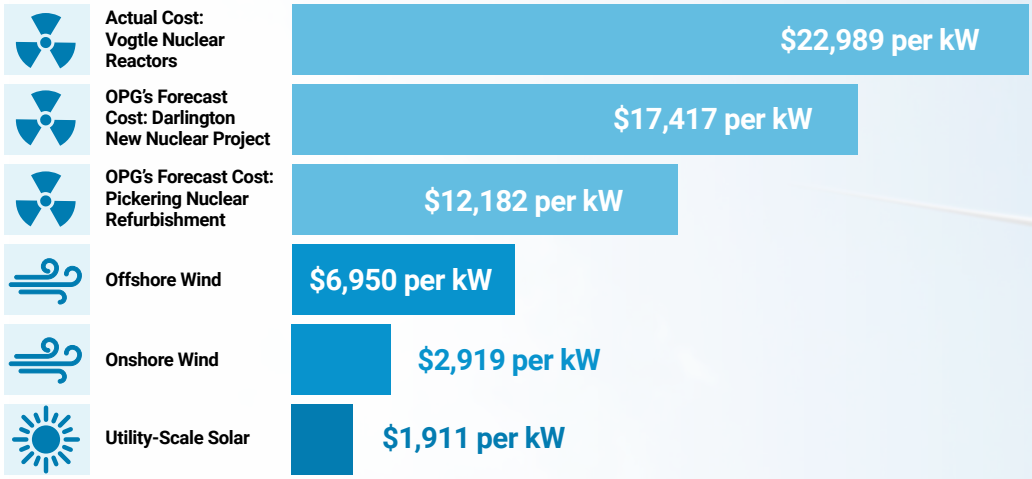
High-Cost Nuclear vs Wind and Solar

Figure 1

Actual and Forecast Capital Cost Estimates[1]



Ontario Power Generation's (OPG's) forecast costs for new nuclear, despite being highly optimistic when compared to the most recently completed nuclear project in the U.S., are still many times higher than renewable alternatives, such as solar and wind.

With solar and wind costing one-third to one-tenth the cost of new nuclear, there is plenty of room to add storage or transmission upgrades along with solar and wind and still reap significant cost savings. As a recent report by Ontario's Independent Electricity System Operator found, wind and solar and battery storage can meet at least 99.5% of Ontario's electricity needs under all weather conditions at a lower cost than new nuclear.[2]

Georgia Power's two new nuclear reactors at its Plant Vogtle came into service in 2023 and 2024, fifteen years after construction began in 2009 and seven years behind schedule. Originally expected to cost $14 billion, their actual cost was $36.85 billion (US$).[3] This nuclear project was far from unique in experiencing massive cost overruns.

A comprehensive study of cost overruns on major infrastructure projects found that, on average, cost overruns on nuclear projects were 10 to 100 times higher than on wind and solar projects, with cost overruns on nuclear projects averaging 120%, on wind projects 13% and on solar projects 1%.[4]

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Endnotes

1 Endnotes for Figure 1

Actual cost of Vogtle Nuclear Reactors: The total capacity of Plant Vogtle's reactors #3 and #4 is 2,228 megawatts (MW). Their total cost was $36.85 billion (US$). We converted this cost to Canadian dollars by multiplying by 1.39. *World Nuclear Industry Status Report 2024*, pages 230 and 231; and U.S. Energy Information Agency, *Today in Energy*, "First new U.S. nuclear reactor since 2016 is now in operation", (August 1, 2023); and "Plant Vogtle Unit 4 begins commercial operation", (May 1, 2024).

OPG's forecast cost of Darlington New Nuclear Project: $20.9 billion for four new reactors with a total capacity of 1,200 MW. Government of Ontario, *News Release*, "Ontario Leads the G7 by Building First Small Modular Reactor", (May 8, 2025).

OPG's forecast cost of Pickering Nuclear Refurbishment: $26.8 billion for re-building four reactors with a planned capacity of 2,200 MW. Government of Ontario, *News Release*, "Ontario Greenlights Pickering Nuclear Generating Station Refurbishment to Create Nearly 37,000 Jobs", (November 26, 2025).

Offshore Wind: Lazard's mid-point cost estimate is $5,000 per kW (US$). We converted this cost to Canadian dollars by multiplying by 1.39. Lazard, *Levelized Cost of Energy*, (2025), page 35.

Onshore Wind: Lazard's mid-point cost estimate is $2,100 per kW (US$). We converted this cost to Canadian dollars by multiplying by 1.39. Lazard, *Levelized Cost of Energy*, (2025), page 35.

Utility-Scale Solar: Lazard's mid-point cost estimate is $1,375 per kW (US$). We converted this cost to Canadian dollars by multiplying by 1.39. Lazard, *Levelized Cost of Energy,* (2025), page 34.

2 Ontario Clean Air Alliance Research: Briefing Note, *New IESO Report on Wind and Solar Energy Combined with Battery Energy Storage vs SMRs*, (September 10, 2025).

3 *World Nuclear Industry Status Report 2024*, pages 230 and 231; and U.S. Energy Information Agency, *Today in Energy*, "Plant Vogtle Unit 4 begins commercial operation", (May 1, 2024).

4 Bent Flyvbjerg and Dan Gardner, *How Big Thinks Get Done*, (Penguin Random House, 2023), Appendix A.