IPA Integrated Resource Planning Workshop #2: Candidate Resources

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Question 1

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

Yes. The proposed framework, as reflected in the Scenarios workshop deck, underrepresents or omits several resource categories that are material to Illinois manufacturers and to overall system reliability. IMA recommends that the following be expressly incorporated: Industrial cogeneration and combined heat and power; Behind-the-meter (BTM) industrial generation more broadly; Industrial demand response (DR) as distinct from residential and VPP-aggregated DR; Natural gas with carbon capture and storage (CCS) as an explicit Illinois resource category; Firm dispatchable zero-carbon resources such as advanced nuclear.

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?

Add: The categories identified in Response 1 above — industrial CHP/cogeneration, BTM industrial generation, industrial DR (separated from aggregated VPP DR), gas + CCS, and each emerging firm zero-carbon technology treated individually.

Do not remove: IMA does not recommend removing any proposed category. The planning exercise benefits from a wider, not narrower, option set.

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.

IMA's overarching comment is that mature-technology cost assumptions should be (a) grounded in the most recent independent benchmark data, (b) Illinois-specific where regional cost differentials exist, and (c) inclusive of all-in delivered cost, not just overnight capital cost.

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.

For emerging technologies, the central risk in IRP modeling is not that costs are assumed too high — it is that they are assumed too low and too early, which causes the model to "solve" reliability shortfalls with technologies that are not yet commercially deployable at scale.

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.

Commercial availability timelines are, in IMA's view, the single most important assumption in the entire IRP modeling exercise. If timelines are optimistic, the model will select technologies that cannot actually show up on the bulk system, and the resulting "plan" will mask reliability gaps that manufacturers and other ratepayers will pay for at real-time prices or, worse, through lost load.

This concern is not hypothetical. The 2025 Illinois Resource Adequacy Study identified capacity shortfalls emerging in the late-2020s under every scenario modeled, and those shortfalls widen if new resource deployment slips by even 18-24 months.

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?

IMA has limited technical expertise in the detailed mechanics of VPP aggregation modeling. However, IMA's members are frequently the participating load in industrial demand response programs and have direct experience with what works and what does not.

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).

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

N/A

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.

IL Resource Cost Assumptions Workbook: Three categories of concerns. (1) Missing resource categories: gas + CCS, fast-start peakers, industrial CHP, nuclear uprates, demand response, VPPs, and BTM industrial generation should be added before modeling. (2) Key assumption issues: CAPEX excludes interconnection costs (biases toward new-build variable resources); 2030 SMR availability in Illinois is implausible (recommend 2032-2033); flat 2.0% inflation from 2029 is aggressive; WACC differentials (nuclear 10.5% vs. gas 7.3%) need methodology disclosure; static 2030 tariff assumption not credible. (3) Structural: mixed real/nominal dollars, incomplete source citations, horizon mismatch.

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.*

IMA strongly supports explicit modeling of gas + CCS as a pathway in the IRP. Preserving a dispatchable, low-emissions in-state generation option is, in IMA's view, essential to maintaining reliability through the CEJA transition, and modeling it honestly — including costs and limitations — is preferable to excluding it and implicitly assuming that SMRs and LDES will fill the gap on an optimistic schedule.

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.

IMA agrees with the premise of the question: assuming 100% capture is not operationally realistic for the term being modeled. Operating commercial-scale CCS facilities worldwide have demonstrated capture rates in the 85-95% range under sustained operation, with performance degrading under partial-load and ramping conditions that would be common for a dispatchable generation resource operating in a high-renewables grid.