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Entergy Arkansas, Inc. 2015 Integrated Resource Plan

September 3, 2015
Response to Stakeholder Group's Meeting Notes

EAI Response to Stakeholder Group

EAI received meeting notes on 8/13/2015 from Ken Smith on behalf of the Stakeholder Group. The notes, compiled by Jim Wimberly, included requests for additional information and analysis.

The following slides are EAI's response to the Stakeholder Group's requests.

Item # 1

1. Organizational

- Kurt Castleberry replied to Ken Smith's email offering to arrange meeting rooms and make EAI folks available to participate in meetings, as needed, with reasonable notice.
- Stakeholder Report will be completed by October 15.

EAI Response: Item #2 (1 of 3)

2. Alternate future generation scenarios requested by the SG

- An additional AURORA Portfolio Optimization model run has been completed in response to the SG's request for the future supply additions assuming White Bluff and Independence cease to use coal in 2028. The assumptions for this new model run and preliminary results are shown on the following slides.
- The SG's request for the future supply additions assuming White Bluff and Independence are fully operational and all CCGT plants are extended is the same as Future 2 as presented at the 8/7/15 IRP Stakeholder Meeting with one difference. The difference is that it would assume no scrubber installations at White Bluff and Independence. This difference would not affect the supply additions.

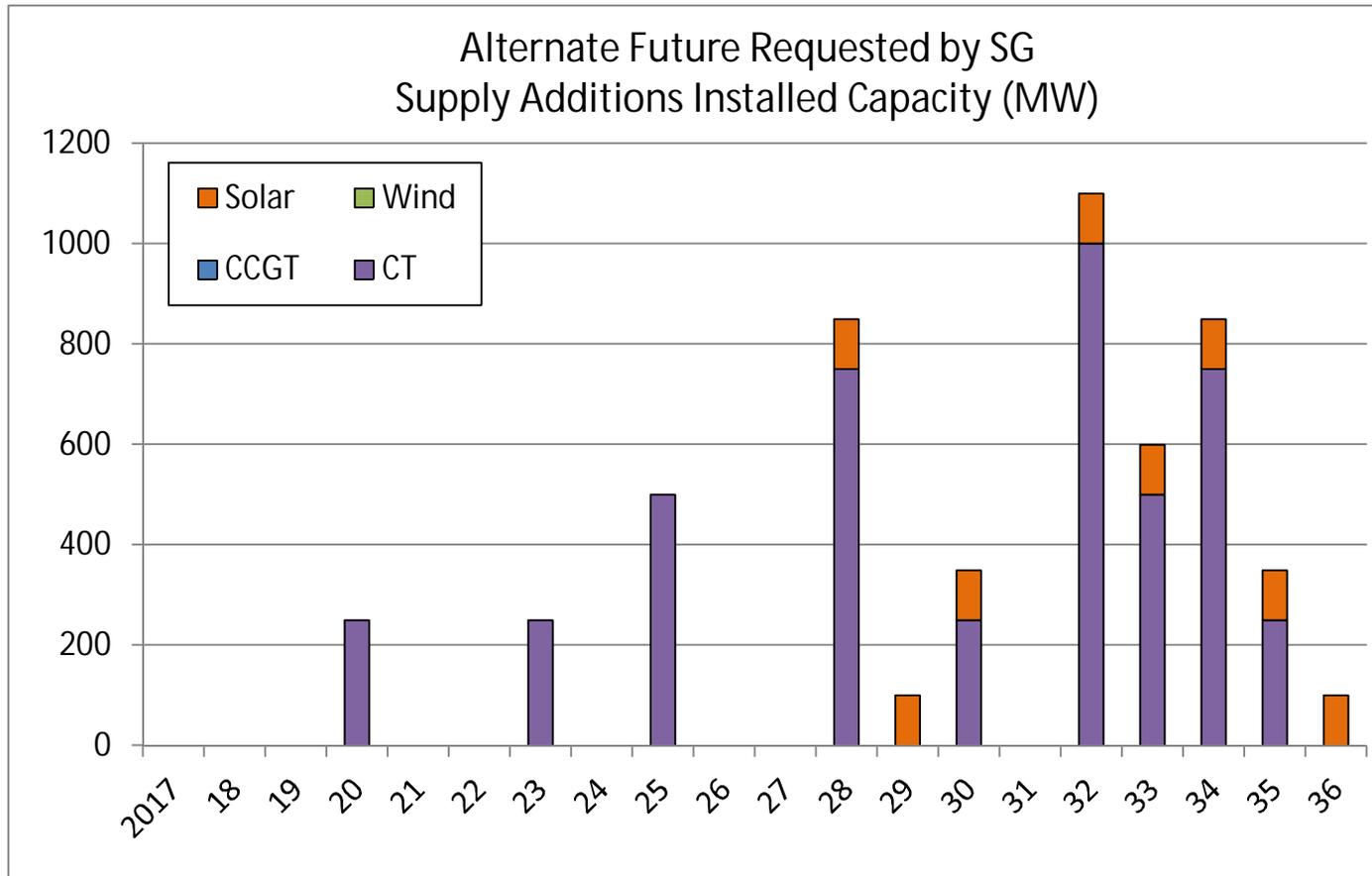
EAI Response: Item #2 (2 of 3)

The alternate future requested by the SG assumes White Bluff ceases to use coal in 2028 and Independence in 2035. EAI is not aware of a potential future outcome that would require Independence cease to use coal or shut down in 2028.

The SG request to vary the cost for solar resources (item #5) is also included in this model run at a 2015 installed cost of \$1,400/kW, as opposed to EAI's current long-term point-of-view, which is \$2,300/kW.

	<u>Alternate Future</u>
Existing Resource Portfolio	
Cease to Use Coal at White Bluff	2028
Cease to Use Coal at Independence	2035
EAI Existing CCGTs	30 years
Solar Technology Cost	\$1,400/kW
Customer Electricity Requirements	
Energy sales and Load	Reference
Commodity Price Forecasts	
Fuel Prices	Reference
Environmental Allowances	Reference

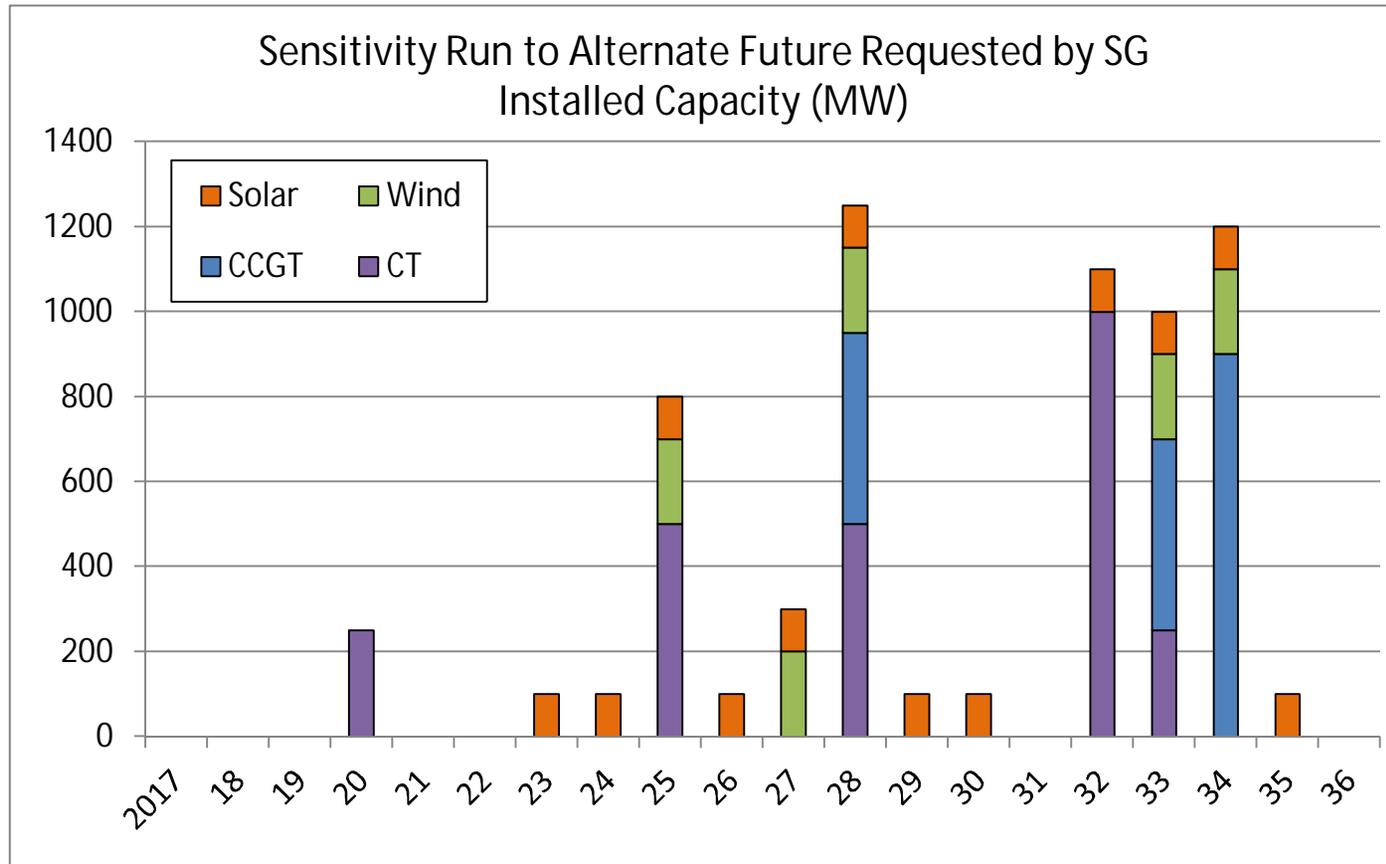
EAI Response: Item # 2 (3 of 3)



EAI Response: Item #2 Additional Analysis (1 of 2)

- After observing that the Portfolio Optimization model run for the Alternate Future selected eight solar resources, a sensitivity run was completed in which we forced the model to select an additional four solar resources, for a total of twelve solar resources. The rest of the portfolio was optimized by the model.
- The composition of the sensitivity case portfolio is different from the fully optimized portfolio resulting from the initial model run, but the total effective capacity and costs are very close.
- The results of the additional model run is shown on the following slide.

EAI Response: Item #2 Additional Analysis (2 of 2)



EAI Response: Items # 3 and # 4

3. Graphic Outputs

- See slides 5 through 9 of the “Follow Up to Aug 7 IRP Stakeholder Mtg.pptx” posted to EAI’s IRP Website on 8/14/2015.

4. Life Cycle Costs

- See slide 3 of the “Follow Up to Aug 7 IRP Stakeholder Mtg.pptx” posted to EAI’s IRP Website on 8/14/2015.

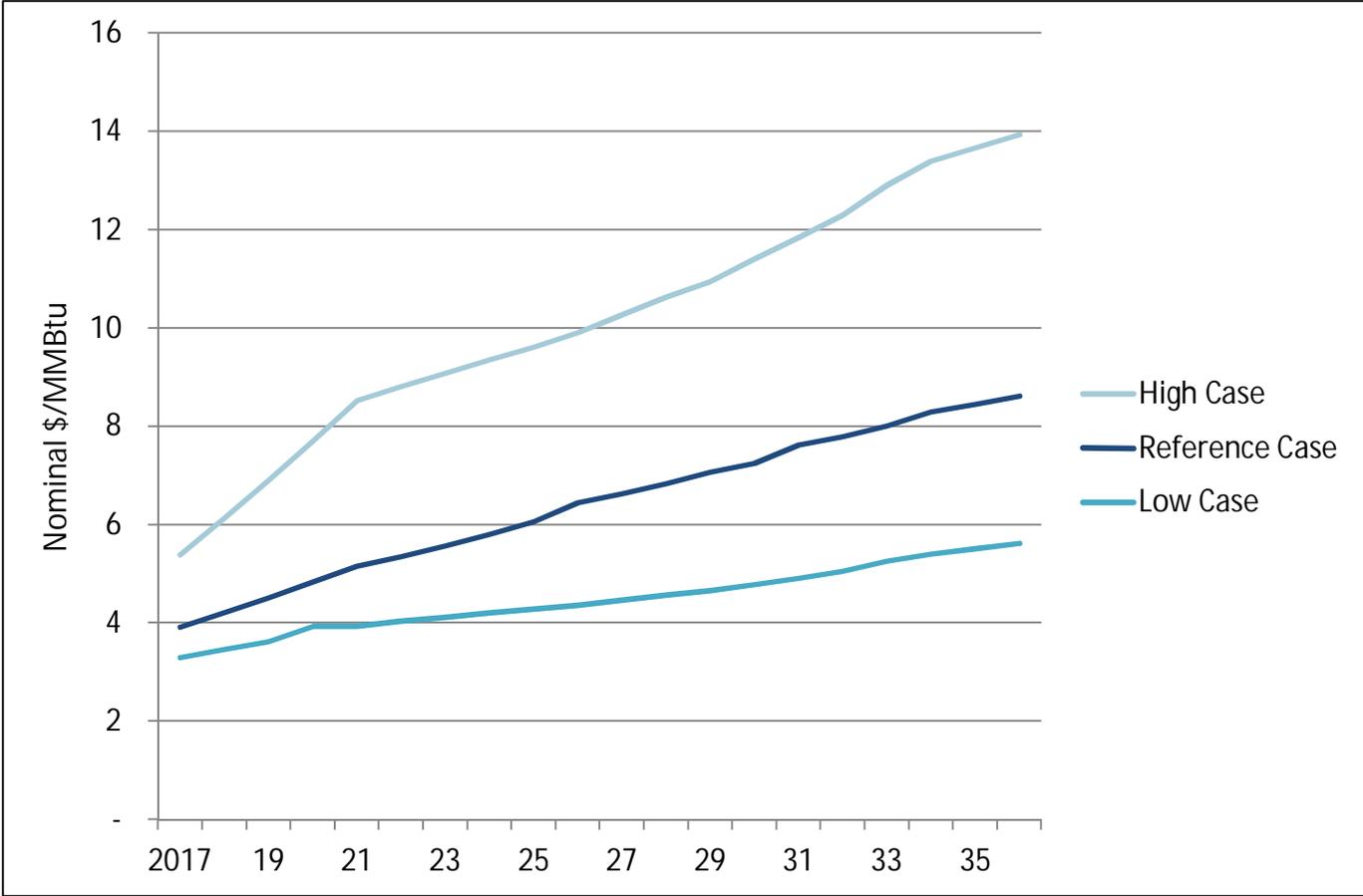
EAI Response: Item #5 (1 of 3)

5. Sensitivity analyses on energy costs

- The requested additional AURORA Portfolio Optimization model run described on slides 4-6 of this document considers a lower installed cost assumption for new solar resources.
- The SG refers to SWEPCO's IRP for cost of wind power, which appears to be reasonably aligned with EAI's point-of-view on wind costs for long-term resource planning. EAI's assumption of \$54/MWh for a 48% capacity factor is in-line with SWEPCO's assumptions which range from \$47-\$60/MWh at a 45%-56% capacity factor.
- Additional information on the natural gas and carbon price assumptions used in EAI's IRP analysis, which cover a reasonably broad range of outcomes, are shown on the following slides.

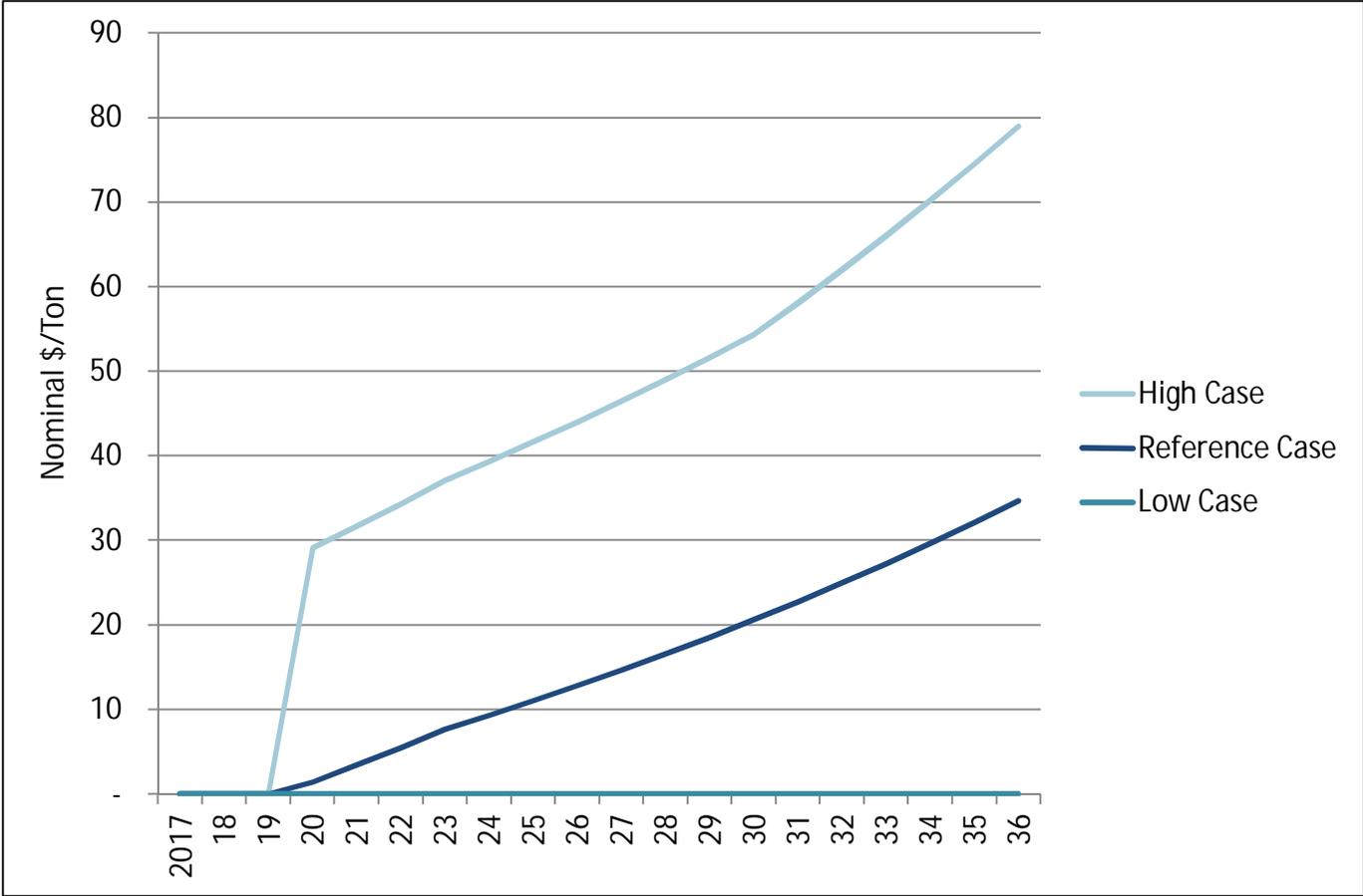
Item #5 (2 of 3)

Henry Hub Natural Gas Price
Reference Case (Future 1), Low Case (Future 2), High Case (Future 3)



Item #5 (3 of 3)

Carbon (CO₂) Price
Reference Case (Future 1), Low Case (Future 2), High Case (Future 3)



Next Steps in IRP Development

- Engage with stakeholders, as requested, through early October
- Develop 2015 IRP Action Plan
- Receive and review Stakeholder Report
- File IRP Report no later than October 31