

## Q&A with Thiemo Lang, Senior Portfolio Manager

The Polar Capital Smart Energy Fund invests in companies at the forefront of the global transition towards a cleaner, more efficient, and sustainable energy future. The Fund is founded on the belief that, with the world faced with an urgent need to decarbonise, demand for smart energy solutions will rise exponentially.

Article  
**9**  
SFDR

### Fund Highlights

- **Highly specialised thematic investment team with an outstanding track record**
- **Access to a multi-decade investment theme**
- **Diversified portfolio positioned to benefit from the energy transition**
- **Article 9 fund under the EU's SFDR; sustainability at the very heart of the investment thesis and outcomes**

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**Thiemo Lang**  
PhD, Senior Portfolio  
Manager

Based in London, Thiemo joined Polar Capital in September 2021 as Head of Sustainable Thematic Equity Team and Senior Portfolio Manager of the Polar Capital Smart Energy and Smart Mobility strategies. Prior to Polar Capital, Thiemo was the Head of Thematic Investing Energy/Mobility/Materials of Robeco Switzerland Ltd, Zurich.

#### **Q: What are the biggest issues around the supply of clean energy?**

**A:** A combination of environmental and government pressure globally has accelerated the demand for smart, sustainable and secure energy sources in a move towards a decarbonised energy future. With a target date of 2050 for the majority of energy use to be derived from clean and efficient sources, one of the biggest challenges is for the supply to deliver at the rate needed.

In addition, solar and wind renewable power are non-dispatchable energy sources. The energy generated during the day will vary a great deal and there is a strong

economic interest to store any temporary surplus energy to be used at a later stage.

Therefore, there are numerous practical challenges that need to be overcome in building a smart and intelligent infrastructure to effectively harness sources of clean energy, as well as storing and distributing it. We consider all of this and invest across the value chain, from renewable power generation, energy distribution, power conversion and storage, to energy efficiency solutions.

#### **Q: How realistic is the aim of limiting global warming to 1.5°C and when might it be achieved?**

**A:** One of the goals of the Paris Agreement, a global treaty on climate change that came into force in November 2016, is to limit global warming by 1.5- 2°C. The only route to achieving this is to reduce the reliance on carbon-based energy (and therefore the production of natural and synthetic greenhouse gases) and move towards clean energy sources.

We are at the very beginning of this transition and significant changes are needed – for example, limiting global

warming at 1.5°C will need a 70% reduction in coal power by 2030, phased out by 2050<sup>1</sup>. To achieve such a substantial reduction in CO<sub>2</sub> emissions over the coming decades we need to (1) substantially increase the share of affordable renewable power generation, (2) ensure the decarbonisation of carbon-intensive sectors, notably transport and heating buildings,

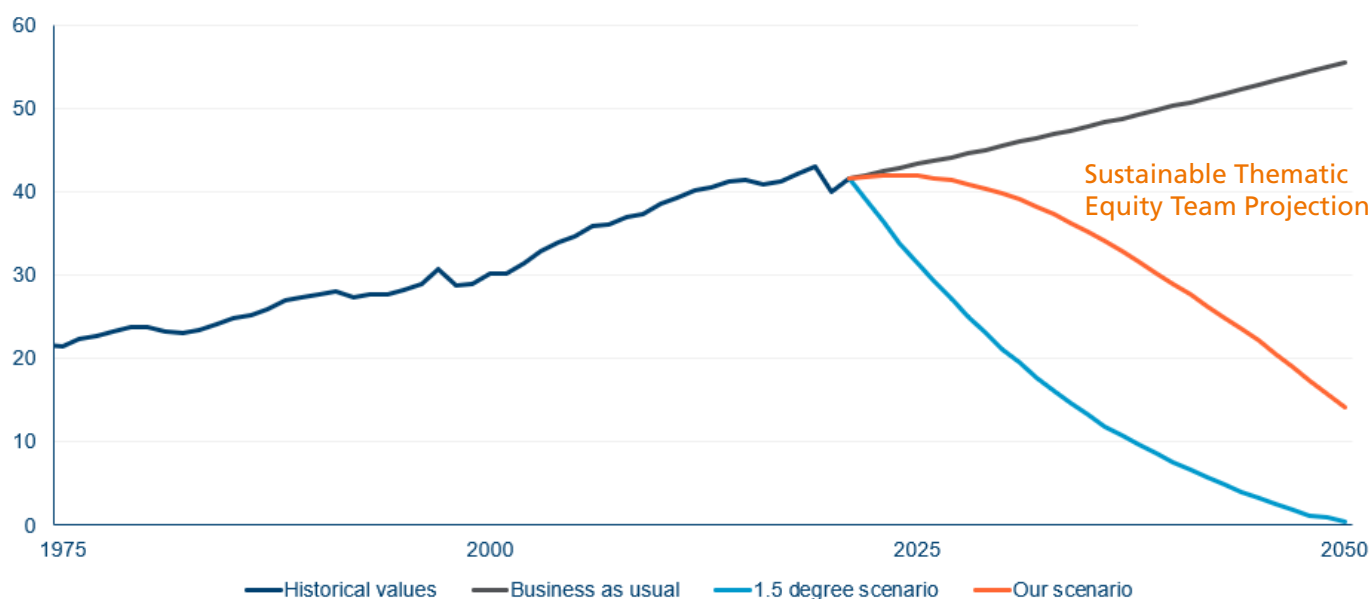
through electrification, and (3) use the most advanced energy efficiency technologies to save energy.

There is a huge amount of work needed, from current players in existing markets as well as from new players in markets that will be created. While we foresee a substantial reduction in global emissions

over the coming decades, we consider the global net-zero carbon emissions requirement by 2050 necessary to reach the 1.5° degree target as very unlikely to be reached. This is partly as developing countries are unlikely to follow the same decarbonisation trajectories as developed countries.

## Few Realistic Scenarios Left to Limit Global Warming to 1.5°C

### Energy related CO<sub>2</sub> emissions (Gt/year)



Source: Polar Capital estimates, [www.icos-cp.eu/science-and-impact/global-carbon-budget/2020](http://www.icos-cp.eu/science-and-impact/global-carbon-budget/2020) for historical figures (until 2020). The information is at the date hereof and is subject to change, without notice, at the discretion of Polar Capital, who does not undertake to revise or update this information in any way.

### Q: Why is technology important to clean energy and what investment opportunities does that present?

A: It is mostly through technology and manufacturing advancements that clean energy solutions have already reached such a high level of competitiveness. We forecast even higher levels of investment flowing into the sector over the next few decades, helping to drive down further the total cost of ownership for clean energy solutions. Clean power generation with storage solutions will become much more affordable, and their seamless integration

into an intelligent electrical grid will become a reality.

For example, an estimated \$14trn of investment is required in the global power grid by 2050, 36% of which is for the digitalisation of the grid infrastructure<sup>2</sup>. As high voltage electricity usage broadens – for electric mobility for example – the use of advanced power semiconductors becomes critical, and we expect demand for the technologies leading to their improvement to expand rapidly.

We have developed our own proprietary sector models to give us a better understanding of all these technological trends and markets, including the identification of relevant inflection points. The sector models are then fed into company-specific models. We look for innovative companies with high barriers of entry, addressing solutions for the smart energy sub-themes, including those that provide energy efficiency technologies targeting the industrials, transportation, buildings and IT end markets.

1. UN's Intergovernmental Panel on Climate Change (IPCC)



**Q: Where do you see value from an investment point of view?**

**A:** Our investment philosophy is based on our conviction that sustainable companies providing highly competitive technologies and solutions to the transformation and decarbonisation of the global energy sector will deliver sustainable shareholder value in the long term.

We invest across the clean energy spectrum, assessing those companies we consider are best placed to deliver on the increased

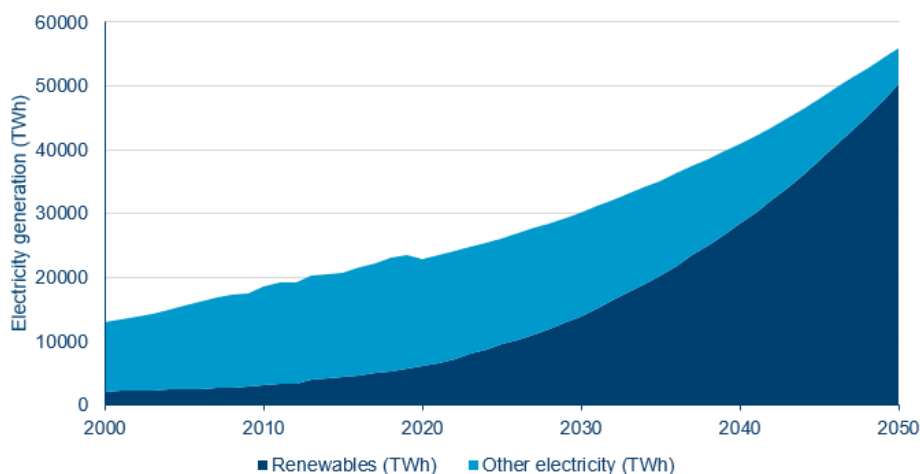
demand for smart, sustainable and secure energy sources. Put simply, as reliance on carbon reduces, the need for cleaner sources of electricity increases. In our own estimates, the electricity demand in 2050 is expected to increase by 2.5x compared to 2020, which is a fairly big number. We see the bulk of the incremental demand to come from new usages like EV (electric vehicle) transportation and space heating (heat pumps), and the use of green hydrogen for transportation, heavy industries and seasonal storage.

This increase in electricity will need to be supplied by green technologies, driving a large increase in renewables and grid investments. In parallel, achieving a high reduction of energy intensity is critical and will drive massive investment in energy efficiency technologies and services.

We expect to see opportunities across all these areas and are likely to see a combination within the Polar Capital Smart Energy Fund, with flexibility built in for the mix to change over time.

## Decarbonisation = Clean Power + Energy Efficiency

### Electricity generation to increase by 2.5-times, or 3% p.a. (CAGR 2020-2050)



“In our own estimates, the electricity demand in 2050 is expected to increase by 2.5x compared to 2020.”



Renewable power generation to increase by a factor of 10



Share of renewable power generation to increase from 30% (2020) to 90% (2050)

**Source:** Polar Capital estimates; [www.iea.org/reports/key-world-energy-statistics-2020/final-consumption](http://www.iea.org/reports/key-world-energy-statistics-2020/final-consumption) for historical figures (till 2020). The information is at the date hereof and is subject to change, without notice, at the discretion of Polar Capital, who does not undertake to revise or update this information in any way. Forecasts are based upon subjective estimates and assumptions about circumstances and events that may not yet have taken place and may never do so.

**Q: From an investment point of view, what is the attraction of clean energy?**

**A:** We live in a finite, constrained world with a population of 7.7 billion that is growing by around 80 million each year. Besides the imperative environmental reasons to move away from carbon-based to clean sources of energy, our resource-scarce developed countries also have a strong strategic interest to become sustainably energy self-sufficient.

It is an exciting time to be involved in this whole area as, despite the focus of attention spurring on vast amounts of government funding, we are still in the very early stages of building what we would consider a coherent clean energy sector. With the advent of cost-competitive green hydrogen, we finally have all the necessary parts of the puzzle in place for an affordable and sustainable energy infrastructure, based on renewable power generation.

Technological advancements will further improve cost competitiveness and efficiencies, while new market segments are developing, offering exciting new investment opportunities. Investing across the value chain gives us exposure to the entire theme and at the same time offers us the ability to diversify the thematic portfolio and avoid concentration risk.

2. <https://www.renewableenergyworld.com/storage/the-grid-needs-14t-to-support-full-decarbonization/#gref>



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