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The hidden silver lining of the energy crisis

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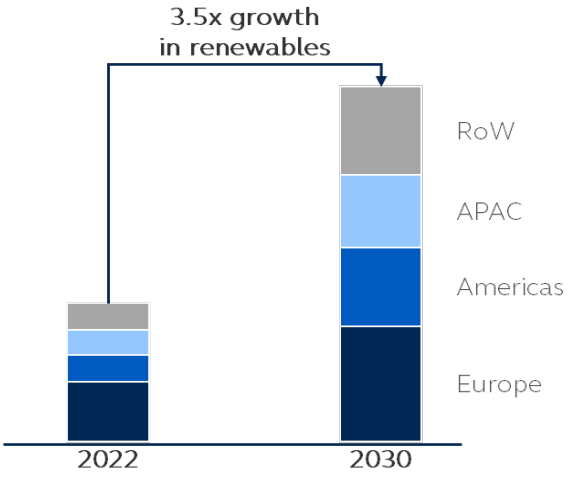
Few people have avoided strains on their household budgets during the inflation wave that has entrenched the world over the past two years. After decades where inflation seemed to be something of the distant past, it came roaring back after a combination of entangled supply chains and Russia`s war in Ukraine ignited skyrocketing consumer and energy prices. While this has caused real pain for most households, it has simultaneously accelerated the global deployment of renewable energy and green technologies in a push to reduce dependence upon Russian natural gas and fossil fuels more broadly. This acceleration builds on top of the material tailwinds that companies delivering green solutions are already experiencing. These tailwinds have recently only increased in strength, as countries representing 91% of global GDP have signed net zero CO2 pledges, which is a significant increase from 68% in December 2020[i]. Reaching these goals is expected to require $5 trillion of annual investments by 2030[ii], equivalent to the combined GDP of both the United Kingdom and France. This paper offers brief perspectives on how investors can navigate this environment by identifying the companies that are best positioned to benefit from these opportunities.

Accelerated growth in renewable energy

One of the most significant investment themes over the past decade has been the global expansion of renewable energy. This unfolded as renewable energy transitioned from being a subsidy-driven market to becoming a secular build-out where it has become cheaper than fossil fuels in many cases. Looking to the future, the renewable buildout is expected to continue, and global installed capacity, excluding China, is on the path to expand by 3.5x from 2022 to 2030. The 2030 market growth projections have been accelerating following the energy crisis, Russia`s war in Ukraine, and monumental legislation like the U.S. Inflation Reduction Act (IRA) and the Green New Deal in Europe.



As of 8 June 2023. Source: Orsted

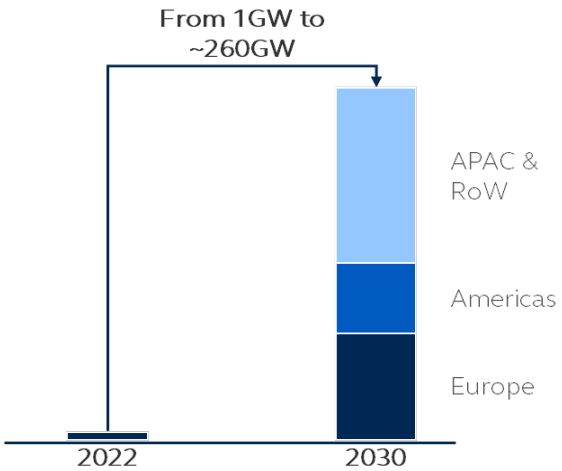
For these reasons, the 2030 growth projection has increased 1.9x from 2,110 GW to 4,045 GW in just two

years[iii]. These large quantities of renewable energy will require significant investments in connections to the energy grid, as well as large scale modernization of the grid to be able to integrate and balance the energy systems that are increasingly dependent on natural resources like solar and wind energy. On a global scale, these grid upgrades and modernizations are expected to require nearly $1 trillion of annual investments by 2030[iv]. The strong growth, both from the renewable energy build-out and the grid upgrades, will flow through to the supply chain behind the build-out and benefit wind turbine, solar equipment, and cable manufacturers materially, as well as the utility companies building the renewable energy and grid connections.

Green technologies are leapfrogging into the present

Over the past decade, green technologies have steadily matured, and some have become competitive with fossil-based solutions. While this has been the case, the maturing has often been slower than initially anticipated. Looking to the future, there are signs that this will change due to the push to reduce dependency on Russian gas and decarbonization, as well as near-shoring initiatives. Decarbonization and energy independency are no small tasks and will require a wide range of technologies. Green hydrogen represents a large potential in this regard because it can be an alternative to natural gas in many industrial processes, as well as in energy storage.

Until now, the ambitions for green hydrogen have been high, but the actual deployment has been slower than what many originally anticipated. Part of the reason for the lacklustre deployment has been the slow introduction of regulation and a price premium that stubbornly has been materially higher than traditional fossil-based hydrogen. However, both these elements are likely to improve over the coming decade. On the regulatory side, the Inflation Reduction Act is establishing the foundation for years of ambitious incentives for both renewable energy and green hydrogen. For green hydrogen, this will likely result in an abundance of renewable energy and an industrialization of the green hydrogen supply chain, which combined will likely drive down the pricing premium materially. On a global scale, these improvements mean that green hydrogen is expected to reach 260 GW by 2030.



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From an investor perspective, this deployment represents significant investment potential. This will not only be true for the companies delivering the equipment needed produce the hydrogen, but also for the industrial gas companies that will play a significant role in the production. In addition to the direct beneficiaries, the renewable energy value chain will likely also benefit materially as 260 GW of green hydrogen will require a substantial amount of new renewable energy, creating a positive feedback loop.

Energy efficiency and electrification at scale

While green technologies and renewable energy are evolving rapidly, their pace has been closely matched by more traditional green solutions, such as energy efficiency solutions and electrification.

In particular, this has been true since the current European energy crisis started, with the reason being that building renewable energy usually requires years of planning and construction, and while green technologies will be paramount over the medium to long term, it will likely be years before they reach scale. For these reasons, energy efficiency and electrification are key catalysts to reduce emissions and energy dependency, as they can rapidly lower demand. In Europe, where Russian gas constituted approximately 50% of consumption before the war[v], the focus on bringing down gas demand has been particularly important. On the back of this, the European Commission has introduced even more ambitious targets for energy efficiency, now targeting 11.7% by 2030[vi].

One of the most impactful technologies for increasing energy efficiency has been the replacement of inefficient fossil-based boilers with electricity-based heat pumps. In Europe, this has resulted in massive market growth from mere 7% growth in 2020[vii] to 34% in 2021[viii], and 40% in 2022[ix]. In Germany, for example, this market grew 111% in the first quarter of 2023[x]. Looking to the future, the heat pump market is likely to continue to grow, as Europe today only has 20 million households (10%) with heat pumps[xi], and key legislation like the Inflation Reduction Act is setting ambitious incentives for households to make the transition to new heat pumps in the US.

A just transition has come into focus

One element of the green transition that is sometimes overlooked is the risk that the transition will negatively affect certain parts of society. People most commonly associate this risk with workers in the fossil fuel industry since they may lose their jobs as society shifts away from fossil fuels. While these risks are real, there will likely also be risks for households on the lower end of the income pyramid due to potential transitory costs. Examples of these costs could be regulation that makes it more expensive to own internal combustion cars or tariffs on foods or goods with high climate impact. Ultimately, the green transition will likely be beneficial for economically vulnerable households as a world that runs on renewable energy with marginal costs that are near zero should entail cheaper energy costs. But since the pace and ultimate success of the green transition rests on continued public support, investors should stay vigilant in monitoring signs of faltering public commitments.

The energy crisis provided a microcosm that showcased how vulnerable households are affected disproportionately by soaring energy prices. This becomes especially important in a future where fossil fuels are being replaced by renewable energy, which likely lowers energy prices over time, but is simultaneously accompanied by increasing intermittency due to dependency on solar and wind resources. Increased resiliency in the energy system and energy storage will therefore be key for long-term viability, but over the transition period until the time when these solutions are at scale, the risk of fatigue becomes real if vulnerable households continuously come under pressure.

Conclusion

The hidden silver lining of the energy crisis is that the deployment of renewable energy and green technologies has accelerated materially to shed energy dependency on Russian gas and meet key emission reduction initiatives. And while the pain that many households have felt from soaring energy prices is real, the acceleration brings increased investment potential for the companies delivering the solutions to achieve this green objective. Further increasing their attractiveness as potential

investment opportunities, the top ten owners of renewable energy have become cheaper, while their growth prospects have expanded. And lastly, the strains of the 2022 crisis have been particularly acute in Western Europe; however, the long-term "silver lining" solutions will be beneficial worldwide.

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MM13607 | 08/2023 | 3051575 - 082025