

United Arab Emirates (UAE) Power - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

United Arab Emirates (UAE) Power Market Analysis

The United Arab Emirates Power Market size in terms of installed base is expected to grow from 45.56 gigawatt in 2025 to 53.63 gigawatt by 2030, at a CAGR of 3.32% during the forecast period (2025-2030).

Capacity expansion is shaped by sustained population growth, electrification of industry, and the UAE Energy Strategy 2050, which commits to a 50% clean-energy mix by mid-century. Gas-fired plants continue to anchor baseload supply, yet solar additions and the 5.6 GW Barakah nuclear plant are steadily lowering the carbon intensity of generation. Record-low solar tariffs, rising corporate demand for renewable power purchase agreements, and federal support for green hydrogen are amplifying investor confidence across the UAE power market. At the same time, rapid growth in data-center load and electrified transport is accelerating grid-modernization spending and stimulating interest in large-scale battery storage solutions.

United Arab Emirates (UAE) Power Market Trends and Insights

Large-scale Solar Program Rollouts under UAE Energy Strategy 2050

Solar additions more than doubled national photovoltaic capacity between 2019 and 2023, reaching 6.1 GW after 70% growth in 2023 alone. Competitive auctions continue to push levelized solar costs below USD 0.02/kWh, making solar the cheapest new-build option in the UAE power market. Flagship projects such as Al Dhafra (2 GW) and the Mohammed bin Rashid Al Maktoum

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Solar Park (5 GW by 2030) underscore investor appetite. The surge in variable output is accelerating investment in advanced forecasting, demand-response programs, and synchronous condensers to safeguard grid stability. Utility strategies increasingly bundle solar capacity with battery energy storage to deliver round-the-clock supply, as evidenced by the 5.2 GW PV plus 19 GWh battery complex announced for Abu Dhabi.

Green-Hydrogen Initiatives Boosting Renewable Integration into Grid

The National Hydrogen Strategy targets 1.4 million t of production by 2031 and 15 million t by 2050. Power-to-gas-to-power pathways will convert surplus solar into dispatchable generation, aligning renewable oversupply with peak-demand periods in the UAE power market. Masdar's 2025 letter of intent with OMV to develop green hydrogen and e-fuels illustrates cross-sector interest. Abundant solar resources and existing gas pipelines create a cost edge that supports plans for a 2,200-km hydrogen network by 2040. The resulting flexibility underpins higher renewable penetration while laying the groundwork for exporting up to 25% of global low-carbon hydrogen demand by 2030.

Gas Price Volatility Challenging Thermal Generation Cost Competitiveness

Natural-gas imports have risen as domestic fields mature, exposing the UAE power market to global price swings. When spot LNG doubled during 2022-2023, gas-fired generation became less competitive than USD 0.02/kWh solar auctions. Long-term supply contracts and ADNOC's upstream expansion aim to shield generators, yet uncertainty complicates financing for new thermal projects. Developers increasingly bundle gas plants with carbon-capture or peaking-only roles to mitigate volatility while retaining essential flexibility as renewable penetration climbs.

Other drivers and restraints analyzed in the detailed report include:

Commissioning of Barakah Nuclear Units Adding Baseload Capacity / Liberalization of Wholesale Electricity Market and Private IPP Participation / Grid Congestion in Northern Emirates Limiting Renewable Project Integration /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Thermal plants delivered 77.5% of generation in 2024, giving this segment the leading UAE power market share for baseload supply. Gas turbines at EGA - Al Taweelah (2,620 MW) and Hassyan (2,400 MW) anchor peak-demand coverage, yet rising gas-price exposure tempers future capacity growth. The UAE power market size attributable to thermal assets will rise modestly through 2030, but its percentage share will slip in favor of low-carbon options. Environmental policy, carbon-pricing discussions, and corporate decarbonization targets reinforce the pivot toward clean energy even as legacy gas assets retain a critical balancing role.

Renewable capacity registered a 13.5% forecast CAGR for 2025-2030, the fastest in the UAE power market. Utility-scale projects dominate, leveraging vast desert sites and cheap land leases to achieve global record tariffs. Coupled with Barakah, renewables drive a structural decline in grid emissions intensity from 0.42 kg CO₂/kWh in 2023 to an expected 0.29 kg CO₂/kWh by 2030. Nuclear now supplies 25% of demand, providing a reliable floor that allows system operators to curtail gas output during periods of high solar generation.

The United Arab Emirates (UAE) Power Market Report is Segmented by Power Generation Sources (Thermal, Nuclear, and Renewables), End-User Sector (Residential, Commercial and Industrial, and Utilities), and Transmission and Distribution (Qualitative Analysis Only). The Market Sizes and Forecasts are Provided in Terms of Installed Capacity (GW).

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List of Companies Covered in this Report:

Abu Dhabi National Energy Company PJSC (TAQA) / Dubai Electricity and Water Authority (DEWA) / Emirates Water and Electricity Company (EWEC) / Abu Dhabi Transmission & Despatch Company (TRANSCO) / Etihad Water & Electricity (Etihad WE) / Emirates Nuclear Energy Corporation (ENEC) / ACWA Power Company / Masdar (Abu Dhabi Future Energy Company) / SirajPower Contracting LLC / EDF Renewables Middle East / Beta Green Solar Energy Systems Installation LLC / Al Jaber Energy Services LLC / ENGIE Middle East / TotalEnergies Renewables UAE / Siemens Energy Middle East / GE Vernova / Korea Electric Power Corporation (KEPCO) / China State Construction Engineering Corp (CSCEC) / JinkoSolar MEA / Trina Solar MENA / Hitachi Energy UAE / Schneider Electric UAE /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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