

Input to the Talanoa Dialogue

2 April 2018

The outputs from research activities, that NewClimate Institute undertook with various partners, are presented below as inputs to the Talanoa Dialogue, organised along the themes mitigation and finance/support and along the main questions of the dialogue: “Where are we?”, “Where do we need to be?” and “How do we get there?”.

1 Mitigation

1.1 Where are we compared to where we need to be?

1.1.1 Are all Parties preparing, communicating and maintaining successive nationally determined contributions?

The preparation process of nationally determined contributions (NDCs) has led to significant learning and political push in many countries, but political momentum needs to be sustained to drive implementation and anchor the Paris ambition mechanism in national and sectoral processes: The biannual NDC Update Report of the [Ambition to Action project](#) provides insights on progress of implementation of the NDC process. Key observations include that countries are generally upbeat about progress achieved, however, policy coherence in the form of alignment of national and sector policies remains a key challenge. Recognition of the continuous ambition raising process and the need to develop long-term (decarbonisation) strategies seems to be lacking, particularly at the sector level. Many countries predominantly focus on immediate NDC implementation without a longer-term view on how to raise ambition. In addition, coordination of the technical and political processes associated with the NDC revision is challenging given often limited institutional capacities.

Countries only start to explain how their NDCs are fair in context of the Paris Agreement’s goals on mitigation: Reported information on why the NDC is a fair contribution is still limited. [A review of all NDCs](#) revealed that the most common equity indicator used in mitigation NDCs is the country’s ‘small share’ of global emissions, followed by per capita emissions. The emissions of individual ‘small share’ NDCs add up to 24% of annual global emissions.

The majority of NDCs are not in line with a fair contribution to meet the Paris Agreement’s long-term warming limit: Of the 32 countries analysed by the [Climate Action Tracker](#), 24 have set insufficient targets; of these, 16 governments have implemented policies that will not result in achievement of their targets. Only seven governments have implemented 1.5°C or 2°C compatible targets and of these, four are not yet backed up by sufficient policy action. The findings on whether countries meet their NDCs with current policies are consistent with [another study](#) NewClimate Institute undertook with PBL, which together with the Climate Action Tracker fed into the [UNEP emissions gap report](#).

The emissions gap between 2030 emission levels and those consistent with least-cost pathways to the 2°C and 1.5°C goals respectively is still wide: The size of the gap between current policy pathways and the Paris Agreement-compatible benchmark is estimated to be [24–27 GtCO₂e in 2030](#).

A comprehensive ambition assessment framework is needed, employing a large variety of approaches, to capture a wide spectrum of perspectives on ambition: [A review of GHG emission](#)

[reduction proposals](#) by countries revealed that countries have very particular perspectives on how to assess the ambition of their proposal. If one takes a wide spectrum of perspectives and compares the different results, several clear trends emerge, even though the results differ per individual assessment approach.

1.1.2 What is the aggregated impact of subnational and non-state actions on the implementation of mitigation actions and ultimately on global GHG emissions?

Non-state and subnational climate action has the potential to significantly reduce the emissions gap by 2030: If 19 international climate initiatives implement their quantifiable goals, global GHG emissions could [be 6-11 GtCO₂ equivalents/year lower in 2030](#) than under the full implementation of the NDCs.

US subnational and non-state actors can help implement the NDC of the USA: [A first analysis](#) of decentralized US climate commitments showed that the USA can already meet half of its climate commitments under the Paris Agreement by 2025, if the 342 commitments included in the analysis are fully implemented.

The impact of non-state and subnational actor commitments on global GHG emissions is still under-researched, finds the chapter on non-state action of the [UNEP emissions gap report](#). Yale University, NewClimate Institute and PBL make an effort to come up with an aggregated estimate by September 2018.

1.1.3 When will emissions peak?

CO₂ emissions have flattened in the last few years, but it is too soon to call a peaking of global GHG emissions, which needs to happen by around 2020 to meet the Paris Agreement's warming limits. Although some large emitters, including China, the EU and India have either reduced—or slowed—their GHG emissions growth rate, currently implemented policies are expected to result in a further growth of global GHG emissions by [about 9–13% between 2020–2030](#).

1.1.4 What is the projected increase in global average temperatures above pre-industrial levels based on current progress?

The full implementation of current Paris Agreement commitments (NDCs) would lead to median global temperature in 2100 of 3.2°C, the currently implemented national policies lead to 3.4°C, estimates the Climate Action Tracker in [its November 2017 update](#).

1.2 How do we get there?

1.2.1 What are the short-term actions necessary today to initiate a trajectory that is compatible with the long-term temperature goal of the Paris Agreement?

Ten benchmarks can be identified that if implemented today put the world on a trajectory that is compatible with the 1.5°C temperature limit: A [comprehensive review](#) of existing emissions scenarios and scanning all sectors and the respective necessary transitions, led to the most important short-term benchmarks for action in line with the long-term perspective of the required global low-carbon transition:

- Sustain the current growth rate of renewables and other zero and low-carbon power generation until 2025 to reach 100% share by 2050

- No new coal power plants, reduce emissions from existing coal fleet by 30% by 2025;
- Last fossil fuel passenger car sold by 2035–2050
- Develop and agree on a 1.5°C-consistent vision for aviation and shipping;
- All new buildings fossil-free and near-zero energy by 2020
- Increase building renovation rates from less than 1% in 2015 to 5% by 2020
- All new installations in emissions-intensive sectors low-carbon after 2020, maximize material efficiency
- Reduce emissions from forestry and other land use to 95% below 2010 levels by 2030, stop net deforestation by 2025
- Keep agriculture emissions at or below current levels, establish and disseminate regional best practice, ramp up research
- Accelerate research and planning for negative emission technology deployment

1.2.2 What can be done on a sectoral level?

It is essential to mainstream climate objectives into sector policies and plans and to achieve policy coherence between the different policy agendas, including also the SDGs. Sectors – led by the respective line ministries – need to drive the implementation of ambitious policies that reflect short-term climate goals as well as the long-term objectives of the Paris Agreement.

The energy transition requires a fundamental system change to allow the massive integration of decentralised renewable energy technologies: Significant investments into the generation and transmission infrastructure are essential to achieve the necessary flexibility of a system relying on (fluctuating) renewable sources. Electricity markets need to adapt accordingly to allow for participating of multiple actors.

Natural gas in electricity supply will have small and decreasing a role in 2050: The requirement for a complete CO₂ emissions phase-out, combined with increasing competition from renewables, results in [a dwindling role](#) of natural gas in the power sector towards the middle of the century despite its ability to balance variable renewables.

Energy efficiency improvements for appliances and lighting is one of the key short term measures to support deep and rapid decarbonisation of the building sector: If the highest existing minimum energy performance and labelling standards were applied globally, they could [save around 4,500 TWh in 2030](#), the equivalent of closing 1,140 average coal-fired power plants (600 MW), lowering global greenhouse gas emission by 3 to 5 GtCO₂e/y in 2030 below reference.

Swift and extensive deployment of electric vehicles powered by clean electricity is needed. [Reductions from the transport sector](#) will only be enough to meet the more stringent long-term goals of the Paris Agreement, with a swift and extensive deployment of electric vehicles powered by clean electricity.

Shifts to zero carbon technologies in the industry sector need to be initiated: Improvements in efficiency and decarbonisation of the energy supply can lead to emissions reductions, for both steel and cement around a 30%–50% below current trends by 2050. But to further decarbonise heavy industry sectors as required by the Paris Agreement, a shift to [innovative low-carbon technologies, product substitutions, circular production routes, and possible industrial scale deployment of CCS will be needed](#).

Agriculture need to tackle food transport, storage and consumption: Emission reductions through efficiency improvements, take-up of best practices and innovative approaches in farming need to be

complemented by actions on [transport, storage and consumption of food](#). Influencing consumer behaviour will play a major role.

The international aviation sector may need to do more to address its climate impact from both CO₂ and non-CO₂ emissions than the current proposal to deliver carbon neutral growth after 2020. The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is likely to be met largely using offset credits. It is important that [robust eligibility criteria](#) are applied on the types of offset credits that are accepted under the scheme. The rules should be designed to ensure that CORSIA supports the [development of new emission reduction projects or targets existing projects that would stop reducing emissions without further financial support](#). Over the medium-term efforts should focus on measures to encourage a reduction in emissions coming out of aircraft, rather than relying on offsetting.

1.2.3 What projects, programs, policies, and institutions are available to close the gap between where we are and where we need to be on a country, regional, sector and organization level?

Applying “good practice” emission reduction policies globally would bring Parties close to what is needed: Direct replication of sectoral policies that already have been implemented successfully in a few countries could [halt emissions growth in most regions](#) well before 2030.

Country-specific suggestions are needed to assist countries to raise ambition: National circumstances vary so that individual country need individual solutions. Recent analysis provides a first attempt for [Indonesia](#) and [Viet Nam](#).

“Transformative coalitions” of countries and sub-national actors interested in advancing a particular low-carbon technology can work together to shift global markets: Transformational changes in the power, transport and buildings sectors have so far [been triggered by policymaking efforts of only a few frontrunners](#). Lessons learned from these early-mover countries could enable these kinds of transitions to become mainstream, achieve critical mass—and transform not just the internal markets of countries participating but significantly influence development outside of those markets, eventually allowing for rapid global decarbonization.

Carbon pricing is available as policy approach to increase costs of GHG emitting-technologies and drive investments in cleaner technologies. Various forms of carbon pricing (Emission Trading Schemes (ETS) or carbon taxes) exist and are proven to be effective if domestically implemented considering national circumstances. Aligning domestic carbon pricing strategies including flexibility elements with other policy areas lead to implications for long-term emissions mitigation trajectories, co-benefits or co-costs which have been [assessed for focus countries such as Chile, Mexico and South Africa leading to design recommendations with broader relevance](#).

International cooperation on carbon markets can help, but countries are differently prepared to implement Article 6 and should consider safeguards to avoid ambition disincentives. The realisation of opportunities for international market cooperation—also with regards to its ambition purpose—is entirely dependent on the effective design and implementation of measures to safeguard against potential risks that can create conditions for ambition disincentives. Safeguards are needed to ensure that instruments developed under Article 6 can deliver effectively on the needs of developing countries, whilst providing positive incentives for ambition raising. Designing and implementing effective safeguards will be a challenging process and will require a comprehensive dialogue. [The three stand-alone case studies](#) on Ethiopia, Vietnam and Ukraine discuss country-contexts on Article 6 readiness in an objective manner, looking at the enabling conditions in these countries, the feasibility to maintain robust accounting and MRV, and compatibility of their NDCs.

1.2.4 What are the costs (e.g. mitigation costs, compromises on food and water availability) and benefits (e.g. improved air pollution and health, energy security, innovation) of achieving additional reductions on a country, regional, sector and organization level?

Evidence on the impacts of ambitious mitigation actions helps to engage with sector level actors and decision makers to support the mainstreaming of climate policies into sector activities. Implications of mitigation pathways on key political objectives, including for example on jobs, industrial development, energy security, air pollution, are important to consider for balanced policy planning. Tools to quantify such impacts and to provide a deeper understanding on potential synergies and trade-offs between, for example the NDC process and the SDGs, can support effective decision making.

Climate action in cities can have significant positive effects on development: New impact assessment methodology tools are available to quantify the effects on jobs, energy security and health benefits of energy efficiency retro fit in residential buildings, enhanced bus networks and services, and district-scale renewable energy in major global regions. As an example, the reduction of vehicle emissions in cities can cause a reduction in exposures to excessive ambient air pollution, leading to the prevention of over 6,000 premature deaths per year in North America and over [30,000 premature deaths](#) per year in Latin America, compared to a reference scenario.

2 Finance flows, support and means of implementation

2.1 Where are we?

2.1.1 To what extent are finance flows consistent or misaligned with compatible pathways towards low greenhouse gas emissions and climate-resilient development?

Financial flows continue to be misaligned with the Paris goals. Analysis of investment decision processes of different development finance institutions showed that currently none of the reviewed institutions has processes in place to ensure alignment of investment decisions with the long-term goals of the Paris Agreement (see also [pre-Paris analysis](#)). Whilst climate mainstreaming in the form of, for example, application of criteria such as use of best available technology or shadow carbon pricing is widespread, none of the approaches refer to the goals of limiting global warming to “well below 2°C”.

Methodologies are under development to determine whether investments and finance flows are aligned with the Paris goals. The [development of a first methodology framework](#) identified criteria for assessing the compatibility of investments into physical assets in the energy supply, buildings and transport sector with the international goal to limit global temperature increase to below 2°C above pre-industrial levels. These criteria are currently being updated to ensure Paris alignment and to evaluate their integration into investment decision making processes of financial institutions. Finding the balance between scientific robustness and practical applicability is critical here.

Creating an enabling framework that is supports investments into climate friendly technologies and shifting financial flows from brown to green remains a challenge in most countries. Fiscal and policy incentives need to be designed to reflect the Paris goals and at least create a level playing field for different technologies. Policy and fiscal reform can help to mobilise (private) climate finance and generate the much-needed investment pipeline claimed to be lacking by many financial institutions.

A deeper understanding of investment needs and gaps at the specific sector level is currently lacking in most countries. Such evidence is essential to design effective national and sectoral policies and support strategies, to manage risks associated with stranded assets and carbon lock-ins as well as to mitigate potential negative impacts for those not directly benefitting from a low carbon transformation. Tools and methodologies such as an investment gap tool can help in this regard.

2.2 Where do we need to be?

2.2.1 What are the priorities and needs for support of developing country Parties?

The identification of technology needs and domestic capacity buildings enables Parties to enhance implementation planning of their adaptation and mitigation targets. Mitigation technology needs are most frequently identified by Parties in the areas of low emission energy supply, energy efficient cities and infrastructure, and low emission mobility and transportation. In the field of adaptation, technology needs are most frequently identified in the areas of climate compatible agriculture and forestry, water management, disaster prevention and meteorological measurement technology and climate simulation. The [Technology Needs Database](#) (TND) supports activities of the National Designated Entity (NDE) of Germany for technology transfer under the UNFCCC. The database captures technology needs identified by developing countries in Technology Needs Assessments (TNAs) and (intended) Nationally Determined Contributions ((i)NDCs) to achieve national climate goals in the areas of climate change mitigation and adaptation.

Potential linkages between market mechanisms and technology transfer might considerably contribute to the Paris Agreement objective of holistic technology transfer. Technology transfer supported through Article 6 mechanisms should aim for technologies where abatement is most likely to be additional to mitigation action that is within reach for the country domestically or with other types of international support. The identification of such technologies in each country context gains key relevance in this process and offers potential interlinkages with institutions and processes under Article 10's Technology Mechanism and the Technology Framework.

2.3 How do we get there?

2.3.1 What policies, pledges and institutional reforms are required to scale up the mobilization of finance, achieve a balance between adaptation and mitigation financial resources, and ensure efficient access to finance?

The Adaptation Fund could follow a dynamic resource mobilisation strategy with a vision of establishing a global norm of adaptation “shares of proceeds” from carbon pricing instruments – a ‘2% campaign’. The Adaptation Fund has pioneered novel financing approaches such as direct access, has streamlined project cycles to allow participation of small institutions and holds an impressive track-record of delivering results-based adaptation finance. A globally accepted norm for contributing a share of the proceeds from carbon pricing instruments provides an innovative approach to mobilise adaptation finance from carbon finance instruments. To this effect, the adaptation fund should actively pursue [multiple innovative finance options](#), including national and sub-national CO₂ taxation, emission trading systems and baseline & credit systems.