

AUSTIN GENERATION RESOURCE PLANNING MEETING MINUTES
(Wednesday, July 29, 2009)



AUSTIN GENERATION RESOURCE PLANNING TASK FORCE
REGULAR MEETING MINUTES

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The Austin Generation Resource Planning Task Force convened in a regular meeting on Wednesday, July 29, 2009 in Room 1029 at City Hall in Austin, Texas.

Chair Phillip Schmandt called the Board Meeting to order at 3:35 p.m.

Board Members in Attendance:

Chair Phillip Schmandt, Cary Ferchill (arrived at approx. 3:50 p.m.), Matt Johnson, Mike Sloan (arrived at approx. 3:40 p.m.), John Sutton, and Roger Wood

-Non-quorum until 3:40 p.m., quorum was recognized at approx. 3:50 p.m.

Staff in Attendance:

Rich Bailey, Roger Duncan, Amy Everhart, Michael Osborne, Chris Smith, and Jeff Vice

Non-Voting Proxies in Attendance:

Barry Dreyling (on behalf of Ron Rogerson), Steve Isser (on behalf of Chris Herbert) Chris Lehman (on behalf of Cyrus Reed)

1. CITIZEN COMMUNICATION: GENERAL

None

2. APPROVAL OF MINUTES

Motion to approve minutes of Task Force meeting on July 15, 2009 was approved on Board Member Cary Ferchill's motion, Board member Roger Wood's second on a 6-0 vote

3. OLD BUSINESS

- a. Discussion on information requests to date.
- b. Preparation for phone conference with Pace and discussion on deliverables to and from Task Force related to Austin Energy's generation planning.

4. NEW BUSINESS

- a. Phone conference with Pace to discuss Pace's modeling of future generation resource scenarios. (Representing Pace: *Pat Augustine, Manage, Power Markets Advisory and Gary Vicinus, Executive Vice President*)

-See attached documentation of questions and answers from phone conference.

- b. Discussion of next week's and future agenda items.

Next meeting scheduled for Wednesday August 5, 2009 at 3:30 pm in Room 1029 of City Hall.

5. ADJOURN

Chair Phillip Schmandt adjourned the meeting at approx. 5:15 p.m. without objection.

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Phone Conference between Pace Consulting and Austin Generation Resource
Planning Task Force (July 29, 2009)

Documentation of Questions and Answers

Responses provided by Pace Consulting represented by Pat Augustine, Manager, Power Markets Advisory and Gary Vicinius, Executive Vice President.

Preliminary Questions

Can you explain generally how the model works and how it compares to other similar models?

2 models are used: 1) ERCOT hourly dispatch model of zonal market and 2) screening tool which is also an hourly dispatch model based on AE data that interacts with ERCOT model (provides more detail). This is a dynamic build-type model; not using an optimization mechanism. Model is representative of all plants in ERCOT system and expected new-builds. Able to do long-term runs and test out expansion plans and evaluate hourly clearing prices.

How does the risk analysis model work?

Uses broader model (screening tool) and uses a stochastic analysis by running a simulation with multiple iterations to look at different uncertainties. Power prices are outputs in the model. This is like a Monte Carlo simulation, but also looking at a few factors independently and evaluating the relationships b/w these factors (fuel costs, capital costs, and energy demand for AE and ERCOT). Assuming new resources are built in ERCOT and look at economics of new generic builds. There is a reference case for what is expected happen (changes by iteration for risk analysis).

Questions submitted prior to phone conference:

Submitted by Phillip Schmandt:

1) Slide 38 of May 27, 2009 Presentation (Cost per MWh Comparison of Cases). Please explain how the cost of replacing FPP can be just 2% points higher than the Strawman and 11% points higher than the Lowest Bill Impact Meeting Council Goals. What costs are being included and which are being excluded in making this comparison? How does this relate to the rates that would be billed customers? Does this include carrying costs for debt and reserves required by bond holders? How does this compare with Roger Duncan's analysis in the Public Participation Power Point (Tab 2 of Task Force Binders) in which he concluded that the cost that AE would incur to maintain CO2 emissions at 2007 levels by switching from coal to natural gas would be \$250,000,000? Where is the \$250 Million in Pace's analysis?

Replace FPP is similar in costs to strawman b/c the avoided costs of operating FPP (\$5/MWh), paying for its fuel (\$20/MWh), and the cost of carbon (\$25/MWh) is similar to an average cost of the renewables and purchased power used to replace FPP (combination used is described: 17% increase in purchased power, 18% increase in wind generation, 2% increase in solar and 3%

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increase in solar...replacement costs is about \$70/MWh). While this is about a \$5 difference from strawman, FPP is only 30% of generation replaced so final impact is about \$1.50 increase per MWh (about 2% of generation costs).

Costs included in the comparison are markets costs of generation on the margin (typically natural gas), O&M, capital, fuel, operating equipment for emission reduction, and carbon. Do not include SO₂ costs, but are minor for this comparative analysis. No value placed on costs of pollutants other than CO₂ (but is included in risk analysis) or value of selling or leasing Fayette Power Project.

The model only projects the actual cost of generation by looking at costs of generation. This is not looking at all the actual total costs to customer. So this analysis is only a part of the overall rates to customer. Transmission, distribution and overhead costs are not included in this analysis.

Model does include carrying costs for debt and reserves. Do look at total costs for technologies. Look at depreciation and capital left for current units.

Pace was not provided with Roger's analysis on switching to natural gas above to evaluate.

Follow-up question: Why are latest wind costs in GreenChoice \$95 rather than \$45-55 as projected by Pace?

Does not include same projected future potential transmission congestion costs (has transmission costs through 2012 and then assumes new transmission lines will eliminate these costs) as AE had for that pricing plan (but will look at risks of wind costs in risk analysis). The contract cost is actually about \$57 which is similar to what Pace gets.

2) Slide 45 of May 27, 2009 Presentation (Annual Capacity Addition Summary by Scenario). Please explain additional DSM and GEO resources. Is GEO assumption credible? Where will additional DSM come from?

Did look at availability of geothermal in region and this number (50 MW) is about 10% of available geothermal for Texas, which is about the percent of wind that is attributed to AE. DSM projections are based on supply curve for DSM provided by AE.

3) What is included in the phrase "Levelized NPV of Portfolio Costs" (Slide 27) versus discussions of "increased costs" on Slide 5. Are the two phrases the same? Different? On Slide 5, whose costs are being increased? AE's or its customers?

The "levelized NPV" costs are an average (levelized, flat rate) year-to-year change in real dollars per MWh from 2009 to 2020 and the "increased costs" is the total rate of change in real dollars (2009-2020).

Costs being increased are for AE, not customers, for just the cost of generation. Embedded capital and debt service is considered in cost of generation. Amortize costs for new builds. Use a levelized repayment costs. If there was a value for FPP the impacts on cost of generation could be easily calculated by this model.

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Submitted by Mike Sloan with response in blue from AE staff, Chris Smith

1) Please provide summary environmental information for each scenario for major emissions (CO₂, Nox, Sox, PM, mercury) and water use/consumption.---As far as I know the only environmental impact that Pace has looked at to date is CO₂ emissions. They may be looking at a other environmental impacts such as water use in the risk analysis.

Costs for emissions equipment are included (scrubber costs). Carbon dioxide is, but NO_x and SO_x are not (but are looked at in risk analysis) Other pollutants are not looked at directly. Water use is not included.

2) Do existing PACE scenarios model future emission costs for anything other than CO₂ ?---
Not that I am aware of

Not in current scenarios but will look at for NO_x and SO_x in risk analysis.

3) Please describe generally how energy efficiency has been/can be modeled by PACE (is it exclusively an efficiency supply curve assumption?).---The 700 MW of demand savings are included in AE's load forecast. For additional DSM (which is included in some of the scenarios that have been run) this is an efficiency supply curve assumption (so the amount of additional DSM that is provided is peak demand savings...i.e. for 14 MW of DSM this means at peak 14 MW of demand savings are achieved, but the "capacity factor" of DSM is much lower.

Based on supply curve assumption provided by AE (which is included in documents provided by Pace for assumptions of model).

4) What is the maximum level of energy efficiency that can be modeled for Austin by PACE ?---It seems that this would be a judgment call, any level of energy efficiency could be modeled, but there is a practical limit

Practical limit is driven by economics. Model has determined that beyond 800 MW is not economically viable relative to other models. Not doing a risk analysis on this directly, but can be inferred from risk analysis on load uncertainty.

5) Related to Q4, Does PACE have experience/knowledge base about what are the most advanced/successful energy efficiency approaches globally that go beyond the rebate approaches that are the mainstay of Austin's successful EE program ?---PACE will have to answer this question

Pace does have experts in this field, but defer to AE's perspective rather than Pace's expert opinions or knowledge.

6) Pace 5/27/09, p 5. says "How much are you willing to pay in order to reduce CO₂ emissions and increase renewable generation". This seems the essential question re: Coal. Can you express scenarios to divest from FPP in terms of the average customer cost to (a) shut down or (b) sell FPP. Please provide answers both for 2014 and for 2020. Could this be modeled and answered for other timeframes ?---This may be difficult to model, but we can discuss this during

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the phone conference

Not difficult to run, but would have to make assumptions on costs of shutting down as well as value for selling at a particular time. Pace is only provided impacts on cost of generation, not costs on rates to customers.

7) Pace 5/27/09, p 12 – Please explain this slide again. What is the production cost (\$/MWh) that serves as the baseline for the % numbers shown?---I will defer to PACE to clarify this but it appears that the baseline for the % change is contract cancellations...assuming that AE could cancel its recently signed renewable contracts (biomass and solar at Webberville)

Reference point is assumption that renewable contracts (wind, solar and biomass) were not in place. The increased costs shown are for power market prices, transmission congestion costs (modeled independently, but consulted with AE) and carbon dioxide costs.

8) Pace 5/27/09, p. 13 – please provide the ENERGY production or sales that corresponds to each year on the graph & also the year-by-year annual COST in nominal dollars. If these numbers represent only a subset of total utility annual costs (which I suspect they do), please also make a best efforts assessment to gross up these numbers to estimate annual utility TOTAL costs by year---it is my impression that these numbers only represent the cost of generation, not overhead costs for the utility; are you asking for the specific numbers that are represented in this chart? I do not think that Pace has the information to show annual total utility costs (costs to customers) but we can bring this up

The issue of total costs will be handled by AE. Energy production would be load served which is provided in the Pace assumptions document (for peak demand).

9) Pace 5/27/09, p. 14 – please explain AE ownership assumptions for future units and how current PPA's are represented here. Please provide the underlying data for the table.---I believe it is assumed that AE owns all future units, but current PPAs reflect the terms of the contracts-Pace should confirm this

PPAs are represented for current fleet as necessary but future added generation is assumed to be AE owned other than the scenario with the nuclear PPA. AE would not be eligible for tax credits as municipal utility, but if AE's ownership were not assumed tax credits would be available.

10) Pace 6/29/09, p. 29 – are there any special features to modeling Pecan Street or is it basically a standard run with lots of Rooftop Solar ?---The only difference from the strawman is 300 MW of rooftop solar (beyond the 100 MW of remote solar, i.e. centralized solar PV owned by the utility). For the 300 MW of solar it is assumed that 75% is owned by utility and 25% owned by customers.

The above answer is accurate.

Follow-up question: What would it take to change the 75/25% assumption?

This would be something that could be analyzed as a spreadsheet exercise.

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Discussion Topics:

How long will it take to produce a scenario?

It would take about 2-3 weeks to get the full risk analysis results for a new scenario. Reason is the number of iterations that must be run. It would take less time to simply run the screening analysis.

Update on risk analysis.

Six portfolios will initially be run for risk analysis: original strawman proposal, no additional generation, lowest cost impact meeting Council goals, Replace FPP with renewables, replace FPP with nuclear, and staff recommendation when it is released. Develop uncertainty distributions for fuel costs, capital costs, and energy demand for AE and ERCOT as a whole. The core of that analysis has been completed and they are working on summarizing and organizing results. Have yet to determine the timing of releasing these results to the public. Explanation is provided on how risk analysis will be presented. Reliability is not a risk they are looking at until AE indicates there will be a significant difference among scenarios.