

Renewable Energy v Nuclear Energy

Comparison	Renewable Energy	Renewable Energy	Nuclear Energy
Description	Wind Turbines	PV Solar Panels	Nuclear Reactors
Weather dependent ©	Yes	Yes	No
Capacity Factor	35%	25%	95%
Land Area per MW	54.5 acres	7.25 acres	0.05 acres
Environmental destruction - Australia's unique flora, fauna and marine life	Extreme	High	Nil
Compromising food production	High	Extreme	Nil
Waste disposal costs	Extreme	Extreme	Allowed in cost
Waste disposal process	No	No	Yes
Waste at end of life	Extreme	Extreme	Low
Visual Impact ©	High	High	Low
Noise Impact ©	Extreme	Low	Low
Wildlife Impact ©	Extreme	High	Low
Plant design/economic life ©	20 years	25 years	60 years
Reliability of generation ©	Intermittent	Intermittent	Reliable
Capex / MWh	\$46.45	\$74.07	\$16.54
MWh of Energy Produced for operational life of 924 MW plant	41,778,219	18,088,387	441,398,880
Load following capability ©	No	No	Yes
Provides frequency control ©	No	No	Yes
Provides system inertia ©	No	No	Yes
Black start capability ©	No	No	Yes
Direct process heat for industry ©	No	No	Yes
Plant/technical operational life ©	25 years	30 years	>60 years
Land Area per TWh ©	7,203 hectares	1,295 hectares	2.4 hectares
Major material required t/TWh ©	5,976 tonnes	2,516 tonnes	1,190 tonnes
Critical minerals required t/TWh ©	130 tonnes	124 tonnes	12 tonnes
Materials - concrete t/TWh ©	4,446 tonnes	1,216 tonnes	1,058 tonnes
Materials - steel t/TWh ©	1,447 tonnes	938 tonnes	134 tonnes
Cost of storage \$/kw ©	\$1,629 battery per kw	\$1,629 battery per kw	\$0
Lifecycle emissions g/Kwh ©	11	48	12
Additional transmission ©	Required	Required	No
Storage required ©	Typical 4 hours battery	Typical 4 hours battery	None
Life waste included in cost ©	no	no	Yes
Fuel cost \$/GJ ©	Free	Free	50 cents
Construction time years ©	18 months	18 months	6 years
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