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January 24, 2012

MEMORANDUM

TO: Power Committee

FROM: Terry Morlan, Tom Eckman, Gillian Charles

SUBJECT: Enhancing Small, Rural and Residential Utility Access to Efficiency Measures

Council members are hearing complaints from small and rural utilities about their ability to participate in energy efficiency programs. This is not a new problem and many steps have already been taken to try to improve this situation. The issue was last raised by Council members in connection with the RTF charter and bylaws. Staff will provide some background on various changes that have been made by the RTF, Bonneville, and Northwest Energy Efficiency Alliance (NEEA) to help accommodate the unique needs of small rural utilities, and the different avenues available to them for achieving conservation savings in their service territories.

One point that staff will try to clarify is that the RTF is not the primary place to address these issues. The RTF is primarily concerned with technical savings estimation, cost-effectiveness, and verification. The small rural utility issue is fundamentally a program implementation issue. Program implementation is the responsibility of Bonneville, individual utilities, NEEA, and the Energy Trust of Oregon (ETO). However, the RTF, as noted below is attempting to address the issue within its scope.

The Council created the RTF Policy Advisory Committee in 2011 largely in response to concerns raised in the Northwest Energy Efficiency Taskforce (NEET) process by the small rural utilities. That committee met three times during 2011 and reached agreement on the appropriate scope and funding of the RTF. As agreed among the RTF Policy Advisory Committee members, program implementation is not within the scope of the RTF. The RTF Policy Advisory Committee recommendations have been embodied within the budget, work plan, and draft charter and bylaws of the RTF.

The RTF did undertake a \$60,000 special study in 2010 and 2011 to try to address the small rural issue. Because both Bonneville and NEEA recognized that the study would likely reveal both technical and implementation issues faced by small rural utilities these entities co-funded the research. The study consisted of in-depth interviews with 20 small rural utilities and resulted in several recommendations for improvements to be implemented by Bonneville, NEEA and the RTF. The RTF has responded (attached) to the RTF-specific recommendations specified in the

report and is now prioritizing the recommendations within its small rural subcommittee. The RTF has a line item in its 2012 work plan to specifically address new measure development for small and rural utilities. Bonneville and NEEA will be issuing their own responses to the recommendations directed to them in the report. While Bonneville and NEEA have both taken steps in the past several years to address small rural utilities, it is clear that more can be done. The RTF will work with Bonneville and NEEA to establish a coordinated effort to address the small rural needs going forward.

Staff's intent is to provide a common background on the situation for Power Committee members to inform further discussions of the issue and help formulate recommendations for any further actions.

Attachment

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Enhancing Small and Rural Utility Access to Efficiency Measures

Power Committee

February 7, 2012

Gillian Charles



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Outline

- 1. Appropriate Roles**
- 2. Measure Approval Options**
- 3. RTF's Small/Rural Technical Support Needs Study**
- 4. What has already been done – Council, RTF, BPA, NEEA**



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Sixth Power Plan

CONS-17. Take into account the unique circumstances and special barriers faced by small and/or rural utilities in achieving conservation and the development and implementation of conservation programs.



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Appropriate Roles

Council	<ul style="list-style-type: none"> • Sets regional energy efficiency target through power plans • Total Resource Cost – cost effectiveness • Oversee RTF
RTF	<ul style="list-style-type: none"> • Determines measure cost, savings, and specifications for limited set of measures
BPA	<ul style="list-style-type: none"> • Set utility reimbursement levels • Determine reporting requirements and qualified savings
NEEA	<ul style="list-style-type: none"> • Implements savings through market transformation
Utilities/ETO	<ul style="list-style-type: none"> • Implement local programs



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Appropriate Roles – cont... What the RTF Does

§ Scope of the RTF is to

- Develop and maintain list of eligible conservation measures
- Establish process for updating list of eligible measures as technology and standards change and provide an appeals process that utilities/trade allies/customers can use to demonstrate that different savings and value estimates should apply
- Develop set of protocols for estimating savings
- Assist the Council by assessing new efficiency technologies
- Track regional progress toward efficiency targets



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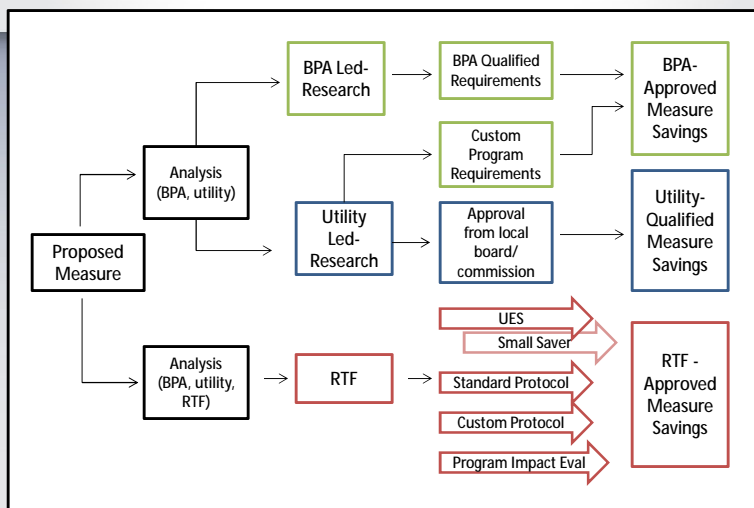
Appropriate Roles – cont... What the RTF Does Not Do

- § Perform any regulatory function
- § Require use of specific measurement and verification protocols or unit energy savings (UES) measures (formerly known as “deemed” savings)
- § Establish utility program reporting requirements and/or schedules
- § Restrict which measures utilities can install
- § Require the use of specific program designs
 - Except for technical and quality control requirements for unit energy savings measures (e.g. PTCS)
- § Establish “rebate or willingness to pay” levels



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Measure Approval Options



RTF Savings Estimation Methods

- § **Unit Energy Savings (UES – formerly “deemed”)**
 - Stable unitized savings that can be reliably forecast through the period defined by the measure’s sunset criteria
 - UES measures reduce program delivery cost by simplifying the data that must be collected
 - **Small Saver** – Likely savings from a measure are too small to warrant the resources needed to qualify for UES.
- § **Standard Protocol** – when savings from a measure vary widely but can be determined by a standardized procedure for data collection and analysis that is applicable to many different end-use sites
- § **Custom Protocol** – requires site-specific data collection and analysis to develop reliable estimate of savings
- § **Program Impact Evaluation** – analysis of randomly sampled program participants to determine savings achieved during a period of program delivery

RTF-Approved UES Measures

- § All RTF measures are available on the RTF website <http://www.nwcouncil.org/energy/rtf/measures/>
- § Currently there are 381 RTF-approved UES measures:
 - Agriculture (95)
 - Commercial (39)
 - Industrial (1)
 - Residential (246)
- § Of particular interest to small/rural utilities:
 - Res: Montana House
 - Res: New Construction: Slab insulation
 - Ag: Stock Watering Tank
 - Res: Ground Source Heat Pump (closed-loop system)



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RTF's Small and Rural Utility Technical Support Needs Study

- § Objectives
 - Determine what technical support the RTF can offer to help small/rural utilities achieve greater efficiency savings
 - Identify infrastructure and delivery constraints and determine what program design and delivery improvements NEEA and BPA can provide small/rural utilities to assist with the implementation of efficiency programs
- § Contractor conducted in-depth interviews with 20 small and/or rural utilities
 - < 15 MWa load in 2010
 - BPA's Low Density Discount (LDD)
- § RTF subcommittee provided guidance and input
 - Composed of RTF members, staff from the Council, BPA, NEEA, NRU, IDEA, utilities, and other interested parties
- § October 2010 – January 2012 | Final [report](#) available



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Conclusions from Report

- § Overall, the utilities want measures that:
 - Are already approved by BPA and/or RTF and easy to implement
 - Achieve high savings
 - Remain the same over a long period of time
- § Utilities want more streamlined requirements for measures, e.g. duct sealing, commercial lighting, irrigation improvements
- § Need to ensure that utilities can fully leverage existing measures



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Specific Recommendations for the RTF

- § Existing Measures
 - Continue work on PTCS and Heat Pump Measures
 - Revise weatherization measures to take into account infiltration reduction and ventilation system improvements
 - Update manufactured home decommissioning measure (develop as small saver)
 - Comprehensive review of all irrigation measures to identify ones that can be simplified
 - Continue analyzing feasibility and cost-effectiveness of open-loop ground source heat pumps
- § New Measures
 - Develop UES measures specific to schools for lighting, ventilation, and weatherization
 - Investigate wind turbine efficiency and identify potential conservation measures



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Specific Recommendations for the RTF – cont...

- § Develop a measure description and technical specification checklist that reflects abilities and constraints of small rural utilities
- § Work with BPA, NEEA, others to develop targeted outreach to small and rural utilities
- § See complete [RTF response](#) to recommendations in the study, approved by the RTF at its January 17 meeting.



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What the RTF is Already Doing

- § RTF Policy Advisory Committee
- § Active RTF small/rural subcommittee
- § Operative Guidelines for RTF Savings Estimation Methods (see [Guidelines](#))
- § Updating online measure petition process
- § Developed measures in response to small rural requests (see slide 9)
- § Improved catalogue of measures on the [RTF website](#)



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BPA Post-2011 Implementation Program

- § Under BPA's Post-2011 Implementation Program:
 - Utilities classified as small, rural, or residential qualify for a higher performance payment (30% instead of 20%)
 - Utilities are able to combine their resources by combining and participating in pools
- § BPA will pursue additional cost-effective measures that are deemed and easily implementable
 - Expanded residential measures
 - Small commercial ductless heat pumps
 - Small commercial weatherization
- § BPA will continue to improve program support and assistance
 - Streamline measure protocols and requirements for inspection and verification
 - Energy Efficiency Representatives (EERs)



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BPA Improvements to EE for SR

- § Developing a response to the RTF's small rural report and addressing the BPA-specific recommendations on program support and implementation
- § Developing a workgroup to discuss what BPA can do to help small, rural, and residential utilities achieve savings
 - Includes BPA EERs, utilities, NRU, PPC, PNGC, Council, RTF



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NEEA Improvements to EE for SR

- § **Hired Stakeholder Relationship Manager in June 2011 to focus on small/rural utilities**
- § **Dedicated resources to developing education, training and other events aimed at small/rural utilities and related stakeholders throughout the region**
 - Began discussion of need for “Efficiency 101” training
- § **Created Conduit group as forum to address unique barriers affecting energy efficiency achievement by small/rural utilities**

RTF Staff Response to Ecotope's Recommendations to the RTF in "Small and Rural Utility RTF Technical Support Needs Study"

1/25/2012

Color Key

- Staff agrees with Ecotope's recommendation and plans to implement the recommendation.
- Staff agrees with Ecotope's recommendation, but implementing the recommendation is contingent on something out of the RTF's control.
- Staff disagrees with Ecotope's recommendation.
- No recommendation/action related to the RTF.

4.1.1 PTCS and Heat Pump Measures

Staff Summary of Ecotope Recommendation:

- a. Review revisions to QC specifications to ensure they maintain standards set in the deemed savings calculation.
- b. Allowing third-party provider to substitute for the utility may help rural areas.

Staff Response and Recommended Action:

- a. The RTF will continue to review, through the PTCS subcommittee, the PTCS specifications.
- b. The PTCS Subcommittee will review a proposal to reduce the inspection rate (currently set at 100%) for the 3rd party QA exemption for all utilities.

4.1.2 Weatherization

Staff Summary of Ecotope Recommendation:

- a. Commit to a stable specification for window measures.
- b. Develop a measure that links savings to infiltration reduction and ventilation system improvements.

Staff Response and Recommended Action:

- a. Staff recommends the RTF take into consideration potential differences in measure baselines and product/services availability in rural areas of the Region. (See 4.3.1 "Design Checklist") This consideration would apply to all measures, including windows. However, since the RTF has a wide variety of stakeholders, staff recommends the RTF continue providing the the most up-to-date (within reason) measure information. Timing of program adoption of RTF work products is a program manager's (i.e. BPA) decision.
- b. In 2012 the RTF will revise the existing residential infiltration reduction measures using the infiltration and ventilation modeling capabilities of SEEM94. As noted by Ecotope, however, the requirement to perform blower door tests makes this a measure not well suited to all rural utilities since contractors with blower door testing capabilities are not readily available in rural areas. A study on the impact of weatherization on the infiltration rates and ventilation requirements of houses is currently being designed by the RTF. Once results are available, the RTF will be able to use SEEM94 to model the energy impact of changes in infiltration and ventilation rates caused by weatherization measures.

4.1.3 Ductless Heat Pumps

Staff Summary of Ecotope Recommendation:

Introduce DHP measures in commercial and residential manufactured home applications as soon as feasible.

Staff Response and Recommended Action:

There are no or very limited data on the performance of DHP's in commercial buildings and manufactured homes. BPA is currently studying manufactured home and commercial building applications. The RTF staff believes the only feasible course of action at this point is to wait for the BPA study results. Once data are made available, the RTF will help in analyzing the data for development into a measure proposal.

4.1.4 Manufactured Homes (Existing)

Staff Summary of Ecotope Recommendation:

Develop a manufactured home decommissioning measure.

Staff Response and Recommended Action:

In 2012, the RTF plans to update its manufactured home decommissioning calculator. The baseline for this measure will be very difficult to reliably predict, but the measure is likely to be classified as a "small saver" given the difficulty of finding manufactured home owners who can afford a new home based on its energy savings.

4.1.5 Commercial Lighting

Staff Summary of Ecotope Recommendation:

- a. The lighting calculator should be updated with a more intuitive user interface.
- b. Deemed measures should be developed for select measures/applications.

Staff Response and Recommended Action:

- a. The lighting calculator provided by the RTF is meant to convey the approved savings calculation methodology associated with the standard protocol. It is not necessarily intended to be used directly by programs. Any user interface improvements for the purpose of utility or contractor program operation have been the purview of the program operators. RTF staff recommends that this present delineation of responsibilities continue as is.
- b. The measure definitions multiply fairly quickly, which is difficult to update with the rapid changes in technology, codes & standards. However, if there were strong regional consensus on their usefulness, applicability, and sunset date, RTF staff would recommend the development of specific UES measures.

4.1.6 Schools Measure Package (Building Type Format)

Staff Summary of Ecotope Recommendation:

Develop UES measures specific to schools for lighting, ventilation, and weatherization.

Staff Response and Recommended Action:

In 2012, the RTF will hire a contractor to develop, and convene a subcommittee to review, commercial UES measures specific to schools. ODOE and NBI have developed a savings modeling tool based on data from 150 schools - this may provide a good starting point for development of UES measures.

4.1.7 Irrigation

Staff Summary of Ecotope Recommendation:

Perform a comprehensive review of irrigation focused on identifying the measures that could be simplified.

Staff Response and Recommended Action:

No specific recommendations were provided for which measures could be simplified. The RTF will be reviewing its Agriculture Irrigation Hardware measures in 2012. During that review process, RTF staff recommends that special attention be paid to identifying which measures are not adequately covered.

4.1.8 Distribution Efficiency

Staff Summary of Ecotope Recommendation:

Probably not a place to develop deemed savings. RTF has been providing support via review/development of two standard protocols.

Staff Response and Recommended Action:

No action recommended. BPA has launched a program to assist its utility customers upgrade the efficiency of their distribution systems, including the development of a savings calculation methodology, which the RTF has adopted.

4.1.9 Proposed New Measures

Staff Summary of Ecotope Recommendation:

- a. Heat Pump Water Heaters
- b. Wind turbine energy efficiency (navigation lights, control system power, miscellaneous space loads) - RTF should attempt to identify potential conservation measures.
- c. Ground Source Heat Pumps - RTF should finish development of GSHP measures.
- d. Other Measures - RTF should review water heater cozies, timers, room AC, and dehumidification only if compelling savings potential data are submitted.

Staff Response and Recommended Action:

- a. The RTF has developed UES measures for HPWH's and NEEA has developed a set of technical specifications and is launching a pilot HPWH program.
- b. Staff recommends the RTF consider hiring a contractor to investigate the energy savings opportunities at wind generation facilities, including the performance of an energy audit at a sample of such facilities. Given current commitments, this may not occur in 2012, in which case, it should be an item for inclusion in the 2013 workplan.
- c. The RTF finished its work on GSHP's in 2011. UES measures for open-loop systems were not developed due to lack of as-installed performance data and lack of consensus on a reliable measure specification. Staff recommends continuing a dialogue with the interested stakeholders in an effort to establish an RTF-approved measure, BPA-qualified measure, or other solution.
- d. Staff will recommend review of these "other measures" when a request is made in accordance with RTF Guidelines.

4.2.1 DIY

Staff Summary of Ecotope Recommendation:

RTF should only develop requested/proposed DIY measures if a reliable QC system is also proposed.

Staff Response and Recommended Action:

Agree.

4.2.2 Circuit Riders

Staff Summary of Ecotope Recommendation:

No recommendation directed toward RTF.

Staff Response and Recommended Action:

none

4.2.3 Third-Party Delivery

Staff Summary of Ecotope Recommendation:

No recommendation directed toward RTF.

Staff Response and Recommended Action:

none

4.3.1 Create a Process for Sustainable Improvements

Staff Summary of Ecotope Recommendation:

a. Design Checklist - The RTF should consider a checklist of small/rural utility principles when assessing and approving UES measure designs/specifications.

b. User Interface Specialists

c. Small/Rural Utilities on Design Task Forces

Staff Response and Recommended Action:

a. In 2012, Staff recommends the RTF work with the Small/Rural subcommittee to develop the measure description and technical specification checklist that reflects the abilities and constraints of small/rural utilities. The BPA's "Power in Efficiency" conference on May 8th and 9th may provide the opportunity for a face-to-face discussion with RTF Staff, Members, and small/rural utilities.

b. Small utilities are often not the direct users of RTF work products. For example, BPA uses the UES measure workbooks to determine payment. Measure specifications are probably not subject to much UI improvement. This recommendation applies more appropriately to BPA and NEEA.

c. RTF subcommittees and meetings are open to all participants however staff recognizes there are barriers for small and rural utilities. Staff recommends the RTF work with BPA and others to develop a targeted outreach and involvement strategy for committee members from small and rural utilities.

4.3.2 Apply Market Transformation Approach to Small/Rural Utilities

Staff Summary of Ecotope Recommendation:

No recommendation directed toward RTF.

Staff Response and Recommended Action:

none

4.3.3 Utility Training, "Efficiency 101"

Staff Summary of Ecotope Recommendation:

RTF should design and implement a conservation industry training program.

Staff Response and Recommended Action:

Development and delivery of this training is a BPA/NEEA responsibility. As requested, the RTF will provide and/or review material content for and participate in the training.

4.3.4 Coordinating an Approach to Small/Rural Utilities

Staff Summary of Ecotope Recommendation:

The RTF should work with BPA and NEEA to develop an integrated and prioritized approach to supporting small/rural utilities.

Staff Response and Recommended Action:

Staff recommends the RTF take an active role in promoting and supporting methods to facilitate an integrated and prioritized approach to bringing appropriate small and rural measures to the RTF for consideration.

Memorandum



January 25, 2012

TO: Power Committee

FROM: Northwest Energy Efficiency Alliance (NEEA)

SUBJECT: Efforts to Assist Small and/or Rural Utilities to Achieve Energy Efficiency

Introduction

The Northwest Energy Efficiency Alliance (NEEA) is a nonprofit organization working to maximize the acquisition of energy-efficient products, services and practices in the Northwest. A representative of NEEA serves on the Regional Technical Forum (RTF).

Needs of Small/Rural Utilities

NEEA recognizes that the needs of small/rural utilities often differ from those of larger utilities in urban areas. In 2010 NEEA learned from its own stakeholder perception survey that small/rural utilities face unique barriers to acquiring energy efficiency and began work to address some of those barriers.

Among other activities, NEEA:

- Hired a staffer focused on increasing interaction between NEEA and small/rural utilities so that NEEA can better understand their needs and figure out ways that NEEA can assist them.
- Dedicated resources to developing educational programs, training workshops and other events directed at small/rural utilities and related stakeholders.
- Scheduled NEEA's Efficiency Connections NW 2012 conference in Spokane to improve access this year to a major educational and networking event by small/rural utilities located east of the Cascade Range (part of regular rotation of the conference site throughout the region).
- Developed a plan to expand representation of small/rural utility viewpoints on NEEA's Regional Portfolio Advisory Committee. The RPAC advises NEEA about which energy-efficiency initiatives NEEA should pursue.

RTF Study about Technical-Support Needs of Small/Rural Utilities

NEEA appreciates the substantial effort devoted by the RTF and its staff and contractor to improve understanding in the region of the special circumstances and unique barriers to achieving energy efficiency faced by small/rural utilities. Currently, NEEA is reviewing the recommendations from the study that are directed toward NEEA and is taking those recommendations very seriously.

NEEA is committed to working with the RTF, the Bonneville Power Administration and small/rural utilities to determine the most effective, efficient and cost-effective ways that NEEA can enhance the ability of such utilities to acquire energy efficiency.

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