WINDS OF CHANGE

Scientists believe we need to reduce total greenhouse gas (GHG) emissions by 50% by 2050 to avoid runaway climate change. This is an ambitious target and most people fail to grasp the magnitude of the shift required and the potential consequences of not making these changes.

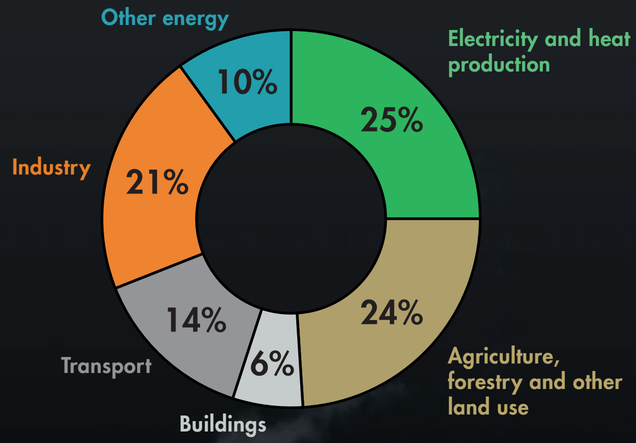
The energy transition needed to reduce GHG as global temperatures continue to rise is an example of the kind of transformative change the Liontrust Sustainable Investment team looks to find and invest in.

This is an area where understanding this trend – and what impacts it might have on different industries – can give sustainable investors a meaningful information advantage.

Over the past decade, considerable effort has gone into replacing fossil fuels as a source of heat and electricity with lower carbon power generation, particularly renewable forms such as wind and solar.

Electricity and heat production are the largest causes of GHG emissions through human activity, accounting for a quarter.

Direct GHG emissions globally

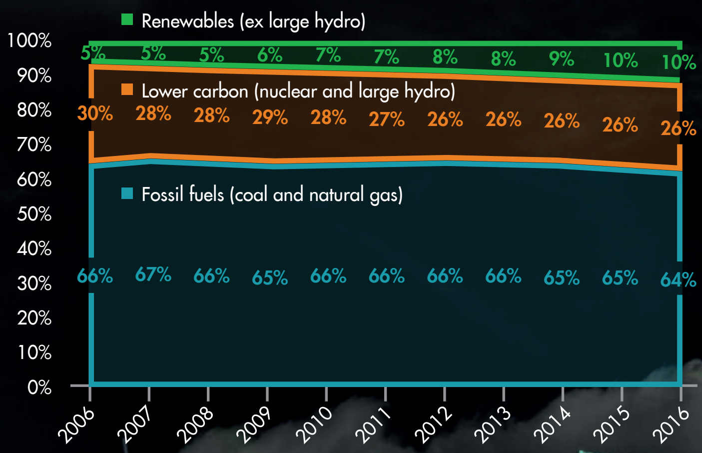


Intergovernmental panel on climate change, 2018

Despite the effort and money spent, however, the pace of this change can feel very slow. We can see from the chart below that between 2006 and 2016:

- The proportion of power generated by fossil fuels (mainly coal and natural gas) has fallen from 66% to 64%.
- The proportion of lower carbon (nuclear and large hydro power) has fallen from 30% in 2006 to 26% in 2016.
- Renewables (wind and solar) are producing a bigger proportion of power globally – this has doubled from 5% in 2006 to 10% in 2016.

Global power generated (% split)



Source: Bloomberg New Energy Finance, 2018

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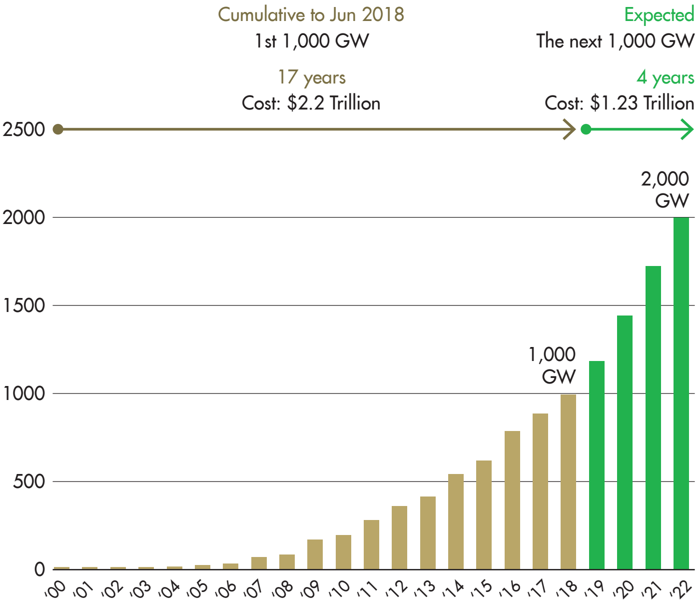
The actual speed of transition is not clear from this data, however, and if you dig deeper, you find an astonishing step-change is taking place. The trend of decarbonising the electricity grid is moving much faster than most people think, and we believe it is likely to keep accelerating as renewable energy technologies mature and become increasingly competitive, with costs reducing because of growing scale.

By 2020, we expect there to have been an almost complete reversal of electricity generation economics, with solar and wind becoming the cheapest, and this will drive accelerated uptake. In this scenario, fossil fuel power generation looks challenged.

To demonstrate how quickly this is happening, consider that in 2016, more solar PV was installed globally than any other electricity-generating technology. Solar and wind accounted for two-thirds of net capacity additions – double that for fossil fuels.

Looking at it another way (as shown in the chart below), it has taken 17 years to install 1000 gigawatts (or one terawatt) of wind and solar power – a huge milestone. But we are at an exciting inflection point and, in terms of how long it takes to install the next 1000 GW of wind and solar, we believe the proportion of electricity consumed from renewables (wind and solar) will easily double in less than ten years.

Global wind and solar installations



Source: BNEF 2018

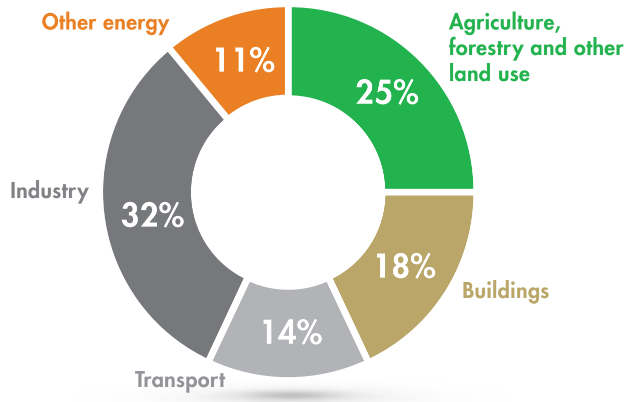
Our view is that the market is underestimating the magnitude and persistence of this trend towards renewables. The beneficiaries of this transition are lower carbon technologies (especially wind and solar), as well as companies improving our aging electricity grids and power infrastructure. Increasing electricity generation from renewable sources is a classic sustainable investment theme, and Siemens Gamesa is among our favoured holdings.

Siemens Gamesa

- Wind turbine manufacturers such as Siemens Gamesa are well positioned to benefit from more renewables going on the grid.
- The company's huge offshore wind turbines are harder for Asian manufacturers to copy and compete with, meaning its margins are relatively safe.

Another area of the economy affected by energy transition is buildings, which account for 18% of human GHG emissions.

GHG end use by economic sectors globally



Source: Intergovernmental panel on climate change, 2018

Improving the efficiency of energy use is where we see the most opportunities to play this theme, with companies such as Kingspan and Daikin well placed to profit from increased demand for their energy efficient products.

Kingspan

- This Irish company produces thermal insulation, which helps to cut the amount of energy needed to heat the buildings in which we live and work.
- Over 80% of its sales come from building efficiency equipment including insulation and ways (using automation) to make buildings more efficient.

Daikin Industries

- Daikin is the leader in energy efficient air conditioners globally, as well as in refrigerant chemicals. More than 80% of its products cut energy usage in the heating, ventilation, and air conditioning (HVAC) segments in which they operate.
- The group's refrigerant technology leadership allows it to develop chemicals that help ensure ozone depleting chemicals are completely phased out, while ensuring better energy efficiency and safety.

Beyond these examples, there are other interesting trends from this energy transition that we believe are misunderstood and underestimated. In transport, for example, the big trends are reducing pollution (and the move away from the internal combustion engine towards hybrids and electric vehicles) as well as improving the safety of cars.

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