

New York Proposes Nuclear Subsidy Based on Social Cost of Carbon

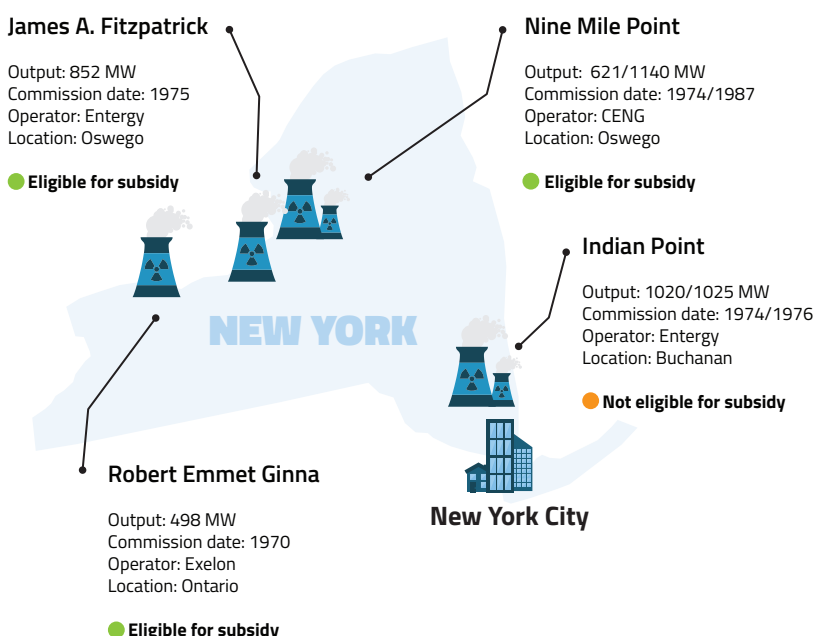
Retaining Nuclear under Clean Energy Standard Contrasts with Phase-Outs in California and Illinois

July 20, 2016

JULY 8 NY PSC PROPOSAL

On July 8, 2016, the New York State Public Service Commission (NY PSC) issued a proposal to subsidize nuclear power generating facilities that may be retired for economic reasons to preserve their zero-emission attributes as part of the state's Clean Energy Standard (CES). In 2016, operators Exelon and Entergy announced plant closures scheduled to occur in 2017 before the expiration of their licenses due to economic constraints.

2 To determine public necessity, the proposal considers the plant's historic contribution to clean energy resource mix, degree of revenue inadequacy, cost-benefits of the subsidy in comparison to other clean energy alternatives, impacts on ratepayers, and public interest. Currently, NY PSC sees Ginna, Nine Mile Point, and Fitzpatrick facilities as eligible. Unlike the three upstate plants, Indian Point has been profitable thanks to its proximity to New York City, an area of higher grid constraints, which has boosted its revenues.



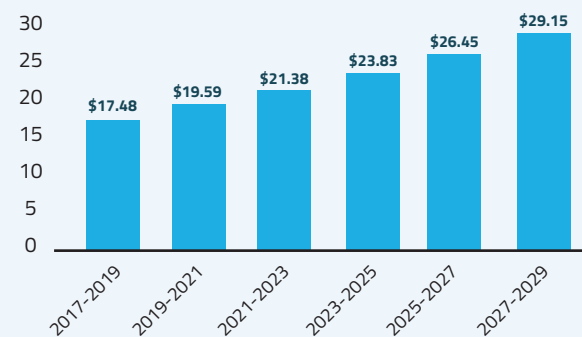
1 Proposal in Brief

12-year contracts for zero-emission credits in six two-year tranches beginning **1 April 2017**

Price of credits would be calculated according to the following formula:

$$\text{CO}_2 \text{ Social cost of carbon} - \text{RGGI Baseline of } \$5.61/\text{MWh} - \text{Cap Price above } \$39/\text{MWh} = \text{ZEC } \$/\text{MWh}$$

CO₂ Social cost of carbon (\$/MWh), or maximum subsidy, is set at these levels:

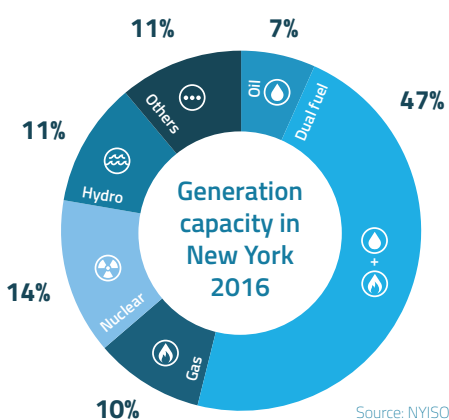


The ZECs would be capped annually at the amount equal to the facility's historic contribution. The program is intended to maintain, not increase, nuclear generation.

For the first two years, the Commission estimates the subsidy to cost **\$1 billion** and yield **\$5 billion** in carbon reduction benefits, equaling net benefits of **\$4 billion**.

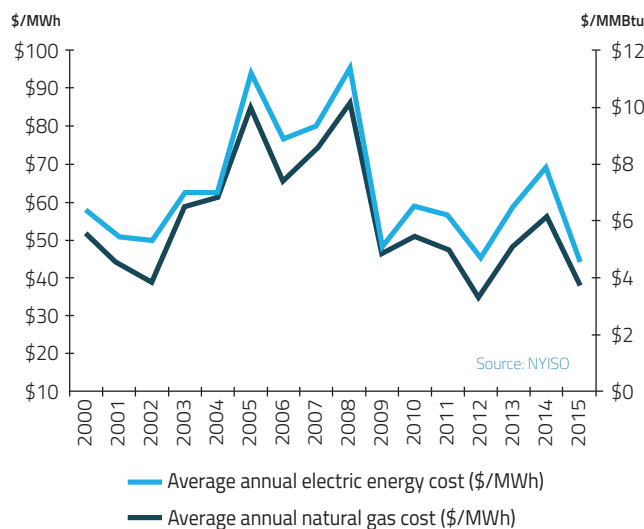
3 The CES, under which the subsidy is proposed, is part of the 10-year, \$5 billion Clean Energy Fund (CEF) unveiled in January 2016 to advance solar, wind, energy efficiency, and other clean energy industries to spur economic development and reduce emissions. It has four goals:

- Generate 50% of New York's energy from renewables by 2030
- Support construction of new renewable generation in the state
- Prevent the closure of emissions-free nuclear facilities
- Promote the Reforming the Energy Vision market objectives

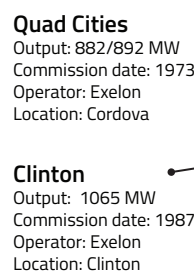
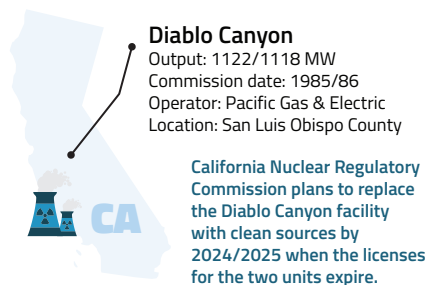


5 **Role of Nuclear in NY**
Upstate New York nuclear-power generating facilities have the capacity to generate approximately 27.6 million MWh of electricity per year. In 2016, nuclear plants made up 14% of the total generation capacity in New York State.

4 **Nuclear Struggles**
Nuclear plants in New York have suffered from sustained low electricity prices, due to the competition from natural gas-fired generators which have enjoyed low fuel costs. In addition, wholesale markets currently do not compensate nuclear generators for their carbon-free generation.



6 **Nuclear Phase-Out in California and Illinois**
In contrast to New York, California and Illinois have chosen not to support the nuclear plants in the two states.



In 2017, Exelon announced a shutdown of both stations by 2017/2018 citing \$800 million in losses since 2009. Despite nuclear power accounting for more than 50% of Illinois' total generation, the State Legislature failed to consider a bill subsidizing the two plants before adjourning on May 31, 2016.

7 **Opposition**
In June, a coalition of 112 organizations led by the Alliance for a Green Economy objected to the proposal with the following arguments:

- The proposal amounts to a nuclear tax of \$7.5 billion, investing twice as much as in renewables under CES
- NYISO analysis of FitzPatrick deactivation identified no resource inadequacy 2016-2020
- State investment of approximately \$1 billion in green manufacturing could create some 6,420 jobs
- Nuclear fuel mining releases greenhouse gases, and spent fuel lacks safe long-term storage

BOTTOM LINE

- Reassurance for Exelon and Entergy**
Exelon has announced its readiness to invest around \$200 million in the upstate plants upon signing the ZEC procurement contract. Entergy and Exelon have begun talks on selling the FitzPatrick plant to avoid a shutdown; Exelon said that the approval of CES program would provide enough confidence to refuel the FitzPatrick facility and continue its operations.
- Long-Term Policy Solutions Needed**
New York's nuclear subsidy could spur further debates on how to compensate the zero-carbon nature of nuclear power. Currently, wholesale markets such as PJM and NYISO do not value such attributes, which, combined with the low gas prices, has been a primary factor behind plant closures in Illinois and other states. New York's choice in extending the role of nuclear power in the transition towards renewables could provide an example for other states with an ailing nuclear industry.

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