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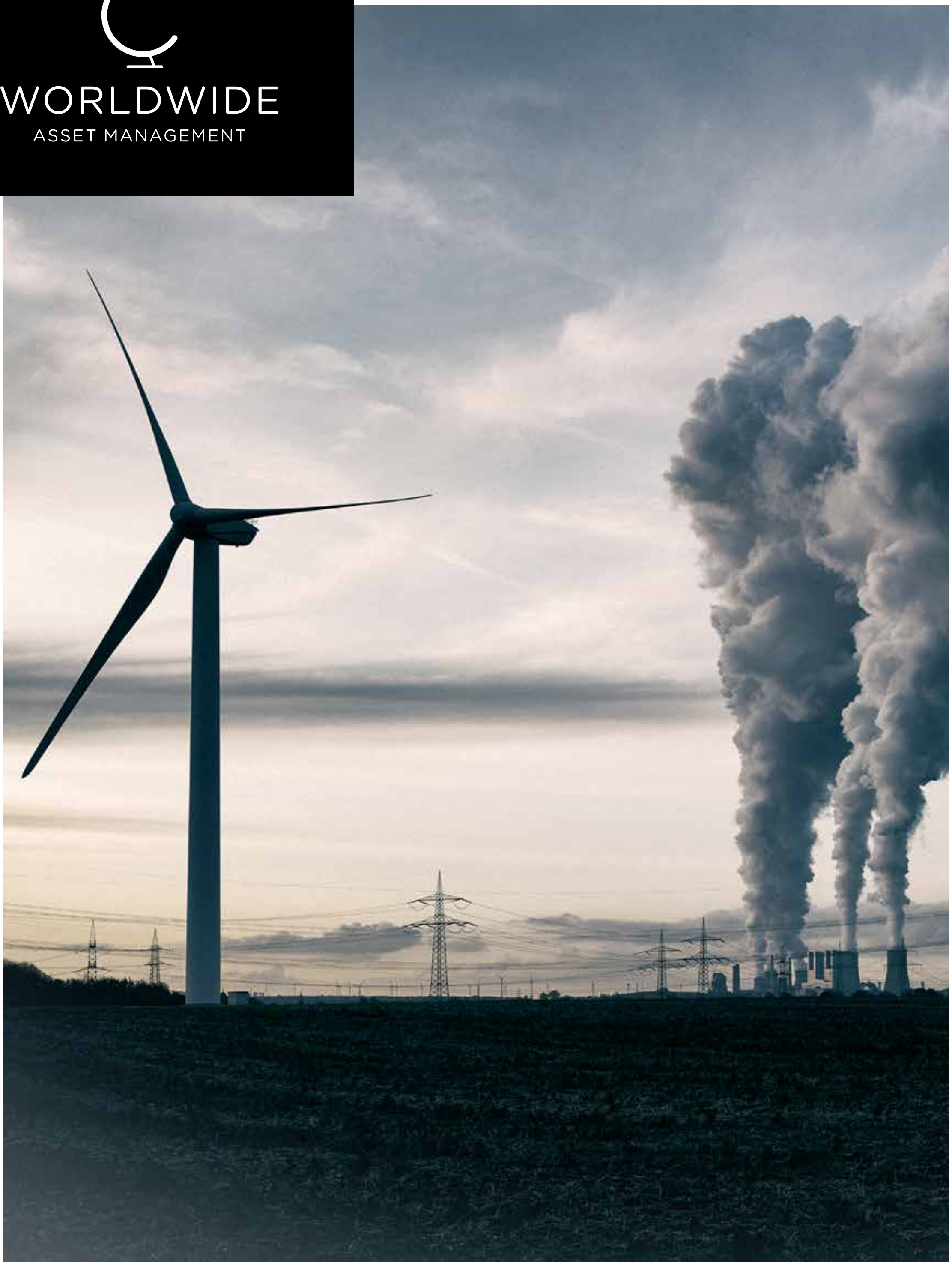

INSIGHT

The energy transition has brought on a new energy crisis

Key Insight

Al Gore's 2006 book and film about climate change, An Inconvenient Truth, triggered a transformation of our energy system. However, idealistic and naive notions of an energy transition have brought on a new energy crisis that might prove much more severe than the energy crisis of the 1970s. Decision makers have been quick to blame the crisis on drought, low winds in the North Sea and the war in Ukraine, but this is not true. The current crisis has not been brought on by war or momentary, unfortunate circumstances – it is the result of inadequate energy investments.

The energy transition has brought on a new energy crisis

We are currently witnessing the beginning of a prolonged structural energy crisis caused by poor understanding of what energy is, a lack of understanding of our dependence on fossil fuels for our growth and prosperity and, not least, naive notions of the speed with which the transition to a carbon-neutral energy system may be achieved.

By Morten Springborg, Global Thematic Specialist

C WorldWide Asset Management

According to the IEA (International Energy Agency), the world should refrain from investing in new fossil production capacity, and investors are currently blacklisting "black" energy companies. Instead, oil companies have embarked on massive investments in sustainable energy, such as wind power, in order to stay relevant in the fossil-free energy system of the future. This is leading to increasing return requirements and reduced investments in new fossil capacity, while shareholder dividends are raised as no one wants earnings to be reinvested in new fossil production. As a consequence, the world's reserve capacity was at a historic low already before the war in Ukraine. In 2021, for example, oil and gas companies replaced a mere 6 per cent of the year's consumption through new finds – the lowest level since 1952. (Source: Alliance Bernstein, August 2022). This may appear sensible given that we want to reduce carbon emissions. The problem is, however, that fossil fuels account for 84 per cent of the world's primary energy supply (Source: Our World in Data, 2020).

Many decision makers labour under the mistaken belief that, over a short span of years, it would be possible to turn down fossil energy and simultaneously turn up renewable energy, using the latter for electrification and decarbonisation by means of hydrogen and the so-called Power-to-X technologies (PtX). Our view is that this is not realistic. 1 USD invested in oil, coal and gas will yield 20–25 times more energy than 1 USD invested in renewable energy. (Source: Thunder Said Energy, 2021).

In 2015, a total of USD 1,000 billion was invested in new primary energy (fuels and electricity) at a global level. By 2021, that figure had dropped to USD 870 billion, while the consumption of energy had increased. Source: IEA,2021) Investments in oil, gas and coal have dropped from USD 700 billion to USD 450 billion during the same period. Investments in solar and wind power, on the other hand, *"We are currently witnessing the beginning of a prolonged structural energy crisis."*

have grown from some USD 230 billion to USD 320 billion over this period. A cursory analysis would conclude that this is exactly how it should be in a world fighting climate change. However, given the much lower energy density (in this context, the difference in energy production compared to investment between renewable and fossil energy), this means that the energy sector is hugely underinvested and that the growing solar and wind power investments by no means compensate for the drop in fossil investments.

During the period 2004–2021, global investments in renewable energy amounted to USD 4,800 billion, reducing the proportion of fossil energy in our energy system by a mere 3%-point from 87% to 84%. The fact that Ørsted – the world's largest offshore wind turbine operator – generated about 25 terawatt-hours (TWh) of electricity in 2021 unveils the naivety. An oil company like BP generates 2,250 TWh of energy – almost a hundred times more than Ørsted. (Source: C WorldWide, 2022). It goes without saying that it will take some time for Ørsted and other renewable energy producers to compensate for the drop in output which we as a society demand in order to be aligned with net-zero targets by 2050.

We have made our bed and now we must lie in it. European natural gas and power prices have gone up 15–20 times in 18 months. If petrol prices increased at the same rate as natural gas, it would cost about USD 1000 to fill up your car. Companies are feeling the impact immediately, and many European businesses in energy-intensive industries have shut down production in the past month. Europe is facing deindustrialisation. Moving production to countries with cheap energy is a better investment than importing expensive energy to Europe. While this would of cause help reduce Europe's carbon emissions, it would also lead to unemployment, social tensions, political instability and, potentially, spell the end of the euro.

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The inconvenient truth is that we will have to live with energy shortages and high prices. Either until demand decreases (sustained recession) or until we as a society accept that our energy system cannot do without fossil fuels, and we return to investing massively in primary energy, especially natural gas and nuclear power. Realistically, the effects of such a U-turn would not be felt until the late 2020s, which is the earliest estimate of when we will hopefully be able to put the current energy crisis behind us.

"Europe is facing deindustrialisation. Moving production to countries with cheap energy is a better investment than importing expensive energy to Europe."

We need more facts and less emotion in the energy debate. Faced with the choice between the perfect but naive solution – transitioning fully to renewable energy – and the good and realistic solution – continuing to use natural gas and phasing out coal combined with energy efficiency, renewable energy sources and nuclear power – we are left with exactly the opposite of what we wanted; the energy transition was supposed to pave the way for new industrial adventures and reduce carbon emissions. Instead, we get deindustrialisation and increased carbon emissions. Gas shortages are fuelling the consumption of coal in Europe, but our starvation of the fossil industry and the resulting deferral of China's transition from coal to, for example, natural gas poses a greater climate challenge. China's coal industry is the largest emitter of CO_2 worldwide, producing four times the volume of Saudi Arabia's oil output. (Source: Meeting with oil analyst Oswald Clint, Alliance Bernstein, August 2022). Coal releases 60 per cent more CO_2 than gas. We need to distinguish between good and bad fossil fuels. Coal needs to be phased out, and gas combined with carbon capture and storage (CCS) needs to be phased in. You cannot worry about the climate and turn down nuclear power, especially considering the fact that modern Small Modular Reactors (SMR) reactors are much safer. The 2030s are expected to see the introduction of nuclear fusion power. Are we also going to turn down the ultimate energy source of the universe just because we continue to be influenced by the 'No to Nuclear Power' campaigns of the 1980s?

Conclusions

Across C WorldWide's strategies our energy investments are confined to companies which we believe are positioned to generate profitable and structural growth over the next decade. We are exposed to the Chinese solar panel value chain, and we are invested in a few utility companies and industrial gas companies which we expect to benefit from the global community's focus on low-emission technologies, such as wind and solar power, hydrogen and natural gas.

We are about to experience the biggest investment spree in the history of the world. In addition to reconsidering the role of natural gas in our energy systems, we need to invest massively in wind and solar power, nuclear power, energy efficiency, natural carbon drains, such as woodland and biochar, and in support for voluntary carbon credits. If we do that, we can hope to achieve "net zero" without causing excessive social and economic tensions. And hopefully stop Europe from sliding into irrelevance.

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C WORLDWIDE ASSET MANAGEMENT FONDSMAEGLERSELSKAB A/S

Dampfaergevej 26 · DK-2100 Copenhagen

Tel: +45 35 46 35 00 · Fax: +45 35 46 36 00 · VAT 78 42 05 10 · cworldwide.com

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