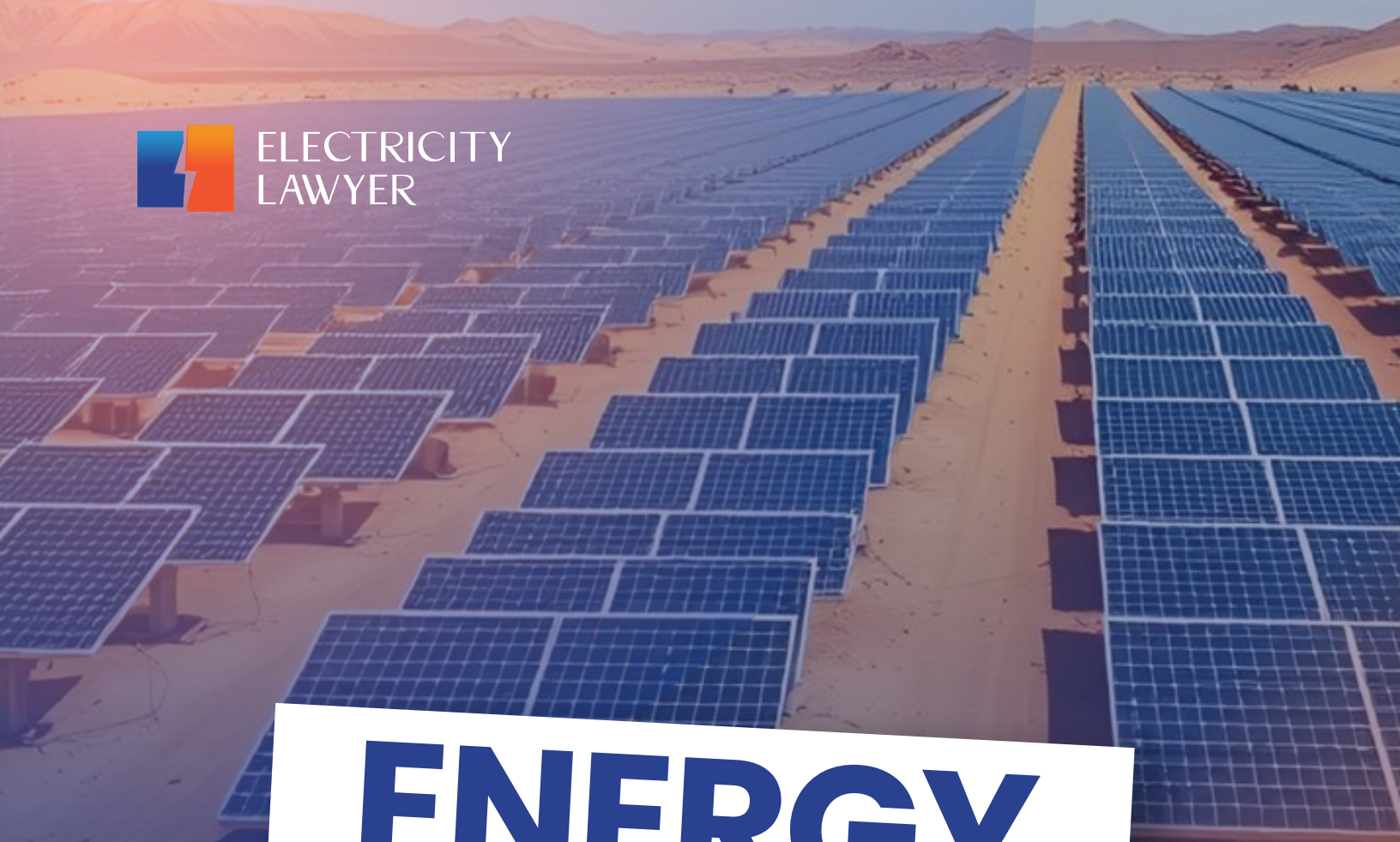
ELECTRICITY LAWYER



ENERGY OUTLOOK 2026

@Electricity Lawyer

CONTENTS

Executive Summary

Executive Summary

The EL Energy Outlook 2026 presents a forward-looking assessment of the global energy landscape, examining how structural shifts in energy demand, technology deployment, investment flows, and regulatory frameworks are shaping electricity markets and broader energy systems through 2026. As energy systems confront the dual imperatives of decarbonisation and energy security, the Outlook situates Sub-Saharan Africa within global trends, while recognising the region's distinct developmental, infrastructural, and regulatory realities.

Global energy demand is projected to continue its upward trajectory through 2026, driven by population growth, economic expansion in emerging markets, rapid urbanisation, and accelerating electrification of end-use sectors. Electricity demand is growing faster than overall energy demand, reflecting increased reliance on electric power for industrial activity, digital infrastructure, cooling, transport, and household consumption. According to international energy forecasts, clean and low-emission electricity sources are expected to meet the majority of incremental electricity demand growth over this period, underscoring the central role of power systems in the global energy transition.[1]

Electricity markets are undergoing significant structural transformation. Generation mixes are shifting toward variable renewable energy sources, particularly solar and wind, while grid infrastructure and system operations are being tested by increased variability,

decentralisation, and cross-border power flows. Regional electricity markets are evolving unevenly. Advanced economies are prioritising grid modernisation, storage deployment, and market reforms to integrate high shares of renewables, while many developing regions continue to grapple with capacity shortfalls, reliability challenges, and affordability constraints. In Sub-Saharan Africa, electricity market development remains closely tied to broader economic growth, access expansion, and regulatory reform efforts.

Overall, the EL Energy Outlook 2026 underscores a global energy system in transition; characterised by accelerating electrification, expanding renewable energy deployment, sustained reliance on transition fuels, and growing importance of enabling technologies and regulatory reform. For Sub-Saharan Africa, the outlook highlights both the scale of the energy challenge and the opportunity to leverage global trends, policy innovation, and investment frameworks to advance energy access, security, and sustainable development within an increasingly interconnected global energy system.

Scope/ Objectives

Scope / Objectives

The EL Energy Outlook 2026 examines the evolution of global energy systems through 2026, with a primary focus on electricity markets, energy sources and technologies, investment dynamics, and policy and regulatory frameworks. The report is global in perspective, but adopts a differentiated regional approach, recognising that energy transition pathways, market maturity, and regulatory responses vary significantly across jurisdictions.

The Outlook situates Sub-Saharan Africa (SSA) within the broader global energy context, acknowledging both the region's distinct energy access and infrastructure challenges and its growing importance in future energy demand growth. Comparative regional analysis is undertaken across Africa, Europe, Asia-Pacific, and the Americas, allowing for an assessment of convergence and divergence in energy system development.


Macro-Trends
in Global
Energy Markets

Macro-Trends in Global Energy Markets

Global energy markets are undergoing a period of accelerated structural change driven by rising demand, geopolitical realignments, decarbonisation commitments, and rapid technological advancement. While long-term transition objectives remain intact, short- and medium-term market dynamics through 2026 reflect a complex balancing act between energy security, affordability, and sustainability. These macro-trends shape investment priorities, policy responses, and electricity market evolution across regions.


Global Energy
Demand and
Supply Trends

Global Energy Demand and Supply Trends

Global energy demand is projected to continue increasing through 2026, driven primarily by economic growth in emerging markets, population expansion, urbanisation, and the electrification of end-use sectors such as transport, industry, and buildings. Electricity demand is growing faster than total final energy demand, reinforcing electricity's central role in modern energy systems.

Global energy demand grew by 2.2 % in 2024, outpacing the decade average of 1.3 % and driven by economic expansion and extreme temperatures. Electricity demand grew 4.3 % in 2024, its largest annual absolute increase ever recorded.

Statistics show global electricity demand is projected to grow by around 4 % annually through 2027, equivalent to adding electricity consumption greater than that of Japan each year.

Global total primary energy demand reached nearly 650 EJ in 2024, with demand growth concentrated in emerging markets. Global energy demand is projected to continue increasing through 2026, driven primarily by economic growth in emerging markets, population expansion, urbanisation, and the electrification of end-use sectors such as transport, industry, and buildings. Electricity demand is growing faster than total final energy demand, reinforcing electricity's central role in modern energy systems.

Key global demand and supply trends include:

- **Accelerating Electrification**

  Electricity demand growth outpaces overall energy demand as digitalisation, data centres, cooling needs, electric mobility, and industrial electrification expand globally. Clean electricity sources are expected to meet most incremental demand growth through 2026.

- **Persistent Role of Fossil Fuels**

  Despite strong renewable deployment, fossil fuels, particularly natural gas, remain critical to meeting global energy demand. Natural gas continues to play a stabilising role in power systems, supporting grid reliability and complementing variable renewable energy generation.

- **Renewable Energy Expansion**

  Renewable energy capacity additions, led by solar and wind, account for most new power generation investments globally. Cost declines, policy support, and scalability continue to drive renewable uptake, particularly in electricity generation.

- **Supply Chain and Geopolitical Sensitivities**

  Energy supply chains remain exposed to geopolitical tensions, trade restrictions, and resource concentration risks, particularly for critical minerals essential to clean energy technologies. These vulnerabilities are influencing national energy strategies and industrial policies.

- **Investment Shifts**

  Capital allocation is increasingly directed toward low-carbon generation, grid infrastructure, and enabling technologies. However, investment in conventional energy supply persists, reflecting the need to maintain system reliability and manage transition risks.


Regional
energy dynamics

Regional Energy Dynamics

While global trends provide a unifying framework, regional energy dynamics differ markedly due to variations in resource endowments, market maturity, policy priorities, and development objectives.

Sub-Saharan Africa

Africa's energy landscape is characterised by rapid population growth, rising electricity demand, and persistent energy access gaps. Sub-Saharan Africa accounts for a growing share of future global energy demand growth, yet per-capita energy consumption remains significantly below global averages.

Africa holds the highest solar irradiance globally but currently has less than 2% of global PV capacity, leaving about 600 million people without electricity access.

Key dynamics include:

- Expansion of electricity access as a development priority
- Continued reliance on fossil fuels alongside rapid renewable deployment
- Strong growth in distributed energy solutions, including mini-grids and off-grid solar
- Infrastructure constraints and financing challenges shaping market outcomes

Europe

Europe's energy markets are heavily shaped by decarbonisation targets, energy security considerations, and regulatory integration. The region continues to accelerate renewable energy deployment, while managing the phase-down of coal and reducing reliance on imported fossil fuels.

Key dynamics include:

- High renewable penetration, particularly wind and solar
- Renewed focus on energy security and diversification of gas supply
- Growing investment in storage, grids, and hydrogen
- Strong regulatory and market integration across electricity systems.

Asia-Pacific

Asia-Pacific remains the centre of global energy demand growth, driven by industrialisation, urbanisation, and rising incomes. For example, China's electricity consumption rose around 7 % in 2024, contributing over half of the global increase. The region exhibits a wide divergence in energy pathways, from advanced economies accelerating clean energy transitions to developing economies with continued coal dependence.

Key dynamics include:

- Rapid electricity demand growth
- Continued use of coal in some markets alongside large-scale renewable expansion

- Growing investment in LNG infrastructure and gas-to-power
- Increasing role in clean energy manufacturing supply chains.

Americas

Energy markets in the Americas are shaped by abundant resource availability, market liberalisation, and technological innovation. The region plays a major role in global oil and gas supply while also driving renewable energy and clean technology investment.

Key dynamics include:

- Strong growth in LNG exports and gas production
- Accelerated renewable deployment supported by policy incentives
- Grid modernisation and electrification of transport
- Increasing electricity demand is linked to data centres and industrial activity.


Electricity
Markets Forecast

Electricity Markets Forecast

Electricity markets are at the centre of the global energy transition and are expected to undergo continued structural transformation through 2026. Rising electricity demand, changing generation mixes, and evolving market structures are reshaping how power systems are planned, financed, regulated, and operated. While global trends point toward increasing reliance on clean electricity, regional electricity markets are evolving at different speeds, reflecting divergent policy priorities, infrastructure readiness, and levels of market maturity.

Demand Outlook and Generation Mix

Demand Outlook and Generation Mix

Global electricity demand is projected to grow steadily through 2026, outpacing growth in overall energy demand. This trend reflects the accelerating electrification of end-use sectors, including transport, industry, buildings, and digital infrastructure. Data centres, artificial intelligence applications, cooling demand, and electric mobility are emerging as significant contributors to incremental electricity consumption, particularly in advanced and rapidly industrialising economies.

Key demand-side trends shaping electricity markets include:

- Electrification of end-use sectors, increasing reliance on electricity as a primary energy carrier
- Rising industrial and digital demand, particularly from data centres and manufacturing
- Urbanisation and population growth, especially in emerging markets
- Electric vehicle (EV) adoption, increasing load growth and shifting demand patterns.

On the supply side, the global electricity generation mix continues to shift toward low-emission sources. Renewable energy, led by solar photovoltaic (PV) and wind, is expected to account for most new capacity additions through 2026. Falling technology costs, short project development timelines, and supportive policy frameworks underpin this trend.

However, conventional generation sources remain essential for system stability and reliability:

- Solar and wind dominate new capacity additions but introduce variability into power systems
- Hydropower remains a critical source of firm renewable generation in resource-rich regions
- Natural gas-fired power continues to play a balancing role, supporting flexibility and peak demand
- Coal-fired generation declines in several advanced economies but persists in parts of Asia-Pacific
- Nuclear power retains relevance in select jurisdictions seeking low-carbon baseload supply.


Energy Sources
& Technologies
Outlook

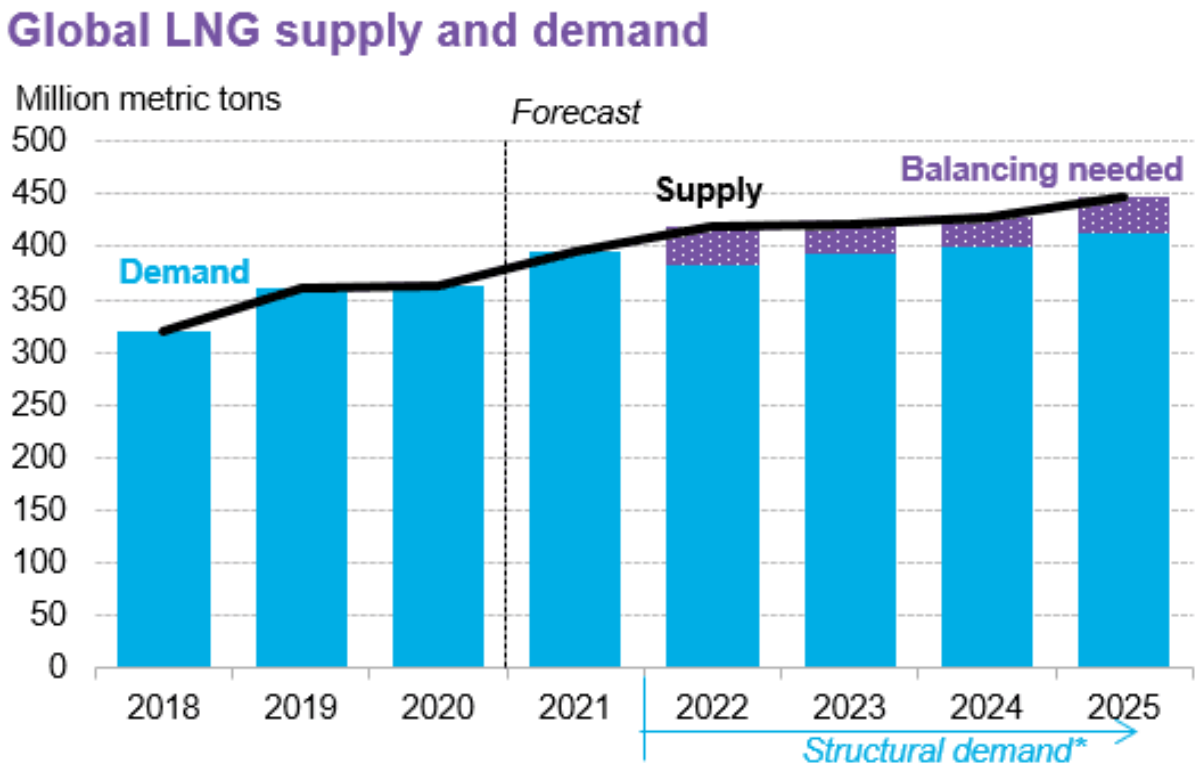
a. Fossil and Transition Fuels

LNG

In 2026, global liquefied natural gas (LNG) supply growth is set to accelerate by 7% or 40 billion cubic meters, which makes it the strongest increase since 2019, according to the International Energy Agency's (IEA) latest quarterly Gas Market. This growth is driven by new projects coming online in the US, Canada and Qatar, IEA, adding that Russia's Arctic LNG 2 project is not considered a source in the current forecast. On the demand side, the wave of LNG supply is set to allow a return to more significant import growth across several countries that are expected to reduce their purchases in 2025.

China, the world's largest LNG importer, is expected to act as the primary growth factor, swinging from an anticipated 11% LNG import contraction in 2025 to 25% growth in 2026.

Figure 1: Global LNG Supply and Demand



*Source: BloombergNEF. Note: *Structural demand is the demand based on current prices and 30-year weather average. For 2021, demand forecast assumes Northwest Europe and Italy takes all volumes, or excess supply, needed to balance the market after non-European demand is met.*

COAL

In 2025, global coal demand hit a new record (around 8.85 billion tonnes) driven by rising power needs, but this marks a plateau before projected gradual decline towards 2030, as clean energy grows and policy shifts. China's demand stabilized, while India and Southeast Asia drove growth, offsetting declines in advanced economies. Production remained high, with China leading, but trade contracted due to oversupply and weaker demand, with metallurgical coal showing more resilience than thermal coal.

Key Developments in 2025

Global coal demand reached a new peak around 8.85 billion tonnes, but this is seen as a high point before a gradual fall. India and Southeast Asia are primary demand drivers, while China's demand stabilized, and advanced economies (EU, US) continued to decline. Production stayed high, with China, India, Indonesia, and the US as top producers, but oversupply began reducing investment. Global coal trade shrank, particularly thermal coal, as major importers reduced purchases, though metallurgical coal remained strong.

Projections for the Future (to 2030)

- **Gradual Decline:** The International Energy Agency (IEA) forecasts a slow decline in overall coal demand, dropping by about 0.6% annually from 2025 to 2030.
- **Policy & Renewables Impact:** China's integration of renewables and energy demand, along with global clean energy deployment, will heavily influence coal's future.
- **Production Shift:** Production is expected to peak and then decline slightly, with India potentially seeing growth, while some exporters contract.

Key Drivers & Uncertainties

- **Demand Factors:** Weather, gas prices, and national policies significantly affect demand.
- **China's Role:** China's vast consumption makes its policies crucial for global trends.
- **Energy Transition:** The rapid expansion of renewables offers a significant counter to coal's growth.

WIND

Global Developments

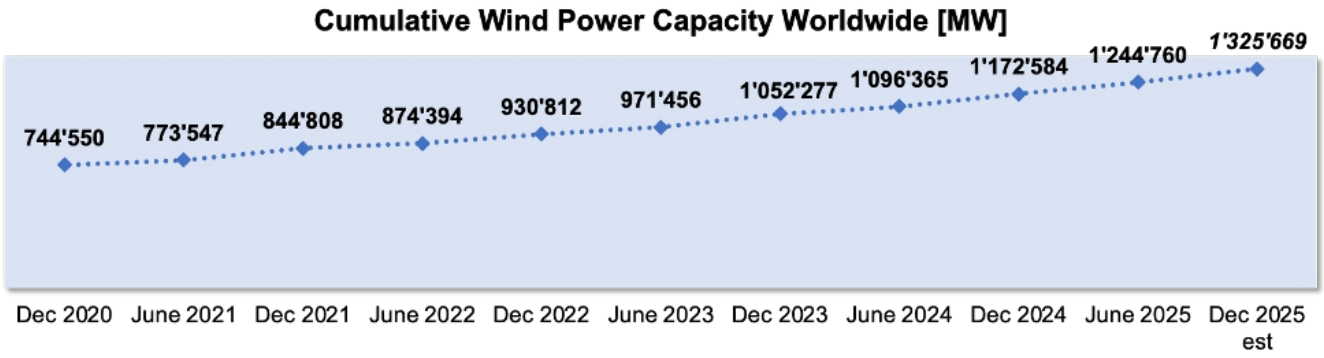
The World Wind Energy Association (WWEA) has compiled statistics on global wind power installations for the first half of 2025, based on data from national associations, official statistics, and WWEA estimates. The figures reflect both confirmed installations and projections for the remainder of the year.

In the first six months of 2025, the world added 72'176 megawatts (72.2 GW) of new capacity — 63,7% more than the 44'088 MW installed during the same period of 2024. This corresponds to a year-on-year increase of 148 GW in total installed capacity, from 1'096 GW in June 2024 to 1'245 GW in June 2025.

The semi-annual growth rate reached 6,2%, compared with 4,2% in the first half of 2024 and 4,4% in 2023, marking a clear acceleration of global wind deployment, while China remains by far the world's largest wind

power market. In the first half of 2025, the country installed 51,4 GW, more than double the capacity added during the same period in 2024 (25,8 GW) and in 2023 (23,8 GW). China represents a market share of 72%, with a cumulative total of over 600 GW and continues to lead global wind development by a wide margin.

Figure 1: Global LNG Supply and Demand



Source: World Wind Energy Association (WWEA)

NATURAL GAS

In 2025, natural gas demand continues growing globally, driven by power generation (especially during heatwaves), industry, and LNG use in transport, though growth slows in mature markets due to renewables. Key technologies involve enhancing LNG supply, integrating gas with intermittent renewables for grid stability, and exploring low-emission solutions like carbon capture (CCUS) and biomethane/hydrogen blending to decarbonize the gas sector. The forecast for natural gas prices is expected to rise to an average of $4.20/MMBtu in 2026. This increase is attributed to growing demand, particularly from new

liquefied natural gas (LNG) export projects, and the expectation that demand will grow faster than supply. Natural gas production is projected to increase by nearly 3% to 107.2 Bcf/day in 2026.

Global Natural Gas Demand: 2020–2026 Overview

The period from 2020 to 2026 has been characterized by significant volatility, moving from a pandemic-induced slump to a tight market and then a projected rebalancing.

Year	Global Demand Trend	Key Drivers
2020	Significant Contraction (-4%)	COVID-19 pandemic, lockdowns, and an unseasonably mild winter in key markets.
2021-2023	Gradual Recovery & Market Turmoil	Demand progressively recovered, but the market was affected by supply shocks and geopolitical tensions (e.g., Russian invasion of Ukraine).
2024	Strong Growth (+2.7% to 2.8%)	Demand reached a new all-time high, with over three-quarters of growth coming from emerging and developing economies, particularly in Asia.

Year	Global Demand Trend	Key Drivers
2025 (Forecast)	Slowed Growth (~1% to 1.3%)	Growth is expected to slow due to macroeconomic uncertainty, tight supply fundamentals, and high spot LNG prices weighing on price-sensitive Asian markets. Growth is primarily in Europe and North America.
2026 (Projection)	Accelerated Growth (~2%)	Demand is forecast to accelerate and reach a new all-time high as a significant increase in global LNG supply (up 7%) eases the market fundamentally.

b. Renewable Energy

By 2026, renewable energy is expected to reach a historic inflection point in the global power sector. According to projections by the International Energy Agency (IEA), renewables are on track to become the world's largest source of electricity generation, overtaking fossil fuels for the first time. When combined with nuclear power, total low-emission sources are projected to supply nearly half of global electricity demand by 2026. This shift reflects sustained investment in clean energy technologies, accelerating deployment of solar and wind, and growing policy commitments aimed at energy security and decarbonization.

One of the most significant milestones anticipated for 2026 is the overtaking of coal by renewable energy as the largest source of electricity generation worldwide. The IEA forecasts that this transition will occur by mid-2026 at the latest, marking a major structural change in the global energy system. Renewables are expected to account for approximately 36–37 percent of global electricity supply by 2026, up from around 30 percent in 2023, underscoring the rapid pace of their expansion. Another landmark development is the projected moment when combined electricity generation from solar photovoltaic (PV) and wind surpasses that of nuclear power for the first time, highlighting the growing dominance of variable renewables within the low-emissions energy mix.

Solar Photovoltaics (PV)

Solar PV is set to remain the primary driver of renewable energy growth in 2026. In 2024 alone, 452 GW of solar PV installed, accounting for 77% of total renewable additions. Generation from solar is projected to expand by between 18 and 27 percent, reflecting continued declines in technology costs, shorter construction timelines, and strong policy and private-sector support across both developed and emerging markets. Annual solar PV capacity additions are expected to approach 200 gigawatts, reinforcing solar's position as the fastest-growing power generation technology globally. Importantly, solar PV is projected to remain the lowest-cost option for new electricity capacity in most countries, further strengthening its competitiveness against both fossil fuels and other clean energy technologies.

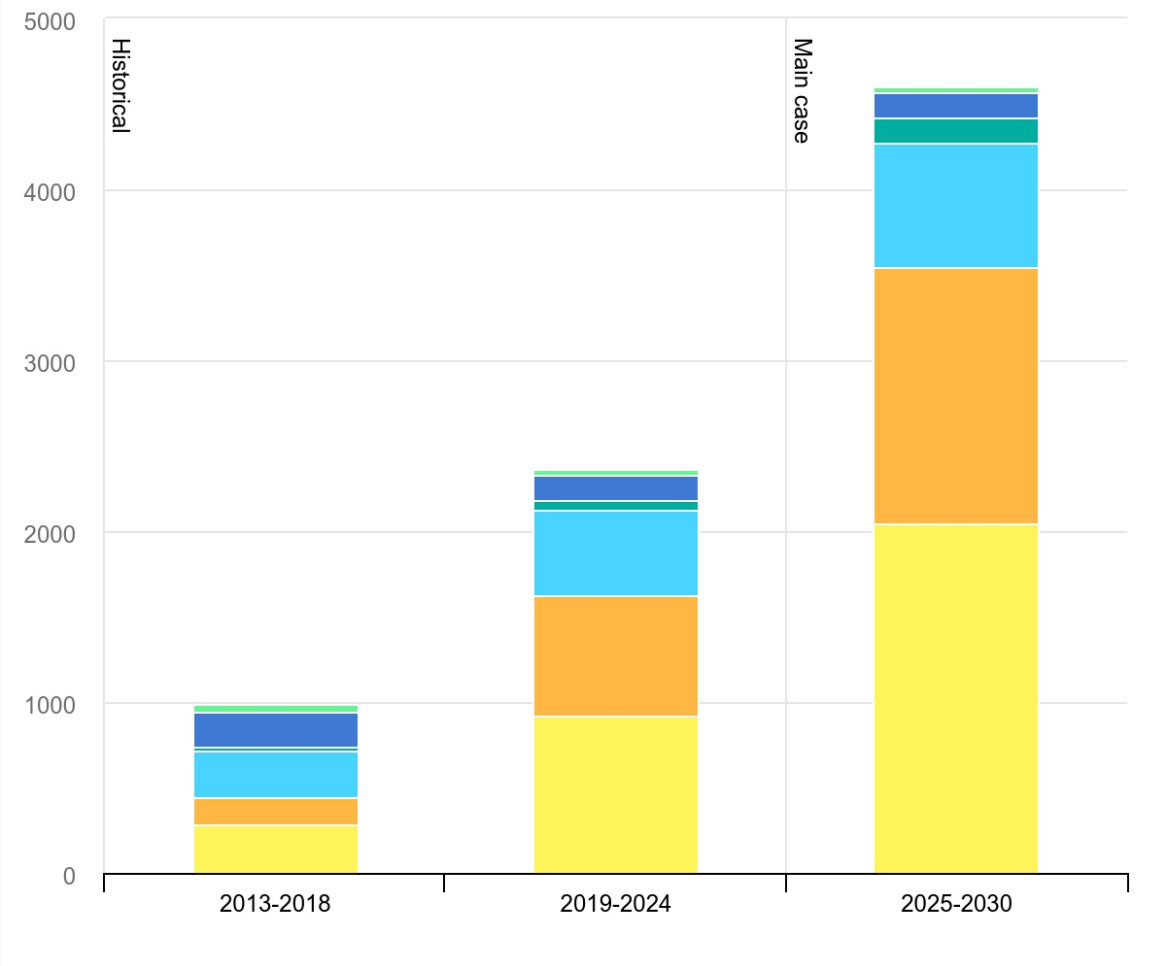
Wind Energy

Wind power generation is forecast to grow by approximately 19 percent globally in 2026, continuing its role as a major contributor to renewable electricity expansion. However, the sector faces notable challenges that could temper growth in certain markets. Supply chain constraints, rising input costs, and inflationary pressures have led to downward revisions in planned capacity additions, particularly in markets such as the United States. Despite these headwinds, offshore wind is expected to gain increasing prominence, with offshore generation projected to reach around 1.5 percent of total global electricity generation by 2026, supported by long-term policy frameworks in Europe and parts of Asia.

Hydropower

Hydropower will continue to be the single largest source of renewable electricity globally in 2026, although its share of total power generation is projected to decline slightly to about 15.6 percent. Electricity generation from hydropower is expected to increase by 7% between 2025 and 2030. Expansion in the hydropower sector remains constrained by long permitting processes, high upfront capital costs, and extended construction timelines. Nevertheless, momentum is building in select regions, particularly in India, parts of Africa, and the ASEAN region, where hydropower projects are increasingly being pursued to support grid stability, energy storage, and broader renewable integration.

Figure 3: Electricity Generation by Source: Renewables, Coal and Nuclear (2013 to 2030)



Source: International Energy Agency (IEA)

Bioenergy

According to IEA, use of modern bioenergy has increased on average by about 4% per year between 2010 and 2023 and is on an upward trend. Bioenergy for power generation is expected to experience a slowdown in capacity expansion through 2026, with growth declining by roughly 10 percent. This trend is largely driven by limited policy support and relatively high costs in many markets outside China. China is projected

to dominate new bioenergy capacity additions, accounting for nearly 60 percent of global growth, primarily through waste-to-energy projects. While bioenergy continues to play a role in diversified renewable portfolios, its contribution to overall power sector growth is expected to remain modest compared to solar and wind.

C. Emerging and Enabling Technologies

Emerging and enabling energy technologies, particularly battery storage, low-emission hydrogen, nuclear energy, and carbon capture, utilization, and storage (CCUS), are expected to transition decisively from pilot and demonstration phases into core components of national energy systems. This shift is being accelerated by targeted industrial policies and large-scale public incentives, notably the United States' Inflation Reduction Act and India's rapid build-out of manufacturing giga-complexes for clean energy technologies. Together, these measures are repositioning these technologies as critical infrastructure for energy security, grid stability, and industrial decarbonization.

Battery and Energy Storage

Battery and energy storage systems are projected to play a central role in supporting renewable-heavy power systems by 2026. Global installed storage capacity is forecast to exceed 270 gigawatts by that year, representing a 56 percent increase compared to the previous five-year period. While lithium-ion batteries are expected to remain the dominant technology, 2026 is increasingly viewed as a turning point at

which alternative chemistries—such as sodium-ion, solid-state, and flow batteries—begin to compete commercially. These emerging technologies are being deployed to address different performance needs, including long-duration storage, safety, and cost optimization.

Utility-scale storage will continue to represent the largest share of the market, driven by the need to balance variable renewable generation and provide grid-level flexibility. At the same time, commercial and industrial (C&I) storage is emerging as a new growth frontier, enabling businesses to manage energy costs, enhance reliability, and participate in ancillary service markets. From a policy perspective, India's 2026 power system reliability program stands out, with large-scale storage tenders designed to stabilize more than 200 gigawatts of renewable energy capacity and strengthen overall grid resilience.

Low-Emission Hydrogen

Low-emission hydrogen is approaching a critical inflection point in 2026, widely described as a "make-or-break" year for the sector. Approximately 2 million tonnes per annum (Mtpa) of hydrogen production capacity is expected to reach Final Investment Decision (FID) by that year, doubling the volume seen in 2025. This surge reflects growing confidence in long-term demand, particularly from industrial off-takers seeking pathways to deep decarbonization.

Cost dynamics are also reshaping the global hydrogen landscape. By 2026, green hydrogen produced in China is projected to potentially undercut European production costs, driven by scale, lower

manufacturing expenses, and integrated supply chains. This cost advantage is reinforcing emerging trade routes, especially in the form of ammonia exports that can be transported and later "cracked" back into hydrogen for domestic use in importing markets. Industrial applications remain the primary focus, with low-emission hydrogen increasingly targeted at hard-to-abate sectors such as steelmaking, chemicals, and oil refining. China is expected to lead global deployment, accounting for roughly 65 percent of electrolyser capacity reaching FID or installation by early 2026.

Table 1: Progress In Low-Emissions Hydrogen Production

YEAR	PROGRESS
2020	0.6Mtpa
2024	0.8Mtpa
2030(Projection)	4.2Mtpa

Nuclear Energy

Global nuclear energy generation is projected to reach a new record high in 2026, growing at an estimated annual rate of 2 to 3 percent. This growth reflects both the commissioning of new reactors and the extension or restart of existing nuclear facilities. Technological innovation is also reshaping the sector, with Small Modular Reactors (SMRs) moving closer to commercial deployment. By 2026,

approximately 6.7 gigawatts of SMR capacity are expected to advance toward Final Investment Decision, signalling increasing confidence in their potential role within future energy systems.

Table 2: Growth Of Nuclear Energy Generation

YEAR	GROWTH
2020	2679TWh
2021	2810TWh
2022	2667TWh
2023	2741TWh
2024	2820TWh
2025	2915TWh
2026(Projection)	2958TWh

Regional trends are driving this resurgence, particularly in Asia, where new reactors in China, India, and South Korea are contributing to capacity growth. In parallel, the restart of nuclear plants in Japan and France is strengthening output in established nuclear markets. From a policy standpoint, nuclear power is increasingly being reframed as "dispatchable clean power," valued not only for its low-emissions profile, but also for its ability to provide reliable, baseload electricity that complements intermittent renewable generation and enhances grid stability.

Carbon Capture, Utilization, and Storage (CCUS)

The global pipeline of carbon capture, utilization, and storage projects is expected to continue expanding through 2026, with a particular emphasis on storage-focused developments. CCUS is increasingly being positioned as a strategic "bridging technology," especially for industrial sectors where direct electrification or fuel switching remains technically or economically challenging. This framing is particularly evident in the ASEAN region, including countries such as Japan, South Korea, and Malaysia, where CCUS is integrated into broader industrial decarbonization strategies.

Table 3: Global Capture Capacity

YEAR	PLANNED	UNDER CONSTRUCTION	OPERATIONAL
2025	-	21.4 Mt Co2	50.9 Mt Co2
2030	327.4 Mt Co2	51.3 Mt Co2	50.9 Mt Co2

Although CCUS still accounts for a relatively small share—approximately 3 percent—of total clean energy investment, capital flows into CCUS startups and pilot projects have increased significantly entering 2026. Public funding mechanisms and policy frameworks are increasingly focused on industrial carbon management, aiming to preserve energy reliability and industrial competitiveness while limiting emissions growth. As such, CCUS is emerging as a complementary tool alongside renewables, storage, and clean fuels in the global transition toward net-zero energy systems.

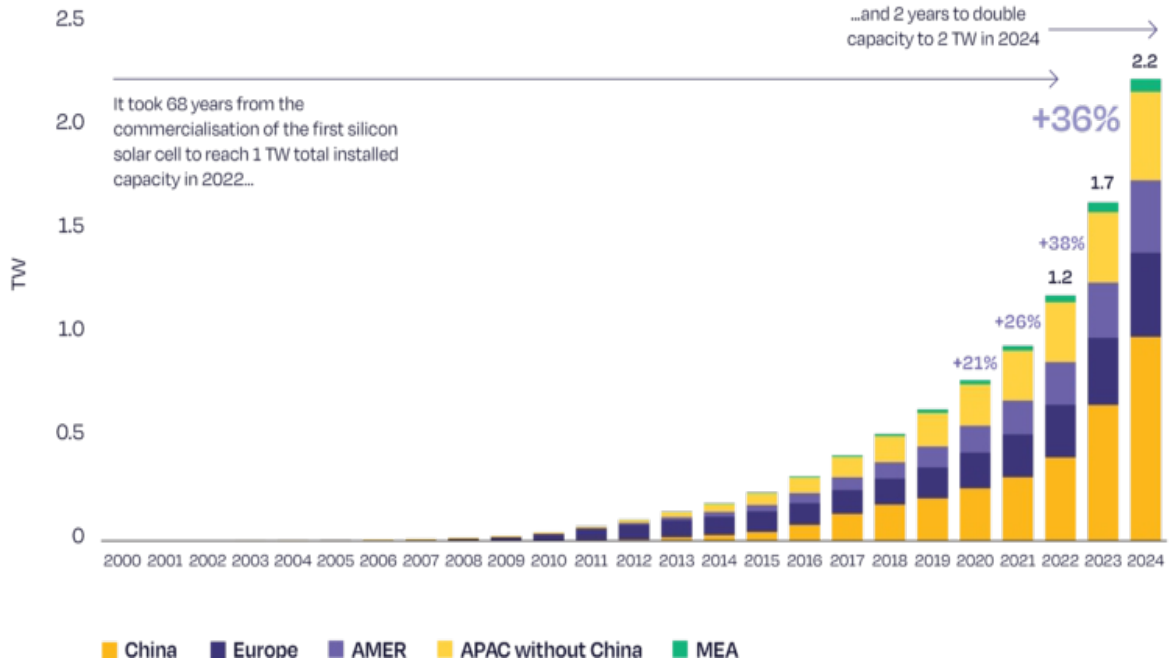
Solar Outlook

Solar Outlook

As a key driver of renewable energy capacity and growth, solar energy is very crucial. Its extent is supported by technological improvements, declining capital costs, and modular deployment advantages. Despite this progress, challenges persist, including grid integration constraints, intermittency management and the need for complementary investments in storage and transmission infrastructure. IRENA's Renewable Capacity Statistics 2025 reports that solar PV additions reached approximately 451.9 GW in 2024, contributing over three-quarters of the total renewable capacity additions for the year. While Asia, specifically China, was responsible for a significant portion of the new capacity additions, solar installations also registered growth in other regions, though at a lower level. IRENA's analysis underscores that despite the record additions, the current pace of deployments remain below what is necessary to triple global renewable capacity by 2030 to keep pace with climate goals.

Solar PV accounted for about 69% of total renewable energy investments in 2024, with USD 554 billion invested in solar technologies, making it the largest renewable subsector by far. Investment levels are approaching the average required under a 1.5°C compliance pathway.

Figure 4: Cumulative Solar PV Installed Capacity 2000-2024



Source: Solar Power Europe

Global cumulative solar capacity is forecast to rise substantially through the late 2020s, with the following projections:

Table 4: Global Solar Capacity Projection

Year	Expected Global Solar Additions (GW)
2025	655 GW (medium scenario)
2026	735 GW
2027	820 GW
2028	910 GW
2029	1,000 GW
2030	7 TW cumulative capacity globally (forecast)

Based on SolarPower Europe's growth scenarios

Despite robust long-term growth, global solar additions could decline in 2026, marking a potential first "stall" if project financing becomes constrained. Renewables overall are projected to become the largest source of electricity generation by 2030, with solar accounting for over half of the growth in generation through that year.

Regional Solar Markets and Financing Trends

Africa: Opportunity and Capital Constraints

Africa possesses among the highest solar irradiance globally, yet less than 2% of global PV capacity is installed on the continent, despite its vast potential. Market forecasts indicate an expanding solar footprint across more African countries in the coming years, but capital costs for solar are 3 to 7 times higher than in developed markets. Africa receives about 3% of global energy investment, far below the estimated USD 200 billion/year needed for energy access and climate targets. Financing shortfalls, high discount rates, and limited de-risking instruments hinder project bankability.

Regional financing trends include the involvement of multilateral development banks in using blended finance and guarantees to crowd in private capital. Increased deployment of off-grid and distributed PV with storage to address grid unreliability and rural electrification needs.

China's state-owned firms are increasingly targeting African renewables, with solar projects, hybrid systems, and large PV investments forming part of this expansion strategy.

Investment in Africa's renewable power generation has more than doubled from 2019 to 2024, with projections of continued growth to 2031 and beyond, though storage and grid upgrades remain modest by comparison.

Europe: Policy-Driven Expansion and Capital Flows

Europe's solar market is benefiting from strong regulatory frameworks (e.g., REPowerEU), corporate procurement, and private capital deployment. Utilities and institutional investors are increasing solar–storage portfolios, with EU solar financing rising sharply relative to other regions.

However, financing complexity persists: Utility-scale solar investment shrank globally in 2025, partially due to curtailment and negative power prices in some markets, indicating revenue risk considerations in investment decisions. Small-scale and rooftop solar installations partly offset declines in large project finance due to quicker deployment and reduced exposure to policy shifts.

Europe is increasingly attracting renewable investment that might otherwise have flowed to the US.

Asia-Pacific: Manufacturing and Deployment Dominance

Asia-Pacific, led by China and India, remains the largest driver of solar manufacturing and deployment. China's manufacturing capacity and capital flows dominate both upstream (modules) and downstream (utility-scale projects).

India has reached 100 GW of installed solar capacity, with policy

programs accelerating grid-connected and decentralized projects.

Asia-Pacific benefits from economies of scale, sovereign and institutional investment, and rapid industrial adoption. However, policy uncertainty; particularly in China and the US—introduces growth volatility.

The Americas: Mixed Policy Signals and Growth Potential

The Americas show strong solar market segments. US and Canada solar capacity continues to expand, though recent policy shifts have slowed acceleration. Developers increasingly pair solar with battery storage to manage revenue stability.

In Latin America, Brazil, Mexico, and Chile are emerging as solar growth hubs, driven by auctions and corporate PPAs, though financing at scale still faces risk-adjusted capital cost challenges.

Investment flows in the Americas are uneven, with strong tech growth in some markets counterbalanced by caution from large institutional investors where revenue streams appear uncertain.

Financing & Investment Trends

Financing & Investment Trends

Global renewable energy investment reached an all-time high of $386 billion in the first half of 2025, up by 10% year-on-year, even as utility-scale solar and wind investment declined relative to total flows. Total energy transition investment surpassed $3 trillion in 2025, with clean energy technologies like solar receiving the largest share, outstripping fossil fuel investments. BNEF reports continued expansion in energy storage and small-scale solar, reflecting shifting investor preferences toward integrated and flexible solutions. Solar's share of renewable investment has more than tripled over the past decade, highlighting sustained financing momentum and cost competitiveness.


Policy &
Regulatory
Landscape

Policy & Regulatory Landscape

The global energy transition is being strongly shaped by policy and regulatory frameworks, which are increasingly recognised as critical levers for ensuring energy security, attracting investment, and achieving decarbonisation objectives. At the global level, governments are aligning national energy strategies with climate commitments, such as the Paris Agreement and net-zero targets, creating a framework for renewable deployment, emissions reduction, and energy efficiency initiatives. Policy instruments, including carbon pricing, renewable energy auctions, tax incentives, and green finance programs, are increasingly deployed to mobilise private capital and de-risk investments in clean energy technologies. Electrification of end-use sectors, including transport, buildings, and industry, is actively promoted through regulatory measures, subsidies, and infrastructure support, reflecting the growing role of electricity in achieving climate and development goals.

Regional dynamics, however, demonstrate significant divergence in policy ambition and implementation. In Europe, energy policy focuses on high renewable penetration, decarbonisation of industrial processes, and energy security considering geopolitical risks. Market liberalisation, regulatory harmonisation, and cross-border electricity integration are central to ensuring efficient operation of highly renewable-dependent grids. In Asia-Pacific, policies simultaneously support large-scale renewable expansion and the continued use of coal and natural gas, reflecting the dual priorities of meeting rapidly

growing demand and maintaining system reliability. In the Americas, particularly the United States and parts of Latin America, regulatory frameworks incentivise private sector participation in generation and storage, support grid modernisation, and drive renewable energy deployment, often through state-level or subnational policy initiatives.

Sub-Saharan Africa presents a distinct regulatory landscape shaped by energy access, affordability, and infrastructure constraints. Policy and regulatory reforms focus on enabling private sector investment through independent power producer frameworks, unbundling vertically integrated utilities, and improving cost recovery mechanisms. Off-grid and mini-grid policies are increasingly formalised to expand access in underserved areas, while regional power pools and market integration initiatives aim to enhance cross-border trade and system reliability. These reforms, while unevenly implemented, are critical to creating an enabling environment for both renewable and conventional energy investments in the region.

Across all regions, electricity market reforms are closely linked to broader energy policy objectives. Market design adjustments, such as capacity markets, ancillary service frameworks, and demand response mechanisms, are implemented to accommodate variable renewable energy and ensure system adequacy.

Global and Regional Energy Policy Trends

Global and Regional Energy Policy Trends

Global energy policies increasingly reflect climate commitments, such as the Paris Agreement and net-zero pledges. These commitments are influencing national energy strategies, energy security planning, and investment priorities. Key global and regional trends include:

Decarbonisation and Net-Zero Targets:

Countries across Europe, Asia-Pacific, and the Americas have established ambitious carbon reduction targets and net-zero commitments, driving renewable energy adoption, phasing out of coal, and investment in clean technologies.

Electrification and Sector Coupling:

Policies are incentivising electrification of transport, heating, and industry, creating additional electricity demand while supporting integration of renewables.

Energy Security and Resilience:

Geopolitical tensions, supply disruptions, and climate impacts are prompting governments to diversify fuel sources, enhance grid resilience, and promote domestic energy production, including LNG, solar, and storage.

Sub-Saharan Africa Focus:

National policies emphasise electrification, renewable deployment, and private sector participation in power markets. Regulatory reforms

focus on improving cost recovery, enabling IPPs, and facilitating off-grid and mini-grid solutions.

Supportive Mechanisms and Incentives:

Carbon pricing, renewable energy auctions, tax incentives, and green finance instruments are increasingly used to attract investment in low-carbon generation.

Electricity Market and Energy Sector Reforms

Electricity Market and Energy Sector Reforms

Electricity market reforms are critical to ensuring reliable, affordable, and low-carbon power supply. Across regions, reforms are increasingly aimed at modernising market design, integrating renewables, and facilitating private sector investment.

Key reforms include:

Market Liberalisation and Competition:

Shifting from state-dominated utilities to liberalised, competitive markets with independent regulators, particularly in Europe, the Americas, and parts of Asia.

Grid Modernisation and Flexibility:

Investments in smart grids, interconnectors, and storage capacity to accommodate variable renewable energy and support cross-border electricity trade.

Regulatory Frameworks for IPPs and Private Investment:

Clear legal and regulatory frameworks, standardised PPAs, and risk mitigation instruments to encourage private sector participation.

Tariff Reforms and Cost Recovery:

Adjustments to electricity tariffs to reflect generation and network costs, while maintaining affordability and access for low-income consumers.

Conclusion

Electricity demand is accelerating globally, driven by the electrification of transport, industry, and buildings, alongside the growing demands of digital infrastructure. This rising demand underscores the centrality of electricity as both a driver and an enabler of economic growth, technological innovation, and sustainable development. At the same time, the generation mix is shifting decisively toward low-carbon and renewable sources, led by solar, wind, and hydroelectric power. These trends are complemented by emerging and enabling technologies, such as battery storage, hydrogen, and carbon capture, utilisation, and storage (CCUS), which are increasingly essential to maintaining system reliability and integrating variable renewable generation into grids globally.

Despite the momentum of renewables, fossil fuels, particularly natural gas and LNG, continue to play a critical role as transition fuels. They provide the flexibility necessary to balance variable renewable generation and maintain electricity system reliability, especially in regions where grid infrastructure remains constrained or where demand growth is rapid. Coal and oil-fired generation are declining in advanced economies due to decarbonisation policies and emissions regulations, but they persist in parts of Asia-Pacific and Africa, highlighting the uneven pace of the global energy transition.

The Outlook further demonstrates that regional differences in energy market development, technology adoption, and policy implementation

remain pronounced. Europe and parts of the Americas are characterised by high renewable penetration, advanced market reforms, and substantial investment in system flexibility. Asia-Pacific represents the largest incremental demand growth, with continued reliance on coal alongside ambitious renewable deployment. Sub-Saharan Africa faces unique challenges, including infrastructure deficits, energy access gaps, and limited financial capacity, yet the region also has significant opportunities to leverage renewable resources, distributed energy solutions, and policy reforms to accelerate energy access and industrial development. These regional disparities highlight the importance of context-specific strategies that balance energy security, affordability, and decarbonisation goals.

Policy frameworks and regulatory reforms are emerging as critical enablers of the energy transition. Governments across regions are implementing measures to attract private investment, promote cost-reflective tariffs, and incentivise renewable energy deployment, while simultaneously addressing the operational challenges posed by variable generation and evolving demand patterns. Investment trends reflect a growing focus on low-carbon technologies, grid infrastructure, and emerging energy solutions, though financing gaps persist, particularly in developing regions. Coordinated policy action, innovative financing mechanisms, and regulatory clarity will therefore be essential to ensuring that the transition is both sustainable and inclusive.


ELECTRICITY
LAWYER