# The renewable energy boom is here

Published 20 February 2024

**Mobeen Tahir**
Director, Macroeconomics and Thematic Research

**The renewable energy boom is here**

In 1839, French physicist Edmond Becquerel discovered the photovoltaic effect when he noted that the cell he was experimenting with produced more electricity when it was exposed to light1. Humble beginnings and serendipitous outcomes are typical of scientific progress. But it took another 15 decades before this technology was used at an industrial scale, in what became the first large-scale solar plant built in California in 1981. Similarly, the origins of using wind power to generate electricity go back well over a century but large-scale wind farms, as we know them today, began appearing on the global landscape around the same time as solar plants.

The world has gradually increased its adoption of renewables, like wind and solar, over the past four decades bringing them from the margins to the mainstream. But now they are experiencing a boom. At COP 28, world leaders pledged to triple global renewable energy capacity by 20302. This is a lofty goal, but it delivers exactly what the world needs from policymakers: an audacious vision and a clear direction of travel.

**The WisdomTree Renewable Energy UCITS ETF (WRNW):**

The WisdomTree Renewable Energy UCITS ETF (WRNW) gives investors a way to capture the growth in renewable energy. WRNW is built in partnership with Wood Mackenzie, who bring deep subject matter expertise in identifying the most promising innovations and relevant companies to create an exposure that best represents the renewable energy theme. In doing so, the product identifies 32 unique subsectors across five categories: raw materials; manufacturing; enablers; application; and emerging technologies. The strategy is primarily exposed to solar and wind power but also recognises other emerging technologies such as green hydrogen. WRNW is classified as SFDR Article 93.

**Are we on track?**

In its January 2024 report on renewables, the International Energy Agency (IEA) provides a status report for where the world is and whether we are on track to meet the target set at COP28. Notably, the report states that global annual renewable capacity additions increased by almost 50% to nearly 510 gigawatts (GW) in 2023, the fastest growth rate in the past two decades. The IEA further state that 2023 was the 22nd year in a row that renewable capacity additions set a record.

These statistics are impressive but may still not be enough to reach COP28's target. The IEA predict that, under existing policies and market conditions, global capacity is likely to increase to 2.5 times its current level by 2030, falling short of the triple goal (see figure below).

**Cumulative renewable electricity capacity**

IEA's pulse check suggests that world leaders have set a reasonably stretching target. To get there, countries will need to remove administrative barriers to renewable energy projects by improving the planning and permitting processes. Naturally, more financing will also be required, especially to help build renewable capacity in emerging economies.

**Why renewable energy works**

In their award-winning 2023 book, "How Big Things Get Done", Bent Flyvberg and Dan Gardner reveal how large projects not only struggle to get completed within budget, most of the time, but that they tend to go significantly over budget. Having said that, among the projects that have the best track record of staying within or as close to budget are wind and solar. The main reason for this is the modularity of these technologies. Large one-off projects, like the construction of a skyscraper, the building of an old-school nuclear power plant, or even a home renovation, are shrouded with so many variables, that the cost of the project is hard to estimate, even for experts.

In contrast, projects that build modular things follow a repeatable process. After learning to build one solar panel or wind turbine, manufacturers simply repeat the process. In doing so, they learn along the way and benefit from economies of scale. This is why solar power costs have come down so dramatically. In 1975, the first solar panels cost about $115.3 per watt3. By the end of 2023, costs have dropped to around 14.5 cents per watt4. These trends give hope that the world might be able to push towards achieving COP28's ambitious goal.

**Investing in the theme**

At WisdomTree, we have worked alongside Wood Mackenzie, experts in the energy transition, to develop the idea of the renewable energy value chain. This gives investors a carefully crafted exposure to the theme that captures all the facets of the industry. The renewable energy value chain is defined as follows:

*Source: WisdomTree, Wood Mackenzie, 2024.*

2023 was, of course, a challenging year for green themes, renewable energy included. Rising interest rates were a headwind for many risk assets but particularly so for renewable energy given large projects often require sizeable financing, something that became challenging with rising rates. Moreover, macroeconomic headwinds penalised Chinese stocks despite the country growing leaps and bounds on renewable energy. According to the IEA, China commissioned as much solar power in 2023 as the entire world in 2022. Its wind additions also grew by 66% year-on-year.

So, although there continues to be substantial growth in the underlying theme, market movements for renewable energy companies have painted a contrasting picture in recent times. At WisdomTree, we believe that 2024 could be the year for this dynamic to correct itself especially once rates begin to come down. For investors, a booming theme underappreciated by markets could present an ideal opportunity.

1 Solarfabric.com, January 2024.

2 United Nations Climate Change Conference held in Dubai from 30 November 2023 to 12 December 2023.

3 Sustainable Finance Disclosure Regulation

4 Avenston, May 2023.

5 Based on estimates from Bloomberg New Energy Finance published in August 2023.

**Related blogs**

+ Battery Solutions: an exciting theme for your 2024 portfolio

+ Five cutting-edge innovations redefining battery technology

## Important Risks Related to this Article

# IMPORTANT INFORMATION

**Marketing communications issued in the European Economic Area ("EEA"):** This document has been issued and approved by WisdomTree Ireland Limited, which is authorised and regulated by the Central Bank of Ireland. **Marketing communications issued in jurisdictions outside of the EEA:** This document has been issued and approved by WisdomTree UK Limited, which is authorised and regulated by the United Kingdom Financial Conduct Authority. WisdomTree Ireland Limited and WisdomTree UK Limited are each referred to as "WisdomTree" (as applicable). Our Conflicts of Interest Policy and Inventory are available on request. For professional clients only. Past performance is not a reliable indicator of future performance. Any historical performance included in this document may be based on back testing. Back testing is the process of evaluating an investment strategy by applying it to historical data to simulate what the performance of such strategy would have been. Back tested performance is purely hypothetical and is provided in this document solely for informational purposes. Back tested data does not represent actual performance and should not be interpreted as an indication of actual or future performance. The value of any investment may be affected by exchange rate movements. Any decision to invest should be based on the information contained in the appropriate prospectus and affer seeking independent investment, tax and legal advice. These products may not be available in your market or suitable for you. The content of this document does not constitute investment advice nor an offer for sale nor a solicitation of an offer to buy any product or make any investment. An investment in exchange-traded products ("ETPs") is dependent on the performance of the underlying index, less costs, but it is not expected to match that performance precisely. ETPs involve numerous risks including among others, general market risks relating to the relevant underlying index, credit risks on the provider of index swaps utilised in the ETP, exchange rate risks, interest rate risks, inflationary risks, liquidity risks and legal and regulatory risks. The information contained in this document is not, and under no circumstances is to be construed as, an advertisement or any other step in furtherance of a public offering of shares in the United States or any province or territory thereof, where none of the issuers or their products are authorised or registered for distribution and where no prospectus of any of the issuers has been filed with any securities commission or regulatory authority. No document or information in this document should be taken, transmitted or distributed (directly or indirectly) into the United States. None of the issuers, nor any securities issued by them, have been or will be registered under the United States Securities Act of 1933 or the Investment Company Act of 1940 or qualified under any applicable state securities statutes. This document may contain independent market commentary prepared by WisdomTree based on publicly available information. Although WisdomTree endeavours to ensure the accuracy of the content in this document, WisdomTree does not warrant or guarantee its accuracy or correctness. Any third party data providers used to source the information in this document make no warranties or representation of any kind relating to such data. Where WisdomTree has expressed its own opinions related to product or market activity, these views may change. Neither WisdomTree, nor any affiliate, nor any of their respective officers, directors, partners, or employees accepts any liability whatsoever for any direct or consequential loss arising from any use of this document or its contents. This document may contain forward looking statements including statements regarding our

belief or current expectations with regards to the performance of certain assets classes and/or sectors. Forward looking statements are subject to certain risks, uncertainties and assumptions. There can be no assurance that such statements will be accurate and actual results could differ materially from those anticipated in such statements. WisdomTree strongly recommends that you do not place undue reliance on these forward-looking statements. WisdomTree Issuer ICAV The products discussed in this document are issued by WisdomTree Issuer ICAV (“WT Issuer”). WT Issuer is an umbrella investment company with variable capital having segregated liability between its funds organised under the laws of Ireland as an Irish Collective Asset-management Vehicle and authorised by the Central Bank of Ireland (“CBI”). WT Issuer is organised as an Undertaking for Collective Investment in Transferable Securities (“UCITS”) under the laws of Ireland and shall issue a separate class of shares ("Shares”) representing each fund. Investors should read the prospectus of WT Issuer (“WT Prospectus”) before investing and should refer to the section of the WT Prospectus entitled 'Risk Factors' for further details of risks associated with an investment in the Shares. Notice to Investors in Switzerland – Qualified Investors This document constitutes an advertisement of the financial product(s) mentioned herein. In Switzerland, this communication is only targeted at Qualified Investors.

The prospectus and the key investor information documents (KIID) are available from WisdomTree's website: **https:** //www.wisdomtree.eu/en-ch/resource-library/prospectus-and-regulatory-reports

For Investors in France The information in this document is intended exclusively for professional investors (as defined under the MiFID) investing for their own account and this material may not in any way be distributed to the public. The distribution of the Prospectus and the offering, sale and delivery of Shares in other jurisdictions may be restricted by law. WT Issuer is a UCITS governed by Irish legislation, and approved by the Financial Regulatory as UCITS compliant with European regulations although may not have to comply with the same rules as those applicable to a similar product approved in France. The Fund has been registered for marketing in France by the Financial Markets Authority (Autorité des Marchés Financiers) and may be distributed to investors in France. Copies of all documents (i.e. the Prospectus, the Key Investor Information Document, any supplements or addenda thereto, the latest annual reports and the memorandum of incorporation and articles of association) are available in France, free of charge at the French centralizing agent, Societe Generale at 29, Boulevard Haussmann, 75009, Paris, France. Any subscription for Shares of the Fund will be made on the basis of the terms of the prospectus and any supplements or addenda thereto. For Investors in Malta This document does not constitute or form part of any offer or invitation to the public to subscribe for or purchase shares in the Fund and shall not be construed as such and no person other than the person to whom this document has been addressed or delivered shall be eligible to subscribe for or purchase shares in the Fund. Shares in the Fund will not in any event be marketed to the public in Malta without the prior authorisation of the Maltese Financial Services Authority. For Investors in Monaco This communication is only intended for duly registered banks and/or licensed portfolio management companies in Monaco. This communication must not be sent to the public in Monaco.