Infographics
Wind Energy

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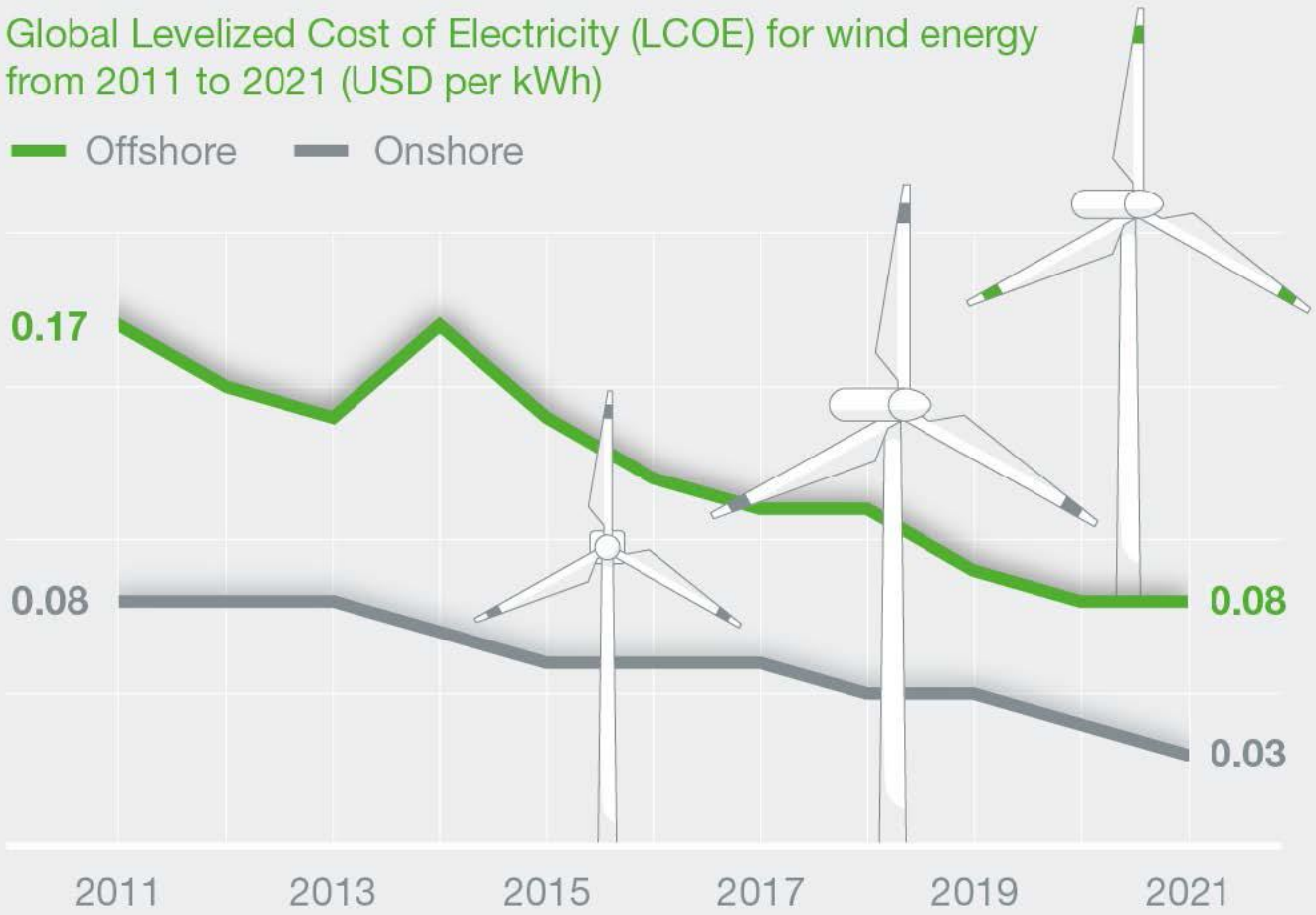
Wind energy is half as expensive as it was 10 years ago

Global Levelized Cost of Electricity (LCOE) for wind energy from 2011 to 2021 (USD per kWh)



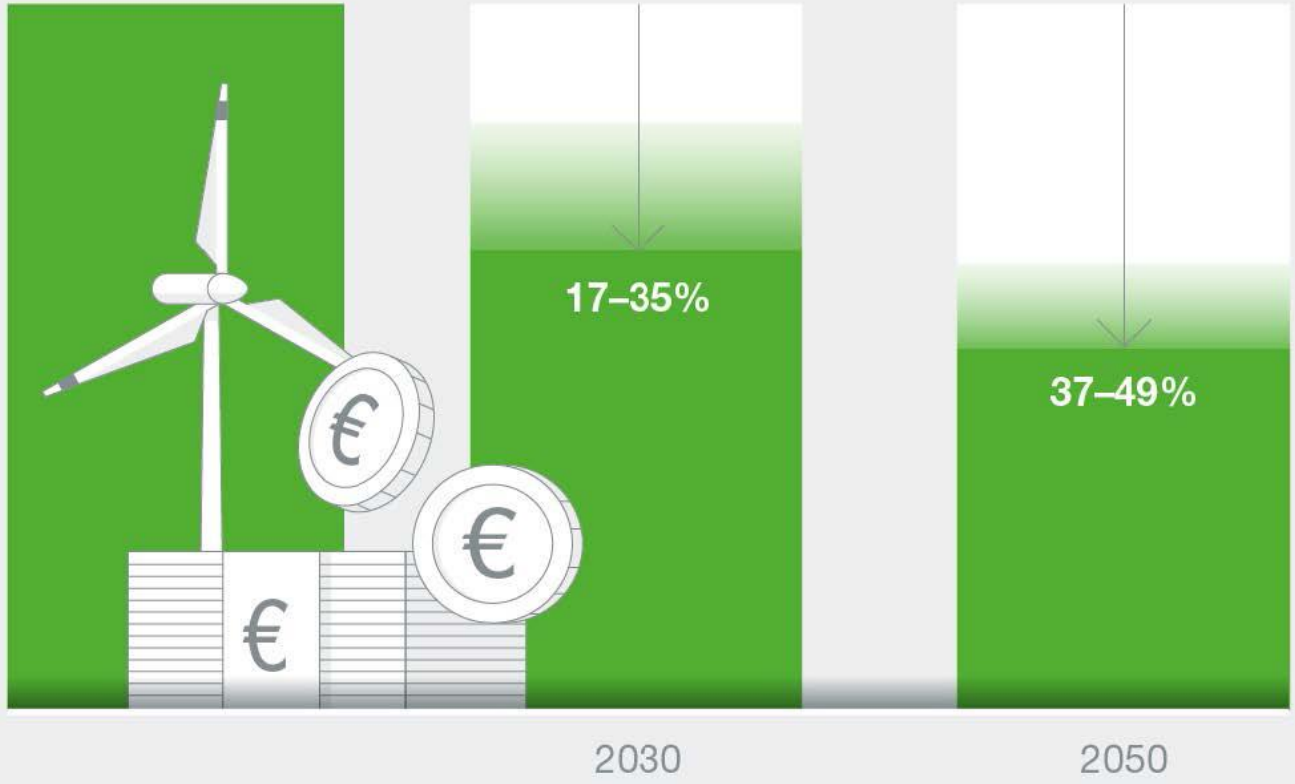
Levelized Cost of Electricity per MWh =
(investment & operating costs + financing costs) / electricity revenue

Sources: Bundesministerium, IRENA

Wind energy will become even cheaper in the future

Up to 49 percent lower costs in 2050: triggered by falling investment, operating and financing costs as capacity and lifetime increases

Cost reduction potential of wind energy's LCOE



n = 140 wind energy experts worldwide in 2021
Source: Lawrence Berkeley National Laboratory

Rising demand for raw materials due to expansion of wind energy

At 25 percent, steel is the second most widely used component in wind turbines after concrete (68%). This demand will triple by 2040

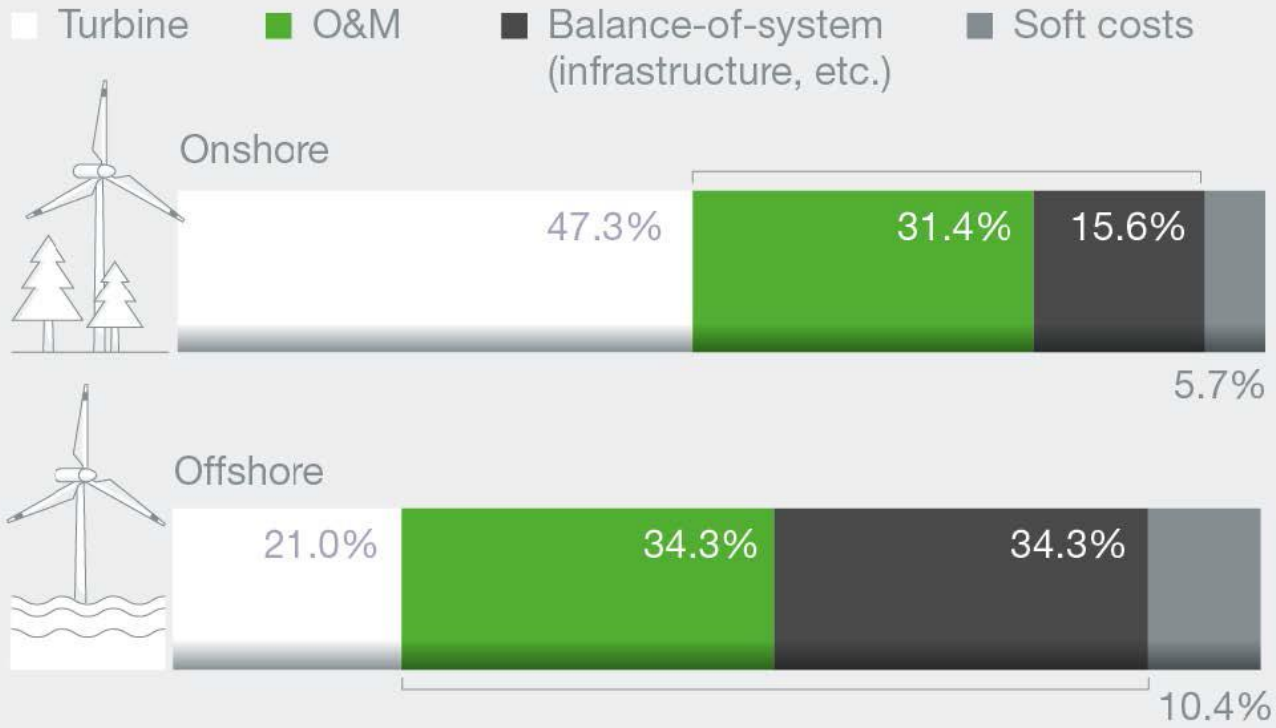
	2018	2040
		(in 1,000 tons)
Steel + cast iron	6,617	21,548
Zinc	272	883
Copper	95	317
Aluminum	58	184
Manganese	39	126
Chromium	24	79
Nickel	19	60
Molybdenum	5	15

Sources: BGR, IRENA

Installation determines the LCOE of the wind turbine

For fixed offshore turbines, O&M and balance-of-system each account for one-third of the LCOE – drives such as PitchOne can reduce effort and costs incurred

Share of components in the LCOE of a wind turbine that has been in operation for 25 years



Source: NREL (2019)

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