

# The Accelerating Battle Over Nuclear Subsidies

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Matthew Hong  
Director of Research, Power and Gas  
+1 312 244-7649  
matthew.hong@morningstar.com

**Data Sources Used in This Publication**  
EIA

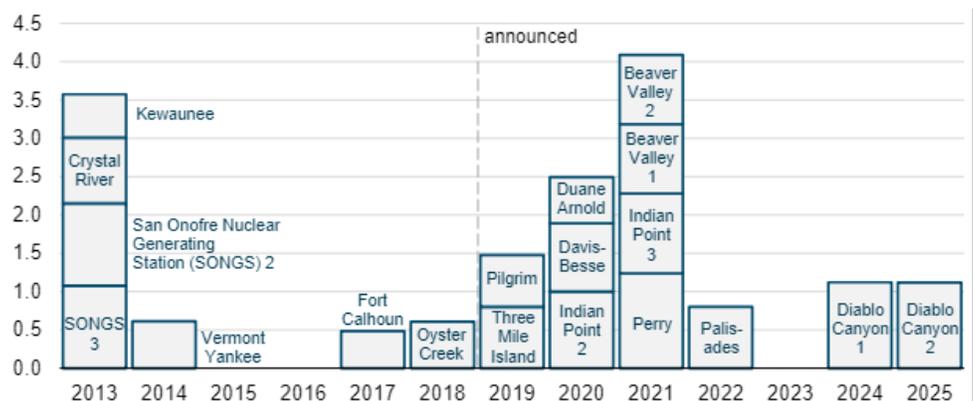
### Hitting a New Peak

Nuclear generation in the United States hit a new peak of 807.1 million megawatt-hours in 2018, just 0.1 million MWh above the previous record set in 2010. However, the Tennessee Valley Authority's Watts Bar is the only new nuclear facility to come on line in the last decade amid seven retirements over the same period. Since 2008, the U.S. has seen a net loss in nuclear generating capacity of 2,988 MW, with plans to retire an additional 11,860 MW by 2025. In April, New Jersey regulators approved a \$300 million a year subsidy to save the state's three nuclear facilities, and several other states with announced retirements are debating the merits of similar legislation. This piece reviews the status of potential nuclear retirements.

### The Next Wave of Nuclear Retirements

Since 2013, the U.S. has seen 5,300 MW of nuclear retirements, and the next seven years should see an additional 11,860 MW of closures (Exhibit 1). Pennsylvania's Three Mile Island (May) and Massachusetts' Pilgrim (September) facilities are both slated for retirement this year. Massachusetts has not been as willing to provide nuclear subsidies to older generators, making Pilgrim's retirement imminent. While New England is often natural gas constrained, ISO-NE expects dual-fired natural gas and oil to make up the gap that will be left from Pilgrim's absence. An expansion in dual-fired generation coupled with the ISO's winter reliability program has been the grid operators' approach to ensure system reliability. In contrast to Massachusetts and ISO-NE, Pennsylvania and Ohio are looking at ways to offer financial support to their states' remaining nuclear reactors.

**Exhibit 1** Announced Nuclear Retirements (GW)



Source: EIA

### **The Next Battleground Over Nuclear Subsidies**

Over the last few years, Illinois, New York, Connecticut, and New Jersey have successfully expanded the use of zero-emission credits. These are renewable energy credit equivalents for the nuclear industry and at a high level fulfill two specific state goals. First, the legislation expands the definition of clean energy, and second, it provides subsidies for nuclear generators paid for by the rate payer. The next battleground between advocates and opponents of nuclear subsidies will be Pennsylvania and Ohio, where both states have introduced draft legislation to provide millions of dollars in annual subsidies to improve the economics of their existing nuclear fleet.

What makes Pennsylvania and to some degree Ohio different from New York, Connecticut, and New Jersey is the former's abundance of in-state natural gas production and generation. Unlike highly constrained New England, natural gas production in the Marcellus/Utica basin continues to grow, with dry production estimated to reach 31 billion cubic feet per day in April. Easy access to low-cost production has kept regional natural gas prices relatively low over the past several years. This fundamental difference explains questions on whether nuclear subsidies are truly necessary to maintain system reliability, even as baseload nuclear economics experience additional stress from cheaper alternatives. However, nuclear generation in Pennsylvania still accounts for 39% of the state's electricity, and additional retirements would require a larger ramp-up in natural gas, which fails to help the state hit lower carbon targets.

Whether Pennsylvania and Ohio pursue active measures to protect nuclear generation in their states should be clear shortly. Two bills proposed in Pennsylvania's legislature have public hearings scheduled for late April and early May. Ohio also recently introduced draft legislation that would create a \$300 million a year clean air program to bail out two of the state's nuclear plants. Any legislation to support nuclear subsidies in Ohio will need to pass before the end of June, which is when FirstEnergy will decide whether to purchase additional fuel for its generators. Whether the legislation in both states has the necessary support to pass is uncertain, but similar bills have passed in adjacent states and survived the plethora of legal challenges that followed.

### **Conclusion**

The aspiration of many states to expand renewable generation to reduce carbon emissions while ensuring reliability has put the role of their nuclear fleets in an odd position. While several states have passed legislation to prop up their nuclear sectors with rate payer subsidies, the benefits and economic need to do so are far from clear. As the battle over nuclear subsidies moves to states with more diverse generation stacks, questions about the need to preserve nuclear to ensure system reliability will come front and center. While Pennsylvania and Ohio debate whether or not they will join the club of states offering subsidies to their aging nuclear fleets, the fact that the nuclear industry is at a crossroads is undeniable. ■■■

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+1 800 546-9646 North America

+44 20 3194 1455 Europe

commoditydata-sales@morningstar.com



22 West Washington Street  
Chicago, IL 60602 USA

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