INTERNATIONAL ENERGY AGENCY

Global Energy Policies Hub

Comprehensive Policy Report

Tracking 6,500+ Energy Policies Across 84 Countries
Based on IEA State of Energy Policy 2024 & Global Energy Review 2025

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1. Overview of the IEA Global Energy Policies Hub

The IEA Global Energy Policies Hub is the world's most comprehensive publicly accessible database of energy policies. It maps key energy policies around the globe, compiling over 200 key policy types from 84 countries, cataloguing over 6,500 energy policies to provide a clear snapshot of actions and current state of play by sector. The Hub captures regulations, spending programmes, and trade policies, and is regularly updated from the IEA State of Energy Policy series.

Purpose & Scope

The Hub covers policies across all major energy sectors — power generation, industry, buildings, and transport — and draws on comprehensive annual reviews to inform the IEA's Global Energy and Climate modelling. More in-depth trackers are also available for Clean Energy Innovation (G20), Critical Minerals (49 countries), and Methane (92 countries).

Key Database Statistics

84	Countries covered in the policy database
6,500+	Total energy policies catalogued
200+	Policy types tracked across the Hub
G20: 15	Countries covered by energy performance regulations

2. Global Energy Demand Trends (2024)

Global energy demand grew at its fastest pace in recent years in 2024, with demand rising across all fuels and technologies. Electricity demand surged far ahead of broader energy demand, driven by record temperatures, electrification of transport, and the explosive growth of data centres and AI.

2.1 Demand Growth Highlights

+2.2%	Global energy demand growth in 2024
+4.3%	Electricity demand growth — outpacing GDP (+3.2%)
>80%	Share of energy demand growth from emerging/developing economies
<3%	China's energy demand growth in 2024 (vs 4.3% average)
+115 bcm	Natural gas demand increase (vs avg 75 bcm/yr over last decade)

2.2 Energy Mix Share of Growth

Renewables	38% of growth in global energy supply — the largest share
Natural Gas	28% of growth — driven by power sector and industry
Coal	15% of growth — led by China, rising 50% faster than gas since 2019
Oil	11% of growth — demand fell below 30% of total for first time in history
Nuclear	8% of growth — reaching record output in 2024

2.3 Regional Highlights

Emerging and developing economies led global energy demand growth, but notable shifts were also visible in advanced economies:

- China: Growth slowed to under 3% — half the rate in 2023 — reflecting structural economic shifts.

- India & SE Asia: Continued strong growth trajectory, accounting for significant shares of global increase.
- United States: Third-largest absolute demand growth in 2024 after China and India.
- European Union: Returned to energy demand growth for the first time since 2017 (excluding post-COVID rebound).

3. Clean Energy Policy & Investment

Since 2020, a wave of new energy policies has reshaped clean energy investment globally. Government stimulus, post-COVID recovery packages, and energy security priorities have all catalysed a historic acceleration in clean energy deployment, with investment reaching nearly USD 2 trillion annually.

3.1 Clean Energy Investment

+60%	Global clean energy investment growth since 2020
~USD 2T	Annual clean energy investment approaching
~2:1	Ratio of clean vs fossil fuel investment (vs 1:1 pre-pandemic)
15%	Share of clean energy investment in emerging economies (ex-China)
USD 170B	Government direct support to domestic clean tech manufacturers (4 yrs)

3.2 Clean Technology Deployment

Solar PV	Set 23rd consecutive annual record for deployment in 2024; manufacturing capacity exceeded 2x actual deployment
Renewables Capacity	560+ GW added in 2023; on track for 10,000 GW by 2030 under current policies
Electric Vehicles	Nearly every 1 in 2 cars sold will be electric by 2030 under STEPS scenario
Battery Cells	Manufacturing capacity nearly 3x actual deployment — indicating massive headroom
Heat Pumps	Sales declined in Europe in H1 2024 — a notable slowdown in an otherwise growing sector

3.3 Government Clean Energy Spending (Priority Areas)

- Electric Vehicles (EVs) — largest share of USD 170 billion in targeted manufacturing incentives
- Hydrogen & Battery Production — second-largest beneficiary of directed government support
- Critical Minerals Refining & Production — essential for enabling wider clean tech deployment
- Advanced economies + China — absorbed ~70% of earmarked clean tech support since 2020
- Emerging manufacturing hubs (Brazil etc.) — growing share of new spending being mobilised

4. Energy Performance Regulations & Policy Progress

Energy performance regulations now cover three-quarters of global energy-related emissions — a significant milestone. The IEA's State of Energy Policy 2024 identifies both tightening and rolling back of regulations, illustrating the complex and evolving policy landscape.

4.1 Coverage of Energy Performance Regulations

75%	Share of global energy-related emissions covered by regulations
15 of 20	G20 countries with energy performance rules across ALL key sectors
~150	Countries with new/more ambitious climate commitments since 2020
~50	Governments that tightened energy efficiency & renewables standards

4.2 Notable Policy Milestones (2023–2024)

Australia	Introduced its first-ever fuel efficiency standard for vehicles
European Union	Enacted F-gas regulations on climate-forcing refrigerants in appliances
Ukraine	Established its first biofuel blending mandate, effective 2025
United States	Defence Production Act designated key clean energy technologies as strategic
EU & USA	Net Zero Industry Act and related domestic manufacturing targets introduced

4.3 Policy Rollbacks & Delays

Some policies were rolled back or delayed, primarily driven by the energy crisis and public affordability concerns, though their aggregate impact was smaller than policy tightening elsewhere.

- Regulations banning new fossil fuel boilers in buildings — delayed or softened in several countries
- Phase-out of internal combustion engine (ICE) vehicle sales — timelines extended in some jurisdictions
- Phase-out of unabated coal — delayed in certain markets

Rollbacked/delayed policies collectively covered approximately 1% of current global emissions.

5. Trade Policies Affecting Clean Energy

Since 2020, trade policy has emerged as a major lever in global clean energy strategy, with governments increasingly using tariffs, subsidies, and bilateral agreements to shape clean technology supply chains.

5.1 Trade Policy Statistics

~200	Clean energy trade policies implemented since 2020
~40	Clean energy trade policies in the five years before 2020
~40%	Share of changes that are tariff/anti-dumping/countervailing measures
~50	New free trade agreements signed since 2020
~90%	Share of new FTAs extending preferential tariffs to clean energy tech

5.2 Key Trade Policy Developments

US & EU Tariff Measures	Anti-dumping duties and countervailing measures targeting solar panels, EVs, and batteries
EU Net Zero Industry Act	Domestic manufacturing targets and preferential procurement for clean technologies
Critical Minerals	49 countries tracked by dedicated IEA Critical Minerals Policy Tracker; supply chain security a top priority
Methane Regulations	92 countries tracked for methane policy; yet methane emissions rose 3% in 2023 despite 90% of fossil production being regulated

6. CO_2 Emissions & Climate Commitments

Despite record clean energy deployment, energy-related CO_2 emissions continued to rise in 2024, though at a slower pace. Clean energy technologies are estimated to have avoided an additional 2.6 billion tonnes of CO_2 per year compared to a scenario without their deployment.

6.1 Emissions Trajectory

2.6 Gt CO_2/yr	CO_2 emissions avoided annually thanks to clean energy technologies
~2.4°C	Projected warming under current policy scenario (STEPS) by 2100
32 Gt	NDC target for energy-sector CO_2 emissions by 2030
<30%	Oil's share of total global energy demand (historic low)

6.2 IEA Scenario Framework

STEPS	Stated Policies Scenario — tracks current policy settings; leads to ~2.4°C warming by 2100
APS	Announced Pledges Scenario — all government climate pledges met in full and on time
NZE	Net Zero Emissions by 2050 — limits warming to 1.5°C; requires deep structural transformation

6.3 Key Climate Policy Gaps

- Current NDCs fall short of long-term climate objectives; updated NDCs expected by 2025.
- Energy efficiency improvement rate needs to double to achieve COP28 goals — currently far off track.
- Fossil fuel subsidies remain near record levels, undermining clean energy price competitiveness.
- Clean energy investment in emerging economies (ex-China) stuck at 15% of global total — well below their economic weight.
- Universal energy access goals will still fall short: 550M gain clean cooking access and 200M gain electricity access by 2030 in STEPS — but this is insufficient.

7. Energy Efficiency Policies (2025 Update)

Energy efficiency remains one of the most important and cost-effective tools for reducing emissions and energy demand. Governments around the world have intensified their efficiency policy frameworks, though global progress remains below what is needed to achieve COP28 commitments.

7.1 Energy Efficiency Progress

250+	New or updated efficiency policies implemented globally in 2025
>85%	Share of global energy demand covered by these policies
+1.8%	Projected global energy intensity improvement in 2025
~1%	Energy intensity improvement in 2024 (below target)

7.2 Regional Efficiency Performance (2025 Estimate)

China	Energy intensity progress estimated at over 3% in 2025 — above recent average
India	Over 4% improvement projected — well above the post-2019 average
United States	Progress set to fall below 1% in 2025 after stronger post-crisis performance
European Union	Progress also set to fall below 1% in 2025 after several strong years

The world remains off track to achieve its COP28 ambition for energy efficiency by 2030.

8. Policy Dashboard — Key Metrics at a Glance

Policy Area / Indicator	Key Metric	Status / Trend
Policies in Hub database	**6,500+ across 84 countries**	↑ Expanding annually
Global energy demand growth	**+2.2% in 2024**	↑ Above 10-yr average
Electricity demand growth	**+4.3% in 2024**	↑↑ Rapid acceleration
Renewables share of energy growth	**38% of supply growth**	↑ Largest energy source
Clean energy investment	**~USD 2 trillion/yr**	↑ +60% since 2020
Energy performance regulation coverage	**75% of global emissions**	↑ Strong progress
Clean tech trade policies since 2020	**~200 measures**	↑ 5x prior 5 years
CO_2 avoided by clean tech	**2.6 Gt CO_2/yr**	↑ Growing impact
Projected warming under STEPS	**~2.4°C by 2100**	⚠️ Insufficient
Energy efficiency progress 2025	**+1.8% energy intensity**	⚠️ Off-track for COP28
Countries with new climate targets	**~150 (95% of emissions)**	↑ Policy commitment
Methane: emissions vs coverage	**+3% despite 90% coverage**	⚠️ Enforcement gap

9. Key Conclusions & Policy Implications

The IEA's Global Energy Policies Hub paints a picture of a world at a critical inflection point. Clean energy deployment is accelerating at an unprecedented pace, yet the pace is still insufficient to limit global warming to 1.5°C. The following conclusions emerge from the data:

Positive Momentum

- Clean energy investment has grown 60% since 2020, with nearly USD 2 trillion deployed annually — close to double fossil fuel investment.
- Renewables set records for the 23rd consecutive year; 560+ GW was added in 2023 alone.
- Energy performance regulations now cover 75% of global energy-related emissions across all major sectors.
- Over 150 countries representing 95% of global GHG emissions have adopted new, more ambitious climate targets since 2020.

Critical Gaps

- Current policies still lead to ~2.4°C warming by 2100 — well above the 1.5°C Paris target.
- Energy efficiency progress is only half of what is needed to meet COP28 commitments.
- Fossil fuel subsidies remain at record levels, undermining the transition.
- Clean energy investment in developing economies (ex-China) is stuck at only 15% of global total.
- Methane emissions rose 3% despite 90% of fossil fuel production being subject to regulations — highlighting a critical enforcement gap.

Policy Priorities Going Forward

- Scale clean energy investment in developing economies through new business models, concessional finance, and technology transfer.
- Close the methane enforcement gap — regulations alone are not enough without monitoring and penalties.
- Double the rate of energy efficiency improvements to meet the COP28 ambition by 2030.
- Phase out fossil fuel subsidies, particularly as oversupply in oil and LNG markets creates a rare window to do so.
- Ensure trade policy frameworks are coordinated to avoid fragmentation of clean technology supply chains.

Source: International Energy Agency (IEA) — Global Energy Policies Hub, State of Energy Policy 2024, Global Energy Review 2025, World Energy Outlook 2024 & 2025, Energy Efficiency 2025. All data as reported by the IEA.

URL: https://www.iea.org/data-and-statistics/data-tools/global-energy-policies-hub