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March 25, 2010

MEMORANDUM

TO: Power Committee

FROM: Terry Morlan

SUBJECT: Monitoring the Sixth Power Plan and the Mid-Term Conservation Review

At the Council's retreat, members expressed interest in seeing the plan for the mid-term review of conservation acquisition. This memorandum and discussion at the Power Committee in April will help inform the Power Committee of staff's proposed approach.

It long has been the Council's practice to monitor its current power plans relative to changing conditions that might significantly affect the plan, and to evaluate the region's progress in implementing the plan. For the Fifth Power Plan, monitoring was formalized in the action plan by calling for a Biennial Monitoring Report. That report was completed in January 2007 and provides a good example of the conditions and progress that would be examined in a monitoring report for the Sixth Power Plan.¹ The biennial monitoring plan is included in the monitoring section of the action plan and will be further described below.

The Sixth Power Plan added a special mid-term review of conservation accomplishments. This is included in the action plan as action CONS-16 and is envisioned by staff as part of the Biennial Monitoring Report. The mid-term review would evaluate efficiency acquisition progress compared to the targets in the plan and the strategic plan developed in response to action CONS-14.

For the monitoring report staff would propose using an outline and format similar to the 2007 report. The table of contents from the 2007 Biennial Monitoring Report is attached. It consisted of an eight page summary of findings followed by several appendices that provided detailed reports in specific areas of review and progress. The summary describes the major findings and recommendations of the plan as a context for the review. Then a summary of developments relative to the assumptions and forecasts is presented followed by a summary of implementation

¹ Northwest Power and Conservation Council. Biennial Monitoring Report of the Fifth Power Plan. January 5, 2007. Document 2007-4. <http://www.nwcouncil.org/library/2007/2007-4.htm> .

progress and policy developments. Finally, the summary provides a brief assessment of the implications of the findings for the power plan.

A review of the attached table of contents, or reference to the 2007 report, will give Council members a good idea of the key forecasts and assumptions to be addressed and the implementation progress to be assessed. Key forecasts are economic growth, fuel and electricity prices, demand for electricity, and generating plant characteristics and costs. Implementation progress includes generating plant additions, efficiency acquisition, and transmission additions. The report also would describe progress in new technology areas such as diversified renewable generation, energy storage, demand response, smart-grid, carbon sequestration, and advanced nuclear plants.

The importance of any departures from the planning assumptions or progress in technologies will depend on the likely effects that changes in each area might have on the plan. Some changes will be well within the ranges of uncertainty considered, or the assumption might have only a small impact on the plan. Other changes may be significant enough that the Council should consider revising the plan. The monitoring report would include recommendations about the implications of its findings.

The major change in the monitoring requirement for the Sixth Power Plan is the mid-term conservation review. A more detailed review of efficiency achievements is envisioned for the Sixth Power Plan. This is because of the large amount of cost-effective efficiency included in the plan, utility concerns about achieving the savings, and the importance of achieving the efficiency targets to reduce power system cost and risk. This review would go beyond the question of whether the region met the conservation targets in total. It needs to answer additional questions including, why did we fall short of or exceed the targets, how did acquisition of individual measures or measure bundles compare to our planning assumptions, how were efficiency gains procured (utility programs, market transformation, codes, standards, and non-program market activity), and what changes need to be made to regional acquisition strategies or to the targets themselves.

The details of the mid-term review would be developed working with the Council's Conservation Resources Advisory Committee. The review would include 2010 and 2011, the first two years of the implementation plan. The level of detail for the conservation assessment will depend on available data and our ability to expand the available data within the review time frame. We expect the data on efficiency acquisitions will be available by June of 2012. Data on fuel prices, economic growth, and electricity demand also would be available by that time or sooner. Therefore, the Biennial Monitoring Report including the mid-term review of conservation should be completed during the third quarter of 2013. There of course will be regular updates on individual assumptions and implementation activities in the interim as information becomes available.

This paper describes the nature of the review process as we see it now. Staff would expect to develop a more detailed plan for the mid-term review in about the fourth quarter of 2010 with the participation of the Conservation Resources Advisory Committee.

In addition to estimating total regional efficiency acquisition compared to the 5-year target, some of the questions to be addressed would include:

- Review of state building codes adopted and pending -- Impact on targets and remaining code opportunities
- Review of federal appliance standards adopted and pending and their impact on targets and remaining opportunities
- Review of utility and NEEA program savings claims: By 3Q 2012 we should have total achievement reports for 2009, 2010, and 2011
- Review of key new initiatives such as:
 - Heatpump water heaters
 - Consumer electronics (TVs)
 - Showerheads
 - Residential specialty lighting
 - Commercial lighting systems & design
 - Outdoor lighting
 - Distribution system efficiency upgrades
 - Industrial system optimization measures

The conservation assessment would include an assessment of the causes of difference from the targets based on the above assessments. Some differences might be related to the economic growth assumptions. For example, if the regional economy grows more slowly than expected in the plan, the opportunities for efficiency gains in new buildings and equipments would be reduced. Alternatively, failure to achieve the targets might be traced to inadequate funding of efficiency programs or implementing organizations or lack of progress in codes and standards improvement. Or it may be that technologies failed to mature as expected and were not available for cost-effective acquisition. In that case, the plan's target might need to be adjusted downward. Assessing the causes of differences from the targets will be a difficult, but important part of the mid-term review.

The enhanced assessment of conservation acquisition may require collection of additional data on efficiency programs and their achievements. As a more detailed plan for the mid-term review is completed, additional data needs will be indentified and plans for collecting the data developed if feasible.

Attachments

Monitoring the Power Plan

Power Committee

April 13, 2010

Boise

Two Elements of Monitoring

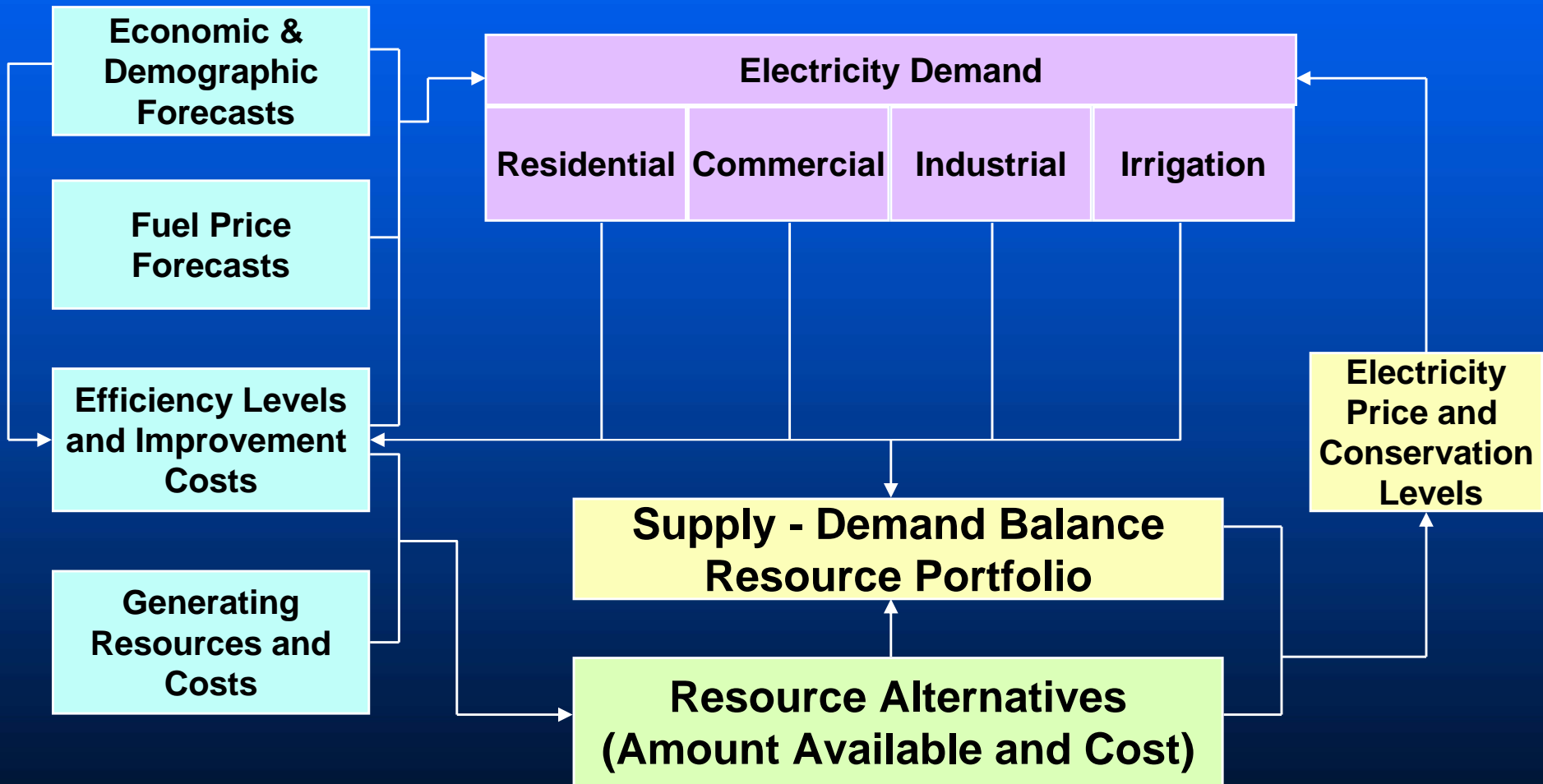
■ Informal

- Regular tracking of data
- Updating data bases
- Comparing to planning assumptions and forecasts

■ Formal

- Biennial Monitoring Report
- Summary of implementation status and implications for the Power Plan

Assess All Assumptions and Track Implementation



Biennial Monitoring Report Table of Contents (5th Plan)

Introduction

Major Findings of the Fifth Power Plan

Summary of Major Developments Since Adoption of the Fifth Plan

Purpose of the Biennial Monitoring Report

Assessment of the Fifth Power Plan

Key Assumptions

Demand Forecast

Fuel Prices

Electricity Prices

Resource Costs

Load - Resource Balance

Implementation Status

Conservation

Demand Response

Generating Resources

Utility IRPs

Policy Developments

Implications for Long-Term Plan and Action Plan

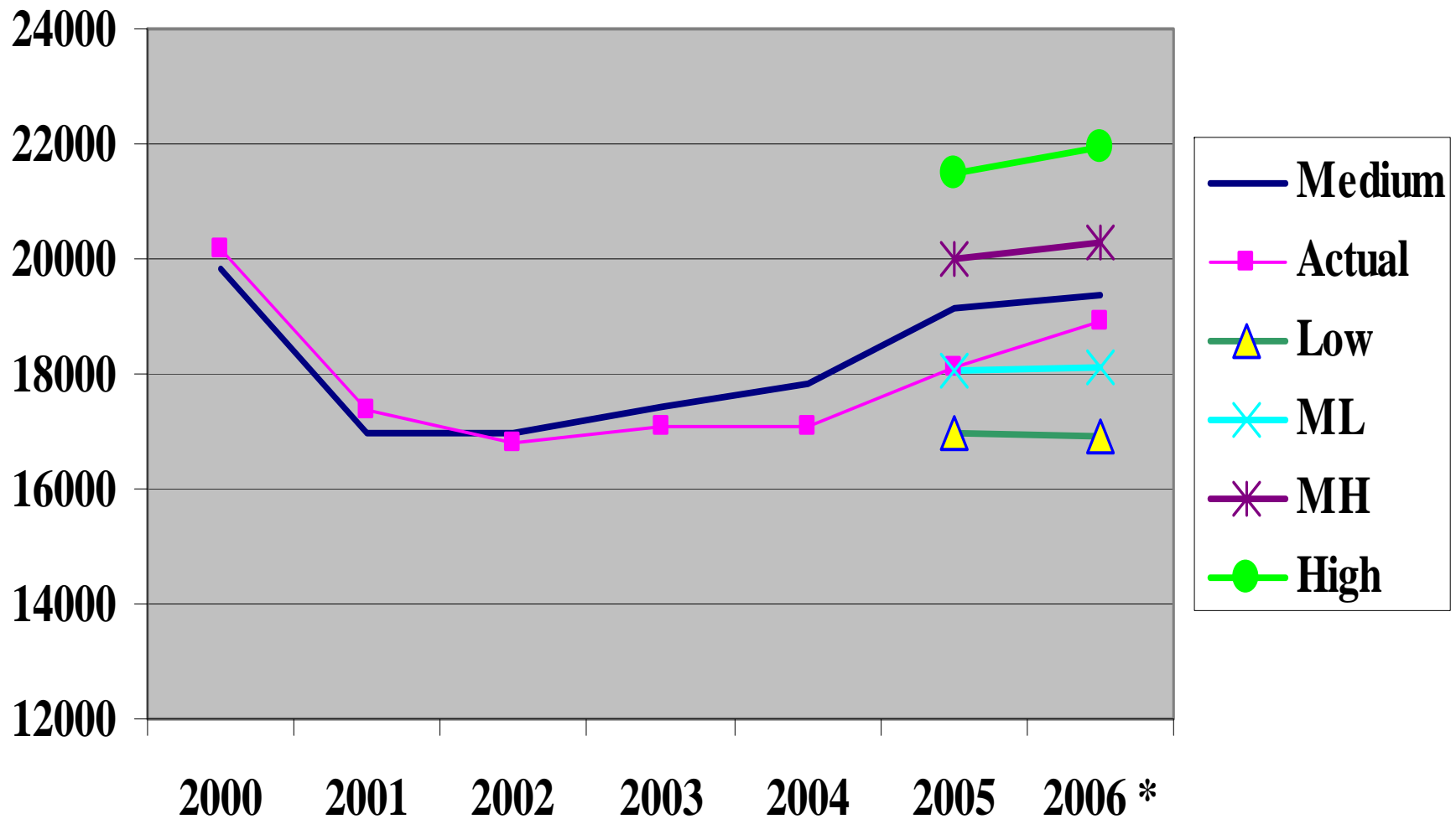
Likely Effects of Major Changes on the Plan

Recommendations

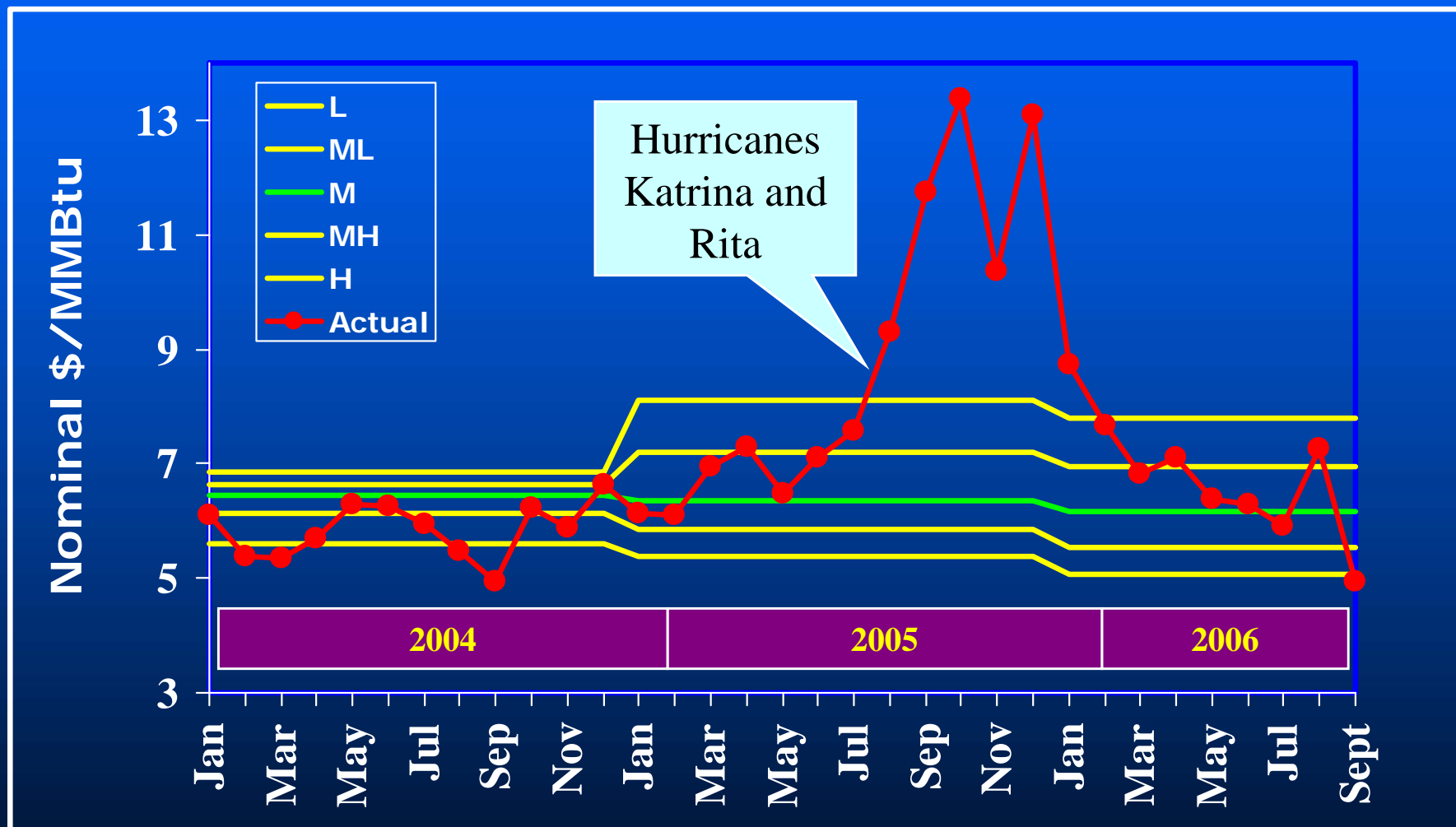
Biennial Monitoring Report Appendices (5th Plan)

- A. Electricity Demand**
- B. Fuel Prices**
- C. Electric Prices**
- D. Wind Power Assumptions**
- E. Gas Turbine Power Plant Assumptions**
- F. Coal-Fired Power Plant Assumptions**
- G. Other Generating Technologies**
- H. Load - Resource Balance**
- I. Energy Efficiency**
- J. Demand Response**
- K. Utility Integrated Resource Plans**
- L. Resource Adequacy Standards**
- M. Bonneville Role**
- N. Transmission Issues**
- O. Federal and State Energy Policy**

Conservation Adjusted Sales Forecasts vs. Actual *

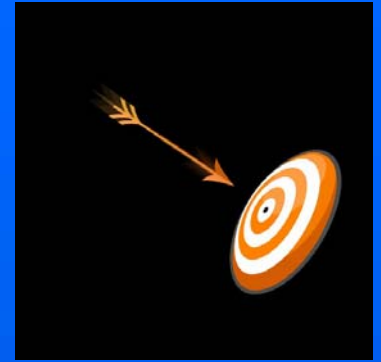


Natural Gas Prices: 2004 Through September 2006



Scoping the Mid-Term Conservation Review

Purpose



- Evaluate efficiency acquisition progress
 - Compared to the targets in the plan
 - Compared to the strategic plan developed by BPA & Utilities in CONS-14
- High Importance
 - Large amount of cost-effective EE in Plan
 - Utility concerns about achieving the savings
 - Key resource to reducing power system cost & risk

Detailed Review of EE Progress

- Review of progress on key measures
 - Lighting, Showerheads, Industrial
- Development of “new” initiatives
 - HP Water Heaters, TVs, Residential Specialty Lighting, Commercial Lighting Systems, Outdoor Lighting, Distribution Efficiency, Industrial System Optimization, Ductless HP
- Identify Reasons for shortfall or surplus
- Recommendations
 - Improvements
 - Target revisions

Process

- Annual RCP reports for overall savings
 - Regular Regional Conservation Progress reports
- Use CRAC to guide detailed review
 - Best set of experts
- Codes & Standards
 - Develop better tools to count impacts
- Circulate draft report for feedback

Draft Timeline

