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Energy Transition is Stalling Amidst Growing Demand, Regional Disparities, and Inaction on Heat and Fuels. New REN21 report finds.

We are now generating 30.3% of our electricity from renewables but urgent action is needed on heat and fuels, which deliver three-quarters of energy supply.

- Regional disparities characterise the energy transition. China is leading the way in renewable power capacity additions, followed by the US and Europe.
- Less than 18% of capacity additions are in Asia (excluding China), Latin America, Africa and Middle East, despite representing near 2/3 of global population.
- Policy and investment continue to focus on power, particularly wind and solar, with limited progress on renewable heat and fuels.
    - 86% of capacities added for power in 2023 came from renewables
    - 54% increase in global renewable power capacity additions reaching 536 GW in 2023
    - Solar PV (407 GW) and wind (117 GW) account for 98% of the renewable power capacity additions
- Renewables still struggle to cover rising demand. Use of fossil fuels in the power sector continues to grow, while renewables only provide 10% and 3.5% of heat and fuels respectively.

Paris - Despite record deployments in the power sector, renewables are still struggling to keep pace with growing global demand for energy, while little progress is being made in the transition to renewable heat and fuels. Renewables are being held back by wide disparities in investments and focus across different energy carriers, regions and technologies; inadequate policy integration to align energy consumption and supply; and delays in infrastructure development. This is the conclusion drawn in the ***Renewables in Energy Supply module*** of the ***Renewables 2024 Global Status Report (GSR 2024),*** released today.

"Even in the power sector, which is celebrated as a success story for renewables, we are not moving fast enough to fully meet the staggering rise in energy demand, let alone replace existing fossil fuels. Without structural transformations and reforms of the fossil-fuelled energy system, we will not be able to build renewables-based resilient economies free from

coal, oil and gas, which is critical to stay on a 1.5°C trajectory," said REN21 Executive Director Rana Adib.

"Governments must also implement stronger energy efficiency policies to bring down demand and unlock greater shares of renewables,"Adib added.

The *GSR Renewables in Energy Supply* module covers the way final energy is supplied and delivered by different energy carriers - heat, fuel and electricity - and technologies - bioenergy, geothermal power and heat, heat pumps, hydrogen, hydropower, solar PV, concentrated solar power (CSP), solar thermal heat, ocean power and wind power.

Energy is delivered to consumers through electricity, heat, solid, and liquid and gaseous fuels. Currently, almost half of global energy supply comes from heat (48%), followed by fuels (29%) and electricity (23%). In 2023, renewables provided a record 30.3% of global electricity, mainly owing to long-term policy attention that enabled market and technology development and drove down costs. China, Europe, the US and Brazil are the countries which mainly contributed to the remarkable 54% growth in global renewable power capacity additions.

However, renewables do not yet cover rising demand and the use of coal, oil and gas in the power sector grew by 18% between 2011 and 2021. Renewables provided only 10% of heat and 3.5% of fuel supply in 2021. Heat is mainly used in buildings and industrial operations and fuels for transportation.

Fossil fuels are still heavily subsidised (USD 600 billion in 2023) and dominate global energy supply with a 79% share. At the same time, governments have neglected the carriers – heat and fuel – that meet most of the world's energy demand, significantly holding back the energy transition.
"Fossil phase out, energy efficiency and renewable energy form the trinity of the energy transition. All three must go hand in hand, otherwise we will not achieve the system change needed to meet development and climate goals," said Adib.

At the COP28 climate summit in Dubai, governments agreed to triple renewable energy capacity and double energy efficiency improvements by 2030. As countries prepare to submit updated Nationally Determined Contributions (NDCs) under the Paris Agreement, there is an opportunity to strengthen commitments to renewables.
"Countries must absolutely catch up in the next round of NDC submissions in 2025 and raise ambition with clear commitments. We are running out of time," said Adib.

Only three regions had more than 35% renewable electricity in their power sector using different technologies: Latin America and the Caribbean, Oceania, and Europe. Latin America and the Caribbean led with 62%, up from 52% in 2013, mainly due to hydropower. Oceania increased from 23% in 2013 to 42% in 2023, largely due to Australia's 9% growth in renewable power generation, primarily from solar PV and wind. Europe had 39% renewable electricity. Africa and the Middle East had the lowest shares, with 24% and 3%, respectively.

The global deployment and investment landscape is highly unequal, with most advancements in China, the EU, and the US, where substantial policy action and financial incentives are spurring strong growth in solar PV, wind, and energy storage, along with enhanced manufacturing capacity.

Globally, China maintained its leading position in new renewable power investments, reaching 44% in 2023, followed by Europe (20.9%), and the United States (15%). Africa and the Middle East combined received only 3.6% of global investment in renewables.

In fuels, the United Stated supplied 40% of the total of renewable biofuels in 2022, followed by Brazil (21%) and Indonesia (6.2%). Germany also emerged as the European leader in biofuel production providing 2.8% of world supply.

Systemic infrastructure issues persist – in the power sector, 1.5 TW of renewables are stuck in grid connection queues, equivalent to 3 times the installations of solar PV and wind power in 2023.

“This is wasted renewable capacity that could have been used to power more homes and businesses. It’s like building the trains without the rails,” said Adib.

About REN21 and the Renewables 2024 GSR Collection

REN21 is the only global policy network made up of renewable energy actors from science, academia, governments, non-governmental organisations and industry across all renewable energy sectors. Our community is at the heart of our data and reporting activities. All our knowledge activities, including the *GSR 2024* ***Renewables in Energy Supply***, follow a unique reporting process that has allowed REN21 to be globally recognised as a neutral data and knowledge broker.

Since the GSR’s first release in 2005, REN21 has worked with thousands of contributors to spotlight the ongoing developments and emerging trends shaping the future of renewables. Producing this annual report is a collaborative effort of hundreds of experts and volunteers who contribute data, review chapters and co-author the report contents.
The Renewables in Energy Supply report follows the release of ***GSR 2024 Renewables in Energy Demand***, which explored renewable energy use in the key energy-consuming sectors of buildings, industry, transport and agriculture.

REN21 also released the ***Global Overview*** in April 2024. It provided the big picture status of renewables in the wider energy system in the context of global challenges such as climate change, economic development and the geopolitical landscape. Upcoming modules will focus on ***Renewable Energy Systems and Infrastructure***, and ***Renewables for Economic and Social Value Creation***.

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