



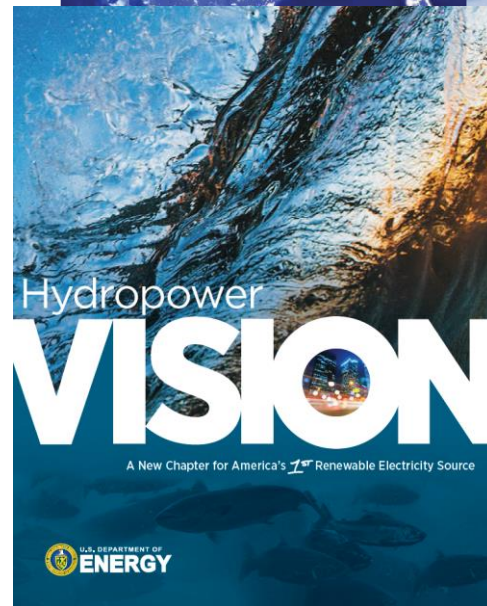
LTES Webinar: Improving (and Using) Scenarios for Decision-making

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Background

- Group consists of (primarily) power sector modelers and analysts
- Build and use scenarios to help people make better decisions



What makes good scenarios?

- Free from major mistakes, bugs, and biases
- Sufficiently robust to inform the question or decision at hand
 - Tool capability
 - Future conditions
 - Analysis
- The results, analysis, or interpretation of the scenarios are actually used for informing real questions or decisions

Key Elements for Having Good Scenarios

1. Good analysts
2. Good questions
3. Use the right tool(s)
4. Collaboration
5. Good review structures



Happens early-on in scenario development

1. Good Analysts

- Analysts need to
 - Build/develop models
 - Work with lots of data
 - Decide how to represent complicated things in models
 - Decide appropriate assumptions
 - Interpret model results
 - Communicate results
 - ...

2. Good Questions

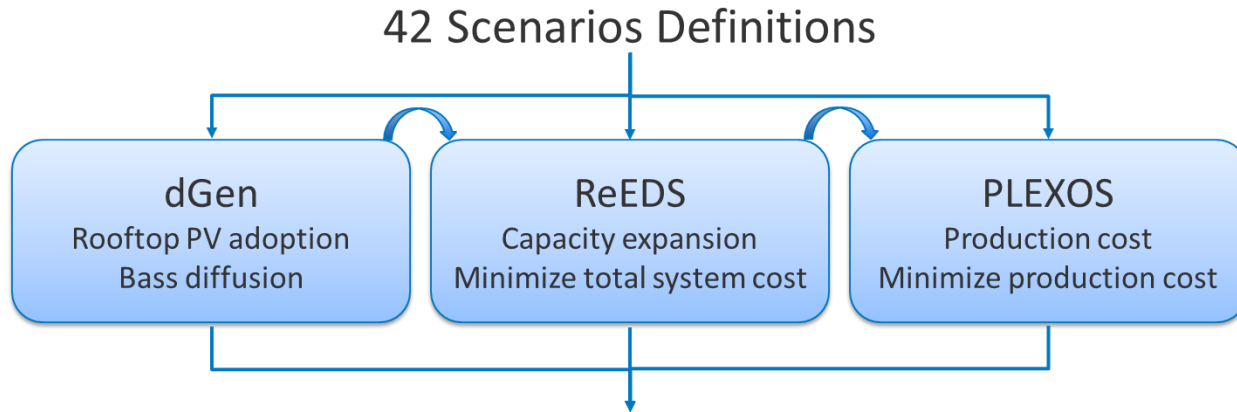
- Questions will drive model development and investment
- Analysts (even good ones) tend to work really hard to answer the questions presented to them, even if the questions are the best ones to answer



Figure Credit: <https://garyhall.org.uk/importance-of-questioning.html>

3. Use the Right Tool(s)

- Some questions do not need sophisticated tools
- Different tools are good at different things
 - Often best tool is a combination of existing tools rather than the creation of a new tool



2018 Standard Scenario Results

Figure from:
<https://www.nrel.gov/docs/fy19osti/72839.pdf>

4. Collaboration

- Different teams are answering different questions
- A lot of learning that happens on modeling teams is unpublished
- Long-term modeling is sufficiently complex that in-person interaction is often required

5. Good Review Structures

- Ensure high-quality code and versioning
- Ensure appropriate messaging and interpretation of results
- Challenge assumptions
- Be clear with caveats and limitations
- Increase the value of the scenarios

Summary

- Energy system decisions are hard
- Developing useful scenarios to inform those decisions is also hard
- Resources (people, time, data, money) are limited so more investment on the front-end of the scenario development has the highest potential return

Questions or Comments?

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