Climate Action Tracker

10 STEPS

THE TEN MOST IMPORTANT SHORT-TERM STEPS TO LIMIT WARMING TO 1.5°C

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SUMMARY

Limiting global temperature increase to 1.5°C requires major transformations that need to begin immediately. We provide insights on the ten most important steps that need to be taken in specific sectors in the short term—to 2020 and 2025—if the Paris Agreement temperature goal is to be met.

We used modelled scenarios to provide guidance on what needs to happen in each sector. The stringency of the 1.5°C limit significantly constrains the levels of freedom to spread emission reductions across sectors, countries and over time.

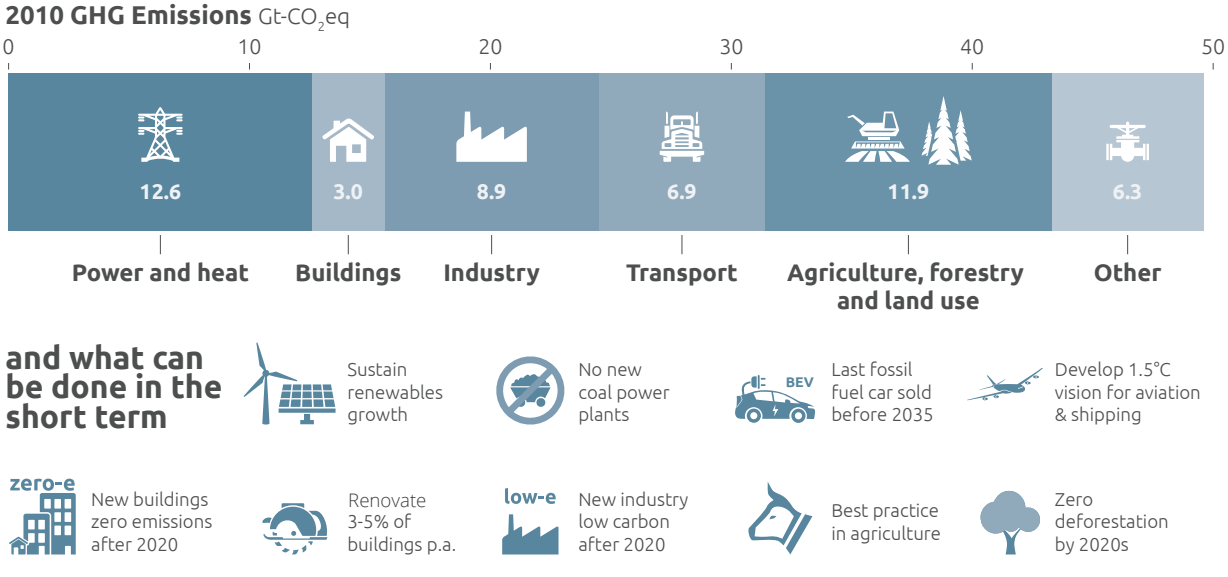
As a result of the limited carbon budget, combined with the inertia of energy, transport, industry technologies and systems, and the difficulty of reducing emissions in some sectors, global energy models find only limited pathways.

If a sector does less, in particular the energy, industry and transport sectors, it would leave a high-emissions legacy for several decades and would mean a failure to set in motion the system changes needed to achieve the required long-term transformation.

Efforts in all of these sectors that begin by 2020, and accelerate by 2025, will be needed to reach zero carbon dioxide emissions by mid-century, and zero greenhouse gas emissions overall roughly in the 2060s.

For all ten elements we show there are signs that the transition of this magnitude is possible: in some specific cases it's already happening. Achieving these ten steps in the period to 2020 and 2025 would put the world on a pathway to limit global temperature increase to 1.5°C.

Global GHG Direct Emissions by Sector



Source: Own elaboration based on emissions data from IPCC AR5 WG3. Chapter 1.

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1 ELECTRICITY: SUSTAIN THE GROWTH RATE OF RENEWABLES AND OTHER ZERO AND LOW CARBON POWER UNTIL 2025 TO REACH 100% BY 2050

All 1.5°C pathways foresee a fully decarbonised power system by 2050. This implies a power system consisting entirely of renewables and other zero and low carbon sources. Of the carbon-free options, renewables are showing the most promise, and their current growth must be sustained until 2025. Rapid action is required to ensure our power systems are ready for them. Policymakers can set boundary conditions and design electricity markets in a way that allows integration of high shares of renewables.

2 COAL POWER: NO NEW COAL PLANTS, REDUCE EMISSIONS FROM COAL POWER BY AT LEAST 30% BY 2025

To close the gap between current ambition and what is needed for 1.5°C, while simultaneously limiting stranded assets, no new coal-fired power plant can be built. There must be consistent efforts to reduce emissions from current coal-fired power plants—by at least 30% by 2025—through, for example early plant retirement or reducing the running time of existing power plants. By 2030, emissions from coal plants should be down by 65%. Fossil fuels often incur externalities, imposing negative effects (such as health-related and environmental damages) on unrelated third parties, and these need to be included in the price of energy. Fossil fuel subsidies should also be phased out (by the very latest) by 2030. The G20 has an opportunity in 2017 to act on both fronts: to follow the G7 in its commitment to end fossil fuel subsidies by 2025 and to introduce carbon pricing to address external costs.

3 ROAD TRANSPORT: LAST FOSSIL FUEL CAR SOLD BEFORE 2035

The sales of electric vehicles, which can be zero-emission if powered by non-fossil electricity, have skyrocketed in recent years in several countries. While they still represent only a small share of overall car stock, zero-emissions vehicles would have to constitute 100% of newly-sold vehicles worldwide before 2035 to be compatible with a 1.5°C vision. At the same time, strong modal shifts, as well as efforts to decrease emissions from freight transport, are needed to decarbonise the entire sector.

4 AVIATION AND SHIPPING: DEVELOP AND AGREE ON A 1.5°C COMPATIBLE VISION

The aviation and shipping sector is lacking coordinated efforts and ambition to develop emission reduction targets and drive mitigation. In fact, there appears to be no overall vision on how the aviation and shipping sector could decarbonise to be in line with 1.5°C pathways, which essentially means zero CO_2 emissions in a few decades. However, there is significant untapped potential through increased efficiency, the use of biofuels and a reduction in travel demand. Therefore, to be in line with 1.5°C, both sectors should drive adoption of existing technologies as well as develop and agree on a 1.5°C-compatible vision.

5 NEW BUILDINGS: ALL NEW BUILDINGS FOSSIL-FREE AND NEAR ZERO ENERGY BY 2020

A 1.5°C pathway demands rapid and near complete phase-out of direct emissions from buildings by 2050. It is easier and cheaper to build efficient buildings than to retrofit later. There is significant potential, especially for rapidly growing economies, to construct future-proof building stock now, but action is too slow. Policies can catalyse change through setting minimum building standards, extending obligations from public buildings to the whole economy, and through providing low-interest loans.

6 BUILDING RENOVATION: INCREASE RATES FROM <1% IN 2015 TO 5% BY 2020

A 1.5°C pathway demands rapid and near complete phase-out of emissions from buildings. Long lifetimes mean that only standards for new buildings—as described in the previous point—are not sufficient: existing stock also needs to be retrofitted. To transform the entire current standing building stock before 2050, we need to more than triple our current retrofit rates within five years. Governments can help through offering cheap loans and setting retrofit obligations.

7 INDUSTRY: ALL NEW INSTALLATIONS IN EMISSIONS-INTENSIVE SECTORS ARE LOW-CARBON AFTER 2020, MAXIMISE MATERIAL EFFICIENCY

In a 1.5 °C scenario, industrial emissions need to be reduced by well over 50% from current levels by 2050, while industrial production is expected to grow significantly. From 2020 onwards, all new installations need to be built according to the best available low carbon technology standard, which excludes building conventional blast furnaces. Also necessary is further development and rapid introduction of new technology, down to near-zero emission steelmaking. Similar approaches are needed for other sectors, like cement, ammonia and petrochemicals. The sector also needs to maximise material efficiency to reduce primary material production.

8 LULUCF: REDUCE EMISSIONS FROM FORESTRY AND OTHER LAND USE TO 95% BELOW 2010 LEVELS BY 2030, STOP NET DEFORESTATION BY THE 2020s

Policies to decrease emissions of LULUCF have to be part of an integrated approach, taking into account energy, land-use management and agriculture to optimise synergies. There are a variety of ways to address the issues of conflicts over land use, such as agroforestry, proper land tenure systems, alternatives for heating, and improving the international trade system to deal with illegal logging. Many solutions for LULUCF lie with community-based options. Financial support mechanisms must be urgently operationalised, and channels improved to finance and modernise agricultural systems (which should also lead to increased resilience to climate disasters and reduced pressure on forests). It is also clear that action in the LULUCF sector cannot be used as an excuse to do less in other areas. There is a long history, and on-going attempts, to use forest sinks to offset obligations to reduce emissions from energy, industry and transport sectors in a number of countries, such as Australia, Canada, New Zealand, Brazil and Indonesia.

9 COMMERCIAL AGRICULTURE: KEEP EMISSIONS AT OR BELOW CURRENT LEVELS, ESTABLISH AND DISSEMINATE REGIONAL BEST PRACTICE, RAMP UP RESEARCH

Emissions in agriculture are growing; the biggest contribution comes from livestock rearing (55%), followed by synthetic fertilisers (12%), and rice cultivation (10%). Even within regions, the large range of agricultural practices means there is significant emissions reduction potential (up to 20%) from adopting best practice within that region. There is additional potential from healthy diets, food waste reduction and advancing research and development.

10 CO_2 REMOVAL: BEGIN RESEARCH AND PLANNING FOR NEGATIVE EMISSIONS

In large part due to insufficient emissions reductions realised to date, negative CO_2 emissions will unfortunately be necessary at scale from mid-century to limit warming to 2°C, and even more for 1.5°C. As explained in all other sections of this report, early and rapid action now across the full range of mitigation options, and to protect and enhance natural ecosystems so that they can retain and store more carbon, are all needed to minimise the need for negative CO_2 emissions. If action to reduce CO_2 emissions slows in the near future, this will increase the need for negative CO_2 emissions technologies, but at this point it cannot be eliminated. Even the most rapid action plausible—to reduce CO_2 emissions to zero before 2050 and to significantly reduce other GHGs—will unfortunately not eliminate the need for sizeable negative CO_2 emissions after mid-century.

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