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Rhonda Whiting
Vice-Chair
Montana

Bill Bradbury
Oregon

Tom Karier
Washington

Phil Rockefeller
Washington

June 28, 2012

MEMORANDUM

TO: Council Members

FROM: Nick O'Neil
Gillian Charles

SUBJECT: Regional Technical Forum 2011 Annual Report

The Regional Technical Forum (RTF) recently published its annual report highlighting important milestones and accomplishments that occurred during the 2011 calendar year as well as activities currently underway in 2012. Over the past year, the RTF has boosted its work load, brought on new staff, and secured a three-year funding agreement. Additionally, it has made great strides towards maintaining consistency, credibility, and transparency with the way it goes about estimating energy efficiency measure savings.

Staff will provide an overview of the 2011 Annual Report and how that work is shaping where the RTF is headed in the future.

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Regional Technical Forum 2011 Annual Report

July 2012 Council Presentation
Boise, Idaho



"Looking back on 2011, I view it as the year the
Regional Technical Forum matured."

– Tom Eckman, RTF Chair

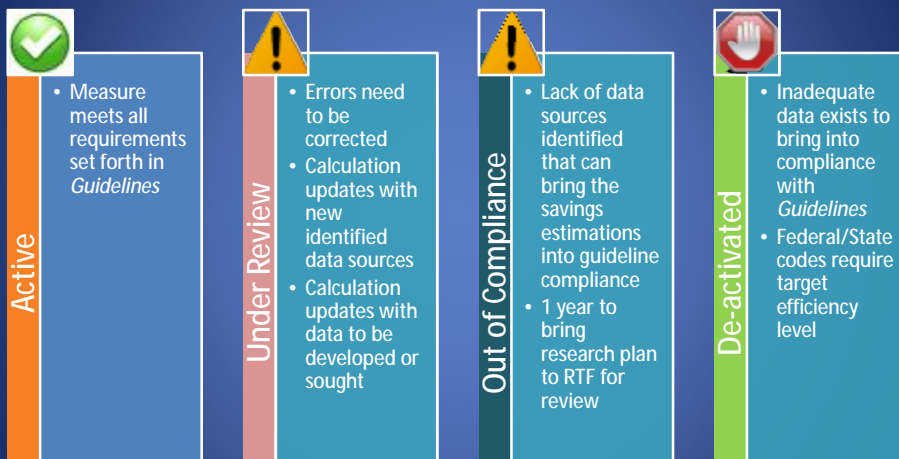


2011 In Review

- Developed operative guidelines for estimating energy savings
- Reviewed existing library of measures and protocols
- Created Policy Advisory Committee
- Secured 3-year funding agreement for \$1.5M each year 2012 – 2014
- Drafted bylaws and made revisions to RTF charter
- Expanded RTF staff team

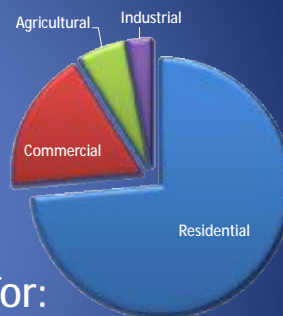


Guidelines Measure Status



2011 - Measure Review

- Acted upon over 30 measures
 - 25 Residential
 - 6 Commercial
 - 2 Agricultural
 - 1 Industrial
- Provisional standard protocols for:
 - Heat Pump Water Heaters
 - Grocersmart™ software package



Created Policy Advisory Committee

Northwest Power & Conservation Council



RTF

Scientific & Statistical Advisory

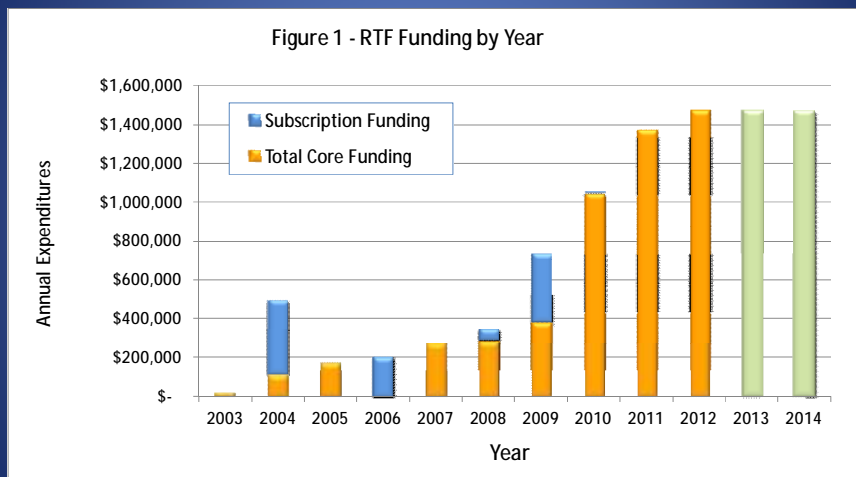
- Approx 20-30 Voting Members
- Plus Regulator Staff (non-vote)
- Appointed by Council
- Based on Technical Expertise
- Candidates Solicited Widely

RTF Policy Advisory Committee

- Stakeholder Advisory Group
- Advise on Priorities, Funding, Governance, Progress
- Appointed by Council

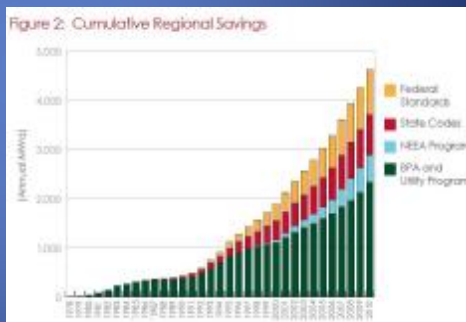


Secured 3-year Funding



Improved Processes

- Updated charter and drafted bylaws
- Increased oversight through the Operations Subcommittee
 - Approval of contracts
 - Set meeting agendas
 - Work plan adherence



- Track regional conservation savings



Added new staff & shifted workload



Ability of RTF Staff to contract & manage project volume

Ability of RTF to absorb results & make determinations



Increased Website Functionality

Regional Technical Forum

www.RTF

Measures:

- UES measure
- Standard protocols
- Supporting files

Meetings:

- Current meeting
- All meetings
- Decisions
- New! Calendar
- Work plan
- RTF Policy Advisory Committee
- Subcommittees:
- Automated CVR
- Custom Protocol and Program Impact Evaluation
- Direct Use of Gas
- End-Use Business Case
- Enr VFD

RTF Unit Energy Savings (UES) Measures and Supporting Documentation

- Click any measure title to see more details and history
- Email Kirk with any technical problems or requests
- also see: [meetings](#) | [decisions](#)

Staff only:
Find measures by document

Filter-as-you-type

Notes	Measure	Status (2)	Implementation Version	Latest RTF Decision	Implementation	Measure ID#
	Residential - Weatherization - Single Family	Active		11/12/2011	1/2/2012	45
	Residential - Weatherization - Multi-Family	Out-of-compliance		11/12/2011	8/2/2015	
	Residential - Weatherization - Manufactured Home	Active		11/12/2011	2/11/2017	25
	Residential - Smart Plug Power Strips	Under review for compliance w/ RTF guidelines		4/27/2009	1/20/2011	6
	Residential - New Construction - Multi-Residential	Under review for compliance w/ RTF guidelines			1/1/2014	73
	Residential - New Construction - Multifamily and Row	Discontinued		11/1/2011		
	Residential - New Construction - Multifamily House 2	Active		8/28/2011	3/1/2014	27 to 63
	Residential - New Construction - Multifamily House	Discontinued		11/1/2011		11 to 42
	Residential - New Construction - High Performance Manufactured Home	Provisional		5/12/2011	12/15/2014	
	Residential - New Construction - Energy Star Homes 2F - WA/SQ/MT (incl. TOC improvements)	Active		11/27/2010	11/1/2011	610-43 years

Looking Forward in 2012

- Developing guidelines for estimating measure cost, non-energy benefits, life, custom protocols, program impact evaluations
- Reviewing and updating existing measures
- Enhancing support to small and rural utilities



Measure Category/Quality Standards

Operative

- Statistical or calibrated engineering data are available and reliable to characterize both the baseline and efficient-case energy consumption for measure-affected end uses

Provisional

- RTF approves with special conditions requiring the collection of data from all or a sample of specific measure applications to improve savings estimation

Small Saver

- RTF approves based on sound engineering analysis and applicability to the region and because cost to obtain statistical data outweighs expected regional savings potential

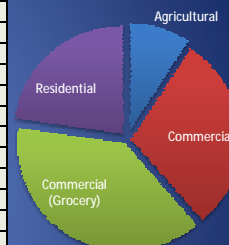
Planning

- Peer reviewed by RTF for measures with regional applicability and reasonable expectation that data will be collected to bring measure through an RTF path in the future



2012 - Measure Review

No.	Sector	Measure	No.	Sector	Measure
1		Motor Rewind	18		Autoclosers
2	Agricultural	Stock Watering Tanks	19		Compressor Head Fan Motor Retrofit to ECM
3		Variable Frequency Drives - Dairy	20		Display Case LEDs (Open Cases)
4		Variable Frequency Drives - Potato/Onion Shed	21		Display Case Motion Sensors
5		Appliances - Clothes Washers	22		Door Gasket Replacement
6		Appliances - Dishwashers	23		ECMs for Walk-ins
7		Appliances - Ice Makers	24		Floating Head Pressure Controls for Single Compressor Systems
8		Appliances - Refrigerator/Freezer Decommissioning	25		Lighting - CFLs
9		Cooking Equipment - Combination Ovens	26	Commercial (Grocery)	Lighting - T8s
10		Cooking Equipment - Convection Ovens	27		PSC Motors
11	Commercial	Cooking Equipment - Fryers	28		Rooftop Unit Supply Fan VFDs
12		Cooking Equipment - Hot Food Holding Cabinets	29		Strip Curtains (Provisional)
13		Cooking Equipment - Pre-Rinse Spray Valves	30		Vending Machine Controller
14		Cooking Equipment - Steamers	31		Visi-Cooler
15		DHW - Efficient Tanks	32		Walk-in Evaporator Fan ECMotor Controllers
16		DHW - Showerheads (Provisional)	33		Walk-in Evaporator Fan Shaded-Pole Motor Controllers
17		New Construction - Energy Smart Design Small Office	34		Walk-in/Reach-in Door Retrofit
			35		DHW - Drain Waste Heat Recovery
			36		Heating/Cooling - Air Source Heat Pump Conversions MH
			37		Heating/Cooling - Air Source Heat Pump Upgrades MH
			38		Heating/Cooling - PTCS Commissioning, Controls, & Sizing MH
			39	Residential	Heating/Cooling - PTCS Ducts Inside
			40		New Construction - Built Green Washington
			41		New Construction - Energy Star and Ecorated Homes MH
			42		New Construction - Energy Star Homes SF - WA/ID/MT
			43		New Construction - Stab Insulation
			44		Smart Plug Power Strips



Refining processes

- Finalized Guidelines for measure Cost, Non-Energy Benefits, and Life
 - In the process of consolidating Guidelines
- Working on petition form for new measures
- Creating searchable index for End Use data
- Converting old calculators to new protocols



Small/Rural Subcommittee Work

- 2012 Focus on:
 - New commercial UES measures specific to schools
 - RTF Small Saver review process
 - Updates on GSHP open loop, ag/irrigation hardware measures, T12 residential lighting, etc.
 - Checklist to ensure small/rural consideration when assessing and approving UES measures

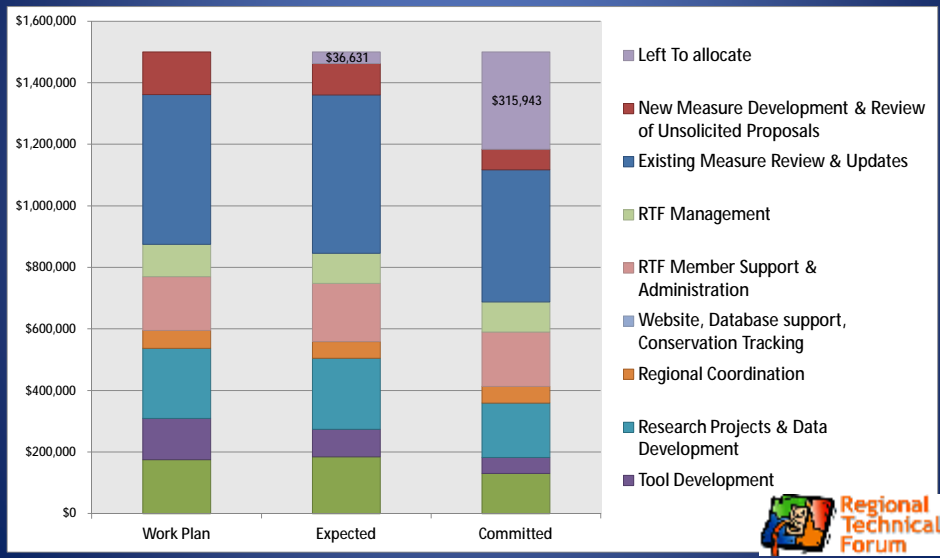


Small/Rural Checklist Process

1. RTF approves UES measure
2. Staff completes S/R UES design checklist
3. S/R subcommittee reviews
4. Post to S/R webpage and UES measure page
5. No follow up action, process ends otherwise, subcommittee follows through w/ recommended action
 - Could include directing staff, hiring a contractor, seeking RTF funds, etc.



2012 Work Plan Status



Products

- Live Website of all RTF Functions
 - Library of 90 Unit Energy Savings (UES) Measures
 - 55 Residential, 25 Commercial, 10 Ag/Industrial/Other
 - All supporting documentation
 - Library of Protocols (Savings Methodologies)
 - Guidelines for how the RTF does its work
 - Calculators, Software, Tools, Data
 - Minutes, Agendas, Subcommittee Work, Reports
 - RTF Decisions Database
- 20 Active Subcommittees
- Quarterly Newsletter Updates & Annual Report



Thank You

“The region’s show of professional, financial, and political support for sustaining the RTF made our year.”



Contact

For more information, contact:

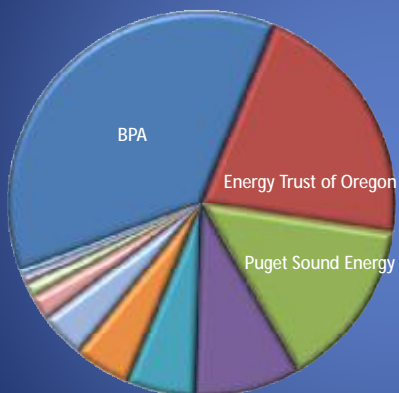
Nicholas O’Neil, P.E.
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RTF Funding in 2012

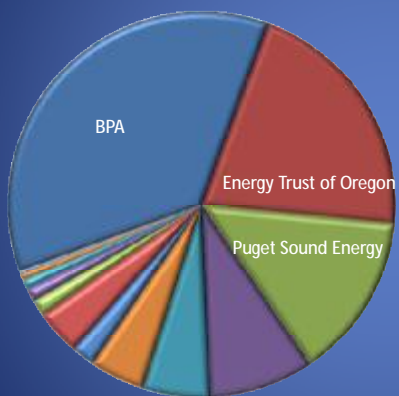


Total: \$1,500,000 Budget

- Bonneville Power Administration
- Energy Trust of Oregon
- Puget Sound Energy
- Idaho Power
- Avista
- PacifiCorp
- Seattle City Light
- Northwestern
- Tacoma Power
- Snohomish PUD
- EWEB



RTF Funding in 2011



- Bonneville Power Administration
- Energy Trust of Oregon
- Puget Sound Energy
- Idaho Power Company
- Avista
- PacifiCorp
- Northwestern Energy
- Seattle City Light
- Clark Public Utilities
- Tacoma Power
- PUD # 1 of Snohomish
- Eugene Water and Electric Board
- PUD # 1 of Cowlitz County





Regional Technical Forum 2011 Annual Report

AND 2012 PROGRESS UPDATE



**Regional
Technical
Forum**





Letter From the Council Chair

In this second annual report, the Regional Technical Forum documents the region's progress in improving energy efficiency in 2011 and continuing to move toward regional goals, including those in the Council's Sixth Northwest Power Plan.

The recent and sudden decline in natural gas prices presents both a challenge and an opportunity for electric utilities to take advantage of low electricity prices while continuing to invest in energy efficiency. As the region learned in the 1990s, periods of low wholesale electricity prices should not discourage investments in efficiency, as avoiding the risks of price volatility in the long term is a better investment for ratepayers than the short-term benefit of low prices.

Like our first annual report last year, this report highlights the RTF's accomplishments to verify and evaluate the amount and cost of energy savings. Activities of the RTF are overseen by a policy advisory committee that works with the Council to ensure that the region's utilities and the Bonneville Power Administration have the tools they need to meet the efficiency targets in the Sixth Power Plan.

Energy efficiency remains the primary component of a low-cost, low-impact, affordable, and reliable power supply.

A handwritten signature in black ink that reads "Joan Dukes". The script is fluid and cursive.

Joan Dukes, Chair
Northwest Power and Conservation Council

A Brief RTF History

The Regional Technical Forum (RTF) was chartered by the Northwest Power and Conservation Council in 1999. Its origins date back several years earlier to a directive from Congress on the need for a systematic way to value conservation savings and a report from the Governor's Comprehensive Review of the Northwest Energy System. The report recommended forming a technical group to help the region achieve its energy efficiency and renewable resource goals.

The original goals adopted by the Council for the RTF were to develop standardized protocols for verification and evaluation of energy savings and the performance of renewable resources; track and periodically review progress toward the region's conservation and renewable resource goals; and provide feedback and suggestions for improving the effectiveness of conservation and renewable resource programs and activities in the region.

Since it was formed, the RTF has been steered toward an emphasis on energy efficiency. In 2012, the RTF recommended revisions to the charter to conform to the focus on energy efficiency. The new charter, was approved by the RTF and the Policy Advisory Committee, and adopted by the Council in June 2012.



Letter From the RTF Chair

Looking back on 2011, I view it as the year the Regional Technical Forum matured. We now have a stable three-year funding commitment from our regional sponsors that makes it possible to develop multiyear work plans and hire additional staff. In recognition of the expanded role envisioned for the RTF in the region, we also developed revisions to our Charter and a new set of bylaws for the Council and RTF Policy Advisory Committee to consider.

Most importantly, the RTF adopted its first set of detailed guidelines for estimating energy savings. These guidelines codified over a decade of RTF decision-making. They ensure that the RTF's savings estimates and estimation protocols are reviewed in a consistent manner and that our decisions are fully documented. In addition, these guidelines improve the transparency of our work for those seeking a clear explanation of how we peg energy saving and what is required to be "RTF approved."

Once the guidelines were adopted in June 2011, the RTF began reviewing its existing portfolio of energy savings estimates and protocols for compliance with the guidelines. We expect it will take through 2013 to work through the backlog of nearly 100 measures and numerous protocols. When this work is complete, every measure and protocol, whether existing or newly proposed to the RTF, will have been treated to a consistent examination based on the guidelines we've set down.

I would like to thank members of the RTF for their commitment to producing peer-reviewed savings estimates and protocols that the region's power system can trust. I would also like to thank the many RTF corresponding members and numerous other parties in the region for volunteering their time and professional expertise. Without your contributions, our decisions would be less informed and critically reviewed.

The region's show of professional, financial, and political support for sustaining the RTF made our year.

A handwritten signature in black ink that reads "Thomas Eckman". The signature is fluid and cursive.

Tom Eckman, Chair
Regional Technical Forum



Introduction

The role of energy efficiency in the region's resource portfolio has grown dramatically over the dozen years since the RTF was chartered. Currently, the Northwest is expected to add over 200 average megawatts (aMW) of conservation every year, about the equivalent of a gas-fired power plant. With this push for energy efficiency, the region is relying on the RTF more than ever to assure unbiased estimates of savings, to evaluate and validate new measures, as well as keep track of changes in standards and technologies that affect current programs.

In general, the RTF evaluates and determines the savings gained through conservation measures. From residential weatherization to commercial lighting, the RTF's expertise and complex analyses are crucial to helping the region meet the energy efficiency targets in the Council's Sixth Power Plan and assuring that utilities

are prepared for an adequate future power supply.

The RTF contributes significantly to the region's energy efficiency ethic and to its status as a national leader in efficiency. In addition to carrying out a full slate of measure reviews and evaluations, the RTF has given considerable attention over the past two years to formalizing and cataloguing the methods by which it determines measure attributes and savings. The RTF and its practices have become more consistent, transparent, and accessible as a result.

Over the past year, the RTF has boosted its work load and brought on new staff. A three-year funding agreement finalized in 2011 added stability, and a newly chartered Policy Advisory Committee (PAC) signaled high-level regional support for the RTF mission. With a recap of 2011 and an update on 2012, this report highlights the RTF's most recent activities.

2011 Accomplishments

The RTF met regularly in 2011, augmenting its monthly meetings with webinars when additional time was needed. During the spring of 2011, the RTF held several webinars dedicated to the draft guidelines for developing

and maintaining approved energy efficiency measure savings. This volume of work was a major undertaking that began in 2010 to formalize and document the RTF's procedures.

Table 1: 2011 Work Plan

Deemed Measures Review and Standardized Protocols
Guidelines for Measure Costs and Benefits
Provide Direction for Measure Life
Identify Measures and Standardized Protocols Applicable to Small Rural Utilities
RTF Website Refinements
PTR and EE Central Support
Regional Conservation Progress Tracking
Measure and Protocol Reviews
Information Technology (IT) Standardized Protocol Review and Adoption
RTF Management and Member, Meeting, and Project Support
Technical Contract Management
Revise RTF Charter, Establish By-laws, Document Procedures

Measure reviews are continuing in 2012 and dozens of measures have now been categorized according to the guidelines. While the process may eliminate some measures, it also ensures the savings for those that remain are valid and verifiable; *see box below for more information.*

Assessing Existing UES Measures

Reviewers are currently working through the library of Unit Energy Savings (UES) measures the RTF has adopted. Under the new guidelines, existing measures must meet standards of reliability in order to retain designation as an RTF-approved UES measure.

The RTF has placed contracts with several firms to conduct the measure reviews. The work is being done in phases, with an initial review of each measure followed by a second phase to bring measures into compliance. The RTF expects the review process to be complete in 2013.

More Measures on the Books

In addition to the guidelines compliance reviews, the RTF considered and adopted or revised savings for a number of proposed measures during 2011. Proposals came before the RTF from sources that included the Bonneville Power Administration (BPA), Northwest Energy Efficiency Alliance (NEEA), and several

vendors. Among its major decisions, the RTF approved a standard protocol to determine savings for a suite of measures in grocery stores and approved, as a provisional measure, heat pump water heaters, a relatively new technology that holds promise for considerable savings in the residential sector.



The following table provides a list of all measures the RTF acted on in 2011.

Table 2: Measures on 2011 Agendas

Sector	Measure
Agricultural	Irrigation Hardware
Agricultural	Motors
Commercial	Efficient Computers
Commercial	Grocery Refrigeration Systems
Commercial	Network Computer Power Management
Commercial	Small Commercial Weatherization
Commercial	Smart Plug Power Strips
Commercial	Street Lighting
Industrial	Motors
Residential	Appliances – Refrigerators
Residential	Appliances – Televisions
Residential	Heat Pump Water Heaters
Residential	Showerheads
Residential	Ground Source Heat Pump Specifications
Residential	Heating/Cooling – Air Source Heat Pump Conversions SF
Residential	Heating/Cooling - Ductless Heat Pump MF
Residential	Heating/Cooling - Electronic Thermostats
Residential	Heating/Cooling - Ground Source Heat Pump Upgrades
Residential	Heating/Cooling - PTCS Duct Sealing SF
Residential	Heating/Cooling - Room Air Conditioners
Residential	Lighting – CFLs
Residential	Lighting - LED Holiday Strings
Residential	Manufactured Home SEEM Calibration
Residential	New Construction - Energy Star Homes SF - ID/MT BOP2
Residential	New Construction - Energy Star Homes SF – Oregon
Residential	New Construction - Energy Star Homes SF - WA/ID/MT DHP TCO
Residential	New Construction - Montana House
Residential	New Construction - Montana House 2
Residential	New Construction - Multifamily Low Rise
Residential	PTCS Specifications
Residential	Weatherization - Manufactured Home
Residential	Weatherization - Multi-Family
Residential	Weatherization - Single Family
Residential	Weatherization Specifications

Support from the Subcommittees

The RTF relies heavily on subcommittees to review work products and provide technical guidance on measure analysis and development. The number of subcommittees fluctuates, depending on the demands. In 2011, over a dozen subcommittees met periodically to handle tasks that ranged from offering feedback on measure savings and analytical assumptions to reviewing proposed research plans.

Currently, the RTF has 20 active subcommittees:

- Automated Conservation Voltage Reduction
- Custom Protocol and Program Impact Evaluation
- Direct Use of Gas
- End-Use Business Case
- Fan Variable Frequency Drive (VFD)
- Grocery Refrigeration
- Ground Source Heat Pump
- Heat Pump Water Heater Evaluation
- Information Technology (IT) Sector
- Lighting
- Measure Costs and Benefits
- Measure Life
- Performance Tested Comfort Systems (PTCS)
- Pump Variable Frequency Drive (VFD)
- Residential Weatherization and Ventilation
- Rooftop Unit Work Group
- Standardized Measurement and Verification (M&V) and UES Measure Protocols
- Small/Rural Utilities Efficiency Measures
- Variable Capacity Heat Pump
- Whole Building M&V

Synching up the Charter

The RTF took another step forward in updating and cataloging its functions in 2011. Working with Council legal staff, the RTF recommended revisions to its charter and drafted bylaws for the first time. The charter was originally adopted in 1999 and set up the RTF as an official advisory committee of the Council. But over the years, it had become out of date and did not adequately reflect the RTF's current role.

The RTF approved the revised charter and draft bylaws in December 2011 and forwarded them to the Council with a recommendation for adoption. The RTF Policy Advisory Committee (PAC) reviewed the revised charter and draft bylaws and submitted its own recommendation to the Council. The Council adopted the revised charter and bylaws in June 2012.

The revised charter reflects the RTF and PAC decision to focus on energy efficiency, deleting references to renewable resource tracking and development. The bylaws set out rules governing membership, officers, and general procedures for the RTF. Both documents bolster the RTF underpinnings and bring transparency to the RTF's mission and purpose.

More Efficiency for Operations

A subcommittee formed in 2010 has taken on responsibility to keep the RTF operating smoothly, the work flowing efficiently, and the operational decisions transparent. The Operations Subcommittee plans and organizes the RTF meeting agendas, keeps tabs on how subcommittee work is progressing, and anticipates when measures and other items will be ready to present to the RTF for formal action. In addition, the Operations Subcommittee approves contract details on behalf of the RTF and carries out other routine business.

During 2011, the RTF also added a new staff member to assist in organization and management of meetings and activities, as well as lend technical support where needed. Mark Kendall joined the staff in early 2011, bringing decades of experience with energy efficiency programs.

A renewed and enhanced website provides a ready resource for the region to track RTF activities and access a list of approved measures. The website underwent a major overhaul completed in 2011 that added increased functions and capability. In addition to offering more materials online, the website is easier to navigate and provides simplified user access to RTF and subcommittee work products. For example, staff added a page that documents the decisions made at each RTF meeting, linking each decision with the measure it affects. For each measure, staff notes the current status in terms of compliance with the guidelines and a description of what the status means. Staff continues to improve the RTF website in response to suggestions and requests from the users.

Pact for a New Policy Advisory Committee

The Council added a major element to the RTF's governance structure in April 2011. Following up on a recommendation from the Northwest Energy Efficiency Taskforce (NEET), the Council chartered an advisory committee to address policy issues that arise from items that come before the RTF. In creating the RTF PAC, the Council is particularly interested in assuring the RTF meets the needs of those who rely on its work and that it remains an independent technical body.

The PAC carries out several broadly defined tasks, including identifying regional priorities and reviewing RTF progress toward them; fostering appropriate use and acceptance of RTF data and decisions; securing the resources needed for the RTF's technical work; and providing consensus recommendations on policy matters related to the scope of the RTF's work.

The PAC met for the first time in July 2011 and held two additional meetings during the year. Among the highlights, the PAC agreed to fund the RTF's multiyear work plan at the rate of \$1.5 million annually for each of the next three years, 2012-2014. A stable funding

commitment has allowed the RTF to boost its level of activity and plan for the future. The PAC also reviewed the RTF's current work plan, charter and bylaws, and the guidelines for estimating savings.

The Council is counting on the PAC to help shape the RTF's annual work plan and budget to meet priorities for promoting energy efficiency measures and technologies. While the Council maintains full authority over the RTF, regional collaboration via the PAC will be valuable for achieving the greatest benefits and tracking the most pressing regional needs, as well as securing commitments to fund the RTF budget.

Council member Tom Karier and Jim West of Snohomish PUD currently co-chair the 23-member PAC. A list of the current PAC members is available on the RTF website.

Regional Conservation Exceeds Target

The RTF surveys the region's utilities every year on their conservation achievements. According to the 2010 results, shown in Figure 1, the Northwest blew past the 200 aMW annual target set in the Council's Sixth Power Plan and accrued 254 aMW of conservation savings. That is the largest one-year gain since a region-wide energy efficiency effort began over 30 years ago, and it continues a six-year upward trend that dipped only slightly in 2009.

Savings come from residential, commercial, industrial, and agricultural electricity consumers. While the residential sector leads the pack, piling up 28 percent of the 2010 savings, the commercial and industrial sectors are experiencing the most growth.

The survey also shows that utilities in the region bolstered their investments in conservation in 2010. Utilities spent about \$360 million on conservation in 2010, which is just over 3 percent of total electricity sales revenues. The average cost of a kilowatt-hour (kWh) of efficiency savings was 1.7 cents compared with the average cost of power from a new generating plant of nearly 10 cents per kWh.

Figure 1: Plan's Savings Were Exceeded in Every Year

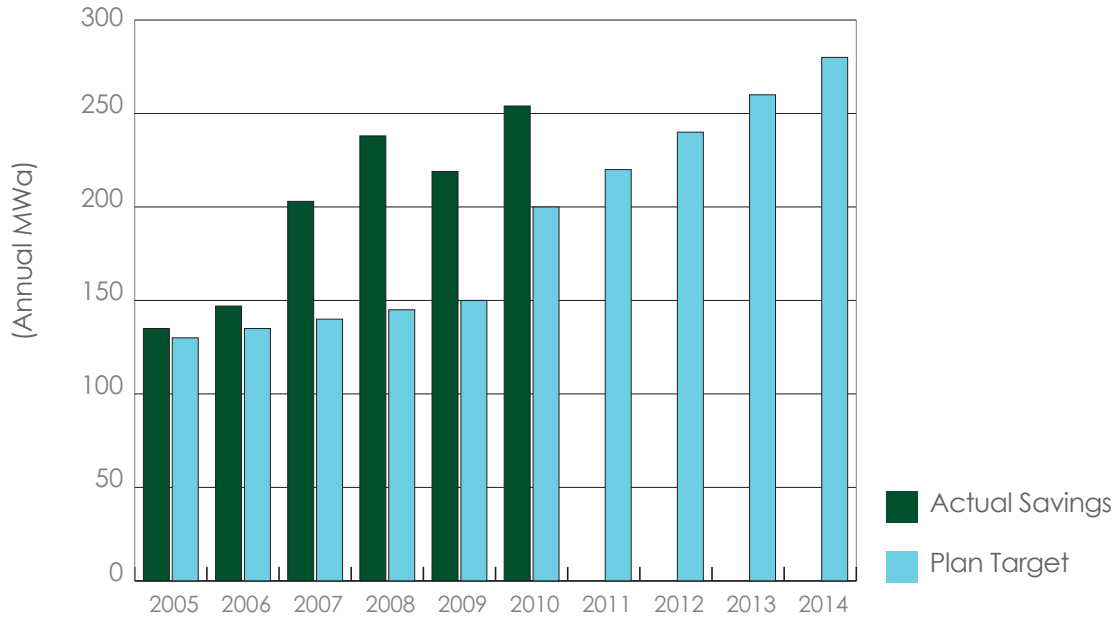
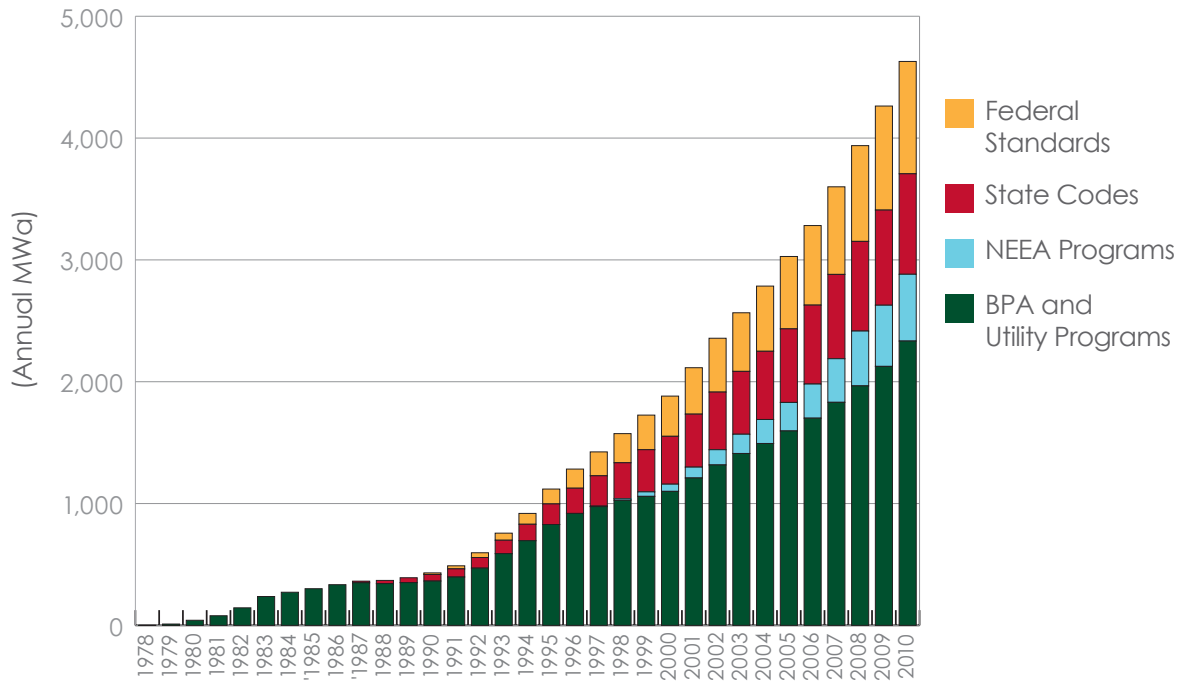


Figure 2: Cumulative Regional Savings



Financial Information

The RTF started 2011 with a budget of just over \$1 million and ended the year with unallocated funds that were credited toward 2012. Table 3 shows the 2011 budget divided into general categories of expenditures.

Table 3: 2011 Budget Categories and Allocations

Category	2011 Budget	Percent
Standardization of Technical Analysis & Existing Measure Review	\$660,000	47%
Review of New Measures, Specific Technologies, Identified High-Priority Measures & Unsolicited Proposals	\$300,000	21%
Develop plan, funding and data warehouse for end-use load research	\$100,000	7%
Website, Database support, Conservation Tracking	\$30,000	2%
RTF Member Support, Contract Staff & Administration	\$310,000	22%
Total	\$1,400,000*	100%

*Actual budget was \$1,373,600 based on funding received.

Funds the RTF received in 2011 from its sponsors are presented in Table 4. For its final 2011 work plan, the RTF projected a budget of \$1.4 million. Based on actual funding received, the final budget for 2011 was \$1,373,600. By December 31, 2011, the RTF had committed \$1,137,747 of its budget in contracts, leaving \$235,852 of the 2011 budget unobligated. The unobligated funds became available for reallocation as a credit towards the 2012 funding commitments.

Table 4: Summary of 2011 Funding and Allocations

2011 Funding	
Projected Budget	\$1,400,000
Funding Received	\$1,373,600
Actual Budget	\$1,373,600
Obligated Funds by 12/31/11	\$1,137,747
Unobligated Funds by 12/31/11	\$235,852

The PAC secured stable funding commitments at the rate of \$1.5 million annually for each of the next three years.

Table 5: Budget Projections for 2012 – 2014

CY 2012 Budget	CY 2013 Budget	CY 2014 Budget
\$1,500,000*	\$1,500,000	\$1,500,000

*Actual budget is \$1,473,000 based on funding received.

RTF Sponsors

The following organizations provided funding (sponsorship) for RTF activities in 2011:

Avista Utilities	Northwestern Energy
Bonneville Power Administration	PacifiCorp
Clark County PUD	Puget Sound Energy
Cowlitz PUD	Seattle City Light
Energy Trust of Oregon	Snohomish County PUD
Eugene Water and Electric Board	Tacoma Power
Idaho Power	



Moving Ahead in 2012

NWEC Recognition

2012 began on a high note with a commendation from the Northwest Energy Coalition. In early March, the NWEC presented RTF members with a “Resolution of Commendation” for their leadership for a clean and affordable energy future. The resolution acknowledged the members’ crucial role in verifying the energy savings on which the Northwest relies.

The RTF moved into 2012 with an ambitious work plan and a \$1.5 million budget. A major category in the work plan is the review and update of existing measures for which the RTF has established UES or approved protocols for calculating savings.

Just over one-third of the RTF’s budget has been allocated to new and existing measure reviews, and several consultants/contractors are working to develop recommendations. The budget categories and projected expenditures are listed in Table 5.

Table 5: 2012 Budget Categories and Allocations

Category	2012 Budget	Percent
Existing Measure Review and Updates	\$487,000	32%
New Measure Development and Review of Unsolicited Proposals	\$138,000	9%
Standardization of Technical Analysis	\$134,000	12%
Tool Development	\$30,000	9%
Research Projects and Data Development	\$228,000	15%
Regional Coordination	\$58,000	4%
Website, Database Support, Conservation Tracking	Council In-kind Contribution	0%
RTF Member Support and Administration	\$174,000	12%
RTF Management	\$105,000	7%
Total	\$1,500,000	100%

The RTF has wrapped up a major multiyear effort to establish a method for estimating energy savings for commercial rooftop heating, ventilation, and air conditioning (HVAC) units. In March 2012, the RTF adopted its first guidelines-compliant “standard protocol” for rooftop units, which provides a standard procedure to collect and analyze data when measure savings are known to vary by site.

A stable funding commitment has allowed the Council to augment its staff with a full-time RTF manager. Nick O’Neil was hired to fill the post in April 2012, adding his experience as a senior planning engineer at the Energy Trust of Oregon and an RTF member since 2010 to the staff.

The RTF is continuing to catalog its procedures. In March 2012, the RTF adopted guidelines for developing and maintaining estimates of measure costs and benefits. The guidelines provide a systematic approach to

developing estimates and documenting the data sources. It is a companion piece to the guidelines for savings estimation adopted in 2011.

In May 2012, the RTF adopted guidelines for capturing the effective useful life (EUL) for energy efficiency measures. The EUL is the estimated number of years a measure will deliver savings and it is an input to the ProCost model, which the RTF uses to calculate a benefit-cost ratio for a measure. The EUL is a major variable in determining cost-effectiveness.

RTF members are appointed for three year terms. The Council is expected to announce a new solicitation in June 2012 to fill the 20 to 30 voting slots that are up for reappointment at the end of the year. Current members and new applicants will submit resumes for the Council’s consideration in making selections for the upcoming term (2013-2015).



Attention to Unique Circumstances

The RTF is working to assist small and rural utilities in the region to achieve their energy efficiency goals. In 2011, the RTF conducted a survey to determine what technical assistance it might offer these utilities to tailor energy efficiency programs to the unique circumstances in their service territories.

Building on an RTF report on the survey completed in early 2012, the RTF tasked its Small/Rural Subcommittee with developing a prioritized work plan that addresses small and rural utility technical issues that directly relate to the RTF's charter. The subcommittee is

coordinating its efforts with others who are addressing similar issues, including BPA and NEEA.

Work is under way to develop a business case for conducting a comprehensive regional end-use and load shape data collection study. The RTF has contracted with KEMA to prepare the business case, which will involve in-depth interviews and assessment of the need for such a study and options for how it could be conducted, as well as the risks of no action. KEMA will consult with the RTF throughout the project and deliver a final report in the fall 2012.

2011/2012 Regional Technical Forum Members

Voting Members

Voting Members	Affiliation
Brad Acker	University of Idaho, Integrated Design Lab
Rich Arneson	Tacoma Power
Mike Bailey	ECOVA
Andie Baker,	Research Into Action
Eric Brateng	Puget Sound Energy
Jeff Brooks	Independent
Tom Eckman	Northwest Power and Conservation Council
Ryan Fedie	Bonneville Power Administration
Lauren Gage	Bonneville Power Administration
Charles Grist	Northwest Power and Conservation Council
Adam Hadley	Hadley Energy Engineering
Jeff Harris	Northwest Energy Efficiency Alliance
Jay Himlie	Independent
Erin Hope	Bonneville Power Administration
Mark Jerome	KAM Energy
Don Jones, Jr.	PacifiCorp
Ken Keating	Independent
Bill Koran	NorthWrite
Jim Lazar	Microdesign Northwest
Tom Lienhard	Avista
Jim Maunder	Ravalli Electric Cooperative
Nick O'Neil	Northwest Power and Conservation Council
Graham Parker	Pacific Northwest National Laboratory
Brady Peeks	Northwest Energy Works
Travis Reeder	Eugene Water and Electric Board
Kerstin Rock	PECI
Eugene Rosolie	Cowlitz PUD
Kevin Smit	EES Consulting
Jill Steiner	Cadmus
David Thompson	Avista

RTF Staff

Tom Eckman, Chair

Charlie Grist, Vice Chair

Nick O'Neil, RTF Manager

Adam Hadley, RTF Staff

Mark Kendall, RTF Staff

Gillian Charles, RTF Management

Looking back at a year full of achievements and looking forward to another, we are reminded of the value the RTF brings to the region. It is a prime example of the Northwest's leadership in energy efficiency.



Regional Technical Forum 2011 Annual Report

July 2012 Council Presentation
Boise, Idaho



“Looking back on 2011, I view it as the year the
Regional Technical Forum matured.”

– Tom Eckman, RTF Chair



2011 In Review

- Developed operative guidelines for estimating energy savings
- Reviewed existing library of measures and protocols
- Created Policy Advisory Committee
- Secured 3-year funding agreement for \$1.5M each year 2012 – 2014
- Drafted bylaws and made revisions to RTF charter
- Expanded RTF staff team

Guidelines Measure Status



Active

- Measure meets all requirements set forth in *Guidelines*



Under Review

- Errors need to be corrected
- Calculation updates with new identified data sources
- Calculation updates with data to be developed or sought



Out of Compliance

- Lack of data sources identified that can bring the savings estimations into guideline compliance
- 1 year to bring research plan to RTF for review

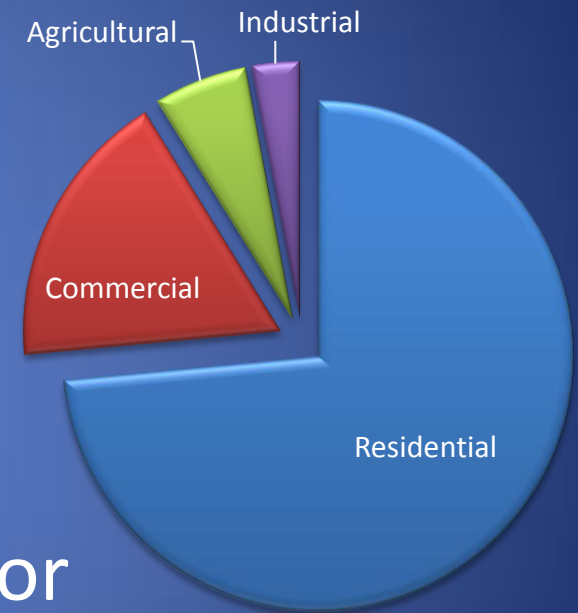


De-activated

- Inadequate data exists to bring into compliance with *Guidelines*
- Federal/State codes require target efficiency level

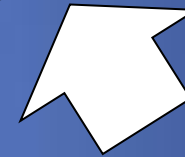
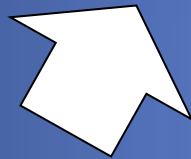
2011 - Measure Review

- Acted upon over 30 measures
 - 25 Residential
 - 6 Commercial
 - 2 Agricultural
 - 1 Industrial
- Provisional standard protocols for Grocersmart™ software package



Created Policy Advisory Committee

Northwest Power &
Conservation Council



RTF

Scientific & Statistical Advisory

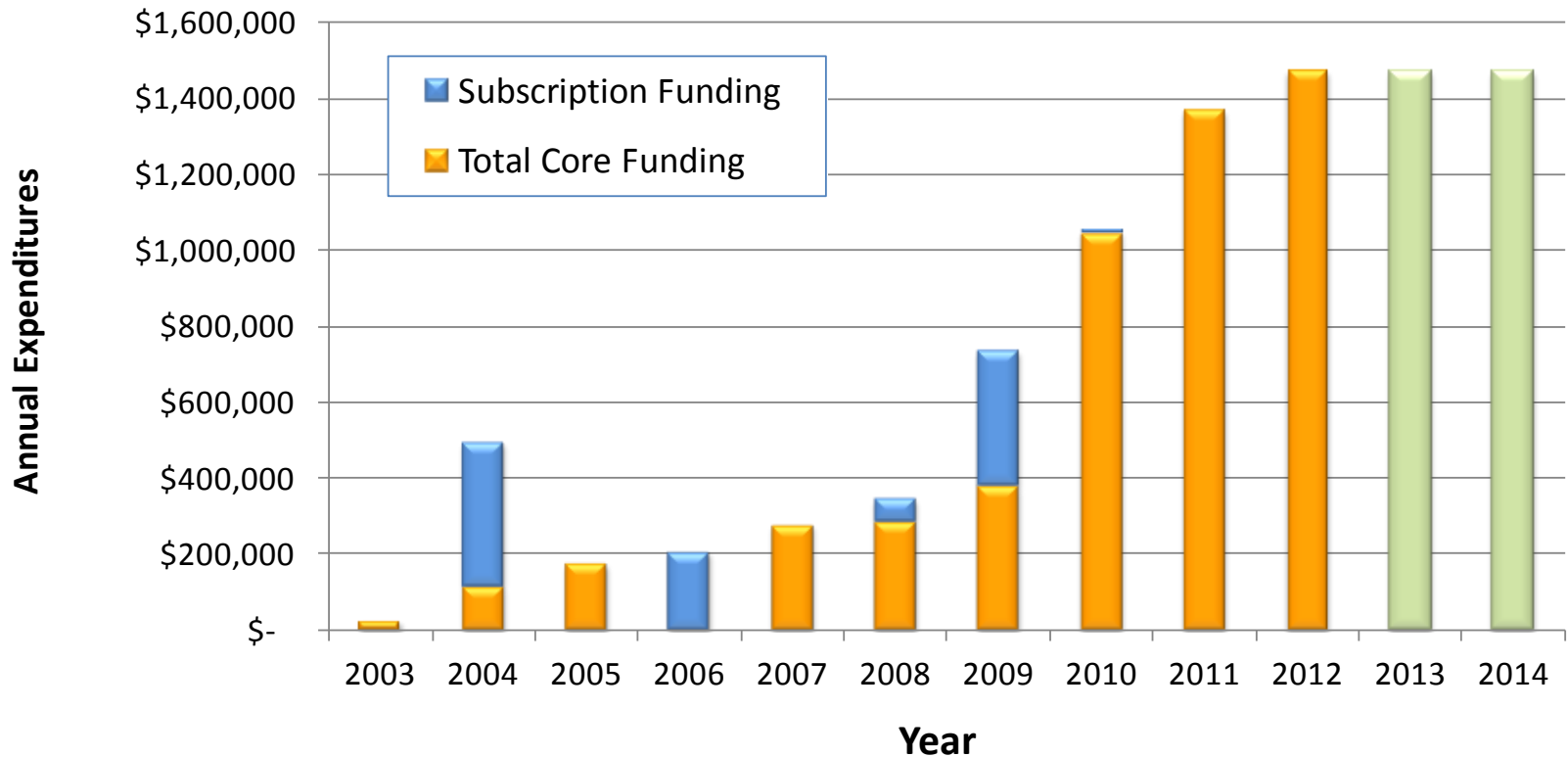
- Approx 20-30 Voting Members
- Plus Regulator Staff (non-vote)
- Appointed by Council
- Based on Technical Expertise
- Candidates Solicited Widely

RTF Policy Advisory Committee

- Stakeholder Advisory Group
- Advise on Priorities, Funding, Governance, Progress
- Appointed by Council

Secured 3-year Funding

Figure 1 - RTF Funding by Year



Improved Processes

- Updated charter and drafted bylaws
- Increased oversight through the Operations Subcommittee
 - Approval of contracts
 - Set meeting agendas
 - Work plan adherence

Added new staff & shifted workload



Ability of RTF Staff to contract & manage project volume

Ability of RTF to absorb results & make determinations

Increased Website Functionality



Measures:

- UES measures
- Standard protocols
- Supporting files

Meetings:

- Current meeting
- All meetings
- Decisions
- New!** Calendar

Work plan

RTF Policy Advisory Committee

Subcommittees:

- Automated CVR
- Custom Protocol and Program Impact Evaluation
- Direct Use of Gas
- End-Use Business Case
- Fan VFD

RTF Unit Energy Savings (UES) Measures and Supporting Documentation

- Click any measure title to see more details and history
- Email [Eric](mailto:eric@rtf.org) with any technical problems or requests
- also see: [meetings](#) | [decisions](#)

Staff only:

Filter-as-you-type

Sector	Measure	Status (?)	UploadDate	Version	LatestRTFDecision	SunsetDate	MeasureLife
Residential	Weatherization - Single Family	Active			3/13/2012	5/2/2016	45
Residential	Weatherization - Multi-Family	Out-of-compliance			11/1/2011	8/2/2015	
Residential	Weatherization - Manufactured Home	Active			3/13/2012	2/13/2017	25
Residential	Smart Plug Power Strips	Under review for compliance w/ RTF Guidelines			4/7/2009	1/30/2013	4
Residential	New Construction - Slab Insulation	Under review for compliance w/ RTF Guidelines				3/1/2014	70
Residential	New Construction - Multifamily Low Rise	Deactivated			3/1/2011		
Residential	New Construction - Montana House 2	Active			6/28/2011	7/1/2014	27 to 63
Residential	New Construction - Montana House	Deactivated			2/1/2011		22 to 40
Residential	New Construction - High Performance Manufactured Home	Provisional			5/15/2012	12/31/2014	
Residential	New Construction - Energy Star Homes SF - WA/ID/MT DHP TCO (provisional)	Active			12/7/2010	12/7/2013	6 to 45 years



Looking Forward in 2012

- Developing guidelines for estimating measure cost, non-energy benefits, life, custom protocols, program impact evaluations
- Reviewing and updating existing measures
- Enhancing support to small and rural utilities
- Hiring one Full Time Employee to help manage RTF (i.e. Me)

Measure Category/Quality Standards

Operative

- Statistical or calibrated engineering data are available and reliable to characterize both the baseline and efficient-case energy consumption for measure-affected end uses

Provisional

- RTF approves with special conditions requiring the collection of data from all or a sample of specific measure applications to improve savings estimation

Small Saver

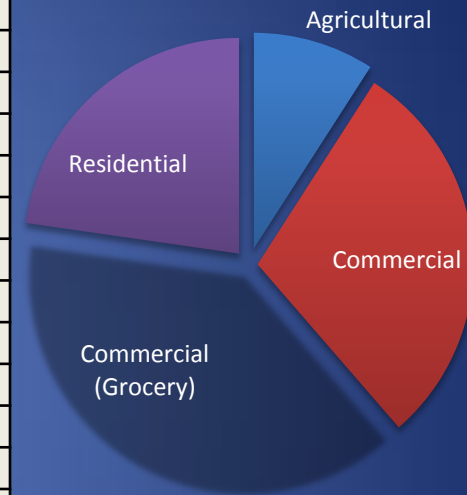
- RTF approves based on sound engineering analysis and applicability to the region and because cost to obtain statistical data outweighs expected regional savings potential

Planning

- Peer reviewed by RTF for measures with regional applicability and reasonable expectation that data will be collected to bring measure through an RTF path in the future

2012 - Measure Review

No.	Sector	Measure	No.	Sector	Measure
1	Agricultural	Motor Rewind	18	Commercial (Grocery)	Autoclosers
2		Stock Watering Tanks	19		Compressor Head Fan Motor Retrofit to ECM
3		Variable Frequency Drives – Dairy	20		Display Case LEDs (Open Cases)
4		Variable Frequency Drives - Potato/Onion Shed	21		Display Case Motion Sensors
5	Commercial	Appliances - Clothes Washers	22		Door Gasket Replacement
6		Appliances – Dishwashers	23		ECMs for Walk-ins
7		Appliances - Ice Makers	24		Floating Head Pressure Controls for Single Compressor Systems
8		Appliances - Refrigerator/Freezer Decommissioning	25		Lighting - CFLs
9		Cooking Equipment - Combination Ovens	26		Lighting - T8s
10		Cooking Equipment - Convection Ovens	27		PSC Motors
11		Cooking Equipment – Fryers	28		Rooftop Unit Supply Fan VFDs
12		Cooking Equipment - Hot Food Holding Cabinets	29		Strip Curtains (Provisional)
13		Cooking Equipment - Pre-Rinse Spray Valves	30		Vending Machine Controller
14		Cooking Equipment - Steamers	31		Visi-Cooler
15		DHW - Efficient Tanks	32		Walk-in Evaporator Fan ECMotor Controllers
16		DHW - Showerheads (Provisional)	33		Walk-in Evaporator Fan Shaded-Pole Motor Controllers
17		New Construction - Energy Smart Design Small Office	34		Walk-in/Reach-in Door Retrofit
		35	Residential	DHW - Drain Waste Heat Recovery	
		36		Heating/Cooling - Air Source Heat Pump Conversions MH	
		37		Heating/Cooling - Air Source Heat Pump Upgrades MH	
		38		Heating/Cooling - PTCS Commissioning, Controls, & Sizing MH	
		39		Heating/Cooling - PTCS Ducts Inside	
		40		New Construction - Built Green Washington	
		41		New Construction - Energy Star and Ecorated Homes MH	
		42		New Construction - Energy Star Homes SF - WA/ID/MT	
		43		New Construction - Slab Insulation	
		44		Smart Plug Power Strips	



Refining processes

- Finalized Guidelines for measure Cost, Non-Energy Benefits, and Life
 - In the process of consolidating Guidelines
- Working on petition form for new measures
- Creating searchable index for End Use data
- Converting old calculators to new protocols

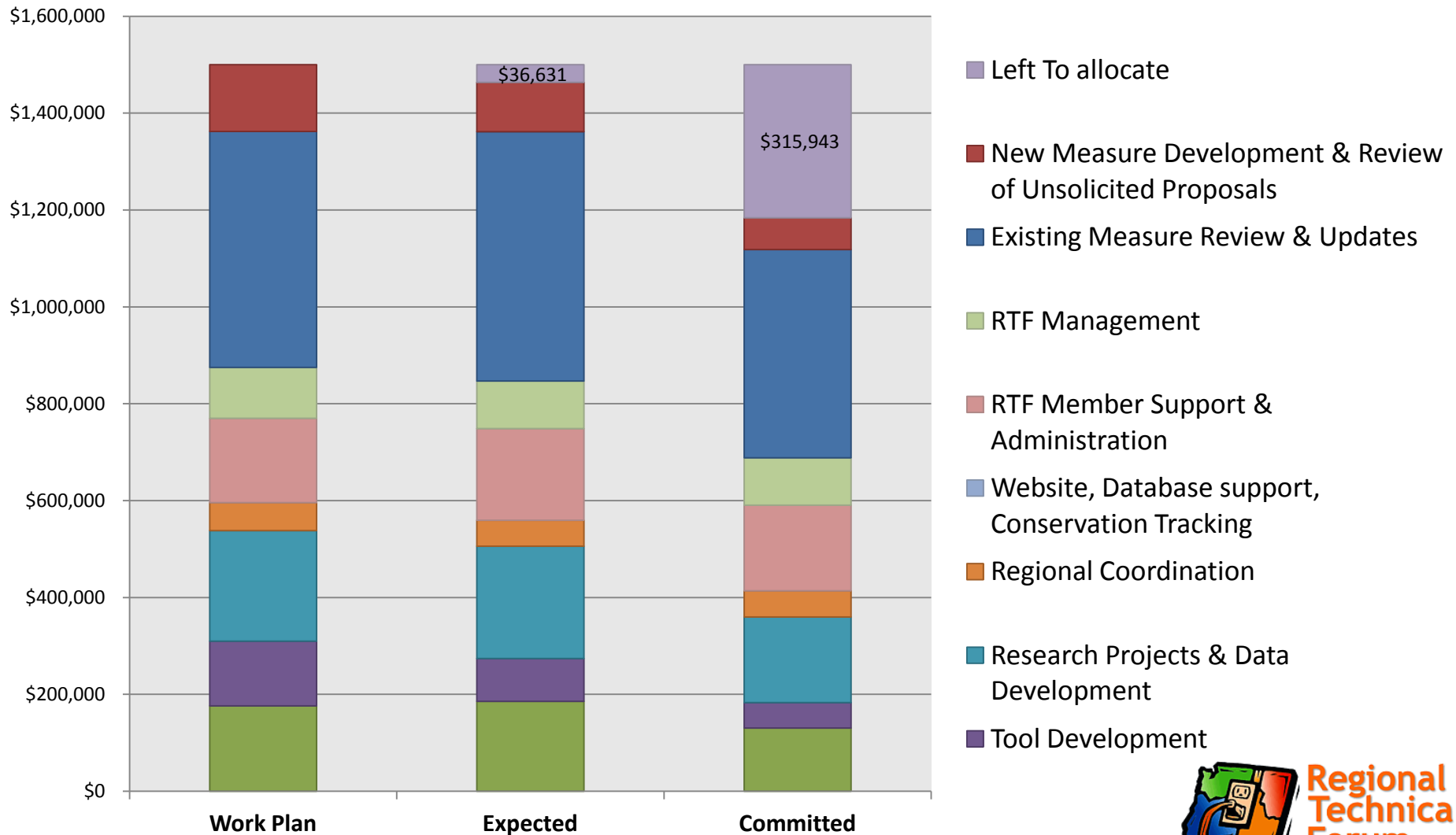
Small/Rural Subcommittee Work

- 2012 Focus on:
 - New commercial UES measures specific to schools
 - RTF Small Saver review process
 - Updates on GSHP open loop, ag/irrigation hardware measures, T12 residential lighting, etc.
 - Checklist to ensure small/rural consideration when assessing and approving UES measures

Small/Rural Checklist Process

1. RTF approves UES measure
2. Staff completes S/R UES design checklist
3. S/R subcommittee reviews
4. Post to S/R webpage and UES measure page
5. No follow up action, process ends otherwise, subcommittee follows through w/ recommended action
 - Could include directing staff, hiring a contractor, seeking RTF funds, etc.

2012 Work Plan Status



Products

- Live Website of all RTF Functions
 - Library of 90 Unit Energy Savings (UES) Measures
 - 55 Residential, 25 Commercial, 10 Ag/Industrial/Other
 - All supporting documentation
 - Library of Protocols (Savings Methodologies)
 - Guidelines for how the RTF does its work
 - Calculators, Software, Tools, Data
 - Minutes, Agendas, Subcommittee Work, Reports
 - RTF Decisions Database
- 20 Active Subcommittees
- Quarterly Newsletter Updates & Annual Report

Thank You

“The region’s show of professional, financial, and political support for sustaining the RTF made our year.”



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