

Carbon Free Power Project

*Utilizing a Risk
Informed Model*

July 21, 2020

Risk Management & Mitigation

- Being a ~\$5B nuclear power plant EPC project, successful delivery of the CFPP requires proactive and effective risk management
 - See project risks
 - Characterize/understand risks
 - Discern and prioritize risks
 - Take action and mitigate risks
- Preliminary Risk Management Program developed as a tool for project leadership
 - Integrated Risk Management Team approach for risk management, led by UAMPS
 - Three primary tools:
 - Risk Register
 - Risk-Informed LCOE Model
 - Schedule Risk Analysis (later)



CFPP Risk Landscape

Risk Areas

Financial

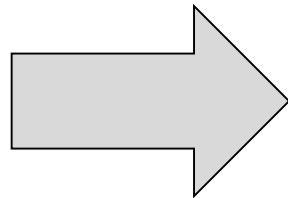
Engineering,
Procurement
Construction

Operations

Project
Development

Regulatory

Technology



Key Risk Topics

First Mover

- Non-recurring costs
- FOAK technology and design
- FOAK supply chain
- FOAK deployment

Commercial

- EPC Contract Terms
- Stakeholder wherewithal
- 1st Mover risk coverage
- Sustained DOE support

Project Execution

- Detailed design incomplete
- Managing cash flow
- “Nuclear” procurement & construction
- Craft availability/performance

UAMPS New to Nuclear

- Minimal nuclear experience

NuScale Viability

- Lack of subsequent NuScale deployments

**Risk Register contains >50 risks, these are key risk topics*

Mitigation Strategies

Manage Costs, Contracts, and Finances

Limit at-risk UAMPS spending

Strengthen DOE engagement and support

Phased Project Plan with incremental risk reduction and off-ramps

Utilize risk-informed cost model

Accelerate EPC Term Sheet

Advance work to reduce EPC uncertainties

Rigorous Execution Plan and FOAK Mitigation

Understand, embrace, address prior lessons learned

Best-in-class contract support to complement UAMPS project team

Risk-informed graded approach for oversight of Fluor, NuScale, suppliers

Focus on on early activities that can impact downstream work/risks

Rigorous maturation and testing programs for FOAK scope

Close monitoring of related NuScale activities (DCA, SDA)

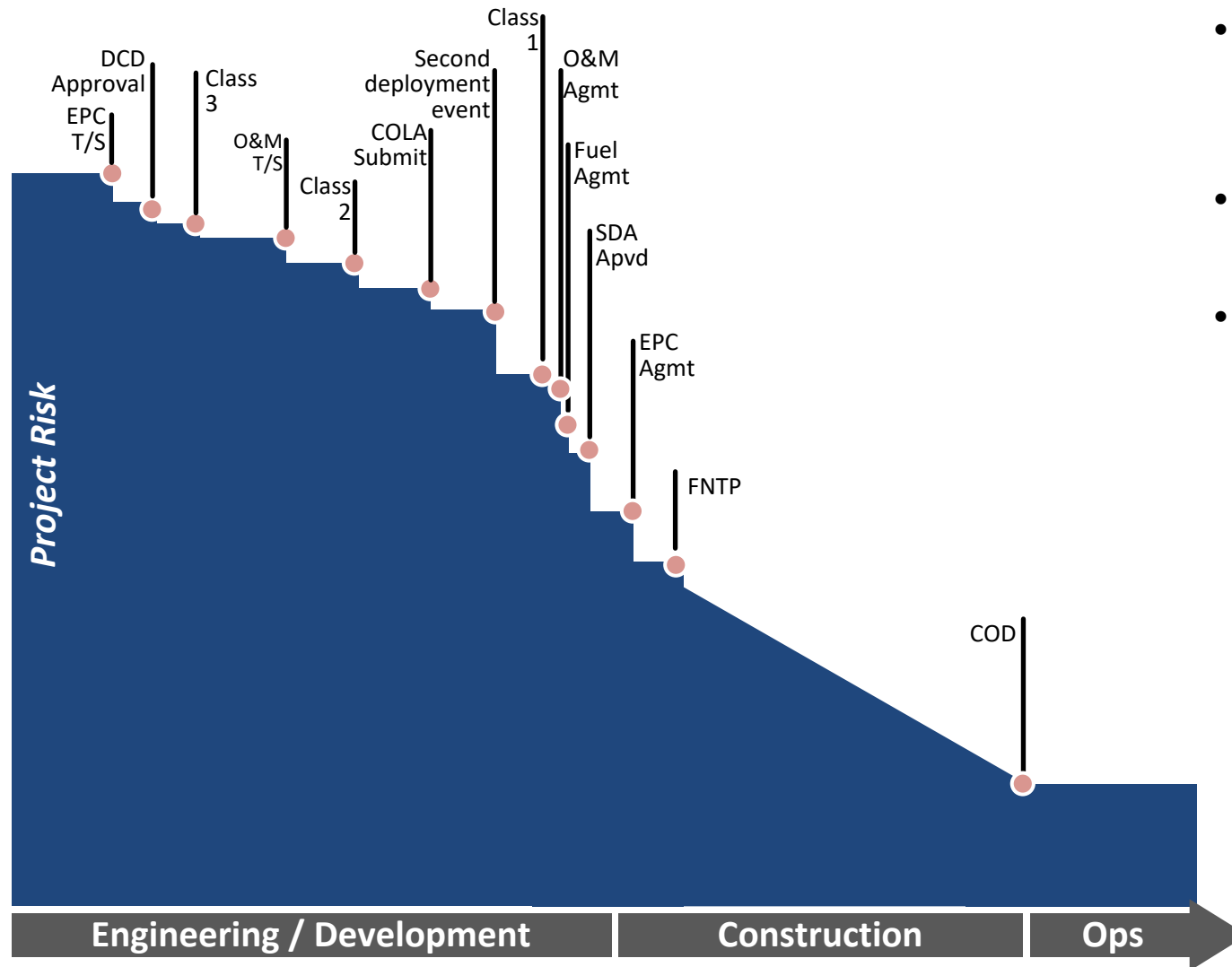
Ensure NuScale Viability

Form NuScale Customer Working Group under UAMPS Leadership

Seek fleet O&M shared services model

Include viability requirements in project agreements

Incremental Risk Reduction Concept (notional)

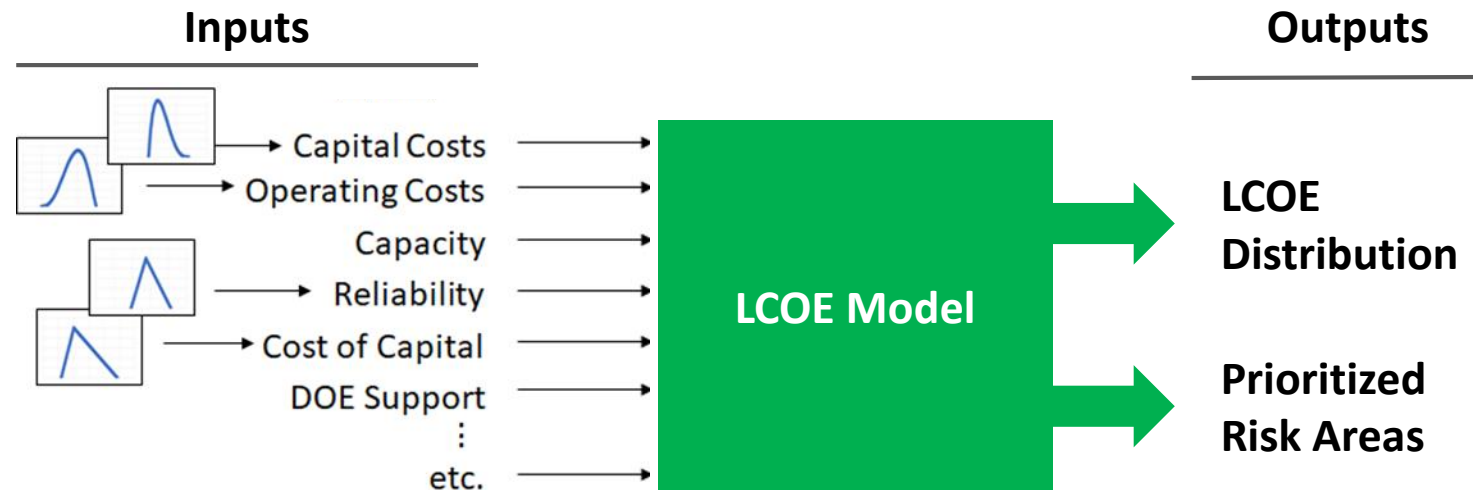


- Risks reduced by achieving key milestones during development period
- DOE support in early phases is critical
- UAMPS funding increases as risks reduce

Risk reduction occurs because of achieving milestones, not simply the passing of time

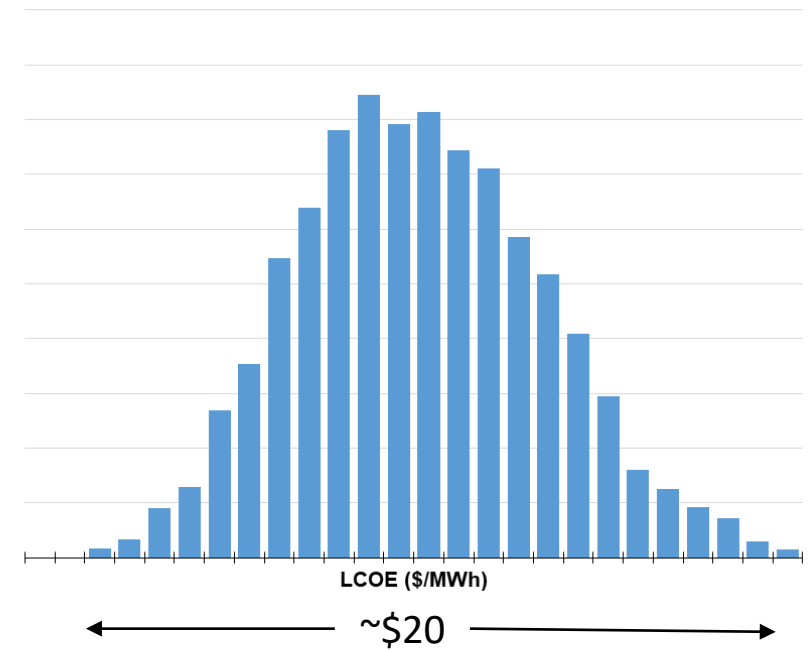
Risk-Informed LCOE Model

- Quantifies risks and areas of highest impact to LCOE
- Impact to LCOE is driven by uncertainties in cost estimate (due to questions, risks, and opportunities)
- Risk-informed LCOE model results/insights used to focus project efforts to mitigate risks and reduce uncertainty
- Supplements single-point LCOE model used for ECT

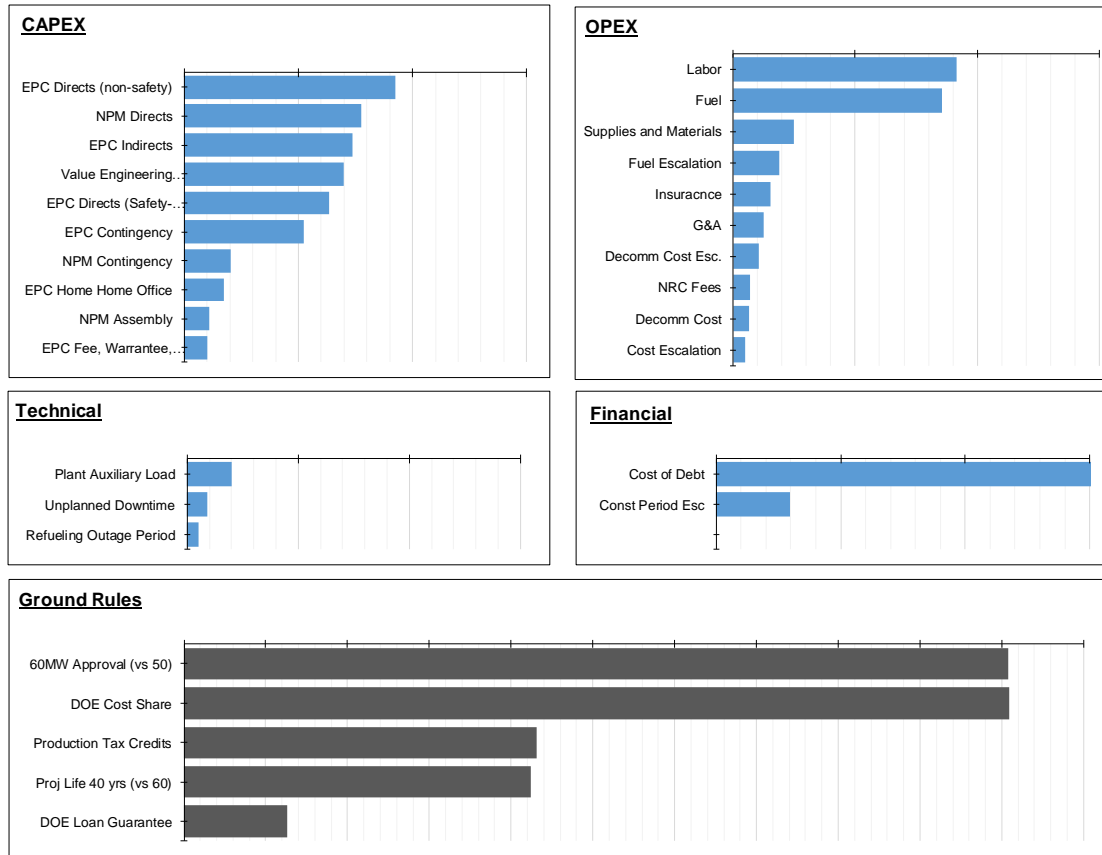


Risk-Informed LCOE Model Insights | Range

- As expected at this stage of project development and design, risk-informed results show wide range of potential LCOE results
- Many inputs to cost estimate have uncertainties of -10% / +30%
- Continuous actions needed to:
 - Focus project priorities and attention
 - Reduce uncertainty ranges
 - Identify cost reductions



Risk-Informed LCOE Model Insights | Drivers



\$100M of CAPEX ≈ ~\$1/MW-hr
\$10M/yr of OPEX ≈ ~\$2/MW-hr

Continuous actions needed to de-risk on multiple fronts:

- CAPEX
- OPEX
- Financial / Funding
- Regulatory

Near term focus needed to identify funding to mitigate threats to cost increases (i.e., DOE cost sharing)

Take-Aways

- A very challenging FOAK project, both establishing project finances and ensuring predictable project execution
- DOE award finalization is absolutely critical
- Mitigation plans developed to address project risks
 - Cost and EPC Terms addressed primarily through DOE support and accelerating EPC Term Sheet
 - Execution and FOAK technology risks addressed through aggressive risk management and enhanced oversight
 - NuScale viability and subsequent deployment risk addressed through increased engagement with other potential NuScale customers

This project can be delivered successfully

To achieve that result, aggressive and effective risk management is required along with important work to firm the project foundation