# Workgroup #6

**Rethinking Governance and Energy Efficiency Policies –**
**How do we optimize the alignment of regulatory practice with public policy goals?**

Co-chairs: Sara Patton, Northwest Energy Coalition (NWEC)
Michael Early, Industrial Customers of Northwest Utilities (ICNU)

## Cost Effectiveness

Sub-group Chair: Sara Patton

### Rethinking Energy Efficiency Program Policies: How to align regulatory practice with public policy goals

**Subgroup task:** Review policies and criteria (e.g., various cost effectiveness tests, free rider/driver policies, IOU cost recovery for non-quantifiable elements like R&D and education) to determine their applicability in today's energy efficiency market. (Note that this task was transferred from Workgroup #3.)

**Status:**

- Completed information gathering/discussion of cost effectiveness protocols set by the Act, Power Council and BPA
- Incomplete data gathering on public utility commission and state legislative protocols
- Remaining issues will be fleshed out in October. They include free ridership, low-income measure cost-effectiveness, point of application of cost-effectiveness criteria, implications of post-2011 BPA power sales contracts on avoided costs, interaction of codes and standards with existing equipment and buildings, recovery of costs for indirect expenditures, and state energy code differences.

***Cost effectiveness tests:***

The Council, BPA and most state regulatory commissions rely on a Total Resource Cost (TRC) test that compares all quantifiable societal costs against all quantifiable societal benefits to establish whether a particular energy efficiency resource is a better investment than an alternative generating resource. The TRC test has been an appropriate mechanism for Integrated Resource Planning purposes and to help identify key energy efficiency priorities for regional efforts. However, there are some major issues with the TRC and its application to specific program operation that could be considered a limiting factor on accelerated energy efficiency program operations. Issues identified include:

- ***Non-quantifiable Benefits:*** TRC doesn't work well in situations where it is difficult to quantify societal benefits for measures that have apparent high value for individual consumers. This sometimes leads to "counter-intuitive" program operations where an individual customer may be told they don't qualify for a utility rebate on a piece of equipment for which they see enough value in to pay

a significant portion of the costs. While the classic example of this phenomenon is residential replacement windows, other more important examples exist in both commercial and industrial environments. A simple solution for this problem would be to simply pay an incentive based on some cost per kWh of energy saved and let the consumer's willingness to pay be a proxy quantification of non-energy societal benefits.

- ***Focus on Current Costs and Benefit:*** In most regulatory settings, TRC must be calculated based on demonstrable current costs and benefits. This favors existing technologies that have already achieved economies of scale; it doesn't allow for long-term costs perspective, and thus sometimes prohibits investment in new energy efficiency opportunities for the future. For example, CFLs were initially only marginally cost-effective at $15 bulb in 1994, but now 14 years later they represent a significant EE resource and cost only $1 to $2 each. If the analysis back in 1994 had concluded that CFLs were not cost-effective, it's hard to believe we would be where we are today without the previous decade of investment in the technology.
- ***Confusion of TRC with Willingness to Pay:*** TRC as a tool has been most useful as guidance for regional policy and providing direction on which EE measures to go after and also at what scale. However, when it's applied within a specific program as a screening tool for projects or individual measures, it creates major problems with the market. Once a specific measure or targeted market opportunity has been shown to be a better alternative than a generating resource, the program implementation design should be structured based on the most effective way to address barriers to consumer adoption of the technology; e.g. what is the consumer willing to pay. That might include payments of incentives up to some portion of the total cost or it might be based on a flat payment per unit of energy saved. In any case, as long as the overall program total expenditures are less that the avoided generating resource the efficiency program is a better buy for society.
- ***Codes and standards:*** On the other side of this issue is the convention that utilities should not pay for things consumers are required to pay for by law. Serious gaps in the code and standard enforcement raise questions about the applicability of this convention. The convention can also prevent full energy efficiency achievement when the consumer has a choice between purchasing new equipment that meets or beats efficiency standard OR repairing very inefficient existing equipment.

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## Direct Application Renewables

Sub-group chair: Kim Crossman, PECI

### Harmonization of Policies and Program Structure with Market Trends, Technical Best Practices, Emerging Technologies

The rise of the green building and integrated design movements along with the availability of emerging technology and growing public awareness of the societal and individual impacts and costs of energy are creating widespread public interest in deploying clean distributed generation.

Simultaneously, the commercialization status and relatively low current deployment of direct application renewables (DAR) creates questions and challenges around best practices in system integration and performance in buildings and on-going concerns about cost-effectiveness.

Harmonized policies, incentives and regulation should encourage everyone to innovate and get to a common goal - energy services that minimize costs to individuals, the environment, utility, system. By continuing to create policies and programs which are difficult to navigate or which actually discourage customer investment in comprehensive approaches to achieving energy savings, the energy policy community fails to serve customer demand or to capitalize on these occurring market forces to meet public policy goals.

### Preliminary Recommendations

#### 1. Conduct Primary and Secondary Research Designed to Characterize Different DAR Options to Inform Policy Decisions

As emerging technologies start to see broader commercialization in a changing energy supply landscape, the economic, environmental and performance characteristics of DAR systems are also changing. There is a need to keep current in characterizing the attributes and quantifying the costs and benefits of various types of DAR systems to customers, to utilities and to society in order to determine the appropriate policy response.

#### 2. Modify Treatment of Solar PV and Solar Water Heating Systems Under BPA's CRC to Increase their Use

Currently BPA's program lumps solar strategies and other DAR with other, primarily utility-scale renewable resources rather than with the efficiency programs. Considering solar strategies along with the conservation measures would better reflect the role they

play in the utility system and in the consumer's mind, as well as aligning the resources better for acquisition. Finally, by not including solar strategies in utility consumer-directed resource acquisition efforts, we are sending consumers the message that we do not value the contribution to the system that solar systems can make.

### 3. Provide Coordinated, Comprehensive Rebate, Incentive and Technical Assistance Information

This recommendation addresses two barriers to the adoption of DAR - (1) the perceived lack of easy, reliable sources of information about DAR technologies themselves and their appropriate use, and (2) the perceived absence of a reliable source for information about available incentives for DAR projects and how those affect DAR project economics. Integrated and coordinated rebate, incentive and technical information for consumers will help them make wise choices at the right time regarding energy and other related utility services. Although electric and gas utilities are stakeholders and may provide their customers with access to this information, informational assistance programs that cross disciplines to serve customers may be best administered by others.

### 4. New Construction Focus - Solar Ready / Upgradeable/ DG Codes - Preventing Lost Opportunities

Integrating DAR into existing building electrical and mechanical systems can be technically challenging and expensive. New buildings offer a unique opportunity to optimize efficiency, integrate the envelope, lighting (both electric and day lighting) and HVAC systems. New buildings can be more easily upgraded with additional features, such as solar PV, if these future improvements are anticipated and the buildings are designed for the upgrades. The Pacific Northwest currently does not have in place land use or building code regulations that support "DAR-ready" construction, however there are examples of such rules from other parts of the world. There is need to better understand the technical specifications and costs of DAR-ready buildings in order to consider the application of solar-ready or other DAR-ready codes in the PNW.

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## Decoupling and (for Investor-Owned Utilities) Efficiency-Related Earnings Opportunities

Sub-group co-chairs: Michael Early, ICNU and Dave Robertson, PGE

### Issue Overview

There is a vast literature on "decoupling." We recommend in particular *Aligning Utility Incentives with Investment in Energy Efficiency, A Resource of the National Action Plan for Energy Efficiency, November 2007*, and *Decoupling For Electric & Gas Utilities; Frequently Asked Questions, National Association of Regulatory Utility Commissioners, September 2007*.

**Question**: Do the current state statutory/regulatory structures for acquiring cost-effective energy efficiency and conservation ("conservation") strike the right balance between utility/shareholder interests and customer interests (or align these interests to the extent they do not conflict) in acquiring cost-effective conservation?

### Utility/Shareholder Interests

1. Timely recovery in rates of all prudently incurred costs for the acquisition of cost-effective conservation.
2. Recovery of fixed costs and "lost margin" to the extent that sales are below forecasted levels used in setting rates due to utility-sponsored conservation measures. In setting rates, the utility commission (PUC) authorizes the utility to charge rates that provide it with the opportunity to recover its fixed costs at forecasted load levels. If actual sales are less than forecasted sales due to utility-sponsored conservation, then the utility will not recover all of its fixed costs due to these measures.

2A. Recovery of authorized fixed costs to the extent that sales are below forecasted sales for reasons beyond just conservation (e.g., weather, economic dislocation of customers). If this is the case, the utility will fail to recover its authorized fixed costs. Correspondingly, higher than anticipated sales will yield higher than authorized fixed cost recovery.

3. Even if Numbers 1 and 2 (or 2A) are satisfied, the utility is only "held harmless" regarding utility-sponsored conservation (or regarding fluctuations in retail sales). The utility still lacks any financial incentive to promote conservation.
4. Due to the same regulatory/rate setting reasons as in Number 2, under current ratemaking structures, the utility has an incentive to increase sales above forecasted levels and to "over-recover" fixed costs and increase profits. The

incentive varies with utility types: Natural Gas LDCs and "unbundled" electric utilities expense gas costs, and their fixed costs are limited to delivery costs. Integrated electric utilities typically have higher fixed costs associated with generation and delivery assets, so their incentive to increase sales may be greater. Publicly-owned or consumer-owned utilities (e.g. PUDs or cooperatives) also have a financial stake in actual retail sales at or above expectations. But because of their non-profit status, their issue is one of timing and rate structure, rather than loss, since, any shortfall or "windfall" would be rolled forward into rates.

**Customer Interests**

1. Low rates and/or bills – Conservation should be included in the utility Integrated Resources Plan (IRP) and to the extent that the IRP shows that conservation is the lowest-cost "resource" option, then it should be acquired. Ratepayers need verification that ratepayer funds have produced verifiable MWH savings.
2. Regulatory changes to guarantee recovery of fixed costs if utility-sponsored conservation causes actual sales to fall below forecasted sales should not be a vehicle for shifting other costs and/or risks to customers. Regulatory changes must be specific to the problem.
3. Fair rate of return – To the extent that the utility is guaranteed fixed cost recovery against the risk of under or over-recovery due to actual sales differing from forecasted sales without regard to the cause (i.e., beyond just conservation), then there should be a corresponding adjustment in its return.
4. If sales below forecast levels are trued up, utility revenues on surplus sales – including any utility share of benefits under an adjustment clause – must be addressed.

**Potential Statutory/Regulatory Approaches** (Need to identify which interests each measure addresses.)

1. IRP. Require utilities to identify and include all cost-effective conservation in their IRPs and to seek authority from PUC to acquire conservation – e.g., Oregon SB 838 for residential and commercial conservation not captured by public purpose charge.
2. Mandate. Require utilities to acquire all cost-effective conservation identified in its IRP or pay a penalty (e.g. Washington I-937).
3. Recovery of Costs. Authorize collection of all prudently incurred costs for cost-effective conservation as expenses.
4. ROE on Conservation "Investments". Allow utilities a return on efficiency and conservation investment – not just expensed as a cost.
5. "Incentive" ROE. Allow PUC to authorize an "incentive" ROE for conservation investment.
6. Shared Savings Mechanisms. Divide net savings from cost-effective energy efficiency programs equitably among utilities and their customers.

7. Recovery of "lost margin" due to utility-sponsored conservation. - Authorize PUC to establish a true-up limited to lost fixed cost revenues due to utility-sponsored conservation and not other factors such as weather or economic conditions. MWH savings and revenue "losses" must be verified.
8. Fully "decouple" revenues from sales. Actual fixed cost recovery trued up to the authorized level used in setting rates at forecasted sales level, without regard to whether the cause was "lost" sales due to conservation or other factors.
9. Independent Third Party. Ratepayers fund a third party to provide financial incentives and promote conservation with either the utilities taken completely out of the conservation business or allowed to continue conservation efforts only as a supplement to the third party (e.g. Oregon public purpose charge and Energy Trust with SB 838 changes).

**Next Steps**

There is some dispute regarding the scope of the "decoupling" question which has resulted in the myriad solutions outlined in the literature and by the states. Each state has taken steps already to address these issues, so there is not one obvious "winning statutory or regulatory measure to be pursued. Other questions must also be answered. For instance, in the future Washington will require utilities to identify and acquire all cost-effective conservation or pay significant penalties. Provided prudent conservation cost recovery is assured, what further Washington incentives, if any, need to be added to this mandate? In addition, Oregon collects a public purpose charge from ratepayers, which is used by the ETO to promote and acquire conservation. The ETO is a non-profit and has no conflicting "disincentive" with its role of promoting and acquiring conservation. Such conservation acquisitions are verified and subject to OPUC review. Are there structural barriers in this Oregon model to achieving additional cost-effective conservation, or is it simply a question of adequate funding of the ETO and the most effective use of these funds? Finally, how will the value of carbon be considered in resource planning to the extent it affects traditional views of cost effectiveness? Will it make many measures previously cost ineffective now achievable?

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## Load Management/Smart Grid

Sub-group chair: Dave Ward, Tacoma Power

**<u>Potential Policy Recommendations Under Consideration</u>**

**Value of capacity:**

- The Region should fully support the Council's efforts to improve assessment of capacity in the Sixth Power Plan
- Regional IOUs should explicitly address capacity needs in their IRP's, addressing both short-term and long-term costs of capacity and fully including avoidable T&D associated with improved system load factors
- Pending a better sense of the value of load and energy management going forward, regional utilities should be encouraged and supported in robust experimentation to improve knowledge of the technologies, program designs, and customer preferences regarding load and energy management
- Load Management/Smart Grid applications may need to be developed that will accommodate both unanticipated increase and decreases in the region's future renewable generation output.

**Establish Regional Load Management/Smart Grid Group:**

- Smart Grid technology (including AMI) is still maturing and it is not clear whether the current technology will prove to be cost effective, and what the useful life of current AMI technology will be. It may be beneficial to see what lessons are learned from utilities that are installing these systems. NWPCC has been leading a demand response work group, but its scope does not encompass SG concepts. This type of group could:
  - Track federal legislation and initiatives, assess any impacts to the northwest region and identify and funding opportunities for LM/SG applications.
  - Review what other utilities have accomplished with successful LM/SG initiatives
  - Review other demand response and load management that may not be linked to SG technology
  - Share information on evaluating/assessing the cost effectiveness of LM/SG activities
  - Initiate a cost-benefit analysis study for the region (Washington, Oregon, Idaho, Montana) or establish guidelines for utilities to consider

- The group could support adopting an advisory position that the Region supports open technologies and "mix and match" capabilities and those LM/SG technologies its utilities purchase will meet ANSI and any other standards.
- Assist in coordinating regional pilots and reporting the results.

**Smart Grid capability:**

- As part of IRP, regional utilities should assess the current state of their grids according to the metrics developed by the US DOE Office of Electricity Delivery and Energy Reliability [follow link to report at: www.oe.energy.gov/documentsandmedia/Smart_Grid_Workshop_Report_Final_Draft_08_12_08.pdf ] and address in their Actions Plans any planned activities to change the results of these metrics over time, including the cost-effectiveness of any proposed investments.
- States should consider adopting a requirement that utilities evaluate suitability of SG investments BEFORE deploying any "NON-advanced grid technologies," similar to that in the federal legislation.
- States should investigate regulatory barriers to SG investment by utilities, including timing of investment recovery, handling of assets retired prior to the end of previously-set depreciation lives, and effect of SG investment on revenues and whether it is appropriate to address any barriers found with generic policies or utility-specific proposals.

**Tax exemptions/Permitting Modifications**

- States should consider offering a sales and use tax exemption on the purchase of load management/smart grid technologies (material, services, etc.).
- States should consider offering an income tax incentive for investments load management/smart grid technologies by businesses and households.
- The states should consider either reducing per-house permit fees or offering utilities bulk rates for demand response or smart grid equipment installations. States should also consider a streamlined process for acquiring these permits.

**Low income and limited income customers**

- Implementation of LM/SG initiatives may adversely impact low income and limited income customers. Utilities should consider reviewing assistance programs to ensure they are in alignment with any new utility plan.
- Additionally, in order to fully realize the full energy efficiency and demand management potential of the Smart Grid, utilities and policy makers need to ensure that low, and limited-income, customer's dwellings are up to modern energy efficiency standards that that customers possess the necessary equipment, end-use device infrastructure and knowledge to fully utilize Smart Grid potential.

**Energy Efficiency Imbedded in LM/SG**

- More analysis and research is needed to evaluate the potential amount of energy efficiency that may be accomplished through LM/SG activities