S&P Global Energy Releases Key Clean Energy+ Trends for 2026 as AI Growth and Geopolitical Shifts Reshape Global Energy Markets

AI-driven power demand surge tests grid, sustainability limits whileChina consolidates cleantech leadership in transformative year for energy transition

- Solar Installations Peak (for Now) –

LONDON and NEW YORK and SINGAPORE, Dec. 9, 2025 /PRNewswire/ -- S&P Global Energy today released its Top Trends report identifying the pivotal developments shaping clean energy technology, sustainability and growth in global energy markets in 2026. The report was produced by analysts of its Horizons team, which provides comprehensive energy expansion and sustainability intelligence, from big picture trends to asset level insights.

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"In 2026, AI's surging power demand growth will be testing grid limits, revenue models and sustainability goals,"**said Eduard Sala de Vedruna, Vice President and Head of Research, Horizons, S&P Global Energy.**"The pace of progress will depend on unlocking new capacity and flexibility, with grid modernization a key constraint on energy security and competitiveness."

S&P Global Energy Horizons Top Trends for 2026—tackling themes from AI's rapid growth, geopolitical realignments, and mounting climate risks—highlight how energy expansion and sustainability are necessarily interlinked.

"The interplay of AI-driven demand, grid bottlenecks, evolving procurement strategies, and rising climate risks highlights how energy expansion and sustainability are not parallel ambitions, but intertwined imperatives," **said Leanne Todd, Senior Vice President, Global Head of Horizons, S&P Global Energy.**

To access the full report and charts, please clickhere.

TOP TRENDS IDENTIFIED IN THE REPORT:

As AI uptake soars in 2026, energy supply and sustainability commitments face a breaking point.S&P Global Energy Horizon's high growth view shows global datacenter power demand increasing 17% to 2026 and 14% per year through 2030, reaching potential demand of over 2,200 TWh, equivalent to India's current electricity use. This surge is testing grid limits and sustainability goals, with 38% of assessed companies with datacenter operations lacking net-zero commitments. Major tech firms including Microsoft, Alphabet and Meta are exploring new options to reconcile their power needs without compromising on their climate targets as aggregate US datacenter capital spending approaches $500 billion in 2026.

Solar growth peaks (for now): first annual slowdown in renewables additions in 2026. China's annual additions will fall from roughly 300 GW in 2025 to about 200 GW in 2026, triggered by a major policy shift from guaranteed pricing to competitive bidding. With China accounting for 50% of global additions over the past decade, this slowdown will have a deep impact. For the first time ever, new global solar installations are expected to decline year-on-year, albeit by less than 10%, as emerging markets take up some of the slack Despite this contraction, cumulative PV capacity is still expected to double over the next five years, supported by emerging markets and continued innovation, including faster deployment of battery energy storage.

Grid modernization becomes a key energy security, transition and competitiveness constraint. Decades of underinvestment have created a critical bottleneck as the world races to electrify and decarbonize. With 40% of EU grids over 40 years old, the European Commission estimates €584 billion in grid capital expenditure is needed by 2030 to support decarbonization. The US faces potential limitations on the ability to deliver needed power without investment to support explosive AI-driven datacenter growth, making grid modernization a national competitiveness issue.

Flexible Power Purchase Agreements become the new standard as price volatility reshapes how risks are managed. Increasing renewable capacity is leading to more zero- and negatively priced settlements, driving the evolution from traditional PPAs to complex hybrid structures that integrate multiple technologies and storage. The market is moving toward shorter contract terms and stronger downside protections as extreme price swings become more visible, particularly in Europe where PPA indices remain well below cost-based levels. Datacenters account for 27 gigawatts (GW), or 43% of total corporate power procurement in 2025 through October, continuing as a leading sector for clean energy procurement.

As the rest of the world slows down to consider, China gets serious about green hydrogen. Chinese projects will install about 1.5 GW of electrolyzers in 2025, nearly doubling the 1.7 GW installed globally at end-2024, with deployment projected to reach 4.5 GW in 2026. Electrolyzer stack prices have plunged from $250 per kilowatt (/kW) in early 2024 to under $100/kW due to oversupply and fierce competition. Unlike solar and batteries, Chinese firms aim to export energy as well as technology, with at least two Chinese green ammonia plants receiving EU certification for clean molecule exports, with indications of prices as low as $600 per metric ton on a free-on-board basis (FOB).

Global SAF capacity expands by one third in 2026—Asia leads, Europe pays. Global dedicated sustainable aviation fuel (SAF) capacity is expected to rise by about one third to eight million metric tons (MMt), though the speed of growth slows compared to the near doubling seen annually from 2022 to 2025. More than half of global SAF capacity will be concentrated in Asia despite modest regional demand, as producers target a European market facing supply shortfalls. Beyond 2026, capacity could increase eightfold to 42 MMt by 2030 if announced projects materialize, though only 7.3 MMt have reached final investment decision.

EV uptake continues as China has shown that EVs can be price-competitive with conventional internal combustion engine vehicles. China appears on track to become the first major "EV majority" market globally, with battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) representing about 50% of new light vehicle sales in the first three quarters of 2025. Europe shows renewed growth due to stricter CO2 standards, while the US faces its first test of organic consumer demand without tailwinds of federal EV tax credits in 2026. Emerging markets including Thailand, Indonesia, Pakistan, Mexico, Nigeria and Malaysia are identified as relatively ripe for Chinese EV adoption.

Global trade and climate policy is increasingly focused on harmonizing emissions reporting. The EU Carbon Border Adjustment Mechanism (CBAM) takes effect January 1st, 2026, requiring accountability for carbon intensity of imported goods, while major revisions are proposed for the Greenhouse Gas (GHG) Protocol standard. Potential proliferation of carbon border adjustment mechanisms requires companies to report different emissions to different regulators, complicating global trade. The harmonization of product-level carbon accounting is increasingly seen as prerequisite for markets to differentiate products based on carbon intensity.

China leverages global clean energy leadership and further expands influence. China has consolidated its leadership in clean energy deployment, technologies and supply chains. With overall cleantech spending growing 30% over the next five years while upstream spending is expected to remain constant, new global energy investment is shifting eastward. Meanwhile, the US is adopting a more interventionist industrial strategy, featuring greater government involvement through equity stakes and targeted support for technologies like nuclear and advanced geothermal. Diplomatically, China continues active climate participation while the US challenges multilateral efforts, creating additional space for China to expand global influence.

As emissions could drive a 2.3°C rise by 2040, adaptation shifts from optional to essential in 2026 Extreme weather and climate hazards are creating escalating risks for infrastructure, physical assets, and operations. S&P Global Energy Horizons projects annual climate-related costs of ~$885 billion for large publicly traded companies in the 2030s. Climate risk assessments and adaptation planning show patchy uptake across sectors, with an evident adaptation gap even in industries where risk assessment is more common. The increasingly urgent question is no longer whether companies will adapt, but how quickly.

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