

PARTNERSHIP FOR MARKET READINESS (PMR)
POLICY ANALYSIS WORK PROGRAM:
REPORT OF FY18 ACTIVITIES AND PROPOSAL FOR FY19

PMR Note PA18 2018-3

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I. EXECUTIVE SUMMARY

1. This note is to inform the Partnership Assembly (PA) about the progress and outcomes of the work that has been carried out under the PMR’s Policy Analysis Work Program (PAWP) in FY18 and outline the activities that are proposed for FY19.
2. The activities planned for FY19 are those associated with the finalization of existing PAWP country projects. Any programmatic activities will be considered as part of the Technical Work Program going forward. The last country project is expected to be completed at the end of FY19. No further activities are planned.
3. Table 1 outlines the status of all remaining PAWP country activities.

Table 1: Status of PAWP country activities

Country	Description	Status
Chile	Modeling of policy options and developing implementation plan for NDC in energy sector	Completed in FY18
Colombia	Macro-economic modeling of carbon pricing instruments Modeling of ETS design options and design roadmap	Completed in FY18 Completed in FY18
Costa Rica	Developing modeling framework, database, and technical capacity for exploring decarbonization pathways to achieve NDC target	Completed in FY18
Morocco	Bottom-up model with focus on the building sector (2030). Rapid assessment of potential carbon pricing options	Ongoing; expected to be complete FY18 Ongoing; expected to be complete FY18
Turkey	Marginal Abatement Cost curve tool (linked with CGE under MRP activity); Investors' perspective approach	Ongoing; expected to be complete FY18
Vietnam	Bottom-up energy model (power, industry), and Marginal Abatement Cost curve tool (2050)	Ongoing; expected to be complete FY19
Thailand	Economic modelling of carbon pricing instruments including carbon tax, ETS and crediting mechanism to contribute to Thailand's NDC mitigation goal.	Ongoing; expected to be complete FY19

II. INTRODUCTION

- This note is to inform the Partnership Assembly (PA) about the progress and outcomes of the work that has been carried out under the PMR's Policy Analysis Work Program (PAWP) in FY18 and share proposed FY19 activities for feedback. The Note begins with a background of the PAWP (Section III), then describes work progress, with a particular emphasis on on-going and new activities in FY18 (Section IV), and finally outlines the future activities for FY19 (Section V).

III. UPDATE ON FY18 ACTIVITIES

A. Country-level activities

5. Significant progress has been made to date under the PAWP through its country-level activities. The work program has so far contributed to policy analysis and modeling exercises relevant to the development of I/NDCs and assessment of carbon pricing instruments in Brazil, Chile, China, Colombia, Costa Rica, Morocco, Peru, South Africa, Turkey and Vietnam.¹ The country-level activities that have been on-going or initiated during FY18 include:

(i) Chile

6. In FY17, the PAWP assisted the Ministry of Energy to prepare the Energy Sector Mitigation Plan, which was unanimously approved by the Council of Ministers of Sustainability in December 2017. The Plan recommends measures and actions to take in the energy sector to achieve the Energy Policy 2050's (EP2050) and the Nationally Determined Contribution (NDC)'s mitigation targets, and steps needed to implement them. This constitutes a first big step towards meeting Chile's long-term commitments under its Energy Policy 2050, and sets up a precedent for other countries in the region in helping achieve their NDC targets in the energy sector. The Chilean energy sector has taken the leadership to establish a clear pathway to tackle the country's climate change agenda, and serves as an example of how and what the sector can do to lead this agenda.

7. The work included the following:

- (i) a study of existing analysis to identify potential technical and behavioral mitigation options and to identify a set of policy measures/instruments for the energy sector that could contribute to the achievement of Chile's NDC;
- (ii) modeling work to assess selected policy instruments in order to understand the impact that these instruments could have on achieving Chile's NDC and other relevant policy goals in the energy sector; and
- (iii) recommended policy instruments to be included in the energy sector's implementation plan, identifying actions and timelines, barriers and solutions, and public and private funding required.

8. This activity developed a hybrid modeling framework that links P-E2BIZ (a bottom-up energy sector model based on LEAP) and Chile's computable general equilibrium (CGE) model. This modeling tool provides a foundation for further development and future application in the context of Chile's NDC.

(ii) Colombia

9. In the context of developing an NDC implementation strategy, the Ministry of Environment and Sustainable Development (MADS) requested PAWP support on (i) macro-economic modeling and assessment of explicit price-based instruments (carbon tax, emissions trading) to implement emissions reductions targets conducive to achieving Colombia's NDC mitigation contribution, and (ii)

¹ See, [PMR Note PA14 2016-2](#) and [PA16 2017-1](#), for details of country activities that had been completed in the past

modeling and preliminary analysis of core ETS design options and, accordingly, development of recommended ETS design roadmap.

10. The macro-economic work provides advisory assistance to support the technical team of the National Planning Department (DNP) and MADS that are in charge of the identification and prioritization of economic instruments that may support GHG mitigation objectives, through providing expert advice and input to the adaptation of DNP's national CGE model (MEG4C). The purpose of model adaptation is to introduce robust capabilities that will allow the assessment of sectoral and macroeconomic effects caused by the introduction of carbon pricing instruments in determined sectors of the Colombian economy. The activity also provides technical support and capacity building on model simulation, scenario development, analyzing model results.
11. The objective of the ETS analysis is to develop a roadmap for the design and piloting of a greenhouse gas emissions trading system (ETS) in Colombia. This exercise analyzes different ETS design options, conducts gap analysis in Colombia's current institutional structures and legal framework for operating a nation-wide ETS, and recommends options to address such gaps, provides step-by-step practical guidance and roadmap for the design and piloting of an ETS in Colombia, and undertakes cross-cutting activities including support to awareness raising, capacity building and stakeholder consultations.

(iii) Costa Rica

12. Building upon the previous phase of PAWP work, the Ministry of Environment and Energy (MINAE) had requested to extend the modelling and analytical support from PAWP, with the overarching objective of deepening the analysis of the emission reduction objectives made in its NDC and exploring decarbonization pathways to achieve these objectives. To this end, the new PAWP activity develops a country-specific modeling framework and analytical tool, and a capacity building program for key stakeholders in Costa Rica. The current modeling framework is based on the TIMES model, focuses on the energy and transport sectors, and is designed to allow incorporation of other NDC-relevant sectors at a later stage. The TIMES-Costa Rica model is expected to be soft-linked to a national CGE model.
13. Apart of the development of modeling tool, this exercise identifies policies and measures that are politically, technically, and economically feasible for Costa Rica and constructs a baseline scenario that is made up of existing actions and policies; develops a planned policy scenario, which includes the baseline scenario and already-planned actions/policies as determined by national decision-makers; and designs enhanced policy scenarios, which involve additional plausible actions that would bring the country in line with meeting its NDC mitigation target.

(iv) Morocco

14. The PAWP work in Morocco aims to develop and demonstrate new tools tailored to support policy and financial planning for NDC implementation. This is carried out in response to the need of the government of Morocco for mobilizing analytical and policy efforts necessary for NDC implementation and its vision to translate NDC objectives into a business-oriented roadmap of policies and actions that can provide clear and strong incentives to low-carbon investment, both at the national level and with international support. The new tools are based on the analytical and modeling approach that

enables the design and evaluation of a range of potential policy reform packages to achieve national NDC targets, taking into account the financial perspective of lower carbon choices for investors and consumers. The current phase of work focuses on Morocco's building sector and measures such as energy efficiency and building-integrated renewable energy technologies.

15. The key innovation of this activity is in the development of a detailed representation of the investors' financial perspective in the modeling framework to inform a realistic and effective strategy to incentivize uptake of energy savings, through the incorporation of investors' and consumers' perspectives and the parameters that affect their investment decisions including transaction costs, barriers and risks, taxes and subsidies, and other financial incentives. The purpose is to explore a granular design of policy and reform packages that create enabling conditions for firms, households, and individuals to take mitigation actions that would not be financially attractive without such policy changes. This work also informs the government on the flows of commercially viable investment and budgetary requirements relative to different policy packages, and discusses potential ways to combine, in a balanced way, different forms of financial support, including grants, concessional finance and international support, such as climate and carbon finance.
16. The PAWP also support the government of Morocco in undertaking a rapid assessment of potential carbon pricing options with the goal of developing a carbon pricing roadmap for the country looking forward. This task is based on a qualitative analysis of existing information, evidence, and lessons learned domestically as well as internationally. The main focus is to identify opportunities and impacts of introducing domestic carbon pricing (to be further investigated), for example, by exploring the possibilities to improve the alignment of the existing fiscal policy with Morocco's ambitious NDC targets and business climate. This work complements very well the Moroccan MRP that explores the opportunities for Morocco to participate in the international market-based mechanisms established under Article 6 of the Paris Agreement.

(v) Turkey

17. This PAWP activity supports the Ministry of Environment and Urbanization (MoEU) in building capacity for effective NDC implementation, in particular through the development of sectoral emissions mitigation marginal abatement cost curves (MAC) curves for key sectors (i.e. energy, industry and transport) of the Turkish economy. Using the developed MAC curves, the abatement potential and cost of different mitigation options will be assessed and compared first from the point of view of society, and then from the viewpoint of economic agents who will be implementing these options. Recommendations will be made on the design of a comprehensive mitigation strategy including packaging and timing of various policy and financing actions (including different scenarios of carbon pricing) to influence the investment and consumption decisions.
18. The model(s) and supporting tools used and/or developed with data collected to populate them will be handed over to the MoEU for future use. Appropriate guidance and training will be provided to build capacity with technical staff of the MoEU and other key stakeholders. The output of the assignment will provide the decision-makers and key stakeholders within the public and private sectors with quantitative analysis and information on the net costs and benefits of emission mitigation

policy and technology options. Hence, it will provide critical inputs to the discussions at the national level; and, help the MoEU formulate fact-based stakeholder engagement activities and mobilize political support towards implementing low carbon policies and technologies.

(vi) Vietnam

19. The Ministry of Natural Resources and Environment (MONRE) is currently requesting each key line ministry to submit their sectoral targets to achieve Vietnam's NDC target. The energy sector for power generation, industry, buildings in the residential and commercial sectors, and transport is the single largest source for GHG emissions in Vietnam, accounting for more than 60 percent of GHG emissions now, and more than 85 percent by 2030. At the sectoral level, the Ministry of Industry and Trade (MOIT) is working to identify and develop its sectoral contribution to achieve the NDC target. The MOIT envisages that the scope of its sectoral contribution towards Vietnam's mitigation commitments will cover both energy supply and demand sides.
20. This PAWP activity supports the MOIT to develop its energy sector targets and contributions to the NDC. Specifically, this PAWP covers the power, industry, and building sectors and may use the results from the parallel transport study as inputs to energy demand and interaction with the power sector in terms of electric vehicles, if the transport study is available in time. The scope of work under this PAWP is an extension of the existing analysis that the Government of Vietnam conducted as an analytical underpinning of its NDC.
21. The PAWP comprises of the following activities: (i) Stocktaking existing and ongoing activities; (ii) collect data and develop modeling; (iii) develop the baseline and two NDC scenarios and policies and institutional framework for their implementation; (iv) analyze results, produce report and presentation; and (v) provide hands-on training and take part in consultation.

(vii) Thailand

22. This PAWP complements the ongoing MRP by filling in analytical gaps at the national policy level, aiming to understand the linkage between climate policy, carbon pricing and the economy. The PAWP helps determine the role carbon pricing can play in achieving Thailand's NDC mitigation objectives in a cost-effective manner and the impact on the economy if carbon pricing is adopted.
23. This PAWP project comprises the following tasks: (i) review and develop economic modeling for carbon tax and ETS with and without crediting mechanism; (ii) model and assess the interaction and consistency between carbon pricing policy (carbon tax/ETS) and existing national policies and regulations; and (iii) support capacity building and dissemination of the knowledge and understanding of the effectiveness of carbon pricing instruments in achieving mitigation objectives.

Table 1: Overview of country-level activities

Country	Description	Framework	Relevance for NDC
Chile	Modeling of policy options and developing implementation plan for NDC in energy sector	Bottom-up energy and CGE models in tandem (2050)	Energy sector contribution and action plan
Colombia	Macro-economic modeling of carbon pricing instruments Modeling of ETS design options and design roadmap	CGE adaptation and soft-linking with bottom-up energy (2040) Qualitative assessment; gap analysis	Inform choice of carbon pricing instrument/s to support economy-wide NDC mitigation targets
Costa Rica	Developing modeling framework, database, and technical capacity for exploring decarbonization pathways to achieve NDC target	Bottom-up model with focus on energy and transport; aggregation framework for other sectors (2050)	Energy and transport sector contributions. Policy actions toward NDC
Morocco	Developing NDC implementation strategies Rapid assessment of potential carbon pricing options	Bottom-up model with current focus on the building sector (2030). Plan to cover other NDC-relevant sectors. Investors' perspective approach Policy analysis and roadmap for carbon pricing; qualitative assessment	Support NDC implementation
Turkey	Support for strengthening local modeling capacity and tools for effective NDC implementation	Marginal Abatement Cost curve tool (linked with CGE under MRP activity); Investors' perspective approach	Refinement of NDC; Support NDC implementation
Vietnam	Assessing policy and reform packages that stimulate investments toward meeting NDC targets	Bottom-up energy model (power, industry), and Marginal Abatement Cost curve tool (2050) Investors' perspective approach	Support NDC implementation
Thailand	Economic modelling of carbon pricing options.	Economy-wide CGE model	Support NDC implementation

B. Program-level activities

24. The main activity planned for FY18 was the development of the Carbon Pricing Simulation Tool. This project is no longer going ahead as the funds were re-allocated to incoming country programs for which resolutions were passed by the PA.

IV. PROPOSED ACTIVITIES IN FY19

25. The work for FY19 will involve the completion of the remaining country-level activities. It is expected that all activities will be completed by June 2019. No further country activities are planned.
26. Any program-level activities will be considered under the Technical Work Program. As such, there is no ongoing budget for the PAWP beyond the completion of existing country-level activities. No program level activities are currently planned.

V. ACTION BY THE PA

27. The PA is invited to provide feedback on the proposed activities under the PAWP for FY19.