Targets as drivers of future progress or reflections of past action?

[Aksornchan Chaianong, Sustainability Transition Policy Group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nürnberg, Germany, aksornchan.chaianong@fau.de]
[Silvia Weko, Sustainability Transition Policy Group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nürnberg, Germany, silvia.weko@fau.de]
[Puru Malhotra, Sustainability Transition Policy Group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nürnberg, Germany, puru.malhotra@fau.de]
[Ioannis Milioritsas, Sustainability Transition Policy Group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nürnberg, Germany, ioannis.milioritsas@fau.de]
[Johan Lilliestam, Sustainability Transition Policy Group, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nürnberg, Germany, johan.lilliestam@fau.de]

Overview

Ratcheting up climate ambitions is necessary to meet the Paris Agreement goal of limiting global warming to 1.5 degrees. Countries have, therefore, set themselves targets to limit emissions and, in some cases, increase their shares of low-carbon energy. However, the process behind and function of targets are complex and affected by disparate factors like each country's economic situation, the climate ambitions of the current government, the development and outlook of the needed technologies, and national or international political aspects. Studies, such as (Meckling and Nahm, 2019; Nascimento et al., 2023), suggest that countries use such targets and commitments to signal to the international community and internal actors that they prioritize specific issues or industries, and sometimes an implementation gap exists. Importantly, the relationship between targets and their actual implementation is under-researched, so that presently the meaning and importance of targets remains unclear and often speculative. This is important, because the causality may go in two directions: possibly, targets can reflect ambition and help guide actions towards faster progress on the ground; or targets might rather reflect past progress, thus instead being more virtue signals than signals to guide future actions. In this paper, we address the question of what targets represent and affect, specifically asking whether targets drive decarbonisation progress, or if they are rather reflections of past achievements?

Methods

We build a dataset of renewable electricity and climate (carbon emissions) targets for approximately 150 countries to empirically study the relationship between targets and performance. Importantly, our dataset includes almost all countries, including the severely understudied regions outside the OECD and G20 worlds, especially low-income countries. To allow conclusions for the role of targets in specific types of countries, or during specific phases of the climate and energy transition, we empirically analyze and cluster our target datasets to examine how countries set targets and whether they drive progress.

Results and Conclusions

We find that the role of targets has shifted over time. Initially, up to around 2020, targets were not drivers of future progress but reflections of past achievements. In most cases, the upcoming target had already been achieved at the time of target setting, or it was at or below the linear extrapolation of past progress.

For post-2020 targets, we observe that targets have shifted from reflecting past achievements to signal future ambitions. Some targets, including the EU 2030 targets and all net-zero emissions/100% renewables targets for 2050, exceed past trends significantly, although many countries still have non-ambitious targets following the same logic as before. This requires much faster progress than recent trends, and such targets thus follow a different rationality than before – signalling ambition and seeking to guide future actions, rather than reflecting past progress. In sum, our results offer a nuanced view of the necessity and role of climate and energy targets, as both signals for the future and reflections of the past.

References

Meckling, J., Nahm, J., 2019. The politics of technology bans: Industrial policy competition and green goals for the auto industry. Energy Policy 126, 470–479. https://doi.org/10.1016/j.enpol.2018.11.031

Nascimento, L., den Elzen, M., Kuramochi, T., Woollands, S., Dafnomilis, I., Moisio, M., Roelfsema, M., Forsell, N., Araujo Gutierrez, Z., 2023. Comparing the Sequence of Climate Change Mitigation Targets and Policies in Major Emitting Economies. Journal of Comparative Policy Analysis: Research and Practice 0, 1–18. https://doi.org/10.1080/13876988.2023.2255151