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Solar & Wind Account for Two Thirds of Global Power Generation Investments to 2030 Driven by Doubling Capacity in Non-OECD Asia

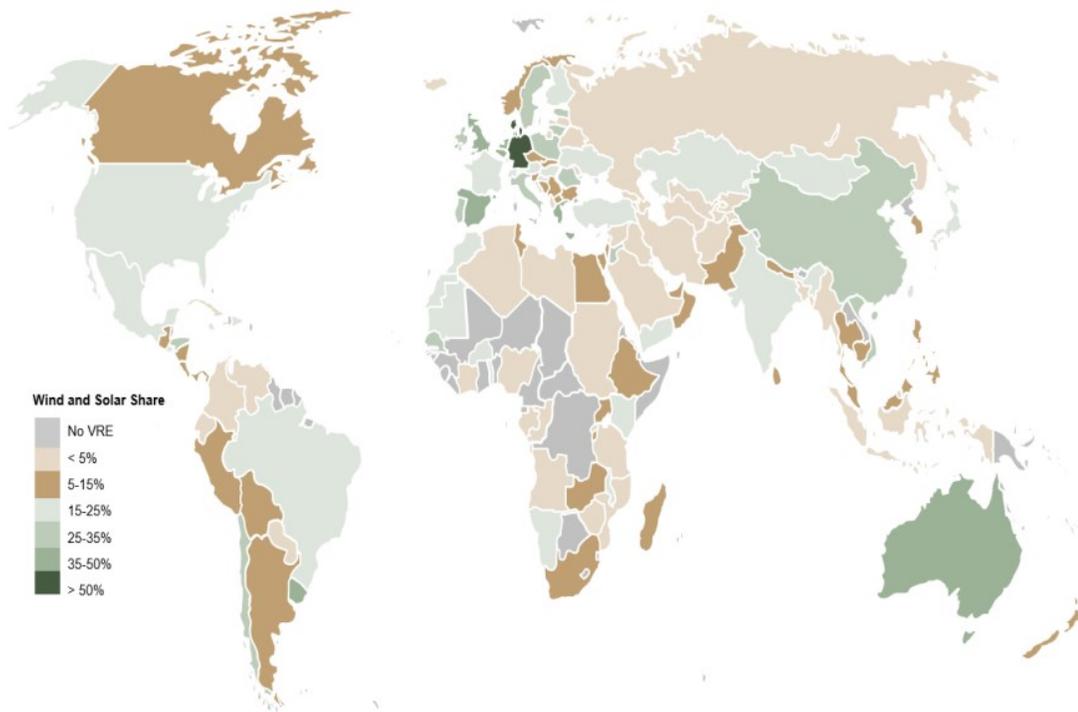
Stratas Advisors

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Despite the slowdown in economic activity caused by the COVID-19 pandemic, falling prices in variable renewable energy (VRE) resulted in record-high capacity additions of solar and wind power during 2020 and 2021 globally, whereas net gas and coal-fired generating capacity additions experienced a blow after a decade of sustained growth. With wind and solar developments proliferating after 2015, globally over 1.5 TW of VRE were installed between 2010 and 2021. As the crisis in Ukraine persists and commodity and energy prices continue on the rise, global progress in solar and wind additions will slow down over the next five years, yet over 60% of investments in new power capacity will remain linked to variable renewable energy.

With generous policy incentives and a long-term decline in generation costs, China remains the global leader in renewable energy projects – in fact, over 2010-2021, China's solar and wind projects amounted to over 40% of global capacity additions, significantly outpacing Europe's and North America's contribution of 20.6% and 13.7%, respectively. However, Europe is set to continue to have the highest shares of renewable electricity in its grid, with wind and solar making up a share of 33.4% compared to China's 28% in 2021. Europe's leadership in renewable power adoption has historically been driven by strong policy support in Denmark and Germany, which today show the highest penetration of wind and solar energy in relation to their national grids, amounting to 67.6% and 56.7% respectively. In the coming decade though, Spain and the UK are projected to show the strongest growth rates in Europe's renewable power sector, with wind and solar power accounting for over half of the national power grid in each country.

Share of Wind and Solar Installed Capacity by Country, 1H2022



Source: *Stratas Advisors, 2022*

In 2022, global solar additions are expected to fall by -16.7% below 2021 levels as a result of increased freight costs in regions which are most dependent on equipment imports, particularly Europe and North America. Despite global turmoil, China is however on track to meet a new record in solar capacity additions in 2022, showing an increase of 73.7% with respect to 2021 by the end of the year. Wind power will see a much more limited growth throughout 2022, with China accounting for over half of total additions.

This analysis assesses current dynamics and trends in key regions and markets, projecting growth in power installed capacity on the basis of project pipeline, regulatory and pricing outlook, and future electricity demand. Key takeaways of the report include:

- China will account for over two thirds of global wind and solar additions over 2022-2030, however increasing coal-fired capacity by 6.2% in the same period. India will however remain the largest contributor to the growth of coal power despite increasing solar capacity by 55%.
- Southeast Asia is projected to account for about a third of global gas additions, while coal-fired capacity will increase by 28.9% over 2022-2030. Exponential growth in solar capacity additions is expected in Philippines, Bangladesh, Myanmar, and Indonesia, with Vietnam and Taiwan emerging as regional leaders for offshore wind.
- With Japan restarting a majority of mothballed nuclear units by 2030, nuclear power is set to account for about 40% of

all capacity additions in OECD Asia. Australia is to remain the undisputed leader in VRE development by connecting about a third of total wind and solar capacity in OECD Asia.

- Gas-fired capacity additions will predominate in Africa, with almost half being installed in North Africa and about 38% coming online in West Africa – with Nigeria as the largest single market in the entire continent. In turn, hydro power will make up the lion's share of capacity additions in East Africa, connecting about 12 GW to the grid by 2030. Solar power will proliferate in North Africa with the exponential growth of the Moroccan solar market, while West Africa will see a larger expansion of wind power.
- While the Middle East will bring online 16.3% of global gas-fired capacity additions over 2022-2030, large-scale solar projects in UAE and Saudi Arabia are set to triple current solar capacity in the region.
- In Latin America, Chile's leadership in solar and wind capacity will weaken as Mexico and Brazil expand their solar and offshore wind capacity, respectively. In fact, Brazil currently has the world's largest offshore wind project portfolio. In North America, about two thirds of all capacity additions will come from solar power, while the wind industry is expected to recover by 2024.
- The European offshore wind industry will lose market share to China despite its exponential development in Northern Europe. Over 2022-2030, cumulative additions of wind power are projected to grow at a CAGR of 4.7%, with 36% coming from new offshore projects.

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