PARTNERSHIP FOR MARKET READINESS (PMR) POLICY ANALYSIS SUPPORT:

STATUS UPDATE

PMR Note PA13 2015-2

October 14, 2015

I. INTRODUCTION

1. In an effort to inform the Partnership Assembly (PA) about the progress and outcomes of the work that has been done under the PMR's Upstream Policy Analysis Work Program (henceforth referred to as the "Policy Analysis Work Program"), as well as provide an update on the scope and calendar of the proposed analytical studies for the current fiscal year (FY 2016, or FY16), the PMR Secretariat prepared this *Note on Policy Analysis Support: Status Update* (PMR Note PA13 2015-2). The Note provides a brief overview of the background on the Policy Analysis Work Program (Section II), describes activities that have been carried out until today, (Section III) and outlines an indicative work program for FY16 (Section IV). Going forward, as requested by the PA, the PMR Secretariat will regularly inform the PA about future activities under this work program.

II. BACKGROUND

2. At PA8 in Mexico City in March 2014, the PMR Secretariat presented an initial "*Proposal on Upstream Policy Work"* (PMR Note PA8 2014-2), in order to respond to new domestic and international developments and provide support to countries for the analysis and development of policy options for mid- and long-term mitigation objectives. The PA invited the Implementing Countries to submit an Expression of Interest for receiving this analytical support.

3. The Policy Analysis Work Program was officially launched at the following meeting (PA9) and the PA, through Resolution No. PA9/2014-3, allocated an envelope of US$5 million for FY15 to support the following activities: (1) country-level analytical work; (2) common methodology and framework (including modeling); and (3) international and national technical meetings and workshops. The PA noted a need to prioritize carbon markets and other carbon pricing instrument in such analytical work, and also requested that the Secretariat inform the PA, prior to each resource allocation, on the scope and schedule of the analytical studies and resource allocation. In addition, the PA invited the Implementing Countries to share the progress and outcomes of their upstream policy analytical work with the Assembly.

4. At PA10 in Santiago in November 2014, the PMR Secretariat prepared an Update on PMR Upstream Analytical Work with an objective to inform the PA on the status of the work, scope and timetable for the planned activities, as well as the corresponding resource allocations.

5. At PA11 in London in March 2015, the PMR Secretariat presented an update of the progress made, concerning the country-specific work under the Policy Analysis Work Program. In addition, a presentation was made on the "Checklist for Establishing Post-2020 Mitigation Scenarios," which was developed with an objective to help technical experts draw on good practices to construct scenarios, share and correspond on the analysis results with policy makers, as well as facilitate transparency and understanding of the key indicators and assumptions used in constructing scenarios.

6. At PA12 in Barcelona in May 2015, and as part of the overall discussion on strategic orientation for the future of the PMR, the PMR Secretariat prepared the "*Note on Options for Funding Additional Activities under the PMR: Update and Proposed Way Forward"* (PMR Note PA12 2015-4), which included the progress made under the Policy Analysis Work Program.

7. Taking into account the allocated budget for the Policy Analysis Work Program in FY15, which was US$5 million, and the estimated spending which amounted to US$1.6 million, the PA (through Resolution No. PA12/2015-1) allocated US$3 million from the remaining balance of the approved funding in FY15 towards FY16. The PA noted that, going forward, the links between the activities supported under the Policy Analysis Work Program and those under the Implementing Country Participants' MRPs should be further clarified.

III. UPDATE ON ACTIVITIES SO FAR

8. The Policy Analysis Work Program consists of two streams of support: **(A)** additional and targeted support to countries, to help them design and implement carbon pricing instruments (e.g. a carbon tax or an emissions trading system), that is outside the scope of the work under their existing Market Readiness Proposal; and **(B)** policy analysis support aimed at helping countries to establish their post-2020 mitigation scenarios and to identify a package of effective and cost-efficient instruments (including carbon pricing instruments) to achieve mitigation and development goals ("Post-2020 Mitigation Scenarios"). Below are the activities which have been carried out under each of these streams of support:

A. Targeted Support to Facilitate the Design and Implementation of Carbon Pricing Instruments

9. The targeted support to countries under the policy analysis work program is aimed to provide technical and financial assistance to the PMR countries that have experienced rapid domestic policy developments since the submission of their MRPs. This has resulted in a need for additional support to address a range of specific issues regarding the design and implementation of carbon pricing instruments.

10. In response to recent domestic policy developments, Chile stated its interest in obtaining targeted support for the design and implementation of a carbon tax. The support provided by the PMR is being coordinated by the Ministry of Energy. It includes two studies which will analyze: (i) the potential impacts from the implementation of the carbon tax and (ii) the interaction and consistency between the country's carbon tax and national energy policies and regulations. The first study uses an electricity model to analyze the current and future scenarios for thermal generation in Chile, and to identify, characterize and analyze the impacts of the carbon tax, including on emissions, mix of generation technologies, market competitiveness, and cost pass-through. Based on this analysis, the study will also provide policy recommendations for the energy sector, including for the design of the carbon tax. The second will analyze the polices, regulations, and instruments that govern the national

energy sector of Chile and examine the interactions with the carbon tax, including considering any overlaps, barriers, complementary effects, institutional aspects, as well as common stakeholders. The study will also draw on experience from other countries that have applied carbon taxes in the energy sector. Based on this analysis, the study will provide policy recommendations for the energy sector, including on the carbon tax, towards a coherent and cost effective package of policies. The outputs and recommendations of these studies will inform the carbon tax design and energy policy over the medium to long-term.

B. Policy Analysis Support on Post-2020 Mitigation Scenarios

11. The scope of the policy analytical work on post-2020 mitigation scenarios could be grouped into the following categories: **(1)** development of a common technical guidance on analytical approaches, technical methodologies and processes for setting post-2020 mitigation scenarios; **(2)** country-specific support; and **(3)** national and international workshops, technical meetings and consultations.

1) Common Technical Guidance

12. Building on the initial work outlined in the PMR Note PA8 2014-2, presented at PA8 in Mexico City, the common technical guidance document, titled Checklist on Establishing Post-2020 Emission Pathways (also known as the "Checklist"), was published in May 2015. Its purpose is to help countries establish post-2020 mitigation scenarios and to identify a package of effective and cost-efficient policies, including carbon pricing instruments, to achieve their mitigation ambition. The "Checklist" was well-received by the PMR Implementing Country Participants and it is seen as a useful tool for developing and presenting medium- and long-term emission pathways. Additional dissemination activities, including at the regional and international events and workshops, have been planned.[1]

2) Country-specific Work on Establishing Post-2020 Scenarios

13. Based on the initial Expressions of Interest (EoIs) received after the endorsement of the Policy Analysis Work Program, the country-specific support in the first phase was provided to Brazil, China, Costa Rica, Colombia and Peru. The proposed activities in the five countries differed with respect to the overall domestic priorities and development stage of the existing work, requested scope of work, and further consultations that were carried out. That said, all Implementing Country Participants reiterated the relevance of the support received under this work program, and particularly emphasized its importance for the process of devising their intended nationally determined contribution (INDCs). Moreover, they stressed that this technical assistance has contributed to deepening the underlying assessment and to refining their national mitigation targets, in addition to

[1] As of October 14, 2015 and according to the data available at the Open Knowledge Repository of the World Bank, the "Checklist" was viewed almost 800 times and downloaded almost 500 times.

reinforcing the objectives of their MRPs. A summary of the country-specific activities that were carried out as part of the Policy Analysis Work Program is provided below:

Brazil

The PMR supported policy work in Brazil built low-hydrology scenarios for 2015-2030 and simulated their consequences for the Brazilian energy system, in particular in regard to additional thermal power and corresponding increase of CO2 emissions, as part of a baseline scenario in the context of the Brazilian INDC. This study used: (i) probabilistic dispatch optimization model for large-scale hydro-based electricity and gas systems, (ii) detailed representation of the complex Brazilian power generation and transmission system, and (iii) large historical hydrology series consistent with the representation of the Brazilian power system. Such approach was consistent with current planning practice of the sector and therefore easier to use in the context of internal consultations to establish a baseline scenario that take into account climate vulnerability of the sector. The study also analyzed alternative scenarios that would allow to compensate for the increase of emissions in case of a dry hydrology and showed that such compensation could be achieved via energy efficiency measures. This result was part of the elements which fed internal discussions that eventually led Brazil to decide to incorporate a 10% energy efficiency gain in the power sector by 2030, as part of the Brazilian INDC. The study is now complete and the report in editing phase.

China

Policy analytical work supported by the PMR in China is being carried out by the China National Center for Climate Change Strategy and International Cooperation (NCSC) together with the Energy Research Institute and the universities of Tsinghua, Renmin and Peking. The work focuses on: (i) mapping existing policies in achieving 2020 targets to assess progress of implementation and effectiveness; (ii) a review and comparison of the existing and ongoing studies on constructing China's GHG emission scenarios for 2020, 2030 and 2050; (iii) comparability of China's emission scenarios with other countries; and (iv) understanding China's emission scenarios and projection in the context of the four pillars of decarbonization strategy as proposed by the IPCC. The outputs of the PMR policy support strengthen the national modeling capacity in regard to analyzing the mitigation trajectory, associated impacts, and policy options. More importantly, they also provided useful technical information which improved the transparency and understanding of China's INDC.

Colombia

Modeling and analytical work supported by the PMR is coordinated by the Ministry of Environment and Sustainable Development (MADS) and carried out by the *Universidad de los Andes* and the National Planning Department (DNP). It builds upon the modelling work done in the context of Colombia's Low Emissions Development Strategy program (ECDBC) and, for the AFOLU sector and the macroeconomic impact assessment, the DNP-WBG Low Carbon Development Study. The work focuses on (i) deepening the available bottom-up sector analysis on technical mitigation options, review of reference emissions scenarios, and development of alternative aggregated mitigation scenarios; (ii) analysis of macro-economic impacts of selected mitigation scenarios and enabling policy instruments; and (iii) assessment of possible economy-wide mitigation targets and its implications in the Colombian context. The

assessment outputs fed into Colombia's INDC decision-making process during this year, and were used to substantiate Colombia's INDC presentation to the UNFCCC in September 2015.

Costa Rica

In collaboration with the Bank's ESMAP energy sector technical assistance program, the PMR supported Costa Rica's Ministry of Environment and Energy (MINAE) with timely analytical work for their INDC determination process. The work, carried out by an ad-hoc research team anchored at MINAE's Climate Change Directorate, focused on bottom-up modelling and analysis comprising of (i) the development of plausible reference scenarios for sector activity and associated GHG emissions in five priority sectors (energy, transport, forestry, agriculture, waste management); (ii) the prioritization and assessment of emissions mitigation options by sectors, and subsequent development of marginal abatement cost curves (MAC curves); and (iii) the exploration of alternative emissions reduction scenarios to reach different levels of mitigation ambition in the mid- and long-term, including assessing the mitigation gap to reach Costa Rica's carbon neutrality goal. The research team served as technical advisors during the INDC stakeholder consultation process, and the assessment results informed Costa Rica's INDC formulation entailing an absolute mid-term mitigation target and long-term deep decarbonization pathway.

Peru

The Ministry of Environment (MINAM), the agency in charge of Peru's INDC preparation roadmap, requested the modelling & analytical work carried out by the national research consortium behind 2012-2014 emissions scenario modelling work (under Peru's Plan CC program). The main areas of work covered (i) broadening the bottom-up analysis of mitigation options by key sectors, including financial analysis and assessment of co-benefits and enabling environment for a prioritized subset of mitigation options; (ii) refinement of sector MAC curves and development of alternative emissions reductions scenarios by 2030; and (iii) the CGE-based analysis of macroeconomic impacts of the proposed 2030 mitigation scenarios. The assessment results informed Peru's INDC cross-sectorial discussion process on an ongoing basis and underlie Peru's economy-wide mitigation target as expressed in their INDC.

3) Technical Workshops and Consultations

14. In order to facilitate knowledge exchange and capacity development, a number of in-country regional and international workshops and technical meetings were organized. These events provided an important platform for policy makers, technical staff and international experts to engage in technical discussions and share information on the progress of the work and its relevance to the preparation of countries' INDCSs. The list of workshops[2] and events held to date is as follows:

[2] Workshop proceedings are available at the PMR website; https://www.thepmr.org/events:

Technical workshop on "Approaches and Tools to Setting Mitigation Scenarios" (September 2014, Washington DC)

This workshop provided an opportunity for countries and experts to compare methodologies used in constructing post-2020 mitigation scenarios, including the role of carbon pricing instruments. It also provided an opportunity to consult on various tools and a common framework that was being prepared in support of the PMR's ongoing work on modeling and mitigation goal setting.

A series of five in-country technical and consultation workshops (January-February 2015)

As part of the country work programs, in-country technical and consultation workshops were organized in Brazil, China, Colombia, Costa Rica and Peru. These workshops provided an opportunity for the technical staff and policy makers in each of the countries to discuss the progress of the work, as well as interact with the international experts and provide inputs to the development of the "Checklist."

Technical Workshop on "Understanding China's INDC" (May 2015, Washington, DC)

This technical workshop provided an opportunity for participants to deepen their understanding of China's preparation of its INDC and to discuss challenges related to its formulation and presentation. The workshop was divided into two parts: (i) a Technical Dialogue, which discussed key findings in the studies supported by the PMR on China's post-2020 emission scenarios, and (ii) a Policy Dialogue, which provided an opportunity for policy makers and technical experts to exchange their views on the INDCs.

Technical Workshop on "Upstream Policy Analysis for INDCs: Approaches, Challenges, Opportunities" (May 2015, Barcelona)

This workshop provided an opportunity for countries to share information on the progress of the work, as well as its relevance to the ongoing preparation of countries' INDCs. In addition, all countries were invited to share their INDC-related progress and potential role of carbon pricing instruments, as well as the challenges in preparing and implementing the INDCs.

Regional Latin-American INDC Workshop (July 2015, Cartagena)

This Regional Latin American Workshop on INDC implementation and monitoring challenges (hosted by the Ministry of Environment and Sustainable Development of Colombia and jointly organized with the International Partnership on Mitigation and MRV and the Spanish Agency for International Development Cooperation) brought together national teams of climate policy makers and technical specialists from ten Latin American countries, including the six Latin American PMR IPCs, to share experiences and discuss challenges underlying the assessment, development and implementation of their INDCs.

15. Going forward it is expected that more workshops and knowledge events will be held at both the country and regional/international levels, in order to facilitate the exchange of information, share lessons and build capacity.

IV. PROPOSED ACTIVITIES GOING FORWARD

Streamlining activities under the Policy Analysis Work Program

16. The first phase of the Upstream Policy Work demonstrated that carrying out economic and policy analysis to inform decisions surrounding the selection and introduction of carbon pricing instruments is one of the key components of each country's market readiness process. In addition, the experience showed that a common challenge faced by the PMR countries is to address the interactions between carbon pricing and other policies, reinforcing each of the policy objectives and ensuring the effectiveness and performance of existing and planned programs. Finally, while this work facilitated several PMR Implementing Countries' efforts in preparing their mitigation component for INDCs under the UNFCCC process, the PMR countries' experience in the first phase of support under the Policy Analysis Work Program demonstrated that the provision of systematic and long-term support to countries in strengthening their modeling capacity is critical and goes beyond COP21.

17. The PMR mandate includes providing policy analysis support and carrying out modeling work to explore the economic and social implications of the implementation of carbon pricing instruments (e.g., ETS or carbon tax), and possible compensatory measures, as well as analyzing the interaction of these policy options with other existing policies, such as energy efficiency standards and renewable energy regulations. Such support is either included in the activities that are carried out as part of the Implementing Country Participant's MRPs or under the policy analysis work stream. In addition, there is a broad recognition by the PA that a holistic approach to mid- and long-term scenario setting (including understanding development implications of the mitigation goals) is necessary for making informed decisions on the choice and the design of a suitable carbon pricing instrument. Against this backdrop and going forward, the PMR's support under the policy analysis work stream will be streamlined around the following two groups of activities:

A. Modeling and Analytical Support

18. Different modeling approaches are appropriate for different policy questions and country characteristics. At times, a mix of modeling strategies is required to address complex policy questions/issues that are typically found in the context of the development and implementation of INDCs and other mitigation policies. In addition, modeling and analytical work is instrumental to identifying a suitable package of policies and measures, understanding their impacts and potential barriers, and achieving effective policy design, particularly in the context of implementing the INDCs, as well as achieving national and international climate mitigation goals in general.

19. Based on a country's needs assessment and gap analysis through the application of the PMR "Checklist on Establishing Post-2020 Emission Pathways," the PMR will provide a package of modeling and analytical support, and capacity building activities, specifically designed to the country's context and needs. Such work will help countries to identify a suitable package of policies and measures – including carbon pricing instruments – as well as improve the understanding of their impacts, particularly in the context of countries' impending efforts with regards to translating stated INDC mitigation objectives into effective implementation strategies.

20. In addition, given the PMR's unique value as a knowledge and experience sharing platform, the above referred country-specific work would contribute to creating a base of knowledge and information on carbon pricing modeling. This, in turn, would allow to draw important lessons through the establishment or complementation of existing modeling networks, comprising national and international experts and the PMR working group. This network of experts would also provide advisory services for the activities under this work stream, as well as host a number of knowledge exchange events and technical meetings.

B. Interactions between carbon pricing and sectoral policies

21. Carbon pricing instruments are primarily designed to achieve GHG emissions reductions, which is the cross-cutting objective with other sectoral policies, including in energy, transport, agriculture, forestry and other sectors. A common challenge faced by the PMR countries that are designing and implementing carbon pricing instruments is to avoid overlapping and uncoordinated efforts when addressing the interactions between carbon pricing and other policies, and to ultimately ensure that climate and other sectoral objectives are met in an efficient and cost-effective way.

22. Using the forthcoming PMR report on "Interactions between Carbon Pricing and Energy Policies" as a scoping tool for identifying country demand and interest, the PMR will carry out a number of country-specific analytical studies on the issues around interactions between carbon pricing and other sectoral policies, including energy, transport, etc. Such work is expected to advance the understanding of policy makers on how to best integrate carbon pricing in their existing sectoral and national policy landscape.

23. In addition, leveraging the PMR's knowledge and experience sharing platform, as well as the country-specific work, a number of workshops and meetings will be organized and cross-country analytical work will be put forward.

Country-specific support in FY16

24. The PA, through Resolution No. PA9/2014-3, allocated an envelope in the amount of US$5 million for FY15 to support the upstream policy work, and endorsed the continuation of this work by carrying over the balance in the amount of US$3 million through subsequent Resolution No. PA12/2015-1. It

invited the Implementing Countries to share the progress and outcomes of the upstream policy analytical work with the Assembly and the PMR Secretariat to inform the PA about the scope, timeline and budget allocations prior to the commencement of the work. Based on such understanding, a number of Implementing Country Participants submitted their EoIs for receiving support under the policy analysis work stream. The table below summarizes the proposed scope of the country-specific work, as laid out in the respective EoIs.

Country	Government Counterpart	Scope of PMR Support
Chile	*Ministry of Energy*	*The Ministry of Energy of Chile expressed the interest in obtaining technical and financial assistance from the PMR to assist the assessment and development of its INDC implementation strategy in the energy sector, including the role and analysis of carbon pricing instruments, while ensuring consistency with the forthcoming 2050 Energy Roadmap. Such support would help Chile achieve its ambitious commitments outlined in the INDC (reduction of CO2 emissions per unit of GDP by 30% compared to 2007 levels by 2030 and, subject to obtaining international funding, an increase in the reduction of CO2 emissions per unit of GDP to achieve an emissions intensity reduction between 35% to 45% over the level reached in 2007, by 2030.*
Colombia	*Ministry of Environment and Sustainable Development (MINAMBIENTE)*	*Following up on the first phase of analytical support which contributed to the INDC preparation in Colombia (by carrying out the analysis of the different mitigation scenarios), the Ministry of Environment and Sustainable Development expressed interest in receiving additional technical assistance in the area of the policy work stream. The requested work is aimed to support the implementation of the mitigation actions, the identification and assessment of various policy instruments – including carbon pricing – which may play a role for in the INDC implementation process, and contribute to the overall mitigation goals of Colombia.*
Morocco	*Ministry of Environment*	*The Ministry of Environment of Morocco expressed interest in receiving technical and financial assistance to conduct studies onthe impacts and co-benefits relative to the post-2020 engagements announced by the Moroccan INDC. In particular, the focus of the requested support is on: (i) modeling of the socio-economic impacts (positive and negative) of the GHG emissions reduction scenarios envisaged in the Moroccan INDC; (ii) modeling of the impacts of the renewable energy choices and increase of the share of renewables in the energy mix of Morocco as per its INDC, on the biodiversity and natural habitats; (iii) building capacity in modeling techniques to enable tracking of the evolution of GHG emissions in response to the efforts by the government to achieve the objectives as outlined in the Moroccan INDC, and to monitor the socio-economic impacts induced by the implementation of the Moroccan INDC (economic modelling).*

Country	Government Counterpart	Scope of PMR Support
Peru	*Ministry of Environment (MINAM)*	*The Ministry of Environment (MINAE) expressed interest in availing support from the Partnership for Market Readiness (PMR) in order to undertake upstream analytical work, to further inform the development of policy instrument options for mid- and long-term mitigation objectives in Peru, supporting the achievement of Peru's INDC. Following up on the first phase of the work that was supported by the PMR and used in the decision-making process on Peru's INDC, the objective of the requested support is to build on and deepen this work in a second phase, in order to inform the articulation of INDC implementation strategies and actions, to ultimately achieve Peru's mid- and long-term mitigation goals.*
Vietnam	*Ministry of Natural Resources and Environment*	*The Department of Meteorology, Hydrology and Climate Change of the Ministry of Natural Resources and Environment (DMHCC/MONRE) expressed interest in receiving support for the assessment of policy mix and financial actions needed to reduce GHG emissions in the future. The focus of requested support is on estimating the emissions impact and resource requirements of the policy actions that are considered by the government in the context of climate change mitigation efforts and other government strategies. This assessment is expected to assist DMHCC/MONRE to better understand expected impacts of alternative policy choices on the future GHG emission pathways, and to allow for the identification of GHG emission pathways that could be a practical tool to support the development of a national road map for the achievement of mitigation objectives. Based on this assessment, the DMHCC/MONRE will also be able to analyze the necessary actions to achieve alternative GHG emission pathways for Vietnam, and to determine the t economic implications of these actions.*

25. In addition to the EoIs presented in the table above, China, Costa Rica and Mexico have also indicated their interest in receiving support from the policy analysis work program and are expected to submit proposals during or soon after PA13.

26. The PMR Secretariat and the World Bank Global Practices' teams will continue to carry out further consultations and refine the scope of proposed work described above. It is important to note that in light of the rapidly changing domestic and international environment (including after the COP21 in Paris), the scope of the work by some countries will be subject to modifications. Following the endorsed procedure, the PMR Secretariat will inform the PA on the exact scope, timeline and resource allocation for analytical support.

27. From FY17 onward, the policy analysis related work is expected to be carried out within an integrated approach for funding additional activities under the PMR. For more information, see the "Note on Options for Funding Additional Activities under the PMR: Draft Proposal for Discussion" (PMR Note PA13 2015-4).