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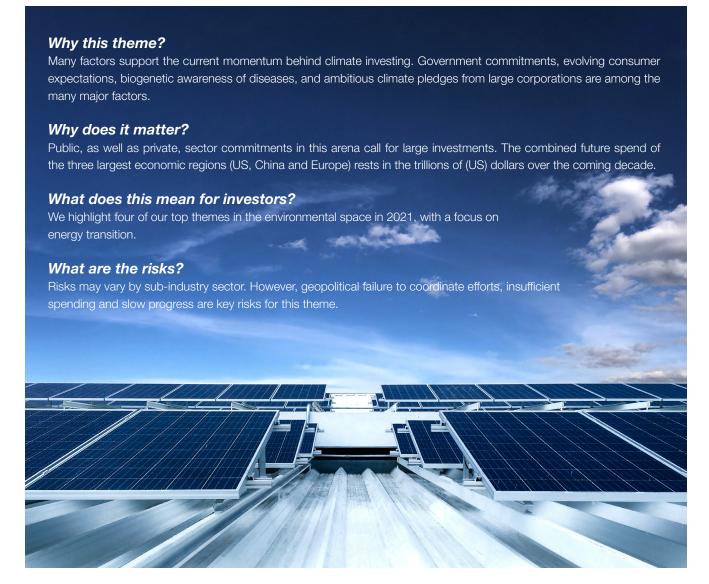
The time for climate investing



The time for climate investing

There is a time and a season for everything and 2021 looks set to be the time for climate investing with key supportive factors converging – government commitments in the form of regulation and investment spend, evolving consumer expectations, greater awareness of diseases brought about by environmental change and ambitious climate pledges from large corporations.

China's aim to be carbon neutral by 2060 signals higher spending on green technologies in the next five years – it is estimated to spend USD 5.5 trillion, or about USD 180 billion annually, to reach its goal. Europe is looking to invest over a third of its EUR 750 billion economic stimulus in projects compatible with the bloc's climate neutrality goal, while Joe Biden has significant ambitions laid out in his Green New Deal, a broad USD 2 trillion proposal that seeks to develop a clean energy economy.



Overview of environmental opportunities

We spotlight four of our top themes in the environmental space in 2021, with a focus on energy transition.









ENERGY TRANSITION

CIRCULAR ECONOMY

SUSTAINABLE FOOD

WATER



ENERGY TRANSITION

About 70% of global ${\rm CO_2}$ emissions come from energy-related activities across a wide range of sectors and this makes energy transition a particularly important theme.

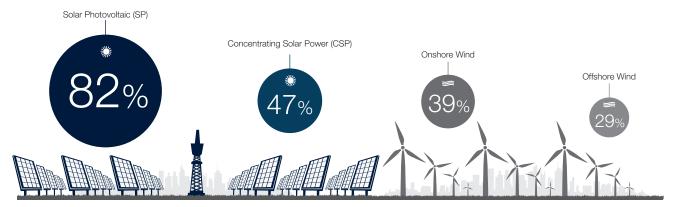
There is a USD 29 trillion opportunity across energy transition solutions - from green hydrogen to smart grid, offshore wind, battery storage, electric vehicles and solar photovoltaics.

Within the theme of the energy transition, there are opportunities in renewable energy, electrification, energy technology and energy infrastructure and storage.

Renewable energy

The days of renewable energy being uncompetitive due to high generation costs and needing financial support from governments are over. The costs of both solar and wind energy are now below the cost of fossil fuels and are likely to fall further over the next decade, giving renewables an even bigger cost advantage. For example, research shows that as a result of declining clean energy prices in China, the country can reliably run its grids on at least 62% non-fossil electricity generation by 2030, while cutting costs by 11%.

Renewable energy costs declined rapidly over the last 10 years (% decline in cost 2009-2019)

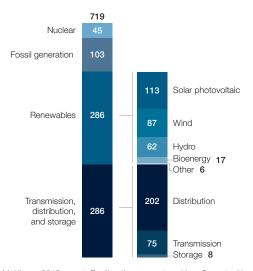


Source: IRENA (International Renewable Energy Agency), June 2020, Standard Chartered

As a result of declining costs and increased demand, McKinsey estimates that renewables will represent 40% of the average annual global energy investments to 2025. This may provide significant opportunities for investors. A large spectrum of companies supply to the renewables sector - from makers of renewable energy equipment to energy generation equipment (such as wind-turbine blades and solar-panel components to whole-systems manufacturers).

Renewables will likely represent 40% of average annual global energy investments to 2025

Estimated average annual power-sector investments globally Estimates for 2018-2025 period (EUR bn)



Source: McKinsey 2019 report: Fuelling the energy transition: Opportunities for financial institutions, Standard Chartered

Electrification

The growth rate for electricity demand/supply already exceeds those for oil, gas, and coal, and by 2050, it is expected to be seven times higher than the average for other fuels. In our 2019 Standard Chartered Opportunity 2030 report, we estimate that the total private-sector investment needed in generation and transmission of electricity in all Emerging Markets by 2030 is about USD 4.2 trillion.

The primary driver of this growth is the electrification of the construction, transport, and industrial sectors. Traditional sources of power generation (e.g. oil, gas, diesel) are being gradually replaced by renewable-based power generation.

We expect to see continued growth in the demand and supply of electric vehicles, and this will drive investment opportunities in many related industries – from batteries to semi-conductors. Monitoring technology change is key to picking winners in the sector.





CIRCULAR ECONOMY

A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems. A report from the Ellen MacArthur Foundation demonstrates how applying circular economy strategies in just five key areas (cement, aluminium, steel, plastics, and food) can eliminate almost half of the remaining emissions from the production of goods. This is expected to lead to a reduction of 9.3 billion tonnes of carbon dioxide equivalent in 2050 – equivalent to cutting current emissions from all transport to zero.

The circular economy concept is now a core component of both China's five-year plans and the EU's 2050 Long-Term Strategy to achieve a climate-neutral Europe. Across all industries, corporations are looking into this. For example, the apparel and accessories industries are focusing on more efficient design and manufacturing technologies, using recycled materials to launch new fashion lines. In food and beverage, corporations are looking at how they can minimise waste sent to landfills. Across engineering companies, there is a push to use recycled content, prolong product lifespan through leasing and pay-per-use and take-back schemes into supply chains.

Compelling opportunities can be found across industries, from recycling to waste management, materials technology, packaging and sustainable fashion.

Tackling the overlooked emissions



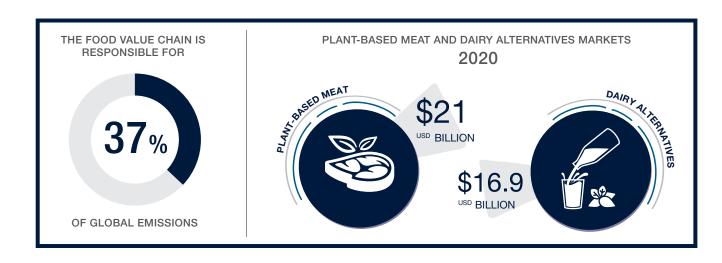
Source: Ellen MacArthur Foundation report: Completing the Picture How the Circular Economy Tackles Climate Change, 23 September 2019



SUSTAINABLE FOOD

According to the Intergovernmental Panel on Climate Change, the food value chain accounts for up to 37% of global emissions. With worsening climate change, credit risk for the agricultural sector is likely to increase, and many meat and dairy players are investing in both alternatives and innovation to address climate implications of their products and to respond to evolving consumer preferences.

Plant-based meat and dairy alternatives have grown in popularity over the last few years, a trend likely to continue. Meat alternatives are expected to become a USD 21 billion industry globally this year while milk substitutes will reach USD 16.9 billion, according to Euromonitor. Despite this, the proportion of meat and dairy substitutes is still tiny compared to the overall meat and dairy markets, at about 5%. Some predictions estimate that this could increase to 50% as consumer demand grows.



Besides the growth of plant-based products, another major trend within sustainable foods is the focus on making the food system fairer, healthier and more environmentally friendly. The Farm to Fork and Biodiversity strategies of the European Union include targets to reduce the use of fertilisers and pesticides in agriculture and to exclude unhealthy ingredients in food and beverages. This is likely to lead to new production methods and the reformulation of processed food.

There is also increased pressure on companies on the overuse of antibiotics, and this is posing increased ESG risks for food producers, restaurants, retailers and pharmaceutical companies. A number of large institutional investors recently announced their backing of Investor Action on Antimicrobial Resistance, with commitments to scrutinise food and medicine companies' use of antibiotics before investing and to engage with businesses in which they already hold stakes to reduce misuse of the drugs.



Water plays a key role in climate change adaptation. Water demand is set to increase in all sectors, and water scarcity is one of the largest global risks in terms of potential impact over the next decade, especially in emerging economies.

Early this year, a survey of about two-thirds of approximately 800 institutional investors surveyed in the United States, Canada, Europe and Asia said concerns over water factored into their investment decisions, placing it behind only cybersecurity and anticorruption as a top ESG consideration.

Amidst concerns around water issues arise opportunities. Standard Chartered's Opportunity 2030 report estimates that the total private sector investment needed in water and sanitation in the world's Emerging Markets by 2030 is an estimated USD 125.4 billion. Investment opportunities in the water space span from water treatment to desalination, water technologies to ensure leak detection and water flow efficiencies, smart irrigation, water conservation and big data to develop solutions.



OVERVIEW OF ENVIRONMENTAL OPPORTUNITIES

The shift towards a new growth trajectory has accelerated, with technology and innovation already pushing the frontiers of what is possible. The risks and costs of inaction are increasing more rapidly than previously recognised, and governments and businesses are now looking at new and transformative ways to build cities, produce and use energy, transport people and goods, and manage waste. This has led to an increasing number of investment strategies that focus primarily on the opportunities of the low-carbon transition and green finance. Investing in sectors such as technology and resource efficiency, waste management, circular economy and sustainable agriculture are just some of the investment opportunities available relating to climate change and environmental issues.

E1.0 Renewable and alternative energy	E2.0 Energy efficiency	E3.0 Water infrastructure and technologies	E4.0 Pollution control	E5.0 Waste management and technologies	E6.0 Environmental support services	E7.0 Food, agriculture and forestry
E1.1 Wind power generation equipment	E2.1 Power network efficiency	E3.1 Water infrastructure	E4.1 Pollution control solutions	E5.1 Waste technology equipment	E6.1 Carbon and other environmental assets trading	E7.1 Sustainable and efficient agriculture
E1.2 Solar energy generation equipment	E2.2 Industrial energy efficiency	E3.2 Water treatment equipment	E4.2 Environmental testing and gas sensing	E5.2 Recycling and value added waste processing	E6.2 Environmental consultancies	E7.2 Logistics, food safety and packaging
E1.3 Other renewables equipment	E2.3 Buildings energy efficiency	E3.3 Water utilities	E4.3 Public Transportation	E5.3 Hazardous waste management	E6.3 Diversified environmental	E7.3 Sustainable forestry and plantations
E1.4 Renewable energy developers and IPPs	E2.4 Transport energy efficiency	E3.4 Diversified water infrastructure and technology		E5.4 General waste management		
E1.5 Biofuels	E2.5 Consumer energy efficiency			E5.5 Diversified waste and technology		
E1.6 Diversified renewable and alternative energy	E2.6 Diversified energy efficiency					

Source: FTSE Environmental Markets Overview, Standard Chartered

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