

# Mapping the way towards a low-carbon world

CAPABILITY STORY

August 2020

## Challenge

Governments, businesses and investors needed a tool to measure the changes required for sectors and countries to meet the maximum 2°C global warming target.

## Criteria

Assess the alignment of a sector with its country's 2°C carbon budget, calculate the reductions necessary to meet the target, measure financing needs and stranded asset risk.

## Solution

The Climate Technology Compass is a free, web-based tool to measure climate transition pathways across 100+ countries and eight sectors.

## The climate risk measurement challenge

To meet the goals of the Paris Climate Agreement, countries around the world need to reallocate investment towards the low carbon economy on a massive scale. To tackle this issue, that belongs to common good, the coordination of efforts from the public policies and private sector is required, specifically for the following three groups of market players.

Governments have to set the policy frameworks to support investment in climate-friendly technologies. Corporations will have to develop those technologies. And investors will need to provide finance through the equity and bond markets or via infrastructure projects. Measuring the scope of these efforts is a significant challenge for all involved.

## Calculating transition pathways

To achieve the above, a roadmap of the investments, energy capacity and emissions reductions required for sectors and countries to meet the maximum 2°C global warming target—or country-specific Nationally Determined Contributions (NDCs)—is a prerequisite.

The transition pathways measurement tool should cover the high-emission sectors where technological change and greenhouse gas reductions are most critical (automotive, aviation, shipping, power generation, cement, steel, agriculture and real estate).

And it should allow investors to assess financing needs and the risks of stranded assets. The measurement tool should therefore:

- Build sectoral transition pathways at the country level
- Align with country NDCs or a 2°C scenario
- Cover the sectors where greenhouse gas reductions are most critical
- Allow for the measurement of financing needs and stranded asset risk

## Solution—the Climate Technology Compass

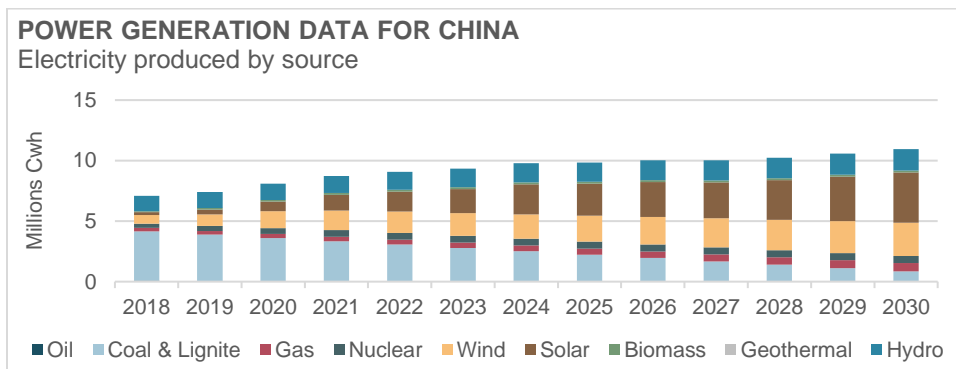
The [Climate Technology Compass](#) is a free, web-based tool that addresses the key informational gaps faced by governments, corporations and investors, developed by Beyond Ratings and 2° Investing Initiative.

Users can consult indicators such as expected demand and production, emissions, technology mix and carbon intensity. These are available for 100+ countries across eight sectors, under both a 2°C climate change scenario and for country-specific NDCs.

The Compass combines two elements: a bottom-up data aggregation approach, based on a high-resolution database of physical assets; and a top-down model that computes national carbon budgets based on a comprehensive set of variables and over 2 million simulations of possible emissions reductions per country. The sum of all sector-level emissions targets is equal to the overall country-level carbon budget.

### Example: power generation in China

Power generation data for China provide an example of how the Compass can be used to calculate an individual sector's transition pathway.



Source: Climate Technology Compass, Beyond Ratings & 2°C Investing Initiative

The chart shows the evolution of the different sources of power in China over the period between 2018 and 2030, calculated for the country to achieve its 2°C greenhouse gas emissions target.

The share of coal in the power generation mix would decrease to less than 10% in 2030 (compared to more than 60% in 2018), quantifying the risk of significant stranded assets in coal. In contrast, renewables (mainly solar and wind) would represent a much greater share of the energy mix and would therefore require much higher levels of investment.

#### Additional information

[Access more information about the Climate Technology Compass.](#)

Further information on our range of products and services is available at [beyond-ratings.com](#)

## About Beyond Ratings

Founded in 2014, Beyond Ratings, a highly regarded provider of Environmental, Social and Governance (ESG) data for fixed income, provides innovative services to assist the financial sector in the transition towards a sustainable economy. Beyond Ratings leverages in-house expertise on climate/ESG, data science, and financial risk assessment for over 175 countries and 10,000 companies. Beyond Ratings is part of the Information Services Division (ISD) of London Stock Exchange Group (LSEG), which also includes the global index provider, FTSE Russell.

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