

A BRIDGE BACKWARD?

THE FINANCIAL RISKS OF THE “RUSH TO GAS” IN THE US POWER SECTOR



Two new reports from Rocky Mountain Institute (RMI) analyze the economics of over US\$100 billion worth of planned investment in new gas-fired power plants and interstate gas pipelines in the United States, in the context of rapidly-declining costs for renewable energy and battery storage technologies. The reports find that the role of gas as a “bridge fuel” is behind us; there are both significant cost savings opportunities if US utilities prioritize clean energy over continuing their present rush to gas, as well as existential risks facing investors that continue spending on new gas infrastructure.

Clean energy technology costs have reached a tipping point

The past decade has seen a dramatic reduction in the costs of wind, solar, and storage technologies. At the same time, sophisticated utilities and market operators are increasingly able to procure grid reliability services from these non-traditional resources. As a result, leading US utilities are now prioritizing investment in “clean energy portfolios” (CEPs)—combinations of renewables, storage, and demand-side management strategies—that can cost-effectively provide the same reliability services as traditional gas-fired power plants.

CEPs have declined in cost by 80% since 2010, and are now lower-cost on a levelized basis than new gas plants. Within the next 10–20 years, continued cost declines will allow new CEPs to undercut the operating costs of existing gas plants. However, US utilities and independent power producers are replacing retiring coal, nuclear, and old gas capacity on a nearly 1:1 basis with new gas-fired power plants—nearly 70 GW of capacity is announced for construction within the next five years, and at least another 20 GW of new gas proposed as part of longer-term utility resource plans.

EXHIBIT 1 2019 represents a tipping point for CEP economics versus new gas-fired power plants

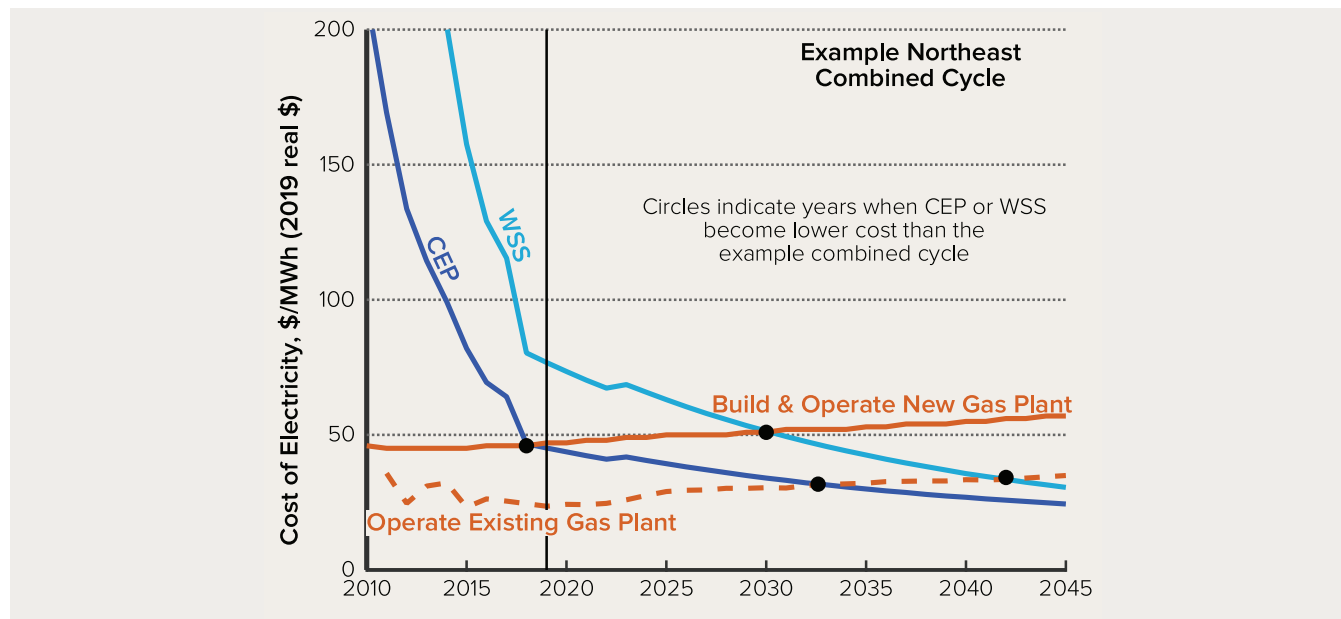
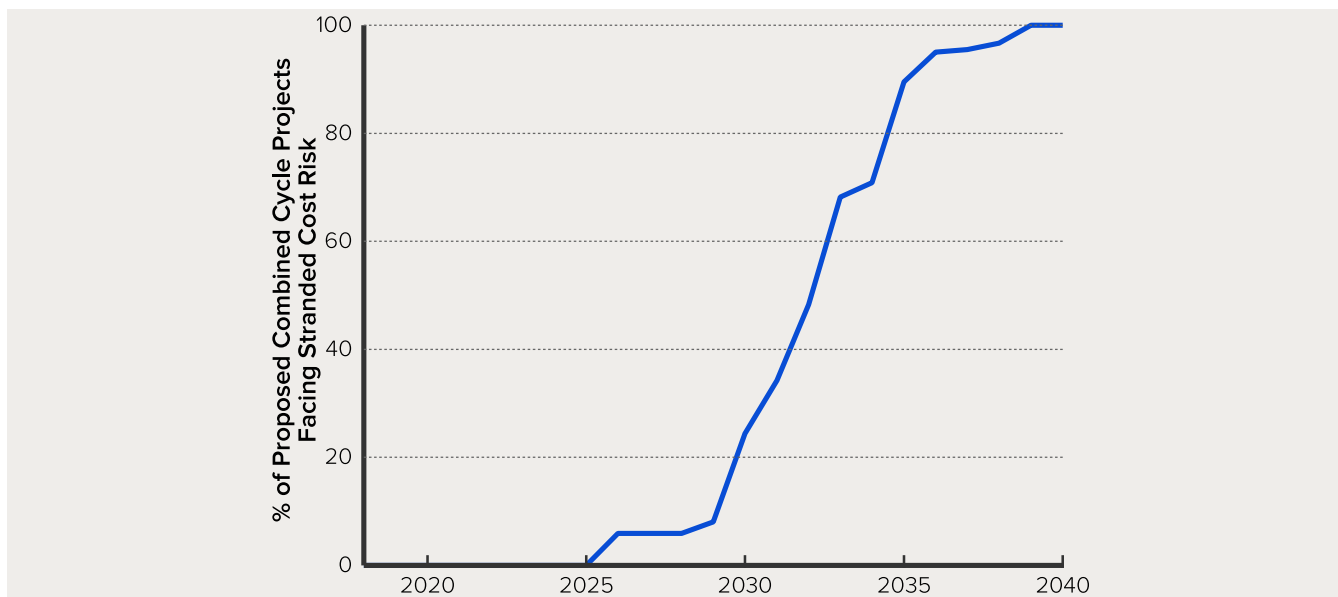


EXHIBIT 2 Percent of proposed combined-cycle gas plants that, if built, will face stranded cost risk



RMI analyzed the economics of every proposed gas-fired power plant in the United States and found:

- Over 90% of proposed gas-fired capacity would be more expensive than an equivalent CEP.
- If built, owners of these gas assets will face tens of billions of dollars of stranded costs with uncertain future revenues as clean energy continues to fall in price.
- US electricity customers could save US\$29 billion (NPV) by investing in CEPs instead of these uneconomic gas plants.
- This reprioritization of capital would also avoid 100 million tons of CO₂ emissions each year, equivalent to 5% of the current emissions of the US electricity system.

Pipelines expected to ship gas to power plants will be underutilized

Growth in US economy-wide demand for natural gas has been driven almost exclusively by the power sector over the past 20 years. In turn, this demand growth has helped drive US\$115 billion in gas pipeline investment over the same period, and interstate gas pipeline developers have proposed another \$30 billion in new investment through 2025 in part to meet the expected increase in demand.

RMI's analysis, however, shows that growth in power sector gas use will stop in the near future, with dramatic implications for pipelines that rely on revenue from new gas plants:

- In the Eastern United States, throughput on new gas pipelines will fall 20%–60% below presumed levels by 2035.
- This decline in utilization will lead to rising unit costs for delivered gas borne, in most cases, by captive utility customers.

A pressing opportunity to immediately cross the natural gas “bridge” in the United States

Together, the RMI reports show that we have reached the end of the natural gas “bridge” and that there is now a clear opportunity to prioritize clean energy investment in the United States. The fact that renewables are now the least-cost solution in the US power sector, despite abundant, low-cost natural gas, showcases the fantastic recent cost declines of wind, solar, and storage. If clean technologies can compete against cheap gas on cost alone in the United States, they are very likely to be least cost in most world markets.

Download the reports:
www.rmi.org/cep-reports

About Rocky Mountain Institute

Rocky Mountain Institute (RMI)—an independent nonprofit founded in 1982—transforms global energy use to create a clean, prosperous, and secure low-carbon future. It engages businesses, communities, institutions, and entrepreneurs to accelerate the adoption of market-based solutions that cost-effectively shift from fossil fuels to efficiency and renewables. RMI has offices in Basalt and Boulder, Colorado; New York City; the San Francisco Bay Area; Washington, D.C.; and Beijing.