Research Institute
Carbon neutrality

July 11, 2022

DWS

Marketing Material

The corporate journey to carbon neutrality

Deploying renewable energy to lower companies' carbon footprint


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IN A NUTSHELL

- Research indicates that publicly listed companies account for 40% of global greenhouse gas (GHG) emissions[1]
- Nearly half of the largest publicly traded companies have committed to reduce their emissions[2]
- Today, around 370 companies are RE100 members committed to sourcing 100% of their electricity from renewable sources. Combined, they consume more electricity than the entire UK economy and are sourcing 45% of their electricity needs through renewables[3]
- More than 2,250 companies are working towards setting science-based targets and commitments to reduce their GHG emissions, equivalent to more than a third of global market capitalization[4]
- China will be central to corporate ambition since the country is the world's largest emitter of greenhouse gases in volume terms and houses one third of global manufacturing
- Asset managers are providing innovative investment solutions to multinationals as they look to invest in renewable strategies

1 / Terminology

In the effort to curb global warming following the Paris Agreement, many governments, corporations, and investors have pledged to reduce greenhouse gas (GHG) emissions down to zero in net terms by 2050. Terms like "carbon neutrality", "net-zero", and "decarbonization" have been around for a while, but in the last few years, they have become if not the central part of corporate strategies, then at least requiring thoughtful consideration as investors and consumers increasingly demand action.

Carbon neutrality means that any CO_2 released into the atmosphere from a company's activities is balanced by an equivalent amount being removed, for example with the use of offsets. Although sometime used interchangeably, net zero is different. Net zero means making changes to reduce emissions to the lowest amount – and then only offsetting the remaining emissions as a last resort. Net zero also extends beyond CO_2 and includes other GHGs, such as methane and nitrous oxide. Decarbonization encompasses all measures through which a business sector or a company reduces their.

[1] Generation Investment Management (October 2021). Listed company emissions
[2] The Net Zero Tracker (June 2022)
[3] RE100, Climate Group, CDP (January 2022). Stepping up: RE100 gathers speed in challenging markets
[4] Science Based Targets (June 2022). Scaling urgent corporate climate action worldwide

carbon footprint, primarily its GHG emissions, in order to reduce its impact on the climate. This also includes direct air capture and storage (DACS) of CO_2.

Companies have the most control over, and ability to reduce, the operational emissions which they produce directly (scope 1) or indirectly through the purchase of energy (scope 2). Emissions linked to a company's supply chain and to the use of its products or services (scope 3) are more difficult to control. This is important since for many companies, scope 3 accounts for more than 80% of their overall climate impact.[5]

2 / Approaches to reduce GHG emissions

Companies can achieve carbon neutrality either by reducing emissions from their operations through higher energy efficiency or through the use of renewable energy, or by carbon offsetting. With a carbon offset, a business, a government, or an individual can pay someone else to cut or remove a given quantity of greenhouse gases from the atmosphere. Right now, some of the most popular offsets involve nature-based solutions like coastal wetlands and forest restoration projects or switching to restorative agricultural practices. But the types of projects which are suitable to generate carbon offsets also include renewable energy, methane abatement, energy efficiency, and fuel switching. The effectiveness and actual climate impact of offsetting has been widely questioned, but credible offsets can be a short- to mid-term solution for industries and companies without immediate alternatives to decarbonization.

One of the most effective ways to address operational and supply chain emissions is to reduce fossil fuel consumption by transitioning to renewable energy (RE). A variety of approaches can be employed to access RE. Self-generation from facilities owned by a company is widely recognized as a high-impact practice to reduce scope 2 emissions. Some market-based instruments also have a high likelihood of driving new renewable energy capacity, and hence contributing to real-world emissions reductions. These include entering into Power Purchase Agreements (PPAs) with individual renewable energy producers, direct acquisition of a renewable energy project as a majority or minority owner, and investment through a pooled investment vehicle in renewable energy projects. Among low-impact market-based instruments is the procurement of renewable energy credits or of carbon credits. Both facilitate a reduction in scope 2 emissions, from an emissions accounting point-of-view, but are unlikely to drive real-world change.

3 / Standard setters drive transparency and traceability

To help companies on their decarbonization journey, several not-for-profit organizations and initiatives have appeared over the past few years. **CDP**--formerly the Carbon Disclosure Project--was founded in 2000 and has played a key role in creating the global disclosure system for companies, investors, cities, states, and regions to manage their environmental impacts. In 2021, disclosing companies accounted for over 64% of global market capitalization, including 96% of the FTSE 100, over 80% of the S&P 500, and more than 1,500 companies in China. The total number of disclosing entities reached more than 14,000 compared to less than 300 in 2002.[6]

In 2015, the CDP, in collaboration with the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), launched the Science Based Targets Initiative (**SBTi**) which helps companies set science-based climate goals consistent with the Paris Agreement. SBTi also conducts independent verification of these goals. In 2021, the number of companies setting and committing to set science-based targets doubled to 2,253, compared to 2020. SBTi companies now cover over a third (35%) of global market capitalization--up from 20% in 2020 and equal to $38 trillion. In 2021, the SBTi High Impact Sample--which represents the largest companies by market capitalization and emissions worldwide--reached a critical mass, surpassing the threshold with more than a quarter (27%) setting science-based targets.[7].

[5] World Economic Forum (January 2021). Net-Zero Challenge: The supply chain opportunity

[6] Accelerating the rate of change: CDP Strategy 2021-2025

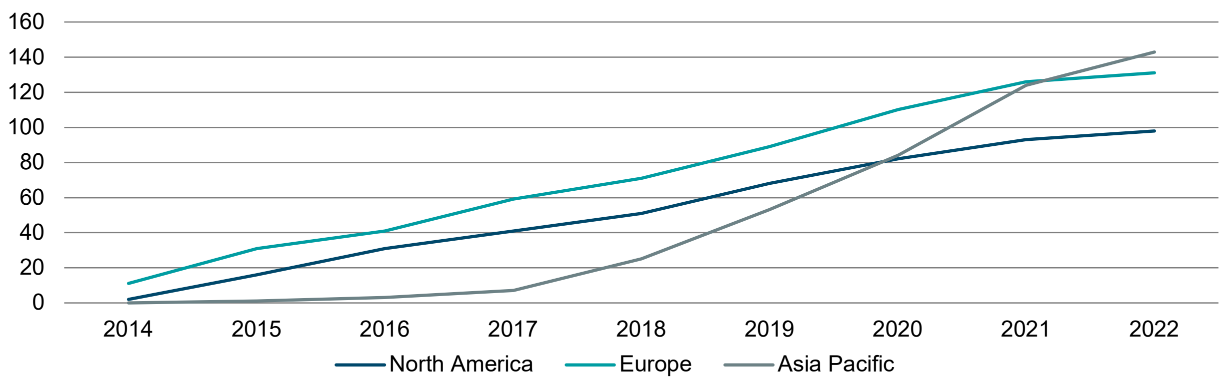
[7] Science Based Targets (May 2022). SBTI Progress Report 2021

RE100 is another important initiative from the CDP which was created in partnership with the Climate Group in 2014. RE100 is a coalition of companies committed to transitioning to 100% renewable energy. The coalition includes 373 members as of June 2022 and has been growing at 25% annually for the last few years[8]. From the onset, most signatories were companies with headquarters located in North America or Europe. However, in the last few years, the initiative has seen strong growth in Asia-Pacific, accounting for 62% of new signatories last year, Figure 1.

Research conducted by the Climate Group suggests that there is a direct correlation between companies signed up for RE100 and of those companies achieving above average financial performance as measured by net profit margin and EBIT margin.[9] This outperformance is irrespective of the sector in which the company operates. From our perspective, this indicates that RE100 companies are typically leaders in their respective sectors. Interestingly, a survey[10] conducted by the Climate Group and the CDP in 2018 revealed that 88% of RE100 members cited the economic case as a key driver for joining RE100. Given the rapid decline in renewable power prices over recent years we expect even more companies to make renewable commitments in the years ahead. Increasing desire for energy independence following the Russian invasion of Ukraine may also be a force driving the renewable energy trend.

Both the SBTi and RE100 stress the importance of going beyond setting net-zero or renewable energy targets and emphasize that businesses also need concrete plans to achieve them and importantly, must report on progress in a transparent way. The SBTi plans to release the measurement, reporting, and verification (MRV) framework in 2023 that will provide a clear and standardized mechanism to assess, verify and enhance corporate accountability on progress towards science-based targets. RE100 encourages its members to source their renewable electricity in impactful ways. RE100 emphasizes additions of new renewable electricity generation capacity to be central to impactful procurement methods. For example, the initiative encourages member companies to use direct procurement methods, such as self-generation, direct lines, or Power Purchase Agreements (PPAs) over unbundled Energy Attribute Certificates (EACs), highlighting the importance of market-based mechanisms for RE procurement to be traceable to the source of RE generation.[11]

FIGURE 1: ASIA-PACIFIC ACCOUNTS FOR MAJORITY OF NEW MEMEBERS SIGNING UP TO RE100



Source: RE100 members list as of June 2022. The Climate Group, CDP.

[8] RE100 members list (June 2022)

[9] Capgemini invent, RE100, Climate Group, CDP (September 2018). Making business sense: How RE100 companies have an edge on their peers

[10] RE100 (January 2018). Making business sense: How RE100 companies have an edge on their peers

[11] RE100 annual disclosure report (January 2022). Stepping up: RE100 gathers speed in challenging markets

4 / How can investors support companies with climate goals?

Investors can play a critical role in helping companies and nations to achieve their decarbonization ambitions. One way this can be achieved is through direct engagement with public companies. Investors can draw on their influence as shareholders to encourage companies not only to set up long-term decarbonization goals, but also to ensure that the companies define interim science-based targets and take shorter-term actions to reduce emissions at a pace that is consistent with keeping warming below 1.5-2°C. Investors should also ask for enhanced annual climate disclosures to be able to assess the robustness of companies' business plans to achieve medium- and long-term goals.

In addition to engagement, investors can play a constructive role in the decarbonization of the global economy through capital allocation choices. It has become more apparent that the divestment and exclusion of high-emissions sectors and steering capital to low-emissions sectors such as technology is not a preferred long-term solution. Rather, asset managers can better support decarbonization by investing in 'transition leaders'–companies with credible transition strategies–in each industrial sector.

Large capital investments in often low-margin industries are required to decarbonize the economy by 2050 and most companies will not be able to achieve this level of investment on their own. Governments can assist with the investment cost and provide demand pull for low-carbon products. In addition, taxing carbon at the point of consumption rather than production could not only curb carbon leakage, but hopefully incentivize exporting regions to decarbonize. Investors could therefore engage in the arena of public policy as well as participate in the development of blended finance vehicles or other innovative investment vehicles that could increase flow of capital in net-zero solutions. The next section examines how corporates are investing in private equity strategies focused on renewable energy assets.

5 / Case Study –China's carbon neutrality ambition

In the past twenty years, China has achieved an average annual GDP growth rate of 10% making it the fastest growing economy in the world during the 21st century. However, this rapid economic growth has come at a cost. Today, the country is the largest CO_2 emitter in the world in volume terms, though not in per capital terms[12], and exceeding the emissions of the US and Europe combined. This has significant impacts on the country's air and water quality. The Chinese government has expressed its determination to transform the economy to a more sustainable model with a particular focus on tackling climate change. During the 75th session of the UN General Assembly in 2020, President Xi declared that China will aim to have CO_2 emissions peak before 2030 and to achieve carbon neutrality before 2060.

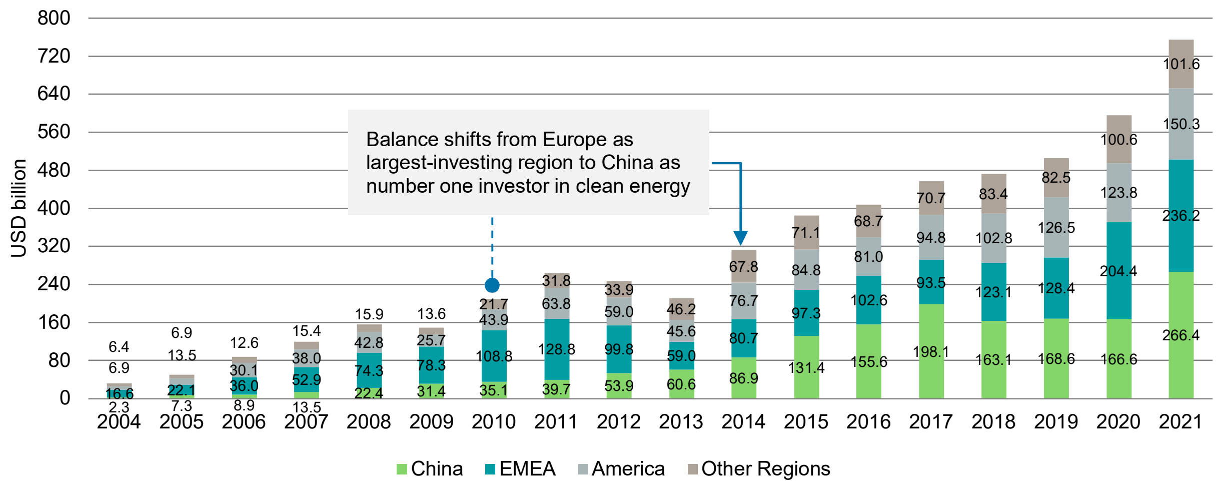
In order to achieve these ambitions, China needs to grow its renewable energy capacity to 90% of total power generation by 2050. In 2020, China's increase in renewable energy capacity represented close to a third of the growth in global renewable energy capacity. Since overtaking Europe as the largest country for clean energy investment in 2014, China has retained this status in every year since then, except 2020, see Figure 2. The 14th Five Year Plan (2021-2025) continues to set aggressive growth targets for solar and wind installations, with the annual renewable power generation forecast to reach 3.3 trillion kWh by 2025 (over half of total electricity consumption over this five-year period).[13]

Although China's plans to fulfill its commitment are just beginning to unfold, the Central Committee of the Communist Party appears to have taken a holistic approach right from the beginning that encompasses all facets of the decarbonization process from conceptualization of a new 2030 Carbon Peaking Action to the process of commercial carbon utilization. These include technological breakthroughs which will support more than 70% of new residential and commercial buildings in urban

[12] Our World in Data (2020) Per capita CO2 emissions https://ourworldindata.org/co2-emissions#per-capita-co2-emissions
[13] China's 14th Five-Year Plan (March 2021)

areas being green buildings by 2022,[14] availability of financial capital for the new 'Zero-Waste City Model' development,[15] and a reduction in carbon intensity per unit of GDP by 18% from 2020 to 2025.[16]

FIGURE 2: GLOBAL NEW INVESTMENT IN CLEAN ENERGY



Source: Bloomberg New Energy Finance (March 2022)

Another approach that the national government has started to use to incentivize corporates to reach carbon neutrality is the creation of carbon markets. China's national emissions-trading scheme (ETS) took effect in 2021 with an objective to incentivize high-emitting industries to transform and to encourage low-carbon production and consumption by putting a price on carbon. The first wave of the ETS required more than 2,200 Chinese coal- and gas-fired power plants to retroactively report their carbon emissions for the previous two years, and retrospectively extend emissions allowances over the same time frame. Rather than cap absolute emissions levels, China's market will impose limits on carbon intensity. Companies that obstruct or delay China's energy transition may be penalized via higher capital costs, regulatory charges or taxes, and reputational risk.

Emission reduction from electricity generation and industrial production in China is required not only for the country to achieve its decarbonization targets, but also for multinational corporations to "green" their supply chains. This prompts a growing number of corporates and their suppliers in China to consider investing in private equity (PE) funds for renewables, making direct investments in clean energy projects, or creating venture capital funds that support the development of technology aimed at reducing carbon emissions and extracting carbon from the atmosphere. These funds can offer corporates an investment opportunity for excess or trapped cash, producing a financial return in addition to carbon credits.

[14] http://www.gov.cn/xinwen/2021-04/08/content_5598427.htm

[15] http://www.gov.cn/zhengce/content/2019-01/21/content_5359620.htm

[16] https://www.reuters.com/article/china-co2-emision-plan-1108-mon-idCNKBS2HT02L

Impact investment case study: Renewable energy private equity strategies

We illustrate an asset manager's efforts to support its corporate clients committed to RE100 and their ambition to green its supply chain. This has proved to be particularly relevant for US-based multinational corporate clients where suppliers have manufacturing plants located in China. The renewable energy strategy enables funding for late development stage and newly constructed renewable clean energy in China. To determine the amount of renewable energy investment required to generate carbon credits sufficient to neutralize a company's carbon footprint, the exercise starts with estimating the company's current MWh used, and then determining the investments required to support expansion in renewable energy projects that would contribute to the generation of renewable energy power. Such an investment strategy may be a first of its kind mandate where corporations are holding suppliers accountable for neutralizing their carbon footprint alongside transparent disclosures and investments in renewables. The benefits for the corporates are twofold. Firstly, rather than buying Green Energy Certificates as a pure expenditure to offset their carbon footprint, they are now able to have more impactful accountability with an investment that yields a financial return. Secondly, the carbon credits come in the form of renewable energy certificates that are directly traceable back to the equivalent MWh of coal power that is neutralized.

6 / Conclusions

It can be argued that corporates are leading the charge when it comes to carbon emission reduction and driving real world outcomes to address the climate crisis. This is welcome since listed companies are thought to be responsible for 40% of climate-warming emissions.

In many instances, multinational corporations are also tackling the most challenging part of their carbon emission footprint, namely the emissions associated with the activities of their suppliers. This presents significant challenges not least since these emissions typically reside in more opaque markets like China or India.

Companies are more likely to resolve the emission challenge when they pursue a variety of solutions, including investing equity in new renewable energy capacity. This allows companies to use their financial resources not only to green their supply chain but also to earn a financial return.

Glossary

Greenhouse gas (GHG) emissions: The primary driver of climate change, predominantly made up of carbon dioxide (CO_2), methane and nitrous oxide

Gross zero: Reducing all GHG emissions from all sources uniformly to zero

Net zero: Allows for residual GHG emissions which are offset using natural and engineered sinks

Carbon neutral: Any CO_2 released into the atmosphere from company's activities is balanced by an equivalent amount being removed

Scope 1: Emissions generated by a company's owned or directly controlled operations

Scope 2: Emissions associated with the generation of purchased electricity

Scope 3: Emissions linked to a company's supply chain and to the use of its products or services

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as of 7/6/22 090851_1 (07/2022)