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Wednesday, June 29, 2011

MEMORANDUM

TO: Power Committee

FROM: Michael Schilmoeller

SUBJECT: Council's System Analysis Advisory Committee (SAAC)

The Council approved the formation of the SAAC on September 22, 2010 to

... advise the Council by evaluating the computer models and analytical techniques used to arrive at power generation resource portfolio recommendations. The Committee will also suggest enhancements to these tools and processes as well as improved approaches to the communication of results derived from their use.

In particular, the System Analysis Advisory Committee will examine the methods of the Regional Portfolio Model (RPM), a tool used to develop resource portfolios under the Fifth and Sixth Power Plans. The Committee will review the sources and nature of the model's assumptions and data. The Committee will also evaluate the interpretation of the model's results.

At the upcoming Power Committee meeting, I will briefly update you on topics that the SAAC has discussed and potential areas for future discussion. The three SAAC meetings we have had have been well-attended and several members helped us organize a pilot workshop in January on the use of the Regional Portfolio Model (RPM).

So far, the presentations have been expository, allowing plenty of time for review and questions. This has given participants an opportunity to grapple with the new and sometime counter-intuitive concepts we routinely encounter using the RPM. There are always new visitors and some turn-over in membership, so questions are rarely heard just once. My sense, however, is that we have answered questions to everyone's satisfaction.

I will answer any questions you have about the committee's activity and progress. If time permits, I may briefly describe some of the current topics under discussion, such as a new cost metric that normalizes for load variation among the futures.

System Analysis Advisory Committee Status Report

Michael Schilmoeller
Thursday, July 7, 2011
GoToMeeting™

Meetings and Attendance

- Three all-day meetings and one planned for August
 - 12/2/2010
 - At meeting, 23 non-Council + 3 Council staff
 - On the web, 9 non-Council + 2 Council staff
 - 2/2/2011
 - At meeting, 17 non-Council + 2 Council staff
 - On the web, 11 non-Council + 1 Council staff
 - 5/19/2011
 - At meeting, 14 non-Council + 4 Council staff
 - On the web, 8 non-Council + 3 Council staff
- Hands-on workshop 1/10/2011 (6)

Past Topics

- Basic introduction to the model
 - difference from and similarity to other models
 - futures, plans, and the spinner graph
- The nature of risk, requirements of the Act, and the role of “open system” models
- Challenges of risk modeling
- How the RPM addresses those challenges and the choice of platform (e.g., Windows[®] Excel)
- Risky futures and the primary sources of regional economic risk
- Use and abuse of the efficient frontier

Current Topics

- Use of NPV cost normalized by (frozen efficiency) load to select resource portfolios – an additional consideration
- Cost-effectiveness premium over forecast wholesale electricity price for conservation
- Understanding the RPM worksheet: worksheet cells that define a plan and cells that introduce uncertainty

Possible Future Topics

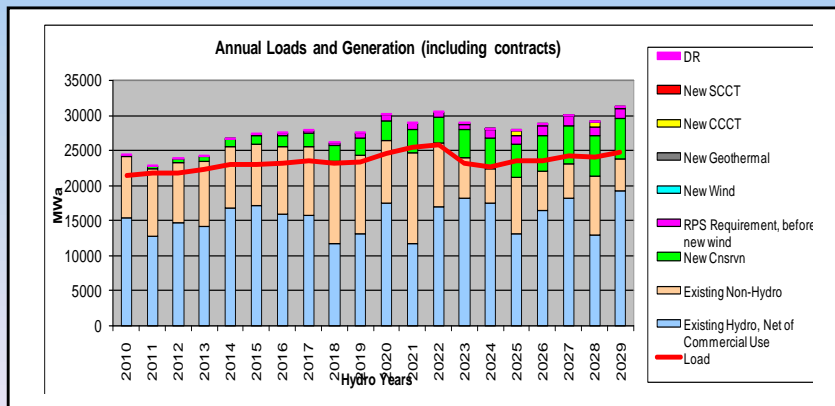
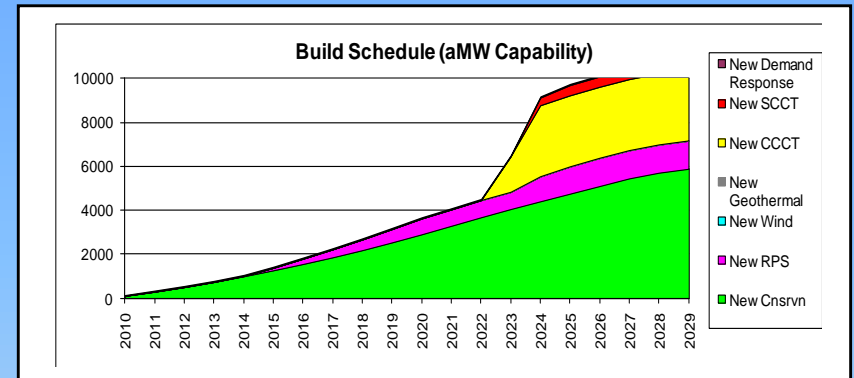
- Enhancements to the RPM
 - Transmission and transmission reliability
 - Minimum-loading of resources
 - Eliminating the current dependence on third-party software and older technology
 - Enhancements to regional adequacy planning standards
- Other computer modeling for the 7th Plan

Possible Future Topics

- Modeling carbon penalties, cap and trade, emission trading credits
- Techniques and tools for analyzing results
- More on resource representations (hydrogeneration, wind, etc.)
- Representations and validation of uncertainties and decision criteria
- More exploration of futures

Achieved: Some Understanding

By examining a plan under an individual future, members develop an appreciation of how the model works. For example, in this future, the model “gets it wrong.” A decision that seems right when the CCCTs are under construction turns out to be wrong in retrospect. Members discussed 1) why the RPM optioned this much CCCT capacity when load growth was virtually flat, 2) why it continued to build the CCCTs when loads and



electricity prices fall almost immediately after completion, 3) why overbuilding in a future produces costs that are lower than the average cost across all futures, and 4) what the value of “getting it wrong” means to the decision to site and license the plant.

End