



2019 IRP Advisory Council

September 18, 2019



Important Notice



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If you are uncertain whether information is either confidential or competitive, or whether any particular information has been publicly disclosed, please ask. Adhering to this practice helps protect both you and Idaho Power.

IRP Advisory Council Meeting September 18, 2019

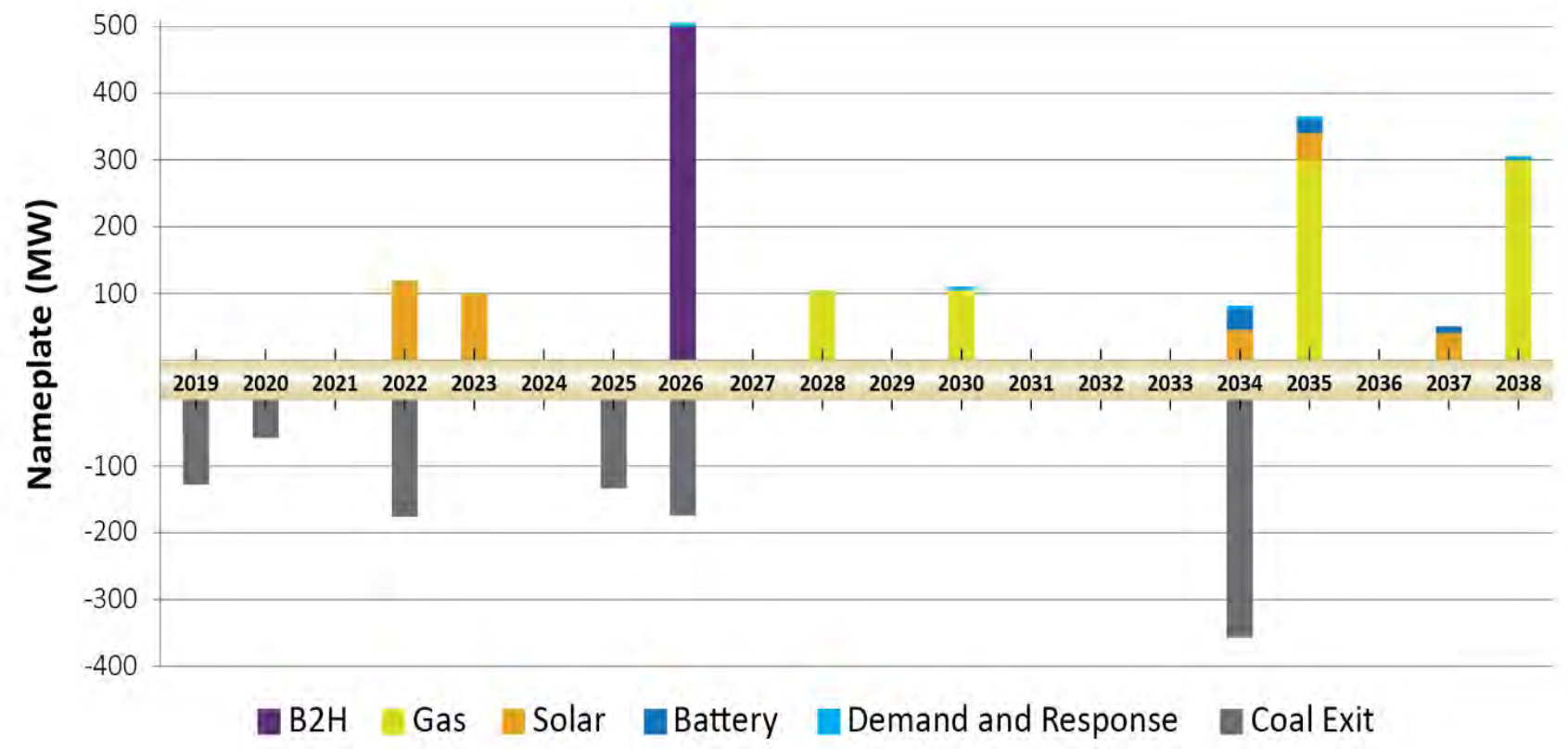
Discussion Topics

- Review initial conclusions
- Cause for supplemental analysis
- Modeling Updates
- Next steps



2019 IRP Preferred Portfolio

Portfolio 14
(Planning NG, Planning Carbon, B2H)



Action Plan 2019-2026

- Jim Bridger early exit planning and coordination (2019-2022)
 - Plan and coordinate for targeted early exits 2022 and 2026
 - Continue to evaluate and coordinate for timing of exit/closure of remaining units
- Jackpot Solar PPAs (2019)
- North Valmy Unit 1 (2019)
- B2H
 - Permitting activities (2019-2021)
 - Preliminary construction activities, long-lead materials acquisition, construction (2019-2026)
- Prepare to issue contingent all-source RFP (2019-2021)
- Boardman (2020)
- Jim Bridger early exit (2022)
- Jackpot Solar (2022)
- Franklin Solar (2023)
- Contingent all-source RFP – procure or construct (2023-2026)
- North Valmy Unit 2 (2025)
- Jim Bridger early exit (2026)
- Demand response resource (2026)



Post IRP Submittal



- Subsequent analyses – least cost, least risk portfolio may not have been identified
- Further investigation of WECC optimization through the Aurora LTCE model
- Idaho Power sent notification for need of supplemental analysis
- Evaluation of solutions

Updates for 2019 IRP Addendum Analysis



- Updated Aurora modeling information for solar PPA (Jackpot and Franklin)
 - Include REC values as offset to energy cost
 - Update energy cost
 - Include IPC network transmission upgrade costs
 - New resource selection
 - Start date moved to second year of contract (Actual start is December, moved from January of start year to January of second year)
 - Coordination between Jackpot and Franklin project selection (Franklin only available if Jackpot selected)
- Switch to Gurobi Solver

Aurora Simulations



- Portfolio Design – Long Term Capacity Expansion (LTCE)
 - Now also including manually optimized portfolios
- Portfolio Analysis
- Risk/Stochastic Simulations

Portfolio Matrix



Non-B2H	Zero Carbon	Planning Carbon	Generational Carbon	High Carbon
Planning Gas	1	2	3	4
EIA Reference	5	6	7	8
High gas	9	10	11	12

B2H	Zero Carbon	Planning Carbon	Generational Carbon	High Carbon
Planning Gas	13	14	15	16
EIA Reference	17	18	19	20
High Gas	21	22	23	24

Portfolio Analysis



- All 24+ Portfolios will be analyzed under the following scenarios:
 - 4 scenarios for each Optimized Portfolio.

Portfolio --	Planning Carbon	High Carbon
Planning Gas	X	X
High Gas	X	X

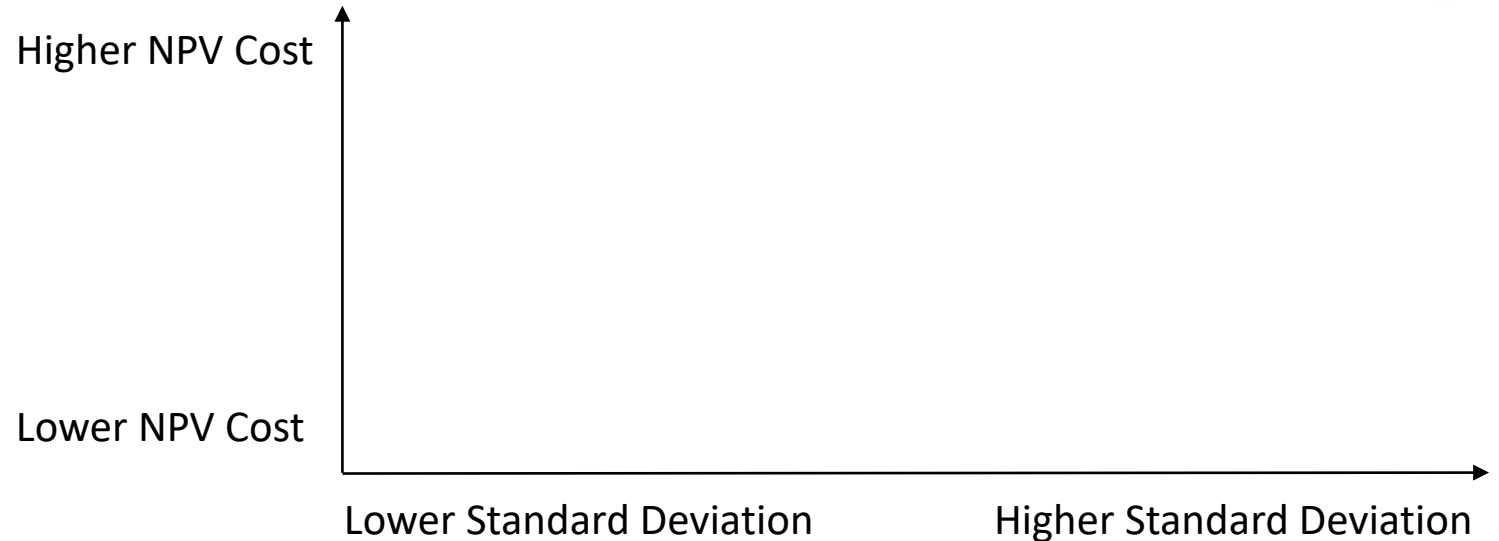
Risk/Stochastic Analysis

- Stress portfolios under the following scenarios:

	Portfolio --
Natural Gas Prices	X
Hydro Generation	X
Demand	X

Portfolio NPV/Standard Deviation

NPV of Planning Scenario
Planning Gas/Planning Carbon



Standard Deviation of 4 Scenarios
Planning Gas/Planning Carbon
High Gas/Planning Carbon
Planning Gas/High Carbon
High Gas/High Carbon

*Note: Previously weighted four portfolio scenarios equally. Open for input on probabilities of future scenarios.

Next Steps

- Manual portfolio optimization
- Portfolio analysis
- Risk/stochastic analysis
- Reliability analysis
- Determine preferred portfolio
- Prepare report
- File report

