho's economic vitality and its interconnectedness with the Pacific Northwest depends in large part on its participating with its neighbors in getting real about addressing climate change.

Gov. Otter, again, to his credit, enlisted Idaho in The National Climate Registry in 2007, which in effect commits Idaho to show up at meetings and join in efforts to identify where our GHG emissions are coming from and provide incentives to those producing those emissions to begin reducing them. Idaho's participation in the Climate Registry does not, however, commit it to actually doing anything to reduce those emissions.

Climate Change in Idaho?

We hear about rising sea levels, but we're 500 miles from the ocean. We hear about melting glaciers, but Glacier National Park is 500 miles away, too. So does Idaho really have a dog in the climate change fight?

You might say that.

All of Idaho's natural resources industries, with the possible exception of mining, are at risk from a warming climate. Researchers from the University of Idaho, the University of Washington and elsewhere are documenting conditions in which snow elevations are rising, meaning parts of mountains that once received snow are now receiving rain. Where it does snow, snowmelt is happening sooner than ever, changing Idaho's "hydrograph" - or the nature of its snowmelt and water flow. All of this poses obvious challenges for agriculture, which relies on this water for irrigation, as well as recreation. Native plants and animals are already doing the Climate Shuffle, abandoning warming realms in which they existed for eons in search for conditions in which they can survive.

According to the U.S. Environmental Protection Agency, the last century has seen average temperatures near Boise rise 1 degree, which may seem like small potatoes but in the larger mechanics of climate operations is ominous. The EPA also reports that precipitation in some parts of the state have increased 20 percent, but in others has declined by more than 10 percent. The agency projects those trends will continue – and likely be amplified – as we race toward 2100.

Climate change isn't just about the Earth warming. It's about the very mechanics of how our planet functions undergoing profound changes that may mean cold where it wasn't so cold, hot where it wasn't so hot, wet where it wasn't so wet, and dry where it wasn't so dry. It's not a question of seeing a fall snowstorm or a cool summer day that belie the phenomenon. It's a change to how our larger climate system will affect our agriculture, recreation, hydropower generation, and almost all facets of life as we Idahoans know it.

According to the U.S. EPA ("Climate Change and Idaho"), while Idaho relies primarily on surface water, groundwater is also extremely important.

"Most of Idaho is drained by tributaries to the Columbia River, including the Spokane, Pend Oreille, Kootenai, and Snake rivers. These rivers are regulated by dams and reservoirs to reduce spring flooding and augment summer flows. Runoff in the state is strongly affected by winter snow accumulation and spring snowmelt. A warmer climate could mean less snowfall, more winter rain, and a faster, earlier snowmelt. This could result in lower reservoirs and water supplies in the summer and fall. Additionally, without increases in precipitation, higher summer temperatures and increased evaporation also would contribute to lower stream flows and lake levels in the summer. Drier summer conditions would intensify competition for water among the diverse and growing demands in Idaho. Traditionally, the largest water withdrawals have been for irrigated agriculture, and hydroelectric power production has been an important in-stream user of water. Recently, water demands to support manufacturing and tourism have increased…"

We could let the EPA go on, but you get the point. That EPA report came out in 1998, but time has proven its prescience. More recently, graduate students at Boise State University's School of Social Work produced a 2007 report, "Climate Change and Idaho: Recommended Legislative Actions for Mitigation."

The BSU study contains no fewer than 18 recommendations – many of which could be implemented by the stroke of a gubernatorial pen or legislative resolution – that Idaho could take to fulfill some of its regional and national responsibilities in the fight against climate change.

"The calamitous consequences of unmitigated global climate change are daunting, but we were heartened to learn that Idaho and other states had looked at the crisis and had recognized that states have the ability – and the imperative – to take action," the BSU report said.

Fast-forward to the Northwest Power and Conservation Council's 6th Power Plan, a thoroughly vetted energy-forecasting document that includes a review of climate change impacts because of the dramatic impacts they will have on the region's hydro resources.

"Climate change impacts include threats to our health, safety, infrastructure, and economic vitality within Idaho. Scientific experts are analyzing climate change impacts and our government is noticing such observations."

– Idaho Bureau of Homeland Security

Hit the fast-forward again and here's a July 2013 U.S. Department of Energy report, "U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather." It warns that thermoelectric power generation facilities (like coal plants) are at risk from decreasing water availability and warmer air and water temperatures that threaten such impacts as raising the risk of partial or full shutdowns of those plants. Hydropower, which as we'll see is central to Idaho's energy picture, faces big enough threats of decreased generation that our utilities are seriously monitoring climate change-caused impacts to the hydropower system – while at the same time the utilities are contributing to the very problem impacting hydropower. It can also lead to a vicious circle as energy demand increases to adjust to warmer temperatures, but the electric grid becomes more at risk, also due to warmer temperatures, and the ability of traditional fossil fuel power plants as well as some renewable generators to keep up is compromised.

In late 2013, the state of Idaho's Bureau of Homeland Security {BHS) updated its State of Idaho Hazard Mitigation Plan, which includes a chapter on "Risk Assessment: Climate Change." It begins:

This plan is prepared with the understanding that climate change will impact state mitigation planning and the hazards that it addresses. Depending upon the research sources and methods utilized, a variety of changes, severities, and outcomes have been predicted in regards to climate change. However, for the purposes of this plan, a general understanding is that:

- *The climate is changing;*
- *These changes are and will have an effect on the hazards within Idaho;*
- *The type and severity of the known hazards are both changing and increasing; and*
- *A dynamic planning approach will be needed going forward to ensure hazard planning remains resilient."*

The BHS mitigation plan outlines many of the likely climate change impacts covered elsewhere in this chapter of our Energy Guide, such as: "As an indicator of a changing climate, during 2012 Idaho experienced some of the worst wildfires and drought conditions in its history." But the assessment and potential for mitigation. But it doesn't mince words in concluding that the climate change phenomenon is no longer hypothetical:

> *"Climate change impacts include threats to our health, safety, infrastructure, and economic vitality within Idaho. Scientific experts are analyzing climate change impacts and our government is noticing such observations."*

The hazard mitigation plan notes that, "In partnership with its three public universities, Idaho is currently supporting research efforts at understanding the effects of climate change" and that the project "will allow for a better understanding of observed climate change and projected changes for the state as well as implications of climate variability and change on ecological, human, and economic systems. The development of climate indicators for the state can serve as a valuable tool for detecting and understanding the effects of observed changes in climate, as well as understanding the ramifications of projected changes in climate for Idaho."

With BHS weighing in on, and agreeing with, many of these region-wide climate change impacts, it stands to reason that for purposes of learning more about our energy resources and use in Idaho, we can consider the discussion of whether we will face such impacts essentially over. That realization comes in stark contrast with our utilities' continued dedication to carbon-emitting, climate-changing coal-fired power plants. It is difficult if not impossible for our power companies to rationalize burning coal for electricity while at the same time our state Bureau of Homeland Security and our state's universities are working overtime planning how we'll deal with the impacts caused largely by burning coal.

For all its shortcomings, the 2012 Idaho State Energy Plan couldn't help but agree with BHS:

> *"The Committee is particularly concerned about the possible impact of federal regulation of carbon dioxide and other greenhouse gas emissions. The Committee did not debate the science of global climate change. The Committee found it sufficient to note that there is enough momentum behind efforts to regulat greenhouse gases at the federal level that it is prudent for Idaho and its energy suppliers to continue to incorporate that likelihood into energy planning. The Committee encourages these utilities and all Idaho energy producers, deliverers, and consumers to continue to improve their preparedness by pursuing less carbon-intensive resources as part of a diversified resource portfolio."*

In June 2013, Elizabeth Kopits of the National Center for Environmental Economics at the U.S. EPA reported on federal interagency estimates of what's now known as the "social cost of carbon" to the Northwest Power and Conservation Council Symposium on Greenhouse Gas and the Regional Power System.

The idea of the social cost of carbon (SSC) entails monetizing the value of economic damages associated with increases in carbon dioxide (CO2) emissions. Kopits said that can include changes in net agricultural productivity; net energy demand; human health, property damage from increased flood risk; and the value of "ecosystem services," or how the natural environment makes it easier to live on Planet Earth through such things as filtering water and dispersing seeds for plants, pollinating crops, producing medicines, and capturing carbon. By placing a value on the benefit of reducing greenhouse gas emissions, economists and climate scientists believe we can better place a value on cleaner energy resources while also reducing our reliance on dirty ones. Properly used, SCC can more accurately estimate the costs of continuing to use a coal plant, for instance, or building a project such as the transcontinental Keystone XL pipeline, or whether to put large coal leases up for bid, since they will eventually contribute to climate change.

Power Council Warns of Climate Change's Impacts on Energy, Ecosystems

Returning to the Northwest Power and Conservation Council, as the entity charged with monitoring the region's ability to meet electricity demand, it is heavily involved in climate issues as they affect energy generation and availability. While we have documented the ongoing and expected impacts of climate change, the Power Council provides the invaluable service of putting climate change into the context of our energy resources.

The Power Council issues its regional Power Plan every five years and it addressed the climate change issue in its 5th Plan and then in more detail in its 6th Plan. The Council will take these the issue of climate and energy to a new level with its 7th Power Plan, which it will produce in 2014-2015. The passage of time has only honed the forecasts and possible scenarios that might befall our region.

What kinds of *energy* impacts? There are two overarching concerns: Rising temperatures will mean increased power demands and will also affect the volume and timing of river flows. Changing precipitation will also impact river flows. River flows not only impact the region's fish and wildlife populations, they also impact how a region that relies more heavily on hydropower than any other in the country will get its electricity. Water flows would be higher in the winter as more winter precipitation falls as rain rather than

snow; while a more meager snowpack means lower river flows in the summer – which is when Idahoans have the greatest demand for electricity. Likewise, the Northwest's power system would be better off in the winter; worse off in the summer.

The Power Council's 6th Plan, issued in 2010, has a chapter that deals exclusively with climate change issues.

> *"Climate change presents a daunting challenge for regional power planners. Not only will the warming trends have the impacts mentioned immediately above, policies enacted to reduce greenhouse gases will influence future resource choices."*

For purposes of discussing electricity, the most pressing climate issue is carbon dioxide (CO2) emissions. The Council says that CO2 emissions account for 85 percent of greenhouse emissions nationally and that about 38 percent of that comes from electricity generation, mostly coal plants like the ones Idaho relies on for half its electrical power. For our region, power generation is only 23 percent of our CO2 emissions, because so much of our electricity comes from hydropower. But that 23 percent is still far too high if the region hopes to make a big dent in its GHG emissions.

So far Idaho has declined to take most of the measures other states have implemented to reduce CO2 emissions – measures such as setting standards for emissions and for the amounts of renewable energy utilities must use, or regulating carbon emissions. To meet regional greenhouse gas emission-reduction goals of 30 to 40 percent of 2005 levels by 2030, the Council says the region must:

- Acquire all possible – and very significant - energy efficiency improvements identified in the Council's 6th Power Plan;
- Cut reliance on coal-fired generation in half, which for Idaho will be a huge challenge given the amount of coal it uses;
- Meet the renewable portfolio standards (green energy requirements for utilities) that are in place in three of the region's four states (Bonus Question: Which state in the Northwest has NOT adopted a standard?);
- Preserve the capability of the hydroelectric system within the confines of our legal, moral, and ethical obligations to protect threatened fish and wildlife species.

That's a tall order for any state in the region. For Idaho, whose policy to date has been to avoid committing to greenhouse gas reductions on its own about climate change until the federal government orders action to be taken, the task is monumental and becoming more so as each year of inaction passes. Keep in mind that 88 percent of our region's power-related CO2 emissions come from coal plants, and the need for Idaho utilities to clean up their power acts becomes evident.

But lest anyone jump to the conclusion that building more hydropower is the key to replacing CO2-emitting generation plants, bear in mind also that it is highly unlikely that any new big dams will be built in this region. In fact, keeping the existing ones legal is no small feat: Idaho Power's customers will end up spending more than $200 million just to relicense the Hell's Canyon hydro complex at the Federal Energy Regulatory Commission. That relicensing process has been under way since Idaho Power delivered its 36,000-page Hells Canyon relicensing application to the Federal Energy Regulatory Commission in 2003, and more than $100 million has already been spent. It is possible to squeeze incremental amounts of additional power out of existing hydro projects through such things as installing larger or more efficient turbines in those dams, but the cumulative gain in generation is nominal.

So once we accept that Idaho's CO2 emissions must be reduced – by a lot, given our disproportionate addiction to coal – and that new dams aren't the answer, the question becomes:

How Do We Get There?

"From a broad perspective," the Power Council's 6th Power Plan says, "there are three things we can do to reduce carbon dioxide emissions: Generate electricity from lower or zero carbon-emitting fuel, use less electricity, or sequester or offset carbon that is released."

Easy as pie, right?

Well, not quite, but it's not as overwhelming as it might seem. The Council notes that the groundbreaking December 2007 McKinsey and Company report, "Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost? U.S. Greenhouse Gas Abatement Mapping Initiative, Executive Report," lays a coherent strategy to get where we need to get. For instance, 40 percent of the greenhouse gas emissions reductions can be done at no cost, most of it coming from more efficient buildings or vehicles. The balance would come from actions that will cost, and in some cases cost a lot. Some, like capturing and sequestering CO2 from power plants and other sources, are not yet ready for prime time. Others, like expanded renewables generation and the integration of hybrid and electric vehicles, are closer on the horizon.

"If the goal is to stabilize greenhouse gas concentrations in the atmosphere, and if the climate change science is correct, policy

decisions would not be a question of which mitigation strategies to pursue, but rather how to pursue all possible actions," the Council reports. It's worth noting, however, that the goal isn't to stabilize greenhouse gas concentrations, but rather how to reduce them to historic levels.

Action!

As clean energy advocates, the real, tangible, threats if not the manifest reality of climate change will be what drives many of us to demand change from our state and local policy-makers and from our utilities. The policies range from the very specific to the more global. Contrary to the contrarians' claims, they are not revolutionary changes. They will not turn off our lights or send us back to become hunters and gatherers huddling around campfires in caves. We will not have to surrender our cell phones. We will not have to fork over our TV sets (although, about those plasmas?), and we will not have to mortgage our grandchildren's futures. The ideas are endless, but a few jump out as worth our attention:

- Idaho must join the 21st Century Northwest in identifying its greenhouse emissions, committing to reduce them, and implementing policies to do so. Passive participation in regional or national carbon reduction efforts have not moved Idaho forward. Policy-makers must be held accountable for committing Idaho and its cities and counties to firm reduction targets. Idaho must establish greenhouse gas reduction goals not just for the electricity sector, but also for the transportation and other sectors as well. A 50 percent reduction of 1990 emission levels by 2050 is reasonable.
- As recommended by the Boise State University report, the governor should elevate the issue's profile by creating a "State of Idaho Climate Change Advisory Commission."
- Idaho utilities must join the others in our region in shedding their coal-fired electricity generation. Coal plants in Oregon and Washington are now targeted for early retirement; those used by Idaho utilities must face the same fate.
- Idaho simply cannot achieve meaningful carbon dioxide emissions by nibbling around the edges and focusing its efforts on squeezing more power from its dams and rivers. Demand that our utilities establish firm timelines to phase out their reliance on coal and simultaneously developing aggressive replacement strategies with bolder energy efficiency and renewable energy planning.
- Idaho should adopt efficiency standards for electric appliances and other equipment, especially television sets. Failure to do so will only continue Idaho's embarrassing role as a dumping ground for companies that cannot market inefficient and unwanted products in states that don't allow them to be sold.
- We can stipulate that Idaho will never adopt a renewable portfolio standard requiring utilities to acquire a percentage of their energy from clean, non-hydro resources. However, we can and should demand that Idaho set standards on the emissions coughed up by utility power plants.
- If Idaho will not adopt a meaningful renewables portfolio standard, it should consider a voluntary standard for its utilities and measure their successes in incorporating more non-hydro renewables into their portfolios. By way of reference: Montana's RPS is 15 percent of investor-owned utilities' sales by 2015; Oregon's varies by utility size but is 25 percent of sales by 2025 for large utilities, 10 percent for medium utilities, and 5 percent for small utilities; Washington's is 15 percent of sales by 2020 plus cost-effective conservation.
- Implement the efficiency and renewables provisions of the 2007 Idaho Energy Plan. Enhanced energy efficiency measures hold the greatest potential for the least expensive carbon reductions in the region. The Energy Plan is rife with recommendations on how to do it, including setting *meaningful* conservation targets for utilities and incentivizing them with rewards for meeting the targets and penalties for failing to do so.

CHAPTER 2

AN OVERVIEW OF IDAHO'S ENERGY PICTURE

Where We Get Our Juice

Ask most Idahoans where our electricity comes from, and most will say we get most of our electricity from hydropower and the dams that over the past 110 years were built on Idaho's mighty Snake River for flood control, irrigation, and, yes, power generation.

There was a time when that was true. Idaho has long prided itself on its reliance on its rivers and downstream Columbia River dams to produce most of its electricity. But the big-dam-building era has largely passed, and as energy demands in Idaho and the Pacific Northwest continued to rise over time, the region came to rely more heavily on other energy resources to make up the difference.

According to the 2012 Idaho Energy Plan, Idaho's 2009 electricity "fuel mix" broke down something like this, with the U.S. net electricity generation in parentheses for comparison purposes:

- Hydropower: 49.7 percent of our electricity (6 percent national generation)
- Coal: 37.6 percent (45 percent)
- Natural gas: 6.5 percent (23 percent)
- Nuclear 2.1 percent (20 percent)
- Non-hydro renewables such as wind or geothermal: 4.1 percent (4.3 percent)

Those figures have shifted slightly since the state energy plan was written, as some additional renewable energy has come onto the systems of Idaho utilities and the Bonneville Power Administration, and Idaho Power has added a large natural gas generation plant near New Plymouth and the Oregon border in southwest Idaho. The fuel mix percentages also shift from year to year, such as when utilities must draw more heavily on coal or gas or other outside resources in times of low stream flows and the resulting poor hydropower conditions, or conversely when they rely on coal plants less in times of abundant hydropower. It's also noteworthy that Idaho's fuel mix varies by utilities. For instance, Idaho Power's mix has coal and hydropower roughly about the same, while Avista Utilities relies more heavily on natural gas, and Rocky Mountain Power (PacifiCorp) has far more coal in its portfolio. The state's nearly 30 small municipal and cooperative utilities rely primarily on hydro-rich Bonneville Power Administration for the bulk of their power, with a small percentage coming from the Columbia Generating Station nuclear plant in Richland, WA, and a growing percentage coming from the wind farms that are springing up across BPA's sprawling Pacific Northwest service territory.

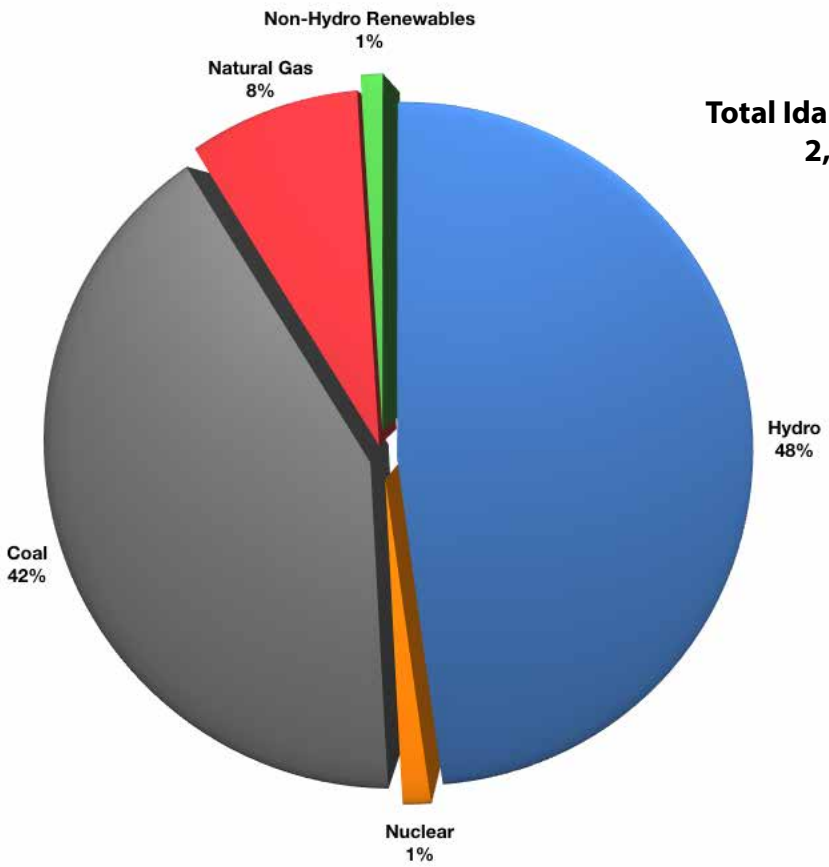
To understand how significant Idaho's electricity imports are and how reliant Idaho is on out-of-state generation, almost all of which comes from coal plants, compare the following list of Idaho's *in-state* generation with the list of total generation above:

- Hydropower: 76.1 percent
- Coal: 0.7 percent
- Natural gas: 14.1 percent
- Nuclear: 0 percent
- Non-hydro renewables such as wind or geothermal: 4.7 percent
- Other: 0.8 percent

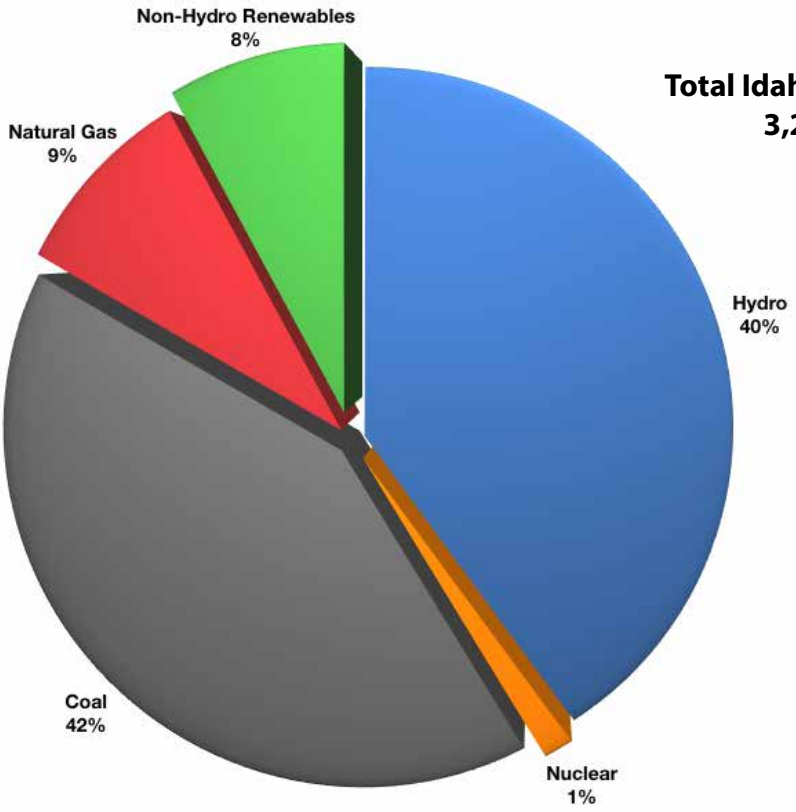
Dworshak Dam, Idaho

The dilemma in Idaho is the dearth of non-hydro renewable electric power in our state's energy portfolio. While it is true that hydropower is for the most part carbon-free (not an insignificant consideration as we strive to address climate change challenges), which meets an important criteria of being a renewable resource, most do not consider it truly renewable. A major reason why utilities and government agencies that set standards for renewable energy (Idaho does not) distinguish between hydro and non-hydro renewables is primarily because many of the region's scores of dams are directly linked to myriad environmental effects that include impacts on our cherished fish species and other wildlife, as well as diminished river conditions.

For instance, Idaho relies on imported coal, gas, wind, and nuclear power for about 56 percent of its total electricity supply, compared to 44 percent for in-state generation (almost all from hydro). If you remove all that out-of-state coal from the calculation, as many state officials and policy makers often do, then Idaho magically becomes the lowest carbon-producing state per capita in the nation by virtue of the fact 80 percent of its electricity produced in-state comes from dams and by virtue of the fact that statistic does not include the coal we consume. It's important to bear in mind that's an intellectual exercise only, because Idahoans are still responsible for our share of the environmental damage being done by those coal plants, even though they're located



Total Idaho Load in 2005: 2,693 aMW



Total Idaho Load in 2015: 3,242 aMW

Source: 2007 Idaho Energy Plan

elsewhere. There's no getting around the fact that Idaho's per capita carbon footprint is far from the lowest in the country but is actually mediocre compared to other states, especially those with coal-free utilities.

We cannot overstate that fundamental but very important reality about electricity in Idaho – that despite all we hear about "carbon-free" hydropower, we are also plugged into coal in a big way, even if there are no coal-fired electric generating plants in Idaho. Instead, the coal plants that keep Idaho's lights on are located in Nevada, Oregon, Montana, Wyoming, and elsewhere. So while we're not burning coal and directly poisoning our environment here in Idaho, we're essentially dumping our carbon footprint and the deadly coal plant emissions onto our neighboring states that must deal with the environmental mess those plants create on the ground, in their air, and in their water. Similarly, hydropower represents about 80 percent of the electricity generated in the state, but less than half of the electricity consumed in the state.

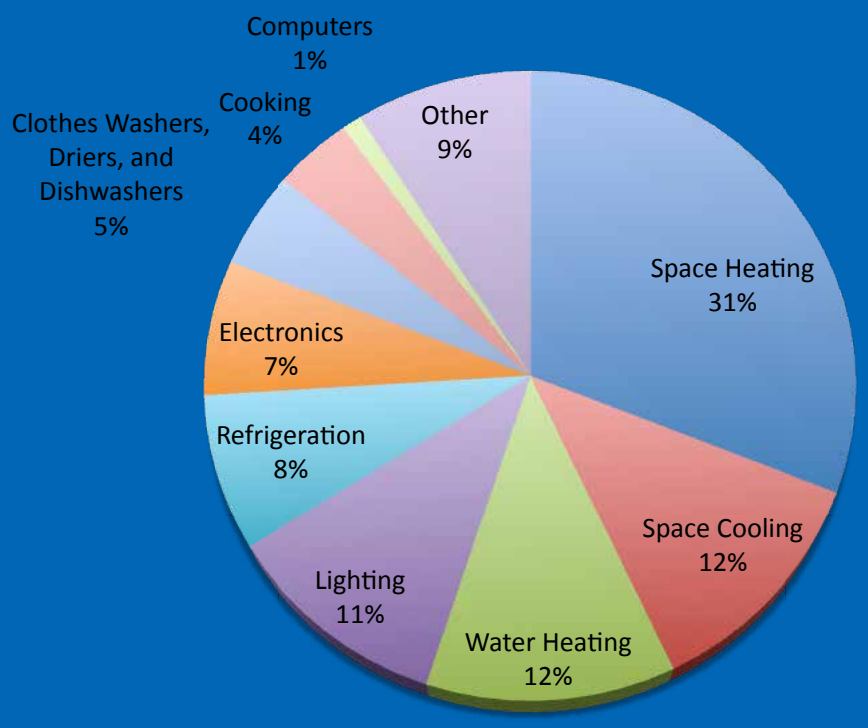
Idaho's heavy reliance on hydro and coal for our electricity is even more troubling in light of the inevitable federal regulations that will either require utilities to reduce their climate-changing carbon dioxide and related air emissions, or require utilities nationwide to have a minimum amount of renewable energy in their portfolios. With roughly 4 percent of our electricity coming from non-hydro renewables, the clock is already ticking for Idaho to accelerate development of wind, solar, geothermal, biomass, and other renewable resources. Another trend we're beginning to see in Idaho is that, facing proposed carbon restrictions aimed at existing coal plants and with new coal plants off the table, Idaho utilities are turning to coal's only-somewhat-cleaner fossil fuel cousin as an alternative. While large natural gas plants emit half the carbon dioxide of coal plants, they do emit greenhouse gases and will probably continue to produce even more of those emissions as more utilities turn to natural gas turbines to replace coal-fired power generation. Another issue confronting natural gas as an electricity generation resource is it is subject to volatile price fluctuations, exposing electricity consumers to swings in their power bills. And as the practice of hydraulic "fracking" to extract gas from previously impenetrable geologic formations continues to grow, the mounting reliance on natural gas for power generation is certain to encounter tougher environmental regulations and consequent price increases. It's true that there is no source of electricity generation – including wind and solar power - that is without environmental consequences and it is disingenuous to try to argue that renewable energy from whatever generation method is completely environmentally friendly. Wind turbines have bird issues; solar energy has issues with manufacturing panels; and resources such as woody biomass raise big questions about removing living or dead forest material from its natural environment, let alone transporting it long distances to biomass processing plants.

"While we're not burning coal and creating its devastating environmental impacts here in Idaho, we're essentially exporting our carbon footprint to our neighboring states that must deal with the environmental mess those plants create on the ground, in their air, and in their water."

Utilities have tried to defend their coal operations by claiming their customers prefer the cheapest electricity possible. Public opinion surveys show differently. Polls by Boise State University and other entities are unambiguous in showing Idahoans want more green power coming into their homes and businesses. The 2007 Idaho Energy Policy Survey conducted by the Center for Advanced Energy Studies at Boise State University asked Idahoans about their priorities in meeting Idaho's energy demands. Fifty percent said we should develop "green" renewable energy sources, followed by 26 percent saying we should do more with energy conservation and efficiency programs. Asked whether human activities are contributing to global warming, 70 percent of Idahoans said we are. And of those, 54 percent said Idaho should reduce its greenhouse gas emissions, something that will require Idaho to rely less on the coal-fired energy it imports. And asked about the single most important energy issue facing Idaho, the leading response was the availability of renewables. Similar results were found when a Northwest-wide collaborative effort by public radio stations that commissioned a poll in 2011 by Davis Hibbitts & Midghall (DHM) Research. Respondents in the four Northwest states resoundingly said they were willing to pay more for clean energy, and they equally overwhelmingly said they wanted far less coal and gas generation than our utilities are providing. Idahoans surveyed said they thought 11.1 percent of our

LET'S PRETEND YOU'RE TYPICAL: HERE'S WHERE YOUR ELECTRICITY WENT

No, none of us are "typical" electricity consumers. Some eschew the TV set, some the microwave, some the clothes drier or the air-conditioner. But if we toss all of us into one bucket and looked at how we use electricity in homes, here's how it would break out, according to the National Academies:



energy comes from coal (the actual number is closer to 40 percent) and that they would prefer that coal accounts for only 3.3 percent of Idahoans' energy. The more Idahoans learn about where their electricity actually comes from, the more they want energy efficiency and renewable energy to replace coal.

It has long been documented that Idaho boasts the lowest or almost the lowest electricity rates in the nation, due largely to all that hydropower that appears cheap from the consumer perspective but is in fact far more expensive due to the enormous environmental consequences that cost hundreds of millions of dollars annually to mitigate. Idaho's electricity prices are also driven down by that perceived "cheap" coal, although the true price of coal is not being calculated, and once its environmental costs are taken into account, coals illusory competitive edge over renewables falls by the wayside and renewables stand out as the least-cost energy resource after energy efficiency, the cheapest of all.

While our power rates are one-half to one-third of those in many states, utilities are steadily bracing Idaho consumers that rates will continue to rise and will never revert to their historic lows. That's because it's unlikely major new dams will be built, and as demand for electricity grows other more costly electricity resources will need to come online. To be sure, Idaho will likely enjoy rates more favorable than in most states, but our rates will continue to rise. In light of pending federal requirements and financial penalties for greenhouse gas-emitting fossil fuel plants, utilities must turn to cleaner energy resources and more importantly to expanded energy efficiency and conservation measures.

Idaho's Electricity Demand

So how much electricity do we use in Idaho, and how much will we need in the future to accommodate our growing population and the new businesses that are eager to come here?

The best source for energy consumption data comes from the U.S. Department of Energy's Energy Information Administration, which is the federal government's leading energy statistician. According to the EIA, in 2010 (the most recent year for which comprehensive data is available) Idaho had a net summer peak need of 3,990 megawatts, and we'll take a look at what "peak" needs are below. The actual total demand for electricity is far larger when averaged over the year, coming in at about 2,500 average megawatts – or about the same as three or four good-sized coal-fired power plants.

Also, Idaho's average retail price for electricity in 2010 was a lowest-in-the-nation 6.54 cents per kilowatt hour, which is the pricing unit consumers see on their monthly bills. According to the federal Energy Information Administration, that price can be higher or lower depending on whether you're in the residential (8.67 cents), industrial (5.48 cents), commercial (6.86 cents), or the irrigation class of customers (EIA does not separate irrigation customers for purposes of determining average rates). By comparison, Hawaii's average retail price was 25.1 cents and California's was 13 cents. Our neighbors in Oregon paid 7.5 cents, compared to 7.9 cents in Montana, 6.5 cents in Washington, 6.6 cents in Utah, and 9.7 cents in Nevada.

The percentage of electricity used by Idaho utility customer classes (based on power sold) breaks down roughly like this:

- Residential: 36 percent
- Commercial: 25 percent
- Industrial: 39 percent

As we'll see later, the prices for power sold by Idaho's regulated or investor-owned electric utilities are set by the Public Utilities Commission in a number of ways, including the utilities'"rate cases" that they file every one or two years. We'll look at how the PUC sets those rates in the chapter on the PUC.

Average Energy Needs versus Peaking Energy Needs

When ooking at our electricity needs, it's important to distinguish between the amount we in Idaho use on average, and how

much we need during those hot summer days when air conditioners are running full bore at the same time Idaho's farmers are working their pumps hard to irrigate their crops.

The differences between Idaho's "average energy" needs (that which we use on average during various times of the year) and our "peaking" needs (a snapshot of total electricity demand at a given time when it's super hot out there) can be huge. But because utilities must always have enough electricity to serve all customers at all times, and also to have some extra in reserve in case a generator or power line goes down, utilities must ensure that they can meet the highest demands they face. They don't have to own all that generation, especially if they can go the markets to buy another utility's surplus power (often at a premium price), but they have to have access to as much power as their customers will need and the transmission ability to get it here.

Idaho Power is a good example of a utility with a very high summer "peak" demand, which can be as high as a whopping 3,400 megawatts, but a much more manageable average energy load of about 1,750 average megawatts.

Why is this important? Because as long as a utility's "peak" demand grows faster than its regular old "average" demand, the utility's customers will need to foot the bill for increasing power plants such as expensive natural gas "peaking" plants used to supply power during those rare times of extra high demand. That's why energy-saving programs that can reduce those peak demands ("demand response" programs) are so important: For a fraction of the price of a shiny new power plant, a utility can implement on-call electricity demand reduction measures like remotely cycling off air-conditioners for residential customers who volunteer. Idaho Power, for instance, has the potential to grab a huge amount of "demand response" resources – more than 400 megawatts, or more than its large new Langley Gulch natural gas plant, that can defer or eliminate the need for pricey new and rarely used "peaking" power plants, saving customer dollars and helping to protect the environment.

So to sum up, both peaking energy needs and average energy needs are very important, but for different reasons. Utilities serving Idaho electric customers have their highest peak demands in the hot summer months; utilities serving customers in places like Seattle or Portland have their higher peak demands in the winter months – which makes for a beautiful friendship because utilities in the Intermountain West can send surplus energy to the West Coast in the winter, and the West Coast can send its surplus power over here when we need it most in the summer. In any case, as we now know, utilities must by regulation have enough electricity available to meet the highest customer demand whenever it occurs. How they do so is the next big question.

Exit: Coal

"Any state as dependent as we are on faraway coal plants and the monumental environmental risks that go with them has, we can safely say, has a carbon problem."

We all agree that Idaho's lights would go out if not for the power generated by toxic, out of state coal plants. We at the Alliance believe that has to change quickly if not for the sake of our health and environment, then for the sake of our economy, because coal is fast becoming an albatross for any business associated with it and any state or local government trying to recruit new businesses into an economy, like Idaho's, that is burdened by coal power. Any state as dependent as we are on faraway coal plants and the monumental environmental risks that go with them has, we can safely say, has a carbon problem. Utilities around the country face the same challenges, which is why so many of them have pulled the plugs on proposed coal plants or are beginning the long process of taking them out of service.

The famous Boardman coal plant near the Columbia River in Oregon provides about 10 percent of its output (about 70 megawatts or so) to Idaho Power, which owns a 10 percent stake in the Boardman plant. Its majority owner, Portland General Electric, saw the hand writing on the energy wall and, facing a lawsuit and regulatory crackdowns on Boardman emissions, sought an exit strategy and now plans to decommission Boardman by about 2020 – not 2040 as planned. PGE and all other part owners of Boardman will have to make up for that lost power, and our clean energy colleagues over on the "West Side" are increasingly confident it will do so with a clean energy replacement. So whether a utility such as Idaho Power likes it or not, its long affection to coal generation is about to change, if marginally, since Boardman makes up such a small portion of its total coal assets. Similarly, our colleagues in Washington State have worked with TransAlta, the owner of Washington's only coal plant in Centralia, to begin the process of shutting down that plant as well by 2020 and also 2025, as there are two units. At least in the eyes of other Pacific Northwest utilities, coal is a dead resource walking.

As most of those other utilities shed their coal boilers, Idaho's regulated electric utilities must be pressured to follow suit. These utilities argue that coal generation is cheap, and that in turn makes their customers happy – a claim debunked by the scientific public survey results referred to above. Some of our utilities are already gambling that with Republicans in Congress waging war on greenhouse gas emissions control measures, the pressure is easing on utilities to clean up their acts. That argument took a big hit in the summer of 2013 when the Obama administration rolled out its Climate Action Plan that calls for the Environmental

Protection Agency to promulgate rules to crack down on greenhouse gas emissions from new coal plants, and by the summer of 2015, similar carbon reduction rules for existing coal plants. Coal plant owners are understandably concerned, given that there are no technologies on the horizon to cut CO2 emissions from power plants other than to cut back on their operations.

In 2009, Idaho Power's and IDACORP's Boards of Directors "approved guidelines that establish goals to reduce the average carbon dioxide (CO2) emission intensity of Idaho Power's utility operations for the 2010-2013 time period to a level that's 10-15 percent below the company's 2005 CO2 emission intensity," according to IDACORP's 2011 Sustainability Report. That's true; the company did set those guidelines. What Idaho Power does not mention in its annual sustainability reports or its annual reports is that, in 2009 when the company approved those guidelines, it was after a bitter fight in which the company urged its shareholders to reject them. IDACOP shareholders stunned the energy world in May 2009 by passing the first corporate shareholders resolution of its kind to demand their utility craft a plan to begin reducing its CO2 emissions. Idaho Power was not a willing participant in drafting those guidelines. Its proxy statement in preparation for the 2009 IDACORP annual shareholders meeting attempted to defend the company's ongoing use of coal and concluded, "Our board of directors unanimously recommends a vote "AGAINST" this shareholder proposal." Why did Idaho Power object to its shareholders' proposal that the company develop a greenhouse gas reductions plan? Again, from the utility's proxy statement:

"We believe that is premature for us to establish quantitative goals to reduce these emissions."

And

"We believe that preparing additional reports on our efforts to reduce greenhouse gas emissions will not provide any meaningful benefits to our shareholders."

Flash forward to the 2012 shareholders meeting, then-IDACORP President LaMont Keen told shareholders in response to a question from shareholder Tim Andreae:

"*You have to understand the nature of our business. We have an obligation to serve. We sell 24/7 on demand service and the coal plants we have today are probably the most reliable portion of our fleet year to year in order to do that and make up in an average year maybe half of our generation. So it's something that our customers rely on every day."*

And

"The reliability we provide is based on coal, that's a national phenomenon. It varies somewhat in percentage across the nation. That's the way it exists today. We didn't get here quickly. We're not going to reverse it quickly."

This is all to illustrate that, while coal will eventually be phased out and replaced with other electricity resources to serve Idaho utility customers, that process will not come without some resistance by the utilities responsible for implementing it. For now, Idaho Power and PacifiCorp, known as Rocky Mountain Power in southeast Idaho, are nibbling around the carbon-reduction edges, trying to squeeze more energy out of their hydropower system and anywhere else so they can take less energy from the coal plants. Eventually, Idaho utilities will need to heed the demands of customers like you to plan more aggressively to "decarbonize" and find acceptable forms of energy that are quickly becoming cost-competitive with coal and gas. The question, as we explore the future of Idaho's energy picture, is when.

Enter: Efficiency and Renewables into the Mix

As we've said, because Idaho has almost no gas or oil reserves for power generation, our power comes mostly from big out-of-state coal plants, a string of Snake River hydropower dams, and a number of natural gas plants. So as demand for electricity grows, where will it turn for power to "serve" that new "load"?

For starters, let's look to the Pacific Northwest's pre-eminent authority on the region's electricity future the Northwest Power and Conservation Council. The "Power Council," as it's known in the region, is comprised of two members appointed by each of the four Northwest states and is equipped with the nation's leading collection of energy policy analysts. Every five years, the Power Council produces its "Power Plan" on how the region can meet its energy needs for the coming 20 years. Last year, it surprised even the most ardent clean-energy advocates with its 6th Power Plan, which says in part:

"The Pacific Northwest power system is faced with significant uncertainties about the direction and form of climate change policy, future fuel prices, salmon recovery actions, economic growth, and integrating rapidly growing amounts of variable wind generation. And the focus of the Council's power plan is clear, especially with regard to the important near-term actions.

In each of its power plans, the Council has found substantial amounts of conservation to be cheaper and more sustainable than most other types of generation. In this Sixth Power Plan, because of the higher costs of alternative generation resources, rapidly

developing technology, and heightened concerns about global climate change, conservation holds an even larger potential for the region."

OK, Power Council, but how, exactly?

"The plan finds enough conservation to be available and cost-effective to meet 85 percent of the region's load growth for the next 20 years. If developed aggressively, this conservation, combined with the region's past successful development of energy efficiency could constitute a resource comparable in size to the Northwest federal hydroelectric system. This efficiency resources will complement and protect the Northwest's heritage of clean and affordable power."

Right on, Power Council!

Despite the naysayers who categorically deny that Idaho can lose the carbon and replace it with efficiency and renewables, their prophesies of a clean coal and nuclear-powered world have been proven wrong time and time again. So it falls on the more pragmatic among us to not so much as prove them wrong, but more important, to show what an alternative energy future will look like. We'll talk about this in more detail shortly, but for now:

First, as the Power Council suggests, we must look to energy efficiency, which we'll discuss in more detail in a later chapter. That's where we will make up a huge part of our new load as more businesses, factories, workers, and others move to Idaho. It's not only the cheapest energy resource available to replace much of the output from dirty power plants, it also holds the most promise in meeting the largest chunk of our new energy needs.

Then we make up the remainder with renewable energy resources, ranging from wind farms, solar farms, and geothermal plants that provide power directly to utilities to smaller solar arrays and other renewables that we'll put on our homes and businesses and barns to provide some of our own power and reduce the amount big utilities need to provide us. You may hear that these renewable energy resources are nice to have around in small quantities to help make us feel like we're making a difference, but in fact these renewable resources will be the workhorses of our new generation of power providers as the old generation is retired.

We'll look at them in more detail shortly, but for purposes of this overview of Idaho's Energy Mix and its future energy picture, know that a clean energy future for Idaho is not only doable and affordable, but the tools to do so are already at our disposal. All we need to do is to get them out of the toolbox.

SO WHAT *IS* A WATT?

Attend a utility meeting or a Public Utilities Commission and one of the first things you realize is that all these energy people simply *love* to talk in code. One of the first things we want to get a grip on is the basic unit of measuring power: The watt.

We all know the difference between a 25 watt and a 75 watt light bulb, but at the level of utilities and power plants and wind farms, we're usually talking more along the lines of kilowatts (a thousand watts), megawatts (a million watts) and gigawatts (a trillion watts).

Megawatts (MW) are often used to describe the output of everything from a single wind turbine (1-3MW) to coal or nuclear plants (600 to 1,000 or more MW) or a gas plant like the Langley Gulch plant Idaho Power is building at New Plymouth (300MW).

A typical megawatt in Idaho might be enough power for 700 or 800 homes or maybe even 1,000, but it depends on the time of year, because we tend to use more electricity in the summer with air-conditioning than in other seasons.

So if a megawatt is how much power is coming out of a power plant, what's an "*average megawatt*"? If a megawatt measures power at a particular time, an average megawatt or average kilowatt measures the amount of power used or needed by a utility over time, maybe a year. We might have a 30MW wind farm, but it's not running all the time and over the course of a year it might produce 30 average megawatts.

Our bills are based on the amount of *kilowatt-hours* we use each month. A kilowatt-hour, for example, is the amount of electricity needed to power 10 100-watt light bulbs for an hour.

CHAPTER 3

RENEWABLE ENERGY IN IDAHO

Idaho is Blessed with Abundant Home-Grown
Clean Energy Resources

With more than half of Idaho's electricity imported from out of state and billions of energy dollars exported to other states annually, Idaho is perfectly positioned to change its course of energy dependence and to begin developing its own sustainable electricity resources. From wind to solar, geothermal, and biomass, Idaho has abundant renewable energy resources that can be built at costs that are now not only competitive with the dirty fossil fuel energy sources of the past, they're actually a better deal for electricity consumers.

Idaho's 2007 Energy Plan says it about as well we can, so we'll ask the Energy Plan to introduce this chapter on renewables, because, after all, it *is* supposed to be Idaho state policy:

> *"Idaho currently imports more than 80 percent of its energy needs. While developing in-state resources would create jobs and result in economic benefits to Idaho, the state lacks conventional resources such as coal, oil and natural gas. The resources that can be developed in Idaho in the near future are renewable resources such as wind, geothermal, small hydro and biomass (for either electric generation or the production of biofuels such as ethanol or biodiesel). Developing in-state renewable resources will contribute to a secure, reliable energy system by reducing dependence on remote resources that must be transported over long distances, although care must be taken to ensure that intermittent resources such as wind energy can be integrated reliably. In addition, renewable resources provide fuel diversity, reducing Idaho's exposure to high and fluctuating natural gas, oil and coal prices. In-state renewables also typically have superior environmental attributes because of substantially reduced air and water emissions, including carbon dioxide. Finally, in-state renewable resources contribute to economic growth by creating jobs and tax revenues in Idaho, frequently in rural areas that are most in need of new economic stimulus."*

The Energy Plan continues:

> *"Cost has long been the principal barrier to increased investment in local renewable resources. Renewable resources can be more expensive than conventional resources, and the Committee wishes to avoid burdening Idahoans' energy bills with needless investment in high-cost resources. While the Committee endorses renewable resources in general because of the many benefits they provide, it declines to adopt specific targets or standards out of a concern that setting arbitrary targets could conflict with the goals of maintaining Idaho's low-cost energy supply and ensuring access to affordable energy for all Idahoans. At the same time, the Committee recognizes that the cost of renewable resources has declined in recent years just as the cost of fossil fuels has increased, making some renewable resources cost-competitive today, particularly considering that renewables are not subject to fuel price volatility. The Committee also recommends a number of actions to help reduce the cost of renewable resources and make them more competitive with conventional resources."*

Well said, 2007 Idaho Energy Plan!

Unfortunately, Idaho's updated Energy Plan, written in 2012, comes up short in the vision and ambition that was so robustly reflected in the original, 2007 version, and we'll get to that in our review of the state's energy policy in Chapter 9. But all is not lost! The 2012 Energy Plan has this to say about the future of renewable energy in Idaho:

> *"…The Committee recognizes that investments in new generating resources are becoming increasingly challenging due to volatile fuel costs and increasing environmental concerns and that Idaho's current dependence on coal resources for nearly 40 percent of its electricity supply could leave the state vulnerable to potential carbon regulation. Enhancing energy conservation and efficiency measures and continuing to support the further development of cost-effective in-state renewable energy resources in order to reduce Idaho's dependence on imported coal-fired power are important aspects of Idaho policy. To that end, this Energy Plan recommends that state government play an active role in facilitating the deployment of power generation and energy conservation resources that are both cost-effective and environmentally sound. It recommends establishing cost-effective conservation, energy efficiency, and demand response as the highest priority resources…"*

And:

> *"While federal regulations on carbon dioxide and greenhouse gases have potential for significant impact on energy costs in*

Idaho, such regulations also may provide potential opportunities. Idaho has an abundance of renewable resources and energy efficiency opportunities, which would reduce Idaho's exposure to CO2 regulatory risk while fostering economic growth."

The revised 2012 Idaho Energy Plan then wanders off into supporting antiquated and climate-changing fossil fuel electricity resources, which was a big disappointment and which we'll get into in more detail in a later chapter. But at least the state's official energy policy, such as it is, acknowledges the value of alternative energy resources.

There was a time – not so long ago – when renewable energy resources such as geothermal, wind and solar were dismissed in some quarters as boutique energy; nice in modest amounts to help make us feel good, but nowhere near up to the challenge of replacing traditional big power plants like coal, hydro, gas or nuclear. The old and long-since-discredited argument was that the wind doesn't always blow and the sun doesn't always shine, so these were considered "intermittent" energy resources that weren't up to the challenge of meeting requirements to serve all power customers 24/7 year-round.

Those days are over. Advances in wind forecasting along with spreading wind farms over larger geographic areas continue to flatten the unpredictable nature of wind power and bolster their "capacity factor" – or the percentage of time they can be relied upon to produce energy. Advances continue in developing storage methods for times when the sun isn't hitting a solar generator. Utilities in the hydro-rich Northwest can use their hydropower generation to help "follow" their power loads, generating added power if renewables tail off or saving the energy-generating water for later when the renewables are fully producing power.

The 2007 Idaho Energy Policy Survey conducted by Boise State University showed half of all respondents want renewable energy to be Idaho's highest priority in meeting our future energy needs, followed by 26 percent supporting energy conservation and efficiency programs. Only one in five support expanding existing hydro and fossil fuel generation. The survey also showed 70 percent of Idahoans believe human activities are contributing to climate change, and 54 percent of those said Idaho should reduce greenhouse gas emissions. Combined with energy efficiency, renewable energy development will help accomplish these crucial goals. The Idaho State Energy Plan identifies renewable energy as the states second-highest electricity resource, following only energy efficiency.

Unlike other states in the West, Idaho does not have a "renewable portfolio standard" (RPS) or similar requirement directing utilities to obtain a certain percentage of their electricity from renewable resources such as wind, solar, geothermal, or biomass. However, such a requirement or something resembling it is almost certain to be adopted eventually by the federal government, and Idaho must make more progress in boosting its renewable energy portfolio in order to avoid an energy crunch when federal requirements are implemented and when standards in surrounding states force utilities serving Idaho customers to add more renewables and reduce their fossil fuel use.

Keep in mind what renewables are: They are energy resources for which the fuel, whether wind, sun, subterranean hot water or plant matter, do not run out. They are "alternative" energy resources, to be sure, but not all "alternative" energy is "renewable." Take nuclear. As we'll discuss below, nuclear proponents are fond of treating it the same as clean energy resources, but of course it is not. Uranium, from which a reactor's fuel is fabricated, is not only a finite resource but it's also one that is incredibly dirty and dangerous to mine and process.

Besides, contrary to claims by the nuclear industry, nuclear power is already yielding ground to renewables and losing more of its share of the nation's overall electricity mix. According to a report by Worldwatch Institute, "The World Nuclear Industry Status Report 2010-2011," global power generation by renewable energy sources topped that by nuclear energy for the first time in 2010, with 381 gigawatts of renewables compared to 375 gigawatts of nuclear. www.worldwatch.org

Despite the apparent attitude in the Idaho Legislature that the scant amount of renewable energy on Idaho utility systems is already plenty, there is no reason why Idaho should not easily attain a 15 percent integration rate of renewables in utility portfolios, as opposed to the current 4 percent or so. Utilities are fighting tooth and nail before the Public Utilities Commission (PUC) for refuge from having to take on more renewable energy, just as they argued unsuccessfully in the Idaho Legislature in 2011 that so much renewable energy is rushing onto their systems that rates will skyrocket, power grids will destabilize, and the resources will have to be offset with massive amounts of natural gas or coal generation to offset the "intermittent" nature of renewables. The old argument that any addition of a megawatt of renewable energy must be offset by a megawatt of "firm" or "baseload" power has long been discredited, although we still hear the argument regularly from renewables skeptics here in Idaho.

On April 22, 2009, Jon Wellinghoff, the chairman of the Federal Energy Regulatory Commission, raised eyebrows when he met with reporters at a U.S. Energy Association meeting.

"We may not need any, ever," Wellinghoff said in response to a question about whether the United States needs new coal or nuclear plants to meet its future electricity needs. As quoted by the New York Times, Wellinghoff said "demand response" measures like Idaho Power's air-conditioning cycling program that reduce electricity demand during times of high load will help offset the variable production of wind and solar and also reduce the need for traditional resources such as coal plants.

"I think baseload capacity is going to become an anachronism," Wellinghoff said. "Baseload capacity used to only mean in an economic dispatch, which you dispatch first, what would be the cheapest thing to do. Well, ultimately, wind's going to be the cheap-

est thing to do, so you'll dispatch that first. People talk about, 'Oh, we need baseload.' It's like people saying we need more computing power, we need mainframes. We don't need mainframes, we have distributed computing."

The key, Wellinghoff said, are technologies like storage for solar plants that can continue to feed power to the grid after sunset. Or "shaping" the way wind energy is delivered and fits with the always-changing demand for electricity.

"So if you can shape your renewables, you don't need fossil fuel or nuclear plants to run all the time. And, in fact, most plants running all the time in your system are an impediment because they're very inflexible. You can't ramp up and ramp down a nuclear plant. And if you have instead the ability to ramp up and ramp down loads in ways that can shape the entire system, then the old concept of baseload becomes an anachronism." The Times said Wellinghoff said there's plenty of renewable energy to meet energy demand: "There's 500 to 700 gigawatts of developable wind throughout the Midwest, all the way to Texas. There's probably another 200 to 300 gigawatts in Montana and Wyoming that can go West."

We tend to side with Wellinghoff and Idaho's Energy Plan (you know, the one that was adopted by the Legislature in 2007 and revised in 2012 and which is Idaho's guiding energy policy), which is unambiguous in stating that renewable energy holds the key to Idaho's energy future along with woefully underestimated energy efficiency.

Having established that renewables are the wave of our energy future, let's take a quick look at the state's renewable resources.

Wind

By far the most promising near-term renewable energy resource for Idaho, wind generation has been slow to develop here. According to the American Wind Energy Association, Idaho ranks 13th nationwide in potential wind capacity, but only 23rd in developed wind projects. In 2010 and 2011, however, several wind projects have received utility contracts that have been sent to the Public Utilities Commission for approval. However, many of those contracts have been held up pending resolution of a case brought by Idaho's Big Three electric utilities to forestall additional renewable contracts until they and the PUC can more thoroughly study grid impacts, costs, and other issues.

- Idaho ranks 17th nationwide for total installed megawatts from wind;
- Idaho has 541 turbines in 32 wind projects, ranking 18th in the nation for number of utility-scale turbines;
- Idaho added 355 megawatts of wind capacity in 2012 and 256MW in 2011;
- Idaho has about 18,000MW of wind potential, according to the National Renewable Energy Laboratory, enough to meet more than 2.2 times the state's current electricity needs;
- More than $1.9 in capital investments have been made in Idaho wind projects.

From 2009 to 2012, several wind projects have received utility contracts that have been sent to the Public Utilities Commission for approval. Unfortunately, many of those contracts became snarled in a protracted regulatory case brought by Idaho's Big Three electric utilities to forestall additional renewable contracts until they and the PUC can more thoroughly study grid impacts, costs, and other issues. Idaho utilities, regulators, and renewable energy developers have been locked in an ongoing saga over how to integrate more renewables for nearly a decade and the issue is still not fully sorted out.

While the estimated wind energy potential in Idaho seems extraordinary, it must be remembered that such estimates are based on a wind farm's generation potential – or how much it could produce if the turbines spun constantly. Because wind power is variable, the total is actually far less. If wind were assigned a 30 percent "capacity" rating, a 20MW "nameplate" (or maximum possible) wind farm would actually generate less than 10MW of energy.

Variability and cost are the primary arguments used by opponents of wind development in Idaho. There's no question that wind is variable, and in fact it often doesn't blow on late summer

BONNEVILLE COUNTY REAPS ECONOMIC WINDFALL FROM, WELL, *WIND*

Critics of wind energy in Idaho have a habit of overstating the cost of power coming from wind turbines and understating or even ignoring the economic benefits wind farms bring to their communities. Beyond paying state taxes and directly supporting local economies through jobs, communities also benefit from direct payments by wind projects. For example, here's a look at how taxing districts in Bonneville County, home of Idaho Falls in eastern Idaho, have benefitted from $1,250,139.23 in payments by the Wolverine Creek wind farm since it began operating in December 2005. The figures come from the county Treasurer's Office:

- Bonneville County: $520,465.18
- School District No. 93: $680,907.84
- Ammon Cemetery: $7,428.04
- Iona Cemetery: $18,192.16
- Bonneville County Ambulance: $23,146.01

afternoons when utilities need it to meet their high power demands. But the variability can be offset by a number of measures, including the improved wind forecasting that is now available and by using a broad, geographically diverse network of wind farms to balance the power deliveries by relying on the turbines that are producing. That also will require a new regime in which utilities cooperate with one-another to share their wind resources, but such a system can and should be implemented.

Some view wind energy as a "bridge" energy resource that will provide clean energy with no fuel costs until such time as solar power matures to a more mainstream power resource and its price comes down. In any event, wind power can be backed up or "firmed" by other resources such as hydropower or natural gas, and wind can still play a huge role in providing carbon-free energy at affordable prices, and in fact is doing just that in Idaho and elsewhere.

Equally important: Idaho is already seeing wind projects inject vital tax revenues to local governments and rural communities where many of the projects are located. The projects bring jobs, tax revenues, and royalty payments to our communities. In addition, unlike fossil fuel plants, wind farms provide landowners a "second crop" while still using their land for farming, ranching or other uses.

Whether it's because Idaho lacks the investment-friendly policies to attract more wind development, an unfavorable regulatory climate, or reluctant utilities, Idaho can and must do better if it hopes to achieve the stated goal of making the state more energy independent.

It's also important to note that not all wind projects are acceptable, however, just like not all energy projects regardless of fuel source should be considered acceptable regardless of the circumstances. Some projects might not be "sited" in appropriate places and might have disqualifying environmental impacts. That's why each energy generation or transmission project should be evaluated independently.

Geothermal

Geothermal energy can be used in two ways in Idaho: To run power plant turbines to produce electricity, and also to provide indirect energy benefits through heating building space and water, as is seen in the Idaho Capitol and other buildings across downtown Boise.

According to the state Office of Energy Resources, "Idaho uses geothermal water for generating electricity; heating buildings; growing fish, alligators and plants; and for recreation. Idaho is a prime candidate for additional geothermal energy development in the future because the state has vast, untapped and underused geothermal resources."

Idaho is also among the states with the highest identified geothermal potential: The Western Governors Association's Geothermal Task Force estimates that Idaho can develop 855MW of geothermal energy (about 30 percent of our current electricity needs) by 2015 and an additional 1,670MW by 2025.

Currently, Boise-based U.S. Geothermal's Raft River facility is selling 13MW of electricity (enough to power 2,900 homes, depending on the time of year) to Idaho Power, and has a contract to sell a similar amount to the Eugene Water and Electric Board in Oregon. The company says the Raft River site in southeast Idaho has the potential to produce much more electricity, perhaps 90MW or more.

In addition, U.S. Geothermal recently energized its geothermal site at Neal Hot Springs across the border in Oregon, with the generation output purchased by Idaho Power. U.S. Geothermal is also one of the first geothermal energy developers to secure a federal loan guarantee to facilitate its efforts to secure financing for the Oregon project.

Geothermal is not without challenges. Exploration is very expensive, costing more than $1 million a hole and with no guarantee of finding a developable resource. But U.S. Geothermal has taken a big leadership role in Idaho in exploring the resource and improving technologies to develop it. In addition, geothermal is a "firm" resource available nearly constantly. U.S. Geothermal uses a binary closed-loop system in which water does not come into contact with any materials or chemicals during the energy generation process, so the risk of groundwater pollution is largely mitigated.

Beyond the productive Raft River site, geologists are exploring possible geothermal sites in Valley County and other parts of western Idaho for possible generation development. Still, former U.S. Geothermal President Doug Glaspey met with Idaho lawmakers in 2012 and told them the lack of state interest in geothermal energy development means the industry will continue to languish. Almost nothing has happened with geothermal in Idaho since Raft River went online in 2008.

"There is a full-scale utility assault on IPP [independent power producer] renewable energy; it's mostly focused on wind," Glaspey

told a mostly sympathetic legislative panel. "There is no state government support for renewable energy."

The one state financial incentive for renewables was a sales tax rebate that helped propel Idaho's wind industry but that the Legislature let expire in 2011. Raft River qualified for $1 million from that rebate on a $52 million project. Idaho did enact provisions to make geothermal leases on 2 million acres of state endowment lands more attractive, but they have yet to lure a developer.

Echoing the lament of others in the renewable energy business, Glaspey told lawmakers in 2012 that demands by Idaho's three electric utilities at the PUC to reduce the contract life of wind and other renewable energy projects from 20 years to five years "guarantees that no projects will be built" because lenders wouldn't touch a project with such a short contract, not knowing whether the utility could walk away after just five years and thus killing the project. "It [geothermal development] is not happening in Idaho right now, " Glaspey said, "and if it is happening it's for a [utility] contract to another state. We're happy to be here in Idaho," he said, but "we don't have an active prospect right now in Idaho."

In the case of Neal Hot Springs, U.S. Geothermal drilled exploratory wells from 2008 to 2010 and spent $15 million before it knew it had a good enough resource to build a 22-megawatt, $144 million, three-unit power plant.

Glaspey said then his company wouldn't benefit for now from some tax credits because it has yet to earn enough to be taxed. Nonetheless, there are other possible incentives, such as Oregon's Business Energy Tax Credit (BETC), that encourage renewable energy development. In addition, to be successful renewable energy businesses need to retain the "renewable energy credits [RECs]" or "green tags" that represent the clean environmental attributes of their projects. Those credits are very valuable, and can be sold to utilities that need the green credits to comply with state rules requiring a percentage of their power comes from renewables. The proceeds of those sales help defray the large up-front costs of building a project, but in Idaho there is a move afoot by utilities to take control of the RECs without paying for them, which would make many projects unaffordable for developers. In the case of U.S. Geothermal's Raft River project, the RECs were sold to a Colorado cooperative utility Holy Cross Electric.

In a more business-friendly climate, such as in Oregon or Nevada, geothermal energy holds huge promise in reducing energy-related greenhouse gas emissions and in delivering reliable base load energy just like a fossil fuel power plant but without the emissions. But again, in Idaho, growth of the business has been stunted. Glaspey said he hasn't given up on the possibility of building more geothermal plants in Idaho, but before that can happen, he told lawmakers, "What we really need is long-term policy" to promote Idaho's renewables business.

Solar

As with geothermal energy, Idaho has immense solar potential, but to date most of it remains undeveloped. Solar energy can produce power through photovoltaic panels installed on homes and businesses, providing energy to help power our buildings right where the electricity is being used, rather than drawing from huge, dirty power plants hundreds of mile away. Or, solar can be used in thermal solar plants, reflecting the sun's energy to produce heat to power turbines. Solar's main hurdle to date has been its cost, which historically has been higher than most other forms of renewable energy. However, technology continues to drive down the cost of photovoltaic panels, which also benefit from state and federal tax incentives, so solar installations are more affordable now than ever, and they pay for themselves in a much shorter time than in the past.

The Idaho Legislature enacted legislation to include solar as an energy resource that qualifies under Section 58-307 of Idaho Code for purposes of renewable energy development on state endowment lands. In addition, the Legislature has enacted a measure to encourage the governor, the Office of Energy Resources, and the Land Board to work toward the development of energy production of renewable resources on state endowment lands "for the purpose of maximizing the potential returns for education."

So it is now state policy to promote solar and other renewable energy development on endowment lands, and we expect the administration and the Land Board to adhere to the spirit of both bills and promote renewables on state lands. So far, however, nothing has happened. Ultimately, development of renewables on endowment lands will benefit consumers as well as the education

recipients for whom the endowment lands were set aside.

In 2004, Idaho adopted a "5,000 Solar Roofs" initiative as part of the national "Million Solar Roofs Initiative" announced by President Clinton in 1997. The effort includes both photovoltaics, which produces electricity directly from sunlight, as well as solar thermal, which produce heat for domestic hot water, space heating, and other uses. The Idaho Solar Initiative was to be implemented by the Idaho "PV4You Solar Working Group," which was administered by the Idaho Energy Division but which has disappeared. This initiative should be restarted.

In the summer of 2013 and in an important victory for promoters of solar power in Idaho, Idaho Power lost a major solar case at the Idaho PUC, which rejected the utility's bid to change the way individual solar generators such as homeowners are paid for generating more power than they use and feeding the excess back to the utility's grid – a mechanism known as "net metering" that at times allows utility customers to actually see their power meters run backward. Idaho Power also sought to limit the amount of solar PV it would be required to accept on its system. In the end, the PUC, responding to an enormous outpouring of pro-solar public sentiment, denied most of Idaho Power's request, sparing what solar businesses said would be the end of private solar installations in Idaho Power's service area.

Idaho Power recently commissioned a study of solar potential by the consulting firm Black & Veatch, and that study shows immense potential for solar thermal development in Idaho. It also raises the question of how we can better deploy solar as a resource in Idaho. Idaho Power's last two "Integrated Resource Plans," which are developed every other year to show how a utility plans to meet future energy needs, have looked at solar as a possible energy resource but concluded other resources such as coal and gas were less expensive. What such studies fail to take into account, however, is that unlike all other forms of energy generation, solar installations are typically paid for by property owners and not utilities, meaning the true cost of solar is far less expensive that utilities claim. All Idaho electric utilities must be encouraged to attach proper cost and risk assessments to solar, as with all resources. Solar can save the utility and its customers by not requiring major transmission additions, and it does not require carbon adders and other environmental costs that will soon be driving up the cost of fossil fuel generation.

The fuel for solar, of course, is free, and solar has another trait that no other renewable energy resource has: It produces power during the day, when Idaho Power has its greatest need for power to deal with its summertime "peak" energy demands when air-conditioners and irrigation pumps are roaring. This "load following" attribute by solar make it a perfect fit for Idaho.

One of the frustrations in promoting solar PV in Idaho is the lack of a financing mechanism to help utility customers get past the initial sticker shock. Most other states have developed creative ways to finance solar projects so property owners can pay for them over time, but Idaho so far has not done so. We also need to convince the Legislature and the Office of Energy Resources to expand the number of solar projects qualifying for state low-interest loans for solar projects, beyond the current $15,000. And we will push for new local building regulations to enhance solar potential, including the adoption of building rules to incentivize solar-friendly housing projects that capture solar benefits through orienting subdivisions and requiring homes be "solar-ready" to qualify for local incentives.

Biomass

Biomass comes in many forms in Idaho, depending in part on where the plants are located. In northern Idaho, wood waste is being used to produce power, while in southern Idaho agricultural crop residue is the fuel source of choice.

Idaho also has ample forms of biomass that, if used in an environmentally sound manner, can be converted into clean energy. Biomass power includes wood or wood products as well as agricultural wastes from crops and livestock or other plant material. Development of these renewable resources must be done in a way that does not imperil Idaho's cherished forests or that creates additional environmental problems such as threatening air quality, but many of these resources show great promise in converting waste to energy.

Biomass is one of the leading renewable resources being promoted by the Idaho Office of Energy Resources, but is not without its challenges. Plants use some form of organic materials, and converting those materials into electrical energy must be done in ways that do not add to Idaho's air quality challenges. The largest user of biomass in Idaho today is the industrial sector, which uses significant amount of wood fuels for energy production. In addition, the Office of Energy Resources says biomass can be a fuel source for fuels such as synthetic gas and to produce transportation fuels such as ethanol and biodiesel. But again, care must be taken to ensure that potential food products such as corn are not diverted to transportation fuel in ways that create produce shortages or drive up prices – or in fuel production processes that don't consume as much or more energy than they produce.

According to the Idaho Office of Energy Resources, biomass in some form has supplied about 9 percent of total energy used in Idaho in recent years. The state energy office predicts that, if developed, biomass as a fuel from forest and logging residue, municipal

solid waste, agricultural residues, animal waste, and agricultural processing residue holds immense potential to produce transportation and electric energy.

All of these made-in-Idaho renewable energy resources mean new green jobs, massive amounts of economic investments, and state and local tax benefits that those investments and jobs can deliver. The argument that state budget exigencies are precluding Idaho from developing the kinds of business-attracting incentives in place in our neighboring states is not valid: While such incentives might have the short-term impact of certain investments not producing immediate tax revenues, the long-term benefits from such investments dwarf such minor revenue hits.

Idaho must rethink its current energy development policies and create incentives that will cause these 21st Century energy resources to flourish. Not only can they reduce Idaho's reliance on outside (and sometimes unreliable) energy resources, they can also help convert Idaho into an energy exporter in the future.

What About You-Know-What?

Try as they might, proponents of nuclear power argue that it, too, should be considered a "renewable" resource for purposes of state or national "renewable portfolio standards" that require utilities to provide a percentage of their electricity from renewable energy. Except Idaho, which has no such standards.

The pro-nuclear argument seems to hinge on the fact that the process of nuclear-powered generation releases little or no greenhouse gases. If that were the criteria to be considered renewable, the nuclear industry might have a point.

But the uranium mined in often-outrageous environmental conditions to create the fuel for reactors is an automatic disqualifier. So is the long-lived and extremely dangerous waste byproduct of the generating process, with no place to put the commercial waste other than at the reactor sites. And as we have learned through painful examples, the generation process itself is fraught with potential for disaster. There are no conditions under which nuclear can be considered alongside the above clean resources, and reducing carbon emissions associated with the likes of coal plants is not a reason to buy into such a troubled and dangerous technology.

The same holds true with so-called "clean coal technologies" that (while not even developed yet) would capture and sequester the greenhouse gas and other emissions created during the dirty, polluting generation process. As with nuclear, coal is not a renewable resource and never will be. It also is not clean and never will be. And as with nuclear, the energy generation process fails every possible test to qualify as a renewable resource.

And finally, the issue of hydropower. While it is true that the operations of large dams do not release greenhouse gases, and that water that passes through one hydropower dam will likewise generate power at another downstream, the case for renewability pretty much stops there. As a case in point: How many fish navigate upstream from the Hells Canyon hydro complex? None. And while that should be the end of the story, hydropower advocates insist they are truly renewable because the region and nation are so desperate for carbon-free energy resources to replace coal plants. Well, we're nowhere near that desperate in terms of our energy needs, and there are myriad other options. Large dams do incalculable harm to fish and wildlife species, river conditions, and an ecosystem that once defined the Pacific Northwest.

It is likely, however, that in the event of a federal renewable portfolio standard of some kind, utilities such as Idaho Power will not be able to count all hydro for purposes of meeting the requirement. However, utilities will likely get the next best thing: Most bills that have been floated in Congress would allow utilities to subtract their big hydro from their total power sales before calculating their obligations under a federal renewable requirement. In that case, Idaho Power may well be very close to meeting such a standard, despite its efforts to rebuff new renewable energy additions.

In the end and despite the dreams of some, the likelihood of any large new dams being built to serve Idaho electricity needs is about zero. It's not to say there isn't talk of increasing the storage and generation amounts in some dams, or as with the Idaho Power Shoshone Falls power plant adding new and larger generating turbines. In some cases, hydropower turbines can be refurbished to boost their generating ability. But for all practical purposes, as overall electricity needs grow if for no other reason than population increases, hydropower will continue to see a diminishing relative share of Idaho's electricity generation as other resources such as renewables and natural gas are used to meet future electricity demands.

JON WELLINGHOFF

Jon Wellinghoff, who in 2013 stepped down as chairman of the Federal Energy Regulatory Commission, was one of FERC's most ardent advocates of renewable energy. He bolstered the hopes of clean energy advocates in 2009 when he said – on multiple occasions – that the idea of "baseload" electricity generation from old-style power plants is no longer necessary now that renewable energy has become so much more reliable. Here are some of Wellinghoff's thoughts:

- If you can shape your renewables, you don't need fossil fuel or nuclear plants to run all the time. And, in fact, most plants running all the time in your system are an impediment because they're very inflexible. You can't ramp up and ramp down a nuclear plant. And if you have instead he ability to ramp up and ramp down loads in ways that can shape the entire system, then the old concept of baseload becomes an anachronism.

- Our nation has much greater ability to reduce the emissions from its usage of electricity. For example, studies indicate that we could add hundreds of gigawatts of renewable energy resources by 2030. Similarly, a study issued last week by McKinstry and Co. indicated that, on an economy-wide basis, energy efficiency alone could reduce our overall energy usage by nearly 25 percent.

- A major reason why "low carbon" renewable resources and energy efficiency are not used more extensively is that the cost of greenhouse gas emissions is, in economic terms, an "externality." In other words, the effect of these emissions is not reflected in the energy marketplace. The market-based cost of producing electricity from coal as compared to, for example, producing electricity from wind turbines or reducing energy use through efficiency, takes little or no account of the fact that certain types of coal production currently cause significant emissions of greenhouse gases and wind turbines and efficiency do not.

- We have extensive amounts of untapped renewable energy resources and large potential to use energy more efficiently. Climate change legislation will remove a major impediment to using those tools.

- Renewable energy resources can not only help reduce greenhouse gas emissions, but also diversify the fuels used to generate electricity and reduce our dependence on foreign sources of energy. For example, solar photovoltaic systems installed on homes and businesses produce emission-free energy, especially during peak hours of energy usage. Other examples of emission-free energy sources include wind power and geothermal power.

- FERC is using its statutory authorities aggressively to eliminate barriers to renewable resources and consumer energy use management, and to encourage greater efficiency in the electricity system. But those efforts and the efforts of other Federal and State agencies, while helpful, are not enough to prevent the growing accumulation of greenhouse gases in our atmosphere. Climate change legislation is the key to altering this trend. This legislation will also set an example of leadership for other countries and help our Nation change from an importer of energy to an exporter of "green energy technology."

CHAPTER 4

ENERGY EFFICIENCY AND CONSERVATION

Idaho's First Energy Choice:
The Cheapest Kilowatt is the One We Never Use

Despite the lack of a supportive climate in Idaho, the promise of renewable energy here is nonetheless real, and as we have seen renewables will play a central role in our drive toward a cleaner energy future for Idaho. But it's no secret that energy efficiency and conservation in all their many forms are the Holy Grail of that future. It is at the core of every single energy planning scenario that sends Idaho on a path of shedding its dirty energy resources and replacing them with clean ones. More than that, energy efficiency is the largest single resource for Idaho and the entire Northwest to attain a cleaner, lower-carbon electricity portfolio.

Naysayers, and there are many of them, cannot fathom a world in which Idaho continues to grow but not a single large power plant is erected to supply the power to accommodate that growth. It's an understandably hard thing to get your mind around. Yet the roadmap has been created. It does not require reductions in the quality of our lifestyle, nor does it require massive investments to revolutionize our electricity sector. In fact and somewhat surprisingly, the opposite is true: The new and expanded energy efficiency measures that will replace the power that won't be coming from big thermal power plants will come at costs that are no more than Idaho's historically "cheap" default generation from hydropower, coal and natural gas.

Like renewable energy, energy efficiency is the blinking light at the crossroads of our energy future: There's the business-as-usual model that our utilities have so far embraced, and there is the new model that will require shedding the dirty energy of the past in favor of these new technologies. Make no mistake: This is going to cost money, and a lot of it. Billions of dollars nationwide. But those billions of dollars will be spent one way or another, regardless of our choice, as the United States transforms its energy infrastructure. Our choice is whether to continue to spend it on dying fossil fuel technologies that will almost certainly be rendered obsolete even before their paid for, or on our future.

We're the first to agree that it seems improbable if not impossible that energy efficiency (the only electricity resource that doesn't involve generating power in some fashion and coincidentally also the cheapest by far) can meet so much of our future electricity needs. It seems outlandish to say that installing efficient light bulbs or using programmable thermostats can possibly replace the output from a muscular, 600 megawatt coal-burning behemoth. And it would be impossible until you start doing the calculations and figure in millions of light bulbs, millions of energy-saving appliances, and ever-evolving technologies in windows, heating and air-conditioning, insulation, and such that cumulatively more than offset what a traditional power plant can deliver. And at a cheaper price, while providing untold numbers of new green energy jobs close to home, and with a longer life than any power plant could ever deliver.

To be sure, Idaho utilities, with the prodding and approval of the state's Public Utilities Commission and energy advocates, have made good progress in developing programs to conserve energy, and for good reason. Every kilowatt saved through efficiency and conservation reduces the need for expensive new power plants and as a result their environmental impacts. It's axiomatic and it has become cliché, but Idahoans know the cheapest energy available to us is the energy we don't use. But don't take *our* word for it:

> *"To achieve the Committee's energy policy objectives of ensuring a reliable, low-cost energy supply, protecting the environment, and promoting economic growth, this Energy Plan recommends increasing investments in energy conservation and in-state renewable resources. Conservation lowers the energy bills of Idaho households and businesses and reduces the flow of dollars outside the state. Conservation and renewables diversify the state's resource base, reducing its dependence on imported fossil fuels and providing insurance against increasing fuel prices. Conservation and in-state renewables also contribute to Idaho's economic development by creating local jobs and tax revenues, frequently in rural areas that are most in need of new jobs."*
>
> *2007 Idaho Energy Plan*

> *"Demand-side management (DSM) customer programs are an essential component of Idaho Power's resource strategy. Idaho Power works with its customers to promote energy efficiency and produce the same output or provide the same level of service with lower energy consumption."*
>
> *Idaho Power 2009 Integrated Resource Plan*

> *"Improved efficiency of electricity use is by far the lowest-cost and lowest-risk resource available to the region. Cost-effective efficiency should be developed aggressively and on a consistent basis for the foreseeable future. The Council's plan demonstrates that cost-effective efficiency improvements could on average meet 85 percent of the region's growth in energy needs over the next 20 years."*
>
> *Northwest Power and Conservation Council's Sixth Power Plan, 2010*

> *"Idaho electric utilities continue to place an emphasis on cost-effective conservation energy efficiency and demand response, and the Idaho Public Utilities Commission has steadfastly directed Idaho utilities to pursue all cost-effective DSM programs. Energy efficiency and conservation not only address current energy use, it is a reliable and cost-effective resource to meet future energy*

THE PHANTOM LOAD & OTHER SCARY TALES

Try as we might to shave our kilowatt-hours, our houses are apt to be filled by dozens of energy-suckers that literally drain those electrons right out of our sockets and into thin air. It's a phenomenon variously known as "phantom load" or "vampire load" – and you might be surprised at the amount of wasted electricity it costs.

If your home is close to typical, it is filled with appliances, electronics, and other gadgets that draw small amounts of power even when turned off. It's the electricity equivalent of a leaking pipe out in the yard. Look around your house: Is the DVD player's panel lights on even though it's "turned off"? Does the TV or the box on top have lights on, even when the set is off? How about the stereo? Is the cell-phone or iPod charger plugged in but not attached to anything? All of these devices are prone to turning a vampire loose the moment you turn them "off."

Add it all up, energy experts say, and this phantom load can account for 5 to 10 percent of the energy used in many homes each year, or about the same amount of electricity generated by more than a dozen coal plants. If you spend $1,000 a year on electric bills, that's $100 you're sending to the power company for electricity you're not even using! And it's especially more important in this era of ever-increasing power hogs such as flat screen TVs and other electronics.

It's not always convenient to unplug all these blinking, energy-sucking gadgets when they're not needed (unplugging the microwave, for instance, can be a pain), but if you take a survey of the dozens of electronic appliances running on "standby power" around your house, you'll no doubt discover many that can be unplugged with minimal inconvenience, especially by using a power strip that can completely shut down a computer and the printer and other accessories, for instance, and drive a stake through the vampire load's heart.

Besides using power strips to truly turn devices off, another cool way to chase away the vampires is to purchase or borrow a device often called a "watt meter" to see how much power devices are consuming when not used. Most watt meters cost less than $40 – sometimes much less, and you may be able to rent one from your local library. You simply plug them into an outlet and then plug a device into the meter, and you can see how much power it's using when turned on and then turned off.

demands. This new supply of energy comes in two forms, increasing energy savings from existing programs and new savings from new programs."

2012 Idaho Energy Plan

The 2007 Idaho Energy Plan was a promising roadmap toward a clean, affordable, and responsible energy future for Idaho. Adopted by the Idaho Legislature and embraced by two governors, the Energy Plan makes it clear where Idaho's priorities should be. It also has this to say about comparing Idaho's energy conservation efforts to those elsewhere in the Pacific Northwest:

> *"Many large electric utilities in the Pacific Northwest region have displaced between 13 and 18 percent of their retail load through cost-effective conservation investments made over the years, while Idaho investor-owned utilities have displaced an average of 6 percent."*

Ouch! As clean energy advocates, we can no longer ask what we can do more to secure our clean energy future with low-cost energy efficiency and conservation measures. We're at the point where we must do more, and that means demanding that our utilities and the Public Utilities Commission embrace the energy efficiency recommendations in the Energy Plan to [this is the important part] *find new ways to build upon the progress made so far*.

The Idaho Energy Plan also contains several recommendations for action by the Legislature and the Executive Branch, including the Public Utilities Commission, to promote energy conservation and energy efficiency. Six years after the first Idaho Energy Plan was adopted, many of its recommendations remain just that – recommendations that have not been fully or partially implemented:

- It calls for the PUC to establish targets for conservation achievements for our utilities and to provide incentives for utilities that meet them, yet this hasn't happened.
- It calls for income tax incentives for investments in energy efficient technologies by Idaho businesses and households and a sales and use tax exemption on the purchase of energy efficient technologies, but neither of these have been implemented or even addressed in the Legislature.
- It recommends the Executive Branch take a number of steps to increase its energy efficiency efforts, but many agencies have yet to do so.
- It also calls for incentives for investments in residential and business renewable energy technologies, and once again the recommendation has fallen on deaf ears.

In Idaho, many utility efficiency and conservation programs are funded through a state-approved energy efficiency "rider" or other kind of surcharge on our electric bills. The funds collected from customers as a percentage of their bills through the rider tariff help fund efficiency and conservation programs. Energy efficiency refers to obtaining the same amount of energy benefits but using less electricity, such as with more efficient light bulbs. Conservation refers to using less energy, such as by turning off lights in unoccupied rooms or using clothes lines rather than dryers.

Often referred to as "demand-side" resources because they save energy on the customer's side of the meter rather than "supply-side" resources such as power plants, efficiency can be aimed at reducing a utility's overall energy demand or its more expensive "peak" demand during high-consumption times of the year.

Peak demand programs are implemented in Idaho in the summer and allow the utility to cycle down residential air-conditioners or farmers' irrigation pumps, sparing utilities from having to turn to more expensive short-term generation resources. They're often called "demand response" programs because the reduced energy demand comes in response to a utility call to reduce consumption from a particular device. Most efficiency programs are aimed at reducing overall power consumption, such as through weatherization, improved lighting or heating and air-conditioning systems.

In 2013 and under an order from the PUC, a series of five workshops were held at Idaho Power to determine how to restart three important demand response programs that Idaho Power suspended for the year because it believed they were not necessary. As things turned out, the programs could have helped when Idaho Power faced back-to-back record peak summer demands. The programs, all voluntary, include a residential program in which customers agree to have their devices "cycled" off for short periods during times of peak demand; another in which irrigation pumpers also agree to have their pumps turned off for short periods; and a third targeted at commercial and small business customers. After the 2013 workshops, parties in the case agreed that all three programs would be reinstated, albeit with smaller incentive payments to customers. That's important because Idaho Power hopes to meet all of its future "load growth" or new energy demand in the coming 20 years with a combination of these demand response programs and also with electricity imports via a yet-to-be-built transmission line from southwest Idaho to near Boardman on the Columbia River.

Combined, these efficiency and demand response programs accomplish five goals that are critical to a clean energy policy: They put DSM as a utility resource on the same playing field as a power plant or other generation resource; they reduce the need for

new thermal power plants and can accelerate the process of phasing out existing ones; they contribute to a more stable grid and power system; they help reduce bill amounts; and they facilitate the integration of renewable energy resources into the power grid alongside more traditional resources such as power plants.

While Idaho's two primary natural gas utilities (Avista in the north and Intermountain Gas in the south) have been slower to adopt efficiency measures, each of the three electric utilities has steadily added to and expanded their suite of efficiency and demand response programs. But like power plants and other "supply side" resources, these "demand-side" resources must be approved, or in utility regulatory parlance deemed "prudent" by the Public Utilities Commission in order for the utilities to recover their investments in efficiency programs. If the utilities don't believe they can recover the costs because an efficiency program may not seem to be "cost effective," then programs will be shut down, sometimes replaced by other programs, but not always.

In the case of Idaho Power, which spends more on energy efficiency programs than any Idaho utility, its 2013 Integrated Resource Plan shows some encouraging trends:

- In April 2012, the utility's "See ya later, refrigerator" program to encourage customers to turn in old, inefficient refrigerators hit its 10,000th unit;
- The utility's DSM programs rose from about $46.3 million in 2011 to about $49.3 million in 2012;
- In 2012, Idaho Power's 10 years of energy efficiency and demand response programs realized a cumulative annual savings of more than 1 million megawatt-hours, or enough energy to power a city of 85,000 average-sized homes;
- The utility's demand response programs (those used to reduce "peak demand") reached 438 megawatts, or 13 percent of Idaho Power's peak demand. That's about as much as Idaho Power's natural gas "peaking" plants in Mountain Home crank out.

To its credit, Idaho Power has sought and been granted approval to implement new ways to fund its important efficiency programs rather than just the rider. One of its ideas was to earn a return on some of its energy-saving programs, much as it does for its investments in power plants. That would help elevate non-generation DSM programs to their rightful place alongside power plants for accounting purposes. When it comes to energy efficiency, it's common sense that a utility should earn a rate of return on its conservation investments just as it does on its physical plant generation investments. Why? Because if we want our electric utilities to promote energy-saving programs, we're also asking our utilities to sell less of their product – electricity.

Also to its credit, Idaho Power became the first electric utility in the West outside California to adopt what in the utility sector was a revolutionary mechanism sometimes known as "decoupling." Also known as a "fixed cost adjustment," it is a way to break the link between the company's volumetric sales of electricity (which hopefully would decline as conservation programs become more successful) and its return on equity. The resistance by utilities to do conservation in the past was rooted in part by the fact that they, like most businesses, have fixed costs they have to cover each year for such things as maintaining buildings and other physical assets to paying their employees. If those costs stay pretty much the same with minor upward adjustments from year to year, a utility would otherwise have little incentive to reduce the amount of cash coming in each year. So this mechanism – which should be a template for all electric utilities in Idaho – makes minor adjustments in customer bills if the company doesn't earn what the PUC determined it should, or if it collects too much. The change to an average residential customer's bill is pennies a month up or down. More simply, decoupling is designed to remove an electric utility's disincentive to sell less of its product. Idaho Power's decoupling experiment has become one of the nation's most-regarded when it comes to promoting energy conservation while still allowing the utility to earn its authorized return on equity for its investments. It is an important example of how a utility and its regulators can expand energy efficiency without creating undue burdens on the company.

Decoupling sales from its allowable revenues is central to implementing energy efficiency, which as we said earlier is our most valuable energy resource. If we allow our utilities and their shareholders to remain whole while implementing conservation measures, then it's a win-win for the company and its customers.

That is very good news, even if only one of our utilities has yet to implement such a mechanism to push for more conservation. But as impressive as Idaho's recent energy efficiency numbers are, our utilities cannot rest on their laurels and our regulators need to continue to push as hard as possible for the utilities to capture more savings.

In Utility-Regulatory-Speak, Idaho's electric utilities are required by our PUC to capture "all cost-effective" energy efficiency, meaning all the energy efficiency whose cost-benefit ratio indicates the programs are worthwhile. But that standard will continue to evolve and the bar will be raised each year as technology improvements make it possible to implement new efficiency programs that perhaps didn't meet the cost-effective test earlier.

For those interested in learning more about Idaho Power's energy efficiency programs, go to www.idahopower.com/energycenter, where you can also download a copy of the company's 96-page "30 Simple Things You Can Do to Save Energy."

In the case of Avista, go to www.avistautilities.com and click the "Energy Savings" link.

If you're a Rocky Mountain Power customer, visit rockymountainpower.net and then click the "Efficiency and Environment" button.

PICKING A LIGHT BULB? CAN'T TELL YOUR CFLS FROM YOUR LEDS?

The Great American Light Bulb Transition is fully under way, and if you're still unsure about difference between an old-style incandescent light bulb, a compact fluorescent bulb (CFL), or a light-emitting diode (LED) bulb, you're not alone! There's a lot more to these new-fangled light "bulbs" than just picking the watt you need.

One of the most fundamental uses of electricity – light – stayed pretty much the same ever since Thomas Edison flipped the switch some 150 years ago, but it has changed a lot in the past few years. While some of your light bulb choices have been made for you by the federal government, like the Jan. 1, 2014, phase-out of most traditional incandescent bulbs, there are a lot of other choices that are up to you. One thing is certain, though: You will save money and energy in the long run. A lot of money, since lighting can account for a quarter of a home's energy consumption.

Incandescent light bulbs, those ubiquitous globes that we've known for the past century, are largely a thing of the past, except for those stockpiled pre-phase-out by resisters who will need to be dragged into the new era of lighting (Rep. Michelle Bachman went so far as to introduce a "Light Bulb Freedom Act," which got nowhere in Congress). These trusty old bulbs did their job well for a century, but they also became one of the largest consumers of electricity, so something had to change. Especially since Congress passed a law that in many cases prevented the marketing or even importation of many kinds of old-style light bulbs.

Enter the CFL, which had some consumer acceptance issues because they were not as diverse as they are today and because some people didn't like the sometimes-odd hue they emitted. People were also concerned that CFLs contain minute amounts of mercury, toxic substance that made the CFLs a little harder to dispose of. But they were far more efficient than incandescents, and unlike the old bulbs they give off less heat, and that heat represents lost energy since 90 percent of an old bulb's energy is lost as heat. They're four times more efficient than old incandescents, and given that so much of our lighting comes from coal-fueled electricity, that means the old bulbs are indirectly implicated for mercury emissions directly into the atmosphere.

Today's CFL's give off far better light than their predecessors, and while they still have mercury issues, disposal sites are everywhere, including big-box home centers.

The Energy Independence and Security Act of 2007 (targeted by Rep. Bachman's ill-fated bill) set in motion a transition to these more efficient lights over time. The law doesn't outlaw incandescents; it requires them to be so much more efficient that most manufacturers simply stopped making them and in fact supported the transition. Beginning in 2012-2014, lighting must be 25-30 percent more efficient. By 2020, lights must be at least as efficient as a CFL – effectively dooming the era of traditional inefficient bulbs.

While the CFL technology has matured, the new player in the lighting world, the mercury-free LED, is still a work in progress. True, LEDs are pervasive, including as holiday lights, but they are even more efficient. They are still fairly pricey compared to other lights, at least for now, but because they last for years more than even CFLs, they are a great deal – if you can get past that initial price point. LEDs also give off almost no heat, another sign of their energy stinginess. CFLs last about 10 times longer than the old bulbs, but LEDs can last well more than a decade, or more than twice as long as a CFL. People who leave their rental homes or who sell their home have been known to take the LEDs with them. They are that much of an investment!

According to the Environmental Protection Agency, replacing 20 million traditional bulbs with "Energy Star" LED would save Americans more than $118 million a year in energy costs and prevent greenhouse gas emissions equivalent to that of more than 150,000 vehicles a year.

One other change that came with the new lighting world is that consumers who were accustomed to just picking up a cheap bulb out of the bargain bin based on its wattage now need to more carefully read the labels on the new lights because there are so many kinds of uses and variations. For instance, these new low-energy lights are measured in "lumens" that indicate brightness – not watts like the old ones. Still, the labels on the packaging will guide you through the new world of illumination.

Here are a few quick CFL tips, courtesy of EPA's Energy Star (www.energystar.gov) Program:

- Get the most out of your CFL's life by leaving them on for at least 15 minutes. Flipping them on and off doesn't do you or the CFL any good.
- Use three-way CFLs on three-way sockets, and use dimmable CFLs on dimmable switches.
- CFLs like to breathe to stay cool, so put them in open fixtures because closed fixtures can generate heat, which CFLs hate!
- Enclosed fixtures are ideal for outdoor use as they protect CFLs from the elements.
- As we said, many consumers shun CFLs because they don't know how to get rid of them after they burn out. CFL disposal varies by jurisdictions, so check your local solid waste agency to determine the best way to dispose of spent CFLs. In addition, check with your electric utility or a local "big box" hardware store to see if they take them. Most do.
- Not all bulbs are of the same quality. Make sure any bulb you buy is Energy Star rated.

CHAPTER 5

TRANSMISSION

Let the Grid Be With You

The mere mention of the word "transmission" can be enough to make the eyes glaze over. But without transmission in all its shapes and forms, the power doesn't make it to you. Moving all those eager-beaver green electrons flying out of wind turbines 300 miles away over creaky old transmission systems, down through substations, across more creaky old distribution systems, into your house and into your patiently waiting coffee pot at roughly the speed of light is no small feat.

But the fact remains that we can build all the renewable energy resources we want, but it won't do much good so long as we don't have a reliable, modern transmission system to deliver that energy to its destination. There is no question that America's transmission system needs a lot of work, mostly because investments to maintain and upgrade it have been inadequate. Idaho electricity customers may well wind up paying billions of dollars in large transmission projects, whether new lines or expansions of existing ones. We should say up front that the Snake River Alliance does not advocate building transmission for transmission's sake: Understand some new transmission will be crucial to maintaining a robust power delivery system, but our priority is always "non-wires" solutions to avoid new transmission by expanding energy efficiency and building new "distributed generation" closer to home – such as rooftop solar panels.

Much is said nowadays about the need to build a "smart grid" to more efficiently deliver power from distant generation resources to our homes and businesses, and for good reason. The coming decade and beyond will bring about the largest transformation of electricity delivery since the development of the modern power transmission system decades ago. In this chapter we'll look at how the electricity transmission and grid systems work, and more important how a lot of very smart people around the country are developing all kinds of new technologies that collectively are referred to as the "smart grid," even if almost everyone has a different idea of what a "smart grid" is.

Today's hefty electric grid is a vast network of interconnected transmission lines attached to giant towers that carry usually big amounts of electricity from big, centralized generation stations such as coal or hydroelectric plants across great distances to "load centers" where the power is needed, as we'll see below. For the most part, those big power generation plants are located in remote areas either because that's where the power source is, as with dams or coal plants or wind farms, or because most people, understandably, don't want to live anywhere near a coal plant.

So long as more than half of all electricity consumed in Idaho is generated in another state, power lines and other transmission equipment are a fact of life here. One of our goals at the Alliance is to promote more "distributed generation" that can be located much closer to where it's needed and will reduce the need for Big Transmission. These promising non-wires energy solutions, like solar on our homes or community-based wind generation, are on the cusp of replacing large polluting power plants, but they are not yet up to the task of replacing more than 1,000 megawatts of coal-fired electricity. Besides, new wind projects exist, are proposed, or are being built far from where the power is needed or out of state altogether, so we'll still need a way to get that energy where we need it here in Idaho.

While today's transmission system was a modern marvel as it grew over time, it's no longer adequate to meet 21st Century needs. Far from it: There are simply more of us and despite our best efforts to conserve and to use energy more efficiently than ever, many of us indirectly or directly use much more than we used to. We simply have more things that need energy, and not just the phone chargers, computers and accessories, or electronic equipment that are driving up consumption.

As a result, many really important transmission lines are at or nearing their capacity during certain times of the year (summertime in Idaho) and cannot handle much if any additional generation, including renewable generation, that's needed to meet this new electric load. To better understand the issues surrounding transmission in and around Idaho, let's first take a look at how those electrons normally get from a power plant to your house.

Electricity 101: A Long, Strange Trip

We start at a power plant, and since it doesn't much matter what kind we'll make ours a wind farm in which the turbines collectively generate a good deal of power to deliver to a utility and ultimately to you. As the wind blows, our wind farm's blades begin spinning and eventually produce electricity.

Big generators produce electricity at about 25,000 volts. The generators feed the electricity into a power plant substation, where before being sent on its way the power is cranked up to something like 230 kilovolts or 500 kilovolts ("500kv") to get it ready for its long trip. Once it leaves the substation near the power plant, the electrons hit the Electricity Superhighway, all revved up and speeding along a high-voltage line such as a 500-kv or 345kv transmission line that's strung between those big towers you can see from a distance or drive under when your car radio is suddenly and momentarily taken over by that static, power line noise. For electricity traveling long distances, like from faraway power plants, higher voltage lines help reduce that inevitable "line loss."

As it nears its destination, the electricity is greeted by another substation that acts like an interstate off-ramp and is stepped down from its light speed trip to something more manageable by the smaller "distribution" lines that will eventually deliver those electrons to you. You've probably seen some of these substations around, maybe in your own neighborhood: A bunch of wires coming in and going out with a bunch of metal box-like devices and all surrounded by a chain-link fence.

As it gets even closer to your house, the electricity taps on the breaks a little bit more with the help of smaller substations and ultimately one of those cylinder-looking transformers atop your nearby power pole, the one with the "Garage Sale" or "Lost Dog" flier attached, where it finally delivers the 120 or 240 volts we're more familiar with and into to our toasters. Easy as pie.

Getting a line on transmission

Well, maybe not quite *that* easy! The backbone of today's U.S. transmission system consists of nearly 160,000 miles of high-voltage transmission lines. The interstate transmission system is regulated by the Federal Energy Regulatory Commission (FERC) and managed by different regional transmission organizations. That's because, with the exception of Texas, which likes to do most everything its own way, most of our transmission systems cross state boundaries and electricity is often traded among utilities, so someone has to be the traffic cop to make sure all utilities can speak to each other and that when one utility needs more power, another utility with a surplus can provide it. The transmission lines are like a Public Common – utilities have to make them available to others, otherwise we'd have even more wires up there than we already have, if each utility duplicated others' transmission systems. Someone, usually a utility of some kind, own these wires, but FERC makes sure that they share capacity for the benefit of all. At a price, of course.

Because customer demand or "load" in Idaho varies dramatically by time of year and time of day, and because power plants might sometimes go out of service, the transmission system must be robust enough to manage these swings to ensure there is always enough power available on the utility's grid system and that the transmission to move it to keep the lights on is always available. Of course, there are times when the transmission system simply cannot carry more electricity, or when too many generators go down. That's when we see brownouts or blackouts. It was a series of blackouts in the past two decades, including a major one in the Northeast United States and Canada in 2003, that led the federal government to launch the massive and incredibly complicated overhaul of the system.

Think of the electric power grid as essentially a network of pipes that allow the flow of electrons from the generator to the consumer. Some of those electrons are green, coming from wind farms or other renewable generation resources. Some are brown, coming from fossil fuel generators such as coal, gas, or nuclear plants. The transmission system doesn't distinguish between the two: The electrons will seek the most efficient route from wherever they came from to their destination, taking detours when the transmission line is congested or when a line goes down. Anything to keep moving and get to where they're needed. The beauty of the interconnected electricity grid is that there are countless ways for electricity to find its way, at least under normal conditions. The North American Electric Reliability Council (NERC) was created in 1968 to ensure that the grid can handle line failures or other disruptions and still function. NERC also requires utilities to have power reserves to meet the greatest possible demand on the system. Reserves are important, and for now they're really important as many utilities integrate more "variable" energy such as

wind power onto their systems. That's why utilities need to have more generation available than they would normally need.

One problem with the current grid system and with relying on distant generation resources is that power lines bleed energy through heat over great distances, so much so that it's estimated we lose 10 percent of the generated electricity through "line loss." More on that later.

So who owns the wires in the Pacific Northwest? The Bonneville Power Administration (BPA), the U.S. Department of Energy's regional federal power marketing agency (another is the Tennessee Valley Authority), provides about half the electricity used in the region. Almost all of its power is from hydropower projects, and BPA owns about 75 percent of the region's transmission. Some utilities own much of their own transmission system. Idaho Power, for instance, owns more than 4,600 miles of high-voltage transmission lines. But as we now know, under federal law, all transmission owners must provide "open access" to those needing to move electricity so long as there's extra room on their lines. BPA's primary customers are cooperative and municipal utilities, not regulated investor-owned utilities like Idaho Power, Avista, or PacifiCorp.

One advantage of this open transmission access is that Idaho is for the most part a "summer peaking" state, meaning its highest loads occur in the summer when air-conditioning and irrigation pumps are busiest, while much of the west side of the Pacific Northwest is "winter peaking." So when Idaho needs to buy extra power in the summer, it's likely available from over there. And when Idaho has extra power in the winter, that's when our neighbors to the west may need it. Unfortunately, the transmission lines connecting Idaho to its neighbors are often very crowded, especially in the summer, making the movement of electricity within the region sometimes problematic, especially since no major transmission construction has taken place in our region since the late 1980s.

One of the big problems with today's overcrowded electricity transmission systems is that it's a tight fit to try to add more generation – especially renewable generation. While there may be solar, wind, geothermal or other renewable developments ready to build, they won't get far if they can't get access to that electricity superhighway. Which is currently becoming a problem in moving renewable energy from eastern Idaho to the Treasure Valley: The big east-west transmission system may be adequate some times of the year, but not in the summertime when it's needed most. Likewise, as we said, for the transmission lines connecting Idaho to the Pacific Northwest, which is why Idaho Power is proposing to build a large new line between the Treasure Valley and the Boardman area west of Pendleton, Oregon.

Idaho is not alone: Nevada has the potential to provide huge amounts of solar electricity to western markets, but lacks the transmission to get it there. Or in the Midwest, where the vast amount of wind energy is only as accessible as the choked transmission system to the urban markets that need it. The American Wind Energy Association and the Solar Energy Industries Association produced a joint report that estimated 300,000MW of wind projects was being delayed for the lack of available grid space, and that 13,000MW of California solar energy was in the same boat.

Jon Wellinghoff, recently retired chair of FERC, noted in 2009 that 75 percent of the nation's energy demand is on the east and west sides of the country, but most of the wind potential is in the central United States and solar in the Southwest. The central United States is often called the Saudi Arabia of wind power with eye-popping amounts of wind energy being produced in Texas, Kansas, Nebraska, Iowa, and the Dakotas. So you can see a big part of our problem: We've got all those electrons all dressed up but nowhere to go, or at least a way to get there.

"We have a lot of location-constrained, low-cost economic, renewable resources like wind and geothermal and solar that have to be delivered to the loads," Wellinghoff said, noting that a lot of the renewable energy potential is not near the locations that need it. "We have to have the transmission to deliver that as well," he said. "So we need to do both. We need to do distributed systems, energy efficiency, and we also need to move those economic, low-cost renewable resources to the loads. My focus is making sure that we can integrate renewables into that transmission system because if we can't make that transmission system work, then none of this is going to work. It won't work for the renewables, it won't work for the coal, it won't work for the nuclear. Ultimately, the transmission system has to be the glue that hangs this all together in a way that we can get these resources to loads."

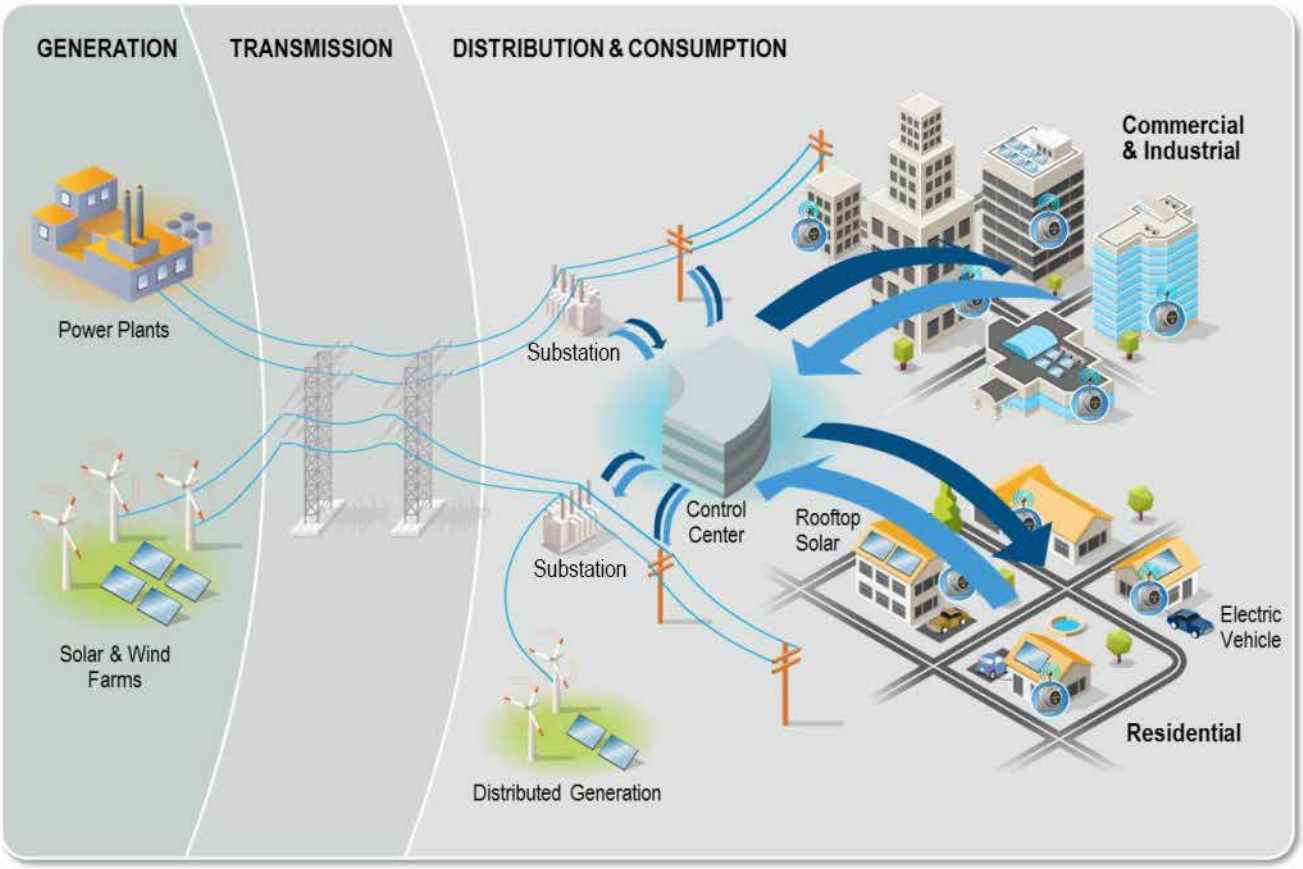
Many states and utilities are pressing for immediate transmission improvements, particularly with the advent of state "renewable portfolio standards" that require utilities to obtain a percentage of their power from renewable energy, only to find they can't get the power reliably delivered and leaving these needed projects in a holding pattern.

Enter the Smart Grid, or Grid, Heal Thyself!

So what's the answer, aside from trying to build our way out of the problem by building big new power lines that can carry more electricity than existing ones – and that cost $2 million a mile or more to install?

First, evolving energy efficiency and conservation measures will greatly reduce the need for new power plants and transmission lines. Energy efficiency is not only the cheapest kilowatt available for customers, it also helps defer the need for expensive power

SMART GRID



Source: trilliantinc.com

THE MYSTERY OF THE VANISHING ELECRONS

One of the vexing things about moving a boatload of electrons from something like a coal plant to something like your refrigerator is that it's impossible to ship electricity long distances over transmission lines, through substations, over more lines and eventually to your house without losing a little bit of that electricity.

In a nifty little book, "What You Need to Know About Energy," that's downloadable for free at www.needto-know.nas.edu/energy the National Academy of Sciences put together a cool way to look at what happens to electric power between the generator and you, the consumer.

Let's assume (much as we'd rather not) that the electricity is coming from a coal plant. The coal is burned in a power plant to release the energy stored in the coal and to generate the heat needed to produce steam to power the turbines to generate electricity. And, thanks again to the National Academies (http://www.nap.edu/reports/energy/sources.html), here's a look at what happens between a lump of coal and you:

A typical coal plant might be 38 percent efficient, meaning 38 percent of the "chemical" energy contained in the coal is actually turned into electricity. Or 62 percent of coal's energy potential is lost to the grid. But wait, it gets worse. So let's assume we started with 100 units of energy; we're now down to 62 units, from power plant losses, so 38 units hop on the transmission lines. Unfortunately, 2 more units are lost to transmission "line losses," meaning the amount of energy coming into your house is 36 units. Sensing a trend here?

So now we're down to about one-third of the power that came from the power plant as those 36 units of energy come into your home to illuminate an energy-wasting incandescent light bulb (not a CFL!). The bulb releases 34 units of energy in WASTE HEAT, and uses just 2 units of energy to actually produce light.

So of the 100 units of energy that started as that lump of coal that went into the power plant, just 2 units were used in the light coming from that old-style light bulb. The rest were lost to heat and transmission losses.

How efficient is that?

plants and the transmission infrastructure they require. Equally important is, once again, that distributed generation in which smaller generation devices are built closer to home and "distributed" all over, which also eases pressure on Big Transmission. You'll be hearing a lot about "DG" in years to come, because many of us believe that is the heart of the future electricity delivery model. Big out of state fossil fuel plants will become uneconomic while localized energy generation will be the generation backbone.

And then there's the "smart grid," which can mean different things to different people. In a March 2009 presentation to the Northwest Power and Conservation Council in Boise, Terry Oliver, the Chief Technology Innovation Officer for the Bonneville Power Administration, described the smart grid this way:

- The term 'smart grid' represents a vision for a digital upgrade of distribution and long distance transmission grids to both optimize current operations, as well as open up new markets for alternative energy production.
- Use of robust two-way communications, advanced sensors, and distributed computing technology will improve the efficiency, reliability and safety of power delivery and use.
- One United States Department of Energy study calculated that internal modernization of U.S. grids with smart grid capabilities would save between $46 billion and $117 billion over the next 20 years.
- If smart grid technologies made the United States grid just 5 percent more efficient, it would equate to eliminating the fuel and greenhouse gas emissions from 53 million cars.

Whew!

So the smart grid isn't just one or two cool new technologies to make our grid more efficient. It actually makes what is now a pretty dumb grid a lot more intelligent with the help of real-time communications between utilities and consumers, or between the grid and your appliances. It will enable storage of energy, something that is currently extremely difficult. It lets consumers and their appliances interact consciously and subconsciously with utilities. It allows utilities to avoid construction of expensive "peaking" generating facilities such as rarely used natural gas peaking plants by reducing demand during times of extremely heavy use. It allows the grid to heal itself when plants or power lines go down by immediately finding other routes to move electricity around a problem. It allows widespread use of "DG" such as home- or community-scale wind turbines and solar photovoltaic systems. It uses "smart meters" that allow your utility to let you know how much your electricity is costing at any given time – more during times of high demand and less during times of low demand – so you can become a better informed electricity consumer and so you can take more control over when you will use electricity and how much it will cost. These smart meters will let our appliances know the cheapest time to operate, which saves energy and money. The Department of Energy's wonderfully named Office of Electricity Delivery and Energy Reliability (http://energy.gov/oe/technology-development/smart-grid) likens the smart grid to "smart phone." Just as these new phones contain powerful computers, "Smart grid means computerizing the electric utility grid. It includes adding two-way digital communication technology to devices associated with the grid."

As the nation continues its shift toward plug-in electric vehicles (EVs), we're now learning that these ultra-efficient cars and trucks might add to our overall electricity demand and create a need for more generation. But in a smart grid world, the vehicles and their smart chargers will work to the grid's advantage, as the vehicles can actually sell power back to the grid when not in use and recharge during the night when electricity demands are not nearly as high. The cars then become "batteries" themselves, storing power for the grid when they don't need the electricity to run. So rather than being a cause for even more electricity generation from the likes of a coal plant, EVs will actually help reduce that need and complement the grid's operation.

In short, the smart grid reinvents the traditional wires-based transmission system into a grid that saves energy by using it smarter and that builds a more robust network to move those electrons in the most efficient ways possible. And it's not an Idaho smart grid or even a regional smart grid. These grids will interact into a lean, green, electron-delivering fighting machine! Beyond the energy-saving and carbon-reducing technologies coming our way, the smart grid also eases us off the old-style centralized energy distribution system that is susceptible to attacks or natural disasters in favor of – here's that word again – a decentralized grid that is more stable, more efficient, and less prone to cascading blackouts and other disruptions. Think of the old-style wireless telephones compared to today's smart phones that can do everything but wash your dishes. The evolution is, and will continue to be, that dramatic.

The U.S. Department of Energy likens the advent of the smart grid to the development of the Internet or the nation's interstate highway system. In a useful primer on smart grid technologies (http://www.oe.energy.gov/smartgrid.htm), DOE also says a smarter grid (http//www.smartgrid.gov) will help the United States greatly reduce its "carbon footprint" by reducing our electricity consumption and by moving massive amounts of carbon-free renewable energy onto the grid, making it possible to begin phasing out greenhouse gas-spewing coal plants.

"With the appropriate application of ingenious ideas, advanced technology, entrepreneurial energy and political will, there will also come a time when you won't remember life before the smart grid," DOE says. That's because, unlike today when you have little real control over such things as the cost of your electricity or the best time to use it, you and your appliances will be in direct communication with your utility, and vice-versa. Not necessarily in a creepy Big Brother way, but in ways that will empower you to use

energy in the most efficient and least expensive ways possible. You'll know beforehand whether you'll be paying 7 cents a kilowatt hour or 12 cents before firing up the washing machine.

On the utility's side of your meter, and using the same kinds of monitors, sensors, and high-speed communication, the utility will have far more control over obtaining electricity from the best available resources. For instance, it can act quickly during times of heavy consumption to reduce that peak demand and the expensive power costs that go with it. With today's technology, utility grid operators have little control over when demand goes up or down, or by how much. A smarter grid gives those operators new tools to manage the load and to meet growing demand without necessarily having to install expensive new generation and transmission. It helps put us on a path to those non-wires solutions to meeting our coming energy needs.

As the old grid yields to a new one that's much more efficient and dynamic, it will be renewable energy that is one of the main drivers.

We've heard a lot of concerns about whether all these connections between you and your utility allow your utility to know more about you than you'd like to share. That's not happening, so far as we can determine. This kind of information is used only to make the grid more efficient, nobody is sharing, nor do they particularly care about, how you use your electricity.

Finally, the Department of Energy's Pacific Northwest National Laboratory ((PNNL) explains how swiftly our grid is changing (http://gridoptics.pnnl.gov):

> *"Over the last 120 years, the power grid has served us well with affordable and reliable electricity. But going forward, the traditional grid is facing serious challenges. Rising demand, changing technology, and environmental and security concerns are already transforming the grid that we know.*
>
> *The Power grid as we know it is evolving. This evolution will continue at an accelerated speed. In the next 10-15 years, more than 15 percent of electricity will come from renewable sources, and more than 15 percent of loads will actively respond to grid constraints and incentive signals. Distributed generation, plug-in hybrid vehicles, and electricity storage are being added to the grid. This results in stochastic behaviors and dynamics the grid has never seen nor been designed for."*

We'll take PNNL's word for that, and fasten our seat belts and get ready to go along for the ride!

Major Western Transmission

Black: ColumbiaGrid

Red: Northern Tier

Blue: Other Western US and Canada EHV Grid Transmission

Source: BPA "Challenge for the Northwest"
White Paper April 2006, pg 24
with red highlight additions by RSB - PacifiCorp
Jan 2007

HIGH-WIRE ACT: A LOOK AT PROPOSED IDAHO TRANSMISSION PROJECTS

While "non-wires" solutions to providing electricity are almost always preferred over the construction of extremely expensive, unsightly, and environmentally problematic Big Transmission projects, development of some new transmission is inevitable given the transmission "choke points" in Idaho from east to west, north to south, and from Boise to the Pacific Northwest. And also given that some of the renewable energy we'd like to use here in Idaho is located a really far way from where we want to use it.

Some of these transmission projects have merit in that they can allow utilities access to distant renewable energy resources such as wind farms in Wyoming, Oregon, Washington, and Montana. Being able to move renewable energy into Idaho when it's needed here and out to other markets when it's needed there can be a good thing. Especially since current transmission constraints make moving large amounts of power into and out of other markets during certain times nearly impossible.

Besides being off-the-charts expensive at more than $2 million a mile, building these mega-transmission projects is hugely complicated and usually controversial as the projects by their nature traverse all kinds of private and public lands, not to mention multiple government jurisdictions. There are excellent reasons for these projects to require exhaustive environmental review. Here's a look at some of the high profile transmission projects that are in the works with direct impacts on Idaho – as well as links to sites where you can learn more and become involved in the public input process. All or some segments of these lines are rated at 500 kilovolts (500kv), which are among the highest-rated power lines in use today and which are distinguished by enormous towers and broad rights-of-way.

GATEWAY WEST

The best-known of the current transmission projects, Gateway West is being developed by PacifiCorp and Idaho Power, with the Bonneville Power Administration joining the action during the exploratory phase. The 1,250-mile project would run from the Dave Johnson coal plant Glenrock, Wyo., east of Casper, through some heavy wind territory and through the Jim Bridger coal complex near Rock Springs and then into Idaho and eventually to a relatively new and very big substation near Murphy, south of Nampa in Owyhee County. It was tentatively scheduled to be completed in 2014, but due to multiple delays, including objections from communities that would be directly affected by the line, the utility partners expect it will be an unknown number of years before it's ready to be energized. The last estimate was 2019 for one segment of the line and 2024 for another. Some of the portions projected to run through Idaho still do not have BLM-proposed routes for public review. Developers say the project will provide greater access to renewable energy resources in Wyoming and the east-west movement of that power. They also say it will ease pressure on the existing smaller lines, which during some parts of the year are near capacity – making it difficult for Idaho and Wyoming wind projects to tie into the system.

Because of its size, Gateway West has posed significant challenges to the utility developers in both states. In Idaho, Idaho Power and PacifiCorp have held numerous public meetings in or near affected communities to attempt to answer concerns about possible private property condemnation and how the line fits in with community development and other plans. In addition, Idaho Power must work with the U.S. Bureau of Land Management and U.S. Forest Service on possible routes and development of a federal environmental impact statement. The Wyoming BLM office is the lead agency in conducting federal environmental reviews, including the Environmental Impact Statement that was released in 2013.

For more information on the Gateway West project, visit www.gatewaywestproject.com and www.wy.blm.gov/nepa/cfodocs/gateway_west

BOARDMAN TO HEMINGWAY

This Idaho Power-proposed project would link the Hemingway substation at the west end of the Gateway West project to a station near Boardman, Ore., on the Columbia River, where Idaho Power has a 10 percent

share of the Boardman coal plant (scheduled to be retired around 2020) and where it could access the rich Pacific Northwest wind and other resources. Also participating with Idaho Power is PacifiCorp and now the Bonneville Power Administration, which needs transmission to serve some southeast Idaho customers.

Idaho Power says the line is needed to relieve pressure on the heavily used existing transmission system from its southwest Idaho load center to the Pacific Northwest. It also says the line can help move power from Idaho to the Northwest in the winter, when Idaho's demand slacks off and the Pacific Northwest's is higher, and vice versa in the summer, when Idaho Power's peak use is highest.

The 300-mile line has not been without controversy. Idaho Power had to delay permitting and construction of Boardman to Hemingway ("B2H") after residents and officials in communities such as Parma, Idaho and Ontario, Ore., and others complained the company failed to adequately brief them on the project and the proposed route. Oregon utility regulators agreed with Idaho Power that the process needed to be slowed down to allow for community meetings and other outreach. A path for the line has yet to be determined. Unlike in Idaho, Oregon has a state facility "siting" authority that will carefully review this energy project before it can move forward. Among the issues beyond the aesthetics of 156-foot-tall steel lattice towers are worries that the lines could interfere with crop dusting the onion fields on both sides of the Idaho-Oregon border. So instead of the line being built by 2012, repeated delays have pushed back the completion date to 2019 – if then.

For more information on the lines, visit www.boardmantohemingway.com

MOUNTAIN STATES INTERTIE

South Dakota-based NorthWestern Energy plans to build a high voltage line from Townsend in southwestern Montana into Idaho and down to the central MidPoint substation between Jerome and Shoshone, where the line is designed to link up with other lines to eventually carry electricity into Nevada and the Southwest.

The future of this transmission line is in doubt – at least the Idaho portion of it – but it has not been resolved.

Mountain States Intertie (MSTI) developers said the project was intended to relieve congestion in the western grid and help move the estimated 30,000MW of clean and renewable energy that western governors say they'll need on the grid by 2015 in order to meet various state renewable standards that require a percentage of many states' utilities to provide from renewable resources. Idaho does not have such a requirement, but it is central to the larger renewables goal because so much of the transmission will cross the state.

The Montana Department of Environmental Quality is the lead agency for the project, which NorthWestern had hoped to complete by 2013 or 2014. The project is being coordinated by the Northern Tier Transmission Group (see below).

For more information about the Mountain States Intertie project, visit http://www.blm.gov/mt/st/en/prog/lands_realty/projects.html#MSTI

THE NORTHERN TIER TRANSMISSION GROUP (NTTG)

The Northern Tier Transmission Group is made up of multiple utility and transmission providers and other stakeholders and is charged with promoting a more efficient use of the grid and coordinating region-wide transmission projects in the Pacific Northwest and the region's mountain states and Canadian provinces. The NTTG covers Albert, Montana, Wyoming, Colorado, New Mexico and all states and provinces to the west. It works to ensure utility-specific transmission projects or projects undertaken by multiple utilities. Working with state and provincial governments and other stakeholders, NTTG also promotes grid-wide transmission reliability and efforts to reduce transmission congestion across the region. Participating utilities include Deseret Power Electrical Cooperative in Utah, Idaho Power, NorthWestern Energy, PacifiCorp, and the Utah Associated Municipal Power Systems (UAMPS). Combined, those utilities own more than 27,000 miles of high-voltage transmission lines and serve 2.6 million electric customers.

For more information, visit www.nttg.biz

CHAPTER 6

IDAHO'S ENERGY UTILITIES

The Big Three, BPA, & the Muni's and Co-Ops

As we begin to figure out how to influence utilities when they choose between energy efficiency or building new power plants or between using clean renewable energy or dirty coal and gas, it's useful first to get a better grasp of the nature of Idaho's many diverse utilities and how they operate.

Idaho has two primary kinds of electric utilities. Eight of 10 Idaho electricity customers, 84 percent, get their power from large, private "investor-owned utilities" – Idaho Power Co., Avista Utilities, and PacifiCorp, which in Idaho is known as Rocky Mountain Power. These three "IOUs" each have their own clearly defined "service territories" and each of them is governed by the rules and decisions of the Idaho Public Utilities Commission (PUC), which we address in more depth in another chapter. Where you live determines where your electricity comes from: Unlike in a few places such as Pennsylvania, Michigan, or Maryland, you do not shop for your favorite utility in Idaho, and there are a lot of valid reasons for that.

Boise-based Idaho Power, by far the state's largest utility, serves customers roughly from Riggins in west central Idaho down to southwest Idaho (including Boise) and across the southern tier of the state to the Pocatello and Blackfoot area. Salt Lake City-based Rocky Mountain Power/PacifiCorp, a subsidiary of MidAmerican Energy Holdings Co., serves a much smaller customer base in eastern Idaho, as well as in Utah and Wyoming; and Spokane-based Avista operates in the Idaho Panhandle, western Montana, and into Washington. There is actually a fourth electric utility that's regulated by the PUC, and that's the tiny Atlanta Power Co.

In addition to those private utilities, Idaho has 11 municipal utilities, such as Idaho Falls Power, and another 15 rural electric cooperatives scattered among the pockets not served by the big IOUs. They receive the bulk of their power from the giant federal Bonneville Power Administration, the U.S. Department of Energy agency that serves utilities across the Pacific Northwest from its network of hydropower projects and also from a nuclear power plant – the only source of nuclear energy serving Idaho utilities. Unlike the Big Three electric utilities, these power providers are not answerable to the Idaho Public Utilities Commission. Rather, they are answerable to city residents in the case of a utility like Idaho Falls Power, or to their individual cooperative members.

On the natural gas front, most of Idaho is served by either Intermountain Gas or, in the north, by Avista's gas operation. Both of these are regulated by the PUC, and as with electric utilities, they also file periodic rate cases (though less frequently than electric utilities) and they file their long-term plans for how they'll get the gas they need to meet customer demand.

As mentioned, the big-three IOU's are regulated by the Idaho PUC, while the numerous smaller municipals and co-ops are not regulated, other than by their shareholder owners or city officials that operate them. Idaho's top five utilities ranked by power sold in 2010, according to the most recent data available from the U.S. Energy Information Administration:

- Idaho Power: 12.88 million megawatt hours
- Avista: 3.38 million
- PacifiCorp (Rocky Mountain Power): 3.32 million
- City of Idaho Falls: 695,314
- Kootenai Electric Coop: 401,940

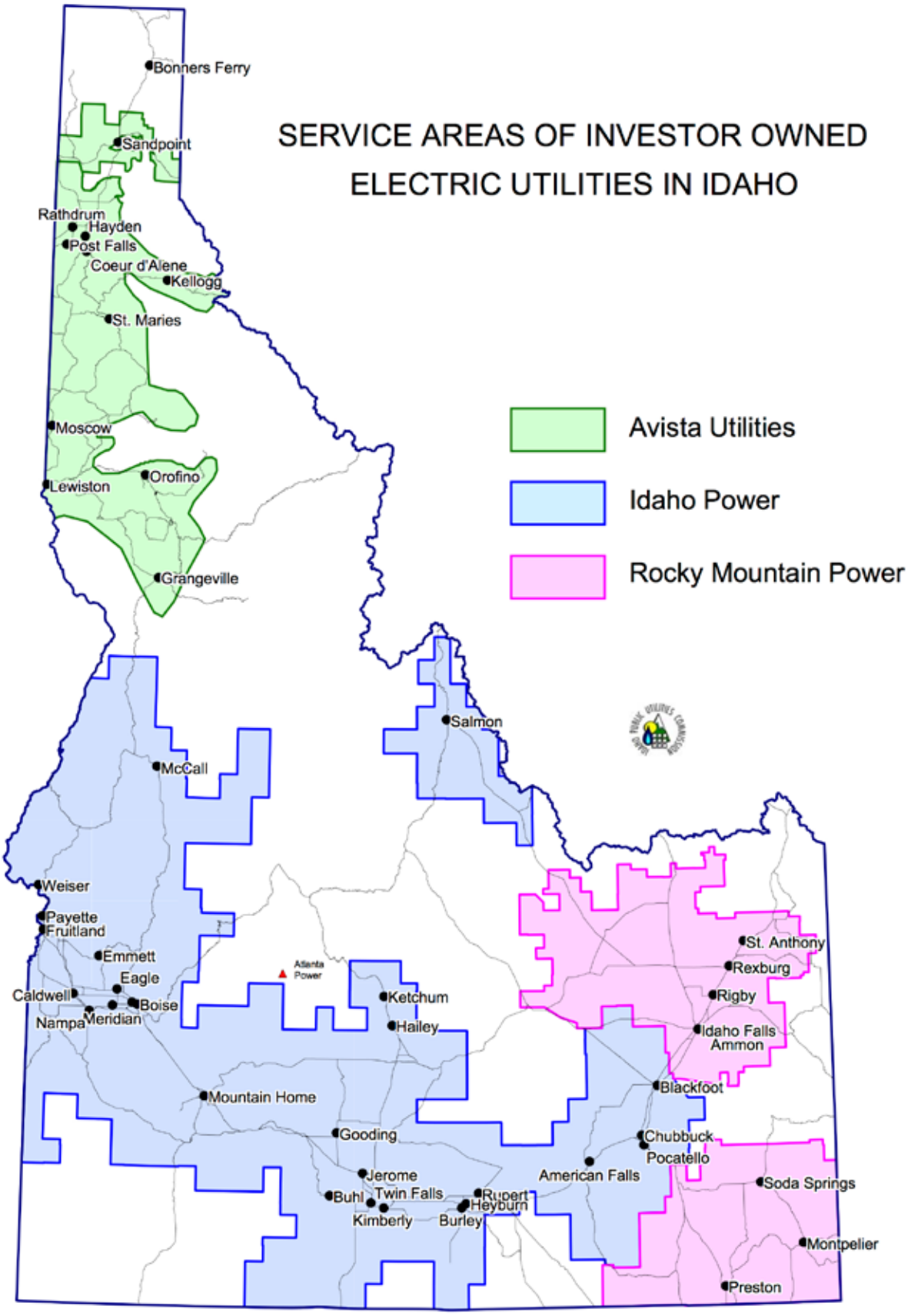
Combined, these top five utilities accounted for 91 percent of Idaho's total electric sales for all sectors, and 89 percent of the residential sales in Idaho.

Before we get into how the utilities work, let's take a snapshot look at the players: The Big 3, Bonneville, and the municipals and co-ops. Beginning with what is by far the biggest utility in Idaho:

Idaho Power Co.

www.idahopower.com

Idaho Power Co. serves an estimated 500,000 customers in all classes (residential, commercial-industrial, irrigation), almost all of which are in southern Idaho, with about 5 percent of its customers in eastern Oregon. The fastest-growing utility in the state, Idaho Power expects to add approximately 8,400 new customers a year through 2025. Of its customers, about 416,020 are residential, 66,039 are commercial or industrial, and 19,045 are irrigators. Its 24,000-square-mile service territory includes nearly 5,000 miles of big transmission lines and 27,000 miles of "distribution" lines, which are the ones that run from substations to customers overhead or underground.


SERVICE AREAS OF INVESTOR OWNED
ELECTRIC UTILITIES IN IDAHO
Avista Utilities
Idaho Power
Rocky Mountain Power
Bonners Ferry
Sandpoint
Rathdrum
Hayden
Post Falls
Coeur d'Alene
Kellogg
St. Maries
Moscow
Lewiston
Orofino
Grangeville
Salmon
McCall
Weiser
Payette
Fruitland
Emmett
Eagle
Caldwell
Boise
Nampa
Meridian
Atlanta Power
Ketchum
Hailey
Mountain Home
Gooding
Jerome
Buhl
Twin Falls
Kimberly
Rupert
Heyburn
Burley
American Falls
Chubbuck
Pocatello
Blackfoot
Idaho Falls
Ammon
Rigby
Rexburg
St. Anthony
Soda Springs
Montpelier
Preston

The state's largest utility has an "average firm load" of less than 2,000 average megawatts. It owns 3,2594MW in "nameplate generation" – meaning the maximum amount of power its dams and thermal generating plants can produce. Examples of the generation plants Idaho Power owns or partly owns include the huge Brownlee-Oxbow-Hells Canyon hydropower complex, which can crank out a combined 1.1 gigawatts, or 1,166 megawatts at full capacity; the Jim Bridger coal plants in Wyoming, which can produce 770 megawatts; the Evander Andrews natural gas peaking plants near Mountain Home, which can produce about 217MW at full steam; CJ Strike Reservoir, which can produce about 83MW and most recently the Langley Gulch natural gas plant near New Plymouth west of Boise. Idaho Power also has a diesel generator in Salmon, which is for emergency backup. What about Lucky Peak Reservoir near Boise? That power is actually purchased by Seattle City Light!

All told, Idaho Power's generation resources include 17 hydroelectric plants and part-ownership in three large coal plants, including a shared ownership with PacifiCorp at the Jim Bridger coal plant complex in Wyoming, with Nevada Power at the North Valmy power plants in Nevada, and with Portland General Electric and others with the Boardman plant in Oregon. The company also operates a small fleet of simple cycle natural gas peaking power plants at Bennett Mountain and Evander Andrews, which are visible from Interstate 84 just west of Mountain Home, and that big new gas plant, Langley Gulch.

These generation plants rarely produce the maximum amount they were built for, whether due to water conditions, power plant maintenance, or other factors. Still, that would seem plenty of power to meet Idaho Power's need for 2,000 average megawatts to serve its customers, until you consider the company's "peak load" can be more than 3,300MW and rising. And that's a huge problem for Idaho Power, which has more energy than it needs for most days of the year, but can face a crunch during those summertime peaks.

Unlike many Northwest utilities, Idaho Power is a "summer peaking" utility, meaning its customers demand the most electricity in summer months, when the booming residential customer base fires up their air-conditioners while farmers need more power to run their irrigation systems. Given that Idaho Power's greatest need is to meet its peak demand, the company has devoted some of its conservation and energy efficiency measures to shaving that summer peak. Those programs include one in which residential customers in some areas can volunteer to have their air-conditioners "cycled" off periodically for brief periods in the summer in exchange for a small rebate during portions of the summer months, and another in which farmers agree to do much the same thing with their irrigation pumps for much larger payments. The ability of the company to "shift" that electrical consumption helps it reduce those troublesome demand "peaks" – and reduces the need for pricy gas plants that would need to be fired up to supply the power instead.

Idaho Power's power supply mix looks like this:

- 30 percent coal
- 45 percent hydropower
- 7 percent market purchases
- 4 percent natural gas and diesel
- 14 percent long term purchases, including wind, geothermal, biomass, small hydroelectric and combined heat and power

Avista Utilities

www.avistautilities.com

Known until 1999 as Washington Water Power Co., Avista Utilities provides electricity to about 358,000 customers and natural gas to about 316,000 customers in Washington, Idaho, and western Montana. Its Idaho Panhandle territory includes about 131,000 customers and its service territory covers more than 30,000 square miles and a population of 1.6 million. Idaho accounts for 32 percent of Avista's customer sales, with Washington representing 58 percent and Oregon 9.6 percent. Idaho's second-largest electric utility, Avista is also the only of the three major Idaho electric utilities to also provide natural gas service.

The utility's average electric load is about 1,075 average megawatts. Like Idaho Power, it has a "peak" demand problem of its own, with a 1,700MW winter peak and a 1,500MW summer peak.

Avista owns about 2,700 miles of large transmission lines and another 18,200 of distribution lines running to its customers. It also runs 7,600 miles of natural gas distribution mains.

Avista's electricity comes primarily from eight hydroelectric plants on two rivers, as well as natural gas, some coal, and wood waste combustion plants. Avista relies more on natural gas plants than any other Idaho electric utility, but more than a third of its electricity comes from hydropower. Examples of its generation resources include 1,000MW of hydropower from such projects as

Cabinet Gorge and Noxon Rapids on the Clark Fork and Post Falls; a 150MW natural gas plant at Rathdrum; and a 222MW share of the huge Colstrip coal complex near Billings, MT.

Avista's power supply mix looks like this:

- 51 percent hydropower
- 36 percent natural gas
- 10 percent coal
- 2 percent biomass
- 6 percent wind
- N/A percent other contracts

Rocky Mountain Power (PacifiCorp)

www.pacificorp.com

Rocky Mountain Power serves an estimated 71,500 southern Idaho customers. While its parent company PacifiCorp's 136,000-swuare-mile service area also includes customers in Washington, Oregon and California, most of the power for its "east side" service territory in Utah, Wyoming and Idaho comes from PacifiCorp's fleet of coal plants. The company is known as Pacific Power in California, Oregon and Washington.

Of the utilities serving Idaho, Rocky Mountain Power and its parent PacifiCorp are the longest in coal-fired generation. It is also the utility that serves the most states in the region, which is important in that it is subject to utility regulators in each of those states in a multi-state service territory. Additionally, because Oregon, Washington and Oregon have "renewable portfolio standards" that require utilities to provide a certain percentage of their total power from renewables, PacifiCorp has had to increase the amount of renewables on its system in recent years.

Besides Idaho, PacifiCorp serves 803,500 customers in Utah, 135,000 in Wyoming, 558,000 in Oregon, 127,600 in Washington, and 45,000 in California. By class, 1.4 million of its 1.7 million customers are residential, 214,000 are commercial, 34,000 are industrial or irrigation, and 4,000 are listed as "other."

The company owns 15,900 miles of big transmission lines, 62,000 miles of overhead distribution lines, and 14,500 miles in underground distribution lines.

The company's historic reliance on coal, combined with the likelihood of federal carbon regulations, is prompting PacifiCorp/Rocky Mountain Power to speed up the integration of new renewables into its system. For example, the company purchases about 64.5MW of wind power from the 43-turbine Wolverine Creek wind farm east of Idaho Falls. PacifiCorp has more than 1,000MW of owned wind on its system, and another 600MW of wind under contract from others. It says its owned and contracted wind has increased by more than 1,400MW since 2006.

PacifiCorp's power comes from 11 coal plants; 47 hydropower plants; six natural gas plants; 12 wind facilities; including Wolverine Creek, Idaho's first major wind farm; and two geothermal facilities. PacifiCorp is the two-thirds owner with Idaho Power on the large Jim Bridger coal generation plant near Rock Springs, WY. It owns 75 generating plants capable of producing 10,597MW of electricity.

Rocky Mountain Power's power supply mix looks like this:

- 60 percent coal
- 8.2 percent hydropower
- 12 percent natural gas
- 8.75 percent renewables, almost all wind
- 10.29 percent other/unspecified

Bonneville Power Administration (BPA)

www.bpa.gov

BPA, the region's federal power marketing agency, was created in 1937 and provides about one-third of the electricity used in the region, although the percentage is far less in Idaho. It sells power to more than 140 utilities. Like a lot of utilities, Bonneville is charged with promoting energy efficiency and renewable energy, and many of its customer utilities credit Bonneville for much of their institutional energy efficiency efforts. Unlike a number of utilities, however, Bonneville and its federal partner agencies are also responsible for undertaking widespread programs to help restore the many fish stocks that have been impacted by the system's dams.

BPA is part of the U.S. Department of Energy, but is funded primarily through electricity generation and transmission receipts. BPA's electricity – and by extension the power used by Idaho's co-ops and municipals – comes from 31 U.S. Bureau of Reclamation and U.S. Army Corps of Engineers dams on the Columbia River and its tributaries, as well as some wind and a nuclear reactor near Hanford, WA. The agency works with other federal entities such as the Bureau of Reclamation and the Corps of Engineers to manage the dams and the Federal Columbia River Power System (FCRPS). Bonneville also controls much of the region's electric transmission, with 15,000 miles of lines across its 300,000-square mile service area in the Northwest.

Besides marketing power, one of BPA's key functions deals with the ongoing efforts to restore endangered fish runs that have been severely impacted by the Federal Columbia River Power System (FCRPS). Those efforts include changing river flows during certain times of the year, working on fish-passage methods to facilitate movement of fish up and down stream, and control of fish predators such as sea lions and birds. Conservation, tribal, and government organizations are among those who have sued federal agencies over dam management on the Columbia River, and in particular the four dams on the Lower Snake River that have been targeted by many for breaching as a way to rescue Idaho-bound fish species from extinction.

BPA's customers include 54 electric cooperatives, 42 municipalities, 28 public utility districts, seven federal agencies, six investor-owned utilities, three direct-service industries, a port district, and two tribal utilities.

BPA's power portfolio depends on the time of year and river flows. Its January one-hour peak capacity is 89.1 percent hydro, 6.3 percent nuclear, and 4.6 percent contracts for power such as wind. Its 12-month annual average is 78.8 percent hydro, 11.6 percent nuclear, and 9.6 percent contracts for wind and other power resources. The Columbia Generating Station near Richland, WA, that feeds power to Bonneville is the Pacific Northwest's lone operating utility nuclear reactor.

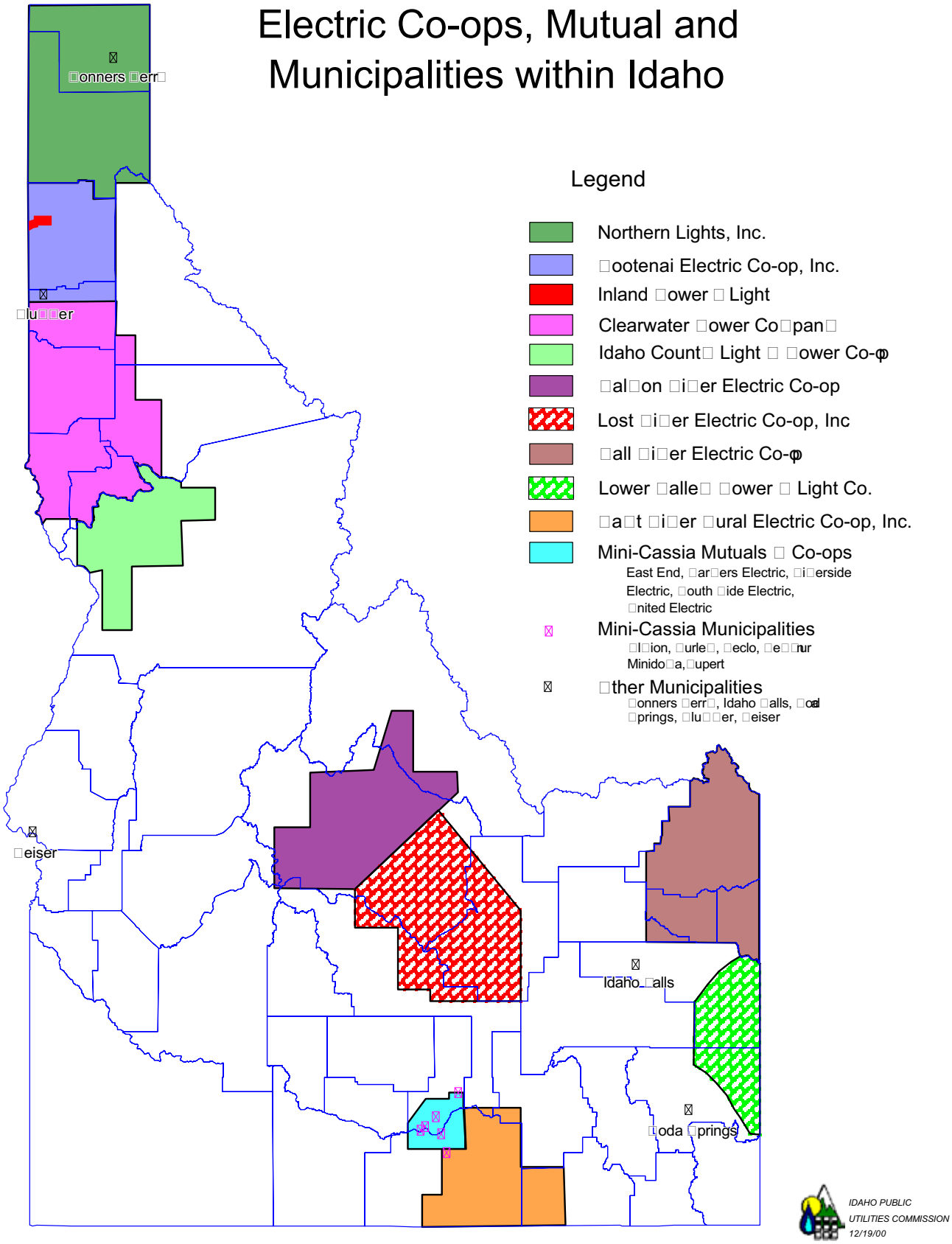
Municipals and Cooperatives

Idaho's non-regulated utilities serve about 12 percent of Idaho's total electric load. There are 11 municipal and 15 rural cooperative utilities, the largest being Idaho Falls Power. These utilities are members of the Idaho Consumer Owned Utilities Association (www.icua.coop) and acquire most of their electricity from the Bonneville Power Administration (www.bpa.gov). While municipals and cooperatives are much more prevalent in places like Washington state, with Seattle City Light and Snohomish County Public Utilities District among the region's largest public utilities, they are not nearly as widespread in Idaho.

They dot the entire state, from Raft River Rural Electric in Malta and the City of Soda Springs in southeast Idaho to Salmon River Electric Coop in Challis, to Northern Lights in Sandpoint and Kootenai Electric in Hayden, to Idaho County Light and Power in Grangeville. The municipals are typically managed by local town or city councils; the cooperatives are managed by elected boards. All are accountable to their customers, who in the case of cooperatives are all part owners.

Here's the full list of Idaho's cooperative and municipal utilities:

- Northern Lights, Inc.
- Kootenai Electric Co-op, Inc.
- Inland Power & Light
- Clearwater Power Co.
- Idaho County Light &Power Co-op



Electric Co-ops, Mutual and Municipalities within Idaho

Legend

🟩 Northern Lights, Inc.

🟦 Kootenai Electric Co-op, Inc.

🟥 Inland Power & Light

🟪 Clearwater Power Company

🟩 Idaho County Light & Power Co-op

🟪 Salmon River Electric Co-op

▨ Lost River Electric Co-op, Inc

🟫 Fall River Electric Co-op

▨ Lower Valley Power & Light Co.

🟧 Raft River Rural Electric Co-op, Inc.

🟦 Mini-Cassia Mutuals & Co-ops
East End, Farmers Electric, Riverside Electric, South Side Electric, United Electric

☒ Mini-Cassia Municipalities
Albion, Burley, Declo, Heyburn, Minidoka, Rupert

☒ Other Municipalities
Bonners Ferry, Idaho Falls, Soda Springs, Plummer, Weiser

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- Salmon River Electric Co-op
- Lost River Electric Co-op
- Fall River Electric Co-op
- Lower Valley Power & Light Co.
- Rafter River Rural Electric Co-op
- Mini-Cassia Mutuals and Cooperatives including East End, Farmers Electric, Riverside Electric, South Side Electric, United Electric
- Municipalities including Idaho Falls, Soda Springs, Bonners Ferry, Plummer, Weiser, Albion, Burley, Declo, Heyburn, Minidoka, and Rupert

So that's the line-up. These are utilities where decisions are made in board rooms or city council meetings. A decision on whether to build a half-billion-dollar gas plant might be made by directors answerable to company shareholders, or by voters who elect city council members who also serve as directors of the home-town utility. Regardless, all utilities have to make fundamental decisions on how they are going to keep the lights on.

Each electric utility must know at all times how much power its customers need, and just as important where that power will come from and how the utility will get it to the customer. On an hourly and daily basis, utility planners keep a close eye on how much electricity is being used, but also on a number of other factors, such as weather, that might influence short-term use of electricity. They also keep an eye on what power is available on the market should they need to buy some, and also how the transmission traffic is shaping up in the event they need to obtain some additional power.

They also need to engage in long-term planning on how much energy they figure they can save through conservation measures. Whether a recession means a stagnant business market and flat energy demands, or worse, declining demands. Whether they need to begin long-term planning to build a new generation plant and the expensive transmission infrastructure to move that new electricity to customers. When to ask regulators or voters or directors for a rate increase to offset rising costs. The decisions a utility must make to meet its most basic obligation – serving all customers at all times – are never ending.

They also present us with chances to have our voices heard, as intimidating as that might seem.

Reaching Out and Touching Your Utility

Because the Big Three utilities are regulated by Idaho's PUC, they work under different rules than BPA or the cooperatives and municipals. Still, all of them have some things in common. And there are a number of ways we, the humble utility customer, can tell our utilities how we feel about their decisions and the way they do business. We'll touch on some of them in more detail in the chapter on the PUC, but here are some ways we get our points across to utilities big or small.

It's the longer term where you can get more involved in utility operations and planning. Idaho's Big Three utilities are required by the Idaho PUC (and because they operate in other states they're accountable to other states' regulators as well) to produce periodic "integrated resource plans" every other year and submit them to the PUC for review. These plans, known as "IRPs" usually entail the involvement of various stakeholders who are brought in for meetings over the span of months to advise utilities on whether they should beef up their efficiency goals so they can avoid having to build new generation plants, or if they need new generation what kind of plants they should consider.

In Idaho, the public is invited to attend these IRP meetings. Idaho Power's meetings are held in Boise, although when the IRPs are ready for public review the utility holds meetings around its service territory to explain the plan and invite questions. Avista and Rocky Mountain Power do much the same. When the plans are ready for review, we all have a chance to comment to the utility about things we like or don't like, and regardless of whether the utilities listen to us, we can also raise our concerns when the utilities submit their IRPs to the PUC for review. The PUC doesn't "approve" or "deny" the IRP, but it does listen to public concerns and makes a note of them for future reference when it "acknowledges" the nonbinding utility plans. We'll talk in more detail in a later chapter about how the PUC works and how you can participate at the Commission.

We can also make our voices heard when utilities file those mysterious "rate cases," which they do every year or two to ensure they're earning the PUC-allowed rate of return on their operations. Investor-owned utilities are state-sanctioned monopolies, mind you, and as such they aren't allowed limitless profits. They are, however, allowed a reasonable return as determined by the state regulators. Often, these rate cases involve more than simply how much a utility's rates should be or what its return should be. Sometimes we look at more detailed ways the utility does business, and it's in these rate cases where you can speak up.

It's usually not enough to simply say your bills are too high and you're mad as heck and you're not going to take it from your utility anymore. The PUC hears that quite a bit, but because its decisions are subject to appeal to the Idaho Supreme Court its decisions must be based on regulations, past decisions and other factors. You're free to vent, of course, and the PUC will listen to you, but when it comes to speaking out about a utility's practices or the way it does business in rate cases or other matters, it always helps to be as specific as possible.

If you're served by a cooperative or municipal utility, such as Fall River Electric or Idaho Falls Power, you won't be working through the PUC. You'll be interacting directly with the cooperative itself, or in the case of a city-owned utility like Idaho Falls with your city officials. Sometimes that's better than being one of 500,000 Idaho Power customers feeling like a voice in the wilderness in taking your case to the PUC. Idaho's non-regulated utilities may get most of their power from Portland-based Bonneville Power Administration, but their decision-makers are generally in your home town or nearby, not in Boise.

Utilities like to pride themselves on their customer service, but dealing with them can sometimes be a lesson in frustration. The key is not giving up: If you have a complaint about service or about the way your utility does business, and the utility doesn't respond to you, you have recourse. In all cases, regardless of what kind of utility provides your power, someone oversees that utility. It may be the PUC or it may be the town council, but you should never accept a non-response to your concerns.

We'll leave you with an inspirational story to prove the point: In 2009, a number of shareholders of IDACORP, which owns Idaho Power, became increasingly concerned about the company's unwillingness to pay more attention to the growing amount of greenhouse gasses, especially carbon dioxide, its coal plants were emitting. After trying multiple times to get the company's attention, those shareholders took the next step and filed a shareholders' initiative to be considered at the IDACORP shareholders meeting. The initiative directed IDACORP to develop a plan to show how it would reduce its CO2 emissions. Such initiatives almost never succeed, and none directing a utility to clean up its CO2 act had ever succeeded. Until this one. Despite IDACORP's urging that shareholders reject the initiative until such time (if ever) that the federal government directs utilities to act to reduce greenhouse gas emissions, the shareholders rejected management's advice and approved the initiative – making IDACORP the first electric utility to be ordered by its own shareholders to clean up after itself.

CHAPTER 7

THE PUBLIC UTILITIES COMMISSION AND OTHER KEY PLAYERS

Like it or Not, the PUC is Where the Energy Action is.
With a Few Tips, It's Not as Intimidating as Many Fear.

One of the first hurdles clean energy advocates face when trying to influence Idaho's energy policies and the way utilities do business is the bewildering maze of state and federal entities that have a finger in the energy pie. From the Idaho Public Utilities Commission (PUC) to the state Office of Energy Resources and a raft of federal agencies that regulate or work on energy policy, it's daunting enough to figure out who does what without trying to understand how to press the right levers and have your voice heard. But once you get your foot in the door and poke around their websites and talk to those who actually work there, the challenge of interacting with these decision-makers becomes far less intimidating. Some might even find it invigorating, but there is help for that!

It's important because as each year passes and as Idaho is forced to become more of a participant in the regional and national energy policy arena, the action continues to drift away from the Idaho Legislature, which in recent years has declined to explore innovative energy policies let alone implement them. Some may even argue that it's not a bad thing that the Legislature is almost a non-player in energy issues. Instead, the Idaho Public Utilities Commission is increasingly the place where energy policies are developed, revised, and tweaked in ways that are often not reported on by the Idaho media (many of which are as afraid of the PUC as we are) but that nonetheless have far more impacts on you and your energy bill than anything the Legislature has done with regard to energy.

If you want to have your voice heard and join the fight for good, sound energy policies in Idaho, you're almost going to have to pay a visit to the PUC or at least communicate with it sooner or later, whether it's actually testifying at a formal hearing or speaking out at a less formal PUC meeting or even sending your views or comments by snail mail or e-mail. So let's roll up our sleeves and take a look under the regulatory hood.

The Public Utilities Commission: There are no Dragons There. Really.

The The Idaho PUC (www.puc.idaho.gov) is the state's regulatory body over such things as electric, gas, water, and telephone utilities and even railroads (sorry, you're on your own with your television dish or cable complaints or issues with your mobile phone providers).

The PUC is comprised of three full-time commissioners who are appointed by and serve at the pleasure of governor for staggered six-year terms. One of the commissioners must be from a minority party, and these days that's Commissioner Marsha Smith. She's joined on the Commission by Mack Redford and Paul Kjellander, who returned to the PUC in the spring of 2011 after leaving for a stint as head the Office of Energy Resources when it was formed.

The PUC is mostly funded by fees imposed on the utilities and railroads it regulates. Those fees not only pay commissioner salaries, they also pay for a substantial staff of engineers, accountants, safety inspectors, investigators, economists, public-contact staff and the all-important support personnel. Each utility in Idaho is under the jurisdiction of every state where it operates, which means they have to answer to multiple public utilities commissions, or whatever a particular state calls it. Idaho Power, for instance, is regulated in Idaho as well as Oregon, where is has a very small customer base.

Commissioner Marsha Smith

Commissioner Mack Redford

Commissioner Paul Kjellander

With regard to the major utilities we're most interested in, the PUC's main oversight is over Idaho Power (electricity), Avista Utilities (electricity and gas), Rocky Mountain Power (electricity), and Intermountain Gas. As we discuss in the chapter on utilities, the PUC does not regulate the more than 20 electric utilities that are run by city governments (municipals), or that are mutually owned or cooperatives. It also doesn't regulate the federal Bonneville Power Administration, the elephant in the Pacific North energy rooms, nor does it regulate in significant detail transmission issues, since those are often interstate in nature and regulated by federal agencies. It does, however, weigh in on utility plans to undertake big new transmission investments, especially since those investments directly affect customers through rates.

The PUC handles everything from consumer complaints against utilities to utility "general rate cases"; specific utility cases such as approving contracts with power suppliers like a wind farm; approving the recovery in rates of new power generation projects; and the every-other-year utility "integrated resource plans" that serve as roadmaps for how utilities will meet their future energy requirements.

The public face of the Commission is generally the frequent, usually weekly, "decision meetings" at which the PUC can take up any of a number of pending cases before it. Be warned, however: These meetings often last just minutes and rare is the decision meeting in which there is more than a minimal amount of banter, because the Commission does most of its deliberating and other business in private. As you begin to learn the PUC ropes, it won't take long to conclude that this is not exactly the most transparent agency in Idaho state government. The opportunities for the public to interact directly with Commissioners (other than at an infrequent public hearing) are few.

Still, attending a few of these meetings can quickly give you the flavor of how they operate, and it's worth the minimal amount of time just to get more familiar with the lay of the PUC land. These meetings are generally held at 1:30 p.m. on Mondays, but not always, so it's good to check ahead by going to the PUC's home page and then checking out the calendar or commission agenda.

Much of the PUC's work is through open cases, sometimes called "dockets," which can resemble court proceedings. The public can participate in these cases by formally "intervening," which is a formal and often technical process generally left to groups representing certain utility customer classes or interests. This is not the place to grouse about your utility and your bill. More often, public participation at the PUC is by attending or appearing in public meetings and of course through written or e-mailed comments. In some public meetings or hearings, such as for a utility's rate case, public witnesses wanting to provide their testimony do so under oath, although that process isn't nearly as intimidating as it sounds.

Accessing PUC Information

Navigating the PUC's website is relatively easy and intuitive, and spending time there brings a quick understanding of how the Commission and its staff work. Call up the page at the above link and let's look around:

- Icons for electric, gas, telephone, water, pipeline safety, rail, commission, consumer assistance and complaints, energy issues, search, related sites, and comments and questions about a case are pretty self-explanatory. They'll take you to areas where there is more general public information, consumer tips, utility backgrounds, that sort of thing.
- The buttons to the right are where much of the action is.
- "Consumer Information," "Calendar," and "Commission Agenda" are self-evident, but the "Consumer Information" section is a great place to get acquainted with the PUC.
- Spend some time reading the press releases. They're written in lay terms and make following a complicated case far easier. It's also a great way to begin to learn the lingo of PUC-Land.
- "File Room" is a beehive of activity. It's where you can find PUC orders and all the open and closed cases (by type of utility, such as electric) that the commission has dealt with or has open before it. Give it a try and go to "electric cases" (our favorite section) and there's a list of the open cases, or dockets. It's more than alphabet and numeric soup, however. The first three letters in each case tell you which utility is involved – IPC for Idaho Power, AVU for Avista, and PAC for PacifiCorp (Rocky Mountain Power). The GNR cases are generic and usually apply to more than one utility. FER denotes the Federal Energy Regulatory Commission, BPA is for Bonneville Power Administration, and SUP are cases that have been appealed to the state Supreme Court, which is where appeals of PUC actions are sent.

It's all surprisingly straightforward, although the actual content can be kind of confusing at first. Keep in mind that, as opaque and even impenetrable as the PUC seems much of the time, it is by Idaho standards a fairly user-friendly agency. The people at the PUC, including the Commissioners, for the most part are genuinely interested in what utility customers think, and they're well known for reading the information the public sends to them. You can view some public comments in the individual cases to see how others choose to communicate with the PUC. Sometimes it's as basic as an e-mail; other times people choose to dress up their comments in more formality. The choice is for the most part all yours. The Commission also has a very helpful sheet on "How to give effective public testimony to the Idaho Public Utilities Commission" at www.puc.idaho.gov/about/testimony.html.

Cases at the PUC

It helps to understand that PUC proceedings are "quasi-judicial" and can look quite like some court proceedings, including the sworn testimony and use of court reporter to develop records that the Commission may need to defend in the case of an appeal of its decision.

You'll notice that in most cases, the PUC staff also submits comments for the Commission's consideration. In theory, while the staff provides the technical expertise, its role as a commenter in a case receives the same weight as yours. There are times where the PUC staff submitted lengthy comments and recommendations, only to have the Commission rule differently.

As we've mentioned, the PUC's biggest job in the electricity sector is probably to oversee utility general rate cases. These cases, filed every other year or so, and sometimes more frequently, are the cases in which utilities seek to recover their costs and their state-authorized return on their investments. The state regulates these utilities because the utilities are essentially state-sanctioned monopolies with identified service territories. Some states opted to "deregulate" their utilities and have come to regret it. Idaho wisely did not, and in exchange for submitting to being regulated, utilities and their shareholders are entitled to receive a return on their investments. Once a utility files a rate case, it triggers what can be a yearlong process in which a number of parties "intervene" in the case to pick it apart to examine the utility's expenses and its operations in a highly technical manner. Groups representing customer classes such as industrial customers, irrigators, or low-income customers are often looking for ways to minimize the impacts of higher rates on those they represent. Groups such as the Snake River Alliance and Idaho Conservation League often intervene in an effort to help direct PUC regulatory policies to ways that are more supportive of energy efficiency and renewable energy and away from resources like coal plants.

The public at-large is not represented before the PUC in these and other cases because, unlike most states, Idaho does not have an independent consumer advocate to represent the interests of regular customers before the Commission. In some states, this position is within the attorney general's office; in others it is a free-standing position. In any case, it's an important role that is not

currently served in Idaho, where residential customers are among the only customer groups that don't have professional representation before the PUC. Sometimes, this role can be filled by groups such as conservation organizations like the Snake River Alliance, Idaho Conservation League, or the NW Energy Coalition, but this isn't always the case.

You do have opportunities to participate in rate cases, however. Depending on the utility, the PUC will hold public sessions around the utility's service area to brief customers on the basics of a particular rate case and to hear public comment. There are also hearings you can attend to raise concerns you might have about the case and how it might affect you and your power bill.

In addition to rate cases, the PUC's menu of cases includes such things as contracts filed by utilities to purchase power from renewable energy projects such as wind farms. By looking the case up in the "file room" mentioned above, you can locate the PUC order that lays out the public participation and comment timelines and procedures. That information is also included (often in more easy-to-understand form) in the PUC staff's press releases, which are also found in the list of documents for any particular case.

You might also be interested in commenting on a utility's "integrated resource plan," which outlines how your utility plans to meet its future electricity or gas needs over the coming 20 years. These are often illuminating documents, and while they're not binding on the utility they give a good sense of the kinds of "supply side resources" (generation like gas plants) or "demand side resources (energy efficiency) the utility plans to use to meet its obligations to supply power. The PUC doesn't actually "approve" utility IRPs; it "acknowledges" receipt of them. Generally, if a utility plans a major expense like a big new generation plant or transmission line, it is included in these plans. If not, the PUC may take a more skeptical look at why the utility is seeing to recover costs for something it didn't previously identify.

Other cases that attract public interest include utility filings to have major projects, such as a big gas plant or a coal plant, recognized by the PUC so that it can later seek to put the project's costs "in rates" – or have you as a customer pick up the tab through utility bills. Each year, utilities also file their annual "power cost adjustments," in which they seek surcharges from customers or rebates to customers if the cost of providing power was higher or lower than expected. For instance, Idaho Power might file a "PCA" that will result in a rate discount for customers if it had an unusually plentiful water year that resulted in lower power costs. The reverse might be true in times of lean water years, when Idaho Power's electricity was more expensive because it had to rely on more expensive resources or outside purchase for its power than inexpensive hydropower.

As we've said, the PUC can be a pretty user-friendly agency, and a call or e-mail to staff will usually result in a prompt answer to questions you might have, or further tips on how you can have your voice heard in a particular case. You will also find the Commission's redesigned web site pretty easy to explore not just to search for information on a specific case, but also for all kinds of other utility information.

The PUC may be where most of Idaho's energy regulations, pricing, and other action is, but it's not the only place. Idaho also has an energy office that reports to the governor's office. It's a work in progress, having been created only a few years ago, but there are some good things taking place over there.

Idaho Office of Energy Resources

www.energy.idaho.gov

Formerly housed in the Idaho Department of Water Resources as the Idaho Energy Division, the seven-year-old office was elevated to a position directly under the governor. OER does not regulate energy entities, but rather it dispenses energy-related information to the public and also analyzes key energy issues to help develop the administration's energy positions. OER also serves as a clearinghouse of state and federal incentives and financial assistance for energy efficiency and renewable energy investments, as well as updates on OER's geothermal, wind, solar and bioenergy programs. OER is funded primarily through federal and other grants, as opposed to state funds.

Among OER's big initiatives is its Idaho Strategic Energy Alliance (ISEA, http://www.energy.idaho.gov/energyalliance), which includes several task forces that have been tasked to examine and then report on several key energy-related issues, such as efficiency, wind, geothermal, forestry, solar, transmission, biofuels, etc. Many of the task forces studying these issues have completed their issue-specific reports, which are posted online and well worth examining.

The ISEA is governed by the Governor's Council, which is made up of gubernatorial cabinet members. Next is the ISEA Board of Directors, which is made up largely of interest group representatives such as the utilities, the Idaho Farm Bureau, a PUC representative, and Simplot. And then the task forces.

For all practical purposes and as the state's lone energy entity, OER is the governor's lead advisor on all things energy. It also serves

as a useful clearinghouse of state-run energy programs and information on such things as transmission projects and renewable energy resources.

OER flourished during the go-go days of federal stimulus funds, when it received huge amounts of money to implement a variety of new clean energy initiatives. However, that money has been spent, and OER is now fighting for survival due to erratic funding. Its various renewable energy working groups (solar PV, geothermal, wind) have been shut down and its staff has been significantly reduced.

The office and its ISEA played a role in the development of Idaho's 2012 state energy plan, which we will discuss in a subsequent chapter.

Northwest Power and Conservation Council

www.nwcouncil.org

The Portland-based Northwest Power and Conservation Council, often referred to simply as the "Power Council," is the regional entity that was created by Congress as part of the 1980 Northwest Power Act to help Pacific Northwest states with policies relating to energy and the Columbia River and its tributaries. The Council is made up of two gubernatorial representatives from each of the four Northwest states. Idaho's representatives are William Booth and Jim Yost. The Council is funded by power revenues from the Bonneville Power Administration. It is the primary forum for states, tribes, local governments and stakeholder federal agencies to work together on energy and fish issues. Those federal agencies include BPA, the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the Federal Energy Regulatory Commission.

The Council's work is divided into fish and wildlife issues such as salmon recovery and power issues. Every five years, the Council adopts its 20-year Power Plan, and the 6th Power Plan was released in August 2009. Similar to a utility integrated resource plan (IRP) the Plan serves as a regional roadmap for meeting energy needs reaching out to 20 years and provides the public an excellent opportunity to weigh in on pressing energy issues. We recommend you review the 6th Plan, which is easy to find on the Council's website. Many of you took the opportunity to comment on the draft plan, which was finalized as a very useful tool in understanding energy issues in the Pacific Northwest.

The Council is preparing to develop its 7th Power Plan, which will provide stakeholders throughout the region with opportunities to participate in molding the Northwest's energy future. It is expected that, when complete in 2016, the 7th Plan will provide an even more ambitious route to a cleaner energy future powered primarily with energy efficiency and continued renewables development.

The Council's website is also an invaluable source of energy-related information and historical and cultural information about the Pacific Northwest.

Bonneville Power Administration

www.bpa.gov

We discuss BPA in more detail in the utilities chapter, but Bonneville is the Pacific Northwest's largest power and transmission provider. While BPA's role in Idaho is not nearly as great as it is in Oregon and Washington, where there are more public utility customers of BPA, it nonetheless wields significant influence in generation and transmission policies across the region.

As an arm of the U.S. Department of Energy, BPA was created in 1937 to deliver and sell power from Bonneville Dam. Bonneville's reach steadily grew along with the expansion of the federal government's Columbia River energy system, which provides about 45 percent of the power consumed in the Pacific Northwest. Its mission today is primarily to provide power to its utility, tribal, direct-service and other customers; but it is also charged with participating in mitigating the well-established impacts that the dams and other infrastructure of the Federal Columbia River Power System continue to have on fish and wildlife and the Columbia Basin environment.

In Idaho, Bonneville provides the lion's share of the electricity delivered to municipal and cooperative utilities, although some like Idaho Falls Power and Fall River Electric in eastern Idaho also own some of their own generation.

CHAPTER 8

LOW INCOME UTILITY CHALLENGES

Fixed-Income Customers Have Fewer Options in Keeping the Lights and Heat On As Bills Continue To Rise

When we think about Idaho's clean energy future, it's sometimes tempting to concentrate most on things like energy efficiency and renewable energy and other exciting possibilities we've explored in earlier chapters. And while it may be true that when it comes to promoting sustainable and progressive energy policies, a rising tide actually does raise all boats, a discussion of energy in Idaho is incomplete without considering how all of these policies might impact Idaho's lower-income or fixed-income utility customers. Yes, they can benefit from new energy policies and technologies that will help keep gas and electric rates as low as possible, just as they will benefit from technical advances like lighting that get more bang for the bulb. But it is undeniable that the less fortunate among us are saddled with utility bills that gobble up a disproportionately larger share of their household income. By some estimates, fixed-income electric customers devote about 14 percent of their annual income for energy, compared to less than four percent for others. And in many cases, the options of doing something about it are more limited, whether because the home might be a rental or because the age of the home might make energy-saving improvements financially impractical if not impossible.

"Incredibly and inexplicably, the 2012 Idaho Energy Plan, which as we'll see in the next chapter is a watered down version of the 2007 plan, makes almost no reference to the unique challenges facing the most vulnerable of Idaho's gas and electric customers in a state with a poverty rate of 16 percent."

That's why, for clean energy advocates, energy affordability is a guiding principal right alongside identifying and plugging into clean and environmentally responsible energy resources. Incredibly and inexplicably, the 2012 Idaho Energy Plan, which as we'll see in the next chapter is a watered down version of the 2007 plan, makes almost no reference to the unique challenges facing the most vulnerable of Idaho's gas and electric customers in a state with a poverty rate of 16 percent.

While majority party legislators chose to ignore the energy affordability issue for low-income Idahoans in the 150-page Idaho Energy Plan, Democratic members of the House-Senate Energy Committee that created the plan filed a minority report. That report touches on the growing problem of energy affordability for those Idahoans who are struggling the most. The minority report said in part:

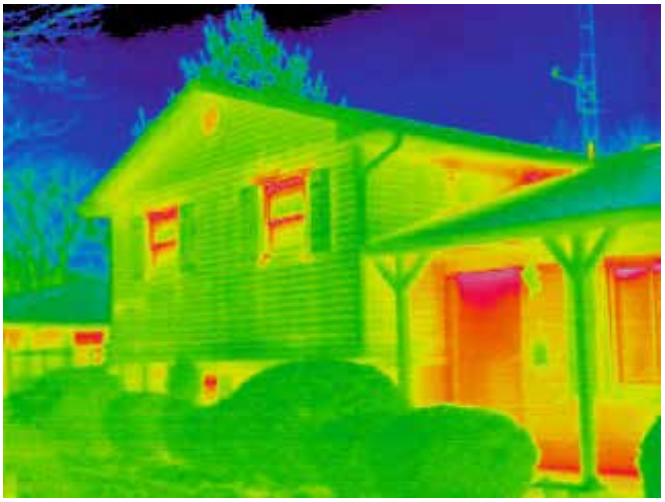
"Low-income families are particularly vulnerable to energy price increases and supply disruptions. During extreme weather conditions, people living in poverty may have to choose between buying fuel to heat or cool their homes and buying food for themselves and their families.

In Idaho, average annual household energy costs (including electricity, natural gas, and gasoline) are $3,000. Low-income households shoulder a disproportionate energy burden. Approximately 21,000 Idaho households live with incomes below 50 percent of the federal poverty level. These households spend on average 36 percent of their annual income on household electricity, natural gas and heating fuels (before accounting for gasoline expenditures), compared to 3 percent for the average Idaho household. An additional 14,000 Idaho households live with incomes between 50 percent and 74 percent of the federal poverty level, spending 14 percent of their incomes on household electricity, natural gas and heating fuels."

2012 Idaho Energy Plan Minority Report on Energy Assistance

Unfortunately, this language is not new. Minority Energy Committee members made the same argument when the 2007 version of the Idaho Energy Plan was adopted. In fact, a draft version of the 2007 Energy Plan actually did contain recommendations on how to deal with low-income issues, but that language was deleted at the last minute because some legislators argued it is not the role of the state to help lower income utility customers pay their power bills.

Part of the problem is that lower income utility customers often face seemingly insurmountable challenges in becoming energy-smart electricity and gas consumers. There are vital, federally funded and utility-funded programs to assist customers struggling to pay their power bills, and as important as those programs are, they don't always get to the root problem of porous, energy-leaking buildings; inefficient appliances; and outdated fixtures that bleed expensive electricity. In Idaho, for instance, studies show every dollar invested in weatherization returns $3.77 in direct energy savings and other benefits. And the more homes that are weatherized, the more power is saved and the more we reduce the need for expensive new generation plants. Idaho community action agencies – the true workhorses in the fight for energy affordability and low-income assistance and home weatherization efforts in Idaho – managed to plow tens of millions of dollars in federal stimulus energy dollars into weatherizing thousands of Idaho homes. Still, those agencies are the first to admit they were able to just scratch the surface, let alone shrink the waiting line for assistance.



It's a Struggle Just to Keep Up With Rising Bills

Even before the recession, most people on fixed incomes were already doing all they could to keep their power bills under control, but the rates we are all paying continue to rise nonetheless as utilities build more generation plants or string up new power lines and pass those costs on to customers. As "cheap" as electricity is in Idaho, it will only get more expensive from here on out – and as a result it will command a greater slice of the fixed-income household budget. Energy assistance programs to install efficient light bulbs or to pay bills are invaluable, yet waiting lists can run into the years while Idahoans still struggle under the weight of rising power bills. Keep in mind that most of these people are employed, sometimes in multiple jobs.

And what happens after things get so bad that utilities finally pull the plug on a customer who has been unable to pay? Eventually, the customer will manage to have power restored, but not before the utility – and all of its customers – pay the additional costs of disconnecting and reconnecting customers and all the other associated costs. And those costs can be considerable, from the actual pulling the plug to the costs of carrying bad debt on a utility's books and trying to collect that debt. All customers share those costs, so any measures that can prevent disconnecting a customer's power should be pursued, if not for the obvious humanitarian reasons, but also for the benefit of all utility customers.

Unlike most states (and every other state in the Western United States), Idaho doesn't have a consumer advocate, which in other states is an independent office that represents the interests of regular folks before the state's utility regulatory commission. This is a shortcoming that can and must be remedied with a small amount of money. When utilities file rate cases or other procedures before the Idaho Public Utilities Commission, more often than not attorneys representing large customers "intervene" in the cases, as do lawyers for industrial customers, for irrigators, and others. But aside from nonprofit groups like the Snake River Alliance, Idaho Conservation League, the Community Action Partnership Association of Idaho, Idaho Community Action Network, United Vision for Idaho, the NW Energy Coalition, and the Renewable Northwest Project, nobody truly represents you, the residential utility customer, at the PUC. Rate cases and other procedures before the PUC can get pretty complicated, and often it is the residential utility customer whose voice goes unheard in such cases. Nowhere is the need for expert representation before the highly technical PUC more important than in the low-income community. Importantly, Idaho's Community Action Partnership organizations do participate in many of these cases, often with the representation of an outstanding attorney who advocates for their issues, but the need for a larger legal presence for all customers is urgent.

Why is it important? Because there are possible ways to push for our interests, if only we had full-time professional advocates to do so. Take an electric utility's general rate case, for instance. There are ways to structure rates for residential customers that can foster more energy conservation, but they must be done carefully. For instance, some utilities are testing the merits of multiple or "tiered" rates in which customers who use smaller amounts of electricity pay lower rates. But as they use more energy and move up into a higher tier, those rates go up along with the increased consumption. The idea is to encourage conservation by trying to get customers to reduce power consumption so they can stay in the lower-cost rate tier. That can work, but sometimes customers can't fully control their energy use. As we've said, many customers on fixed incomes live in some of the most energy inefficient homes or in rentals where landlords may be hesitant to invest in energy efficiency, so these most needy customers might be penalized by being bumped into more expensive rate tiers due to factors beyond their control. Likewise, caution must be paid when

STRUGGLING TO PAY YOUR POWER BILLS? THERE IS HELP!

For a growing number of electric and gas utility customers in Idaho, simply keeping the lights on and the gas flowing can mean big sacrifices elsewhere in the home budget, like for groceries or health care.

Fortunately, there are some safety valves for income-qualified utility customers. They can differ in Idaho from utility to utility, income level to income level, and region to region, but there are places to turn for assistance.

A good first start is the federal Low Income Home Energy Assistance Program (LIHEAP), which can be reached at (208) 442-9991 or at www.idahocommunityaction.org/programs/programsenergyassistance/

That link will take you to the Community Action Partnership Association of Idaho (CAPAI), a private, non-profit association of agencies that administer the LIHEAP program and other assistance programs in Idaho. A rule of thumb for the LIHEAP income criteria in Idaho is $1,436 a month for a family of one, $1,939 for a family of two, $2,442 for a family of three, and so on. The criteria can change, so it's a good idea to contact your regional CAPAI offices, which also administer weatherization assistance and other energy programs.

LIHEAP in the U.S. Department of Health and Human Services' Administration for Children & Families also has an Idaho-specific web page that serves as a clearinghouse for low-income energy assistance programs in Idaho. Go to http://liheap.ncat.org/profiles/Idaho.htm

In addition, Idaho's three major electric utilities, Avista, Idaho Power, and Rocky Mountain Power, administer their own low-income energy efficiency programs. Some utilities, including Intermountain Gas Co., also have last-resort emergency assistance funds that are supported by other customers, shareholders, employees and others. The LIHEAP web link directly above contains utility contact information to get you started.

utilities, armed with the new "smart meters" that are being installed across Idaho, consider implementing "time of use" pricing mechanisms that change electricity prices depending on the time of day. While that can help discourage electricity use at times when utilities are facing their heaviest loads, it's worth restating that of all electricity customers, low-income residents have the least flexibility in shifting their power consumption.

Another helpful tool – again, not available in Idaho becasue the Legislative refuses to act – would be to allow utilities to have more than one rate for a certain class of customer, such as the residential class. Idaho law forbids what's known as "discrimination" within rate classes by having one rate for some residential customers and a higher one for others. There have been half-hearted attempts in the Legislature to work around this problem, without success even though the Idaho Public Utilities Commission recommended that the issue be addressed. This is a shortcoming in Idaho law and utility regulation that can and should be fixed.

As with the 2012 Energy Plan, Energy Committee Democrats filed a Minority Report in the 2007 plan:

> *"The second of the five objectives of the Idaho Energy Plan is to 'maintain Idaho's low-cost energy supply and* ***ensure access to affordable energy for all Idahoans****. The undersigned believe that, consistent with this objective, the Energy Plan should include specific policies and/or actions that indicate support for efforts to work towards the stated objective. To ensure that a lack of heat and power does not jeopardize the health and safety of our most vulnerable citizens, the Energy Plan of the state of Idaho should recognize a goal of a baseline level of affordable energy service available to all Idaho households. For this to happen, the Idaho Energy Plan should endorse the concept that Idaho utilities be allowed to offer reduced rates with a tiered rate design that offers quantities of energy at a reduced 'lifeline' rate, and indicate support for state funds to supplement the other available energy assistance and weatherization programs."*

Some say the advent of the new "smart grid" can help fixed-income customers, like all customers, by reducing the need for new peaking power plants and by building a more efficient electricity transmission and distribution system that will also reduce costs. But low-income advocates caution that all the hype over the smart grid and the billions of dollars the federal government and utilities are investing in it needs to be considered along with some potential unintended consequences, including making it easier to disconnect customers remotely for nonpayment. Utility consumer advocates warn that smart grid advances must include robust and even expanded consumer protection measures because they have the potential to depersonalize the relationship between the utility and its customers.

Efficiency and Weatherization are Huge, But More is Needed

As we've seen, there are no easy answers, but there are ways to ease the burden on fixed-income Idahoans, and by doing so also reducing some of these added costs along the way. Idaho and its utilities must remain committed to squeezing every bit of energy efficiency we can out of our system. And then squeeze some more. Some energy-saving measures might not seem "cost effective" as it is defined by utilities and state regulators, but over the long run they deliver benefits far beyond their investments. Weatherization is a great example. Idaho and its assistance agencies made a big dent in the huge backload of homes needing weatherization thanks to the rush of federal "stimulus" money, but a backlog still remains even after those dollars have been put to use. Once again, in the long run, sound energy efficiency and conservation measures for all customers have the potential to delay or even eliminate the need to build expensive new "supply-side" generation resources like new gas plants, which cost hundreds of millions of dollars and which drive everyone's power bills even higher.

Idaho's six Community Action Partnership organizations administer the Low Income Home Energy Assistance Program (LIHEAP), which helps families cope with energy costs. The dollars come from the federal government – not the state – and are used to help with home energy bills, energy crises, weatherization, and home repairs. Sixty-nine percent of LIHEAP households had an annual income of under $15,000; 37,273 of the households included the elderly, handicapped, or children under 5, another 11,7167 households were also served in 2012. In 2012, Idaho CAP organizations administered $12,448,252 – a number that discredits arguments by some that it is not the state's job to get involved in helping low-income Idahoans with crushing utility bills.

To its credit, the Idaho PUC initiated its own "Inquiry About Energy Affordability Issues" in 2008. In directing Idaho's energy utilities to participate in workshops dealing with low-income issues, the Commission said:

> *"The Commission recognizes that there are a variety of factors contributing to significant upward pressure on electric and natural gas rates in Idaho and energy affordability has become a central issue for many Idaho households and businesses. Utilities are*

facing the prospect of more customers being unable to pay their energy bills in full and/or on time. Customers who are unemployed, have lower incomes, and/or have fixed incomes that fail to keep pace with inflation are disproportionately affected by rising energy costs, since they must devote an increasingly larger share of their income to paying for natural gas and electricity."

After holding workshops and receiving a mountain of feedback from stakeholders, the PUC issued an extraordinary report in February 2009. Participating in the workshop, along with PUC staff, were Idaho Power, Rocky Mountain Power, Avista Utilities, Intermountain Gas, the Northwest Industrial Gas Users, Community Action Partnership Association of Idaho, the Idaho Community Action Network, and the Snake River Alliance. Among the PUC's recommendations was one referenced above that was introduced in the Legislature but, inexplicably, was not enacted to allow the within-class "discrimination" in rates to help low-income consumers with their power bills. That change requires legislation, and the recommendation would have been voluntary for Idaho utilities. The Commission report noted that 101,000 Idaho households qualified for assistance under the federal Low-Income Home Energy Assistance Program (LIHEAP) in 2008, but only 32,843 of those households received assistance due to a lack of adequate funding. The LIHEAP program in 2007-2008 had $9,410,895 in funding, but would have needed an additional $19,492,902 to cover all households with an average benefit amount of $286 per household. The report can be found at www.puc.idaho.gov and by clicking "File Room" and then "Closed Cases" and then "Multi-Utility" and then scrolling to GNR-U-08-01.

The bottom line is that energy affordability is much more than a loosely defined goal in the 2007 Idaho Energy Plan. It is a daily fact of life for tens of thousands of Idahoans who are seeing ever-increasing shares of their household income devoted to power bills or going out the door in the form of energy inefficiency. The upside to all of this is that the important answers to dealing with the problem are well within our reach. Some are state policies that can be tweaked at little or no cost. Some require a little more heft, such as creating a state position to truly represent the interests of some of Idaho's most vulnerable. But unlike some energy solutions that might require large investments, most of these are so doable there is no excuse for continued failure to act.

To their credit, each of Idaho's three regulated electric utilities offer some form of low-income assistance programs, and those programs are of immense help to those most in need. But what continues to be missing is a commitment by the State of Idaho to more actively participate in these utility consumer assistance programs not just with dollars, but also with changes in regulations and policies that can unleash the kind of assistance that is needed today.

CHAPTER 9

IDAHO'S 2012 ENERGY PLAN

State Energy Guide Filled With Lost Opportunities

Guess Who Helped Write Idaho's Energy Policy. That's Right, Idaho's Utilities

"Energy issues are a foundational part of our lives, and will continue to increase in importance, touching almost every aspect of our lives, and for which our state has a great deal of regulatory responsibility. We strongly recommend that the Legislature and other state policy-makers maintain vigilant oversight of the implementation of this Energy Plan and stay abreast of energy issues by frequently revisiting these recommendations to ensure that they continue to advance Idaho's interests…

For implementation, we recommend that this Plan be assessed and maintained yearly with the assistance of responsible state agencies and their stakeholder groups."

2012 Idaho Energy Plan

One can only hope.

A big challenge when adopting something as ambitious as a state energy plan is ensuring that, after the initial excitement of the plan's completion passes, it is actually implemented. It's not unusual to go from "Yay, we did it!" to "We have to do *what?*" Idaho has a record of writing these kinds of plans – ambitious or not - and then forgetting about them. And that's where you come in. We've learned from experience, so apparently it is now up to non-governmental advocates and stakeholders to make sure the trend of putting Energy Plans on the shelf doesn't continue with the 2012 Idaho Energy Plan, as disappointing as it is. Before we get to the contents of the 2012 Energy Plan, however, some context is called for.

Back in 2006, Idaho lawmakers were surprised to learn that, 25 years earlier, the state conducted an exhaustive and truly quite impressive effort to write the state's first energy plan, but that plan was quickly forgotten. So it made sense, a quarter century later, to take another run at writing another one in 2006, which the state did and which was adopted by the Legislature in 2007. It wasn't the best plan in the eyes of clean energy advocates, but it wasn't that bad, either. At a minimum it provided the first comprehensive examination of Idaho's overall energy picture as well as some good recommendations on how Idaho can address new energy issues going forward. Most of the work on the 2007 plan was done by a highly regarded energy consulting firm that had performed similar work for other states, but it also had the involvement of myriad individuals and entities, including the Snake River Alliance, on a number of topical committees assigned to gather information. Unfortunately, it also had the involvement of certain interests, including some legislators, whose primary interest was not to write a good energy policy for the state. Still, the process worked pretty well despite some bumps along the way. Since that plan was adopted in 2007, however, the Alliance has been critical of the state's failure to implement or address many of the important recommendations in the 2007 Idaho Energy Plan (http://snakeriveralliance.org/things-to-read/) and we committed to working with those responsible for implementing the plan when it was reviewed and revised as required, five years later, in 2011. If there were concerns with how the 2007 plan was reviewed and eventually adopted by the Legislature, the process that led to the creation of the updated 2012 Idaho Energy Plan can most charitably be described as a failure. A number of factors, from an extremely tight schedule to the involvement and meddling of some more interested in preserving the status quo, contributed to its undoing. Bear in mind we're discussing the only thing that passes for Idaho's state energy policy.

Energy Plan Rewrite Stumbles out of the Gate

First, lawmakers said they thought they could do as good as a job on their own as their consultant did for the 2007 plan, so rather than spend anything to bring in outside expertise, and in an effort to save money, they turned the rewrite of the plan over to a state Office of Energy Resources group, the Idaho Strategic Energy Alliance and its twelve-member Board of Directors, which at the time featured five utility members. Public interest representatives were excluded, immediately compromising whatever energy plan would emerge from this increasingly flawed process. The ISEA Board was tasked by the Legislature with making the first draft of the Energy Plan rewrite. Stung by criticisms that its work was being done largely out of public view and driven by utility interests, the ISEA Board inserted language in the 2012 Energy Plan noting that the House-Senate Interim Energy Committee ultimately responsible for the plan "worked in partnership with the Idaho Strategic Energy Alliance, comprised of nearly 200 volunteers from state, local, and federal interests as well as profit and non-profit private sectors."

It is true that a group of Office of Energy Resources-ISEA task forces worked tirelessly to produce impressive recommendations on everything from wind to geothermal to carbon issues, forestry, solar, energy efficiency and more. Those reports (http://www.energy.idaho.gov/energyalliance/) reflect significant amounts of work and dedication on the part of those nearly 200 volunteers, and they also contain forward-looking recommendations and proposals on how to foster a responsible, modern energy infrastructure for Idaho. For the most part, these volunteer task forces did a fantastic job. Where the wheels completely came off was when

the utility-heavy ISEA Board – the one tasked with writing the first draft of the plan – began mowing through each of the task force recommendations and rejecting many of them and watering down those that weren't thrown out. Some of the task force reports weren't even complete at the time. The Energy Plan says in its introduction that, "This Energy Plan presents a broad set of consensus recommendations, encompassing nearly every aspect of the Idaho energy industry." Actually, what occurred was that, as the ISEA Board was busy ripping up the task force recommendations, any of the 12 members (including the utility members) was given the right to veto any task force recommendations. So if a utility thought any recommendation, such as promoting solar power for instance, was too odious, it could have it tossed out regardless of the efforts put into the recommendations by the task forces. This was the ISEA Board's idea of "consensus," but what it really did was lead to an Energy Plan stripped of things to help direct where the state's energy policies should head. It was probably inevitable that what emerged as the 2012 Idaho Energy Plan was a document decidedly sympathetic to Idaho's utilities.

The Snake River Alliance was the only stakeholder in the room when this daylong "editing" process took place on Oct. 7, 2011, and it raised objections to legislators before they received the ISEA version of the 2012 Idaho Energy Plan. Lawmakers would later acknowledge the process was imperfect, but facing an unrealistically tight timeline they plowed ahead anyway and after a public hearing to take comments on the draft plan, the plan would eventually be adopted after the Legislature's Energy Committees heard and overruled concerns raised by the Committees' minority members. The Alliance raised its concerns in a 2012 letter to the Interim Energy Committee:

> *"A draft energy plan such as ISEA Draft 2 that was presented to the Committee on Oct. 13 and that contains action items that were screened and edited by Idaho's utilities is dubious, to say the least. While the public has for the most part been excluded from this process, Idahoans will soon learn how ISEA Draft 2 was developed. And when that happens, we believe ISEA Draft 2 will be correctly viewed by the public with suspicion as a plan that was vetted by Idaho's utilities but not by the public. And that, we believe, will significantly set back this Committee's review and update of the 2007 Idaho Energy Plan…*
>
> *Our concern here – as it has been since this process began – is that the public and stakeholder interests have been marginalized while important policy recommendations were discussed, processed and passed on to the Legislature in the form of ISEA Draft 2."*

Aside from the Alliance's objections to the way the plan was written – and just as important by whom – it presented detailed objections to many of the energy policy recommendations that were so diluted or so overhauled as to be meaningless, or new recommendations that were slipped into the plan to tilt it more toward economic development and business recruiting than actual energy policy. Economic issues clearly have a place in a state's energy policy, but they should not be what drives energy policy. The Alliance also objected to ISEA's submitting its first draft, Energy Plan Draft 1, to the Interim Energy Committee, but immediately (and unsuccessfully) trying to withdraw it when its contents became public. Why did ISEA want to recall it? Turns out that Draft 1 did include some forward-looking recommendations (including a frank discussion of climate change issues and concerns), which would wind up on the cutting room floor when Draft 1's replacement, Draft 2, was screened by the utilities. But by then the damage to the integrity of the process was finally complete. It became very public and apparent, from the changes between Drafts 1 and 2, that those writing the Draft 1 were not yet through undermining the energy plan before someone inadvertently delivered it to the Legislature, which in turn had to make it available to anyone because by then it was considered a public document. Then Draft 2, stripped of many of the good ideas in Draft 1, was hastily delivered to the Legislature instead and eventually became the 2012 Idaho Energy Plan. This is just a glimpse at how Idaho's energy policy got to where it is today.

OK, That Was a Mess, But What's Actually *In* the Plan?

The most commendable thing about the 2012 Idaho Energy Plan is that it does a good job of updating all of the valuable data, statistics, and similar information that was assembled for the 2007 version. That in and of itself makes the 2012 Plan valuable, because as fast as the energy world is changing nowadays, it is critical to have the most up-to-date data available.

Where things continue to unravel in this process is that, by design, the 2012 Idaho Energy Plan is far less muscular than its 2007 predecessor, despite the fact that the very utilities that had their thumbs on the scales when helping to write the 2012 Idaho Energy Plan expressed no objections to the more progressive 2007 Plan. At almost every level, the 2012 Idaho Energy Plan is remarkably more timid than its predecessor, not to mention deliberately more vague on many important issues. Gone are the "shoulds" in the 2007 Energy Plan that suggested responsible parties (utilities, government agencies, the Legislature, etc.) do this or that. Now, the 2012 Plan merely and meekly "encourages" that they might consider doing this or that, but no hard feelings if they don't. Everyone realized going in that this is Idaho and, as pragmatists, we all understand that an Idaho Energy Plan will never be prescriptive or contain mandates to government entities or utilities. However, this plan goes overboard in going the other way as a hands-off collection of warmed-over ideas that stop short of having any real effect.

Gone are recommendations that tax and other incentives can be used to encourage clean energy policies, such as this one that was scrubbed from Draft 1:

> *"To that end, this Energy Plan recommends consideration of implementing a variety of tax incentives, regulatory actions, and*

utility programs in a fiscally responsible manner. Tax incentives can include income tax incentives and/or sales and use tax exemptions for households and businesses that invest in renewable energy and energy-efficient technologies."

Perfectly reasonable, right? If adopted, Idaho would have joined every other state in offering these kinds of business-friendly incentives to promote renewable energy and energy efficiency measures, but it suddenly vanished, without explanation. In fact, the new plan suggests no incentives at all in the electricity sector, almost guaranteeing that clean energy businesses looking to relocate will opt for any of Idaho's surrounding states with a more hospitable environment for these kinds of businesses.

"The 2007 Idaho Energy Plan was written to address these concerns and to put the state on a path to a more sustainable, affordable and reliable energy future. This plan takes the state a step backward."

Or take climate change issues, which as we said were included in Draft 1 but almost dodged in the final version. Climate issues, including certain future regulations of greenhouse gases such as carbon dioxide, are driving energy policy in every state in the nation, but so far not Idaho. That a state energy plan can be adopted and skirt a meaningful analysis of this overarching energy and environmental issue is more than puzzling, particularly since Idaho cannot hide from the federal greenhouse gas and other energy-related pollution regulations that are in place or on their way.

Idaho remains at risk of falling further still behind other Western states in addressing greenhouse gas emissions, putting the state in a potentially difficult position as those inevitable clean energy and climate mandates emerge in Washington, D.C. Idaho also continues to lose ground to its neighbors and other states in bringing more renewable energy into its energy mix, despite the expectation that federal legislation will force the state's hand. The 2007 Idaho Energy Plan was written to address these concerns and to put the state on a path to a more sustainable, affordable and reliable energy future. This plan takes the state a step backward.

There are many other important parts of the 2007 Idaho Energy Plan that didn't survive the 2012 Idaho Energy Plan despite the fact ISEA's charge was simply to freshen data in the older plan – not to turn it upside down and distort the intent of the 2007 Plan. In fact, the 2012 Energy Plan itself describes it this way:

"The Committee made a request to the Office of Energy Resources and the Idaho Strategic Energy Alliance to assist in the review and updating of the 2007 Idaho Energy Plan."

Nowhere did the Legislature turn Idaho's utilities and others loose for a free-for-all retooling of Idaho energy policy. Here are some examples from 2007 that were jettisoned by the eight or nine ISEA Board members at that fateful Oct. 7, 2011, meeting at *Idaho Power's headquarters*:

- Set conservation targets for Idaho's regulated electric utilities and provide incentives for utilities to meet them.
- Offer income tax incentives for renewable generation investments in homes and businesses, and create incentives for utilities that invest in renewables.
- Offer sales or use tax exemptions to encourage consumers to buy energy efficient appliances and other technologies.
- Require utilities to report to their customers where they obtain their power. Such a "fuel mix disclosure" requirement would help educate consumers on the kinds of power they're buying and empower them to press for change, such as more renewables.
- Direct non-regulated utilities such as cooperatives and those owned by municipalities to report to the state energy office how they're meeting conservation and efficiency goals.

Furthermore, those who rewrote the Energy Plan (and the legislators who approved it) failed to address some of the most vexing energy policy issues Idaho has faced since the 2012 Energy Plan was adopted, such as how to deal with solar "net metering" issues where customers generate their own power, or how to deal with "renewable energy credits" created by renewable energy project developers but now being demanded by utilities.

The utilities ensured that language saying "The Idaho PUC should administer its responsibilities under (PURPA) in a way that en-

courages the cost-effective development of customer-owned renewable generation and combined heat and power facilities" was stricken from the final version.

And, of course, as referenced in the prior chapter, the 2012 Energy Plan remains silent on one of the most important of energy issues confronting Idahoans: Affordable energy and assistance for low-income utility customers struggling to pay their power bills.

All in all, though the data in the 2007 Idaho Energy Plan was becoming quite dated, it is reasonable to ask whether freshening that information was worth the cost of a far weaker overall plan., that sends Idaho energypolicy backward.

"So there you have it: OER, the agency responsible for monitoring and implementing much of Idaho's Energy Plan, relies on the kindness of strangers to keep its lights on. Not only is that funding severely limited, when it does come in it is for activities unrelated to Idaho's Energy Plan. Anything wrong with that picture?"

Another gaping hole in the 2012 Idaho Energy Plan is that the Office of Energy Resources is the lead agency in keeping an eye on its implementation. There's only one problem: OER doesn't have the money to do that. From the 2012 Plan:

"OER has a dedicated funding source through geothermal royalties from the auction of geothermal leases on federal land. However, since the initial payment into the geothermal royalties fund, payments from the federal government have been very limited. Based on actual geothermal development on federal land, a steady revenue stream from this fund appears unlikely. Due to the limited dedicated funding, OER primarily relies on federal funds to support its program work; no employees are supported by General Fund appropriations. As a result of its reliance on federal grant money, the OER staff is restricted to activities that are provided for in the federal grants."

So there you have it: OER, the agency responsible for monitoring and implementing much of Idaho's Energy Plan, relies on the kindness of strangers to keep its lights on. Not only is that funding severely limited, when it does come in it is for activities unrelated to Idaho's Energy Plan. Anything wrong with that picture?

What About Future Stakeholder Involvement, Like the 2012 Plan Says?

Well, it's been more than a year, and it hasn't happened yet. The exhortation at the very top of this chapter that the 2012 Idaho Energy Plan "be assessed and maintained yearly with the assistance of responsible state agencies and their stakeholder groups" has so far yet to occur, although in fairness it has only been one year. A concern is that the "responsible state agencies" have not heeded the recommendation to create a process in which "their stakeholder groups" can assist in "assessing and maintaining" the plan every year.

But that doesn't mean we give up. For all its problems, there are some good ideas and recommendations in the current plan. The trick is to remain vigilant in making sure the state, our utilities and, yes, our Legislature is doing its job in being faithful to the 2012 Idaho Energy Plan. Each of us needs to read the 2012 Idaho Energy Plan and then do any of the following:

- Adopt as your own one or two of the recommendations, action items, or policy recommendations and keep an eye on whoever is responsible for doing it. Then ask yourself if they're doing a good job, and make some noise if they aren't.
- When we see actions being taken or decisions being made that are in conflict with any of the provisions of the 2012 Plan, say so! For instance, when electric utilities launch a campaign to try to stem the number of customers who want to install solar PV panels on their rooftops by undermining the net metering program, remind them of Action Item E-11: "It is Idaho Policy to encourage investment in customer-owned generation; therefore the Idaho PUC, utilities, municipalities, and cooperatives are encouraged to ensure non-discriminatory policies for interconnection and net metering."

- When those responsible are failing to do good things that survived in the 2012 Plan, blow the whistle! For instance, ask how Idaho is fulfilling Action Item E-7 "Idaho should encourage cost-effective investment in renewable generation and combined heat and power facilities." Or ask what Idaho is doing to comply with Electricity Resources Policy 1: "The state of Idaho should enable robust development of a broad range of cost-effective energy efficiency and power generation resources within environmentally sound parameters."
- You can, and should, even blow the whistle when it's the state government that's asleep at the switch. Keep a lookout to see if the state is fulfilling a recommended policy aimed directly at state government: "This Energy Plan recommends that state government play an active role in facilitating the deployment of power generation and energy conservation resources that are both cost-effective and environmentally sound."
- Make a list of the items in the plan that are of most interest to you (Electricity? Natural gas? Transportation?) and periodically check it out to see if any movement is taking place. We don't need to wait four years for the next Energy Plan rewrite for responsibilities to scramble to show how they're complying it.

"The 2012 Energy Plan is now more than 18 months old, and it's time for those responsible for putting it to use get on with it. Let them know you're watching and that you're keeping track of how they're doing."

You get the idea. The 2012 Energy Plan is now more than 18 months old, and it's time for those responsible for putting it to use get on with it. Let them know you're watching and that you're keeping track of how they're doing.

Advancing good energy policies in Idaho can sometimes seem like rolling a boulder uphill, but progress has been made – and continues to be made. For better or worse, Idaho went through the trouble of writing a plan that is supposed to inform decisions by our policy-makers, utilities, and others who deal with these issues.

It's our job to make sure they do just that!

Then, stay abreast of the Legislature's website at www.legislature.idaho.gov for notices on when the Interim Energy Committee will be meeting and how you can become involved. You can also call Legislative Services at http://legislature.idaho.gov/lso/lso.htm for updates on coming action on the Plan. It's important that as many Idahoans as possible try to participate in person, online, or via the mail to communicate the need to keep the 2007 Idaho Energy Plan as strong as possible and to reinforce the important energy efficiency and renewable energy recommendations that have not been acted upon.

APPENDICES

ENERGY ACRONYMS

As you dive into the world of energy policies, you'll soon discover that energy aficionados take a perverse delight in speaking in tongues. Nowhere is this more evident than in the liberal use of acronyms in Energy Speak. We feel your pain, so here's a list of some of the most frequent abbreviations and acronyms you're likely to encounter as you wander the realm of energy geeks.

A/C: Air-conditioning

ACEEE: American Council for an Energy Efficient Economy

AMI: Advanced metering infrastructure

AWEA: American Wind Energy Association

BPA: Bonneville Power Administration

Btu: British thermal unit

CO_2: Carbon dioxide

DSM: Demand-side management

EPRI: Electric Power Research Institute

FERC: Federal Energy Regulatory Commission

GHG: Greenhouse gas emission(s)

HVAC: Heating Ventilation and Air-Conditioning

IOU: Investor-owned utility

IPP: Independent Power Producer

IPUC: Idaho Public Utilities Commission

IRP: Integrated resource plan

kWh: kilowatt hour(s)

MW: Megawatt

MWh: Megawatt hour(s)

NEEA: Northwest Energy Efficiency Alliance

NERC: North American Electric Reliability Council

NOx: Nitrogen oxides

NPCC: Northwest Power and Conservation Council

NREL: National Renewable Energy Laboratory

NWEC: Northwest Energy Coalition

OER: Office of Energy Resources

PCA: Power Cost Adjustment

PPA: Power Purchase Agreement

PURPA: Public Utility Regulatory Policies Act

PV: Photovoltaic

QF: Qualifying facility

RPS: Renewable portfolio standard

SO_2: Sulfur dioxide

SRA: Snake River Alliance

WGA: Western Governors Association

GLOSSARY OF ENERGY TERMS

Here's a look at some of the terms you're likely to encounter as you navigate the world of electric utility planning and regulation

BASE LOAD: The amount of energy a utility needs on average to serve its customers. A base load resource is one that operates nearly constantly, such as a hydropower or coal plant. It's measured in average megawatts (aMW). Idaho Power's average firm load is less than 2,000 aMW. See also **PEAK LOAD**.

BIOMASS: Organic materials that can be converted into energy by burning or other means. Examples include agriculture waste or timber. Some forms of biomass can also be used as biofuels such as ethanol for transportation uses.

CARBON OFFSET: A way to reduce carbon dioxide emissions by reducing emissions somewhere else, such as protecting forests or through a CO_2 trading exchange.

CARBON CAPTURE AND SEQUESTRATION: Especially with coal plants, the ability to capture CO_2 emissions rather than releasing them into the environment. Sequestration entails storing the captured CO_2, such as in underground formations or "fixing" the CO_2 in agricultural or forest lands..

CAPACITY: Measured in kilowatts (kW) or megawatts (MW), capacity refers to the amount of power that can be generated – or the total that is needed at a specific time. It is often used in reference to a utility's "peak demand" (see below) or a particular generation resource's ability to produce electricity. For instance, while many fossil fuel resources such as coal and gas have high capacity rates – above 90 percent – wind has a capacity rate in the 30-40 percent range because turbines do not produce electricity when the wind is not blowing. Sometimes referred to as the maximum or "nameplate" capacity of a given energy generator, such as a wind turbine.

COGENERATION (CO-GEN): Sometimes called "combined heat and power," co-gen plants can generate electricity by using excess heat or steam, while surplus heat can be used in building operations. Co-gen plants are often associated with excess heat from industrial facilities.

DECOUPLING: The concept of removing a utility's incentive to sell as much energy (and make as many profits) as possible. Utilities can lose revenues by encouraging energy efficiency and conservation because they sell less power. Decoupling disconnects power sales from revenues. Idaho Power is in the midst of a decoupling pilot project.

DEMAND- SIDE MANAGEMENT (DSM): DSM programs are aimed at managing the amount of energy used at given times, and the time it is used. DSM programs include energy conservation programs such as having lights turned off in unoccupied rooms; energy efficiency programs such as lighting improvements; or demand-response programs such as air-conditioner or irrigation pump "cycling" to reduce a utility's "peak power" needs in times of high energy use. In Idaho, these programs are typically funded through what are known as "DSM riders" that add a surcharge to utility bills. The programs are implemented by individual utilities in hopes of maximizing energy savings among various customers classes, such as residential, agriculture, commercial, and industrial.

DISTRIBUTED GENERATION: Small-scale electricity generation that helps reduce the burden on the larger power transmission grid by generating smaller amounts of electricity close to areas where it's needed. In Idaho's case, where much of the state's generation comes from out-of-state coal plants or in-state hydro facilities, distributed generation ("DG") plants such as smaller wind or co-gen facilities access the transmission network close to home, freeing space on the grid. Using these smaller distributed generation resources not only makes the grid more efficient, it also reduces the need for some expensive transmission upgrades.

ENERGY EFFICIENCY: Refers to reducing total energy use without affecting the services provided. Often achieved through technical improvements such as highly efficient light bulbs or more energy efficient appliances, efficient building design and improved heating and cooling. Sometimes different from "conservation," which is simply using an existing device less, like turning lights off when not needed.

FEDERAL ENERGY REGULATORY COMMISSION (FERC): The federal agency that regulates the interstate movement of energy resources across state lines. In Idaho, FERC is most visible in its role reviewing licenses for hydropower projects, such as Idaho Power's decade-old attempt to relicense its Hell's Canyon complex. It also reviews wholesale electric rates, given those sales are often interstate transactions.

FUEL MIX DISCLOSURE: A practice in which utilities disclose the source of their power, and in some states the cost of that power and the emissions associated with it. Idaho does not have a fuel mix disclosure requirement, although some utilities provide minimal information to consumers on where their energy comes from. Fuel mix information can be presented as a pie chart on customers' monthly bills.

GREEN TAGS: Also called renewable energy certificates or RECs, green tags are created when a renewable energy facility generates electricity. Each tag represents the environmental attributes or benefits of renewable generation, such as for a megawatt. Utilities needing to meet clean energy requirements can acquire the tags when buying green energy, or they can buy them on the market.

For more information, see the Bonneville Environmental Foundation's green tags site at www.greentagsusa.org

INTEGRATED RESOURCE PLAN (IRP): Plans by utilities on how they will meet their future load requirements. A typical IRP identifies a utility's current and projected demand and resource options to meet that demand over the next 20 years. Idaho utilities are required to prepare IRPs every two years. The Public Utilities Commission does not "approve" the IRP, but acknowledges it as the utility's long-term strategic plan for how it will meet its future energy needs.

INVESTOR-OWNED UTILITY (IOU): A for-profit utility owned by stockholders that provides utility services. Idaho has four large IOUs, which are regulated by the Public Utilities Commission: Idaho Power, Rocky Mountain Power, Avista, and Intermountain Gas. Idaho also has more than 20 electric cooperatives and municipal-owned utilities, such as Idaho Falls Power. The Idaho Public Utility has maps of utility service areas at http://www.puc.idaho.gov/fileroom/maps/maps.htm

LOAD: The amount of electric power required by devices or customers at a given time. In Idaho, a utility's load often rises in the summer, when air-conditioners and irrigation pumps place a heavy demand on the utility's system. All utilities must have adequate resources to meet their load – and then some, for reserves. When a utility cannot meet its load because its generation resources are maxed out and it cannot acquire more power from the markets, it must "shed load" to maintain a stable system. That can mean rolling blackouts.

MEGAWATT (MW): One million watts or 1,000 kilowatts. 1MW is roughly enough electricity to power between 700 and 9,000 homes, depending on the season. During summer "peak" periods of high demand, 1MW may only be enough power for 300 homes.

MEGAWATT HOUR (MWh): One MWh is 1,000 kilowatt hours (kWh) and is the equivalent of 1,000 kilowatts used continuously for one hour.

MERCHANT PLANT: A power plant that is not owned by a utility but rather a third party that then sells its power to utilities under contract. Merchant plant owners are not regulated by the Idaho PUC unless they are providing power to an Idaho regulated utility.

NET METERING: Allows customers who invest in wind, solar or small hydro systems for their own properties to hook into the utility's power grid. Net-metered customers can receive credit from the utility for power generation that exceeds their own needs. Idaho and its utilities have some limited net metering programs, although these programs hold potential to reduce the need for large new generation resources. In effect, a successful net metering installation allows a customer to "spin the meter backwards" in times when a power source such as a wind turbine or solar system is generating more power than that customer needs.

NORTHWEST ENERGY EFFICIENCY ALLIANCE (NEEA): A non-profit corporation supported by electric utilities, public benefits administrators, state governments, public interest groups and energy efficiency industry representatives. These entities work together to make affordable, energy-efficient products and services available in the marketplace. Financial contributions to the Alliance are pooled and used to fund energy-saving projects for residential, commercial, industrial and agricultural sectors. From 1996 through 2004, $165 million was committed to the Alliance by its funders. Starting in 2005, an additional $20 million a year has been pledged for five years through 2009.

NEEA uses a tool called "market transformation" that accelerates the adoption of energy-saving products and services in the existing marketplace. The Alliance and its partners work to create long-term, lasting acceptance of energy efficiency by encouraging manufacturers and retailers to make energy-saving products and sell them in the stores where consumers typically shop for such items; working with home builders and commercial building design teams to adopt high performance building practices; promoting new and innovative energy-saving technologies and helps bring them to market; and supporting energy efficiency training and information programs for Northwest businesses and industry.

See http://www.nwalliance.org/

PEAK LOAD (PEAK DEMAND): Maximum load at a specific time, sometimes referred to as "capacity." In the case of Idaho Power, for instance, the company's base load is well below 2,000MW, but its peak load – the amount of power needed when demand is greatest in the summer, when air conditioners and irrigators are going full blast - is just more than 3,000MW.

PEAKING PLANTS: Because utilities so seldom reach their peak loads – but must be prepared to serve them – one tool to provide additional short-term power is through peaking plants, or "peakers." In Idaho those plants are generally natural gas fired. Most of Idaho Power's peaking capacity is from gas plants near Mountain Home.

PHANTOM LOAD: Also called "vampire load," refers to electricity consumed even though an appliance or other device is turned "off."

PUBLIC UTILITY REGULATORY POLICIES ACT of 1978 (PURPA): Federal legislation that requires utilities to purchase electricity from qualified independent power producers at an "avoided cost" price that reflects what the utilities would have to pay for the power on the open market or by building new generating resources. PURPA was designed to encourage the development of small-scale co-generation and renewable resources and bring competition to the utility industry. The federal PURPA law requires

states to implement utility conservation programs and create special markets for co-generators and small producers who meet certain standards, including the requirement that States set the prices and quantities of power the utilities must buy from such "qualifying facilities."

PURPA has become very controversial in Idaho due to the unexpectedly high number of proposed small-scale wind projects seeking PURPA contracts with Idaho Power, which succeeded in 2005 in obtaining a moratorium on new PURPA contracts. The moratorium case led to a series of workshops that included wind developers, Idaho Power, and other parties, but no agreement was reached and the case remains unsettled at the PUC.

QUALIFLYING FACILITY (QF): A cogeneration or small power production facility (in Idaho's case it's typically wind but can include other generation such as the use of Ada County's landfill gas) that meets certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC) pursuant to the PURPA (see above).

REGIONAL MARKET TRANSFORMATION: Movement upstream from consumers to get manufacturers to sell more efficient appliances and systems by default.

These are policies designed to change the types of choices available to consumers and producers in a market. Typically, these policies are enacted by governments, and consist of two main features: incentives and regulations to change consumer and producer behavior; and education to explain to consumers and producers why the new behaviors are a good thing. An example is the Northwest Energy Efficiency Alliance's WashWise program, where, for example, manufacturers were required to produce washing machines meeting certain energy standards; retailers were trained in how to sell the energy-efficient machines; and consumers were offered incentives to buy them.

REGIONAL TRANSMISSION ORGANIZATION (RTO): A regional transmission organization designed to operate the grid and its wholesale power market over a broad region and with independence from commercial interests. An RTO would also have a role in planning and investing in the grid, though how it would conduct these activities remains unresolved. An RTO would also coordinate with other RTOs. In the Pacific Northwest, where the Bonneville Power Administration owns and operates 70 percent of the region's transmission grid, design of an RTO has been somewhat controversial and complicated by varying approaches by the region's utilities, among other things. To review NWEC position and policy papers on RTOs visit http://www.nwenergy.org/policy/index.html

RENEWABLE PORTFOLIO STANDARDS (RPS): When adopted by states, RPSs establish the portions of total load that comes from renewables. They require utilities to include a growing percentage of renewable energy in the mix of resources from which they obtain electricity. More than half of all states use an RPS. Idaho does not, while all neighbors except Wyoming do.

TIERED RATES: A system in which customers pay less for their electricity in a first "block" of energy use, and pay more in subsequent blocks as their use increases. The idea is to encourage energy efficiency and conservation by letting customers know their power gets more expensive the more they consume. The Idaho Public Utilities Commission has approved a tiered rate structure for Idaho Power as part of Idaho Power's most recent rate case, but similar tiered rate structures are not yet in place for Idaho's other major regulated electric utilities, Rocky Mountain Power and PacifiCorp.

TIME OF USE RATES: A system in which utilities charge differing rates depending on the time of day. Used to encourage customers to reduce electricity use during peak times when energy is most expensive, time of use rates can be a way to reduce the need for additional "peaking" resources because customers will shift their energy use to off-peak periods by such measures as running clothes washers and driers in the evening or mid-morning rather than late afternoon and early evening. No Idaho utilities currently offer time-of-use rates on a system-wide basis, although the advent of "smart meters" may provide that option in the near future.

ACTIVIST RESOURCES

Here's a collection of government agencies, utilities, advocacy organizations and other entities involved in Idaho and Pacific Northwest energy issues and how to access them.

GOVERNMENT

Idaho Public Utilities Commission

www.puc.idaho.gov

PO Box 83720
Boise, ID 83720-0074

Street Address: 472 W Washington Boise, ID 83720

(208) 334-0300

Idaho Office of Energy Resources

www.energy.idaho.gov

PO Box 83720
Boise, ID 83720-0199

Street Address: 304 N 8th Street, Suite 250 Boise, ID 83720

(208) 287-6713

Idaho Legislature

www.legislature.idaho.gov

PO Box 83720-0038 (House)
PO Box 83720-0081 (Senate)

Boise Phone: (208) 332-1000

Toll Free Phone: (800) 626-0471

Hearing Impaired: (800) 626-0471

NW Power and Conservation Council

www.nwcouncil.org

851 SW Sixth Ave, Suite 1100
Portland, OR 97204

(503) 222-5161

(800) 452-5161

info@nwcouncil.org

Bonneville Power Administration

www.bpa.gov

PO Box 3621
Portland, OR 97208-3621

Street Address: 905 NE 11th Ave Portland, OR 97232

(800) 282-3713

(503) 230-3000

U.S. Department of Energy Idaho National Laboratory (INL)

www.inl.gov

Communications and Public Affairs
2525 N Fremont Ave
Idaho Falls, ID 83415

Toll-Free (866) 495-7440

Boise Regional Office
702 W Idaho, Suite 310
Boise, ID 83702

(208) 334-9574

U.S. Department of Energy National Renewable Energy Laboratory (NREL)

www.nrel.gov

1617 Cole Blvd
Golden, CO 80401-3305

(303) 275-3000

U.S. Department of Energy – Energy Information Association

www.eia.gov

U.S. Energy Information Administration
1000 Independence Ave, SW
Washington, DC 20585

(202) 586-8800 (Live experts from 9 a.m. to 5 p.m. ET)

U.S. Department of Health and Human Services - Low Income Home Energy Assistance Program (LIHEAP)

www.liheap.ncat.org/profiles/Idaho.htm

370 L'Enfant Promenade, SW
Washington, DC 20447

(202) 401-9351

U.S. Federal Energy Regulatory Commission

www.ferc.gov

888 First Street, NE
Washington, DC 20426

1-866-208-3372

customer@ferc.gov

U.S. Nuclear Regulatory Commission

www.nrc.gov

Washington, DC 20555-0001

(800) 368-5642

U.S. Environmental Protection Agency

www.epa.gov

USEPA Ariel Rios Building
1200 Pennsylvania Ave NW
Washington, DC 20004

USEPA Ronald Reagan Building (RRB)
1300 Pennsylvania Avenue N.W.
Washington, DC 20004

(202) 272-0167

UTILITIES

Idaho Power Company

www.idahopower.com

PO Box 70
Boise, ID 83707

Street Address: 1221 W Idaho St, Boise, ID 83702

(208) 388-2200

Pacificorp (Rocky Mountain Power)

www.rockymountainpower.net

201 South Main St, Suite 2300
Salt Lake City, UT 84111

(888) 221-7070

Avista Utilities

www.avistautilities.com

Customer Service, MSC-34
PO Box 3727
Spokane, WA 99220-3727

(800) 227-9187

AskAvista@AvistaUtilities.com

Intermountain Gas Company

www.intgas.com

PO Box 7608
Boise, ID 83707

(208) 377-2200

Idaho Consumer-Owned Utilities Association (ICUA)

www.icua.coop

PO Box 1898
Boise, ID 83701

(208) 344-3873

ADVOCACY GROUPS

Snake River Alliance

www.snakeriveralliance.org

PO Box 1731
Boise, ID 83701

Street Address: 223 N 6th St Boise, ID 83702

(208) 344-9161

Idaho Conservation League

www.idahoconservation.org

PO Box 844
Boise, Idaho 83701

(208) 345.6933

icl@idahoconservation.org

Community Action Partnerships Association of Idaho

www.idahocommunityaction.org

5400 W Franklin Rd Suite G
Boise, Idaho 83705

(208) 375-7382

Toll Free (877) 375-7382

NW Energy Coalition

www.nwenergy.org

811 1st Avenue, Suite 305
Seattle, WA, 98104

(206) 621-0094

Renewable Northwest Project

www.rnp.org

917 SW Oak, Suite 303
Portland, OR, 97205

(503) 223-4544

renewables@rnp.org

Climate Solutions

www.climatesolutions.org

Seattle

1402 Third Avenue, Suite 1305
Seattle, WA 98101

(206) 443-9570

Olympia

219 Legion Way SW, Suite 201
Olympia, WA 98501

(360) 352-1763

Portland

721 NW Ninth Avenue, Suite 236
Portland, OR 97209

(503) 227-8928

Rocky Mountain Institute

www.rmi.org

1820 Folsom Street
Boulder, Colorado 80302

(970) 927-3851

American Council For An Energy-Efficient Economy

www.aceee.org

529 14th Street NW, Suite 600
Washington, DC 20045

(202) 507-4000

Institute for Energy and Environmental Research

www.ieer.org

"Carbon-Free and Nuclear-Free – A Roadmap for U.S. Energy Policy"

6935 Laurel Ave, Suite 201
Takoma Park, MD 20912

(301) 270-3029

Sierra Club Idaho Chapter

www.idaho.sierraclub.org

PO Box 552
Boise, Idaho 83701

Street Address: 503 W Franklin Boise, ID 83702

(208) 384-1023

Snake River Alliance
PO Box 1731
Boise, ID 83701

(208) 344-9161

This booklet is available for free download on our website:
www.snakeriveralliance.org

Share the link and spread the word!