

Subcommittee and Staff Subcommittee on Nuclear Issues: New Opportunities for Nuclear Energy

This session will begin at 11:15 am



New Opportunities for Nuclear Energy

Moderator: Hon. Tim Echols, Georgia

Panelists:Brian Szews, ScottMaddenDr. Otgonbaatar, ConstellationJacob DeWitte, CEO and Co-Founder, Oklo Inc.



Value Propositions of hydrogen

NARUC Policy summit

July 2022

Constellation: By the Numbers

| Constellation is the #1 zero-carbon energy provider in the U.S with 90% carbon-free output, backed by more than 32,000 MW of generating capacity. | | Opera State 215 160 Customer | tes in 48 s & DC 5 TWh 0 Bcf Load Served | Scalable national platform of approximately 2 million customers served, offering a diversity of innovative products and services, including ³ / ₄ of Fortune 100 companies | |
|---|-----|--|--|--|----------------------------|
| Power Supply Mix | TWh | | | C&I | Goal of |
| Nuclear | 176 | 12000 | Constellation | Market | 100% of |
| Conventional | 20 | 13,000 | is soon to be | Share | business |
| Owned Renewable | 7 | Employees | a Fortuna 200 | Ranking | customers |
| Contracted Renewable | 7 | | Company | #1 | with custom GHG data by |
| Purchased Power | 73 | | | | end of 2022 |



Constellation's Nuclear fleet is within 100-mile range of ~14 MT H2



Source: Internal Hydrogen analysis



Constellation Clean Nuclear Power Sites



Constellation R&D and Grant Program Privileged and Confidential

Nine Mile Point Hydrogen Pilot

- Constellation has been awarded a DOE grant in partnership with Nel Hydrogen and 3 National Laboratories to demonstrate an integrated hydrogen production strategy
- Nine Mile Point was selected as the site to install a Proton Exchange Membrane (PEM) electrolyzer
- Budget Period 1 concluded in August 2021









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NARUC National Association of Regulatory Utility Commissioners

Cryptocurrency Mining with Nuclear Power

Securing carbon-free nuclear power through alternative revenue generation

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Discussion Outline





Introduction to Cryptocurrency and Blockchain Technology





Generate Revenue from Surplus Capacity

Components of a Cryptocurrency Mining Operation

- 1. Mining computers
- 2. Electrical infrastructure
- 3. Network infrastructure
- 4. Internet connection
- 5. HVAC temperature control (cool climate)
- 6. Housing space with racks and shelving





Cryptocurrency Mining and Nuclear Power Compatibility



Combining nuclear power and cryptocurrency mining generates positive value propositions for both industries



Current Events and Recent Announcements

<u>Talen Energy</u> \$400M Susquehanna JV with TeraWulf for 475MW mining mid 2022

Energy Harbor Agreement with Standard Power using a direct connection & fixed price for 300+MW from Beaver Valley in 2023-24

<u>Mawson Infrastructure</u> 250MW of mining in Georgia using mainly nuclear and hydro power by Q3 2022





Financial Parameters of Cryptocurrency Mining

CAPEX is dominated by the cost of the mining computers, electrical infrastructure, and housing space

O&M is dominated by the cost of electricity

| | NPV (6yr) | ROI | Break Even | Initial Investment | Power Demand |
|---------|-------------|------|------------|--------------------|--------------|
| .06/kWh | \$1,285,000 | 172% | 17 Months | \$1.8M | 1MW |
| .03/kWh | \$2,700,000 | 251% | 13 Months | \$1.8M | 1MW |

| | Bitcoin Price | Difficulty | Pool Fee | Recurring Cost | Block Reward | Difficulty Change |
|----------------------|---------------|------------|----------|----------------|--------------|----------------------|
| Features of the Case | \$20,500 | 29.2T | 2% | \$5,000/month | 6.25BTC | +2%/month |

Mining operators who pay the least for electricity make the most profit and are insulated from cryptocurrency price drops





Thanks for attending. The next session begins at 2:00 pm.