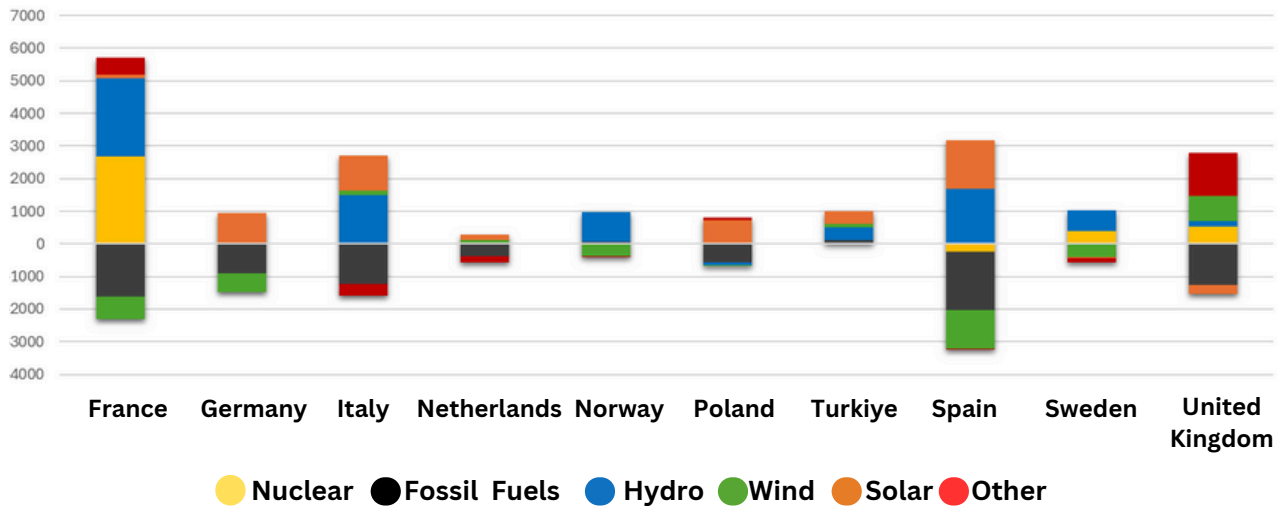
A Shift in Electricity Generation and Grid Capacity

There has been much discourse in international communities around the level of investment needed to achieve net zero emissions by 2050. While the World as a whole may not be totally on track to meet these targets, there is still considerable work being done to try and lower overall carbon emissions. In the past we have highlighted China's dominance in renewable energy capacity and generation, while highlighting how the US and Europe are far behind their geopolitical rival when it comes to the Green Transition. However, this does not imply that progress isn't happening.

Taking Europe as an example, below we can see the Year-over-Year change in net electricity generation amongst the largest economies in Europe in May of this year. On average, fossil fuel generation fell by over 800 Gigawatt Hours (GWh's) in May of 2024, with only Norway and Turkiye increasing their year over year generation. Average Solar generation on a year over year basis increased by 508GWh's, with only the United Kingdom and Sweden seeing a reduction in solar generation. However with Sweden it is important to note that the country produces almost all of its power from renewable means, so a slight reduction in solar generation is not detrimental to the country's overall carbon emissions. However the big change on a year-over-year basis is Hydro power, which seen an average increase across the top producers in OECD Europe of 945GWh's, with France, Italy and Spain all producing over 1000GWh's of hydro power in May 2024 compared to May 2023. The overall takeaway here is that the reliance on fossil fuels is continuing to fall, and in real terms renewable energy generation is increasing in areas other than China.

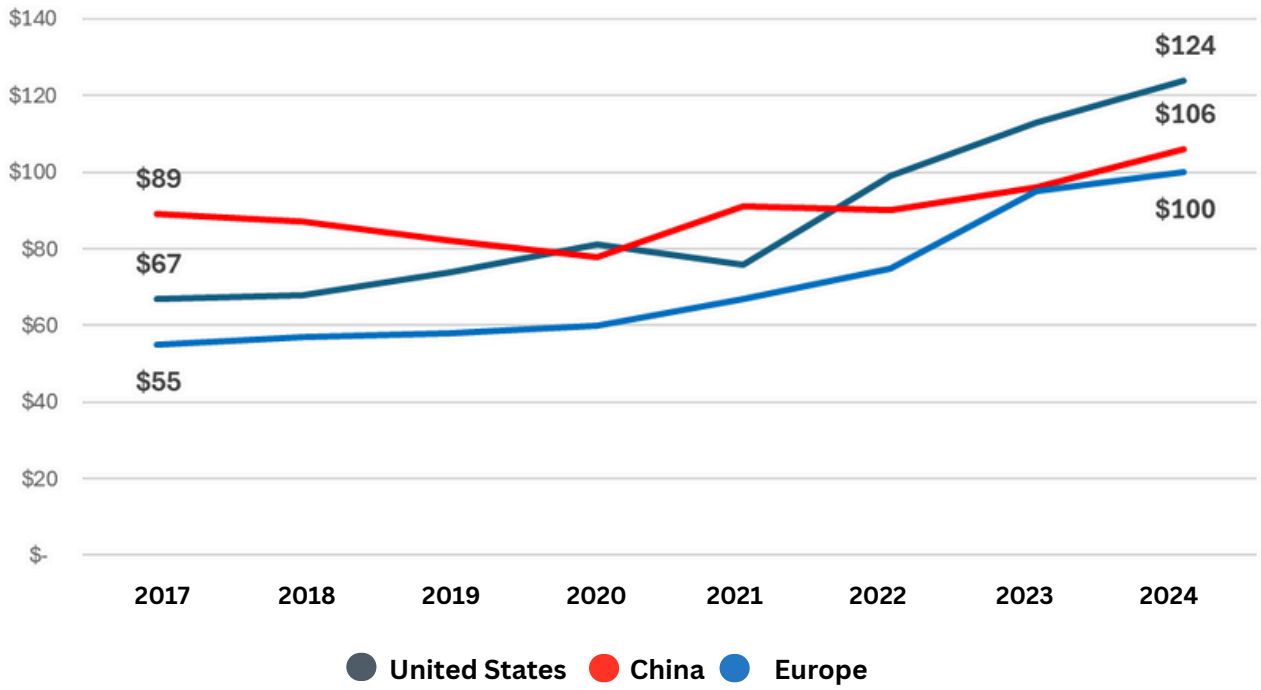
Year - Over - Year Change in Net Electricity Generation for Top Producers in OECD Europe (May 2024)



SEASPRAY PRIVATE
Creating Investment Solutions

While the increase in renewable energy generation is an extremely positive forward step, without the proper infrastructure to store and transfer this energy the transition to green energy will be considerable slower than is needed. In fact the increase in the need for electricity and power, fueled by rising populations, increased reliance on technology and the advent of data centers means that newer and more efficient power grids and storage facilities will be required. However it is clear that the largest countries and blocs realise this, with investment in power grids and storage increasing by an average of 62% between the years 2017 and 2024 in the US, Europe and China combined. For once it is not China that leads the charge here, with investment in the Grid only increasing by 19% between 2017 and 2024, with and expected $106bn of investment in 2024. The US has increased investment in the Grid and storage facilities by 85% in the same time frame. It is expected that in 2024 $124bn will be spent on the Grid in the US. Finally, in Europe investment in the Grid has increased by 81%, with $100bn of expected investment in this sector in 2024.

Investment in Power Grids and Storage by Region 2017 -2024 (US $bn)



SEASPRAY PRIVATE
Creating Investment Solutions