

October 27, 2011

Subject: Transmittal to ISEA Council of the Second Energy Efficiency and Conservation Report

Dear Council Members:

The Board of Directors (Board) of the Idaho Strategic Energy Alliance (ISEA) recognizes and thanks the Energy Efficiency and Conservation Task Force for their development of this second report. The ISEA Task Forces are comprised of volunteer experts, including energy engineers, developers, private and academic researchers, regulators, and policy experts who have come together in the interest of Idaho citizens to develop and analyze options, provide information and build partnerships necessary to address Idaho's energy challenges and capitalize on Idaho's energy opportunities. The reports produced by these Task Forces present an understanding of the current status and potential path forward for each resource, and as such, provide a first step in executing the Legislature's 2007 Idaho Energy Plan.

The core of this report is the identification of barriers and challenges to, and the development of options for, expanding development of energy efficiency and conservation in Idaho. The conclusions and recommended options are not intended to be exhaustive, but rather, form a starting point for informed discussions.

As you know, it is the Board's responsibility to evaluate the potential benefits and costs of the recommended options developed by ISEA Task Forces. Our initial review comments on the Energy Efficiency and Conservation Task Force report are summarized in this transmittal. The Board believes that an adequate policy assessment of individual reports cannot be made, however, until all of the Task Force reports and options have been evaluated together, including considerations of Economic Development & Finance, Energy Transmission, and Communications. In this respect, both this report and the Board's comments should be viewed as "living documents" that will be updated as significant new information and/or perspectives emerge.

Summary of Task Force Recommendations

The Task Force recommendations, which are listed below, are described in detail in the body of the report. In some instances, the ISEA Board concurred completely with the Task Force recommendations. In other instances, there was conditional or no consensus. In all cases, we as a Board feel that it is valuable for you to have an understanding of the recommendation, its potential benefits and downsides.

1. The State Department of Education should develop an improved protocol for operation and maintenance to address both building safety and energy performance of K-12 school facilities.
2. Statewide electric and natural gas utilities should collaborate to develop a comprehensive K-12 energy efficiency education program.
3. OER should continue to implement the ARRA K-12 program and carryout the plan to promote the successes. This program has laid the foundation for continuous improvement and OER should develop a strategy to implement a sustained program of this nature.
4. A multi-university team should develop an energy efficiency summit create an Idaho 'energy efficiency center'. CAES should provide seed funding for the visioning. Industry and commercial partnerships should be pursued.

5. The Idaho State Board of Education or state universities should conduct or fund a feasibility assessment for developing an Energy Design, Engineering, and Operations degree program in Idaho (multi-university degree or certificate).
6. Recipients of the Energy Efficiency and Conservation Block Grant (EECBG) Program, funded for the first time by the American Recovery and Reinvestment Act (Recovery Act) of 2009 and the Office of Energy Resources should continue to administer the ARRA funds and highlight successes. In addition, OER staff should research the recovery.gov website to establish a list of all the EECBG projects underway in Idaho. A summary of all projects should be posted on the OER website.
7. Require all state buildings owned or leased be benchmarked with Energy Star Portfolio Manager. This could also extend to city and county buildings.
8. Require all state owned or leased facilities to adopt cost-effective efficiency measures.
9. Develop an Idaho Industrial Efficiency Summit targeted at Idaho industrial leaders.
10. Build upon the success of DOE's Save Energy Now program in Idaho to leverage new innovative programs, such as a mentoring program for small industrial organizations.
11. Expand the array of financing mechanisms available to support efficiency projects in new construction and major renovations.
12. OER and EE&C Task Force lead discussions about the benefits and challenges of on-bill financing program as a complimentary incentive program.
13. ISEA Board should explore options to establish a revolving loan fund to support commercial energy efficiency improvements. There could be a similar fund for Government buildings.
14. ISEA Board request OER and Task Force to build stakeholder support for an Idaho Energy & Economic Development Act that will provide potential investment tax credit legislation, and do so in a manner that demonstrates it as an economic development strategy.
15. Reconcile the difference between the two economic analyses of 1976 tax deduction update.
16. Investigate implementation of the Home Star weatherization program in Idaho.

The Board was supportive of most of the recommendations with some concerns as noted in the attached spreadsheet. There seemed to be unanimous agreement on having the OER administer and report upon their ARRA program expenditures and successes.

The Board was unanimously opposed to a few of the recommended options, including requiring Idaho utilities to collaborate to develop a K-12 energy efficiency education program, creation of an Idaho Energy Efficiency Center (since this is already being done), and supporting an Idaho Energy and Economic Development Act. Another issue which did not receive support was building upon DOE's Save Energy Now program.

There was a great deal of Board discussion on other recommended options, and these may be candidates for further evaluation and debate. These options included: development of a protocol for safety and building performance of public schools (one Board member felt that tools should be made available to the schools in order to do this), continued implementation of ARRA as well as documentation of lessons learned (as analysis of this kind costs money), developing energy related degree programs at the university level (concern was expressed about resources and the risk-reward), requiring state buildings to be benchmarked with Energy Star (due to potential resource needs), requiring state-owned or leased facilities to adopt energy efficiency measures (concerns were expressed about requiring participation if the state doesn't own the building as well as the resources needed to do

this), developing an industrial efficiency summit (one member thought this was a good springboard, others were hesitant to use meetings for dispersing information and believe this is already being done anyway), expanding available financing mechanisms and establishing revolving loan funds for commercial energy efficiency, and promoting the Home Star weatherization program.

In overview, there is no question that the slate of recommended options could help facilitate further development of energy efficiency measures in Idaho. In expressing reservations about a number of the options, however, the Board recognized that many of the recommendations require money or manpower and thus are very difficult to implement due to current market conditions. The discussions surrounding this can be found on the attached spreadsheet, and also includes the team response to these concerns.

Proposed Action Items

In addition to commenting on recommended options, the Board believes it has the responsibility to suggest the State agencies to whom the Council and Governor might consider assigning the responsibility for evaluating, and possibly implementing recommended options. This evaluation would include, as appropriate, development of an implementation plan and timeline for Board review. The Board's recommendations are presented below.

- ***The Department of Education***
 1. Develop an improved protocol for operation and maintenance of K-12 buildings to improve safety and energy performance.
 2. Consider developing an energy related program at the university level
 3. Develop a program to provide K -12 schools facilities energy efficiency support.

- ***Office of Energy Resources***
 1. Implement and report on the ARRA K-12 program processes, roadblocks, and lessons learned
 2. Administer ARRA funds, highlight successes, research funding projects and opportunities
 3. Help develop an Executive Order to require all state owned or leased buildings to acquire cost-effective energy efficiency measures
 4. Coordinate with the Department of Building Safety to require state buildings be benchmarked with Energy Star Portfolio Manager
 5. Develop an Idaho Industrial Energy Efficiency Summit
 6. Lead discussions regarding expanding financing mechanisms to support energy efficiency programs
 7. Examine developing a revolving loan fund for energy efficiency improvements (specifically in the commercial area)
 8. Investigate implementation of Home Star weatherization (perhaps with Building Safety)

- ***Idaho Tax Commission and Division of Financial Management***

1. Produce an analysis to reconcile the difference between the two economic analyses created to evaluate the 1976 tax deduction update

Again, the Board is pleased to commend the work of the Energy Efficiency and Conservation Resources Task Force and is pleased to submit their report to Council members for your review.

Steven E. Aumeier,

Chair, ISEA Board of Directors

Idaho Strategic Energy Alliance Board Members:

Tim Clark, Intermountain Gas

Krista McIntyre, Stoel Rives

Larry La Bolle, Avista

Russ Hendricks, Idaho Farm Bureau

Jackie Flowers, Idaho Falls Power

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David Solan, Center for Advanced Energy Studies

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Recommendation

Page

Position

Comment

Team Member Response

Overarching Comment - The Task Force wishes to thank the Board members who took the time to review our report and provide comments! The Task Force does not propose to update this version of the 'living document' Task Force Report. We request that it be published as is with the date of October 2010. We submitted it in October 2010 and received feedback from the Board in February 2011. In that period a great deal changed. We request that this document be posted as a 'point in time' document with the October 2010 date. After it is published, the Task Force will begin working toward a third update to our living Task Force Report to be finalized in 2012. Respectfully, Kevin Van Den Wymelenberg, EE&C Task Force Chair

K-12				
Priority #1 – The State Department of Education should develop an improved protocol for operation and maintenance to address both building safety and energy performance of K-12 school facilities.	6-7, 9-12	Support	A demonstrated commitment to properly maintaining and operating any facilities paid for with ARRA dollars should be part of the eligibility criteria for future facility dollars	
		Support	However, the "Process" should entail OER 1)providing its findings publicly to both the SBOE and individual school districts and 2) offering to facilitate any further identified energy efficiency projects by providing analytical tools and expertise. This would allow school districts and the SBOE to prioritize capital spending. Building safety, not energy efficiency, must be the first priority for schools.	
		Oppose	If the task force is asking the SBOE and the school districts to make energy efficiency a funding priority, then the task force should recommend that OER develop or gain access to and provide cost/benefit analysis tools for the schools. Analytical tools would help the schools 1)make beneficial efficiency investment choices and 2) justify those choices.	
Priority #2 – Statewide electric and natural gas utilities should collaborate to develop a comprehensive K-12 energy efficiency	6-7, 9-12	Oppose	This has been done numerous times, in Idaho and elsewhere, first in the late 70s. It does not get used because educators have other priorities. The demand for the curriculum needs to be developed before we spend more of our limited resources developing another curriculum.	The TF recommendation is moving forward with CEERI and IPC support initially and working to bring in other utilities, munis, coops in the future.
		Comment	This should include the larger munis and coops	
		Oppose	No meetings are necessary because, according to page 9 of the report, 15 schools already have real time energy usage kiosks. The recommendation should be for SBOE to expand the existing program, using OER as a resource.	The TF recommendation is moving forward with CEERI and IPC support initially and working to bring in other utilities in the future.

<p>Priority #3 – OER should continue to implement the ARRA K-12 program and carryout the plan to promote the successes. This program has laid the foundation for continuous improvement and OER should develop a strategy to implement a sustained program of this</p>	<p>6-7, 9-12</p> <p>Support</p> <p>Support</p> <p>Support</p> <p>Oppose</p>	<p>No doubt, OER will report on its use of ARRA funds and its findings of potential efficiency improvements ARRA funds could not cover. OER's report will serve as a resource for future SBOE and school district budget/funding decisions. However, education and safety - not energy efficiency - are their top priorities.</p> <p>Could promote performance improvement</p> <p>Assessment and analysis costs money and OER is stretched thin right now</p>	<p>No further action required.</p>
Higher Education			
<p>Priority #1 – A multi-university team should develop an energy efficiency summit to progress the vision and business plan for an Idaho 'energy efficiency center'. Seed funding for research should be pursued (via utilities, INL, CAES and other industry partners) in</p>	<p>7, 12-16</p> <p>Support</p> <p>Oppose</p> <p>Support</p>	<p>Superseded by the creation of CAES Energy Efficiency Initiative endorsed by the Governor and OER. Economic impact assessments that are not back of the envelope calculations cost 50K-125K.</p> <p>No meeting is needed. See Governor Otter's 10/29/10 press release supporting the development of the Energy Efficiency Research Institute in Boise.</p>	<p>This was not set at the time of this report.</p>
<p>Priority #2 – The SBOE, or one or more of the state universities, should conduct or fund a feasibility assessment for developing an Energy Design, Engineering, and Operations degree program in Idaho. This could be a multi-university degree or certificate offering.</p>	<p>7, 12-16</p> <p>Support</p> <p>Support</p> <p>Oppose</p>	<p>As the report points out, Idaho does not have a certification program for installing and auditing energy efficiency installations and has declining enrollment in HVAC programs. Along with a degree program, SBOE should evaluate associate degree and certification programs.</p> <p>Multi-university programs are a good idea but a tar-baby in terms of resources expended, and the risk-reward is large</p>	<p>The TF recommendation is moving forward with CEERI effort.</p>

State & Local Government

<p>Priority #1 – Direct EECBG Recipients and OER should continue to administer the ARRA funds and highlight</p>	<p>7, 16-18</p>	<p>Support Support Support</p>	<p>Agree, but OER should work with IAC and AIC to develop a report on the EECBG projects.</p>	
<p>Priority #2 – Require all state buildings owned or leased be benchmarked with Energy Star Portfolio Manager. This could extend to city and county buildings as well.</p>	<p>7, 16-18</p>	<p>Support Support Oppose Support</p>	<p>Data is critical for performance Possible resource needs and training Agree, but there is uncertainty concerning whether buildings not owned by the State (that is, leased) can be required to participate. Likewise, cities and counties would participate on a voluntary basis.</p>	<p>We agree that financial resources and training should be identified to support this important work. The training is available in state.</p>
<p>Priority #3 – Require all state owned or leased facilities to adopt cost-effective efficiency measures. This might include full participation in utility incentive programs and life cycle cost assessment. This could extend to city and county buildings as well.</p>	<p>7, 16-18</p>	<p>Support Support Oppose Support</p>	<p>Agree, but there is uncertainty concerning whether buildings not owned by the State (that is, leased) can be required to participate. Likewise, cities and counties would participate on a voluntary basis. Goals are important to achieve performance improvements Resources required by life cycle cost assessment</p>	<p>Begin as a pilot in a few volunteer jurisdictions to understand the costs and process.</p>

Industrial

<p>Priority #1 – Develop an Idaho Industrial Efficiency Summit targeted at Idaho industrial leaders.</p> <p>7, 19-21</p>	<p>Support</p> <p>Oppose</p> <p>Oppose</p> <p>Oppose</p>	<p>Good idea...can be a springboard</p> <p>Will have to figure out if still needed b/c the Western Governors Association, with Governor Otter as chairman, is planning such a meeting in early 2011, tentatively scheduled to take place in Idaho (IIRC)</p> <p>Is another meeting the best way to disseminate information to these busy decision makers? I doubt it. There are not that many industrial leaders. It would probably be more economical and effective to develop a program of one on one, targeted, efforts.</p> <p>A meeting is not necessary to obtain commitment from industrial customers to energy reduction goals. Industrial customers have already made a substantial number of efficiency investments to cut their energy costs and may not be able to make more cuts. Efficiency investments compete with other capital projects tied to innovation or R&D. Further, as the report notes, industrial processes are highly specialized and not particularly applicable to other users.</p>	<p>This report precede the WGA event. This is moving forward with support and development of the ISEA Industrial Efficiency Forum</p>
<p>Priority #2 – Build upon the success of DOE’s Save Energy Now program in Idaho to leverage new innovative programs, such as a mentoring program for small</p> <p>7, 19-21</p>	<p>Oppose</p> <p>Oppose</p> <p>Support</p>	<p>Industrial customers in Idaho are sophisticated enough to not need a mentoring program.</p> <p>Depends on chances for unsolicited proposal to be funded as determined by OER; depends on funding</p>	<p>This is moving forward with support and development of the ISEA Industrial Efficiency Forum</p>

Commercial		
Priority #1 – expand the array of financing mechanisms available to support efficiency	7, 19-21 Support Support Support	Potential opportunity is vast
Priority #1 (above) Part A: OER and EE&C Task Force facilitate a utility lead discussion about the benefits and challenges of on-bill financing program as a complimentary incentive program.	7, 19-21 Support Support Oppose Support	<p>I support the investigation of on-bill financing, but utilities have probably already done so, and should be able to identify why they were rejected. The objective should be to identify ways to overcome any barriers to implementing on-bill financing.</p> <p>Potential opportunity is vast</p> <p>Dependent on the private sector for mechanisms and funding; EE improvements are not often easy to pencil out with ID electricity rates being very low</p> <p>Whether utilities provide on-bill financing for commercial customer energy efficiency improvements is a utility management and board decision. If a utility chose to provide this service, the PUC would have to approve any associated tariff rates, terms, and conditions.</p>
Priority #1 (above) Part B: ISEA Board explore options to establish a revolving loan fund to support commercial energy efficiency improvements. There could be a similar fund for Government buildings.	7, 19-21 Support Oppose Oppose	<p>The first step should be to look at the existing IOER revolving loan programs and determine if they can be expanded to address this sector's needs.</p> <p>Where will the funds come from? Without a pot of funds may be premature to "explore options"</p> <p>A better alternative for priority #1 is to insure that commercial customers have access to analytical tools to determine costs/benefits and payback periods for efficiency improvements. OER could facilitate this. Also, it is unclear who would establish the revolving loan fund. Asking the State to do this is inappropriate, given State budget constraints.</p>

Task Force will pursue utility representatives to educate Task Force on the decisions and analysis conducted to date on this matter.

These are fair questions. We are requesting a dialogue be conducted amongst the Board and a list of issues be reported back to the Task Force that we can work toward addressing.

<p>Priority #1 (above) Part C: ISEA Board request OER and Task Force to build stakeholder support for and an Idaho Energy & Economic Dev. Act that will provide potential investment tax credit legislation, and do so in a manner that demonstrates it as an economic development</p>	<p>7, 19-21</p>	<p>Oppose</p> <p>The task force must provide evidence that commercial customers cannot make efficiency investments absent the revolving loan fund and the tax credit. Otherwise, the potential for free riders and inefficient investments will exist.</p> <p>Oppose</p> <p>ISEA is not a lobbying or advocacy organization; up to OER to carry the ball</p> <p>Oppose</p> <p>Tax credits tend to reward those who would have taken the action without the credits (excessive free riders) A more targeted incentive is a much better use of limited State dollars.</p>	<p>This topic remains a Task Force recommendation. We agree ISEA is not a lobbying agency, but should provide unbiased honest broker knowledge to key stakeholders.</p>
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Residential

<p>Priority #1 - Reconcile the difference between the two economic analyses of 1976 tax deduction update.</p>	<p>7, 22-25</p>	<p>Oppose</p> <p>Idaho's existing tax deductions waste much of the dollars supporting dubious investments. They were designed to be easy to administer, but there is no link between the actual savings received and the cost of the deduction. We subsidize heating leaky buildings with an inefficient wood stove, when we should tighten up the building first. As we do not have any data on the actual savings from the deduction, evaluation is nearly impossible. With no actual data available, all studies must rely upon assumptions, so it is easy to understand how two different analyses could have significant differences.</p> <p>Oppose</p> <p>Cost of reconciling analyses and who should pay for it. Also, Appendix D from 2009 report is not accessible from the web, so interested parties cannot analyze previous Task Force analysis without substantial effort to obtain how the analysis was done.</p> <p>Support</p> <p>Provide sound foundation for policymakers to make informed decision</p>	<p>The Task Force proposal would help to eliminate these concerns by updating the current legislation.</p> <p>The Task Force made Appendix D available to the Board in 2009. ISEA Board has authority to determine whether to post it or not. The Task Force did original analysis on donated time. The Tax Commission did not produce their analysis upon request.</p>
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Support

An independent analysis of state revenue impacts would lead to a better understanding of how to structure the incentive to encourage participation and discourage free riders. This analysis should review the impact and interaction of current federal tax incentives for residential customers.

<p>7, 22-25</p> <p>Priority #2 – Investigate implementation of the Home Star weatherization program in Idaho.</p>	<p>Support</p> <p>Support</p> <p>Oppose</p>	<p>The ARRA funds for weatherization are being administered by the Department of Health and Welfare in conjunction with the Community Action Partnerships of Idaho. Any implementation of the Home Star program in Idaho should include input and participation by DHW and CAPAI.</p> <p>Articulated in economic impact (column C); unclear what the status is of the proposed program at the federal level</p>	<p>Task Force is requesting a dialogue be conducted amongst the Board and OER and a list of issues be reported back to the Task Force that we can work toward addressing.</p>
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IDAHO STRATEGIC ENERGY ALLIANCE

Energy Efficiency and Conservation Task Force

Report Revised – October 11, 2010

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1	<u>EXECUTIVE SUMMARY</u>	3
1.1	BACKGROUND AND CURRENT SITUATION	3
1.2	ENERGY EFFICIENCY POTENTIAL	3
1.3	BARRIERS AND CHALLENGES TO DEVELOPMENT	5
1.4	FOLLOW UP ON PREVIOUS TASK FORCE RECOMMENDATIONS	6
1.5	SUMMARY OF 2010 TASK FORCE RECOMMENDATIONS	7
1.6	REPORT CONTENT	8
2	<u>RECOMMENDATIONS BY SECTOR</u>	8
2.1	EXISTING RESOURCES ACROSS SECTORS	8
2.2	K-12 SCHOOL FACILITIES	9
2.3	HIGHER EDUCATION	13
2.4	STATE AND LOCAL GOVERNMENT	17
2.5	INDUSTRIAL	19
2.6	COMMERCIAL	22
2.7	RESIDENTIAL	23
2.8	OTHER OPPORTUNITIES FOR FUTURE CONSIDERATION	26
3	<u>MOVING FORWARD</u>	26
4	<u>APPENDICES</u>	28

1 EXECUTIVE SUMMARY

1.1 BACKGROUND and CURRENT SITUATION

In recent years energy has emerged as a top issue for Idaho, the region and the Nation. Idaho is fortunate that our Legislature recognized the need to look at long-term energy planning in 2005. The subsequent development and adoption of the 2007 Idaho State Energy Plan set a framework for state energy policy including documentation of energy efficiency goals and objectives. Idaho also benefits from the planning efforts and recommendations of the Sixth Northwest Electric Power and Conservation Plan, developed by the Northwest Power and Conservation Council for our region.

This report is a living document and is an update to the report published June 8, 2009 (2009 Report). The Task Force hopes that previous versions of the report will remain available for public access on the ISEA website when new versions are published. This updated report to the Board of the Idaho Strategic Energy Alliance is not a comprehensive assessment of energy efficiency resources in Idaho, nor is it a comprehensive assessment of energy efficiency needs. Other organizations, such as the Northwest Power and Conservation Council¹ (Council) and, to some degree, Climate Solutions² have already accomplished that work. This report attempts to document and prioritize those opportunities for efficiency that will increase market adoption and address specific needs in Idaho related to energy efficiency. It is not meant to capture all short and long-term opportunities available to Idaho. The opportunities and recommendations presented herein are those that the Task Force feels are the best practice processes and technologies that are market ready, deployable in the short-term, and will provide energy savings and subsequent economic development benefits.

1.2 ENERGY EFFICIENCY POTENTIAL

Since 2000, Idaho's three investor-owned electric utilities (Avista, Idaho Power Company, Rocky Mountain Power) have invested approximately \$119 million in energy efficiency programs statewide resulting in 893 million kWh of "first year" electric savings (approximately 102 aMW) for their customers and Avista has saved 4.5 million therms of natural gas. The electric savings are enough to provide service to over 68,000 homes in Idaho on an annual basis. The expectation for energy efficiency is high for the future of Idaho, and it is identified as the resource for meeting much of the growth in the State's future energy needs. The Council's sixth Plan shows that energy efficiency can meet over

¹ The Northwest Power and Conservation Council's sixth Power Plan is available on line. <http://www.nwcouncil.org/energy/powerplan/6/Default.htm>

² Athena Institute, *Securing Idaho's Energy Future, the Role of Energy Efficiency and Renewables*, July 16, 2008.

http://www.climatesolutions.org/publications/CS_Securing_Idaho__s_Energy_Future___The_role_of_Energy_Efficiency_and_Renewables_2008-07-16_89.pdf

85% of growth in electricity needs. And a study by the consulting firm Ecotope (published by the NW Energy Coalition) showed that 50% of growth in natural gas use could be met by energy efficiency improvements.³ Consumers and businesses can save thousands of dollars each year by investing in low-cost energy efficiency measures.

According to the US Department of Energy's Energy Information Administration in 2008, (the most current data available) the industrial sector uses the most total energy in Idaho at 36% of all energy used. Residential and transportation sectors each use about a quarter and the commercial sector uses just over 16%. In addition, the industrial and residential sectors are Idaho's largest natural gas-consuming sectors. Close to one-half of households in Idaho use natural gas as their primary energy source for home heating and one third of households heat with electricity. Wood represents about 10% and fuel oil and propane represent about 5% each.

The Department of Energy estimates that "homeowners can achieve an energy savings of up to 25% while improving the home's comfort level by adopting energy efficient building practices." Also, "in typical office buildings, energy use accounts for 30% of operating costs. Building owners can lower energy costs by 50% or more while lessening maintenance and capital costs" by implementing energy efficiency measures. As such, implementing energy efficiency measures in state buildings can save millions of dollars per year in energy costs while providing "green" jobs in manufacturing, construction, energy auditing, and installation.

Of course, Idaho's agricultural sector is major industry in the state with great energy and water saving opportunities that lower energy bills and increase the financial health of irrigators and farmers.

Idaho ranks 23rd among states in total energy consumption per capita. While Montana ranks 9th, Washington is 30th, Utah is 36th and Oregon is 38th. Energy efficiency improvements can help Idaho lower its per capita energy use so citizens and businesses use those savings for more productive uses elsewhere in our lives, businesses and broader economy.

Since 2000, under Idaho's Energy Saving Performance Contracting (ESPC) Enabling Legislation (I.C. 67-6711D), there has been substantial success in implementing energy conservation and facility improvement work throughout the State. As of Fall 2010, there has been over \$200 million in energy conservation and facility improvement work performed in numerous K12, city, county and state, healthcare and higher education facilities in Idaho, saving almost \$10 million per year in energy costs, and resulting in over 100 professional & permanent careers and hundreds of support and labor positions. Currently there is over \$60 million of additional energy conservation work being developed between University of Idaho, Idaho State University, Blaine Schools, Garden Valley Schools, City of Nampa and the City of Boise. On average, these projects reduce the institution's energy consumption by 25-30%. There remains hundreds of millions of

³ <http://www.nwenergy.org/policy/policy-by-region/washington/the-power-of-efficiency/>

dollars in deferred maintenance, energy conservation and facility improvement needs in Idaho's public buildings. In fact, the Energy Services/ESPC industry estimates there is conservatively an additional \$1.5 billion of additional energy conservation and facility improvement work that could be implemented in Idaho.

1.3 BARRIERS AND CHALLENGES TO DEVELOPMENT

The ultimate challenge to achieving higher energy savings is about getting people making wiser choices about energy use, from everyday consumers and business people to policymakers. This big challenge breaks down into a number of key barriers that slow down energy efficiency implementation, including:

- funding - both upfront capital and after-the-fact rebates are often necessary for retrofits, operation efficiency upgrades and best practice operations (all sectors)
- clear and effective information and communication
- availability of a trained energy efficiency workforce - auditors, installers, and operators
- difficulty implementing energy efficiency measures in existing buildings for a myriad of reasons
- a patchwork of programs and players who all have a different role in decision-making and implementation
- human behavior affects energy efficiency decision making at multiple scales and behavior change is a slow process

This report identifies specific recommendations for energy efficiency across a range of building sectors. One consistent theme across all sectors is that access to funding for energy efficiency investments continues to be a substantial hurdle. Particularly in the K-12, government, and higher education sectors, funding must be obtained to identify and implement energy efficiency measures, even though these measures can be shown to save money over the long-term. In the commercial and residential sectors, although many energy efficiency measures can be shown to be cost effective and reduced by utility incentives, payback periods are often still too long and tax incentives or investment tax credits, federal grants, and other financing mechanisms are sometimes also necessary to encourage implementation. Extreme limitations on public agencies to borrow funds make it difficult to implement energy conservation and facility improvements projects. The expenses of Idaho's regulated utilities' cost-effective demand-side management programs have exceeded the revenues from their tariff rider funding mechanisms despite recent increases. Increases to both base rates and tariff riders have resulted in increased customer concerns, which may make further rider increases more difficult. Even though energy efficiency improvements are often the least costly resource, i.e. efficiency costs less than generating new electricity, the fact that Idaho's retail electricity rates are generally lower than the incremental cost to generate electricity is an additional impediment to acquiring all cost-effective efficiency improvements. Other barriers to implementation include the need to inform stakeholders on energy efficiency measures, the availability of energy efficiency auditors, operators and installers, and the challenges of implementing energy efficiency measures in existing buildings as opposed to the design and construction of new buildings.

Many of the opportunities and recommendations detailed in this report will face some barriers and challenges in development and deployment. However, detailed process steps are outlined in the report, including areas where additional research or development is necessary, and these are meant to promote collaboration and an open discussion that will ideally result in useful progress.

1.4 FOLLOW UP ON PREVIOUS TASK FORCE RECOMMENDATIONS

The Energy Efficiency and Conservation Task Force made four primary recommendations in the 2009 Report. These emerged from brainstorming sessions and prioritization based upon expected energy savings potential and economic benefit to Idaho. The four primary recommendations in 2009 were:

- 1. Update the 1976 residential tax deduction law for insulation and alternative energy devices.**
- 2. Support commercial building tax credit for legislation.**
- 3. Adopt the 2009 International Energy Conservation Code (IECC).**
- 4. Provide K-12 school facilities energy efficiency support.**

The progress to date includes adoption of the 2009 IECC that will go into effect January 1, 2011. This is a major accomplishment and will mandate efficiency improvements in Idaho as compared to the 2006 IECC of approximately 10%-11.6%⁴ for new construction in the residential sector, and of approximately 8-10% in the commercial sector. Substantial progress has also been made in K-12 efficiency in Idaho as a result of the American Recovery and Reinvestment Act of 2009. See section 2.1 for more details on this progress. The two legislative recommendations were not carried forward due to political and economic constraints. The Task Force continues to support and work toward the development of recommendations that meet the intent of these two legislative recommendations for future implementation as specific hurdles are overcome.

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⁴ ICF International. (2008, September 22). Energy & Cost Savings Analysis of 2009 IECC Efficiency Improvements.

1.5 SUMMARY of 2010 TASK FORCE RECOMMENDATIONS

This section outlines prioritized recommendations within each sector. Detailed process steps are provided for each in the body of the report. One overarching theme is the need for access to affordable capital financing to support energy efficiency projects. Several recommendations aim to address this hurdle and the Task Force plans to continue to develop and promote solutions in the coming year.

K-12

Priority #1 – The State Department of Education should develop an improved protocol for operation and maintenance to address both building safety and energy performance of K-12 school facilities.

Priority #2 – Statewide electric and natural gas utilities should collaborate to develop a comprehensive K-12 energy efficiency education program. This may include curriculum, interactive kiosks, or other program activities.

Priority #3 – OER should continue to implement the ARRA K-12 program and carryout the plan to promote the successes. This program has laid the foundation for continuous improvement and OER should develop a strategy to implement a sustained program of this nature.

Higher Education

Priority #1 – A multi-university team should develop an energy efficiency summit to progress the vision and business plan for an Idaho ‘energy efficiency center’. Seed funding for research should be pursued (via utilities, INL, CAES and other industry partners) in order to leverage local, regional and national level funding for energy efficiency research, outreach and teaching.

Priority #2 – The SBOE, or one or more of the state universities, should conduct or fund a feasibility assessment for developing a Energy Design, Engineering, and Operations degree program in Idaho. This could be a multi-university degree or certificate offering.

State and Local Government

Priority #1 – Direct EECBG Recipients and OER should continue to administer the ARRA funds and highlight successes.

Priority #2 – Require all state buildings owned or leased be benchmarked with Energy Star Portfolio Manager. This could extend to city and county buildings as well.

Priority #3 – Require all state-owned or leased facilities to adopt cost-effective efficiency measures. This might include full participation in utility incentive programs and life cycle cost assessment. This could extend to city and county buildings as well.

Industrial

Priority #1 – Develop an Idaho Industrial Efficiency Summit targeted at Idaho industrial leaders.

Priority #2 – Build upon the success of DOE’s Save Energy Now program in Idaho to leverage new innovative programs, such as a mentoring program for small industrial organizations.

Commercial

Priority #1 – expand the array of financing mechanisms available to support efficiency projects in new construction and major renovations.

Residential

Priority #1 - Reconcile the difference between the two economic analyses of 1976 tax deduction update.

Priority #2 – Investigate implementation of the Home Star weatherization program in Idaho.

1.6 REPORT CONTENT

The Energy Efficiency and Conservation Task Force (Task Force) mandate is currently defined to include energy efficiency and conservation planning for buildings and industrial processes, and excludes, for example vehicular transportation and electricity transmission. Our work to date has focused on a comprehensive range of building sectors including K-12 schools, higher education, state and local government, industrial, commercial and residential. We considered opportunities for both new and existing buildings.

The Task Force identified and prioritized those opportunities that, when developed or deployed, are expected to hold the most energy saving and economic benefit for Idaho. In some cases this report specifically identifies and recommends additional analysis that is necessary in order to further substantiate these expectations. Direct recommendations to the Board are based upon the expertise of the Task Force members, previously requested analysis or are otherwise considered to be market ready opportunities that have proven records of success either in Idaho or in the region. In many cases more thorough economic impact assessments are warranted and the EE&C Task Force will support the Economic and Financial Task Force and other parties upon request in this activity. Where possible, this report identifies specific groups, agencies, or organizations that are equipped to carryout the specific recommendations or necessary process steps.

2 RECOMMENDATIONS BY SECTOR

This section details prioritized recommendations for each sector and supporting information. Each building sector report includes recent accomplishments, sector specific existing resources, opportunities, challenges, needed resources, prioritized recommendations, process outline, and economic impact considerations. There are several ‘existing resources’ that span multiple sectors, and for sake of brevity, these are mentioned once in the following subsection and referred to within each sector.

2.1 EXISTING RESOURCES ACROSS SECTORS

- a. US DOE and US EPA programs
- b. Federal tax incentives
- c. Utility energy efficiency programs, technology incentives, energy audit support, training programs are available across all building sectors.
- d. NEEA efficiency programs
- e. Idaho Office of Energy Resources low interest loan programs
- f. Idaho Office of Energy Resources project development and assessment programs
- g. Idaho Energy Collaborative
- h. Idaho Energy Code Collaborative
- i. The Center for Advanced Energy Studies Energy Policy Institute, housed at Boise State University, “conducts policy research focusing on meeting our energy challenges and capitalizing on opportunities created by an increasingly carbon-constrained economy and regulatory environment.”

- j. The University of Idaho Integrated Design Lab (IDL) provides project based educational resources related to energy efficiency in new construction and major renovations. The IDL also hosts free and subsidized public education sessions on energy efficiency topics year round. Furthermore, the IDL conducts research related to human comfort, energy efficient technologies, systems and integrated design, construction and operations processes. This work spans industrial, commercial, government, K-12 and residential sectors and is funded in part by Idaho Power Company, the Northwest Energy Efficiency Alliance and other organizations.
- k. City of Boise revolving loan fund for energy efficiency

2.2 K-12 SCHOOL FACILITIES

This section applies to all K-12 school facilities in Idaho, including the public and private facilities.

1. Accomplishments

- a) Thermal legislation (SB1354) went into effect summer 2010. This bills provides School Districts the authority to sell excess thermal energy (heating and cooling) that is generated from renewable energy to local clients – public or private – as a means of sustainable revenue. This would assist School Districts who wish to expand their existing biomass boilers to provide heating to other city and county buildings. In effect, they would become a central heating district for broader community use.
- b) Senate Bill S1132 regarding integrated design and fundamental commissioning legislation went into effect summer of 2009. This provided support and incentive for schools to pursue the design and construction of higher performing facilities.
- c) K-12 Schools ARRA Project - In 2009 Report, the Task Force recommended that stimulus funds from the American Recovery and Reinvestment Act of 2009 (ARRA) be prioritized to reduce the energy consumption in K-12 schools across the state of Idaho. This was one of four major recommendations in the 2009 Report.

Below is an update of progress to date for the resulting K-12 Project:

- o In June of 2009 the Idaho K-12 Project was officially approved by the US Department of Energy and awarded \$17,464,693 as part of the ARRA funding.
- o 894 K-12 school audits completed by 10 statewide engineering firms.
- o 91 schools with smart software installations
- o 15 schools with real time energy use educational kiosks
- o Contracted with 21 service providers to tune up 894 school HVAC systems
- o RFQ for lighting retrofits was due 9/3/2010 and 11 statewide contractors were notified of intent to award contracts
- o 1st of 5 contracted success story case studies under development
- o Pre-intervention Energy Use Index (EUI) has been completed with a statewide average EUI of 60 kBtu/sf*yr
- o Scheduled November 2010 trainings for school district building operators at three statewide locations

- Using the Department of Energy’s formula for job creation, the project team estimates that implementation of the K-12 project will either create or help to maintain 150-250 jobs in the Idaho market over the three year project period. The educational aspects of this work are promoting innovation within engineering firms and service providers that will foster sustained job growth and maintenance.
- The audits to date suggest that the maximum potential electric savings to be 236,659,922 kWh across 894 schools statewide.
- The building tune-ups on 894 schools statewide are in process. The energy savings will be analyzed by December 2010.
- Blaine County School District is implementing the first \$15 million of energy conservation and renewable energy work, including a District-wide geothermal system funded in part from a \$5 million DOE Federal grant. This is being implemented through Energy Savings Performance Contracting (ESPC). When complete, the District estimates it will reduce its energy consumption by approximately 30%.
- Caldwell School District is investigating the expansion of their \$6 million energy conservation project to include future renewable energy options with the goal to become the first net zero energy user in Idaho’s K12 network.
- Garden Valley School District is completing the installation of a high-efficiency biomass boiler that will save them over 50% of heating costs. This \$2.75 million project was funded through a USDA biomass grant and is being implemented through the ESPC process.
- Salmon School District is completing over \$1 million of energy conservation upgrades for their High School, implemented through the ESPC process.
- In each of the ESPC processes, over 85% of the project was provided by local labor and has resulted in dozens of new jobs.
- Several school districts are examining the implementation of energy education curriculum designed to better prepare students for careers in energy conservation, sustainability and technology fields.
-

2. Existing Resources

- a. See existing resources in Section 2.1
- b. Remaining Federal ARRA stimulus dollars
- c. Senate Bill S1132 provides O&M incentives for K-12 schools to use integrated design and fundamental commissioning in new school design.
- d. Idaho Power Company’s Students for Energy Efficiency program provides a curriculum to teach students how to conduct school building energy audits and create and present recommendations for improvements to school officials. Twenty schools participated in 2009-10, and twenty are expected to participate in the 2010-11 school year.

3. Opportunities

- a. Upon completion in 2012, the ARRA K-12 project will have generated substantial data indicating energy efficiency opportunities beyond the capability of project

funding. These data should be analyzed and prioritized in order to support proposals for continued funding.

- b. If a mechanism were made available, school districts could use saved dollars from reduced energy bills for ongoing energy related O&M investments.
- c. Identify synergies between required building safety and indoor air quality improvements and opportunities for energy efficiency upgrades.
- d. Support student led initiatives and educational opportunities to promote efficiency such as additional energy kiosks, classroom pedagogy, and utility programs.
- e. Energy Savings Performance Contracting for school districts.

4. Challenges

- a. Lack of funding mechanism to capture the remaining energy efficiency available.
- b. Lack of mechanisms to capture dollars saved from energy efficiency projects for reinvestment.
- c. Some required building safety improvements, such as increased ventilation for fresh air, may result in increased energy consumption.
- d. There is currently no plan for a statewide K-12 energy efficiency education program.

5. Needed Resources

- a. Resource plan to identify funding in order to support improved operation and maintenance.
- b. Resource plan to identify funding in order to complete energy efficiency capital projects.

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6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
<p><i>Priority #1</i> – The State Department of Education should develop an improved protocol for operation and maintenance to address both building safety and energy performance of K-12 school facilities.</p>	<p>The ISEA Board should identify the correct representative at the Board of Education and initiate a meeting with OER representative to discuss the findings of the K-12 ARRA program. The agenda should include a discussion of the energy efficiencies gained, the remaining efficiency opportunities, and the building safety issues identified.</p>	<p>The economic assessment is part of the recommended activity and should be managed by the State Department of Education with collaboration from OER and the Division of Building Safety.</p>
<p><i>Priority #2</i> – Statewide electric and natural gas utilities should collaborate to develop a comprehensive K-12 energy efficiency education program. This may include curriculum, interactive kiosks, or other program activities.</p>	<p>The ISEA Board members from each utility should identify the correct representative to participate in a meeting to initiate this process.</p>	<p>The economic assessment is part of the recommended activity and should be conducted by the state utilities and the State Department of Education.</p>
<p><i>Priority #3</i> – OER should continue to implement the ARRA K-12 program and carryout the plan to promote the successes. This program has laid the foundation for continuous improvement and OER should develop a strategy to implement a sustained program of this nature.</p>	<p>The ISEA Board should ask OER to document the processes, roadblocks and lessons learned from the ARRA K-12 project so that it may be effectively replicated. OER should conduct a thorough analysis of K-12 ARRA project data in order to support proposals for continued funding to capture identified efficiency.</p>	<p>The economic assessment is part of the recommended activity and should be managed by OER.</p>

2.3 HIGHER EDUCATION

This section applies to all higher education facilities in Idaho, including public and private universities and community colleges.

1. Accomplishments

Boise State University

- a) The **Energy Policy Institute** - A part of the Center for Advanced Energy Studies (CAES), EPI conducts policy research focusing on meeting our energy challenges and capitalizing on opportunities created by an increasingly carbon-constrained economy and regulatory environment. View recent activities at www.epi.boisestate.edu.
- b) The **Small Business Development Center** provides free energy evaluations, upgrade suggestions to commercial businesses.
- c) Work is progressing on bringing the City of Boise's geothermal district heating system to campus. First phase will bring about 10% of campus conditioned space under the geothermal district heating system.
- d) Performance contract has resulted in a reduction of energy consumption of nearly 20% in targeted buildings.
- e) New buildings show consistent improvement in energy consumption. Norco is 35% lower than code. CESDED is likely to be 35 to 40% lower and the designs of COBE is likely to be as much as 50% of a similar sized code compliant building. New aquatic center features solar water heaters.
- f) Campus-wide energy monitoring and control: All major facilities are centrally monitored and controlled in an effort to optimize building performance and minimize energy consumption.

Idaho State University

- a. The **Energy Systems Technology Education Center** – As part of a grant from the US Dept. of Labor, ISU established ESTEC. The center will have both an instructional and industrial focus. View more at www.isu.edu/estec.
- b. Currently Idaho State University is exploring another Energy Savings Performance Contract to expand their energy conservation and facility improvement work beyond what was accomplished in 2002.

University of Idaho

a. Sustainability Center

- In 2007, The University of Idaho joined the Chicago Climate Exchange and the American Colleges and University Presidents Climate Commitment; carbon-equivalent emissions reduction goals of 25% by 2012, 50% by 2016, 85% by 2022 and 100% by 2030.
 - As of January 23rd, 2008, all new construction and major renovations are required to achieve at least LEED Silver certification
- b. The **Integrated Design Lab** (founded 2004) established multi-year contracts with the Northwest Energy Efficiency Alliance and Idaho Power Company in

2010, which will facilitate ongoing research and market transformation efforts for energy efficiency in buildings across Idaho. Actively building collaborative opportunities with Lawrence Berkeley National Laboratory, Pacific Northwest National Laboratory, Idaho National Laboratory, and PNW universities. Will move to a larger facility in 2010 at 6th and Front in downtown Boise. View recent activities at www.uidaho.edu/idl.

- c. **President's Annual Sustainability Symposium** – the 2010 symposium will focus on efficiency in buildings and on site generation and will be hosted in Moscow, ID.
- d. Completed the first phase of a projected \$35 million in energy conservation and facility upgrades through the ESPC process with McKinstry. Estimated utility costs savings of over \$1.2 million each year and over \$1 million in utility incentives. This project includes the installation of a thermal (chilled water) storage system designed to take advantage of off peak energy use, an expansion of their existing biomass system, including a research application of a high-technology plasma-fired waste-to-energy plant.
- e. Working with industry partners, including McKinstry, to develop school-to-career internships and engineering curriculum to better prepare students for the expanding market in sustainability, renewable energy and integrated design-build.

College of Southern Idaho

- a. In January 2010, the first LEED certified higher education building in the state opened. The Health Sciences and Human Services building has earned a LEED Gold certification and is predicted to use 55% less energy than allowable by code (IECC 2006).

University Collaboration:

- UI, BSU, ISU collaborated with INL staff to develop a proposal for funding through the Center for Advanced Energy Studies – Lab Directed Research and Development (LDRD) RFP in 2009. The proposal outlined several specific opportunities for potential research and collaboration spanning policy, education, and technology development. Unfortunately the proposal was not selected for funding, however the group has recently pursued an additional collaboration on the DOE-ERIC Funding Opportunity Announcement and is seeking continued opportunities to collaborate with Pacific Northwest National Lab and Idaho National Lab.

2. Existing Resources

- a. See existing resources in Section 2.1
- b. University of Idaho
 - The Integrated Design Lab (IDL) described previously.
 - The Sustainable Idaho Initiative provides small competitive annual grants to improve sustainability education at the University of Idaho.
 - The Sustainability Center organizes and supports efforts to create an active culture of sustainability on campus and in the communities where we

operate through projects that reduce our environmental footprint and increase participation and collaboration among students, faculty, staff and community members in addressing sustainability-related issues.

- The President’s Sustainability Symposium is a two-day event held each year that focuses on issues related to energy and sustainability. Recent topics include water conservation, renewable energy generation and in 2010, the symposium will focus on energy efficient buildings.
 - For over 50 years, the Utility Executives Course has engaged “the utility industry’s best leaders from diverse business backgrounds in a dynamic interchange of knowledge, insight and expertise.” Learn more at 222.uidaho.edu/uec.
- c. Boise State University
- The Energy Policy Institute (EPI) described previously.
 - Small Business Development Center described previously.
- d. Idaho State University
- The Energy Systems Technology Education Center (ESTEC) provides workforce training on mechanical, wind, electrical, and instrumentation and control engineering technology.
- e. The Center for Advanced Energy Studies (CAES) “is a public/private partnership comprised of the three Idaho public universities, private industry, and the Idaho National Laboratory. CAES integrates resources, capabilities and expertise to create new research capabilities, expand researcher-to-researcher collaborations, and enhance energy-related educational opportunities.”

3. Opportunities

- a. There is room for increased collaboration between Idaho universities as well as the Idaho National Lab to pursue federal funding for energy efficiency related research, outreach and education for the benefit of Idaho. The Center for Advanced Energy Studies (CAES) provides a structure for collaboration between Idaho universities as well as the INL. There is growing interest in a multi-university ‘energy efficiency center’ that could be located in Boise.
- b. Currently there are no professional degree programs in the Pacific Northwest with an explicit emphasis on energy design, engineering and operations. There are a few community colleges in Washington and one in Oregon that offer courses in HVAC system design, and Lane Community College in Eugene, OR has a well respected ‘energy management technicians’ program. However, there are no such programs in Idaho. An *Energy Design, Engineering, and Operations* degree program could be developed through a collaborative effort between multiple institutions including the state’s architecture (UI), engineering programs (UI, BSU, ISU), and construction management programs (BSU). The University of Idaho has an HVAC Certificate program that is currently not promoted and could potentially be expanded.

4. Challenges

- a. Economic strain at all levels of university structure.
- b. Competition amongst Idaho universities.

- c. Lack of seed funding to attract federal funding for energy efficiency.
- d. Historically low organizational priority placed upon energy efficiency research at INL and CAES.

5. Needed Resources

- a. Funding to support seed research and foundational collaboration efforts focused on energy efficiency amongst universities, INL and CAES. This could be accomplished through future INL LDRD RFPs.
- b. A feasibility assessment and business plan for an Energy Design and Engineering degree program aimed at improving the energy efficiency workforce in Idaho across multiple disciplines including architectural design, mechanical engineering, electrical engineering, product development, building operations and facilities management.

6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
<i>Priority #1</i> – A multi-university team should develop an energy efficiency summit to progress the vision and business plan for an Idaho ‘energy efficiency center’. Seed funding for research should be pursued (via utilities, INL, CAES and other industry partners) in order to leverage local, regional and national level funding for energy efficiency research, outreach and teaching.	An interdisciplinary multi-university team should work with key industry partners to develop a visioning document and business plan for an Idaho ‘energy efficiency center’. CAES should provide seed funding for the visioning. Industry and commercial partnerships should be pursued following NSF’s industry/university cooperative research centers model.	State universities should work with CAES to develop an economic impact assessment and business plan.
<i>Priority #2</i> – The SBOE, or one or more of the state universities, should conduct or fund a feasibility assessment for developing a Energy Design, Engineering, and Operations degree program in Idaho. This could be a multi-university degree or certificate offering.	In collaboration with the BOE, a multi-university team should conduct a feasibility assessment and business plan for an Energy Design, Engineering, and Operations degree program.	The SBOE or state universities should conduct a feasibility assessment, and if appropriate develop a business plan and economic impact assessment.

2.4 STATE and LOCAL GOVERNMENT

The section applies to all State, County and City buildings in Idaho, as well as legislative affairs that may apply across multiple sectors.

1. Accomplishments

- a) In the 2009 Report the Task Force recommendation was to “utilize federal ARRA stimulus dollars to fund energy audits and identify cost effective energy efficiency and conservation measures”. This opportunity is being realized. The ten largest cities and counties applied direct to DOE for funding to energy conservation and renewables projects and were awarded a total of \$7,363,200. For smaller cities, DOE created the Energy Efficiency and Conservation Block Grant (EECBG) Program, which was administered by OER and resulted in a strong response from “smaller” Idaho cities and counties. Of the 73 proposals received from small cities and counties, 62 were offered funding for energy efficiency and conservation projects totaling over \$5 million. In Phase 2, 11 of the 23 proposals received were awarded funds for methane capture and reduction as well as renewable technologies on government buildings, totaling over \$2 million. The third, and final, phase is focusing on implementation of the 2009 IECC. The solicitation process used for each phase of the EECBG funding has indeed provided “competitive funding to those jurisdictions that focus on sustainable job development and sustainable energy savings” (2009 Report). OER has partnered with the Idaho Association of Counties (IAC) and the Association of Idaho Cities (AIC) to develop and implement a selection process that is independent of the OER while providing necessary expertise and local government perspective in choosing the projects that best meet the four selection criteria (energy savings, cost effectiveness, job creation, and sustainability).
- b) In the 2008 legislative session Idaho Statute 39-2902 passed, and requires state agencies to adopt an energy performance target and document the operational cost savings for energy efficiency in new and renovated state buildings.
<http://legislature.idaho.gov/idstat/Title39/T39CH29SECT39-2902.htm>
- c) State energy audits and cost effective implementation.
- d) The City of Nampa is implementing a Energy Savings Performance Contract that will implement citywide energy conservation and facility improvements. The audit was funded via ARRA grants, but is now fully developed to include several millions of dollars in energy savings and necessary facility upgrades.
- e) The City of Boise has embarked on a substantial ESPC project that will focus on energy, infrastructure and economic development solutions, starting with a small-scale co-generation plant at the wastewater treatment facility that utilizes digester biogas and syngas created from woody biomass. This project may be expanded to include substantial energy conservation and facility improvement work on all City facilities.

2. Existing Resources

- a. See existing resources in Section 2.1
- b. Idaho Association of Counties
- c. Association of Idaho Cities

- d. Annual Idaho Energy and Green Building Conference
- e. Division of Building Safety energy code compliance/enforcement
- f. EPA Energy Star Portfolio Manager
- g. EPA green building toolkit for local governments
<http://www.epa.gov/region4/recycle/green-building-toolkit.pdf>

3. **Opportunities**

- a. Department of Public Works (DPW) could more aggressively pursue utility incentive programs for energy efficiency. Of approximately 52 projects completed by DPW in IPC service territory in 2008 and 2009, only 5 were submitted through IPC's incentive program. Routine participation in utility incentive programs will promote improved design and provide financial benefits to state taxpayers by reducing operating costs.
- b. Capture a percentage of energy cost savings from efficiency projects funded through the federal AARA stimulus dollars and invest to create a revolving energy efficiency fund.
- c. Explore program opportunities to educate employees about the effect of human behavior on energy use in buildings. For example, provide plug load management education to building operators of government buildings.
- d. Target cities that have already shown interest in energy efficiency programs. Assess progress and provide tools and processes for further effort. Provide High Performance Building Education to Local Governments with the intent of encouraging local codes requiring higher standards for new buildings and retrofits of existing government buildings.
- e. Track energy use data in government buildings using Energy Star Portfolio Manager.
- f. Provide High Performance Building Education to Local Governments with the intent of encouraging local codes requiring higher standards for new buildings and retrofits of existing government buildings.
- g. Develop an annual energy action plan for building improvements, procurement policies, and employee behavioral improvements to conserve energy.
- h. OER could promote ESPC process for public institutions as a way to develop, procure and fund energy conservation and facility improvement projects throughout Idaho.

4. **Challenges**

- a. Difficulty allocating funds within capital and/or operating budgets for energy efficiency projects after ARRA funds are removed.
- b. The mechanism (such as a revolving energy efficiency fund) to capture energy efficiency cost savings for a particular agency is not in place. It can be difficult to identify the actual savings from a specific project from year to year. The cost to administer such a mechanism would need to be included in a business plan.
- c. Human behavior is not easily changed.
- d. Having qualified individuals to oversee energy efficiency programs and projects.
- e. Limited OER staffing or budgets necessary to actively promote and manage the expansion of the ESPC process for public institutions.

5. Needed Resources

- a. Financing mechanism for energy efficiency improvements
- b. Educational materials to inform staff on how their behaviour affects energy use
- c. Training opportunities to inform building operators how to improve energy efficiency in buildings
- d. Energy management expertise
- e. Guidelines for how to pursue cost effective energy efficiency in government buildings
- f. Baseline energy data of existing government buildings

6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
Priority #1 – Direct EECSBG Recipients and OER should continue to administer the ARRA funds and highlight successes.	OER staff should research the recovery.gov website to establish a list of all the EECSBG projects underway in Idaho. A summary of all projects should be posted on the OER website.	The EECSBG funded projects increase energy efficiency, reduce energy consumption and reduce energy costs through efficiency improvements in buildings, transportation and other appropriate sectors.
Priority #2 – Require all state buildings owned or leased be benchmarked with Energy Star Portfolio Manager. This could extend to city and county buildings as well.	Coordinate with DPW to determine resources available and/or needed.	Benchmarking data will prioritize facilities for energy efficiency projects. No direct economic impact will occur, until projects are completed.
Priority #3 – Require all state-owned or leased facilities to adopt cost-effective efficiency measures. This might include full participation in utility incentive programs and life cycle cost assessment. This could extend to city and county buildings as well.	OER work with the Task Force, state utilities and DPW to develop appropriate language for an Executive Order. Adoption through an Executive Order as a mandatory basis or one or more state agencies adopt the policies on a voluntary basis as part of a demonstration effort.	The goal of the Executive Order might be to reduce energy-operating budget by 25-30% below existing use, or below current code.

2.5 INDUSTRIAL

This section applies to all industrial facilities in Idaho. The industrial processes that occur in conjunction with these facilities are discussed in some cases.

1. Accomplishments

- a. August 3, 2010 Board Meeting and Industrial Roundtable was a successful working group discussion with presence from several industrial organizations

in Idaho, US DOE Save Energy Now, universities, utilities, the Department of Commerce, the Farm Bureau, OER, INL and the Governor in attendance. The industry representatives present agreed that continuing this type of information sharing dialogue is desirable.

2. Existing Resources

- a. See existing resources in Section 2.1
- b. US DOE—training and audits, Save Energy Now Program, energy analysis software, loans and rebates for certain energy efficiency projects and equipment.
- c. EPA—Energy Star Partnership
- d. Northwest Food Processors Association energy committee
- e. NEEA Industrial Sector Initiative
- f. Tech-Help has an established track record in the state related to industrial process improvements and could be a collaborator on industrial process energy efficiency projects.

3. Opportunities

- a. Energy audits by 3rd party trained experts to identify priority cost savings projects. Existing utility programs can fund much of this.
- b. Energy training for the general workforce with an emphasis on operations and maintenance personnel. Training is available from numerous universities and professional organizations and from several State and Federal energy agencies. NEEA coordinates several training sessions a year in Idaho and Utilities often cover 100% of registration fees for Industrial Customer employees. Popular examples are training on Steam System Assessment and Industrial Pumping System Assessment generally held in the Boise or Pocatello area, near major industrial facilities.
- c. NEEA and OER (DOE Save Energy Now Ally Organizations) collaborate to develop a cohesive resources package and multidisciplinary support team to educate building managers and corporate decision makers about pursuing a comprehensive corporate energy program.
- d. Energy Star Program provides partnering opportunity and Energy Star rating for some industrial facilities. Partnering with EPA requires a formal commitment from a company's senior management to certain energy efficiency improvement goals and, in return, offers public recognition and networking opportunities.
- e. The DOE Industrial Technology *Save Energy Now* program provides an excellent framework and a challenge to develop an aggressive energy program.
- f. Private companies that provide “Kaizen Blitz” type tune-ups that include multi-day retro commissioning and analysis of major industrial systems along with identification of capital project opportunities. Some Utilities cover a significant portion of these costs. Typical results suggest 3-8% total facility energy use reduction as feasible. Utility incentives are often available for the identified capital upgrades.

- g. Develop programs to improve collaboration, peer-to-peer learning, sharing of case studies and best practices for industrial sector energy managers.

4. Challenges

- a. The highly customized nature of industrial energy systems poses challenges to implementing successful practices from other sectors.
- b. EE projects compete head on with processing or R&D projects in a limited capital environment.
- c. Industrial employers face challenges hiring competent energy efficiency managers and operators due to lack of trained workforce.
- d. Proprietary systems and processes limits dissemination of lessons learned.

5. Needed Resources

- a. Technical resources to develop projects stemming from energy audits.
- b. Improved energy efficiency workforce. Specifically, local training for Energy Engineers, Certified Energy Managers and Building Operators.

6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
<i>Priority #1</i> – Develop an Idaho Industrial Efficiency Summit targeted at Idaho industrial leaders.	OER and the Task Force should work together to plan an Industrial Efficiency Summit, perhaps in conjunction with Western Governors Association with invitations from the Governor. The summit could include ceremonial commitment of industrial leaders to a 25% energy usage reduction by 2020, and could follow a team approach where CFOs, Financial Analysts, Engineers, HR, and Procurement are all present in a peer-to-peer learning environment.	The economic impact of a singular summit is not critical. However, industrial sector energy efficiency can be the most cost effective due to large-scale implementation of system and process improvements. A single industrial energy efficiency project may save the equivalent energy of several hundred single-family residences. A recent example from an Idaho Power customer showed that one project saved electrical energy equivalent to nearly 500 homes.
<i>Priority #2</i> – Build upon the success of DOE’s Save Energy Now program in Idaho to leverage new innovative programs, such as a mentoring program for small industrial organizations.	State utilities should collaborate with OER, Task Force, and industry partners to develop an unsolicited proposal to DOE <i>Save Energy Now</i> for mentorship program.	To be determined as part of the recommended federal funding proposal.

2.6 COMMERCIAL

This section applies to all commercial facilities in Idaho, and in some cases to K-12, Higher Education, and State and Local Government sectors as well.

1. Accomplishments

- a. Draft legislation and economic analysis for a commercial tax credit for energy efficiency measures has been developed (2009 Report, Appendix B).

2. Existing Resources

- a. See existing resources in Section 2.1
- b. BSU EPI - Energy Efficiency Financing Mechanisms, May 2010 report
- c. Draft legislation and economic analysis for commercial tax credit to support economic development (2009 Report Appendix B)
- d. Annual Idaho Energy and Green Building Conference
- e. BSU Small Business Development Center provides free energy evaluations, measures, and follow up

3. Opportunities

- a) Continue to develop support for and improve the existing draft tax credit legislation (Appendix B). Promote the legislation as an economic development strategy. Develop stakeholder awareness and continue to engage the Interim Energy, Environment and Technology Committee.
- b) Provide targeted education to build awareness and expertise for energy efficiency amongst general contractors, especially for major renovation projects.
- c) Promote collaboration amongst OER, utilities, the Department of Commerce, and industry to prioritize improved energy efficiency financing mechanisms.
- d) Provide training for building operation and maintenance personnel as well as property management companies that provide O&M services.

4. Challenges

- a) The current fiscal climate is averse to considering any new tax credit, given the high perceived cost of tax credits and the unknowns related to the overall economic benefit.
- b) The Idaho Constitution and Statutes present challenges to Property Assessed Clean Energy and Local Improvement District financing mechanisms for energy efficiency. Utility on-bill financing is generally perceived as more complex and this mechanism is not a typically accepted business practice.

5. Needed Resources

- a) An engaged stakeholder working group to build support for the development and adoption of an economically viable tax credit to support energy efficiency.
- b) Creative financing options for commercial businesses to pursue energy efficiency, such as a revolving loan fund for energy efficiency improvements.

6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
<p><i>Priority #1</i> – expand the array of financing mechanisms available to support efficiency projects in new construction and major renovations.</p>	<p>A - OER and EE&C Task Force facilitate a utility lead discussion about the benefits and challenges of on-bill financing program as a complimentary incentive program.</p> <p>B – ISEA Board explore options to establish a revolving loan fund to support commercial energy efficiency improvements. There could be a similar fund for Government buildings.</p> <p>C – ISEA Board request OER and Task Force to build stakeholder support for and an Idaho Energy & Economic Development Act that will provide potential investment tax credit legislation, and do so in a manner that demonstrates it as an economic development strategy This may include specific language that enables utilities to be fully compensated for the value of energy conservation.</p>	<p>These mechanisms would be designed to stimulate the \$1.5 - 2 billion opportunity for energy conservation and facility improvement work. A Task Force analysis on one form of business investment tax credit for energy efficiency estimated State revenue could increase by approximately \$495,000 (2009 Report, Appendix B).</p>

2.7 RESIDENTIAL

This section applies to all single resident occupancy and multifamily housing in Idaho.

1. Accomplishments

- a) Updated draft legislation and economic assessment for updating 1976 Residential tax deduction (2009 Report, Appendix C).
- b) Community Action Partnerships dramatically increased low-income weatherization through ARRA funding.

2. Existing Resources

- a. See existing resources in Section 2.1
- a) updated by approval of the draft legislation that has been prepared (2009 Report, Appendix C).

- b) Utility weatherization programs and existing low-income weatherization programs. Low-Income Weatherization (LIWA) funding. Community Action Partnership (CAP) agencies seeking increased funding from non-federal sources once the stimulus dollars run out. Currently the Administration is promoting the Home Star program, the first-ever federal rebate program for residential energy efficiency work. This legislation is aimed at providing funding for non-income-qualified home energy audits and subsequent weatherization measures. The proposed incentives would cover up to half the cost of efficiency-related home improvements.
- c) BSU EPI – Energy Efficiency Financing Mechanisms, May 2010 report.
- d) State utilities have increased their budgets for residential energy efficiency programs.
- e) OER received \$1.2 million in ARRA funds to provide appliance incentives in 2010.
- f) Annual Idaho Green Expo
- g) Existing 1976 residential tax deduction law for insulation and alternative energy devices.

3. Opportunities

- a) Update the 1976 residential tax deduction law (for insulation and alternative energy devices) to include new technologies and any house more than 5 years as eligible projects.
- b) Continue and expand existing weatherization programs.
- c) Develop and implement appliance standards.

4. Challenges

- a) The current fiscal climate is averse to considering expansion of any tax legislation, regardless of Task Forces' analysis that indicates a positive impact to overall state revenue. The Division of Financial Management (DFM) also conducted an Economic Impact analysis, which predicted a revenue loss for the state of approximately \$100,000 annually. For these reasons, no bill addressing this legislation was introduced in the 2010 session. However, DFM's analysis report was not shared with the Task Force upon request. Furthermore, there was no discussion of how much the current legislation costs or benefits the state.
- b) Project management is the greatest challenge for weatherization programs, followed by obtaining program participation. Even with incentives, most Idaho residents will not participate due to financial limitations, lack of understanding, or apathy towards energy conservation.

5. Needed Resources

- a) Collaboration with DFM and investor owned utilities to request third party economic analysis for 1976 legislation update.
- b) A number of Idaho citizens have been trained by the CAP agencies to provide weatherization services, and private auditors are still under-employed. If the proposed Home Star program becomes law, resources will be needed to

administer these funds in the state of Idaho to manage the program. This project management function could be added to existing utility programs or accomplished by adding state employees.

- c) Additional financing mechanisms to support energy efficiency projects.

6. Recommendation / Process / Economic Impact

Recommendation	Process	Economic Impact
<p>Priority #1 - Reconcile the difference between the two economic analyses of 1976 tax deduction update.</p>	<p>The ISEA Board could request that DFM and Task Force to produce a transparent joint analysis so that the Task Force can make an informed recommendation. Alternatively, the ISEA Board could request DFM and OER work with the Tax Commission to identify a third party (perhaps from university economics department or investor owned utilities) to review the two existing analyses.</p>	<p>Task Force’s analysis suggests the amendment will be revenue positive after considering income tax on installation labor and material and product sale profits and sales tax on materials and products. The deduction is estimated to increase 30%, a state tax loss of \$200,000. A conservative estimate shows this increase would be offset by \$106,000 estimated increased income tax on installation income and material and net product profits and an estimated \$105,000 in increased sales tax. State revenue is estimated to increase overall by approximately \$10,500. DFM’s analysis resulted in a negative net impact to the state of \$100,000. Third party review is suggested to resolve this disparity.</p>
<p>Priority #2 – Investigate implementation of the Home Star weatherization program in Idaho.</p>	<p>ISEA Board could ask OER to evaluate if and how to promote the implementation of this program.</p>	<p>Unable to quantify financial impact of weatherization programs until funding is available. It is expected that it will bring substantial economic and energy efficiency benefits to the state. However, this program will require management, and alternatives must be explored to identify resources to manage the auditing, installation, rebate, and quality assurance functions required by federal agencies</p>

2.8 OTHER OPPORTUNITIES FOR FUTURE CONSIDERATION

There are several other opportunities that the Task Force has identified but has not yet explored but plan to in future meetings.

- Responsibly expand demand response programs for industrial and commercial sectors in Idaho.
- Promote smart economic growth by working with the Department of Commerce to consider tracking jobs added per aMw in recruitment priorities.
- Examine the viability of creating a conservation incentive program for natural gas throughout Idaho, similar to that used in the AVISTA territory by working with the Idaho PUC.
- Examine implications of expanding energy conservation incentives to include projects that shift from thermal resources to renewable energy, such as geothermal, biomass and solar.
- Encourage the Idaho PUC to examine innovative policies that reimburse utilities for the full value of energy conservation to provide the same incentive to save energy as to produce and sell energy.

The 2007 Idaho Energy Plan has recommendations that will be explored in future Task Force meetings. Below is a numerical listing of the recommendations that may be relevant to further Task Force investigation.

- E-8 Idaho should offer an income tax incentive for investments in energy efficient technologies by Idaho businesses and households.
- E-9 Idaho should offer a sales and use tax exemption on the purchase of energy efficient technologies.
- E-10 Idaho should adopt international building codes on a three-year cycle as a minimum for building energy efficiency standards and should provide technical and financial assistance to local jurisdictions for implementation and enforcement.
- E-11 State Government will i.) demonstrate leadership by promoting energy efficiency....in all facets of state government, ii.) ensure that the public facility procurement rules provide appropriate incentives to allow full implementation of cost effective energy efficiency...at public facilities, iii.) collaborate with.....to advance energy efficiency, iv.) work to identify and address all barriers and disincentives..., and vi.) educate government agencies.....about the benefits and means to implement energy efficiency.

3 MOVING FORWARD

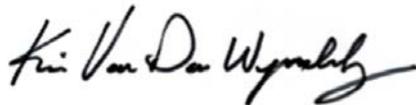
The current economic recession is unlike any in our Country's history, and Idaho's downturn has been particularly steep. Many economic indicators point to a prolonged downturn with lethargic or minimal growth. Significant economic recovery will demand innovative and non-traditional solutions to incent growth, expansion and dynamic

economic recovery. One of the strongest growth sectors in the “new economy” is in energy technologies, renewable energy, sustainability, conservation and integrated design and delivery services. Facility designs based on space efficiency, operational performance, sustainability and energy efficiency reflect the new economy. Programs designed to incent, promote, develop and fund these industries will provide a development base from which Idaho can attract businesses uniquely structured to succeed and excel in the new economy. These programs, policies and legislation should be specifically designed to promote public/private partnerships through which sustainable energy, infrastructure and economic development solutions can be implemented.

Given that there are several recommendations put forth across multiple sectors, the Task Force prioritized the recommendations within each sector to guide the Board's efforts in reviewing them. However, the Task Force seeks critical feedback, guidance and a clear decision from the Board on each recommendation. The Task Force welcomes any opportunity to correspond with the Board, or a sub-committee of the Board, to initiate progress toward the implementation approved recommendations.

This report documents several opportunities for increased energy efficiency in Idaho that, once initiated, will save energy while creating jobs and promoting economic expansion.

*Respectfully Submitted on behalf of the Energy Efficiency and Conservation Task Force
September 22, 2010*



CHAIR, Energy Efficiency and Conservation Task Force

4 APPENDICES

Appendix A. – Task Force Meeting Dates Prior to this Report Revision

2008

June 16
July 21
August 3
November 13

2009

January 15
March 25
May 26
July 13
September 21
December 12

2010

February 24
April 13
September 1