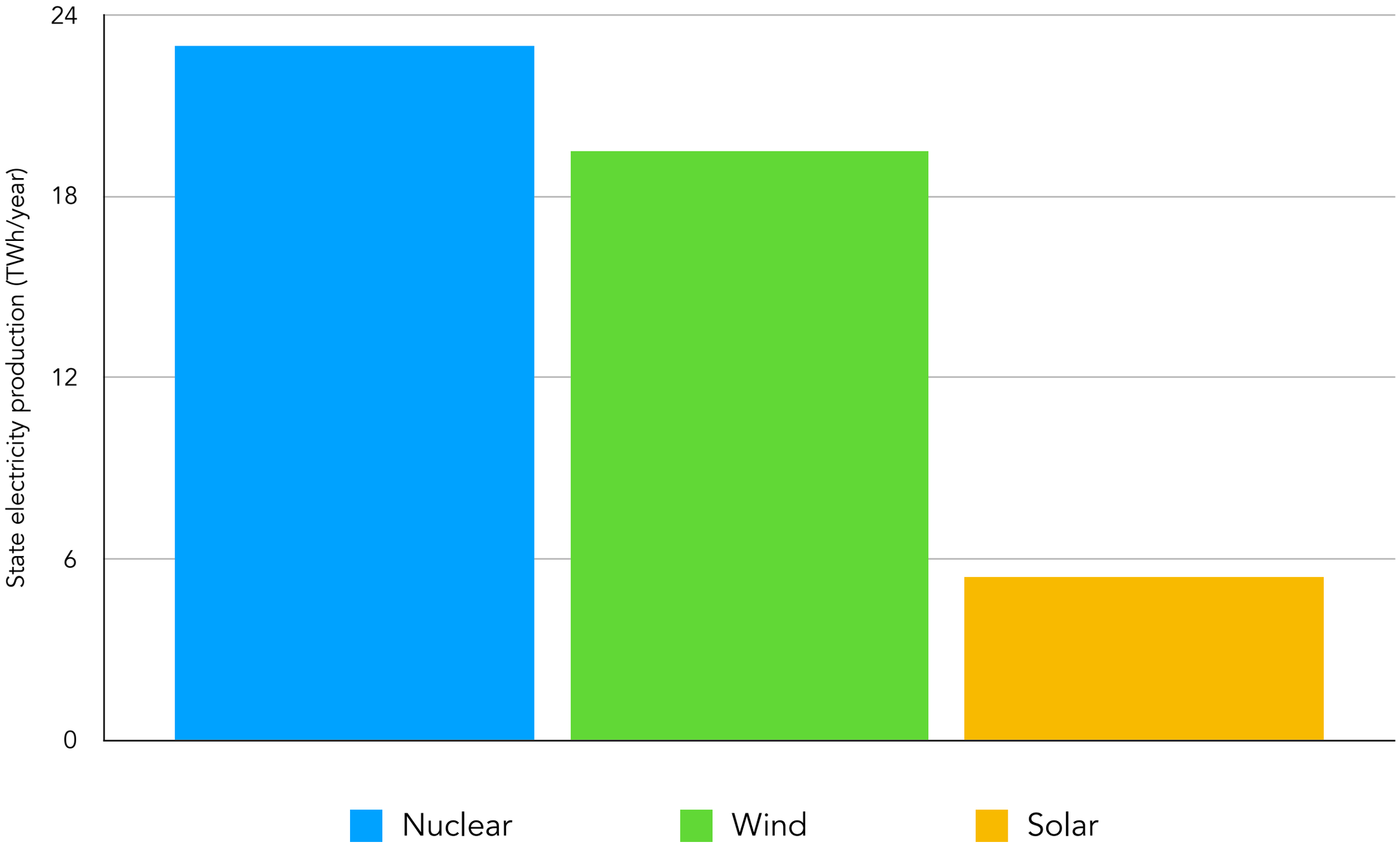
# Spain

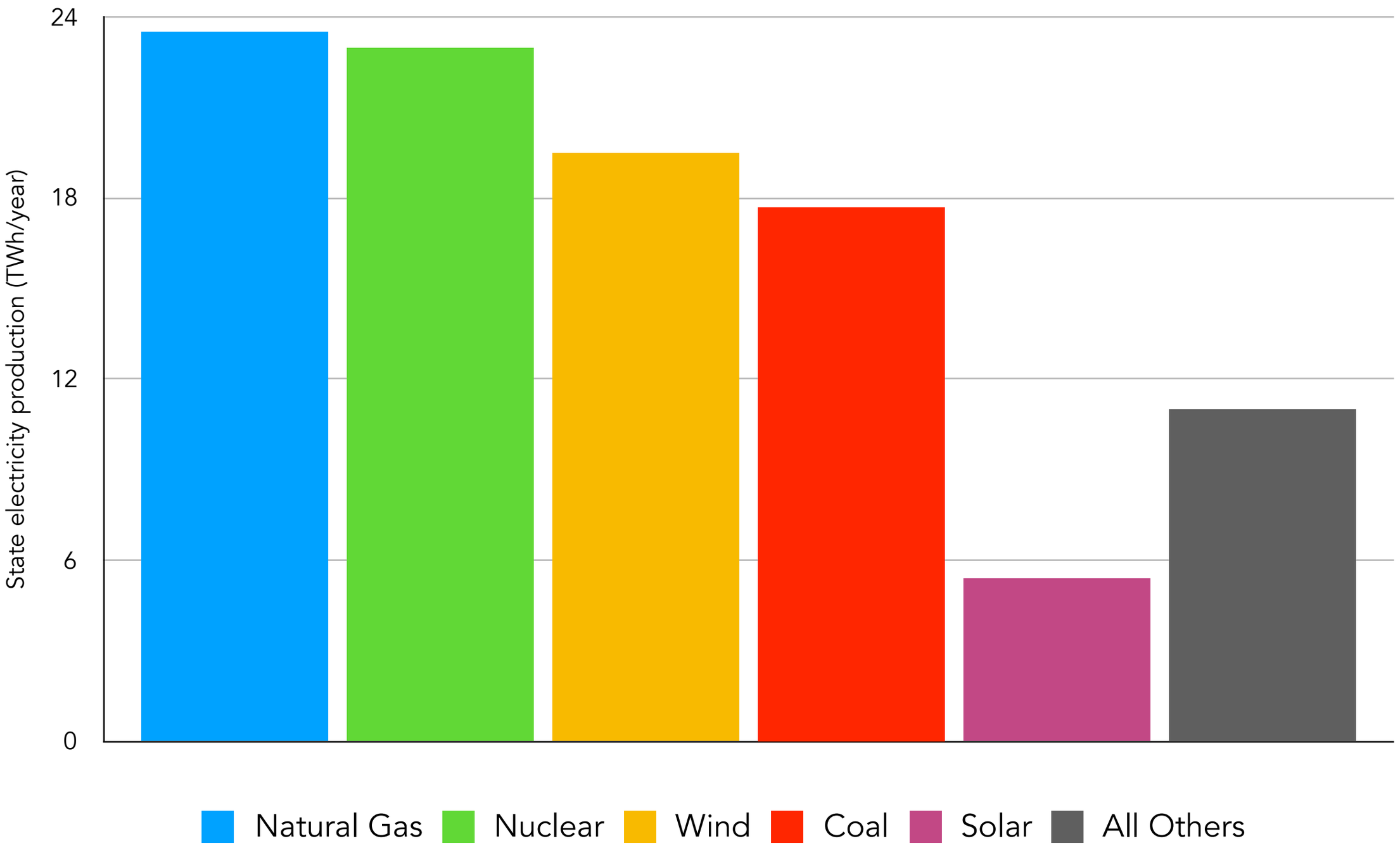
ENVIRONMENTAL PROGRESS

# Nuclear is Spain's Largest Source of Clean Energy




**Source:** Data from ENTSO-E Transparency platform. In 2017, Spanish natural gas and coal operated at 21% and 51% capacity factors. Electricity mix without nuclear assumes 2017 generation but with nuclear replaced by 2/3 gas and 1/3 by coal.

# Spain's Electricity Mix

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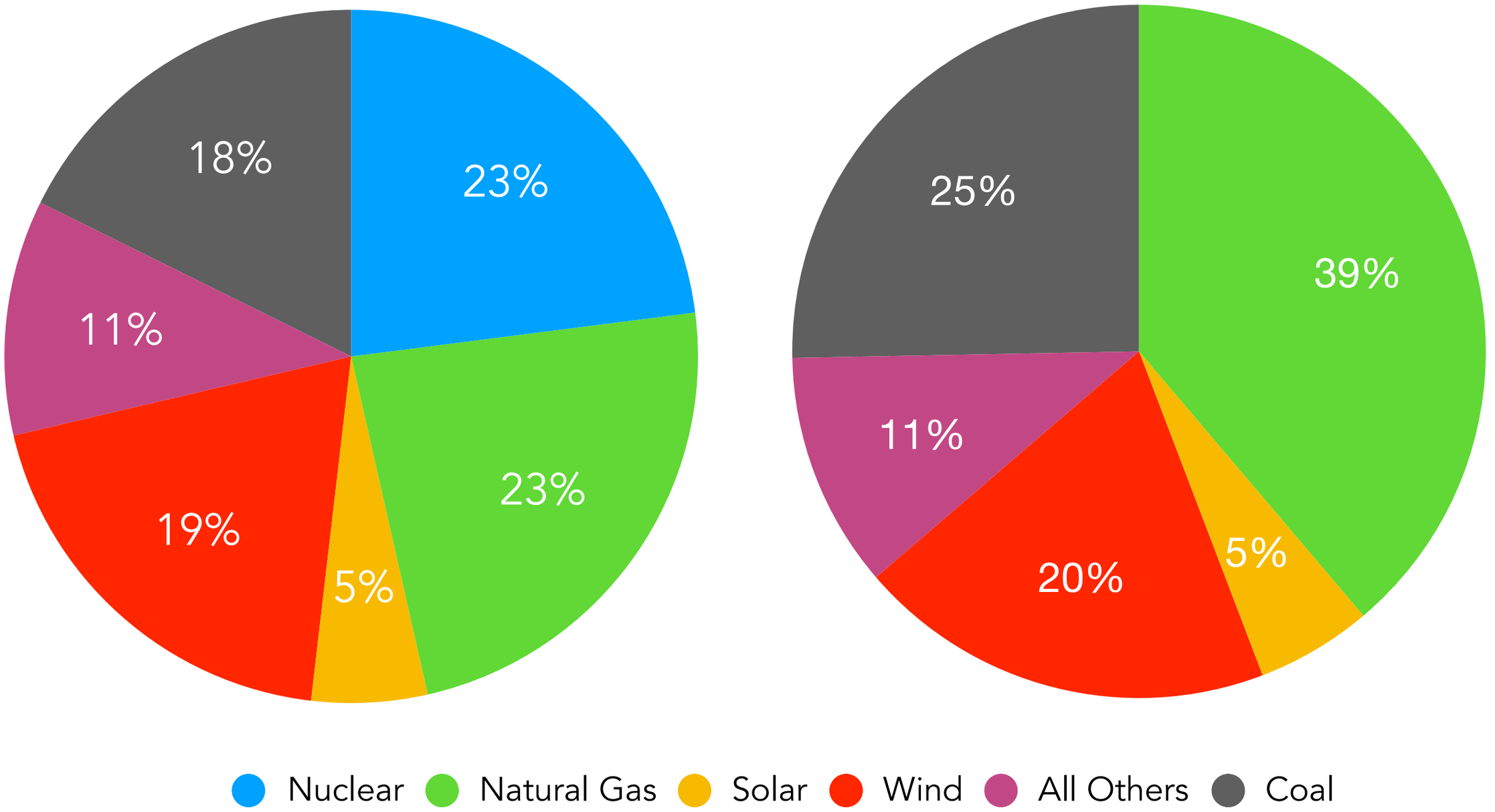
**Source:** Data from ENTSO-E Transparency platform. In 2017, Spanish natural gas and coal operated at 21% and 51% capacity factors. Electricity mix without nuclear assumes 2017 generation but with nuclear replaced by 2/3 gas and 1/3 by coal.

# Spain's electricity mix without nuclear would be dominated by fossil fuels

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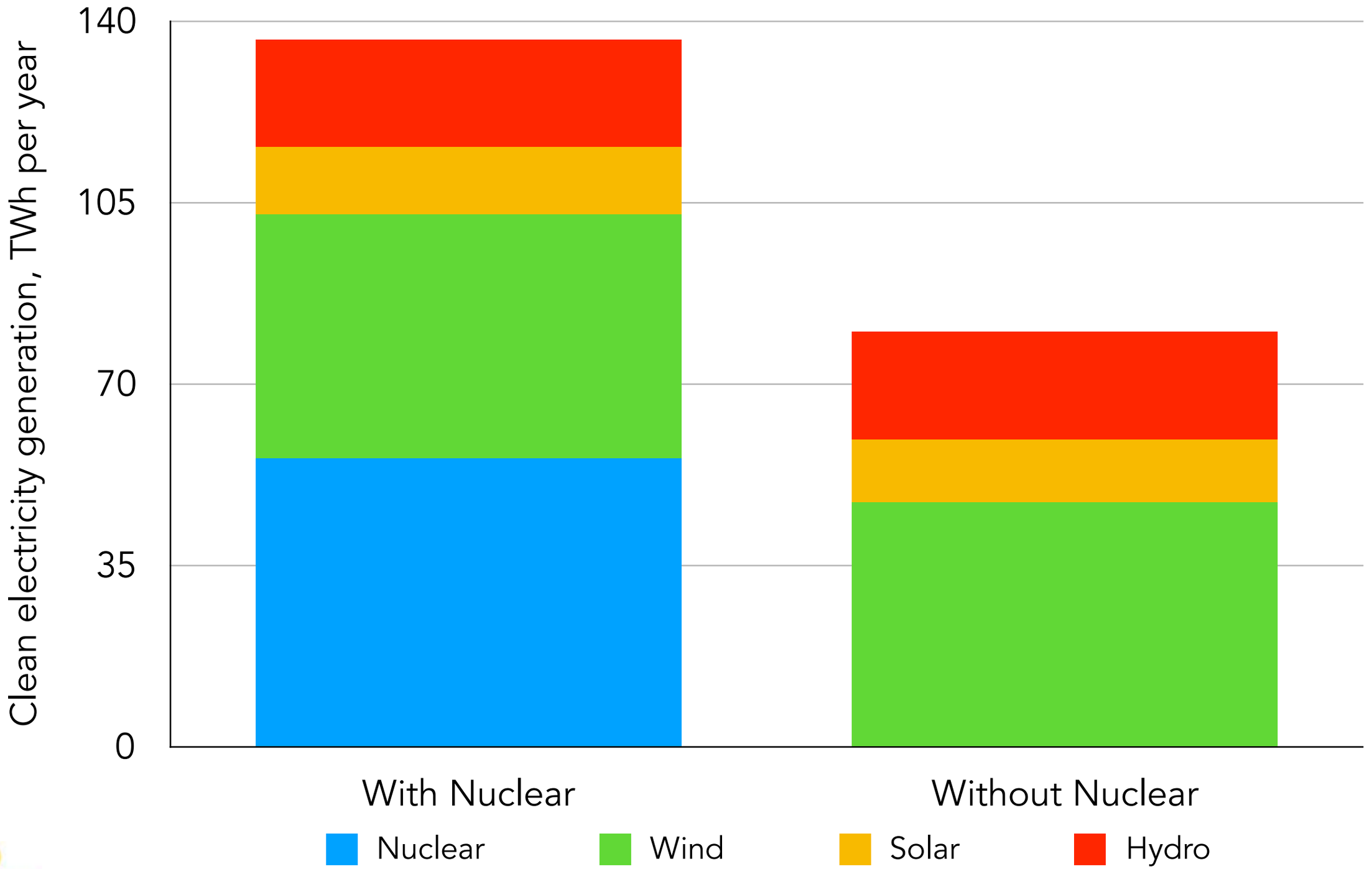
**Source:** Data from ENTSO-E Transparency platform. In 2017, Spanish natural gas and coal operated at 21% and 51% capacity factors. Electricity mix without nuclear assumes 2017 generation but with nuclear replaced by 2/3 gas and 1/3 by coal.

# Spain's clean energy with and without nuclear




**Source:** ENTSO-E Transparency platform, 2017 generation data for Spain

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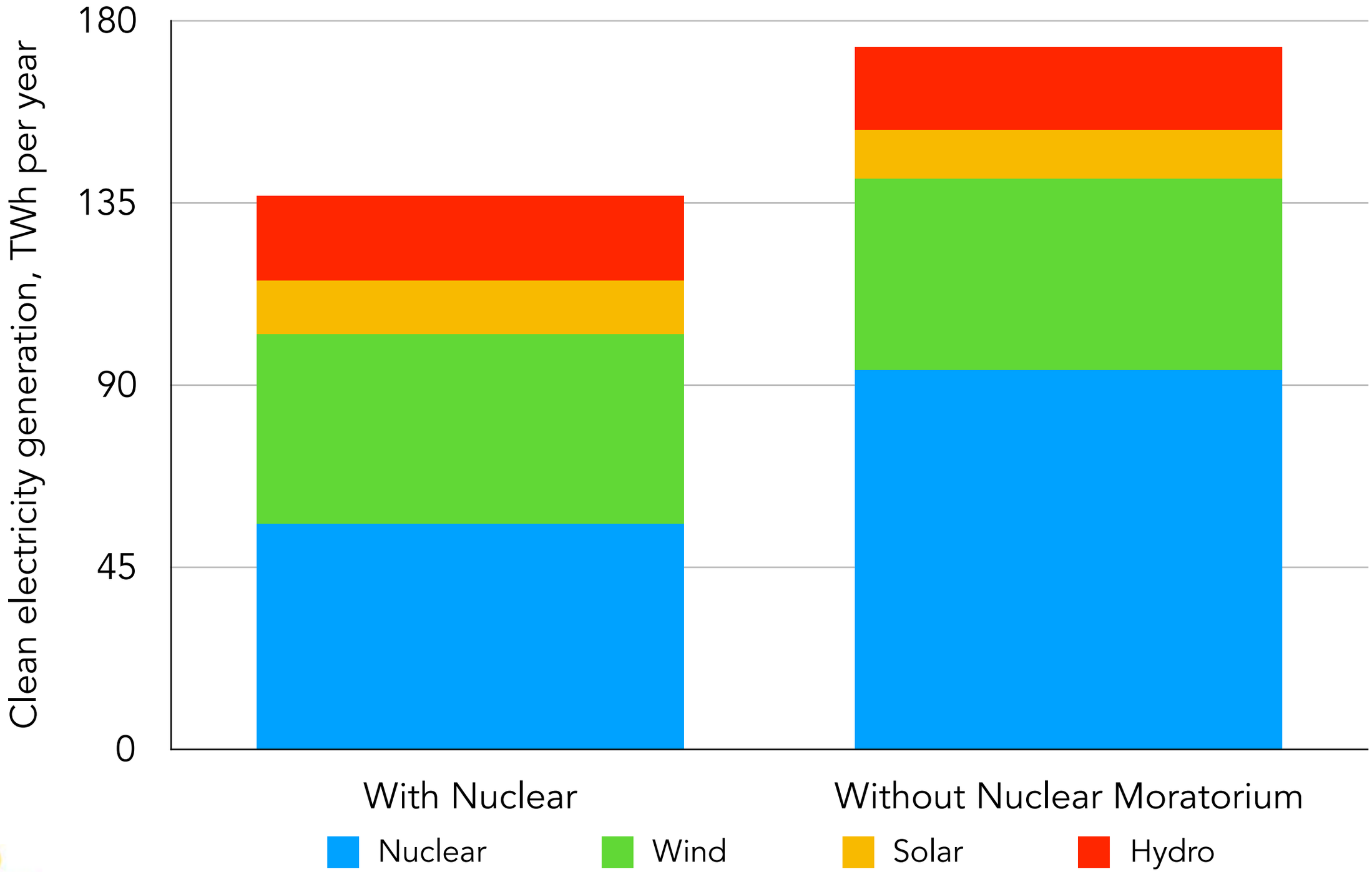
# Spain's clean energy with/without moratorium




**Source:** ENTSO-E Transparency platform, 2017 generation data for Spain

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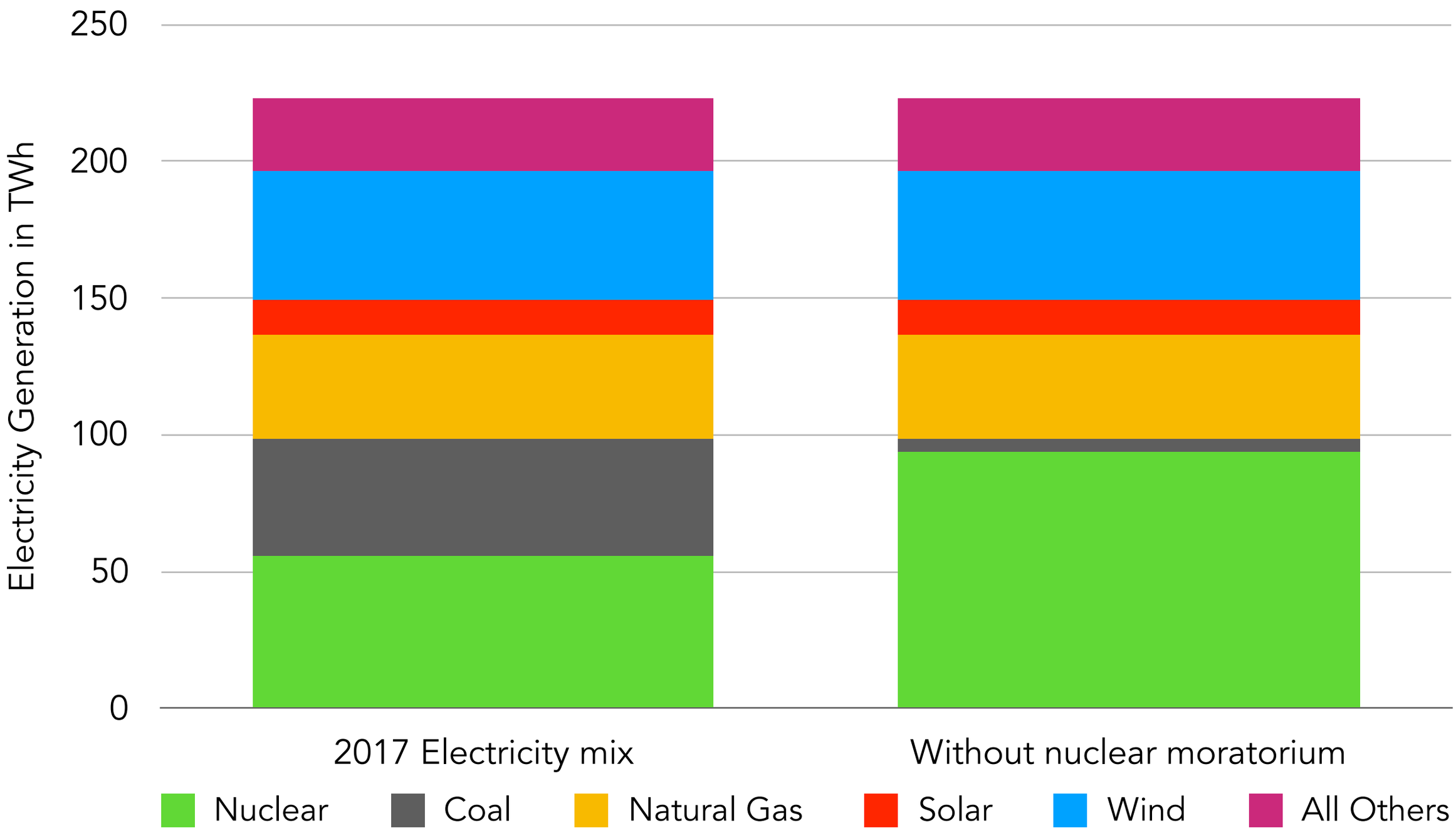
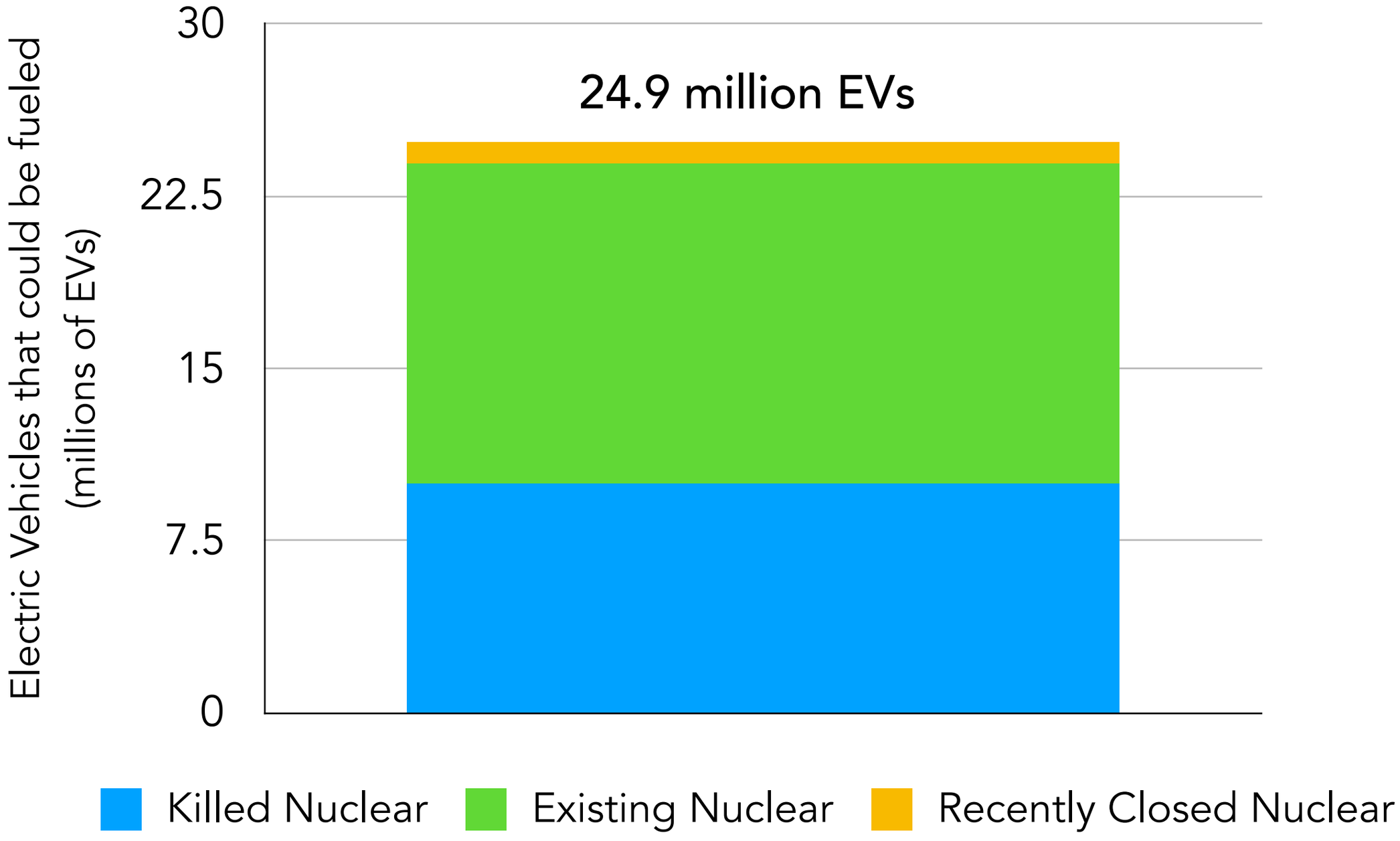
# Spain's nuclear moratorium killed five reactors that were already completed, under-construction, or planned, locking in coal and natural gas




**Source:** Data from ENTSO-E Transparency platform. Electricity mix without moratorium assumes 2017 generation but with an additional 38.2 TWh (4850 MW operating at 90% capacity factor, typical for Spanish nuclear fleet) displacing coal generation.

# Spain's nuclear plants could have powered 25M EVs




**Source:** Existing nuclear generation from IAEA-PRIS. Recently closed nuclear includes Santa Maria de Garoña's generation from IAEA-PRIS. Figure assumes EVs driving 19080 km per year at a rate of 5km per kWh.

# Spain's remaining nuclear avoids the carbon equivalent of 14.5 million new cars on the road.

Assumes new Spanish cars driving 19080 km per year at an efficiency of 115g-CO2 emitted per km. Replacement power is assumed to come ffrom a mix of 2/3rds natural gas, 1/3rd coal, with a weighted emissions intensity of 0.60 kg-CO2 per kWh replacing 53 TWh of nuclear generation per year.