



Europe's race to net zero: an investor's perspective



Sahil Mahtani
Strategist



Deirdre Cooper
Co-Head of Thematic Equity



Graeme Baker
Portfolio Manager
Multi-Asset

The fast view

- There are many paths to net zero, and each one has different implications for investors.
- Europe's destination is now clear. It is aiming for a high-renewables, high-electrification outcome, with a plan to build a hydrogen economy. It is also heavily incentivising energy efficiency.
- An analysis of Europe's pathway sheds light on how the race to net zero is likely to be run differently elsewhere.
- Early indications suggest China is much more likely to rely on demand efficiencies than Europe or the US, while also relying on nuclear to solve the problem of variability.
- The US is likely to rely most on carbon capture, while also the most likely to keep a role for hydrogen from natural gas with carbon capture.

Europe, China, Japan, South Korea and many US states have adopted net-zero emissions targets. But there are multiple paths to net zero, each with different trade-offs and likely with different outcomes. Investors therefore need to understand not only the goals of environmental policy, but the approach each region is taking towards a more sustainable economic model.

At present, Europe's route-map is the clearest. In this paper, we examine the region's planned course to carbon neutrality, consider the investment implications, and draw conclusions and parallels that will shed light on the net-zero journeys that other parts of the world will take (for the full paper, see the Ninety One Investment Institute's '[Europe and the race to net zero](#)'). The research behind this paper is based on published scenarios derived from several integrated assessment models.

Achieving net zero is crucial if the world is to avoid 3°C warming by 2100 from pre-industrial levels.

Towards net zero: Europe's strategy

'Net zero' means reducing emissions of carbon dioxide (CO₂) to zero, either by eliminating harmful emissions or by removing CO₂ from the atmosphere. Achieving net zero is crucial if the world is to avoid 3°C warming by 2100 from pre-industrial levels, the trajectory it is on currently, a temperature rise consistent with major environmental, social and economic problems¹.

In Europe's case, reaching the Paris Agreement's 'below 2°C' target requires reducing emissions by 80–95% by 2050 from 1990 levels. Its strategy for achieving that encompasses extensive renewables and electrification, but with a plan to also build a hydrogen economy based on renewable hydrogen. The region's governments are also heavily incentivising energy efficiency – for context, regional energy demand has actually been flat-to-declining in recent years.

1. Lieven, A., *Climate Change and the Nation State: The Realist Case*, Allen Lane, 2020, pg. 2–34.

For professional investors and financial advisors only. Not for distribution to the public or within a country where distribution would be contrary to applicable law or regulations.

We would highlight six variables that shed light on Europe's chosen clean-energy transition pathway, each of which has potential investment implications and which are useful yardsticks to assess other regions' net-zero pathways:

1 Energy demand will shrink

There is likely to be an acceleration of measures to reduce energy demand in Europe, with scenarios clustering at 0.8%-1.00% per annum. This implies a decline in energy demand in the coming years ten times faster than the average rate of the last three decades.

2 Electrification will accelerate

Electrification in Europe, including of transport, will have to expand significantly. By 2050, net-zero scenarios converge on electricity accounting for just above 50% of total final energy consumption, up from 19% today.

3 Renewables will dominate

Renewables' share of final energy demand clusters around 80% in scenarios tending towards net zero. The more that decarbonisation relies on supply-related measures (as opposed to reducing demand for energy), the more renewables will be needed.

4 Hydrogen will be used to overcome renewable intermittency

The problem of intermittency from variable renewable-energy sources can be solved through renewables overbuilding with battery storage, or renewables overbuilding with hydrogen. Europe is going the latter way, which will involve 80% more gross electricity generation relative to the former scenario's 40%.

5 Carbon-capture is a must, but scenarios vary

Carbon capture – both nature-based and engineered options – are used in nearly all scenarios. However, the range of outcomes is vast, and at the median estimate they will account for just 12% of current emissions.

6 Transport policy must be watched

Big decisions still have to be made in transport. For passenger vehicles and light commercial vehicles, Europe's path has been set towards battery electrification. For heavy trucks, the choices are between battery electrification and hydrogen-based fuels, with the decision on which one to take dependent on institutional factors such as labour laws. Aviation is likely to require fuels, and could be solved by a combination of e-liquids, liquid biofuels, and jet fuels.

How do other regions differ?

Broadly, we see decarbonisation as one of the most powerful structural growth trends of our times, and as presenting a significant investment opportunity and a clear risk to existing portfolios. But the way each region's economy shifts away from fossil fuels will influence the likely winners and losers of the clean-energy transition, and hence have important investment implications.

An early comparison of Europe's net-zero strategy relative to other regions suggests China is much more likely to rely on demand efficiencies than Europe or the US, while also relying on nuclear to solve the problem of variability. The US is likely to rely most on carbon capture, while also the most likely to keep a role for hydrogen from natural gas with carbon capture. In all cases, Europe, China and the US need to get renewables to over 80% of final energy demand by 2050 to reach net zero.

| The global race towards
| net zero is on.

Growing momentum

European countries were the first to commit to legally binding net zero targets. In 2017, Sweden committed to achieving net zero by 2045. In 2018, the UK became the first G7 country to do the same, by 2050 this time². In 2019, those initiatives broadened out into the European Commission's Green Deal, which targets net zero by 2050.

Since then, the rest of the world has joined in, with 2020 marking a dramatic acceleration in national commitments to decarbonisation. In September 2020, China announced a 'net zero by 2060' pledge; Japan and South Korea followed with 2050 targets. The US has been a notable laggard, but President Biden and a Democratic Congress can do much to reverse the inaction of the last administration. In any case, individual US states have been more proactive. In 2018, California Governor Jerry Brown signed an executive order for a net-zero emissions target by 2045. In other words, the global race towards net zero is on.

2. Evans, S., In-depth Q&A: The UK becomes first major economy to set net zero climate goal, Carbon Brief, 12 June 2019. For professional investors and financial advisors only. Not for distribution to the public or within a country where distribution would be contrary to applicable law or regulations.

Much as countries mobilised for 'total war' in the mid-twentieth century, societies, economies and energy systems are on the cusp of an energy transformation.

An economic reconfiguration

Much as countries mobilised for 'total war' in the mid-twentieth century, societies, economies and energy systems are on the cusp of an energy transformation as they are reconfigured for a world in which nearly all emissions need to go. There was a moment in the early days of the COVID-19 pandemic when the question was raised whether the crisis would distract from the decarbonisation agenda. In fact, COVID-19, as perhaps the most simultaneous, synchronised crisis in history – one felt in every corner of the world at more or less the same time – has only reinforced the threat posed by long-term vulnerabilities such as climate change.

Climate change, of course, is the ultimate crisis of the Anthropocene, the period when human activity is not just leaving a mark on the physical world, but that may eventually overwhelm it. The crisis is of our own making, but clarifying the net zero pathways is the only way they are going to be solved.

Important information

All information provided is product related and is not intended to address the circumstances of any particular individual or entity. We are not acting and do not purport to act in any way as an advisor or in a fiduciary capacity. No one should act upon such information without appropriate professional advice after a thorough examination of a particular situation. This is not a recommendation to buy, sell or hold any particular security. Collective investment scheme funds are generally medium to long term investments and the manager, Ninety One Fund Managers SA (RF) (Pty) Ltd, gives no guarantee with respect to the capital or the return of the fund. Past performance is not necessarily a guide to future performance. The value of participatory interests (units) may go down as well as up. Funds are traded at ruling prices and can engage in borrowing and scrip lending. The fund may borrow up to 10% of its market value to bridge insufficient liquidity. A schedule of charges, fees and advisor fees is available on request from the manager which is registered under the Collective Investment Schemes Control Act. Additional advisor fees may be paid and if so, are subject to the relevant FAIS disclosure requirements. Performance shown is that of the fund and individual investor performance may differ as a result of initial fees, actual investment date, date of any subsequent reinvestment and any dividend withholding tax. There are different fee classes of units on the fund and the information presented is for the most expensive class. Fluctuations or movements in exchange rates may cause the value of underlying international investments to go up or down. Where the fund invests in the units of foreign collective investment schemes, these may levy additional charges which are included in the relevant Total Expense Ratio (TER). A higher TER does not necessarily imply a poor return, nor does a low TER imply a good return. The ratio does not include transaction costs. The current TER cannot be regarded as an indication of the future TERs. Additional information on the funds may be obtained, free of charge, at www.ninetyone.com. The Manager, PO Box 1655, Cape Town, 8000,

Tel: 0860 500 100. The scheme trustee is FirstRand Bank Limited, RMB, 3 Merchant Place, Ground Floor, Cnr. Fredman and Gwen Streets, Sandton, 2196, tel. (011) 301 6335.

This document is the copyright of Ninety One and its contents may not be re-used without Ninety One's prior permission. Ninety One Investment Platform (Pty) Ltd and Ninety One SA (Pty) Ltd are authorised financial services providers. Issued, May 2021.

Contact information

36 Hans Strijdom Avenue
Foreshore, Cape Town, 8001
Telephone: +27 (0)21 461 2000
Client service support: 0860 500 100
Email: comcentre@ninetyonemail.com

www.ninetyone.com
Follow us on Twitter @ninetyone_sa