



UTAH STATE LEGISLATURE PUET COMMITTEE

SEPTEMBER 15, 2020

Mike Squires, Government Affairs Director

CARBON FREE POWER PROJECT UPDATE

What?

Why?

How?

WHAT? RENEWABLES, ENERGY EFFICIENCY AND SMR

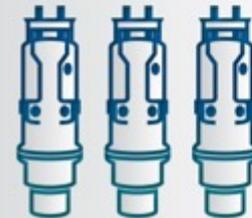
CARBON-FREE ENERGY SOLUTION FOR THE FUTURE



Renewable
Energy



Energy
Efficiency



Small Modular
Reactors

UAMPS



SMARTENERGY™

SMR DESIGN

- **Plant design approval:** First SMR licensed by NRC in U.S. history
- **Capacity:** Total capacity 720 MWe, nuclear has highest energy capacity factor
- **Small footprint:** Sits on 34.5 acres
- Located near existing transmission
- **Safe:** Safer design with NRC approval for fence line emergency planning zone (EPZ)
- **Sustainable:** UAMPS determined (5,000 af/year versus 21,000 af/year utilizing wet)



Cut away of NuScale small modular reactor (SMR)

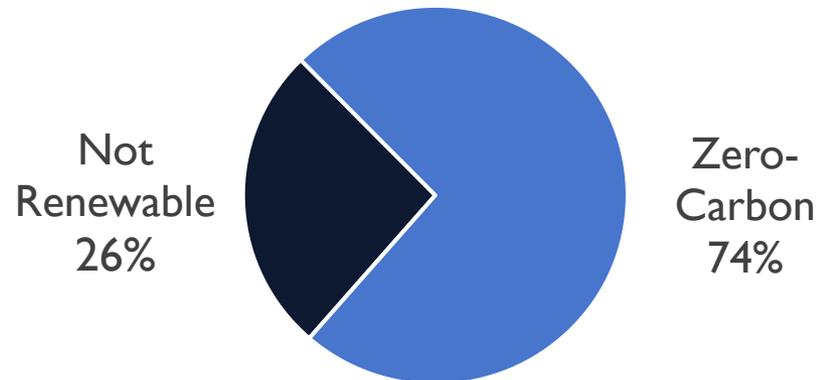
WHY?

Carbon-free capacity

WHY?

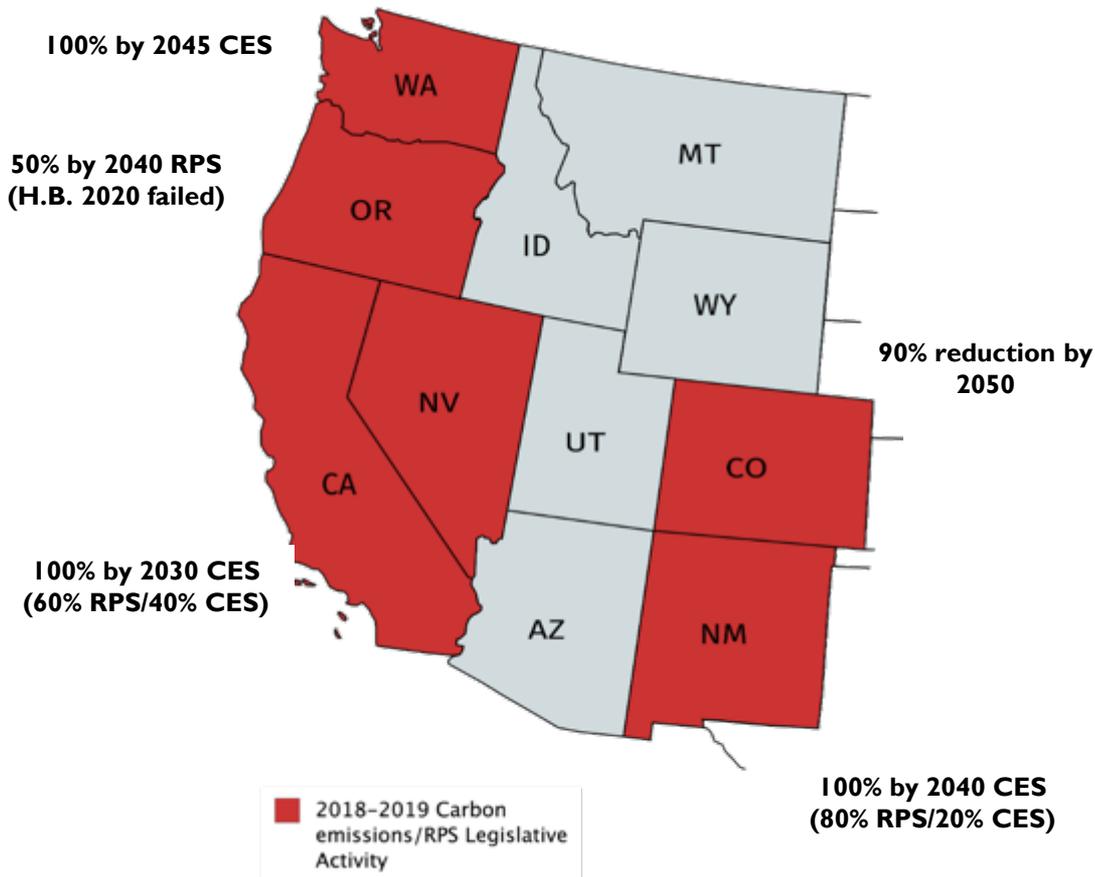
- Replacement of existing carbon fired generation with non-carbon sources
- Providing for future load growth needs with a more diverse energy portfolio
- Economic cost stability with high reliability and resiliency

UAMPS Utah Zero-carbon Resources 2030



Where UAMPS members would be on its carbon footprint with CFPP

I. LEGISLATION ON CARBON

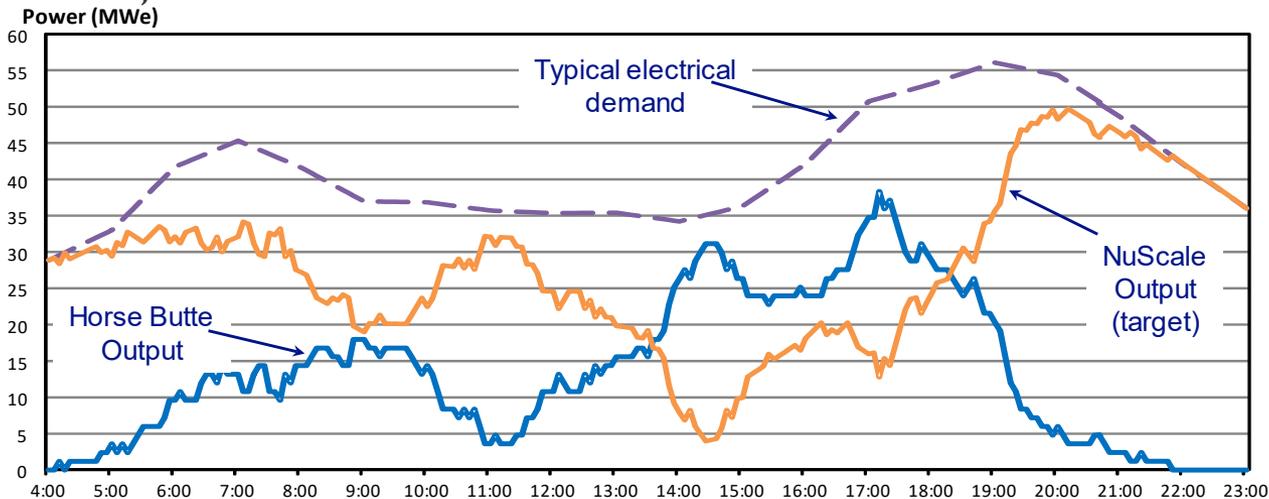


Between 2018-2019, 6 of the 15 states with RPS/Carbon emissions legislative activity were in the West



HORSE BUTTE WIND FARM

- Commissioned in 2012
- 32 Vestas V100 turbines
- 1.8 MWe capacity per turbine
- 57.6 MWe total capacity
- 17,600 acres

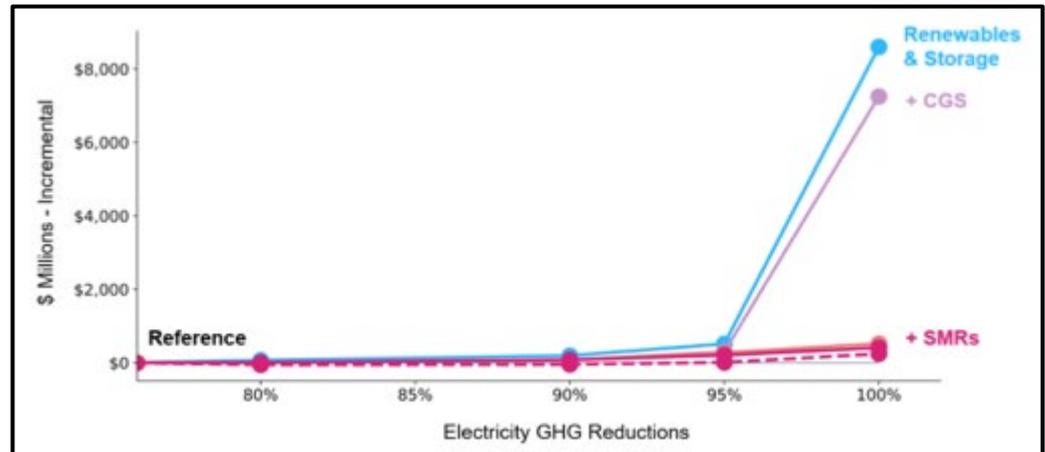


NuScale's SMR is able to ramp quickly allowing for higher penetration of renewables

- Study used Typical Electrical Demand based on 24 hour output (Nov. 11, 2014)
- NuScale design meets or exceeds EPRI Utility Requirements Document (URD), Rev. 13, load following and other ancillary service requirements.

3. ECONOMIC COST STABILITY

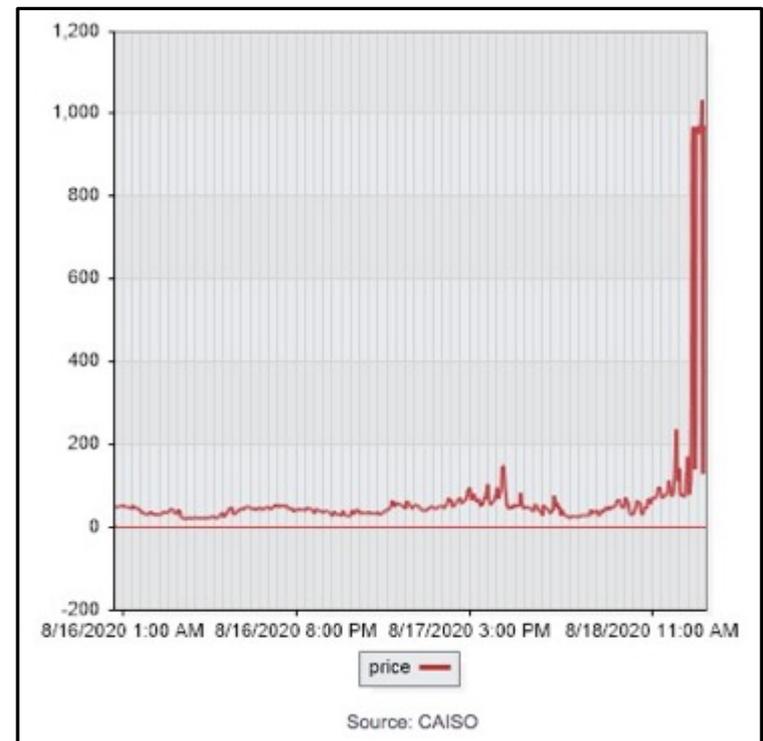
- Forecasting the price of electricity can be difficult and especially in a carbon-constrained regulatory environment
- Least cost method evaluating replacement for coal generation
- \$55/MWh became the benchmark LCOE cost
- UAMPS and its members continue to invest in renewables and that part of the generation mix is increasing
- Batteries and renewables will at current rates prove to be more expensive according to E3 study in Northwest



Relative costs to decarbonize with SMRs versus

(CALIFORNIA TEST CASE)

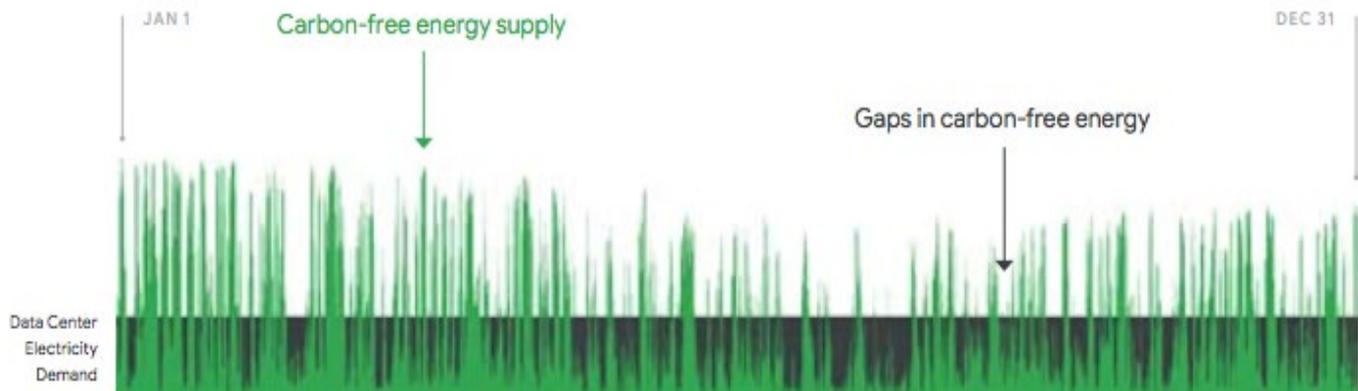
- *California is EXCEEDING their RPS, they are presently at 33%, and by 2023 they are to reach 40%, by 2030 100% (60% renewable).*
- *2020 California witnessed the worst energy emergency since 2001*
- *Spot pricing increased to over \$1,000/MWh*
- *Hundreds of thousands of homes lost power*



(COMPANIES SEEKING DECARBONIZATION RECOGNIZE ADVANCED NUCLEAR)

“However, renewables can only do so much; decarbonizing Google’s electricity supply will also require deploying entirely new kinds of energy production and storage technologies. Near-term, this means we’ll scale our purchasing of battery capacity, but batteries are not themselves a panacea. To reach our goal in locations with limited land or renewable resources, or to address seasonal variations in wind or sunshine, we’ll explore opportunities to source power from emerging tools, such as advanced nuclear.”

(Google White Paper on going to 100% carbon free power 24/7 by 2030)

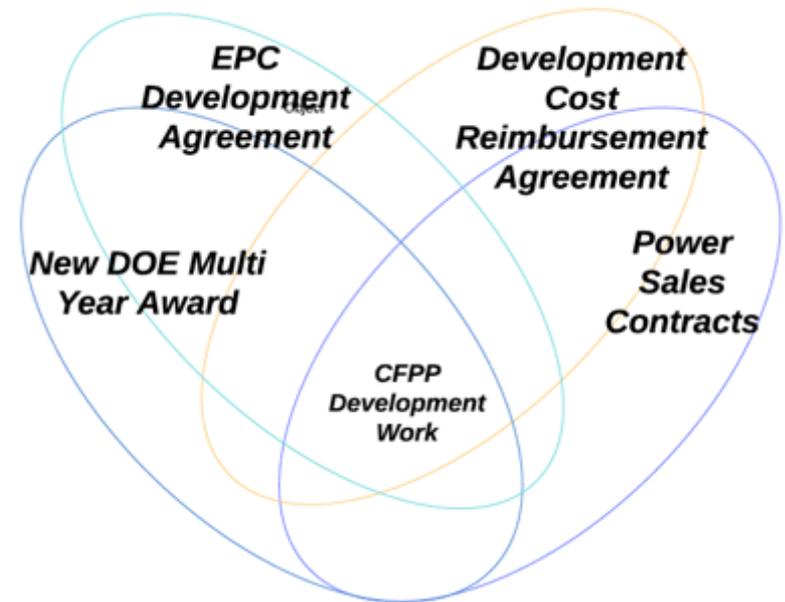


HOW?

CFPP DEVELOPMENT

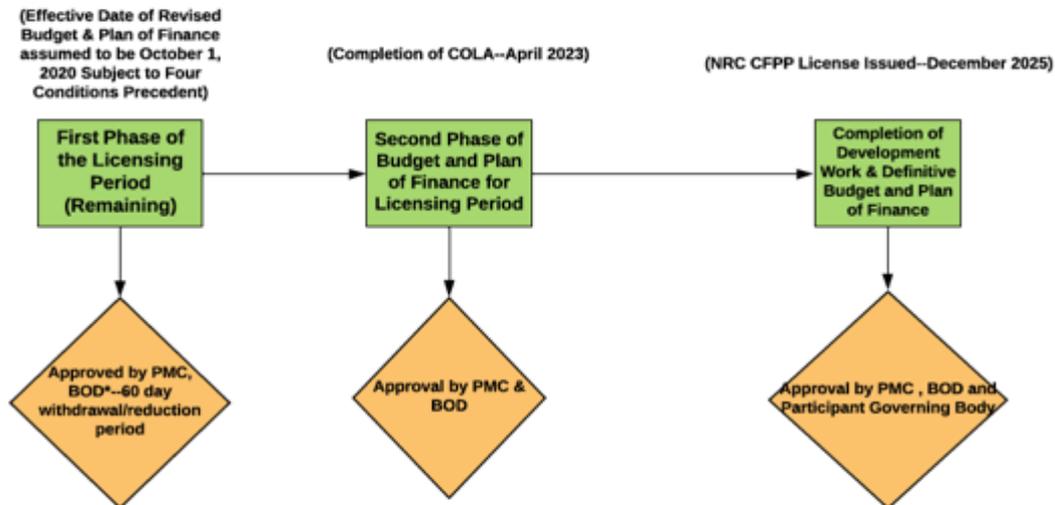
- Project development is very particular to that project
- Financed costs are repaid by the cost of electricity (ratepayer) not tax dollars
- Contractual arrangements exist to protect ratepayers and keep costs at \$55 /MWh
- Independent owner's engineer review of project cost estimates from EPC contractor [or Fluor]”
- An economic competitive test (ECT) must be met to ensure accountability

CONTRACTUAL ARRANGEMENTS



THE PROJECT PROTECTS AND SUPPORTS UAMPS MEMBER COMMUNITY AUTONOMY

Participant Withdrawal & Reduction Rights under the Power Sales Contracts



*BOD=Board of Directors

Each Approval (diamond shapes) Identified above provide a withdrawal option to each Participant as described in Section 204; Participants can notify intent to withdraw at any point during a Phase but effective date for the withdrawal will be the end of that Phase

- CFPP contractual arrangements protect their community's autonomy while developing this resource option at a minimal cost
- Subscription at Current CFPP Entitlement Shares equate to 213 MW of subscription or 29.7% of the 720 MW.
- UAMPS has incurred out of pocket costs of approximately \$2.3M or 20.5% of the total project costs included to date.
- CFPP continues to attract interest in a carbon-constrained world
- COD 2029

STRONG LEGISLATIVE SUPPORT

- Project continues to experience stronger bipartisan and bicameral support
- Supported across President Obama and President Trump administrations
- SMRs included in former VP Biden's climate plan and those of congressional Democrats

U.S. CONGRESSIONAL APPROPRIATION

Recent Advanced SMR R&D Appropriations. Award History				
Year	President Request	House Mark	Senate Mark	Approps/Omnibus Conference
FY 2017	\$89.6 M	\$96.6 M	\$95 M	\$95 M
FY 2018	\$20 M	\$60 M	\$0	\$60 M
FY 2019	\$54 M	\$100 M	\$90 M	\$100 M
FY 2020	\$10 M	\$100 M	\$100 M	\$100 M
FY 2021	TBD	TBD	TBD	TBD



QUESTIONS

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