



GAIN

Gateway for Accelerated
Innovation in Nuclear

Trends in State-Level Energy Markets and Policy: Wyoming

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National Strategy for Establishing Relationships with Utilities/End-Users

Wyoming

Prepared by Envoy Public Labs

December 2020

Executive Summary

Introduction

Since July 2018, the Gateway for Accelerated Innovation in Nuclear (GAIN) has supported the *National Strategy for Establishing Relationships with Utilities/End Users*. Direct engagement, in targeted states, with the electric utility industry (EUI) and a broad set of stakeholders has yielded a detailed picture of the ecosystem in which generation planning takes place. From this picture, GAIN has begun to build an understanding of what information utilities need to assess advanced nuclear technologies, and how to provide that information. Broad deployment of advanced reactors into the US market will require well-informed customers who can see value in the technology as part of a clean, resilient resource portfolio. Doubt about whether the US customer base was well-enough informed about advanced reactor technologies was first raised at the March 8-9, 2018 symposium, *Enabling Advanced Reactors for the Market*, sponsored by GAIN in partnership with the Nuclear Energy Institute (NEI) and the Electric Power Research Institute (EPRI). A subsequent pilot study in Minnesota and follow up study in Arizona both found that most utilities and key energy stakeholders, including environmental and ratepayer advocates, state regulators, and legislators, did not have sufficient information to properly evaluate advanced reactor technologies. GAIN is well-positioned to serve as a conduit for resources from the US national laboratories to potential customers of advanced reactor technologies; a more informed US customer base will better enable the US market for commercial deployment of advanced reactors.

To support GAIN's role in fostering awareness and knowledge of advanced reactor technologies amongst potential customers, four additional states were selected for direct engagement: Colorado, North Dakota, Washington, and Wyoming. Wyoming was also included in this study for its outsized dependence on coal-fired generation and for its significant extraction economy, with potential for retirements. However, the state's mining and generation activities differ in important ways from the mine-to-mouth coal operations in North Dakota. The state is also close in proximity to Idaho National Laboratory, and recently passed legislation directly related to deployment of Small Modular Reactors. Like North Dakota, Wyoming's relationship to decarbonization efforts in neighboring states, and its vastly differing regulatory landscape, were of interest. The study included eight respondents from across Wyoming, including NGOs and state officials. Respondents were asked questions regarding their power procurement and communications habits, as well as their policy interests. Questions were also asked to gauge respondents' knowledge and sentiments regarding advanced nuclear energy; questions were included to specifically understand the legacy impacts of uranium mining in the state. The ultimate goal of the preliminary engagement completed by this study was to better understand the circumstances and challenges facing the EUI and its stakeholders in Wyoming, while identifying opportunities for GAIN and positioning it as a resource for utility planners and state-level utility stakeholders.

Key Findings

- The challenges that face Wyoming's specialized economy and government revenue streams are time sensitive. The accelerated phase-out of coal in the Western US has created massive government deficits and devastated coal-based communities in the state. **These challenges have been created by policy originating outside of the state of Wyoming, and demonstrate that even states with conservative, pro fossil fuel supermajorities are not insulated from regional and national trends.**
- **Wyoming's pro-business, conservative government is responding to the state's urgent energy transition needs by favoring advanced baseload technologies, particularly carbon capture, utilization, and storage.** State policy developments include unprecedented action by the PSC, and a suite of bills attempting to incentivise reinvestment in coal and the communities and tax base underwritten by it.
- **The state is open to exotic energy solutions to its economic and fiscal challenges, and low-dollar opportunities exist through informational engagement.** HB74, a bill that allows for SMRs to be sited in the footprint of a decommissioned coal plant, was passed with overwhelming support from both chambers of the legislature as the result of efforts made by a single legislative champion.

Results

Wyoming is currently the largest producer of coal in the United States, Powder River Basin (PRB) coal having grown its market share since the 1990s. Due to its low sulfur content affording lower environmental compliance costs for operators, PRB mines provide roughly 40% of the US's coal supply. Generally, the extraction industry plays an outsized role in Wyoming's economy. Wyoming's economy is particularly specialized and dependent on oil, gas, and mineral extraction. The state has no income tax and relies heavily upon property and severance taxes to fund the government, with estimates ranging from 50-70% of state revenue dependent on Wyoming's extraction economy. Market forces stemming from political decisions made in aggressively decarbonizing states (e.g. Colorado, California, and Washington) are compelling state officials and energy planners to take steps to prevent economic decay. The state's electricity generating mix is also dominated by coal, accounting for nearly 74% and 84% of in-state capacity and generation, respectively. To protect in-state coal generation, Wyoming Governor Mark Gordon proposed a regulatory framework characterized as the inverse of a renewable portfolio standard (RPS). In passing HB200, Wyoming's legislature took aim at encroachment on the state's declining coal assets by incentivising investment in carbon capture and separation (CCS) technologies to prolong the economic viability of coal, while also disincentivizing further investment in other technologies. Wyoming is a large energy exporter, with nearly 15 times of in-state consumption serving load outside the state boundaries. Rocky Mountain Power, a PacifiCorp subsidiary, has nearly 4,000 MW of coal generating capacity in the state, but is under pressure to retire their coal assets early due to carbon legislation in other states throughout the West and the cheapening cost of renewable energy. Due to its ample

wind resources and high capacity factor, Wyoming has witnessed an immense rise in wind generation, with nearly 1,500 MW of generating capacity and over 4,000 MW of additional capacity planned to come online by the end of 2026. SB159, passed during the 2019 session in response to the PacifiCorp IRP, denies rate recovery for projects intended to replace retiring coal plants, incentivizes third-party purchasing of retiring coal plants, and requires utilities to purchase power from purchased retiring coal assets. With no clear path for state income tax implementation in the near future, the conservative state legislature is attempting to preserve its so-called “golden goose” of mineral production and extraction which generations of Wyoming citizens have enjoyed.

The decline of coal in Wyoming would appear to present an opportunity for advanced nuclear developers to replace retiring units with advanced reactors. In the 2019 legislative session, Representative David Miller championed HB074, which authorized the replacement of coal generation capacity with SMRS. Though HB074 includes a \$5/MWH excise tax and prohibits the storage of spent nuclear fuel or high-level radioactive waste in the state, the legislation opens a pathway to commercial deployment of advanced nuclear reactors as a replacement for retiring coal assets in Wyoming. However, coal assets are retiring at a more rapid pace than anticipated, spurred on by unfavorable regulatory regimes in rapidly decarbonizing states. Plans to deploy AR technology beyond 2030 that rely on replacing baseload coal assets in the market may find a landscape devoid of coal units to replace, despite legislative attempts to prolong their economic viability. Opportunities for AR will emerge as economic and political factors inevitably push the state to take a more hands-on role in radically changing the composition of its economy. The state has already lost more than \$1B in revenue due to the COVID-19 pandemic; Wyoming’s budget is forecasted to contract by nearly one-third by the end of 2022. Passage of HB074 and HB200, and the establishment of the new Wyoming Energy Authority to address looming economic challenges suggests that Wyoming policymakers are open to innovative, yet unproven technology solutions, such as CCS and AR. That HB074 became law in Wyoming in spite of little industry support, advocacy, or education further suggests low-dollar opportunities to favorably shape a rapidly evolving policy landscape in Wyoming exist for the industry. A successful engagement strategy for advanced nuclear technology must necessarily acknowledge and directly address the priorities of state job creation and tax revenue when considering Wyoming as a potential market.