

Sustainability in Action

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Accelerating the Energy Transition

Climate change is one of the biggest and most urgent problems of our time. Emissions of greenhouse gases, including CO₂, are a major cause of this problem. As CO₂ emissions continue to rise, it becomes increasingly difficult to achieve climate goals, which will have profound consequences for our environment. It is therefore necessary to accelerate the transition to the use of sustainable energy sources. In order to achieve the climate goals for 2030 and 2050, not only more ambition and effort are needed, but a greater commitment of capital as well. This Sustainability in Action explores the opportunities this offers to (impact) investors who wish to support this vital transition.

The need for change

If global CO₂ emissions remain as they are now, then by the end of this century the average global temperature could be 2.1 to 3.4 degrees Celsius higher than before the industrial revolution.¹ Currently, the increase is limited to 1.1 degrees Celsius, and the effects are already very noticeable.

For Europeans, the danger is even greater: due to its geographical location, Europe is warming at an average rate twice as fast as the global average.² This has disastrous consequences for the environment and nature, such as disruption and destruction of ecosystems, and extreme weather conditions.

The economic consequences are also noticeable: economic sectors such as tourism and agriculture are disrupted, resulting – for example - in reduced food security.

Risks for companies

Individual companies face physical risks from climate change. For example, some companies depend on stable temperatures and sufficient water, which becomes scarce during droughts. Companies which have a negative impact on the climate face reputational risks, and companies which continue to rely on fossil fuels, risk becoming 'stranded assets' in the long run - assets which can rapidly lose value. These companies will also have to incur higher costs to refinance their debts.

Energy security

At the same time, the growth of the world's population is expected to increase the demand for electricity by at least 50% by 2050.³ Since the supply of fossil fuels is finite, the European Union, as a net energy importer, could become vulnerable.

¹ Intergovernmental Panel on Climate Change, Synthesis Report 2023

² Copernicus Climate Change Service, European state of the Climate Summary 2023

³ US Energy Information Administration International Energy Outlook 2021

The transition to sustainable energy sources is therefore of great importance from the perspective of energy security. To achieve this transition within a few decades, an unprecedented pace of innovation and societal changes will be needed.

How do we achieve net zero?

Can the goal of achieving net zero emissions by 2050 (see insert) be achieved, and what is needed to achieve this?

- a. Increasing the production of clean, renewable energy.** This will require scaling up solar and wind energy production, as well as the production of low-emission fuels.
- To achieve the net zero goal, the installed capacity of renewable energy worldwide will need to triple by 2030.⁴
 - At the same time, the use of fossil fuels for electricity generation needs to be reduced from the current 60% to 30% by 2030.⁵
 - Solar energy is expected to become the main source of electricity generation worldwide. Its capacity is growing rapidly, doubling every three years, and the production costs are decreasing significantly.⁶
 - For sectors such as heavy industry, shipping, and aviation, low-emission energy sources such as hydrogen will play a crucial role in reducing emissions. Electrification is difficult and expensive in these cases.⁷
 - Green hydrogen is a promising low-emission energy source. However, the production capacity of green hydrogen is currently behind schedule. To achieve net zero, it should increase from 1 million tons right now, to 70 million tons in 2030.⁸
- b. Expanding and modernising the energy infrastructure.** A good (energy) infrastructure is essential for the success of the energy transition.
- Clean energy is generated separately and intermittently, which can lead to capacity issues and fluctuations in supply and demand. Smart networks connected to larger transmission and distribution capacities are needed to manage this.
 - More storage options are also needed. Short-term energy storage can be achieved through electrons (such as lithium-ion batteries), molecules (such as ammonia storage), or thermal storage systems.⁹ For long-term storage, large thermal storage systems and energy storage in molecules (such as hydrogen, ammonia) are suitable solutions. Research is also currently being conducted on lithium-free batteries, using materials such as iron, saltwater, hydrogen, and sand.

- All of this requires significant investments. Improving networks requires a doubling of investments to \$800 billion by 2030 and investments in battery storage should triple to \$150 billion in less than 6 years.¹⁰ The necessary financing from the private sector offers opportunities for (impact) investors.

- c. Making buildings, transport, and industry carbon-neutral and energy-efficient.** Switching these sectors to sustainable energy sources and/or limiting their energy consumption would be an important step forward for the energy transition. However, these major consumers of fossil energy are significantly behind schedule. Serious investments are still needed to address this, including in low-emission energy sources.
- **The industrial sector** is a major energy consumer and accounts for 44% of all global CO₂ emissions. To achieve net zero by 2050, the sector's emissions need to decrease by 3% annually until 2030, followed by an even sharper decline. However, reducing the use of fossil fuels in the sector is challenging because many industrial processes cannot efficiently run on electricity. Low-emission energy sources such as hydrogen are being developed for this purpose. To encourage the industry to reduce its use of fossil fuels, greater investments, stricter regulations, and increased pricing of CO₂ emissions are urgently needed.
 - **Transport** accounts for 39% of global CO₂ emissions. This sector would need to reduce its CO₂ emissions by 4% annually until 2030 to achieve net zero by 2050. Legislation on air pollution, pricing of CO₂ emissions, and significant investments can accelerate the transition to emission-free transportation.

What is an energy transition?

This is a transformation of an energy system based on fossil energy sources into a system based on clean, renewable energy sources. The goal is to reduce greenhouse gas emissions to 'net zero' by 2050, in line with the goals of the 2015 Paris Agreement. This means that the total emissions of greenhouse gases are equal to the emissions removed from the atmosphere.

4 International Energy Agency (IEA), Renewables 2023

5 IEA 50, Electricity - Energy System

6 IEA, Renewables 2023

7 Electricity - Energy System - IEA

8 McKinsey - Hydrogen for Net-Zero report 2021

9 For example, barrels where surplus energy generated by solar panels can be stored for some time.

10 IEA, Report on Batteries and Secure Energy Transitions, 2023

- **Buildings** account for approximately 15% of all CO₂ emissions worldwide. To achieve net zero by 2050, the sector would need to reduce emissions by 7% annually. Strengthening legislation, pricing of CO₂ emissions, and investments can move the sector in the right direction.¹¹

Significantly more investments needed

In recent years, investments in renewable energy and energy efficiency have increased, and for the first time, more investment is now being made in renewable energy, networks and storage than in fossil fuels. China is the driving force behind this, followed by the EU and the US. Together, they account for 60% of total investments in clean energy.

Investments in solar energy are particularly significant: they are expected to reach \$500 billion in 2024, more than 15% of all energy investments. (IEA, VLK 2024) However, this is still not enough to achieve the climate goals of the Paris Agreement. Doubling the current level of investments in renewable energy is needed by 2030 to stay on track for the 'Paris' path. This would mean an increase to \$2 trillion from the current \$1 trillion (in 2023).

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In addition, making buildings, industry, and the transportation sector energy-efficient requires a tripling of investments to around \$1.9 trillion. It is estimated that about 70% of the financing for this transition will need to come from the private sector.¹²



¹¹ All investment projections: IEA, World Energy Investment 2024

¹² All investment projections: IEA, World Energy Investment 2024

The role of investors

This brings us to the role that investors can play in the transition. Institutional and private capital is necessary to accelerate the energy transition, and at the same time, investors may mutually benefit from the opportunities this presents. This is where so-called impact and transition investments often offer the best opportunities (see insert).

To measure and report on this contribution, it is useful to set concrete goals and determine the focus areas of the investment. Being an investor, would you like to contribute to more electric vehicles, the modernization of the energy infrastructure, or perhaps the scaling up of renewable energy sources? Goals can be defined using key performance indicators (KPIs) to measure their impact.

By transition investing, we mean investments in companies which are undergoing a transition towards a sustainable business model, such as utility companies transitioning from coal to wind energy. Impact investing involves companies which intend to make a measurable positive contribution to the energy transition, such as producers of renewable energy.

Opportunities in listed investments...

Contributing to the energy transition through listed investments can be through investing in companies or funds which aim to make a positive impact or make improvements throughout the investment period. Fund managers can select companies which prioritise more sustainable energy-use, such as producers of (components for) electric vehicles, builders of sustainable buildings, or companies working on the electrification of industrial processes that are currently reliant on fossil fuels.

It's also important to consider companies which contribute positively to energy storage and distribution. For instance, companies that develop battery storage systems, work on grid stabilisation, and help implement energy-efficient policies. 'Pure players' such as solar panel producers, hydrogen producers, or wind turbine manufacturers are also eligible.

An example of a KPI (measurable goal) for this kind of impact investing could be the amount of renewable energy produced, or, the realised energy savings, the number of tons of avoided CO₂ emissions, or the amount of installed renewable capacity in megawatt-hours (MWh).

To keep companies on the right track, or to further increase their ambition, it is important to continue the dialogue. Through engagement, fund managers can push for tighter CO₂ targets or more ambitious sustainability measures.

...or in private investments

In **private investments** investors tend to have more control over how their money is used. In this way, they can achieve tangible positive impact towards the energy transition.

The next four investment categories are particularly suitable for this: Real Estate, Infrastructure, Private Equity, and Private Debt. In real estate for instance, investors can invest in measures to make buildings energy-efficient, installing heat pumps, or systems to reduce water usage. Investments in private equity or debt can also achieve this impact. Infrastructure offers opportunities for the construction of renewable energy installations and energy networks.

On the next page, you will find an overview of private, non-listed investment opportunities, the potential KPIs, and the contribution they could make to the energy transition.

Difference between listed and non-listed investments

In non-listed, the focus is on companies which have a positive impact on the energy transition. With listed companies, the focus is more on companies that contribute to the energy transition with (part of) their activities.

If you would like to learn more about our view on the energy transition, and the possibilities to contribute through your investments, your contact person at Van Lanschot Kempen will be happy to provide more information or connect you with our sustainability specialists.



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Non listed Investment possibilities...





Infrastructure

SDGs	Aspects	KPIs
 7 AFFORDABLE AND CLEAN ENERGY	Scaling up the production of clean, renewable and affordable energy sources	# MWh of installed renewable capacity
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Expanding and modernising the energy infrastructure	Renewable energy produced
 13 CLIMATE ACTION		# ton CO ₂ avoided





Real Estate

SDGs	Aspects	KPIs
 7 AFFORDABLE AND CLEAN ENERGY	Making the Energy, Transport & Industry carbon-neutral and energy-efficient	# Tonnes of CO ₂ e reduction (operational and construction phase)
 11 SUSTAINABLE CITIES AND COMMUNITIES		Renewable energy (on site)
 13 CLIMATE ACTION		Water reduction

Private Debt (Corporate + Infra)

SDGs	Aspects	KPIs
 7 AFFORDABLE AND CLEAN ENERGY	Scaling up the production of clean, renewable and affordable energy sources	Renewable energy produced
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE		Increase in % of electric vehicles
 11 SUSTAINABLE CITIES AND COMMUNITIES	Making the Energy, Transport & Industry carbon-neutral and energy-efficient	# ton CO ₂ e reduced/avoided
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION		

Private Equity / Venture Capital

SDGs	Aspects	KPIs
 7 AFFORDABLE AND CLEAN ENERGY	Scaling up the production of clean, renewable and affordable energy sources	Use of electric vehicles
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE		Waste reduction & recycling
 11 SUSTAINABLE CITIES AND COMMUNITIES	Making the Energy, Transport & Industry carbon-neutral and energy-efficient	# ton CO ₂ e reduced/avoided
 13 CLIMATE ACTION		

...through out the energy value chain

Energy consumption

- Electric vehicles such as cars and scooters
- Net-zero buildings, for instance, through heat pumps
- Electrical application in industrial processes

Energy storage & distribution

- Electricity network and infrastructure (such as charging stations)
- Batteries
- Digitalisation/big data

Energy production

- Solar and wind energy
- Biofuels
- Hydrogen



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