

**TECHNICAL EXPERT MEETING ON  
THE SOCIAL AND ECONOMIC VALUE OF CARBON**

**CONCRETE TOOLS BASED ON A REFERENCE VALUE OF CARBON TO  
INFORM INVESTMENT DECISIONS, RE-EVALUATE RISKS AND  
INCENTIVIZE EARLY ACTION**

Friday, 20 May 2016, 9.30 a.m.–4.30 p.m.

**Summary by the facilitator Mr. Alfredo Sirkis (Brazil)**

As part of the technical examination process on mitigation organized by the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice, a technical expert meeting (TEM) on the social and economic value of carbon was held in Bonn, Germany, on 20 May 2016. The social and economic value of carbon can be represented as the net present value of long-term damages avoided by removing or preventing one additional tonne of carbon dioxide (CO<sub>2</sub>) emissions. The growing awareness of the social and economic value of carbon is highlighted in decision 1/CP.21, paragraph 108, which recognized the value of voluntary mitigation actions and their co-benefits for adaptation, health and sustainable development.

The TEM was organized under the guidance of the high-level champions representing the Presidents of the Conference of the Parties at its twenty-first and twenty-second meetings, and in consultation with the Organisation for Economic Co-operation and Development. The TEM consisted of three sessions focusing on: (1) internalizing co-benefits, informing investment decisions and re-evaluating risks utilizing a reference value of carbon; (2) economic instruments relating to the social and economic value of carbon; and (3) ways to turn potential into action. TEM participants that represented Parties, subnational authorities, private sector organizations, international organizations and academia engaged in an in-depth discussion in order to share experiences relating to the various ways in which the social and economic value of carbon is utilized, including the following:

- Conducting project appraisal (project cost–benefit analysis);
- Conducting Regulatory Impact Assessment (policy cost–benefit analysis);
- Setting of various economic/carbon pricing instruments (taxes, charges and market-based instruments);
- Evaluating long-term objectives or targets relating to climate policy.

**Internalizing co-benefits, informing investment decisions and  
re-evaluating risks utilizing a reference value of carbon**

During the first session of the TEM, participants discussed the concept of the social and economic value of carbon and how it relates to incentivizing early mitigation action. This connection was made by first highlighting that more ambitious climate action is needed now and in the lead-up to 2020, as the aggregate effort under Parties' current nationally determined contributions (NDCs) are insufficient to achieve the 2 °C goal, and even more so to achieve the 1.5°C goal. Early and additional mitigation action could not only assist with achieving the temperature goals, but could also save Parties money by avoiding long-term damages associated with greenhouse gas (GHG) emissions, which can be represented by the social and economic value of carbon.

By estimating the monetary value of potential damages avoided in the future, the social and economic value of carbon can serve as a reference level for stakeholders, such as Parties and the private sector, by which to evaluate the development, implementation and effectiveness of their mitigation actions. Also, it can play a key role in informing their decision-making processes, particularly in setting the stringency of climate policies at levels that will promote the highest possible mitigation efforts called for by Parties. Participants highlighted several successful applications for using a reference value of carbon, such as conducting project appraisals and regulatory impact assessments, setting of economic instruments, and evaluating long-term objectives or targets relating to climate policy.

One such application was presented by the United States of America which outlined how it is using an estimated social cost of carbon as part of its policy appraisal process. To date, the United States has used its social cost of carbon estimates in at least 75 rule-making actions, leading to a consistent way in which government agencies quantify: (1) the benefits of reducing GHG emissions, and/or (2) the costs from increasing GHG emissions, in regulatory impact analyses. However, it was highlighted that the uncertainties associated with the models used for deriving this value, such as the choice of discount rates, could be significant. In order to address these uncertainties, the United States is applying multiple discount rates when deriving the social cost of carbon.

Private sector participants shared numerous success stories relating to the application of an internal carbon price/reference value for project appraisals, which allows companies to de-risk their business operations that are susceptible to climate policy changes and to seek economic opportunity by reducing GHG emissions. In addition, an internal carbon price allowed many private sector entities to communicate to their investors the benefits of setting long-term business strategies that shift away from fossil fuels and towards renewable energy. Participants stressed the use of carbon pricing as a replicable good practice in the private sector in order to keep future project portfolios robust and resilient. They also highlighted the capacity-building needs of companies in determining and estimating internal carbon prices, as well as in setting project boundaries.

## **Economic instruments relating to the social and economic value of carbon**

The second session began with the potential relationship between the social and economic value of carbon and carbon pricing being highlighted. While the social and economic value of carbon represents the long-term damages avoided by preventing the release of one tonne of CO<sub>2</sub> emissions into the atmosphere, a carbon price reflects the amount that emitters must pay for the right to emit one tonne of CO<sub>2</sub>. Governments and stakeholders use various methods and inputs in order to establish a carbon price such as current estimated costs to mitigate CO<sub>2</sub> emissions or the social and economic value of carbon as a reference level.

Parties, financial institutions and other stakeholders then discussed the development and use of economic instruments, including carbon markets; carbon taxes, which establish a carbon price by incorporating pollution impact externalities; and carbon reduction/removal certificates that could engender future financial and investment mechanisms and guaranties. Worldwide, about 40 national jurisdictions and over 20 cities, states and regions, representing almost a quarter of global GHG emissions, have some forms of carbon pricing in place.<sup>1</sup> Participants discussed the current ‘global state of play’ of such economic instruments, with Parties providing specific examples of the successes and challenges they faced on the national and regional levels. For example, China shared its challenges in establishing a carbon market, including the lack of reliable statistics and the prolonged legislation process. Canada

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<sup>1</sup> World Bank Group. 2015. *State and Trends of Carbon Pricing*. Available at <[http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/09/21/090224b0830f0f31/2\\_0/Rendered/PDF/Stateand0trends0of0carbon0pricing02015.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/09/21/090224b0830f0f31/2_0/Rendered/PDF/Stateand0trends0of0carbon0pricing02015.pdf)>.

highlighted the diverse approaches it takes to carbon pricing, which vary based on each province's economics, policies, carbon mitigation strategies and targets. It was widely recognized that the use of economic instruments allows for GHG emission reductions in a cost-effective manner, and therefore, could serve as good practice examples that could further encourage early mitigation actions by various stakeholders.

A number of initiatives that can assist Parties in developing and implementing such economic instruments were discussed, including the World Bank's three main initiatives promoting carbon pricing: (1) the Carbon Pricing Leadership Coalition that brings together leaders from governments, the private sector and civil society to share their experiences in utilizing carbon pricing; (2) the Partnership for Market Readiness that provides support, such as capacity-building and knowledge-sharing in order to prepare and implement climate change mitigation policies; and (3) the Networked Carbon Markets Initiative that focuses on complementary services like enabling comparability and addressing challenges associated with linking different carbon markets. Participants recognized the importance of such initiatives, while acknowledging that the integration of carbon markets may not always be the preferred option due to the structural differences and sovereignty of Parties.

Participants then discussed other regulatory policies and approaches that send economic signals towards low-carbon and carbon-free solutions such as fossil fuel subsidy reform. New Zealand highlighted the benefits of fossil fuel subsidy reform, including the potential global GHG emission reductions, which range between 6 and 13 per cent by 2050.<sup>2</sup> Already, 13 countries have included fossil fuel subsidy reform and energy pricing in their NDCs as part of the overall effort to reduce GHG emissions. Actions on fossil fuel subsidy reform and energy pricing could be very effective, particularly when the savings realized are reinvested into renewable energy and energy efficiency projects and programmes. It was suggested that fossil fuel subsidy reform could be implemented in a structured way, where good communication with the public, the approach towards the implementation, and capacity-building are critical for its success. Participants also recognized that as the international oil price is currently very low, now is a good time to pursue such actions.

The new concept of positive carbon pricing was also presented, which implies offering real financial assets in exchange for mitigation actions. As decision 1/CP.21, paragraph 108, recognizes the intrinsic value of avoided carbon emissions and removals through mitigation actions, participants highlighted that positive carbon pricing could serve as an investment tool and stimulate the climate finance needed to achieve the 2 °C goal. This could be accomplished by rewarding early mitigation actions that go beyond established climate targets such as NDCs. In addition, government certificates based on the social and economic value of carbon could be established and used to finance mitigation projects.

It was also emphasized that the implementation of positive carbon pricing is not conflicting with the use of other economic instruments, such as carbon markets and the direct pricing of carbon. For example, the infrastructure from many current carbon markets could be used to assist with the development and implementation of positive carbon pricing worldwide such as using the verification and certification processes from the clean development mechanism to ensure that mitigation actions being implemented and compensated for are additional and are not double counted.

## Ways to turn the potential into action

The discussion on the next steps in the technical examination process on mitigation started with the exchange of views of the Technology Executive Committee (TEC), the

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<sup>2</sup> Merrill, L., et al. 2015. *Tackling Fossil Fuel Subsidies and Climate Change: Levelling the Energy Playing Field*. Available at <<http://dx.doi.org/10.6027/TN2015-575>>.

Climate Technology Centre and Network (CTCN) and the Global Environment Facility (GEF). In this context, the discussion between these organizations and the participants focused on how these institutions provide assistance to developing countries, how to turn mitigation potential into action, and what should be the next steps under the technical examination process on mitigation.

The TEC provided an overview of its activities dedicated to catalysing support, and facilitating and promoting technology cooperation and partnerships in order to scale up mitigation actions. In addition, it shared the possible practical ways in moving forward in the TEMs, including: (1) organizing an event dedicated to addressing support issues (e.g. Support Day) as part of the Climate Action Fair; and (2) presenting the outcomes of the technical examination process at the regional level. The latter could enable more effective engagement of policymakers at the national level and related stakeholders, allowing regional organizations engaged in capacity-building, technical and financial support to tailor their support to the needs of different developing countries.

The CTCN highlighted that it has received approximately 100 requests from 60 countries for assistance, including on the development and use of the social value of carbon. It then shared its experiences on how the CTCN had provided various tools to assist countries, including tools to conduct the analysis of a project in the energy sector involving 11 countries in West Africa dealing with gender responsiveness.

The GEF stated that its current portfolio strategy includes assisting countries with establishing emissions trading schemes and providing supporting measures to de-risk emission reduction investments. It provided examples that highlighted its activities to scale up investment at both the national and global levels such as its support to China for its market-based energy efficiency programme. The GEF stated that it was looking to receive more requests for projects in this area.

After the interventions from the TEC, the CTCN, and the GEF, participants reiterated that many replicable success stories from different parts of the world presented during the TEMs demonstrated how to address the technical and non-technical challenges in utilizing the social and economic value of carbon, as well as in implementing different carbon pricing instruments. It was recognized that carbon pricing instruments and related policies and approaches, such as fossil fuel subsidy reform, help to mobilize financial investments and enable the operational decisions that are required to support diverse climate actions such as fuel switching from coal to natural gas, renewable energy deployment, the adoption of energy efficiency measures and the use of low-carbon technologies in industry.

In terms of the next steps to promote and recognize the social and economic value of carbon in the pre-2020 period, participants highlighted the need for: (1) enhanced political momentum on the use of the social and economic value of carbon (2) better coordination and capacity-building at the local/subnational level, including between the ministries of finance and the environment in order to build an understanding on this concept and apply it in a consistent way, and (3) further technical assessment leading to positive pricing financial mechanisms capable of boosting investment in low carbon projects and policies.

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