



National Transmission Planning Study

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PROJECT DETAILS UNDER DISCUSSION

Objectives of the study

- 1 Identify interregional and national strategies to accelerate cost effective decarbonization while maintaining system reliability**
- 2 Inform regional and interregional transmission planning processes, particularly by engaging stakeholders in dialogue**
- 3 Identify viable and efficient transmission options that will provide broad-scale benefits to electric customers**

How will the results of the study be used?



Results will **help prioritize future DOE funding** for transmission infrastructure support



Results will help **fill existing gaps** within interregional transmission planning



Results will help provide framework for stakeholders to discuss **desired grid outcomes** and **address barriers** to achieving them

Scope

Stakeholder Engagement

- Develop detailed SH engagement plan
- Coordinate with existing convenor groups
- Form Technical Review Committee with subcommittees
- Hold public workshops and develop informational webpage



Baseline Analysis

- Develop database of large, high-probability transmission projects
- Develop nodal version of a 2030 base case for power flow and production cost modeling
- Evaluate baseline projects and system relative to 2035 target and identify bottlenecks
- Identify potential interregional renewable energy zones (REZ) for use in scenario modeling

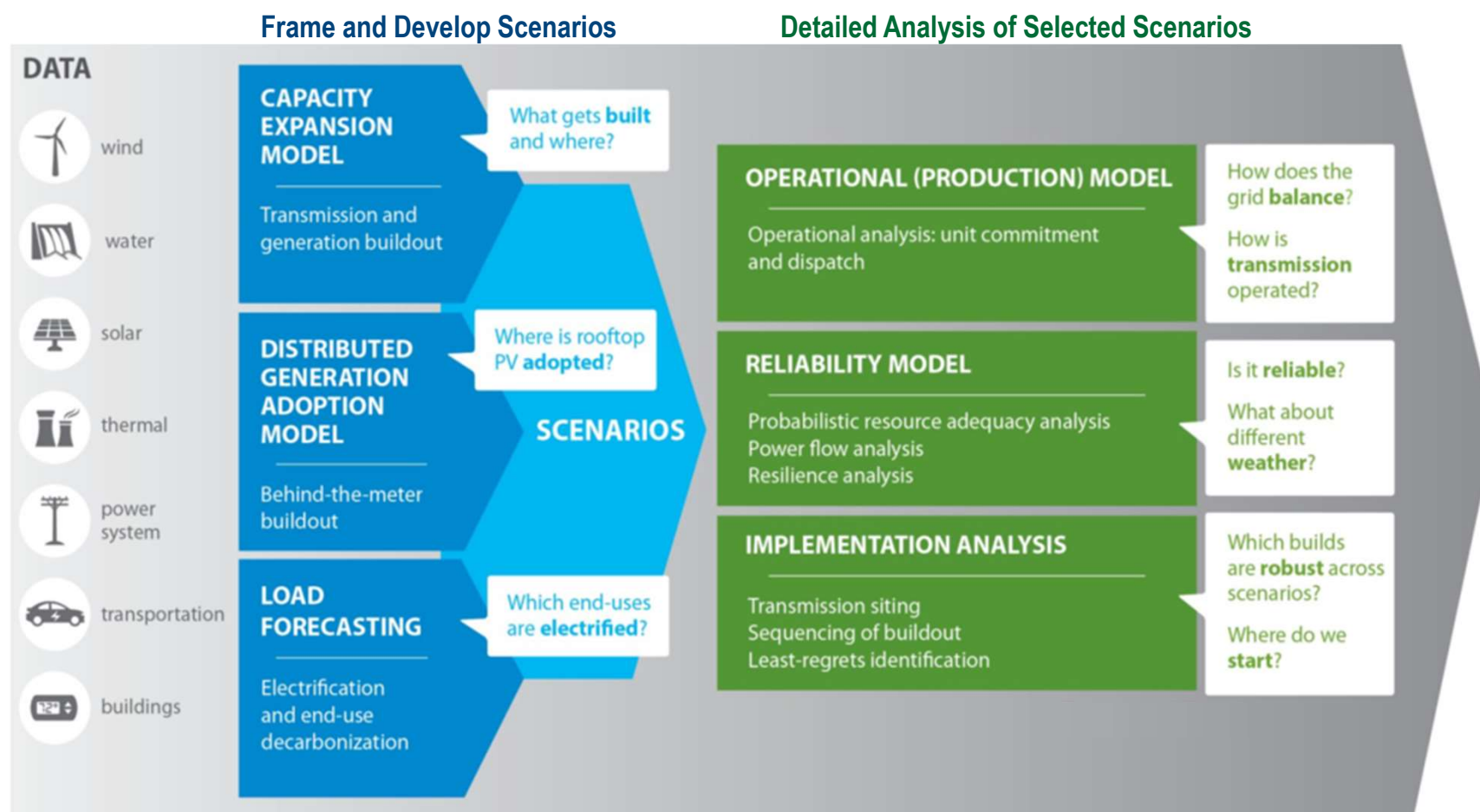
Scope, cont.

Scenario analysis key tasks

- Define scenarios for capacity expansion planning
- Conduct capacity expansion modeling
- Conduct production cost modeling
- Conduct AC power flow and dynamic reliability analysis
- Conduct economic analysis
- Conduct stress case and resource adequacy analysis
- Least-regrets identifications and build-out sequence



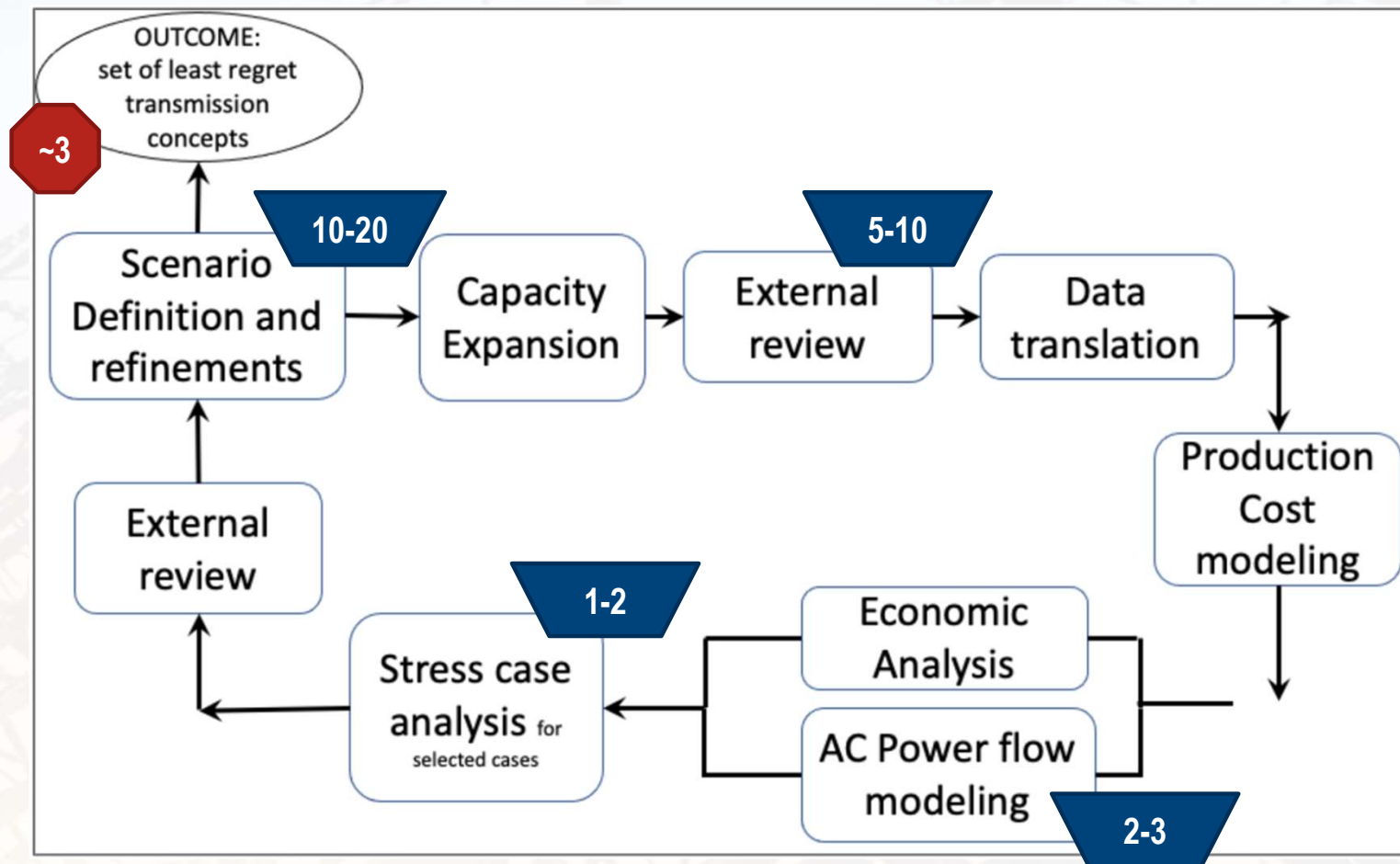
Scenarios study plan



Modeling will be iterative with many opportunities for review

Scenarios will be **down-selected** throughout modeling process.

Intend to end with **3_(ish) final** scenarios



Upcoming data request

- Retirements or changes to generation
- Load projects (ranges)
- Present and future transmission **congestion issues already identified** by regional stakeholders
- Existing transmission buildout plans
- Stress scenarios
- Scenario storylines

Scenario Characteristics



Transmission Drivers

Topology

- Macrogrid Overlay
- Interconnection-Wide Expansion
- Intra-Balancing Area

Technology & Cost

- Existing Technology & Costs
- High Costs
- Voltage Source Converters
- Non-wires Alternatives (e.g., FACTS, DLR, etc.)



Demand Drivers

Electrification

- High
- Medium
- Low

Distributed energy resources

- High
- Medium
- Low



Generation Drivers

Renewable siting

- Open
- Reference
- Constrained

RE & Storage Costs

- High
- Medium
- Low

Thermal fleet

- Nuclear fleet extension
- Clean firm capacity
- Carbon capture and sequestration

1. Which of these drivers do you care most about?
2. What are reasonable characteristic values to use for each?



Modeling Q&A and Discussion

Stakeholder engagement is multifaceted and casts a wide net

Public Workshops

- Introduce project and provide updates
- Share interim and final results
- Provide opportunities for public feedback

Meet
x3-4

Existing Convenor Groups

- Validate data and input assumptions
- Discuss modeling challenges
- Share project updates and interim results

Meet
x4-6

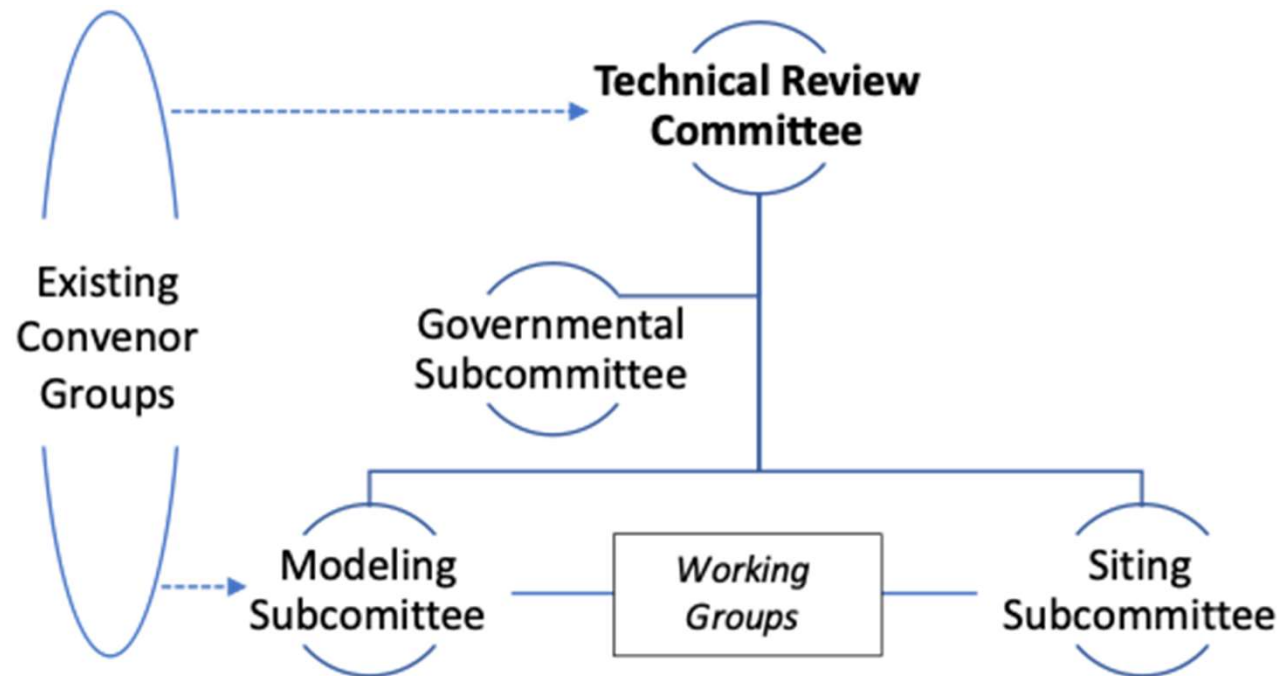
Technical Review Committee

- Provide overall project guidance
- Suggest necessary project course corrections
- Review interim results

Meet
x8-10

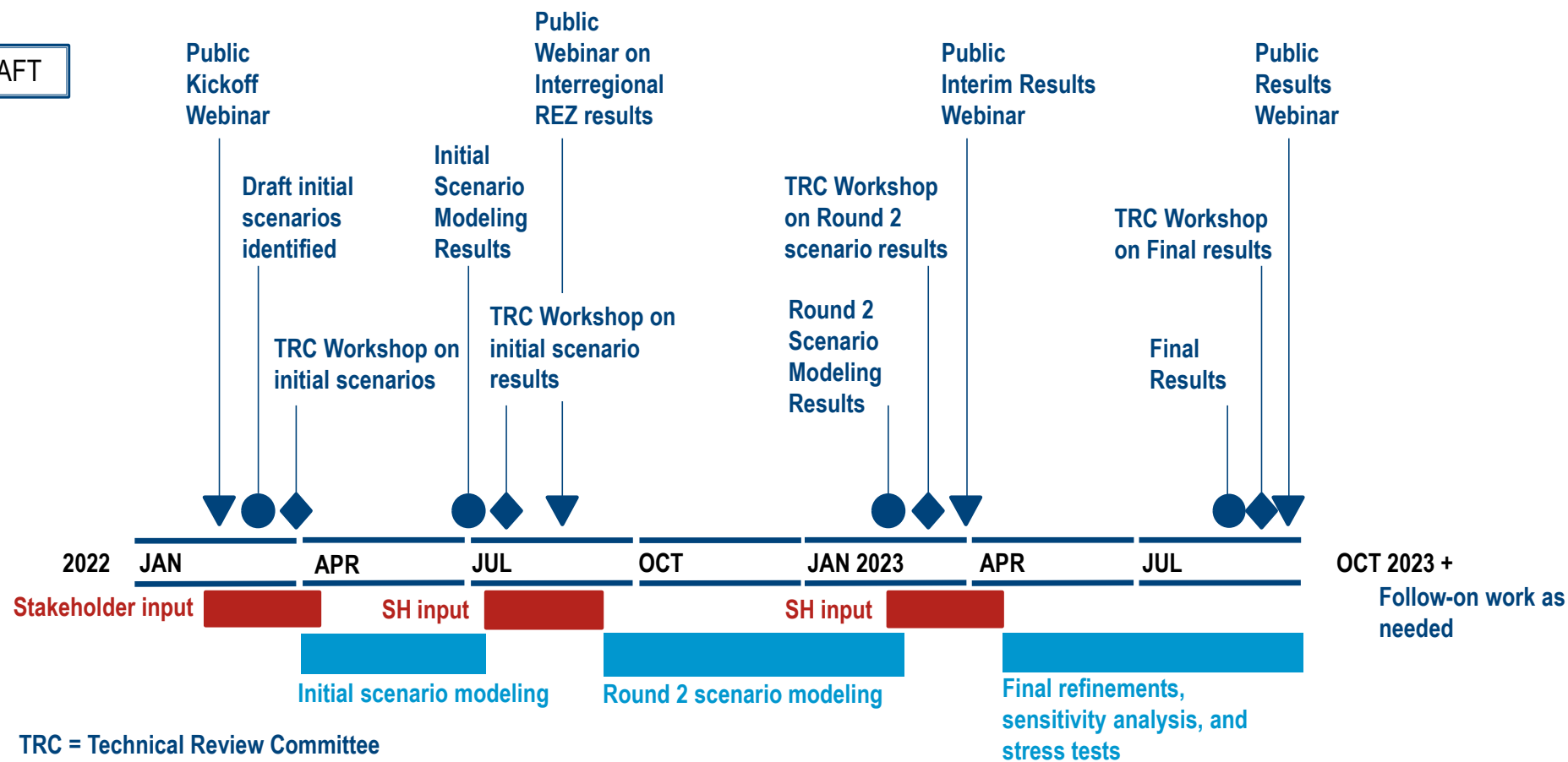
**One-on-one
meetings
with entities
as necessary**

Stakeholder engagement framework



Timeline

DRAFT



TRC = Technical Review Committee
 REZ = Renewable Energy Zones
 SH = Stakeholder



Q&A and Discussion

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