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From Paris to 2°C: Implications of the Contributions

Auteur

Roberta Pierfederici

Senior Research Fellow - Decarbonisation pathways, climate and energy policies

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While the currently submitted national contributions to the new global climate agreement do not yet put the world on track to limit warming to 2 degrees Celsius, they imply an unprecedented acceleration and consolidation of action against climate change in major economies around the world. Moreover, they can serve as an entry point for the deep low-carbon transformation, if the Paris Agreement includes a mechanism to strengthen and broaden policy commitments by 2020 at the latest. This is shown by a [report](#) published by 14 leading research teams within the “Modelling and Informing Low-Emission Strategies” (MILES) project, an international research project funded by the European Commission and coordinated by IDDRI.

The report investigates the concrete implications of INDCs for the low-carbon transformation by and beyond 2030, from energy systems, buildings to transport and industry.

The report shows that **INDCs imply an acceleration and consolidation of action against climate change in major economies around the world. This is particularly true in the electricity sector, where INDCs will further drive the transition towards renewables and other low-emissions forms of electricity production.** In the 5 countries and 1 region assessed individually, carbon dioxide emissions per unit of electricity production fall by about 40% between 2010 and 2030 and renewable electricity becomes the dominant source of electricity production at about 36% of the electricity-mix. **There are similar positive trends regarding energy efficiency**, with the energy intensity of passenger transport, for example, falling by 30% in China, India, the EU, the US, Brazil, and Japan in aggregate.

However, the report highlights that the INDCs would imply uneven progress among the drivers of decarbonisation. Some crucial low-carbon solutions, like CCS, electric vehicles, advanced biofuels, sustainable urban planning, appear unlikely to be developed under the INDCs at the scale and speed required for a 2°C scenario. **This highlights the risks of lock-in into a high carbon trajectory** if action is not strengthened quickly. A clear message is that Post-Paris policy efforts need to stimulate technology innovation, deployment and diffusion in order to drive down costs in such sectors where insufficient progress is being seen.

INDCs lead to a significant reduction of emissions compared to projections based on existing policies and commitments. Nonetheless the global INDC scenario in this report showing emissions of 54 GtCO₂eq³ in 2030 is above the emissions range of cost-effective scenarios consistent with the below 2°C goal as estimated by the IPCC's Fifth Assessment Report (30-50 Gt CO₂e in 2030). **With this level of emissions in 2030, emissions reductions would need to be extremely rapid, more than 4% per year, if the below 2°C objective is to be met.** The INDCs alone, as currently proposed, would imply the need for a dramatic and abrupt shift of course in 2030 and a technically challenging and economically costly rate of transformation thereafter, if the below 2°C goal is to be maintained.

The Paris Agreement can build a bridge between INDCs and 2°C by establishing predictable and credible mechanism for regularly strengthening targets and policies, on a five yearly timeframe with the first strengthening taking place by 2020 at the latest. The report explores such a bridge scenario in which action is strengthened over time, beyond the level of ambition implied by the INDCs. In this scenario, a strengthening of policies and commitments by 2020 allows the overachievement of INDCs and a less costly, more feasible trajectory towards 2°C. It also allows for a smoother reallocation of investment away from high-carbon towards low-carbon technologies and infrastructure, avoiding the risk of stranded assets and economic disruption.

The report highlights that INDCs imply significant change. But they are not yet coherent with the deep transformations required to limit warming to 2 degrees. This highlights the need to get away from a 'incremental' approach to setting climate policy targets. Countries need to consider the pathways to deep transformation of their economy. The report shows that the shoots of this transformation are underway, but not fast or far enough. For future emissions targets, countries should base their proposals on visions of a profoundly different future – deep decarbonisation their economies. The first steps are being taken in the INDCs, what's needed next are comprehensive national pathways.