

130125 SAAC NOTES 130822.DOCX

Thursday, August 22, 2013

The Northwest Power and Conservation Council's Systems Analysis Advisory Committee (SAAC) met on Friday, January 25, 2013. Attached are the agenda and list of attendees. After an introduction and walk through the agenda, staff started the morning session. The Committee adopted unanimously the minutes of the September 2011 meeting. We then rearranged the agenda a little and postponed the review of previous meetings' presentations to last.

General issues and review of prior presentations

Charter and membership changes

The Council has renewed and revised the charter and membership for each of its advisory committees. Michael presented the list of new members (*see posted PowerPoint slides*) and asked for any corrections. Rob Petty provided some specific changes, which appear among the action items at the end of this note.

Achievements of the SAAC

At the request of the SAAC, Michael prepared a memo summarizing the achievements of the SAAC. The memo is *posted along with these minutes*. He asked for any corrections, whenever members had a chance to provide them.

RPM Review Committee Report

Michael summarized the report of RPM Review Committee. *A link to that report appears along with these minutes*. The four main conclusions of the report are

1. the RPM is sound and appropriate,
2. Council and Council staff need to improve communication,
3. the model needs enhancement in specific areas, such as power transmission, addition of power plant operating constraints, and use of retirement logic, and
4. the Council needs more staff for support of RPM

Michael asked for feedback from the group on reading the review report. There was no reaction from participants in the room or on the phone.

One of the recommendations of the RPM Review Committee was to have the Council develop a single risk metric additive to cost. There was strong consensus on the part of the SAAC,

however, that a single risk metric additive to cost was neither desirable nor realistic. Marty Howard agreed that it was attractive or seductive to have a single risk additive to cost, the Council would love it, but it would almost certainly bite them in the end.

Michael asked the SAAC about ways the RPM or the Council's communication might be improved. Steve Weiss and Dave LeVee had provided specific guidance, and the SAAC was given copies of those. Much of this pertains to how to best communicate the results of the model. (*See the link to those contributions on the meeting web page.*) Charlie Black pointed out that there are really different audiences for these different messages. Each one will require its own kind of presentation.

An FAQ for the RPM and the SAAC

For new questions for the FAQ, talk about how we get from four plans along the efficient frontier to a decision. Talk about tools and procedures for arriving at a decision. These are all things that we've done elsewhere but we need to gather them together into various message packets.

Silvia Melchiorri, PGE, asked us to include descriptions of inputs, explaining how we come up with inputs for creating futures (stochastic or scenario). For example, she wanted to better understand the future with high CO₂ penalty and high load growth.

Clint Kalich, Avista, wanted us to explain why the Council uses the RPM instead of Aurora or some other model in the FAQ.

Rob Petty, BPA, would like a better explanation of what drives conservation target levels (loads, costs, prices, etc.)

Jim Litchfield asked the question, how do we interpret risk? Ken Corum had some insights into Jim's question. To make risk as concrete as possible, Jim believes we really want to go through various scenarios much along the lines of what Gary Doris suggested. Dr. Gary Dorris is one of the members of the RPM Review Committee.

Marty Howard pointed out that, although we've discussed the construction of uncertainties and metrics in the appendices, we need to come up with more evocative rhetoric. People want to better understand how variables are combined and their relations.

Overview of preceding meetings' presentation

Clint: Curious about how the RPM performs stochastic optimization. Michael, we do not have a global optimization, because this is not assumed to be a linear problem. It is a goal seeking approach.

Steve Weiss: We should emphasize policy choices, not plans. There is as much information available from the plans off the efficient frontier as from those on the frontier. Utilities use a lot less futures... focus more on grouping of dots. There still is not an easy way to explain the dots.

There was a question regarding how electricity price is calculated. Michael discussed how electricity price is calculated.

Michael talked about Unit Service Cost (NPV \$/MWh) to create efficient frontier, and he showed that in general the frontier is the same except for low the lowest-risk plans. The premium for conservation is slightly reduced. The need for new resource is reduced as well. This is not finalized. Proposal to the group is to use both metrics. Michael asked for feedback from the group. There was a question about how costs are divided by requirements (load). Michael walked through the illustration and calculation. Howard: he is trying to understand the policy perspective. Are we interested in reducing total cost or cost per unit? Michael: Do we want to say that high load futures are high risk futures? There still is not consensus on the use of the Unit Service Cost metric (Marty Howard)

Quantifying System Flexibility

Michael started to discuss the new method he developed for evaluating the need for and availability of system flexibility. Due to time constraints, however, the presentation was abbreviated. This presentation, however, has been available on the Council's web site (see the SAAC web page).

Clint Kalich had a question about chronology, setting up the system day- and hour-ahead to meet flexibility requirements at least expected cost. Michael said that this metric is not a substitute for the detailed optimization studies done for real-time operations. As Daniel Kirschen, University of Washington, has observed, the new metric lies between the simple metrics based on treating flexibility requirements as a stochastic process (the quantile and "swing-door" algorithms) and the system simulations for commitment studies. The new metric says nothing about how to set up specific resources to minimize the cost in the short-term, only about the system requirements long-term. The new metric is especially useful in helping planners understand the requirements for different ramp rates and thereby helps reduce the cost of meeting new flexibility requirements. More and different kinds of resources and new advisory control systems for existing resources can participate.

Avista's DSS model

In Clint Kalich's presentation on the vistas DSS model, he pointed out that the lack of perfect foresight was dealt with using capacity set-asides. Much of the study work that Clint is able to do with this model requires the use of scenarios and lots of testing. There is no PowerPoint presentation stack available to the participants. For details, contact Clint.

Energy Exemplar's PLEXOS model

Uncertainty is resolved in stages, and the first stage consists of the commitment decision. Commitment is done without perfect foresight, using forecasts and decision rules. The second

stage consists of implementing the resources that are appropriate for the existing circumstance. In arriving at a decision about which plans to commit, plexus uses a risk aversion standard rather than attempting to optimize for the best outcome.

Open Plexos has hooks for actions and reports. This is a good technique for models that users should be able to extend.

Modeling Considerations for the Seventh Plan

Priorities and Questions related to the Seventh Plan:

1. Map the needs identified to the Panel's report (Charlie Black)
2. More accurately model the impact of RPS caps behavior and caps, rather than have an unidentified event reduce RPS potential. States have different policies on RPS. (Marty Howard)
3. Elucidate the relationships among carbon penalty, conservation value, DR potential, and load elasticity.
4. More completely reflect DR and the role of the customer in a solution to meet regional power requirements (Dave LeVee)
5. Give more thought, study, and exposition to the task of meeting the BPA Administrator's obligation under sec 42 of the ACT (Jim Litchfield)
6. The model may need to be expanded WECC wide (Clint Kalich)
7. Durability of conservation resources was another issue raise. Michael agreed and indicated that Tom and Charlie have looked at the issue of in kind replacement of conservation investments
8. In addition to describing what makes for successful or less successful plans, in terms of the efficient frontier, that we also share what we've learned about plans that fall in the interior, off the efficient frontier (Steve Weiss)
9. Allow decision makers to put in their own assumptions. This builds on the idea of permitting people to design their own resource plans and try alternative assumptions to determine how sensitive the results are to those (Kathy Carruthers).

Principal actions for Michael:

- Set up good meeting demonstrations of the flexibility technique
- Send out the early drafts of the FAQ for the rpm

- Send out a survey or in query asking members to prioritize the order in which we implement the recommendations of the review panel
- Update the membership lists and repost to the website
- Convene another conversation around the unit service cost. The key individuals are Marty Howard, David Levy. Howard Schwartz was originally in that group but is no longer.
- Rob Petty says to replace Lauren Gage with Danielle Gidding, who is taking on that role now. We should also move Tina Kao to the interested list.

Agenda

Bill Bradbury
Chair
Oregon

Tom Karier
Washington

James A. Yost
Idaho

W. Bill Booth
Idaho



Bruce A. Measure
Vice-Chair
Montana

Henry Lorenzen
Oregon

Phil Rockefeller
Washington

Agenda for the System Analysis Advisory Committee January 25, 2013

- Introductions and accommodations
- Recusal: The Ultimate Defense
- **Plan for the day**
- Adoption of minutes

Plan for the day

- Review and consolidation (9:00AM-10:30AM: 90 minutes)
 - Progress on general issues
 - Charter and membership changes
 - Achievements of the SAAC
 - RPM Review Committee Report, an introduction
 - An FAQ for the RPM and the SAAC
 - Overview of preceding meetings' presentation
 - Reactions and thoughts of the Committee
- *Break (10:30AM-10:45AM: 15 minutes)*
- Quantifying System Flexibility (10:45 AM -11:15 AM: 30 minutes)
- Modeling Considerations for the Seventh Plan (11:15 AM -12:15 PM: 60 minutes)
- *Break for lunch—on your own (12:15 PM -1:00 PM: 45 minutes)*
- Avista's **DSS** model – Clint Kalich (1:00 PM -2:00 PM: 60 minutes)
- *Break (2:00 PM-2:15PM: 15 minutes)*
- Energy Exemplar's **PLEXOS** model – Greg Woods (2:15PM – 3:15PM: 60 minutes)
- Wrap up (3:15PM – 3:30PM: 15 minutes)

Adjourn at 3:30pm

- We will be providing the opportunity for interested members to remain and ask Clint and Greg questions about their models

MeetingToGo[®] Attendees

Power Admin	poweradmin@nwcouncil.org	8:52 AM - 3:28 PM
Villamor Gamponia	villamor.gamponia@pse.com	8:56 AM - 3:27 PM
Hossein Parandvash	hossein.parandvash@portlandoregon.gov	8:57 AM - 2:58 PM
Anna Miles	ajmiles@snopud.com	9:00 AM - 12:55 PM 1:03 PM - 2:58 PM
Rick Sterling	rick.sterling@puc.idaho.gov	9:01 AM - 3:28 PM
Mark Stokes	mstokes@idahopower.com	9:02 AM - 12:15 PM
Raquel Crosier	rcrosier@nwcouncil.org	9:03 AM - 9:25 AM
Steve Weiss	sdweiss@bpa.gov	9:53 AM - 1:45 PM
Tyler Llewellyn	tillewellyn@bpa.gov	10:39 AM - 12:05 PM