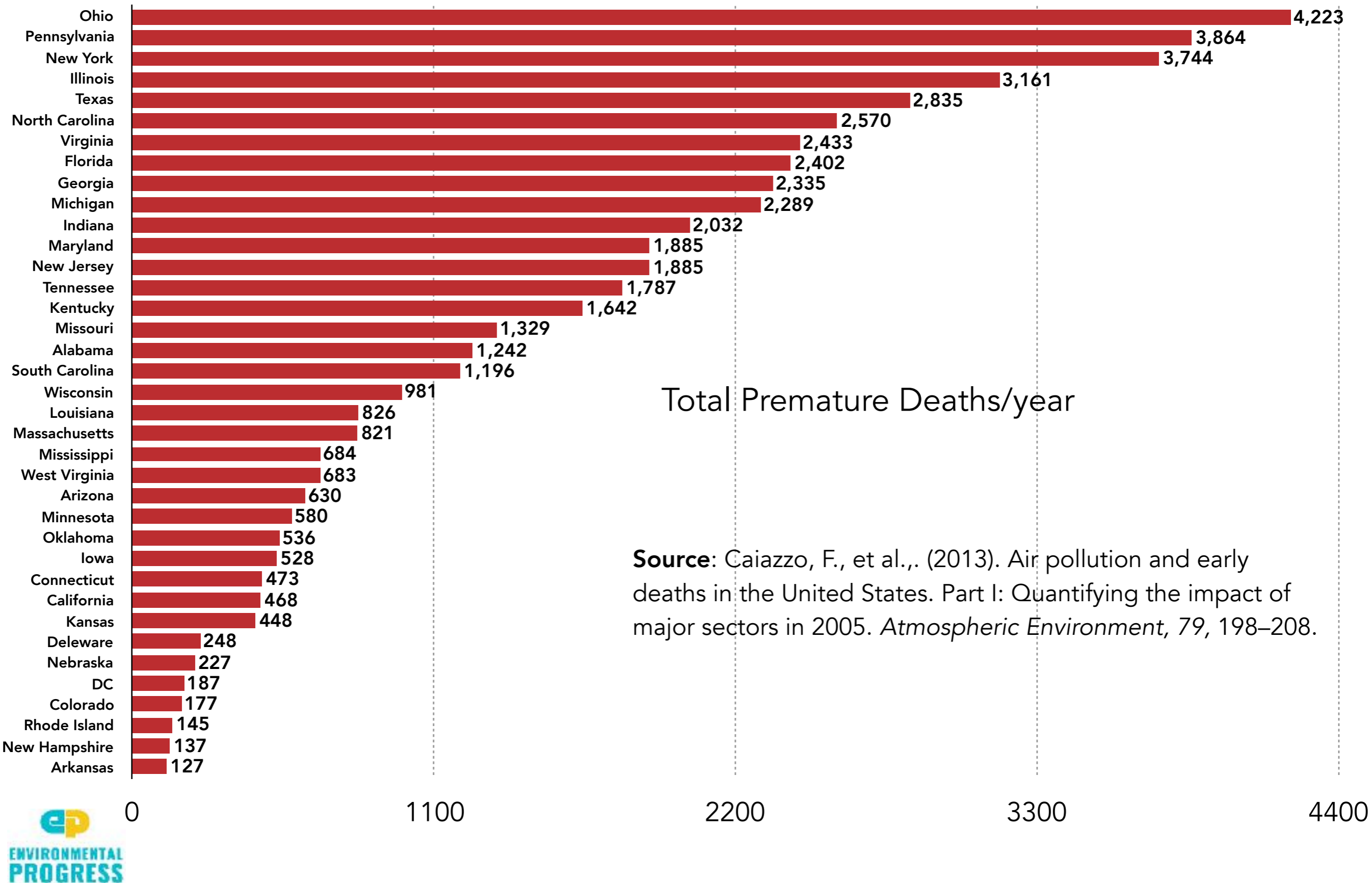




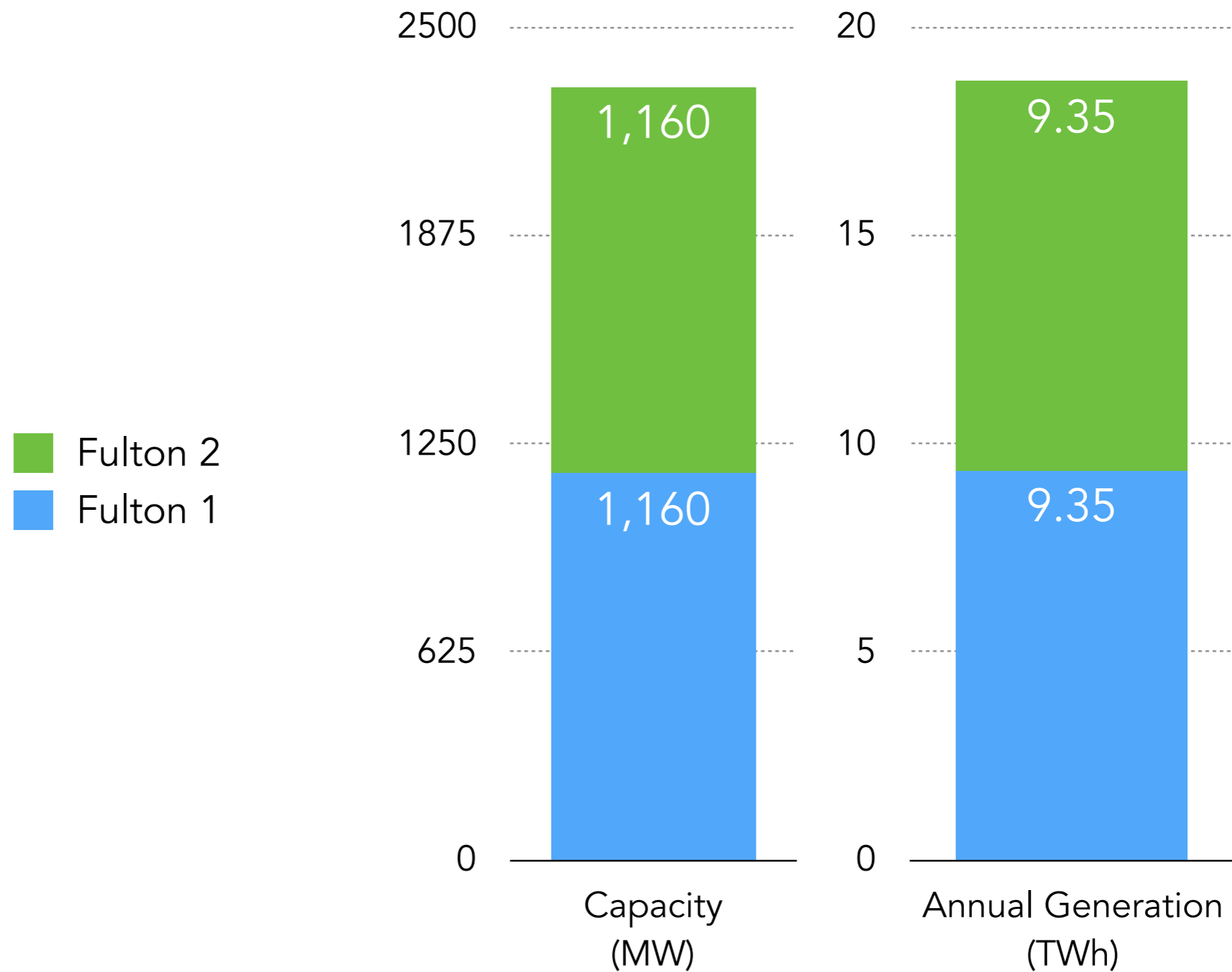
Environmental & Economic Impact of Pennsylvania Renewable, Nuclear & Efficiency Subsidies

Last updated June 2, 2017

Pennsylvania #2 in premature deaths from particulate matter from electricity generation



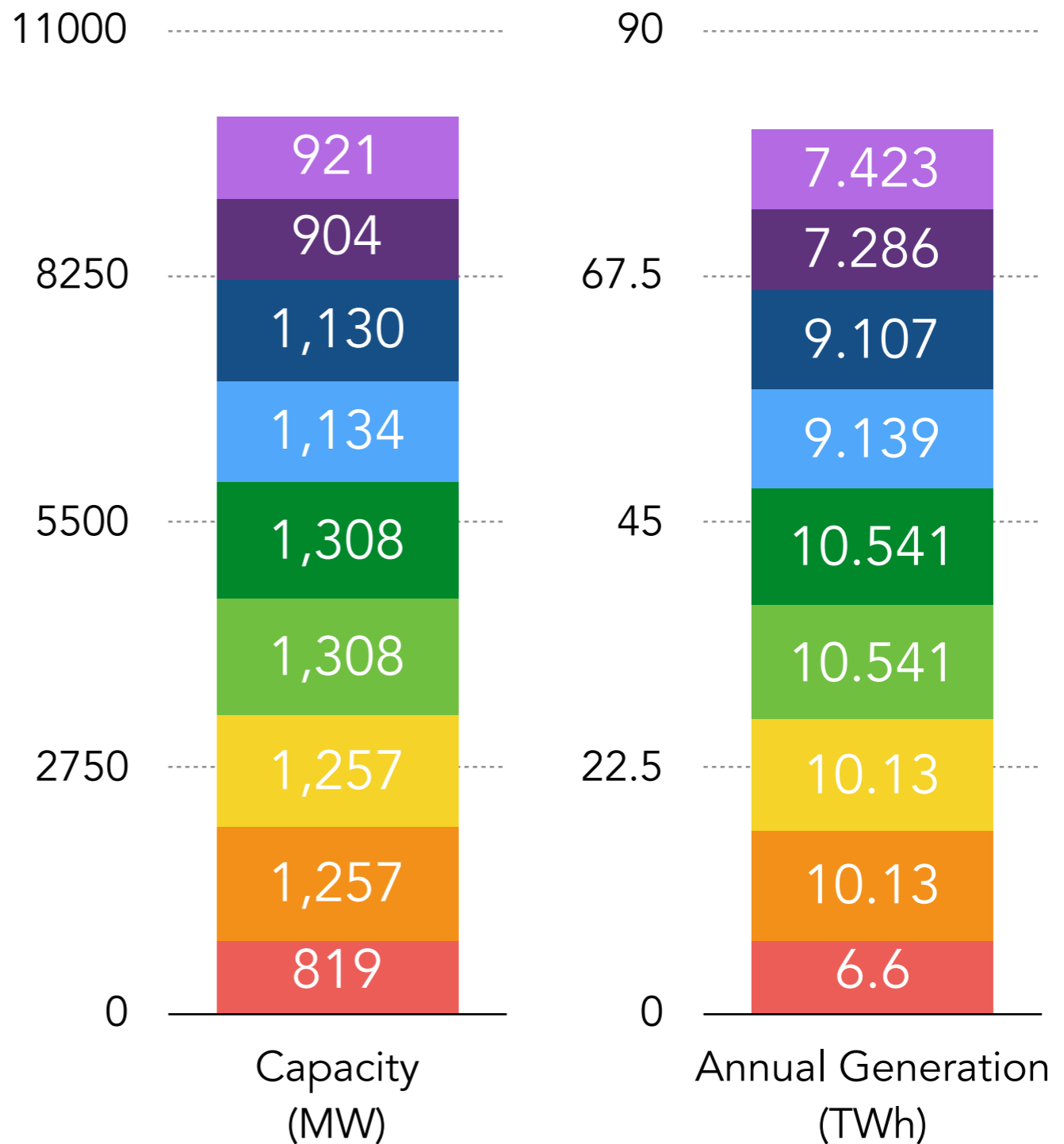
Pennsylvania Nuclear Abandonments



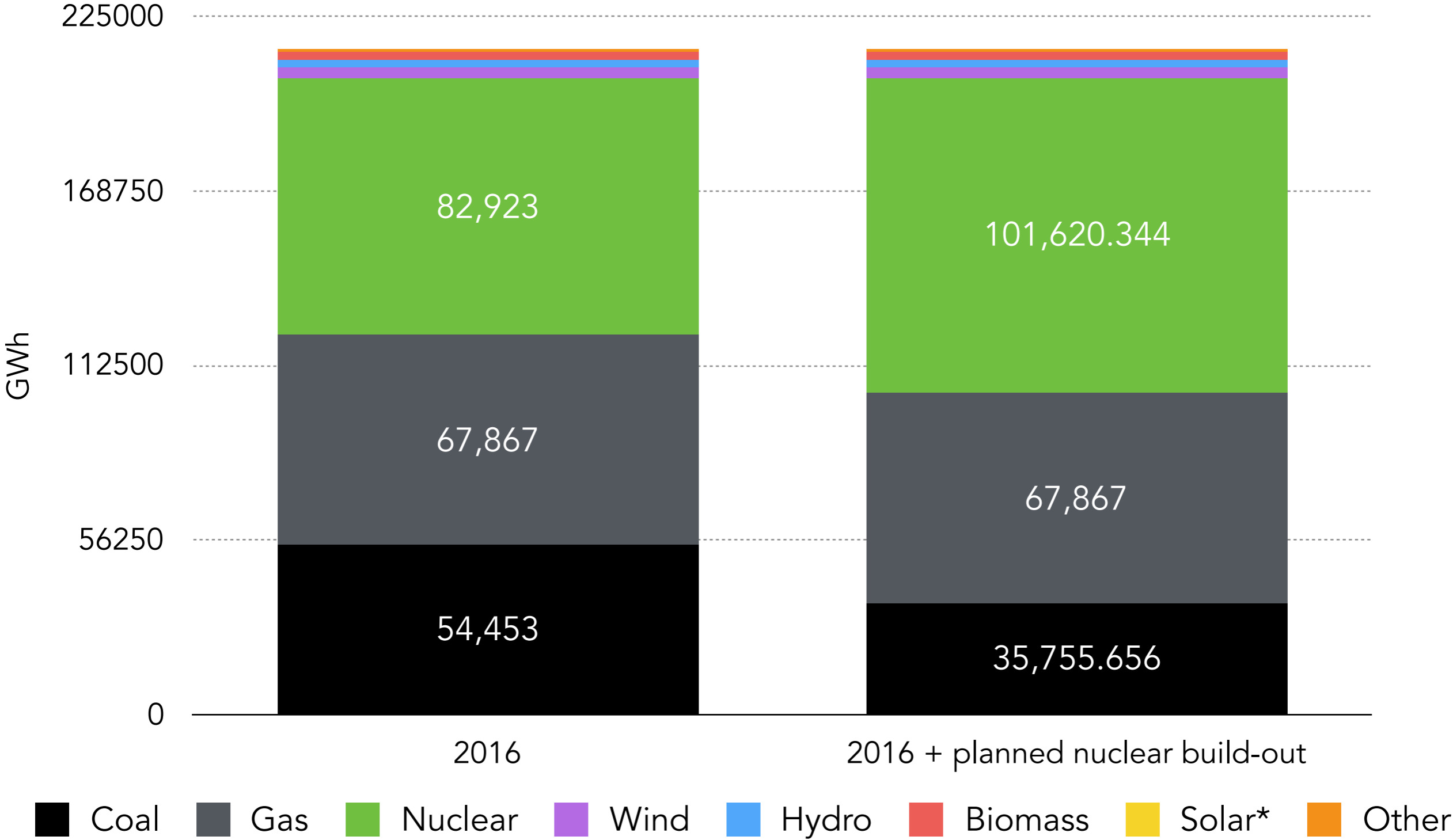
Source: EP Energy Progress Tracker

Pennsylvania Reactors Still in Operation

- Beaver Valley 1
- Beaver Valley 2
- Limerick 1
- Limerick 2
- Peach Bottom 2
- Peach Bottom 3
- Susquehanna 1
- Susquehanna 2
- Three Mile Island 1



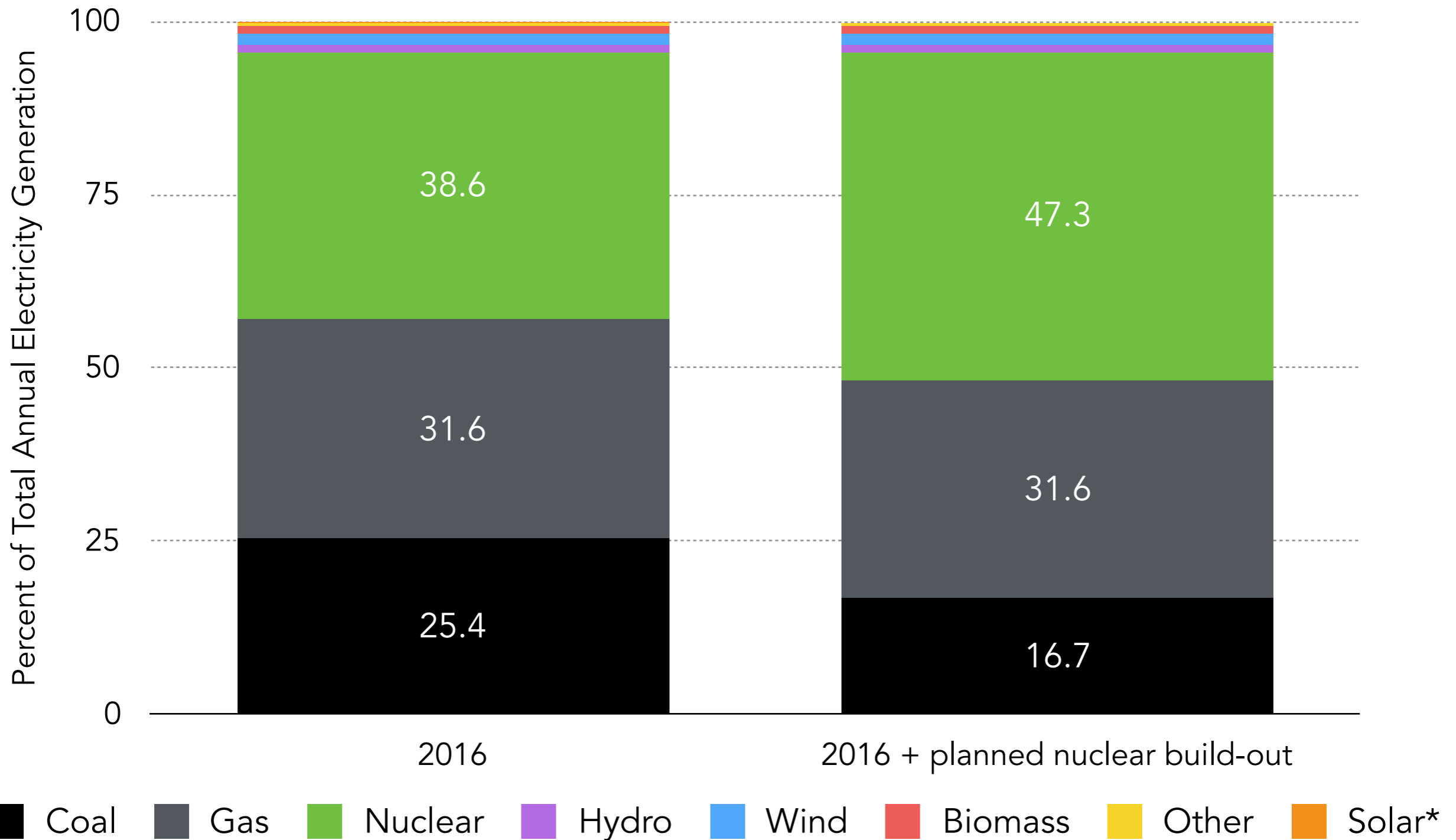
Pennsylvania Nuclear Abandonments Locked in Fossil Fuels



*Includes distributed solar

Source: US Energy Information Administration and EP analysis

Had Pennsylvania built out its planned nuclear, 9 percent more of its annual electricity would be clean.

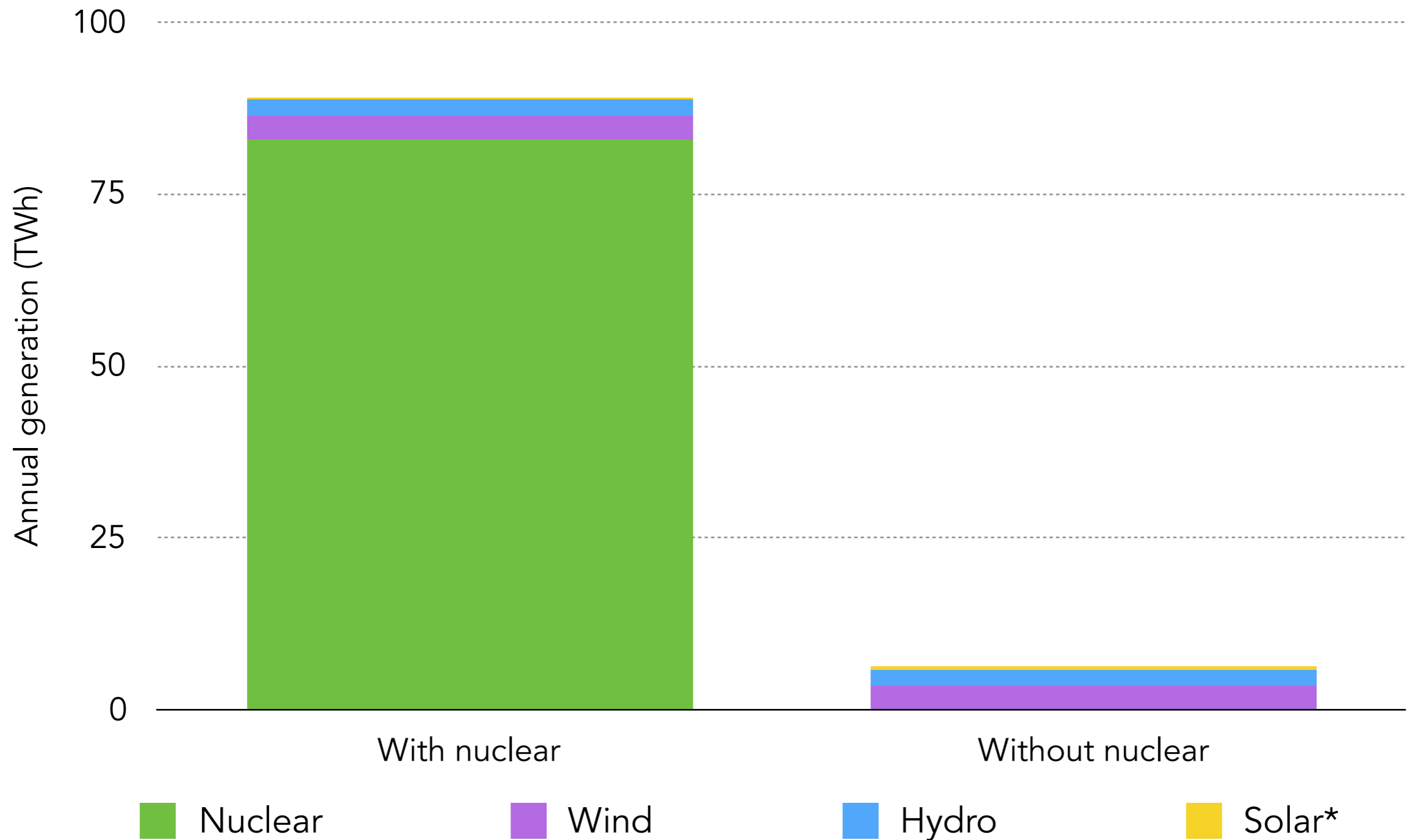


*Includes distributed solar

Source: US Energy Information Administration and EP analysis



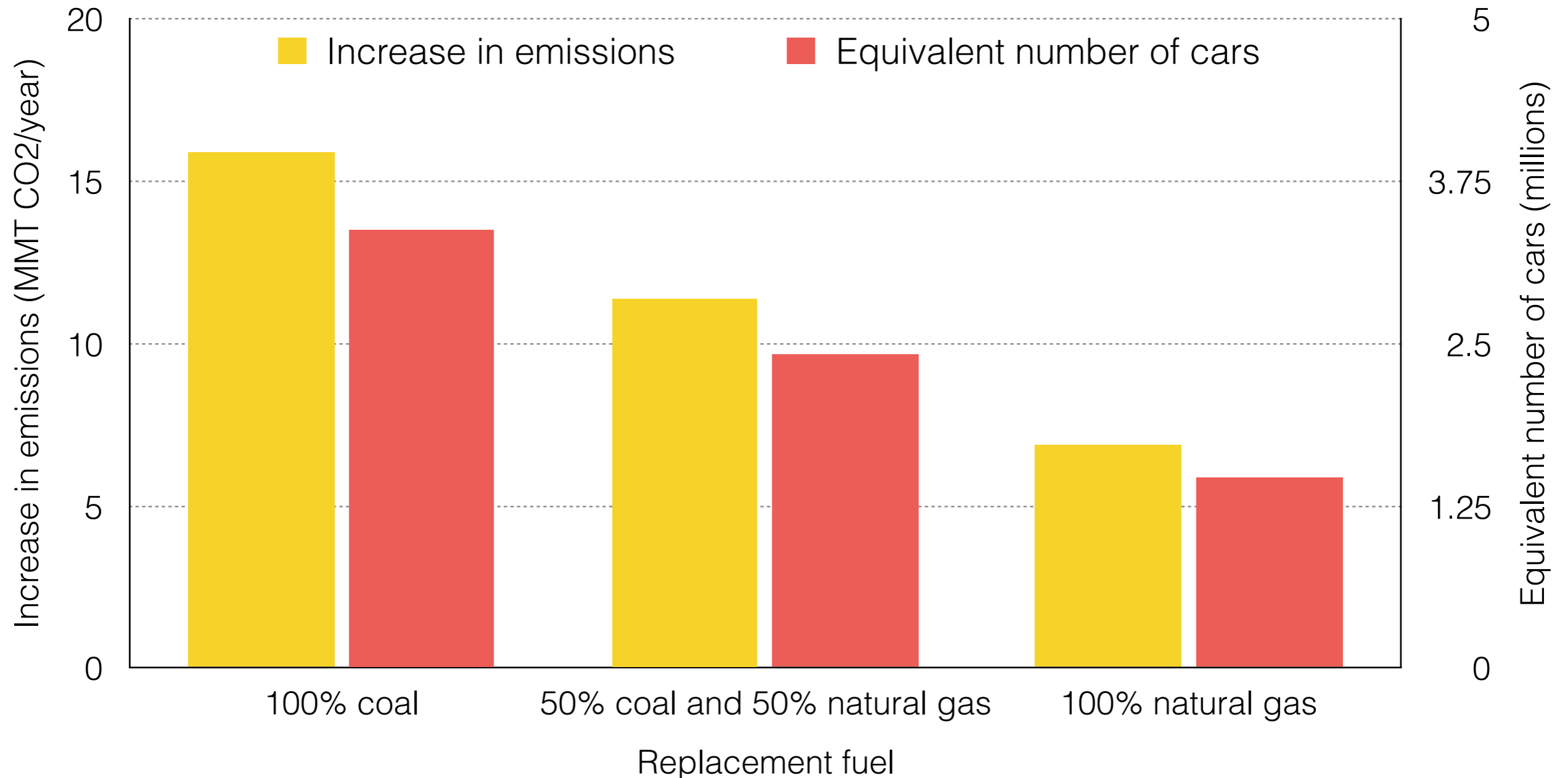
Without nuclear, the amount of electricity from clean energy in Pennsylvania will decline 93 percent.



*Includes distributed solar

Source: <https://www.eia.gov/electricity/data/browser/>. Based on 2016 generation totals.

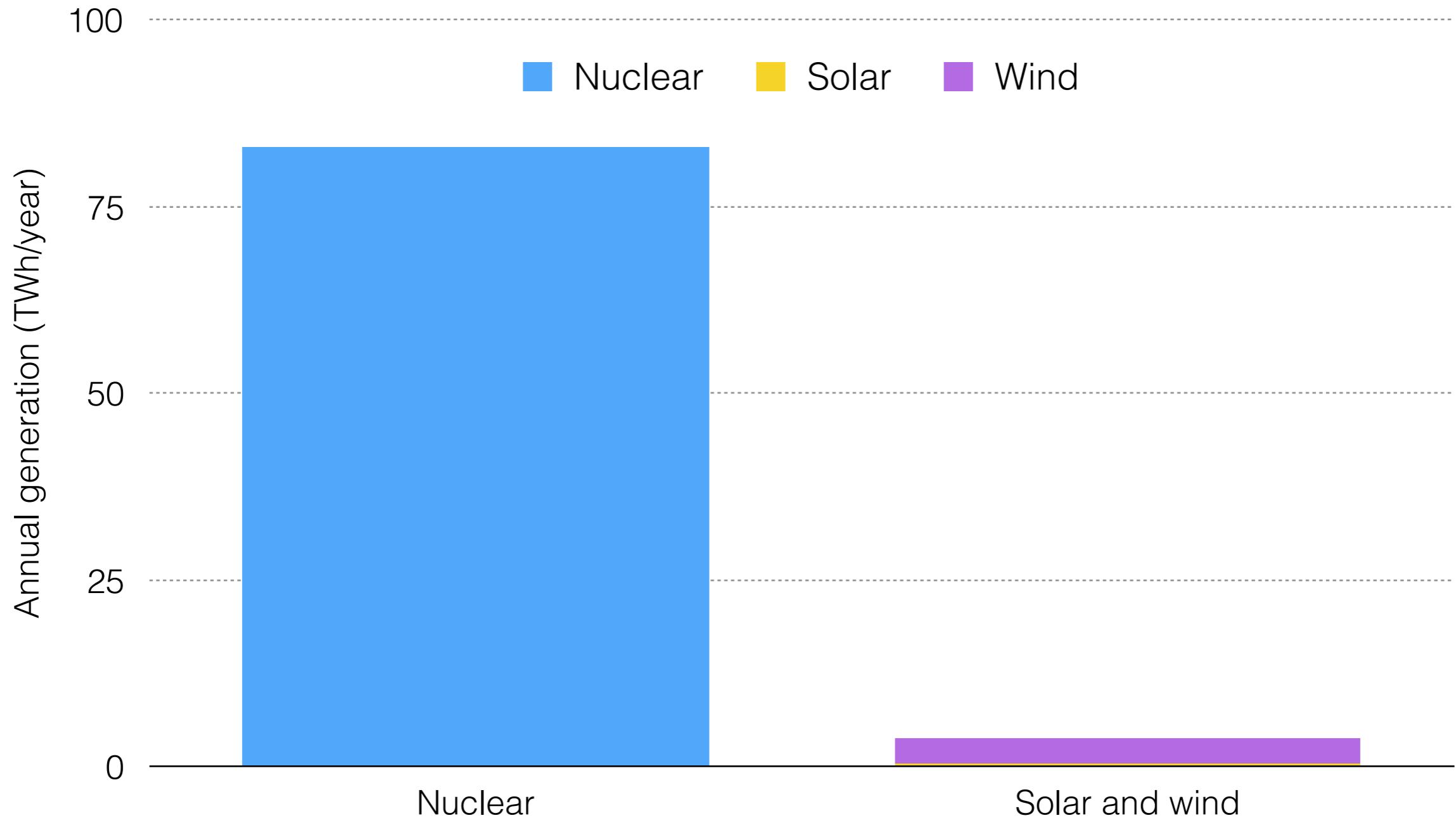
Pennsylvania emissions will increase the equivalent of adding more than 3.1 million cars to the road if Beaver Valley and Three Mile Island close.



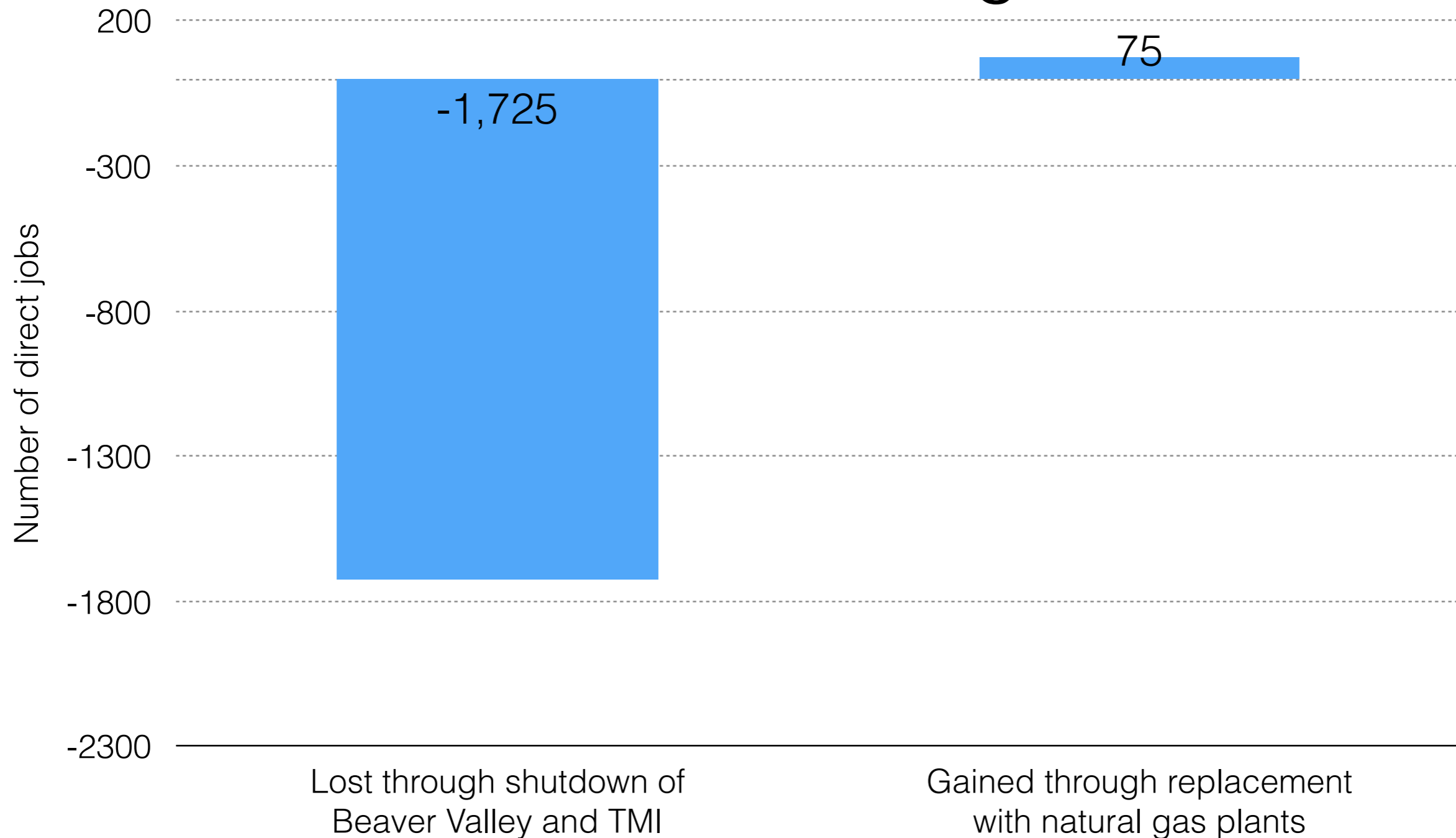
Sources and Calculations: <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle-0>
https://www.eia.gov/electricity/annual/html/epa_08_02.html
<https://docs.google.com/spreadsheets/d/1nXClot42I3gLOMTYMUKeeXN9vTMK-ZjaD9MHtHAO1qY/edit?usp=sharing>

Calculation assumes a 50/50 split between coal and gas in replacing nuclear.

Pennsylvania nuclear provided almost 22x more electricity than Pennsylvania solar and wind combined in 2016.

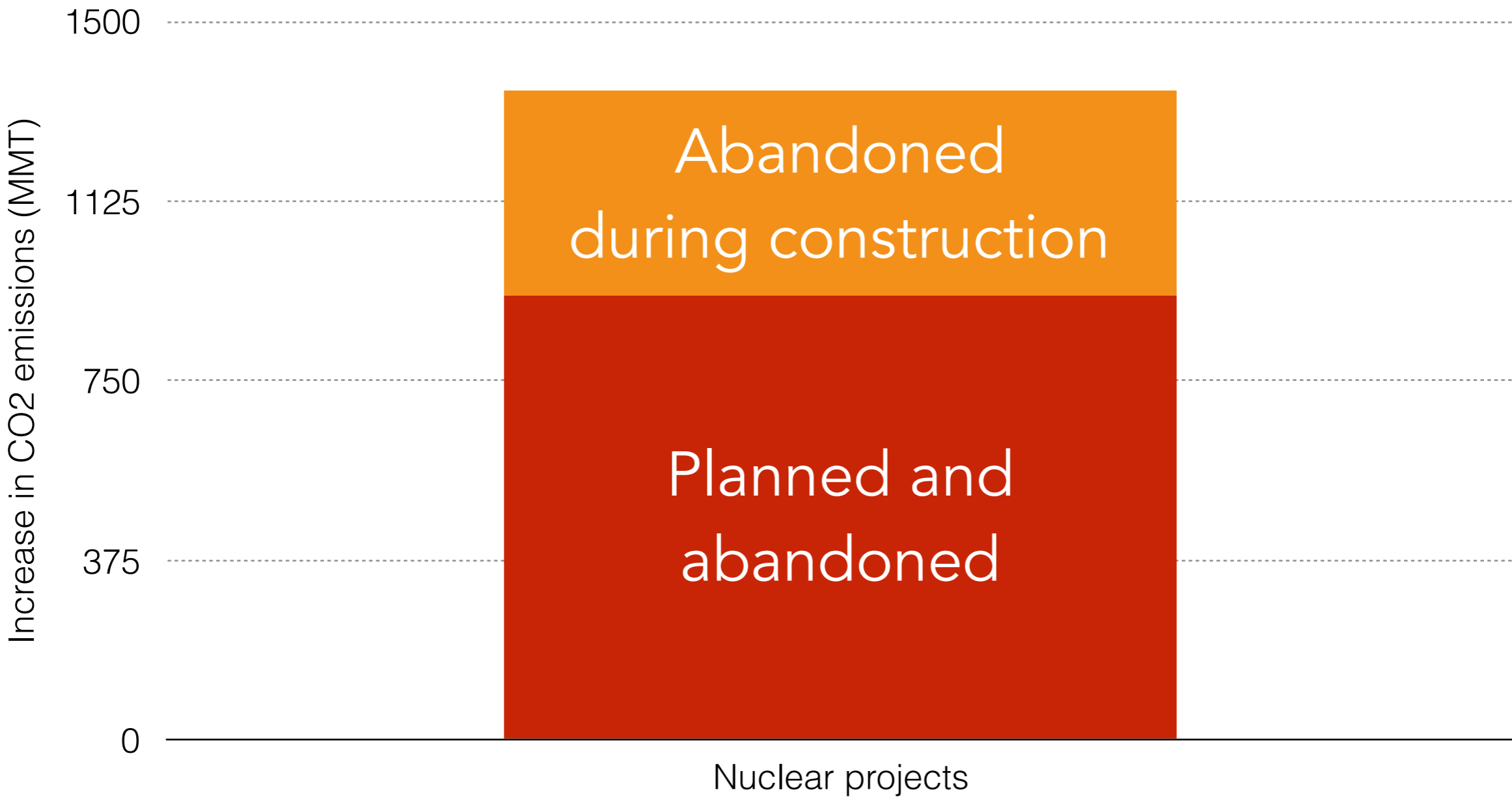


Pennsylvania will face a net loss of at least 1,650 direct jobs if Beaver Valley and TMI are replaced with new natural gas.



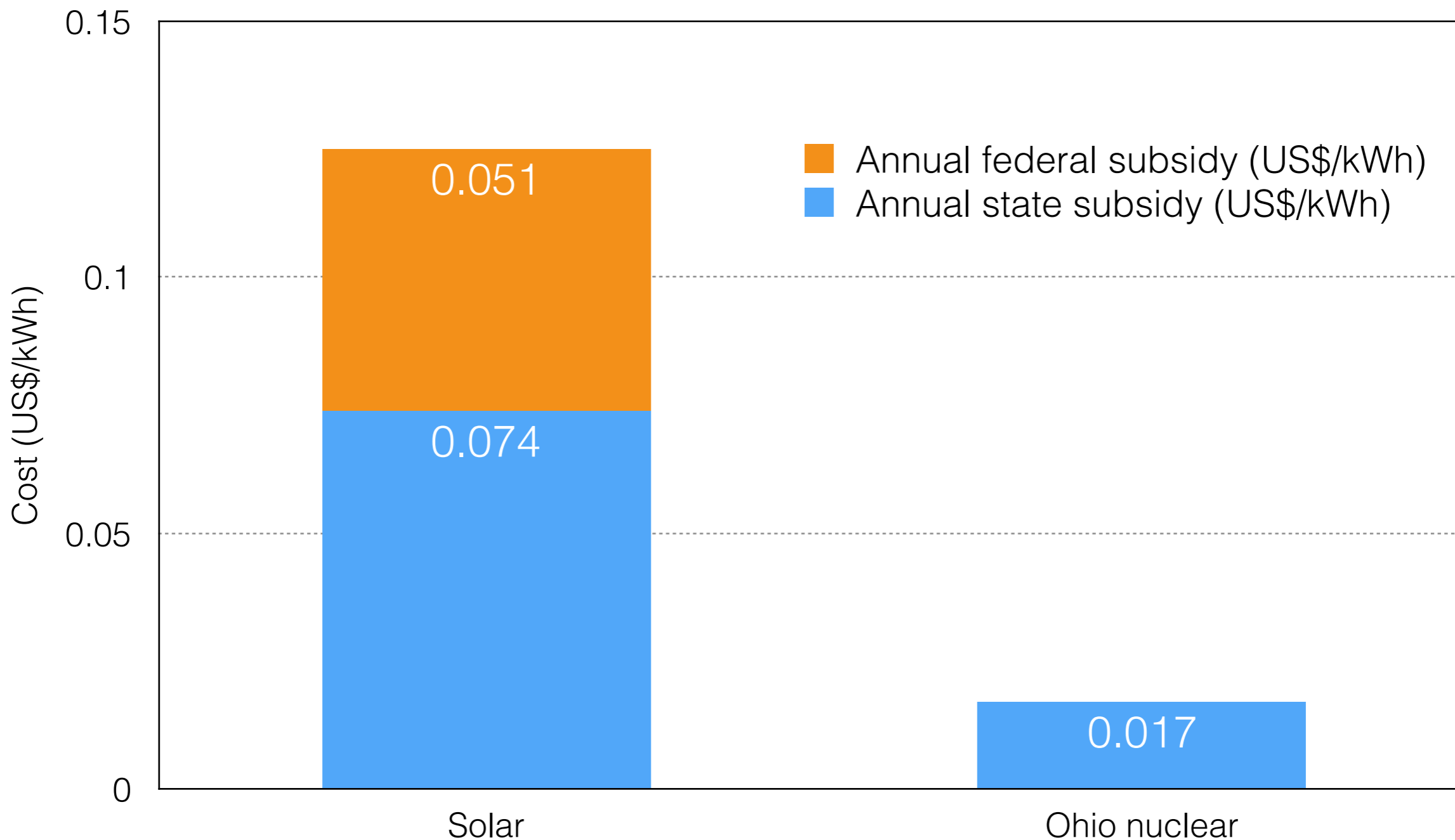
OH slides to be
converted to PA

Since 1970, Pennsylvania's nuclear abandonments increased emissions the equivalent of adding 7 million cars to the road.



Source and notes: EP Energy Progress Tracker. Emissions calculated using a coal emission factor of 950 g CO2/kwh. All replacement generation came from coal.

Solar subsidies vs. proposed Ohio nuclear subsidy



Sources: http://www.sretrade.com/srec_markets/ohio

<https://solarpowerrocks.com/ohio/>

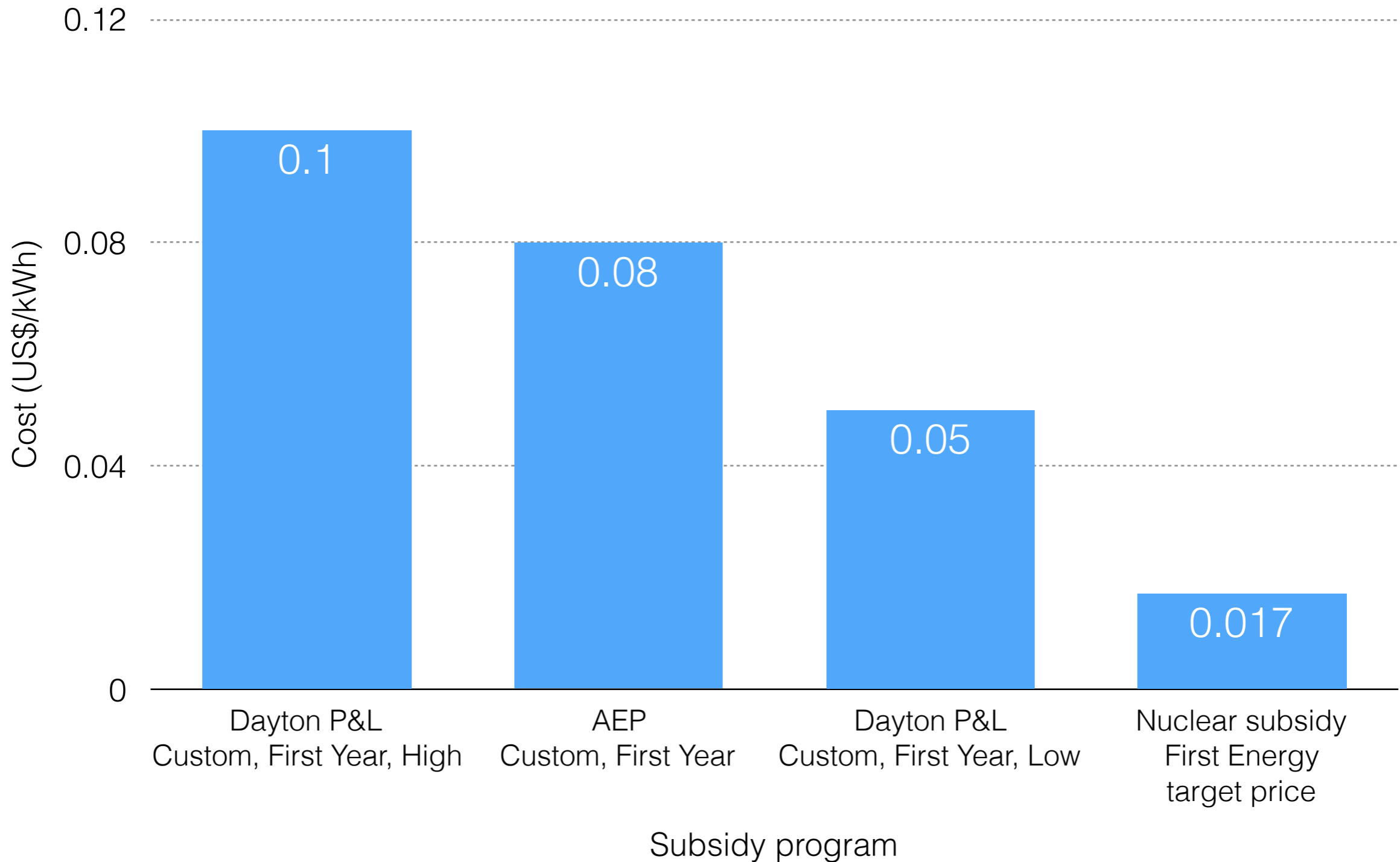
<http://www.utilitydive.com/news/aep-ohio-wholesale-auction-prices-continue-to-decline-stressing-utilities/408870/>

<https://www.eia.gov/electricity/data/browser/#/topic/7?agg=0,1&geo=g0002&endsec=vg&linechart=ELEC.PRICE.US->

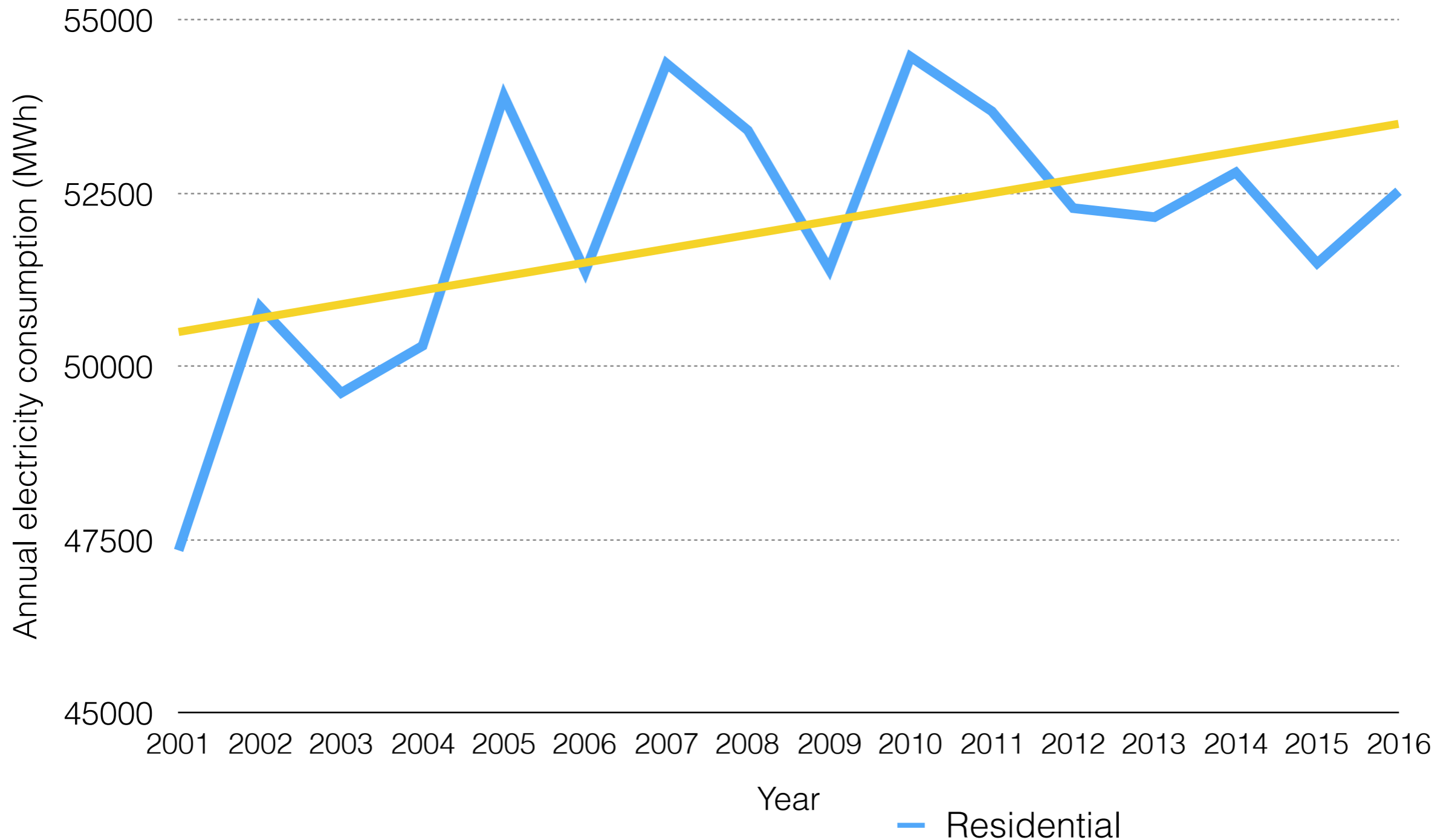
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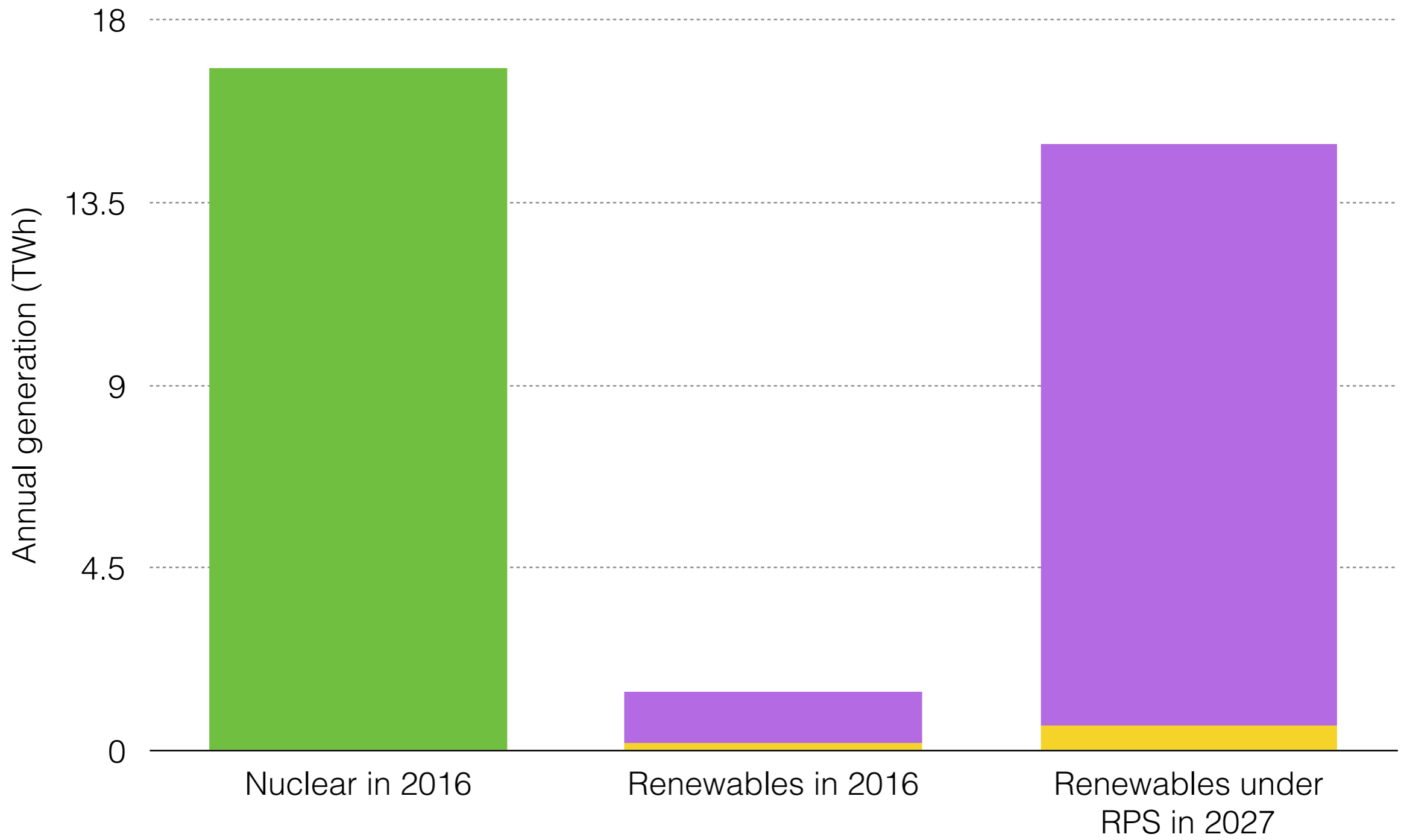
Ohio energy efficiency subsidies cost up to 6x more per kilowatt hour than the proposed nuclear subsidy.



Ohio residential electricity increased despite energy efficiency spending



Nuclear produced more electricity in 2016 than renewables under RPS in 2027 assuming flat demand.



Source: <https://www.eia.gov/electricity/data/browser/>
<https://www.puco.ohio.gov/industry-information/industry-topics/ohioe28099s-renewable-and-advanced-energy-portfolio-standard/>