

## *WORKPLAN ON ENHANCING MITIGATION AMBITION*

### **TECHNICAL EXPERT MEETING ON ADDRESSING NON-CARBON DIOXIDE GREENHOUSE GASES**

Wednesday, 22 October 2014, 10 a.m.–6 p.m.

#### **Summary by the facilitator, Ms. Marta Pizano (Colombia)**

At the last technical expert meeting (TEM) in 2014 on unlocking mitigation opportunities for addressing non-carbon dioxide (CO<sub>2</sub>) greenhouse gases (GHGs), held in Bonn, Germany, on 22 October 2014, Parties, observers, international organizations and the private sector engaged in productive discussions to share experiences on mitigation action on non-CO<sub>2</sub> GHGs, lessons learned through policy implementation, challenges and the potential to replicate and further scale up implementation efforts in the pre-2020 period. The presentations and interventions were made by representatives of national governments, the private sector, international organizations and UNFCCC support institutions.

#### **POLICIES, PRACTICES AND TECHNOLOGY – THE GLOBAL STATE OF PLAY**

Non-CO<sub>2</sub> GHGs emissions from four economic sectors – energy, industrial processes, agriculture and waste – constituted around 25 per cent of the global GHG emissions in 2010 according to the Intergovernmental Panel on Climate Change Fifth Assessment Report (AR5).<sup>1</sup> If left unabated, these emissions are expected to grow by more than 50 per cent above the 1990 level by 2030, according to the AR5 projections. The projected rates of emission growth by 2030 of CO<sub>2</sub>, nitrous oxide and fluorinated gases vary, with hydrofluorocarbon (HFCs) emissions expected to have the highest growth rates. However, opportunities exist to tap the mitigation potential in all sectors emitting non-CO<sub>2</sub> GHGs by 2030. For example, in the agriculture sector up to 80 per cent of emissions could be reduced by 2030 through a combination of supply-side and demand-side mitigation options.

At the meeting, participants identified wide-ranging co-benefits of addressing non-CO<sub>2</sub> GHGs emissions, and recognized that in many cases these co-benefits are major drivers of mitigation policies summarised below. Also, they confirmed the significance of mitigation efforts for promotion of sustainable development, poverty eradication and adaptation to climate change. The following co-benefits were associated with mitigation policies and actions:

- In the agriculture sector – food security, improvements in soil productivity and nutrient-use efficiency, efficiency gains in agricultural production, cost savings, access to reliable sources of heat and energy generated from manure-to-energy conversion, increased resilience to climate change, environmental and health benefits, and strengthening of ozone layer protection;
- In the energy and industrial processes sectors – energy security, reduced dependency from energy imports, energy efficiency gains, reduced cost of energy services, cost savings, improvements in building design, and improvements in human health and safety;
- In the waste sector – environmental and air quality improvements, access to reliable local energy sources and job creation.

In the discussion of mitigation solutions, participants recognized that such solutions vary by region and sector, evolve over time and depend on national circumstances. They also recognized that there is no ‘one-size-fits-all’ solution. There are examples of good practice policies implemented at the national level, including with the involvement of international partnerships such as the Global Methane Initiative. This initiative provides support to partner countries to assess the needs and opportunities for advancing mitigation efforts, share

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<sup>1</sup> See the Summary for Policymakers in the contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, available at [http://report.mitigation2014.org/spm/ipcc\\_wg3\\_ar5\\_summary-for-policymakers\\_approved.pdf](http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf).

information, build capacity through technology transfer, and training through project-level interventions. Effective replication and scaling up of mitigation actions on the ground are affected by the following barriers mentioned at the meeting:

- Lack of legislation and regulations to reduce non-CO<sub>2</sub> GHGs emissions;
- Lack of sufficient funding, low carbon prices and unstable carbon markets;
- Limited market acceptability and applicability of cost-effective and commercially available technologies, in particular technologies based on lower global warming potentials (GWPs) HFCs, especially in several developing countries that experience high-ambient temperature conditions;
- High investment requirements, limited investment incentives, and high costs of technology operation and maintenance, in particular for technologies for reducing nitrous oxide emissions from industry and for reducing the use and resulting emissions of HFCs;
- Lack of capacity to invest in and develop climate-friendly technologies and scale up good practices in developing countries;
- Risks associated with toxicity, flammability and safety considerations of some alternatives to high GWP chemicals, which could be addressed via technical standards, and reinforcement of the refrigeration and air conditioning servicing sector in order to appropriately deal with new alternatives.

Proven solutions for the above-mentioned barriers, as proposed by the participants, are focused on global-level solutions and include the following:

- Development of new market mechanisms under the 2015 agreement and sending a strong signal to stimulate the private sector, which is already moving forward in addressing non-CO<sub>2</sub> GHGs emissions, for example in sectors such as mobile air conditioning, small refrigeration and air conditioning, and foam blowing;
- Inclusion in the 2015 agreement of the reduction of non-CO<sub>2</sub> GHGs emissions by placing commitments in the context of intended nationally determined contributions, for example such commitments as the HFC phase down;
- Establishment of a consistent and flexible global approach to phasing down HFCs, taking into account several global, regional and domestic actions that are already under implementation;
- Encouragement of multilateral cooperative initiatives and implementation of the global commitments announced at the United Nations Secretary-General's Climate Summit such as the Oil and Gas Methane Partnership, and Municipal Solid Waste and HFC initiatives of the Climate and Clean Air Coalition (CCAC).

Several mitigation policies and actions were identified at the meeting to address non-CO<sub>2</sub> GHGs emissions, including cross-cutting measures such as:

- Development of an integrated management approach, for example, for the waste management policies covering a broad range of sectors and stakeholders, or regulations on comprehensive measures addressing the whole life cycle of fluorinated gases;
- Implementation of policies to promote innovative abatement technologies and the phasing down of obsolete technologies, for example, through establishment of stricter regulations and technological upgrading to reduce perfluorocarbon and HFCs emissions in the aluminium and refrigeration industries, respectively;
- Promotion of innovative financial mechanisms, such as Australia's Emissions Reduction Fund or the World Bank Pilot Auction Facility for Methane and Climate Change Mitigation targeting the lowest cost mitigation actions to reduce methane emissions;
- Continuation of implementation of the clean development mechanism and joint implementation projects under the Kyoto Protocol.

During the working group sessions, participants discussed good practice policies to address individual gases and sources of emissions, recognizing the uncertainty of estimates of the mitigation impact of some policies and the varying degree of cost effectiveness. The following policies and actions were mentioned:

- In the agriculture sector:
  - In relation to agricultural soils, such as promotion of cropland management; soil conservation; soil productivity and erosion control; tillage/residue management; integrated nutrient management; nitrogen use efficiency; targeted fertilizer subsidies to avoid overuse of nitrogen fertilizers; rice management; the landscape approach; and ‘climate-smart’ programmes;
  - In relation to enteric fermentation, such as improving livestock management; feeding and breeding practices; the reduced use of nitrates; manure management; and research and development.
- In the energy and industrial processes sectors:
  - Implementation of emissions trading schemes with financial incentives to attract investment and engage the private sector;
  - Upgrading technologies and equipment, and improving operations in the oil and gas sector to advance abatement, recovery and use of methane;
  - Reducing and potentially utilizing fugitive methane gas from underground coal mines;
  - Introduction of regulations and providing capacity building and training on safety codes and standards, and safe handling of hazardous substances to transition away from high-GWP HFCs and minimize HFC leakage;
  - Technology upgrading, development, transfer and deployment, in particular for technologies aiming to replace hydrochlorofluorocarbons (HCFCs) and high-GWP HFCs with substances with low GWP through investment and demonstration projects.
- In the waste sector:
  - Preparation of comprehensive waste management policies, including waste prevention and for reuse and recycling;
  - Landfill gas collection and utilization;
  - Waste-to-energy conversion.

The Montreal Protocol process was referred to by some participants as a suitable platform to achieve significant reduction in HFC consumption and production, and resulting emission reductions. Some developing countries raised concerns related to the timeliness of the discussion on the phase down of HFCs in the light of the limited availability of affordable low-GWP technologies in high ambient temperature countries and the need to initiate the debate with a technical discussion, which should be conducted taking into account the principles of the Convention.

As part of their implementation of the provisions of the Montreal Protocol, many developing countries prepared and are implementing national HCFC phase down management plans, which contain a degree of uncertainty on the possible conversion to low-GWP solutions in all sectors. This was done with the support from the Multilateral Fund and its bilateral and implementing agencies. The lesson learned from the implementation process is that national comprehensive strategies, regulations and plans are instrumental in facilitating the work of international support institutions and in engaging the private sector. The Multilateral Fund secretariat provided an example of the chlorofluorocarbon (CFC) phase down that started in 1991 when not all technologies were yet available and how this work led to development of alternative technologies. Despite these initial constraints, by 2010 all developing countries were in compliance with the control measures stated out in the Montreal Protocol.

United Nations Industrial Development Organization indicated that there are many ways of lowering HFC consumption and that the number of solutions and examples of available and lower cost technologies to address HFCs is growing. However, it was also recognized that with current technological solutions it is not yet possible to completely avoid the use of high-GWP HFCs in some specific cases, namely in countries that experience high ambient temperature conditions.

## THE WAY FORWARD

The discussion on the way forward saw some delegates and international organizations providing concrete actionable suggestions on the ways in which the UNFCCC process can help Parties to tackle barriers and realize their mitigation ambition in addressing non-CO<sub>2</sub> GHGs in the pre-2020 period. Participants discussed how to improve the TEM process in 2015 and beyond and suggested continuing this process and focusing future TEMs on practical options to achieve action-oriented sustainable and lasting impacts. The specific proposals made by participants are grouped below.

## ACTION BY PARTIES

In the light of the political momentum generated by the United Nations Secretary General's Climate Summit and the significant number of initiatives launched at the Summit, participants called on Parties to accelerate the implementation of these initiatives and engage subnational actors and civil society in such work. To intensify mitigation action at the national level and as part of commitments to reduce non-CO<sub>2</sub> GHGs emissions, Parties could be encouraged to announce specific national commitments and to prepare nationally appropriate mitigation actions (NAMAs) addressing those emissions. In line with their commitments related to the provision of support, developed countries should provide adequate financing for the implementation of the relevant NAMAs.

## INTERNATIONAL ORGANIZATIONS AND UNFCCC INSTITUTIONS

UNFCCC institutions such as the Technology Executive Committee and the Climate Technology Centre and Network (CTCN) called on Parties to provide clear instructions and guidance to these institutions on the scope of assistance and types of services required from them. In particular, the CTCN reminded participants that its work is carried out on the basis of specific country requests and that, thus far, it has received only a few requests to address non-CO<sub>2</sub> GHGs. Participants proposed the improved integration of the outcomes of TEMs into the work of the UNFCCC institutions.

To strengthen global cooperation, international organizations and partnerships could develop innovative solutions and expand services provided to Parties. For example, the forum of the CCAC could be used to conduct technology-neutral work on the feasibility of an HFC phase down in countries with high temperature ambient conditions. The European Union mentioned that it is already working through the CCAC on know-how transfer and support for development of technologies based on low-GWP HFCs. Existing knowledge management platforms of the partnerships with broad geographic outreach, such as the CCAC and the Global Methane Initiative, could be used for an intensified information exchange and good practices sharing. Given a large contribution of agriculture in terms of non-CO<sub>2</sub> GHGs, Parties would benefit from seeking technical support from FAO on practices linking mitigation objectives to food security and rural development. New non-State actors could be mobilized through the expansion of existing multilateral partnerships such as the International Solid Waste Association and the CCAC Municipal Solid Waste Initiative that bring together city-level partners.

## UNFCCC SECRETARIAT

Parties greatly appreciated the dialogue among Parties, international organizations and the private sector that took place at the meeting. Some Parties suggested continuing the technical work by conducting a more focused discussion on specific issues at the meetings to be organised next year. An updated technical paper on the mitigation and sustainable development benefits of actions, initiatives and options to enhance mitigation ambition will be prepared by the secretariat to take into account the discussions held at the meeting. The updated technical paper will be presented at the twentieth session of the Conference of the Parties, to be held in Lima, Peru, from 1 to 12 December 2014.