Electricity Committee

NARUC Summer Policy Summit

Electricity Committee and Subcommittee on Nuclear Issues-Waste Disposal

Nuclear Power Updates

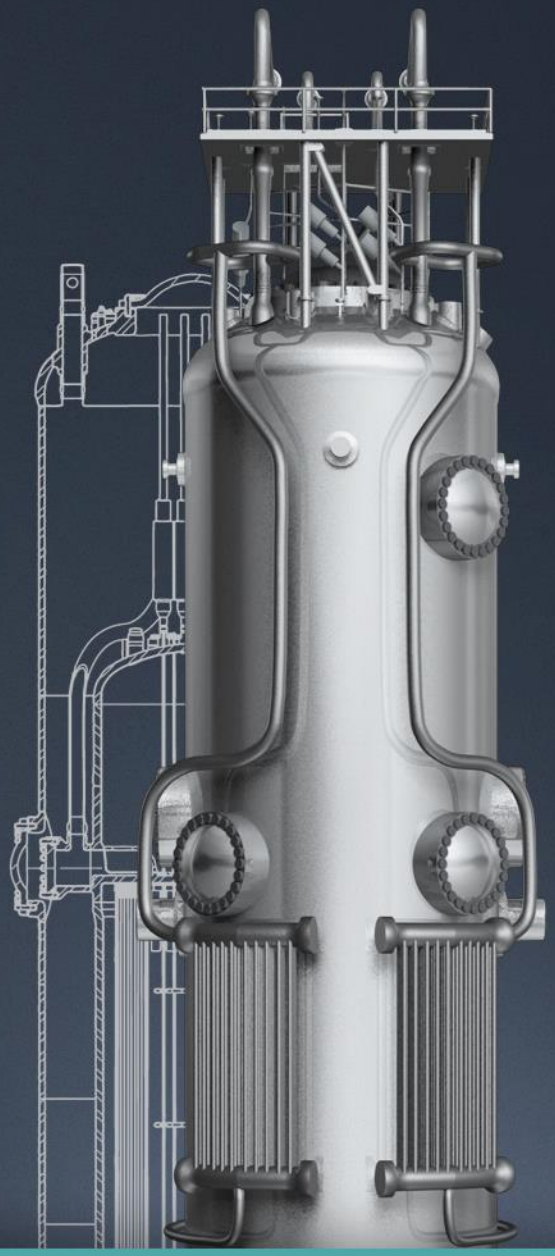
NARUC Summer Policy Summit

NuScale Power™

July 17, 2017

NuScale's Small Modular Reactor

Jack Bailey
VP NuScale Power



Acknowledgement & Disclaimer

This material is based upon work supported by the Department of Energy under Award Number DE-NE0000633.

NuScale Power History

NuScale Engineering Offices Corvallis

2000 MASLWR

2003 Test Facility

2011 Fluor

2012 Simulator

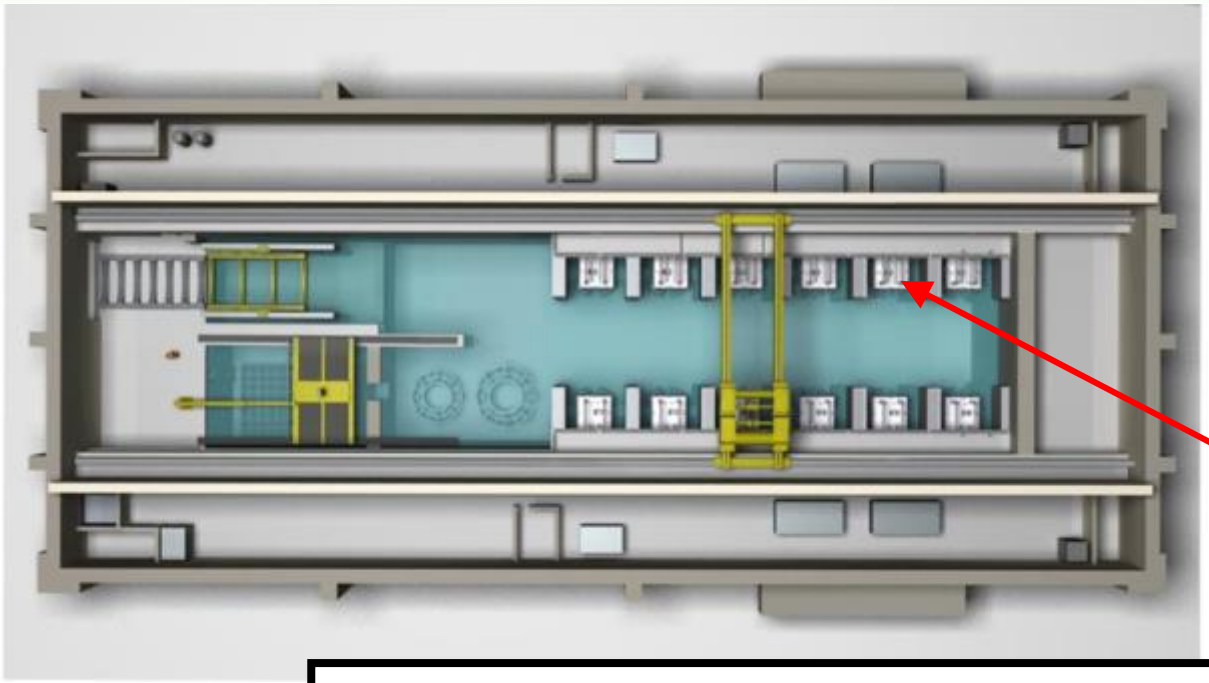
2014 DOE Award

2017 > $600M Invested

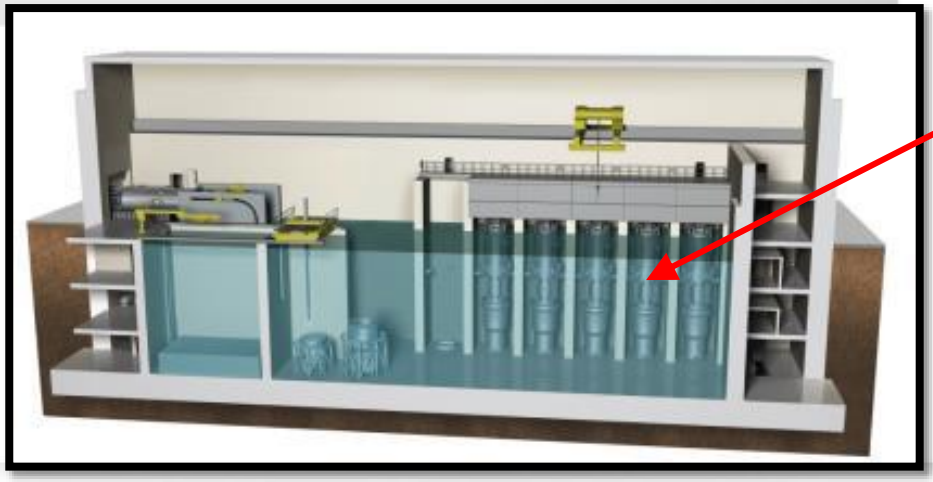
NuScale Power

DCA: Submitted and Accepted by NRC

What is a NuScale Power Module?

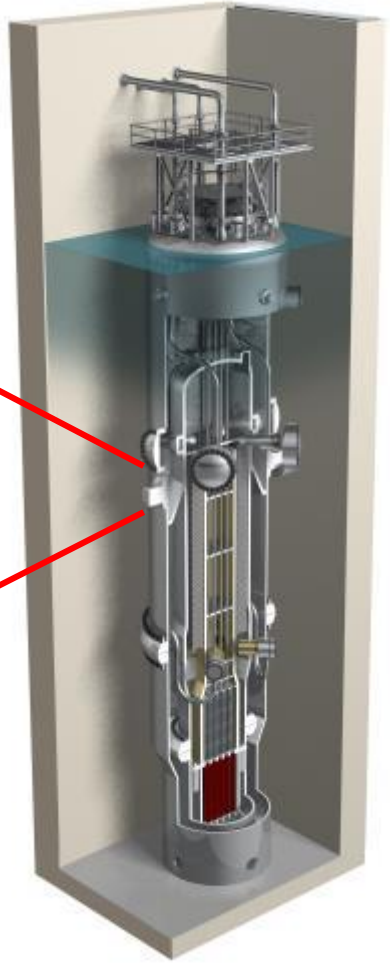


Top View



Cutaway View

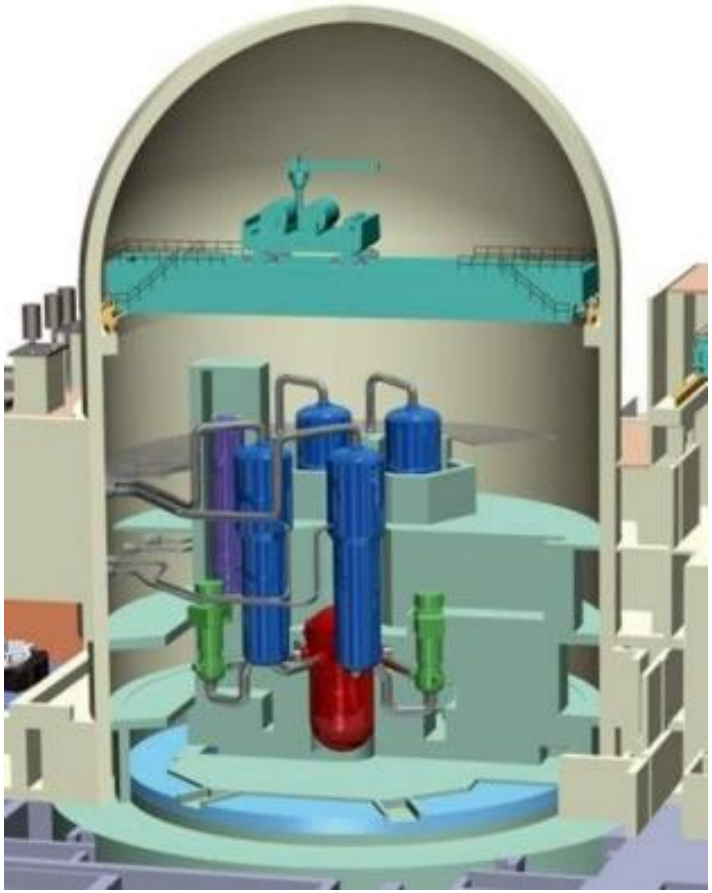
NPM
50 MWe (gross)



NuScale Power

Size Comparison

Typical Pressurized-Water Reactor
Containment & Reactor System



*Source: NRC

NuScale Power Module
Combined Containment Vessel and
Integral Reactor System

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Factory Fabrication

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Transportable

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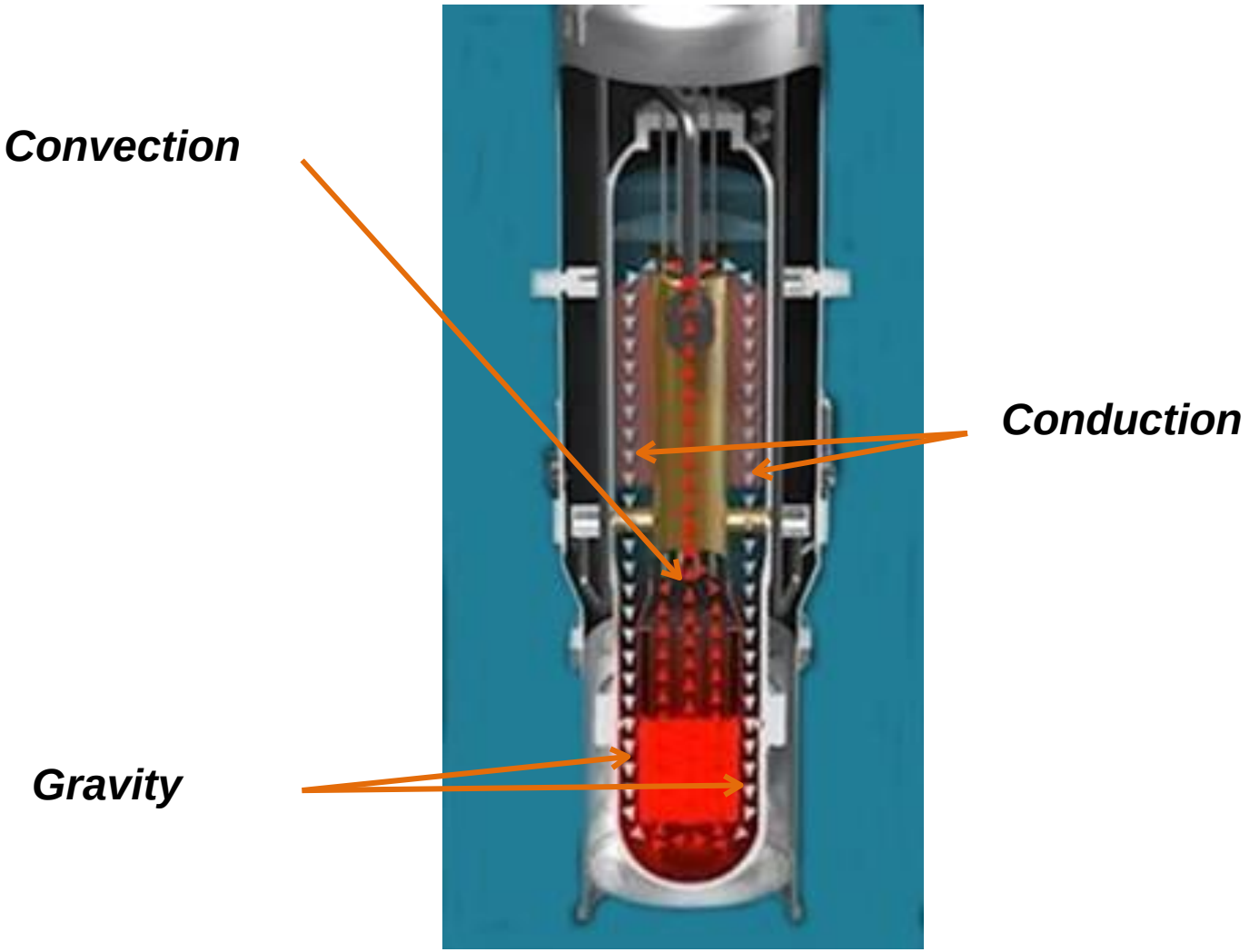
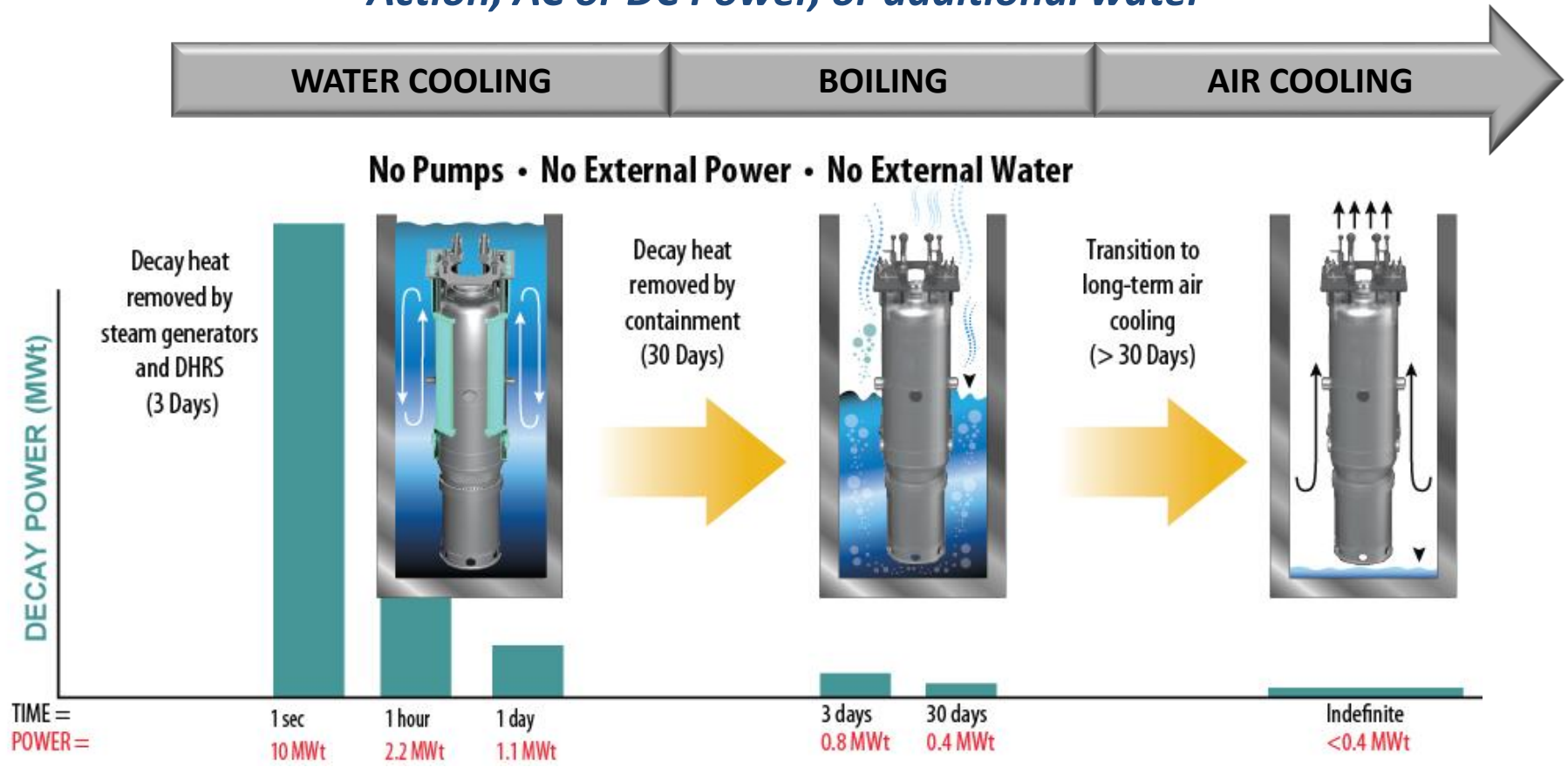
Coolant Flow Driven By Physics



Triple Crown of Nuclear Safety

Reactors cooled for an unlimited time without Computer or Operator Action, AC or DC Power, or additional water



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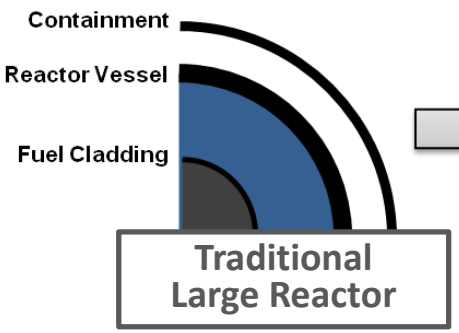
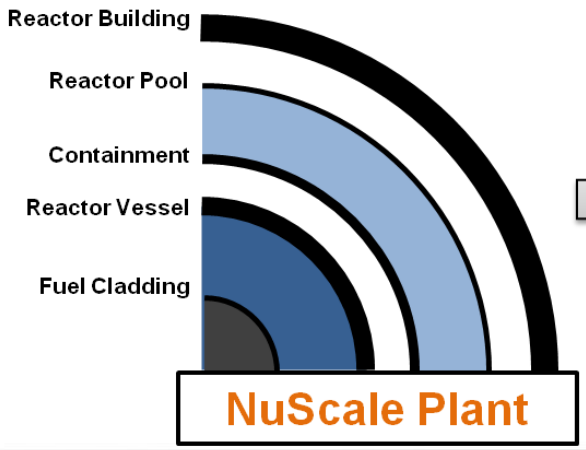
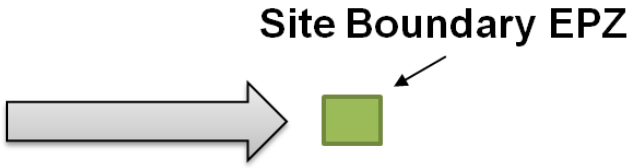
Smaller Emergency Planning Zone Due to Enhanced Safety

Barriers Between Fuel and Environment



Current





Goal

- ***Passive Safety***
- ***Reactor core < 1/20 size of large reactors***
- ***Additional Fission Product Barriers***
- ***Significant Delay in Release of Radiation***

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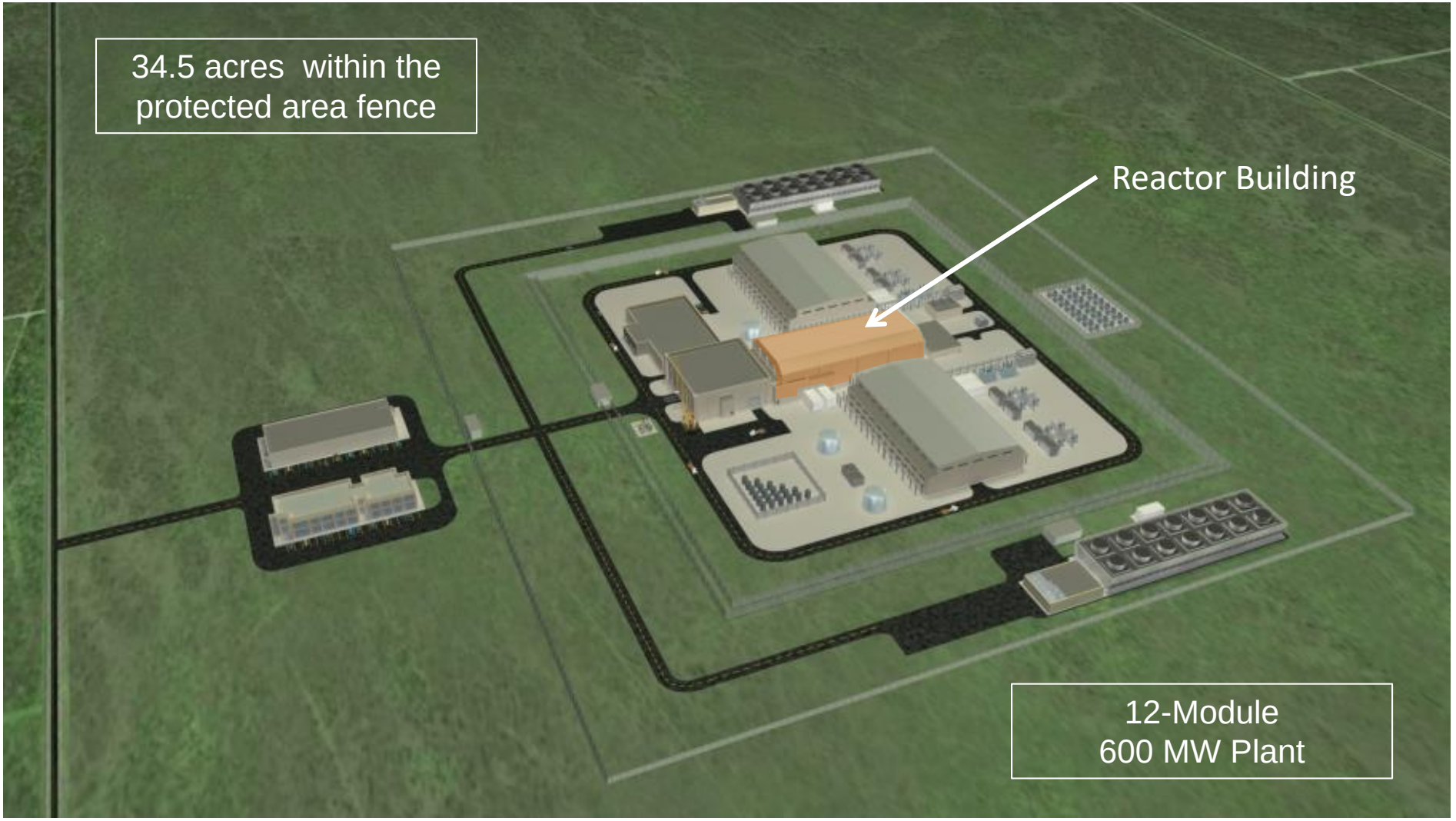
Small Footprint



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Flexible Operation

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NuScale Adds Good Jobs

Manufacturing

Construction

Operations

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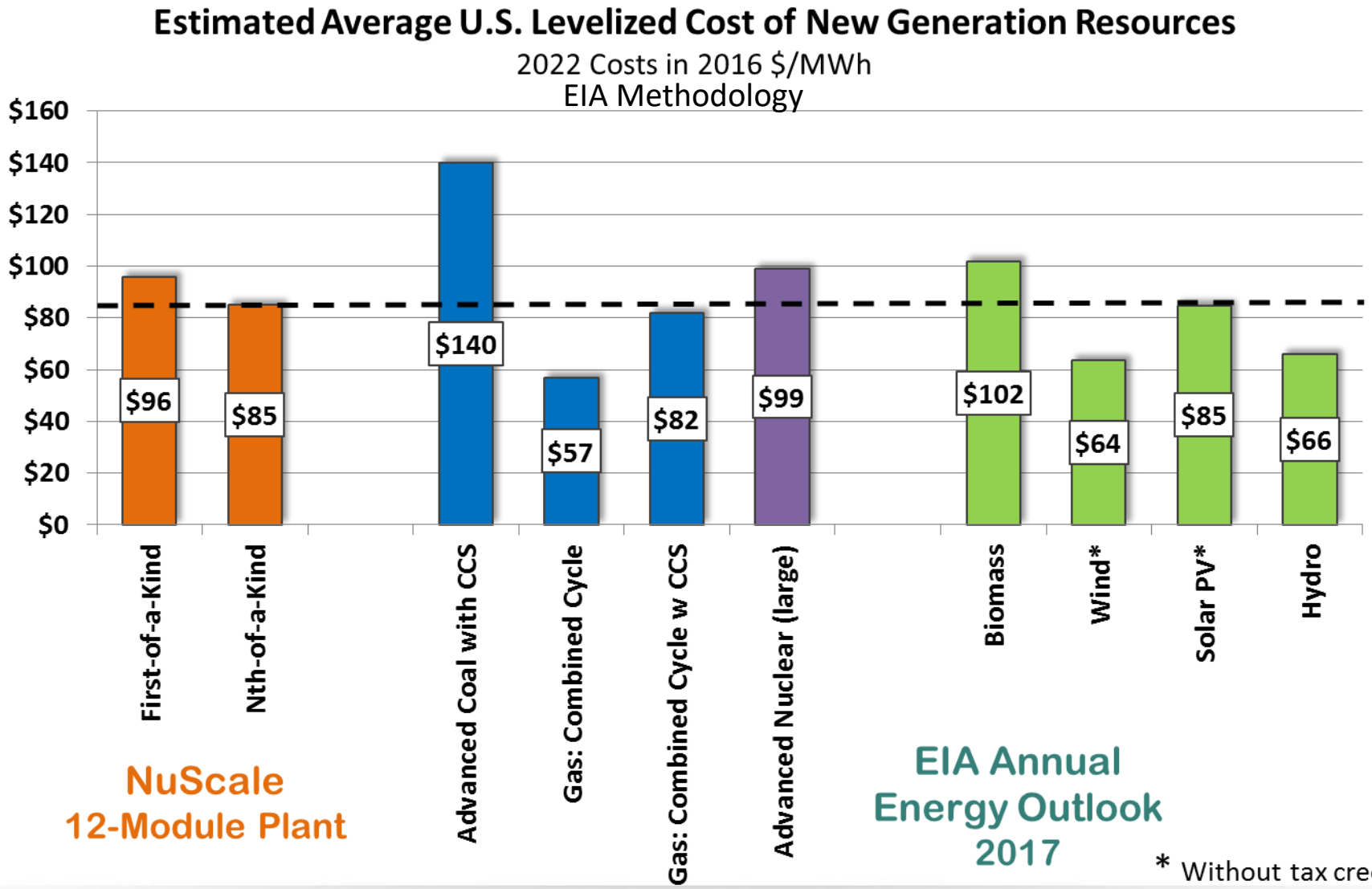
Competitive Economics



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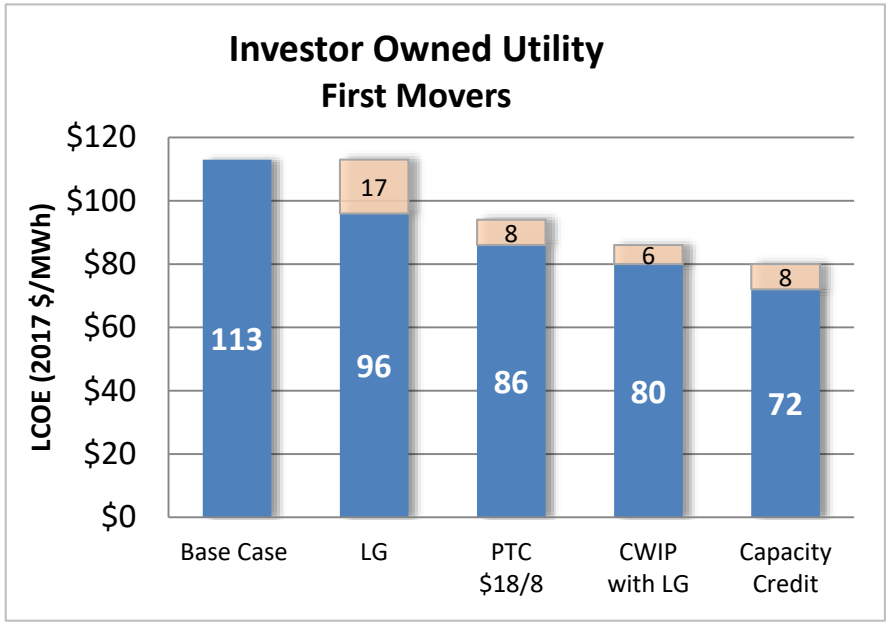
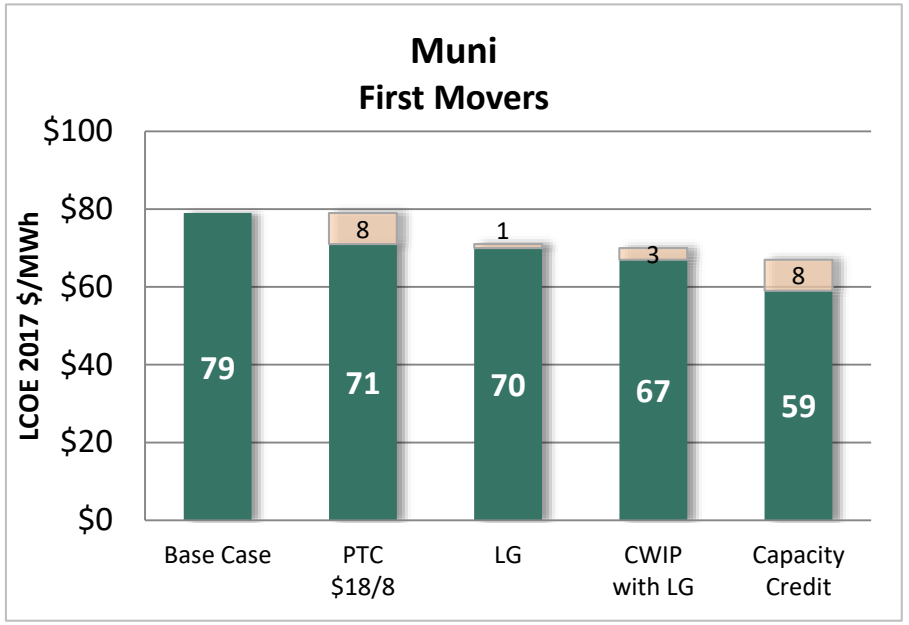
Summary of Potential Policy Impacts

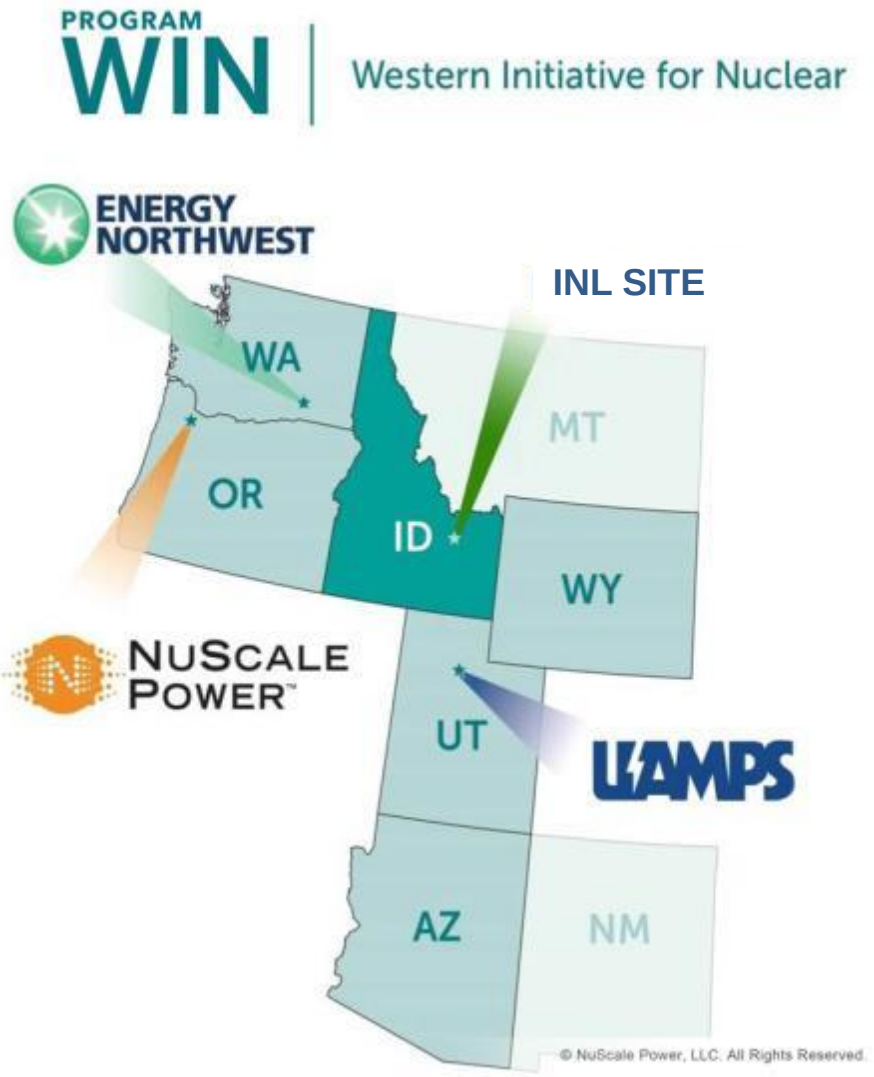
Generic SMR Cases using NEI SMR Financial Model (2017)
To Show Relative Benefit of Various Policy Options





LG = Federal Loan Guarantees
Capacity Credit = Payment for security /reliability of $100/kw-yr

First Deployment: UAMPS CFPP



NuScale Diverse Energy Platform Initiative

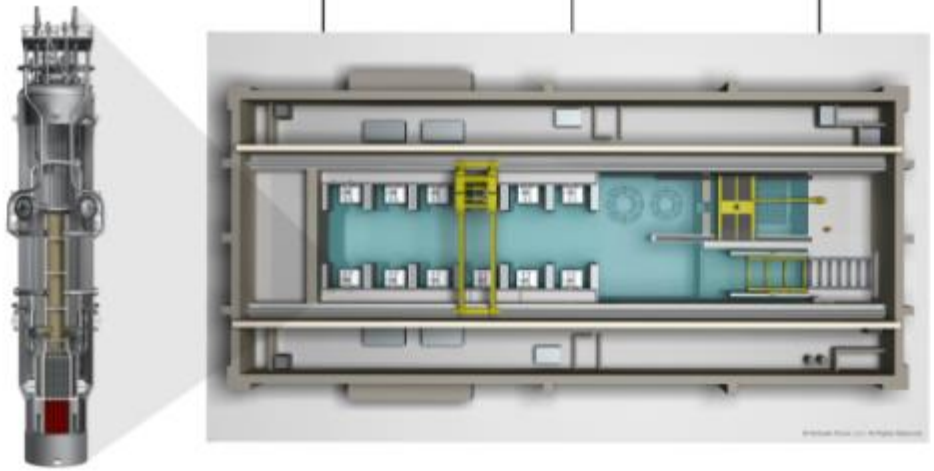
Mission Critical Facilities

Hydrogen Production

Desalination

Wind Integration

Oil Refineries



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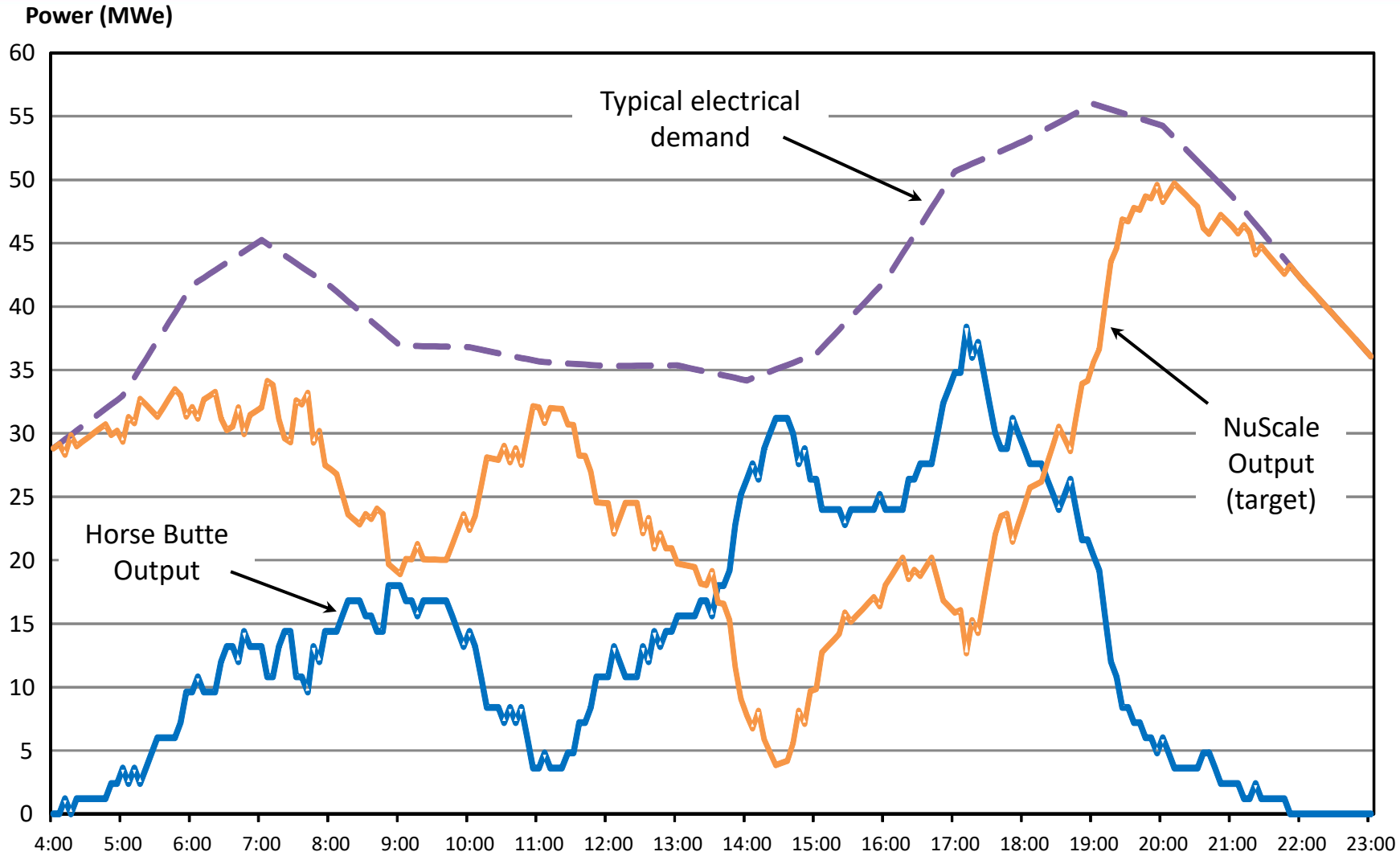
Load-Following with Wind



NuScale Reliable Power for Mission Critical Facilities

UTILITY MACROGRID

470 MWe (net)
> 95% Capacity

NuScale 12-Module Plant

MISSION CRITICAL FACILITY

DEDICATED MICROGRID
100 MWe (net)
> 99.99% Availability

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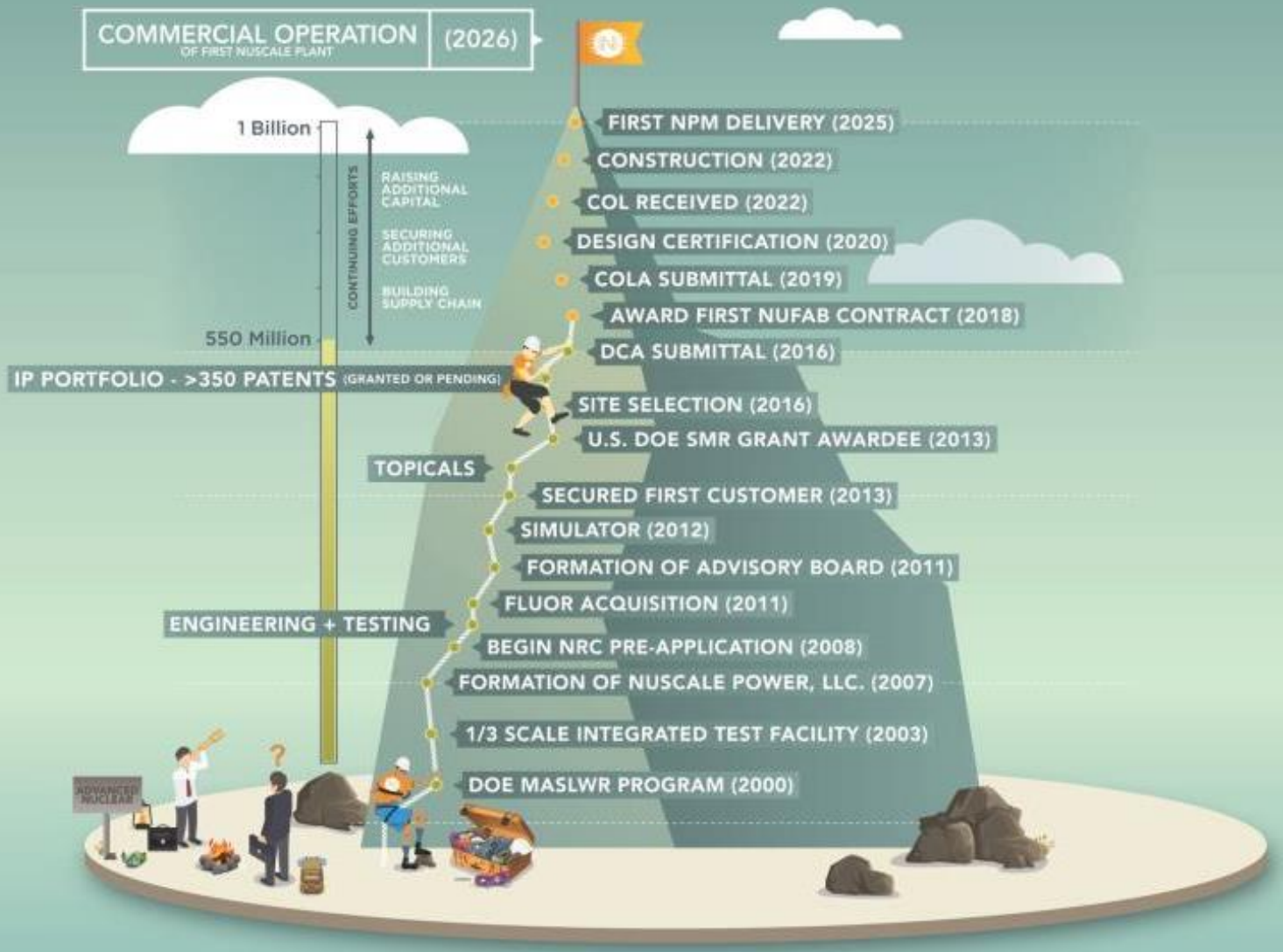
Blazing the Trail to Commercialization



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Electricity, Energy Resources & the Environment Committees

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