

PIENAAR ENERGY (PTY) LTD

Solar power generation costs and oil power



Overview

Renewable Energy Has Achieved Cost Parity: Utility-scale solar (\$28-117/MWh) and onshore wind (\$23-139/MWh) now consistently outcompete fossil fuels, with coal costing \$68-166/MWh and natural gas \$77-130/MWh, making renewables the most economical choice for new electricity. Renewable Energy Has Achieved Cost Parity: Utility-scale solar (\$28-117/MWh) and onshore wind (\$23-139/MWh) now consistently outcompete fossil fuels, with coal costing \$68-166/MWh and natural gas \$77-130/MWh, making renewables the most economical choice for new electricity. Different methods of electricity generation can incur a variety of different costs, which can be divided into three general categories: 1) wholesale costs, or all costs paid by utilities associated with acquiring and distributing electricity to consumers, 2) retail costs paid by consumers, and 3). This paper presents average values of levelized costs for new generation resources as represented in the National Energy Modeling System (NEMS) for our Annual Energy Outlook 2025 (AEO2025) Reference case. The estimates include only resources owned by the electric power sector, not those owned in. Numbers calculated by financial advisory Lazard as of June 2025 estimate price ranges for the generation of one MWh of energy by different sources. While the data shows that it is always cheapest to produce electricity from fully depreciated facilities, renewable energy can nevertheless compete in. The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US dollars per kilowatt-hour. It is adjusted for inflation but does not account for differences in living costs between countries.

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Wind and Solar Energy Are Cheaper Than Electricity from Fossil-Fuel

Persistently low natural gas prices, rising renewable energy costs and higher electricity demand have made existing gas plants economically attractive compared with renewables, Lazard ...

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Cost of Electricity Generation by Source

As of 2023, solar is 14% cheaper than energy produced by gas. But if we look back to 2009, solar was 433% more costly than energy generated by gas. Today, wind is the lowest cost ...



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Chart: The Cost of Energy , Statista

This chart shows the levelized cost of energy generation by source (in U.S. dollar per MWh).

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IRENA's 2024 Renewable Power Generation Costs Report Confirms

In 2024, solar photovoltaics (PV) were on average 41% cheaper than the lowest-cost fossil fuel alternatives, while onshore wind was 53% cheaper. Onshore wind also remained the ...

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Cost of electricity by source

Short-term fluctuations in fuel prices can have significant effects on the cost of energy generation in natural gas and oil fired power plants and to a lesser extent for coal fired power plants.

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Renewable Power Generation Costs in 2024

In 2024, renewables helped avoid USD 467 billion in fossil fuel costs, reinforcing their role in enhancing energy security, economic resilience, and long-term affordability.

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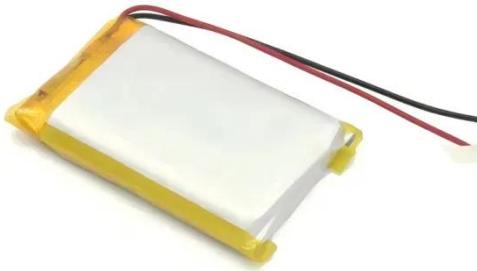


Levelized cost of energy for renewables, World

The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US

dollars per kilowatt-hour. It is adjusted for inflation but does not account for ...

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Levelized Costs of New Generation Resources in the Annual ...

This paper presents average values of levelized costs for new generation resources as represented in the National Energy Modeling System (NEMS) for our Annual Energy Outlook 2025 (AEO2025)

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Cost Of Renewable Energy 2025: Complete Guide To Solar, Wind

Comprehensive 2025 guide to renewable energy costs. Compare solar, wind, and clean energy pricing vs fossil fuels. Includes latest LCOE data, trends, and projections.

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Projected Costs of Generating Electricity 2020 - Analysis

It presents the plant-level costs of generating electricity for both baseload electricity generated from fossil fuel and nuclear power stations, and a range of renewable generation - ...

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