

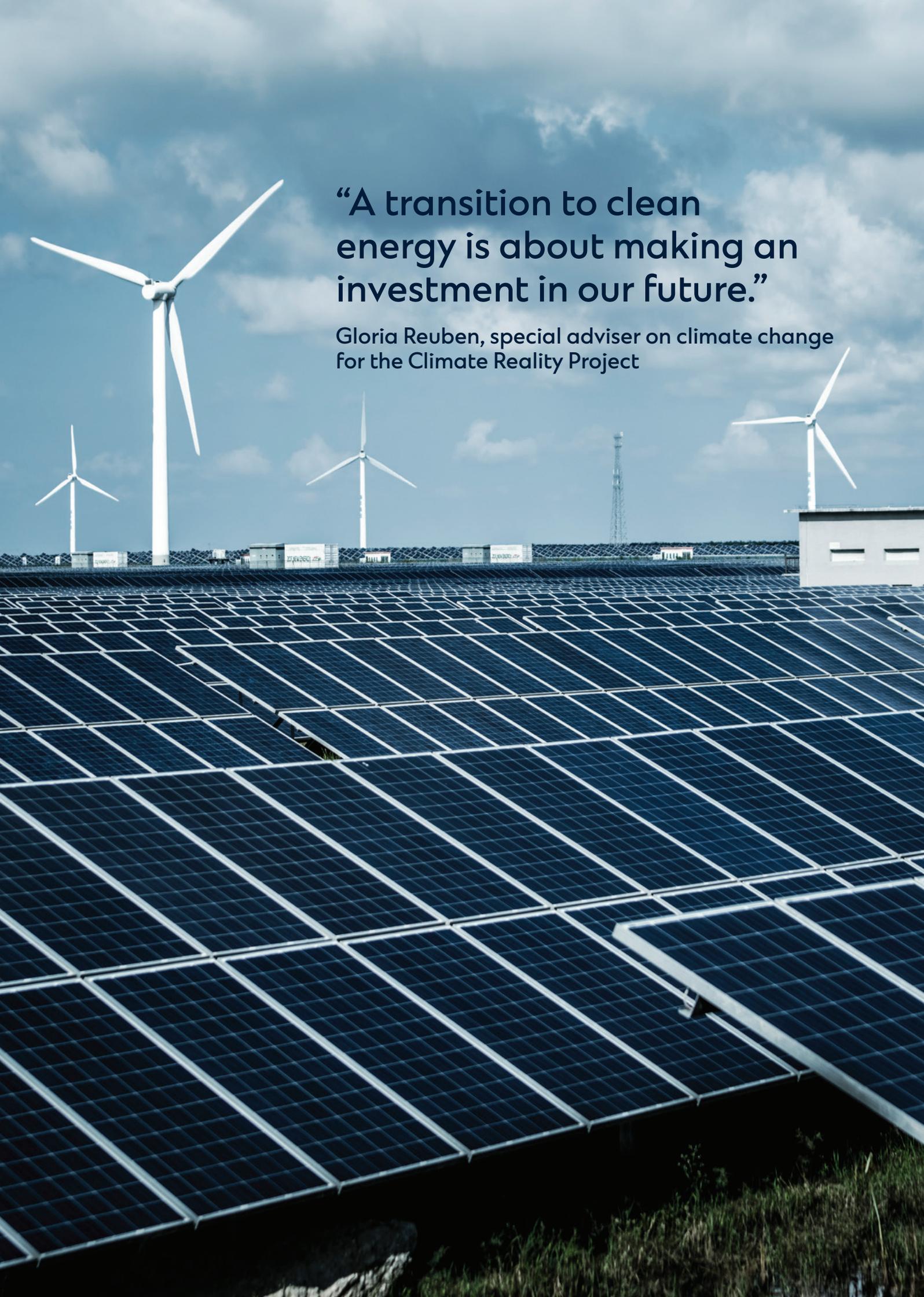


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WM Chief Investment Office

Energy transition

April 2021



“A transition to clean energy is about making an investment in our future.”

Gloria Reuben, special adviser on climate change for the Climate Reality Project

The energy transition is often referred to as the next industrial revolution. It refers to the global economy's shift from a fossil fuels-based system of energy production, distribution and consumption to more sustainable sources of energy as the world moves to a 'net-zero' economy.

A net-zero economy is one where there is a balance between the greenhouse gas emissions produced and the emissions taken out of the atmosphere.

While renewable energy sources such as wind and solar, alongside electrified energy-powered systems such as electric vehicles (EVs), typically come to an investor's mind when thinking about energy transition, it encompasses a much wider ecosystem of industries.

For example, steel and cement production accounts for 7-9% of all global greenhouse emissions and there is pressure mounting on manufacturing and construction industries to decarbonise. Agriculture, forestry and land use is another big sector contributor facing significant disruption in the move towards net-zero.

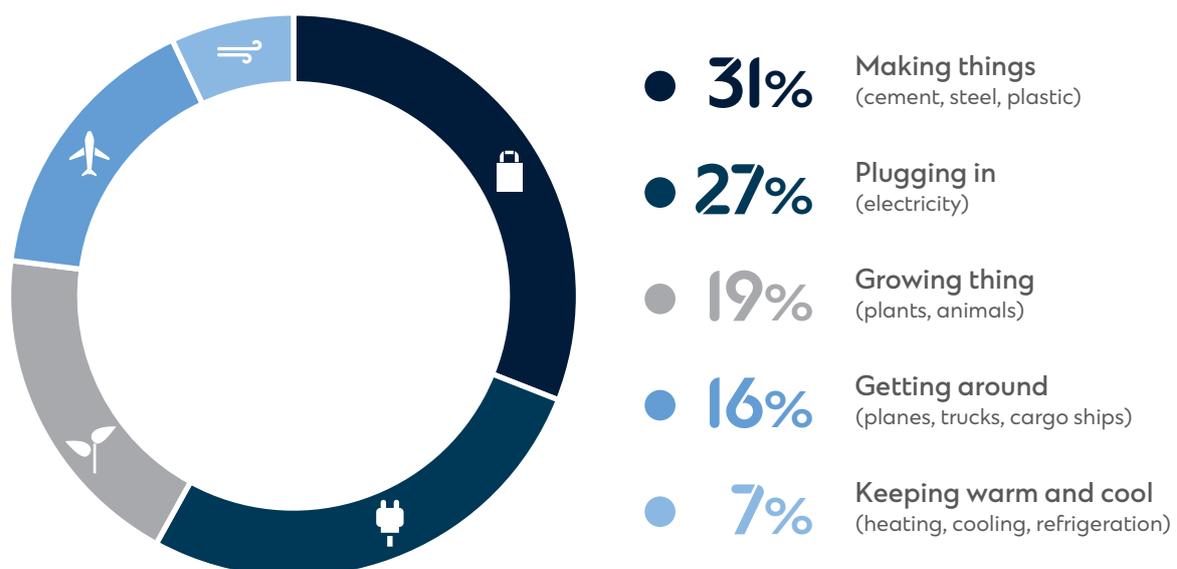
Bill Gates, in his latest book *How to Avoid a Climate Disaster*, provides a breakdown of human activities that produce greenhouse gases. Supplementing this with an overview of global greenhouse gases by sector, investors can identify industries that are at the greatest risk of an energy transition and those that offer significant opportunities.

Government commitments and regulatory developments

According to the UN, around 110 countries, responsible for more than 65% of global carbon dioxide emissions, have made ambitious net-zero commitments to date. Many have pledged carbon neutrality by 2050, while China says it will do so before 2060. We provide a snapshot of the ambitions, commitments and focus areas of key markets.

Many human activities produce pollution

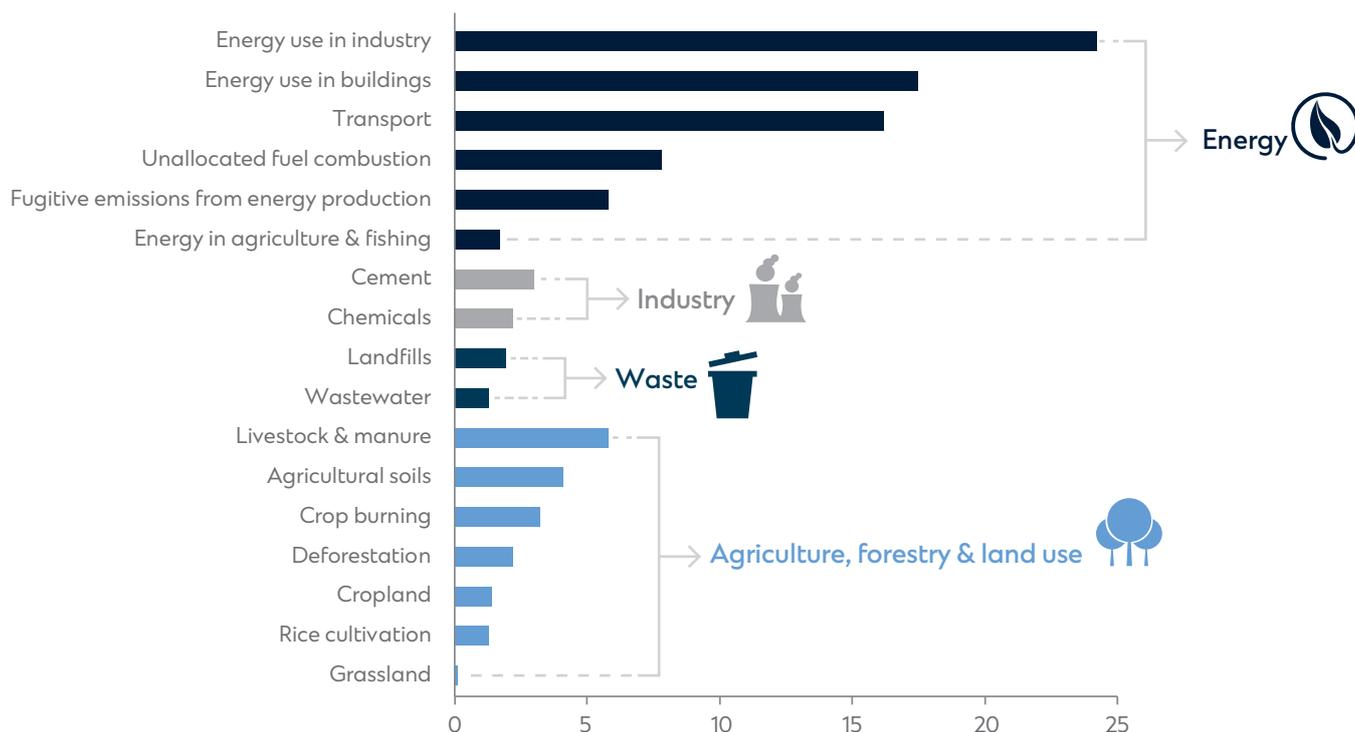
Details of greenhouse gases emitted by "things we do"



Source: "How to avoid a climate disaster" by Bill Gates, Standard Chartered

Energy-focused industries offer the largest opportunities for disruption

% of total greenhouse emissions by industry sector



Source: Our World in Data, Standard Chartered

Risks and opportunities of energy transition across four key sectors

The risks of energy transition impact companies in all sectors to varying degrees. There are two main types of risks – physical risks and transition risks.

Physical risks include increased business interruptions and damage to operations and physical assets (eg, factories and offices) as a result of extreme weather events such as floods. Central banks across the world have warned that global GDP could fall 25% below the expected level by 2100, largely due to extreme weather events caused by maintaining current levels of global greenhouse gas emissions.

Transition risks are risks that occur when moving towards a greener economy, where some sectors of the economy face either higher costs of doing business or a significant depreciation in their assets. Stranded assets resulting from transition risks are expected to pose significant costs across all sectors – in oil and gas, International Renewable Energy Agency estimates this at about USD 900bn, while in the buildings sector, it estimates this to range between USD 5.4trn and USD 10.8trn given the low turnover rate of buildings.

Beyond managing risks, the energy transition is also opening up opportunities for investors across various sectors. This goes beyond just EVs and renewables to green buildings, low-carbon materials, precision agriculture and expansion of railways.

Potential opportunities in energy transition across four key sectors



Energy

Incumbents staying ahead of the curve: Oil companies are shifting a greater proportion of investments into utilities, renewable energy and electric vehicles.

Renewables: Asia remains the world's largest market for renewables, with an EY report ranking seven Asian markets among the most attractive markets for wind power, hydropower and solar. PWC estimates Asia Pacific to see up to USD 250bn in new renewable investments by 2025.

Green hydrogen: Commercial viability for green hydrogen is likely at least a decade away even with rapid cost reductions, increasing policy support and infrastructure investments. However, its potential means this, together with batteries, is the cleantech market to watch in coming years.



Transport

Growth of rail: Global rail transport market is expected to grow by about 10.9% CAGR to USD 519bn in 2021. Railways is seen as the most efficient and lowest emitting mode of transport; urban and high-speed rail in focus.

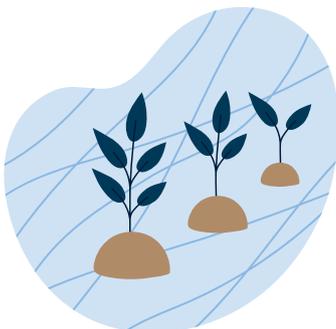
Electrification: Tax incentives, improved technologies, declining battery costs and awareness continue to drive the growth of EVs. The global EV market is estimated to reach USD 700bn by 2026, a 22% CAGR from 2019 to 2026.



Building

Green buildings: Buildings comprise the largest segment of the USD 231bn energy efficiency market. Shift to greener buildings is an opportunity. Retail buildings will be a particular focus given it is one of the most energy intensive building sectors.

“Smart energy” management, low carbon solutions: Increasing demand for these solutions is creating upstream opportunities for materials manufacturers and driving the development of carbon-efficient production techniques, including that of low carbon cement and concrete.



Agriculture

Precision agriculture: Digital farming tools and agriculture is a growing area of interest, as innovation pours into developing hardware, software and services to increase yields at lower costs. The global precision farming market is estimated to reach USD 16.35bn by 2028, a CAGR of 13.1% from 2021 to 2028

Plant-based meat and dairy alternatives: The market has been fuelled further by the COVID-19 pandemic and is expected to reach USD 23.2bn by 2024.

Source: Ernst & Young, Robeco, World Green Building Council, Grand View Research, WBCSD, media reports, Standard Chartered

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