Energy transition: 7 benefits of investing in green energy

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1. **Clean energy investment has increased nearly 50%, reaching $1.8 trillion in 2023**
2. **There are evolving opportunities across generation and transmission networks**
3. **Technological advances in battery storage and big industry expand the possible for investors**

In the next five years the world will deliver more energy from renewable sources than it did in the last 100 years. With the demand for electricity ever increasing, it's an opportune time to be investing in and financing renewable energy infrastructure across both generation and supply networks, writes Tania Duncan.

There's a lot of opportunity in the energy transition. Though this isn't news, it is picking up speed with the International Energy Agency's (IEA) January 2024 report finding that last year renewable energy grew faster than it has in the last 30 years, with solar photovoltaic (PV) technology leading the way.

This means that, globally, the world could be on track to fulfil the ambitious target set at COP28 in December 2023 – to triple global energy generation capacity from renewables by 2030.

The first edition of the IEA's Clean Energy Market Monitor reports that between 2019 to 2023, clean energy investment increased nearly 50%, reaching $1.8 trillion in 2023 and growing at around 10% a year across the period. The report goes on to lay out how the sector contributes to the global economy and where

opportunities lie, as most of the activity is in China and in advanced economies.

With onshore wind and solar now cheaper in all countries than new fossil fuel plants, renewables will soon overtake coal as the leading source of energy in the world.

To further facilitate this transition – and reach or breach the COP28 2030 goal – the IEA identifies certain areas in need of attention. For one, emerging and developing countries will need access to finance to realise their renewable energy goals, and policies across all economies will also need urgent planning and investment in grids to facilitate this growth.

Legislation such as the European Green Deal in 2020, UK's Contracts for Difference (CfD), and the Inflation Reduction Act (IRA) of 2022 in the U.S. are examples that are helping to drive the energy transition and, along with it, the circular economy. The circular economy refers to a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes such as maintenance, reuse, refurbishment, remanufacture, recycling, and composting. It tackles social and environment problems such as biodiversity loss, climate change and pollution by separating economic growth from the consumption of finite resources.

For investors, all this translates into opportunities across the generation and supply networks:

1. **More demand throughout the supply chain**

As the population increases and people's demand for energy continues to rise, so too does the need for increased infrastructure, growing the need for transport, more efficient housing, access to a wider variety of food and goods and the expansion of the communications network to include more people, all of which requires more energy to produce. This can only be done sustainably with the use of renewable energy sources.

Another area that requires ever-increasing energy to power it, is the technology revolution. Every email you send, every AI image you create or haiku you write draws on global energy supply and the demand is growing.

To create sustainable growth the solutions we implement to fill these growing needs must be sustainable too.

2. **Less waste, lower production costs**

One of the benefits of solar, wind and hydro electricity generation is there is no need for thermal generation to produce the electricity. To turn coal into electricity requires heat, and this means that almost 68% of the potential electricity that could be generated is lost in the generation process. Similarly, gas loses 56% of its energy in the generation process, while nuclear loses 67%. By contrast both wind and solar might miss out on potential wind or solar generation, but the loss doesn't cost because there's no heating process to capture it. Hydro has an almost 100% conversion rate. (source: Yale Climate Connections)

This means that investments into the renewable energy generation sector leads to less waste across the value chain.

3. **Transmission loss and storage infrastructure**

Another consideration for investment is the loss of energy that happens – regardless of the power source – during the process of getting the generated electricity to the end user. This averages out at 5% and storage infrastructure is where there are opportunities for investment.

A historical conundrum for renewable energy has always been storage and consistency of supply, the speed at which progress is being made is increasingly making these problems redundant, and their solutions provide long-term investments.

The technological advances in battery storage are significant as a study into patenting activity, supported by the European Patent Office and the IEA, shows. The annual rate of patenting worldwide in electricity storage technologies grew at an average of 14% between 2005 and 2018, four times faster than the average of all technology fields. According to the Sustainable Development Scenario (SDS) of the IEA, close to 10,000 GWh of batteries across the energy system and other forms of energy storage will be required annually by 2040, compared with around 200 GWh today. Finding ways to store large quantities of electricity at an

affordable price is needed to address this requirement. It also offers an increasing investment opportunity.

4. **Big industry**

There's a growing appetite for off-grid renewable energy solutions for heavy industry such as mining operations. Energy intensive industries can invest in their own renewable power sources, which can power energy-hungry processes and then send any excess into the grid for nearby communities. This follows in all sectors where machinery can be developed or adapted to be more energy efficient, offering many investment opportunities. For example, precision agribusiness machinery that saves energy and water. Currently the green hydrogen used to power industrial processes for making ammonia for fertilizers is made from gas. Increasingly it will be made by renewable sources, creating further opportunities for innovative investment in the renewable energy sector. Other examples include next generation zero emission jet fuel, which emits only water vapour when burned.

More on this from our ESG partner Worldfavor 3 high-impact ways the industrial sector can become more sustainable (worldfavor.com)

5. **ESG considerations**

Investing in green energy solutions is an ESG imperative for investors. Globally frameworks and standards are moving towards a more standardised measurement of emissions throughout the value chain.

Buildings or industrial premises can be upgraded to be more energy efficient or even energy generating, feeding the grid, which offers another opportunity for investment. The life of these premises can be extended and environmental impact of the building and its materials reduced, along with its use made more efficient. Buildings can be graded with a Building Research Establishment Environmental Assessment Method (BREEAM) rating. BREEAM is an industry recognised, sustainability rating system, used in over 80 countries to evaluate buildings' environmental performance in a consistent way. Whilst the BREEM grading is not new, it continues to provide a tangible metric and helps support opportunistic investment opportunities across the Real Assets industry.

6. **Circular economy potential**

As renewable energy matures and technology improves there will be scope to upgrade and refit solar and wind farms as well as offer potential investments in recycling the replaced parts. The circular economy offers investment opportunities at each stage in the cycle for entrepreneurs from recycling plants to refurbishing and repairing products and finding innovative ways to extend the usefulness of products.

There are many examples of social entrepreneurial businesses that are part of the circular economy, solving a social or environmental problem while being a profit generating business. Examples include businesses such as Signify, which sells light to businesses rather than light fittings. The company retains the equipment and when the contract is fulfilled, they can reuse or repurpose the materials to prevent waste.

7. **Financing deals**

Opportunities to invest in the sustainable energy supply chain are aided by government policies across most major economies, such as the U.S. Inflation Reduction Act. This Act includes $369 billion in climate and clean energy funding, and is designed to fight pollution, give impetus to clean energy programmes, as well as create jobs and grow the U.S. economy. Signed into law in 2022, within a year it had generated over $278 billion in new investments for local communities and resulted in the announcement of 272 new clean energy projects nationwide.

In the UK, the CfD is the mechanism for supporting large scale renewable energy infrastructure projects by guaranteeing generators what they will be paid, while the EU's Green Deal has passed much legislation to drive the bloc's path to net zero, making sustainability a key success factor for all investments.

Outlook

Throughout the value chain, the energy transition offers a plethora of exciting investment opportunities for fund managers looking to achieve investment returns whilst meeting the increasing ESG expectations of investors.

We support investment managers across a spectrum of renewable energy funds and projects. To discuss the topics in this article further, please contact Tania.