IPA Integrated Resource Planning Workshop #2: Candidate Resources

April 10, 2026

Respondent Name: Deborah J. Williams

Respondent Organization: City of Springfield, Office of Public Utilities

Respondent Email Address: Deborah.williams@cwlp.com

Respondent Zip Code: 62704

Question 1

Are there specific resource types that are not adequately captured by the proposed categories and should be reflected in the IRP framework?

The study should include additional consideration of Deep Enhanced Geothermal Systems. While CAPEX is still high, LCOE and O&M costs are potentially approaching commercially mature technologies. DOE is currently sponsoring EGS demonstration projects and it would appear there is a reasonable likelihood that such technology could be emergent in the 2040 time frame. Additional consideration of this technology, or a more detailed justification for not considering the option, is advisable and reasonable.

Question 2

Are there any resource categories that should be added, removed, or redefined to better reflect meaningful differences in cost, performance, or system value?

Regarding Small Modular Reactors, commercial entities, such as NuScale, exist and have NRC approval. Resource assumptions for SMRs appear to be based on general category-wide projections from NREL. A more detailed review of specific data for such commercial or near-commercial options may yield a more accurate functional result for these resources. This is especially true for this resource versus mature technologies that have a multitude of industry-wide data points from which to draw a composite picture.

Question 3

What feedback do you have on the proposed base case cost assumptions for mature technologies (including solar, wind, lithium-ion storage, and gas)?

Please indicate which specific assumption you are commenting on, describe the reason for your feedback, and provide any alternative data source or supporting materials that you would like us to consider to support your recommendation. Please provide a link or share via email.

Listed capacity factors for utility-scale wind and solar do not align with seasonal accreditation metrics for RTOs – IRP assumptions appear to be considerably higher than seasonal accreditation values for MISO starting in 2028, for example. If this is due to translation of seasonal capacity factors to an annualized value, transparent description of the calculation and assumptions for the translation is warranted in order to evaluate exposure to seasonal shortfall not otherwise accounted for. If this is a conscious decision to diverge from RTO capacity factor processes, this should be explicitly justified given the expertise and experience of the RTOs in such forecasting as well as the potential for significant divergence in resource planning and transmission expansion between the two projections. In short, justification for not utilizing RTO capacity factors should be provided.

Question 4

What feedback do you have on the proposed base case cost assumptions for emerging technologies (including nuclear and long duration storage)?

Please indicate which specific assumption you are commenting on, describe the reason for your feedback, and provide any alternative data source or supporting materials that you would like us to consider to support your recommendation. Please provide a link or share via email.

See answer to Question #2

Question 5

What feedback do you have on the proposed commercial availability timelines shown on Slide 18? Please identify any technology timelines you believe should be revised, why you think it should be revised, and any supporting data or materials you have to support your recommendation.

None

Question 6

Please refer to the approach to modeling VPPs in this IRP on slide 29. Are there any targeted refinements you would recommend to improve the robustness of this approach and the results?

Inclusion of VPPs as proposed is concerning. Given tariff provisions are not yet established, there is no clarity on performance requirements of distributed generation resources. In contrast, there are established requirements and penalties for capacity performance for utility-scale resources. If VPP components do not have performance requirements and penalties, the reasonable and conservative result from a long-term resource planning perspective would be to rate the capacity factor at zero – no output can be dependable and customers are more likely to act against the best interests of the grid or even their own economic interests (not curtailing at peak due to inconvenience, disabling or not maintaining distributed control schemes, diverting storage charging to serve their own load, etc.). Additionally, the concept of creating a single representative VPP for the scenarios is problematic since there are wide variation in operational characteristics among DSM and DG resources. While the workshop notes that the resources will be studied based on

their individual characteristics, they will still need to be aggregated from a control/dispatch resource to compose an effective grid-facing resource and thus the composite dispatch function of the VPP will be a critical parameter. This would appear to need better definition for the study.

Question 7

As shown on Slide 29, this IRP will model one representative VPP made up of multiple DER building blocks. Please rank which VPP building blocks you believe are most important to include in a representative VPP. (BTM solar, BTM storage, Managed EV charging, Residential smart thermostats, Water heater controls, Commercial building controls, Others).

Commercial building controls; Residential smart thermostats; Managed EV charging; Water heater controls; BTM storage; BTM solar; Others

Question 8

Slide 30 identifies key VPP parameters that will inform the representative VPP to be modeled in the IRP. Please use the parameter categories shown when responding to the following questions. Please provide specific assumptions where possible with supporting data sources and/or program examples, where available.

- *Based on the building block rankings you provided in your response to the previous question, please specify the percentage of total VPP nameplate capacity you recommend assigning to each building block.*
- *Of those building blocks, how would you distinguish between existing and new resources in your proposal?*
- *What available capacity should be assumed for this VPP? How should it be assumed to vary over the year?*
- *How long may this VPP sustain the response? How frequently?*
- *What may this VPP cost?*

None

Question 9

Do you have any feedback to provide on the Assumptions workbook separately posted? Please note the specific assumption, your recommendation, and any data or supporting materials to support your recommendation.

See response to #3

Question 10

If CCS is considered as an added, co-paired technology with natural gas resources in a scenario:

- *What is a likely timeframe for when this technology could be reasonably expected to be commercially operational and accessed?*
- *What is reasonable costing for this technology to be included in modeling and analysis? Include data and reports to support your answer.*

None

Question 11

While current policy expects that CCS would fully sequester all carbon emissions to comply with CEJA (i.e. 100% carbon sequestration), a lower percentage of carbon sequestration may be more likely (e.g. 80% or 90% of sequestered carbon, i.e. 10-20% carbon emissions). Please provide a recommendation for a different percentage if 100% carbon sequestration is deemed to not be operationally likely during the term being modeled (2027-2047). If a different percentage is proposed, please support your recommendation.

None