

The key messages from the 2018 Emissions Gap Report send strong signals to national governments and to the political part of the Tanaloa Dialogue at the 24th session of the Conference of the Parties (COP 24). Along with the recent IPCC Special Report, these messages provide the scientific underpinning for the UN 2019 Climate Summit, which will convene on the theme of 'A Race We Can Win. A Race We Must Win'.

The United Nations Secretary-General will seek to challenge States, regions, cities, companies, investors and citizens to step up action in six key areas: energy transition, climate finance and carbon pricing, industry transition, nature-based solutions, cities and local action, and resilience.

How are we doing?

The definitive measurement of global emissions

1. Current national commitments on emission reduction are not sufficient to bridge the emissions gap in 2030. Technically, it is still possible to ensure global warming stays well below 2°C and 1.5°C, but if countries do not scale up their ambitions before 2030, exceeding the 1.5°C goal can no longer be avoided.

Now more than ever, unprecedented and urgent action is required by all nations. The assessment of actions by the G20 countries indicates that this kind of action is yet to happen; in fact, global CO₂ emissions increased in 2017 after three years of stagnation.

- This year's report presents the latest assessment of global emission levels under full implementation of countries' emissions pledges (or NDCs), and those consistent with least-cost pathways to stay below 2°C and 1.5°C respectively.
- The emissions gap has increased significantly in comparison with previous estimates - especially with regards to the goal to stay below 1.5°C warming. New studies make more cautious assumptions about the possibilities of removing carbon dioxide on a global scale.
- Projections reflecting current nation emission efforts and ambitions imply that if nothing changes, the world will see global warming of about 3°C by 2100, with warming continuing afterwards. If the emissions gap is not closed by 2030, it is very plausible that the goal of a well-below 2°C temperature increase will not be reached.





- While most G20 countries are on track to meet their emission-reduction pledges for 2020 – made at the 2010 United Nations Climate Change Conference – the majority are not yet on a path that will lead them to fulfilling their NDCs for 2030.
 - According to scenarios factoring in current policy and NDC's, global emissions are not estimated to peak by 2030, let alone by 2020.
 - As the emissions gap assessment shows, the world's original level of ambition needs to be roughly tripled to stay within 2°C warming, and increased around fivefold for the 1.5°C scenario.
2. Global greenhouse gas emissions show no signs of peaking. Global CO₂ emissions from energy and industry increased in 2017, following a three-year period of stabilization. Total annual greenhouse gases emissions, including from land-use change, reached a record high of 53.5 GtCO₂e in 2017, an increase of 0.7 GtCO₂e compared with 2016. In contrast, global GHG emissions in 2030 need to be approximately 25 percent and 55 percent lower than in 2017 to put the world on a least-cost pathway to limiting global warming to 2°C and 1.5°C respectively.
- In 2017 greenhouse gas emissions (GHG) - excluding emissions from land-use change - reached a record 49.2 GtCO₂e. This is an increase of 1.1 percent compared to the previous year.
 - Despite modest growth in the world economy, CO₂ emissions remained relatively stable from 2014 to 2016, indicating that global GHG emissions might show signs of peaking. However, preliminary estimates of global CO₂ emissions from fossil fuels, industry and cement for 2017 suggest an increase of 1.2 percent.
 - The main drivers of the increase are higher gross domestic product (GDP) growth (about 3.7 percent) and slower declines in energy, and especially carbon, intensity, compared with the 2014–2016 period.
 - The 2017 increase leaves considerable uncertainty as to whether the 2014–2016 slowdown was driven primarily by short-term economic factors.

What needs to happen?

New insight into the most effective climate actions to reduce the emissions gap

3. The projected gap in 2030 between emission levels under full implementation of conditional National Determined Contributions and those consistent with least-cost pathways to the 2°C target is 13 GtCO₂e.

If only the unconditional NDCs are implemented, the gap increases to 15 GtCO₂e. The gap in the case of the 1.5°C target is 29 GtCO₂e and 32 GtCO₂e respectively. This emissions gap has is showing an increase compared with the 2017 report: this is a result of expanded and more diverse literature on these 1.5°C and 2°C pathways, as prepared for the IPCC Special Report.

- The 2018 Emissions Gap Report draws on a substantial number of new, least-cost scenarios for meeting the 2°C and 1.5°C warming limits.
- Last year 16 scenarios were available for both the 1.5°C and 2°C pathway categories; this year, there are a total of 85.
- These new scenarios are more diverse and often set a lower maximum potential for carbon dioxide removal. This in turn results in a recommendation for deeper emissions reductions over the coming decades, in order to stay within the same overall carbon budget.



Who is doing it?

The latest assessment of Nationally Determined Contributions.

4. In order to achieve the temperature goals of the Paris Agreement, countries need to strengthen the ambition of their Nationally Determined Contributions and increase the effectiveness of domestic policy. To bridge the 2030 emissions gap and ensure long-term decarbonization, countries must also enhance their mitigation ambitions. By scaling up the ambition in their NDCs, nations send an important signal regarding mitigation commitments, both internationally and domestically. However, to translate mitigation ambition into action, it is the domestic policies that are crucial.
 - Ambition in the context of the Emissions Gap Report can be viewed as a combination of target-setting, preparedness to implement and a capacity to sustain further reductions over time.
 - Major gaps in coverage and strictness of domestic policies remain, including among G20 members. For example, gaps are seen in fossil fuel subsidy reduction, material efficiency measures in industry, oil and gas methane, support schemes for renewables heating and cooling, emission standards for heavy-duty vehicles, and e-mobility programmes.
 - Even in areas where policy coverage is high, stringency can be improved, for example in the support of renewables in the electricity sector.
 - **The technical potential for reducing GHG emissions is significant and could be sufficient to bridge the emissions gap in 2030.** A large part of this potential can be realized through scaling up and replicating existing policies that simultaneously contribute to key sustainable development goals.

Expanding climate action:

The untapped emissions reduction potential from the private sector and sub-national level

5. Non-state and subnational action plays an important role in delivering on national pledges. Non-state and subnational action could potentially allow countries to raise their ambition. However, current impacts are extremely limited and poorly documented.
 - Action by non-state and subnational actors (NSAs), including regional and local governments and businesses, is key to realizing greenhouse gas emissions. However, the impact of current individual NSA pledges on reducing the emissions gap is extremely limited. If international cooperative initiatives succeed in increasing their membership and ambition, much greater potential can be realized
 - To enhance the credibility of NSA action, monitoring and reporting of actions and resulting emissions reductions will be essential.



Funding climate action:

New analysis of global emissions in the context fiscal policy

6. Fiscal policy reform can play a key role in creating strong incentives for low-carbon investments and reducing greenhouse gas emissions. Revenues from carbon pricing can be used for reducing other taxes, increase spending on social issues and/or compensating low-income households.

Well-designed fiscal reform packages can reduce the costs of mitigating emissions, thereby making these fiscal reforms more socially acceptable. The use of carbon pricing to reduce greenhouse gas emissions is only just taking off in many countries and not applied at scale large enough to facilitate a real shift towards low-carbon societies.

- Fiscal policy is a key government tool for managing and influencing the national economy and can be used to tax fossil fuels or subsidize low-emission alternatives as a way of influencing carbon emissions and ultimately investments in the energy sector.
- Fiscal policies provide a key opportunity for reducing future emissions, and there are options to design them to deliver the desired results without creating economic and social problems. Several countries have demonstrated that it is possible to overcome social resistance against such policies, but few have gone far enough to have the necessary emissions reduction impact.
- In most countries, fiscal policy is not yet geared towards delivering the required transition to a low-carbon economy. Effective carbon prices are too low and inconsistent, and the broader fiscal policy framework is often poorly aligned with climate policy goals
- Studies show that a carbon tax of US\$70/tCO₂ in addition to existing measures could reduce emissions from just above 10 percent in some countries to more than 40 percent in other countries. Furthermore, in developing and emerging economies, an additional carbon tax of this order could raise the equivalent of 2 percent of GDP in public revenue.

Inventing climate action:

The current pace of climate action innovation

7. Accelerating innovation is a key component of any attempt to bridge the emissions gap, but it will not happen by itself. Combining innovation in the use of existing technologies and in behaviour with the promotion of investment in new technologies and market creation has the potential to radically transform societies and reduce their greenhouse gas emissions.
- Innovation policy and market creation also offer significant mitigation potential and governments should play a key role in ensuring the development and market introduction of new and emerging low-carbon technologies and practices.
- Based on an assessment of existing studies of what works, there are five key principles or 'success factors' that policymakers should consider when designing policies and programmes to accelerate low-carbon innovation:
 1. Public organizations must be willing to take on the high, early-stage risk that private organizations shy away from.



2. At the mid-stage of the innovation chain, public organizations must be able to nurture feedback effects among different parts of the innovation landscape and help de-risk private investment in commercial-scale projects.
 3. Green policies must set a direction for the whole economy, not for each sector separately.
 4. Mission-oriented innovation is useful for stimulating investment and innovation across different parts of the economy to reach concrete, target-specific goals, such as X percent cost reduction in a specific low-carbon technology, by a specific date.
 5. Policy instruments need to be structured to mobilize actors through bottom-up exploration and participation. All these policies benefit from a long-term design horizon that creates certainty for private finance to be crowded in.
- While these principles apply to countries at any stage of economic development, a country's financial resources and technological capacity determine what types of concrete policies are most appropriate.