

Phase 1: simple scenario screen (individual technologies)

Screen scenarios under the following futures

CT&P future

- P50 load 8760 production cost run
- Extreme weather load 8760 production cost run

CT&P + Stable ED Growth

- P50 load 8760 production cost run
- Extreme weather load 8760 production cost run

Scenarios (additions of RFI technologies occur 2028-2033)

(Base technologies include wind, solar, 4-hr li-ion storage, energy efficiency, demand response; EnCompass capacity expansion modeling optimizes installed capacity of base technologies in each scenario)

1. Base technologies only
2. Base + Pumped hydro storage 70-hr (NW NM)
3. Base + Pumped hydro storage 8-hr (NW NM)
4. Base + Iron-air storage
5. Base + CAES (+transmission adder for salt access)
6. Base + LAES
7. Base + flow battery
8. Base + thermal storage (with steam turbine)
9. Base + CTs
10. Base + linear generators
11. Base + wind expansion (transmission + 800 MW wind)
12. Base + carbon capture retrofit (Afton)
13. Base + NET power plant
14. Base + 250 MW hydrogen project
15. Base + 500 MW hydrogen project

Evaluate scenarios based on:

- a) *Overall cost*
- b) *Cost difference to incorporate strong ED growth*
- c) *Ability to accommodate extreme weather load*

Other (qualitative) considerations for reporting:

- *TRL*
- *Similarities to other technologies evaluated*

Rank all scenarios based on evaluation criteria.

Phase 2: complex scenario evaluation (multiple technologies)

Determine complex scenarios

- Combine technologies in portfolios for EnCompass optimization (identify technologies that are likely to complement each other; additions of RFI technologies occur 2028-2033)
 - Base technologies, 70-hr PHS, CTs
 - Base technologies, 70-hr PHS, linear generator
 - Base technologies, 70-hr PHS, CTs, transmission expansion + eastern wind
 - Base technologies, 70-hr PHS, carbon capture (>99%)
 - Base technologies, 8-hr PHS, CTs
 - Base technologies, 8-hr PHS, linear generator
 - Base technologies, 8-hr PHS, CTs, transmission expansion + eastern wind
 - Base technologies, 8-hr PHS, carbon capture (>99%)
 - Base technologies, Iron-air storage, CTs
 - Base technologies, Iron-air storage, linear generator
 - Base technologies, Iron-air storage, CTs, transmission expansion + eastern wind
 - Base technologies, Iron-air storage, carbon-capture (>99%)
 - Base technologies, transmission expansion + wind + CAES
 - Base technologies + transmission expansion + eastern wind & co-located battery storage

Screen scenarios under the following futures

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- Extreme weather load 8760 production cost run

CT&P + Stable ED Growth

- P50 load 8760 production cost run
- Extreme weather load 8760 production cost run

Evaluate scenarios based on:

- d) Overall cost*
- e) Cost difference to incorporate strong ED growth*
- f) Ability to accommodate extreme weather load*

Other (qualitative) considerations for reporting:

- TRL
- Diversity benefits between technologies/operating characteristics represented among portfolios

Rank all scenarios based on evaluation criteria.

Phase 3: evaluate selected complex and/or simple scenarios against all futures and additional selected sensitivities

Futures and sensitivities:

Future	Sensitivities
Current trends & policy	Technology costs (high/low), economic development (accelerated), TOU rates, natural gas prices (high/low, applies to scenarios with natural gas), carbon prices (NMPRC prices), IRA tax credits expire
High economic growth	Technology costs (high/low), economic development (stable)
Low economic growth	Technology costs (high/low), no carbon price
National carbon policy	Technology costs (high/low), economic development (accelerated)