the Paris Agreement are not yet finalised, existing markets may not provide fully additional effort and reliance on them may present risks to effective mitigation;[46,47] so this is a critical issue.

Governance: Poor governance increases the risk that targets are missed. We characterise governance using three features: whether the entity has published a plan for achieving the target, whether it has clear interim targets on timescales of planning cycles to assure accountability, and whether it has committed to report progress. We also looked for statements specifying that the entity had taken equity into account when setting its target.

We did not attempt to assess whether commitments are internally consistent – for example, whether interim targets provide a realistic pathway to the net zero target – only, whether they exist or not. Evaluating consistency is not a simple question and requires much closer scrutiny of individual targets than we can give.[48] We also did not attempt to measure the impact of meeting net zero targets on projections of global emissions or temperature rise.

Note that the robustness criteria we evaluate for are not a direct check of 'compliance' with the Race to Zero, which has its own defined compliance process.[49] Rather, we make an independent assessment of publicly available information regarding these entities' net zero targets, using our own criteria for robustness that draw on those of Race to Zero. For example, Race to Zero requires entities to have a plan in advance of COP26, while we record whether entities currently have a publicly available plan. Note as well that the Race to Zero does not include nation states, but does include many smaller entities that are not included in the sample of large non-state actors studied here.

We cut off entry to our database, to allow for analysis, on 12th December 2020.

Findings

In total we find that 124 countries, 73 states & regions, 155 cities, and 417 companies in our sample have made some form of commitment to net zero. These figures differ from some previously published estimates because our sample focuses on the largest entities that produce the majority of global emissions.[50] These 769 entities represent 19%, by number of targets, of our total sample: 61% of nations, 9% of states & regions, 13% of cities and 21% of corporates.

46 https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf
47 https://www.tandfonline.com/doi/full/10.1080/14693062.2018.1521332
48 Translating the scientific requirement of global net zero, or global temperature goals, to individual entities is complex. There are essentially two approaches. What we might call the 'microcosm approach' treats each actor as a world unto itself, requiring that all emissions attributable to that actor are either reduced or balanced with sinks. This approach is commonly used by countries, states and regions, and cities, but also by some companies. Alternatively, a 'scenario approach' is based on global scenarios that show what each sector needs to achieve to deliver global net zero for a given temperature goal. Each actor is then assigned a pathway of emissions reductions that corresponds to their share of a given scenario. This approach is used by the Science-based Targets Initiative (SBTI) for corporations and other entities, and is commonly used for corporations generally.
49 For the exact Race to Zero criteria, see: https://unfccc.int/sites/default/files/resource/Minimum-criteria-for-participation-in-RTZ.pdf
50 For example, https://newclimate.org/2020/09/21/accelerating-net-zero-exploring-cities-regions-and-companies-pledges-to-decarbonise/

Countries with net zero targets together represent 61% of global emissions, 68% of global Gross Domestic Product (in PPP terms) and 52% of the global population. Cities and regions whose net zero targets are not subsumed by a higher level of government add a further 4% to the total population covered. However, we were unable to add on estimates for the additional coverage given by states & regions and cities in terms of emissions or share of GDP, as it proved impossible to obtain sufficiently comprehensive and consistent data.

Companies with net zero commitments together represent sales of nearly $14 trillion – 33% of total sales across the top 2,000 public companies – with wide annual variations between sectors. For example, over two thirds of companies (by sales) in the Household & Personal Products sector have net zero targets. In contrast, the lowest coverage by sales is in the Semiconductors sector, at around 5%. Aerospace & Defence is little better, at just over 10%.

Assessing the results of this first 'global snapshot' against the five classes of criteria identified above, we find the following.

Changing tack: Maersk

Shipping may be among the hardest industries to decarbonise, but that hasn't stopped Maersk throwing down the challenge to its competitors. The world's largest container ship company issued its 'net zero by 2050' pledge in December 2018. At the time, Maersk made it clear that because vessels have at least a 20-year lifetime, the first carbon-free ships would need to be operational at the latest by 2030. The pledge covers Scopes 1 and 2 but not yet 3, which may not be ideal, but on the other hand, the company is refreshingly clear about this.

Maersk recently announced that its first carbon-neutral container vessel will be on the water by 2023, seven years ahead of schedule.[1] Powered by carbon-neutral methanol, the Danish giant also promised that every new vessel will be 'dual-fuel', so capable of running on carbon-neutral substances such as methanol or ammonia as well as conventional petroleum-based fuels. According to CEO Soren Skou, what had seemed a 'moonshot' just two years ago was now a 'tough but achievable goal'.[2] Maersk is a founding member of Transform to Net Zero, a cross-sector initiative aiming to shift businesses from net zero ambition to net zero action.[3] Its stated objective is plucked straight from the IPCC's special report on 1.5˚C: 'halve global emissions this decade and get to net zero emissions no later than 2050.' Other members include Microsoft and Unilever.

Despite steering in a direction consistent with its net zero target, this analysis found that Maersk could improve the robustness of its navigations. Maersk has a decarbonisation plan and reports annually on progress (including to CDP),[4] but to enhance the credibility of its target, it could consider moving from an emissions efficiency target (of 60% relative reduction in CO_2 by 2030 from a 2008 baseline) to an absolute reduction target. Setting a Scope 3 target would also send a stronger signal that Maersk is serious about its promise to tackle supply chain emissions. Maersk, like most other companies we scrutinised, could also provide more clarity around how it plans to use and limit offsets.

1 https://www.maersk.com/news/articles/2021/02/17/maersk-first-carbon-neutral-liner-vessel-by-2023
2 https://www.ft.com/content/79bc2ed9-c0c4-4c29-a4bd-e3ec5f3a440e
3 https://transformtonetzero.org/
4 https://www.maersk.com/about/sustainability/reports

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