

Annex 6

INDC Development Process & Energy Sector Roadmap

LEAD, ECN & IISD

April, 2015

Leadership for Environment And Development (LEAD) Pakistan, International Institute for Sustainable Development (IISD), and Energy Research Centre of the Netherlands (ECN) are supporting the Government of Pakistan (GoP) with the development of its' Intended Nationally Determined Contribution (INDC).

From the six INDC Green House Gas (GHG) related sectors, this project focused on developing an energy sector INDC as a priority. Primacy of the energy sector was identified after consultation with stakeholders, upon the request of the Ministry of Climate Change (MoCC), and after assessing Pakistan's plans and priorities, all the while keeping in mind the short project timeframe. This document provides an overall guide to the INDC development process as well as a roadmap that we have developed in order to formulate Pakistan's INDC for the Energy Sector.

The INDC will be based on an analysis of existing plans, policies, and other government documents, with a gap analysis conducted to identify areas where additional work is needed, and direction for undertaking this work. The INDC process, in particular the Energy Sector INDC, will also be informed by/linked to IISD's Low Carbon Scenario Analysis project through its identification of mitigation options and sector baselines.

The role of the project team is to support the Government of Pakistan and Ministry of Climate Change specifically with the process, analytically and administratively. A key challenge is to gain constructive input and buy-in from stakeholders including provinces, industry and civil society organizations.

Intended Nationally Determined Contributions - What are they?

During previous climate negotiations, all countries agreed to publicly outline what climate actions they intend to take in the future. When aggregated globally, these INDCs will largely determine whether the world achieves a 2015 agreement that puts us on a path toward a low-carbon future. A country's INDC should signal to the world that they are doing their part to combat climate change and limit future climate risks. (WRI 2014).

At the 20th COP in Lima last year, limited consensus was reached on the nature of information to be included in INDC submissions. At the same time, the language of the Lima Call for Climate Action leaves a lot of room for countries to set their own priorities when developing INDCs.

What the text does say is that contributions should go beyond current plans. In other words, the contribution should be incremental to ongoing/planned efforts. The hope is that these efforts, when aggregated, will be sufficient to tackle climate change globally (or at least provide a valuable starting point for increased action in the future).

More concretely, INDCs should provide information on (NewClimate 2014):

- Quantifiable reference points (e.g. base years, or reference levels if the form of the INDC is a reduction below reference)
- Time frames for implementation (e.g. the target year(s) or period)
- Scope and coverage of plans (inclusion of sectors and gases)
- Assumptions and methodology for estimating and accounting for GHGs
- Self-assessment of how the INDC is fair and ambitious, given the countries' national circumstances
- Explanation of how the INDC contributes to the objective of the Convention to hold global warming below 2°C or 1.5°C above pre-industrial levels
- Information on the "planning processes" (e.g. how they arrived at the INDC or how they plan to implement it)

Parties are also invited to submit details of their national adaptation plans along with their INDCs, although this is not given high priority within the text.

Development of INDCs and current best practice

In their INDCs, countries will propose the steps they will take to reduce emissions. There is therefore an urgent challenge for all countries to understand the potential contributions that they can make and formalize these into INDCs. The final form of these contributions is likely to be varied, with some different approaches discussed in Box 1. What can be said more broadly about good INDCs is that they should (WRI 2014):

- Be ambitious, leading to transformation in carbon-intensive sectors and industry;
- Be transparent, so that the level of ambition can be reviewed;
- Be equitable, so that each country does its fair share to address climate change;
- Articulate how the country is integrating climate change into other national priorities, such as sustainable development and poverty reduction, and send signals to the private sector to contribute to these efforts; and
- Clearly communicate, so domestic and international stakeholders can anticipate how these actions will contribute to global emissions reductions in the future.

Box 1: Approaches to INDCs

With no internationally agreed definition of what an INDC looks like, it has been left to individual countries to define the concept (with some international organizations offering suggestions). Several options have emerged, particularly for mitigation, including (Ecofys 2014a; 2014b):

- **Economy-wide emission limitation or reduction targets:** With a historic base year or intensity targets. Can also be sector-based or sub-national in focus. Short and/or long-term.
- **Energy Targets:** Such as efficiency, renewable expansion, or reduction of fossil fuel use.
- **Policies:** Such as introduction of carbon pricing or subsidy reform. Can reference NAMAs.
- **Projects:** Smaller in scope than policies, similar to CDM or JI initiatives, or NAMAs.

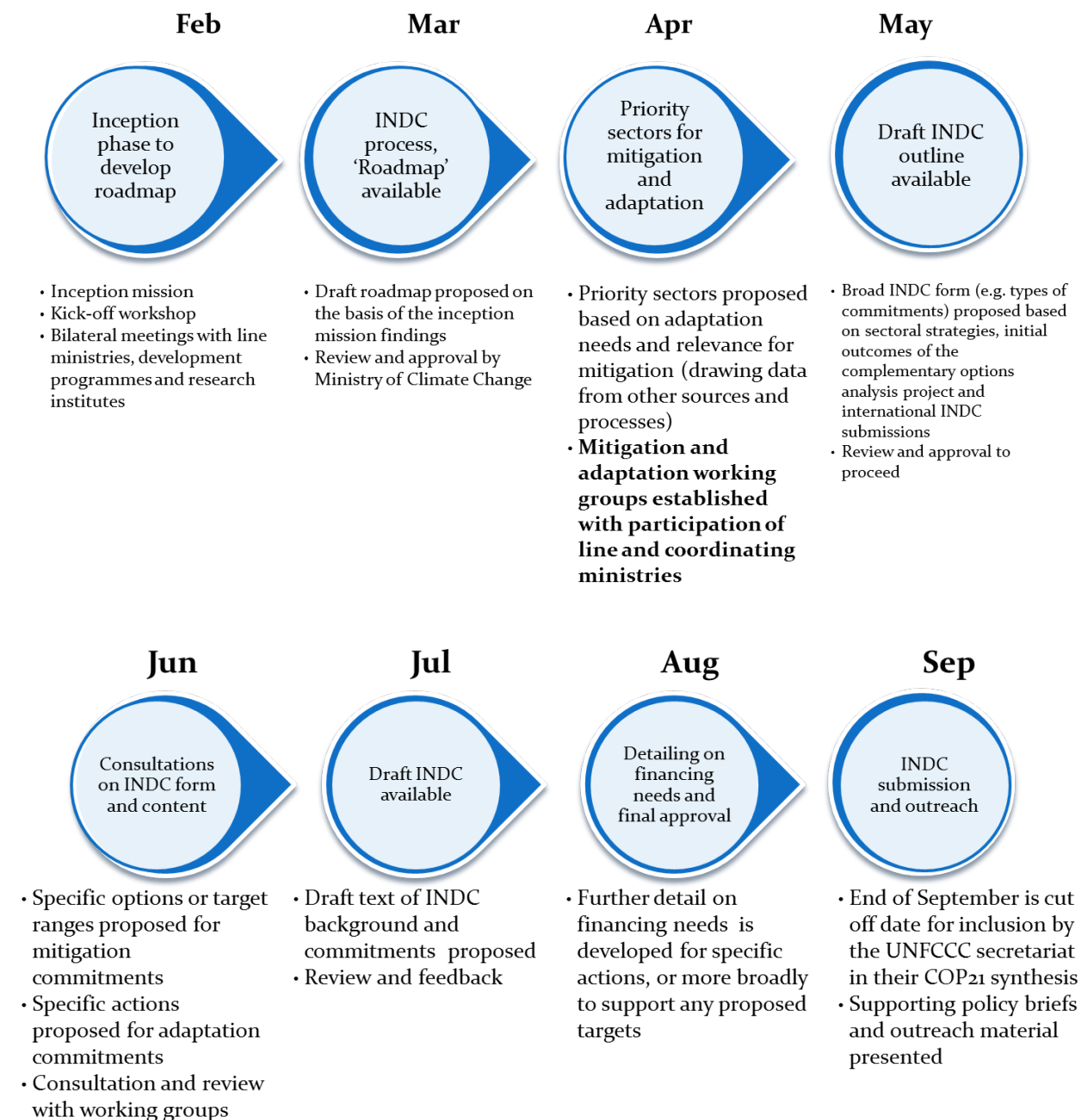
Potentially smallest in overall impact, but can build capacity for future action.

INDCs can also include international financial, technology and capacity building supports required as well as guidance on adaptation plans and actions.

INDC Development Process for Pakistan

The following outlines the schedule of action and events leading up to INDC Submission.

Figure 1: Simplified Indicative Timeline



Tasks by Month

The following represents a more detailed month-by-month breakdown of tasks necessary for the development of Pakistan's overall INDC, as well as the INDC specific to the energy sector

March 2015

Overall Focus: Setting the Scope, Roadmap and Principles for INDC development for Energy. Identifying and reaching out to potential data sources. Initiating study of the energy sector.

Task 1: Principles for INDC Format

Objective: Principles for INDC format are developed, identifying what an INDC might look like generally

Approach: Identifying the principles for the INDC format entails determining what elements (i.e. mitigation, adaptation, targets, sector coverage, etc.) should be included in an INDC. These would be determined by drawing from existing INDC submissions, UNFCCC ADP direction, work of key international INDC thought leaders (e.g. WRI), International presentation on INDC approach and balancing this with the priorities of the GoP and its guidance documents.

Data Requirements: International best practices, GoP preferences, International INDC literature.

Data Acquisition/Identification: Direction on INDC format can be obtained from copies existing INDCs, Reports from international organizations (i.e. WRI), GoP-specific development plans, and other international literature.

Stakeholder Engagement: Mainly internal but could seek feedback from provinces, CSO and others on what should be in an INDC in relation to energy, this determines what the INDC will look like. Also involves initiating partnerships with other key organizations working on INDCs, prominently the World Bank.

Task 2: Setting INDC scope

Objective: Determining sectors and topics of focus. For the Energy sector, determining the key influencing documents, stakeholders, and sectoral plans to be drawn from

Approach: Engaging with the GoP, and drawing from the content of existing and planned INDCs of other countries, key sectors of focus and supportive topics (e.g. capacity building) that are important for INDC inclusions would be decided upon.

Data Requirements: Collection of any existing baseline data for Energy Sector on key macroeconomic and environmental indicators. Also, to ensure consistency with national and sectoral plans, need all key national and sectoral strategies. See Annex 6-A

Data Acquisition/Identification: Need breadth of existing information on key indicators for all targeted sectors (i.e. production, GDP impact, emissions). This includes (in order)

1. Determining what data is available within relevant Government Ministries
2. What data is available from other national research or statistical institutions

3. What data is obtainable from local level governments (i.e. provinces)
4. What is available from international submissions (i.e. UNFCCC National Communications)
5. What data can be obtained from international third parties through public means (e.g. World Bank data sets)
6. What needs to be obtained from international third parties through targeted requests
7. What must be obtained from original modelling (i.e. new work to fill gaps)

Stakeholder Engagement: Introductory workshop to introduce INDC process to key stakeholders, and start conversation on data requirements. Initiate dialogue with external stakeholders (notably WB) and determine how collaboration on INDC development can be pursued. Initiating dialogue with sector Ministries and also seeking input from provinces on their views on INDC elements but chiefly energy sector aspects for INDC inclusion. Need to engage with national and international stakeholders to obtain baseline data.

Box 1: The WRI Model for INDC Design (Bhatia 2015)

WRI has developed a model for INDC design that is gaining prominence. To date it is primarily focused on mitigation but design on adaptation is forthcoming. Key elements of the WRI mitigation model include:

- Sectors & Gases: Which of the sectors does your INDC cover, and which of the seven GHGs (CO₂) (CH₄) (N₂O) (HFCs) (PFCs) (SF₆) (NF₃) will it cover.
- Actions and/or Outcomes: Actions can be policies or mitigation actions to reduce emissions. Outcomes are the intent to achieve a result; they can be GHG outcomes (i.e. a reduction target) or non-GHG outcomes (i.e. a renewable energy target). INDCs can contain elements of both.
 - Actions should be listed, be they policies or projects
 - Outcomes should list the type (GHG, non-GHG) and the way to express it (e.g. base year/baseline/fixed level, absolute/intensity)
- Timeline: The time frame on which the actions and/or of the INDC will be implemented/achieved.

WRI Considerations for INDC targets includes:

- They should be practical (cognizant of data needs).
- Be transparent, and up front about uncertainties.
- There is no specific “winning” approach, any type of outcome/target can lead to emissions increases or reductions. Implementation is key.

A graphical depiction of types of INDCs is covered in Figure 2. Graphical representations of action vs. outcome approaches are covered in Figure 3.

List of potential energy sector INDC stakeholders:

National Government Institutions
Ministry of Climate Change (MoCC)
» Environmental Protection Agency (EPA)
Ministry of Water and Power (MoWP)
» Water and Power Development Authority (WAPDA)
» K-Electric fka. Karachi Electric Supply Company Ltd (KESC)
» National Transmission & Despatch Company (NTDC)
» National Electric Power Regulatory Authority (NEPRA)
» Private Power and Infrastructure Board (PPIB)
» Alternative Energy Development Board (AEDB)
» National Energy Conservation Centre (ENERCON)
Ministry of Science and Technology (MoST)
» Pakistan Standards and Quality Control Authority (PSQCA)
» Pakistan Council of Renewable Energy Technologies (PCRET)
» Pakistan Council of Scientific and Industrial Research (PCSIR)
Ministry of Finance (MoF)
» Economic Advisory Council (headed by Minister of Finance)
Ministry of Petroleum and Natural Resources (MPNR)
» Hydrocarbon Development Institute (HDIP)
Ministry of Planning, Development and Reform (MPDR)
Atomic Energy Commission
Province level: Executive District Officer Works and Services
Civil society / universities
University of Engineering and Technology, Lahore
Global Change Impact Studies Centre (GCISC)
Renewable & Alternative Energy Association of Pakistan (REAP)
Private Sector/Companies
Power Information Technology Company (PITC)
Pakistan Electric Power Company (PEPCO)
Electricity Supply Companies

Figure 2: Types of INDC Contributions (Bhatia 2015)

Types of contributions

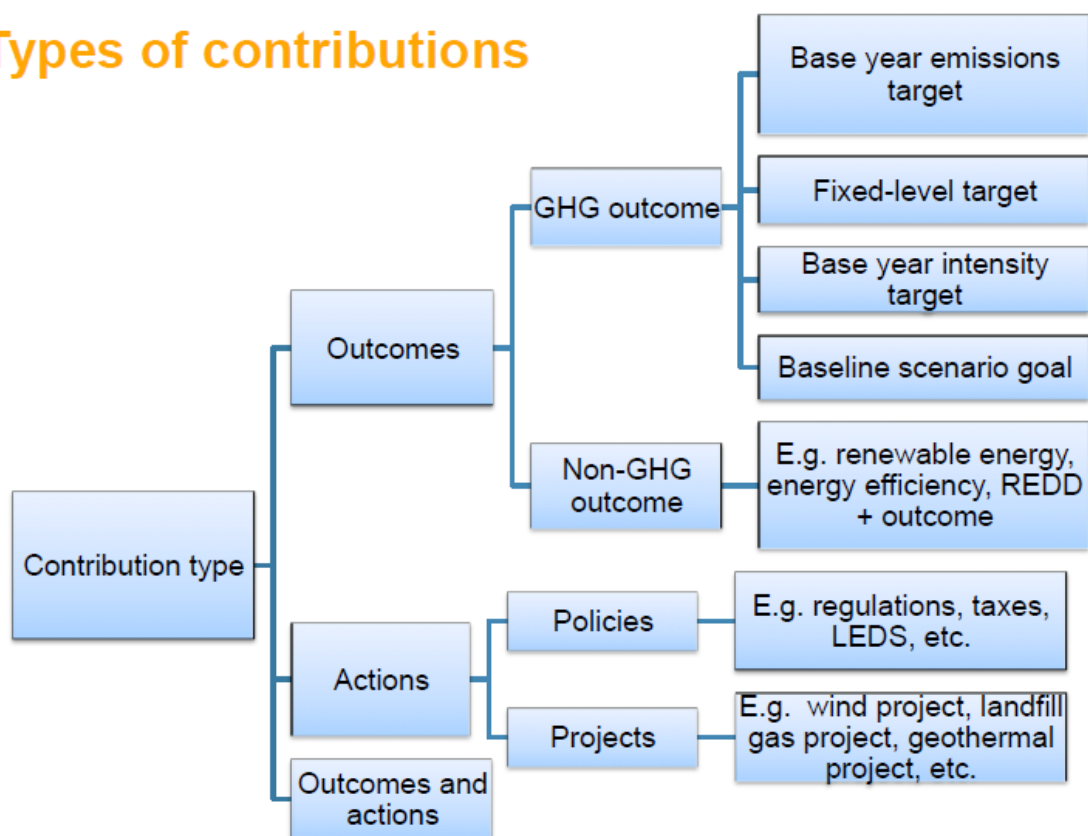
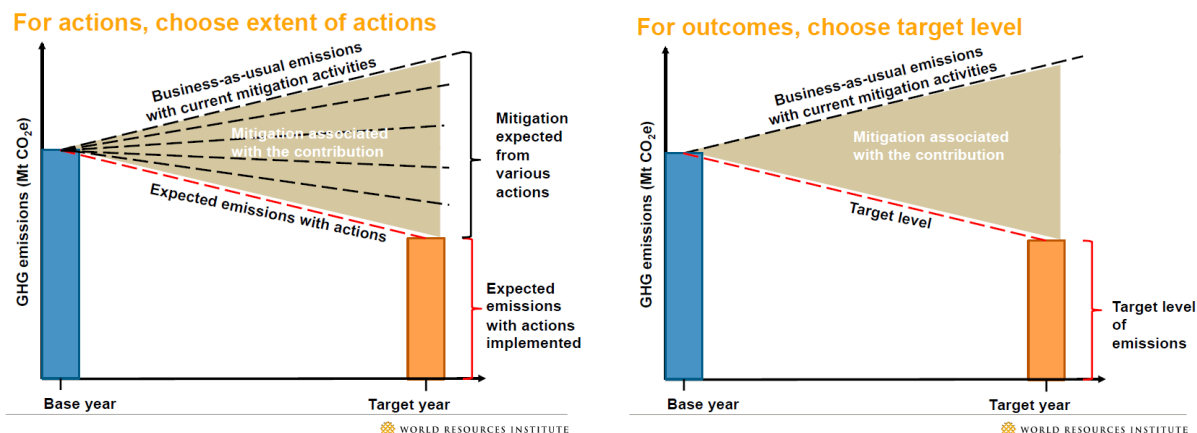


Figure 3: Setting targets – Action vs. Outcome approach (Bhatia 2015). Action approaches are sometimes referred to as ‘bottom up’ while outcome approaches could be considered more ‘top down’.



Task 3: Catalogue of existing energy sector policies & actions relevant to INDC

Objective: A determination of what elements for INDC inclusion may already be identified in existing policies and actions.

Approach: Literature review of existing policies to determine how baseline actions will contribute to GHG mitigation or resilience to climate change. This literature review will also identify gaps in existing policy that an INDC can contribute to closing, or motivating greater action.

Data Requirements: Project team already has identified several documents, compiling a list for key GoP stakeholders to review and identify any potential gaps.

Data Acquisition/Identification: Ministries will be requested to provide any relevant sectoral plans or policies that would impact INDC development that the team has not already identified.

Stakeholder Engagement: Meeting with key Ministries to obtain information on sectoral policies and plans currently under way as well as their priorities for future action. This engagement begins with the end-March 2015 workshop.

Task 4: Scoping an Energy Sector Roadmap (which can also be adapted for other sectors)

Objective: Determination of how an Energy Sector INDC can be developed over the March-September timeline.

Approach: For each sector that is covered by the INDC an approach will be used that analyzes current action in the sector, determines the impact of existing policies and actions, identifies options for greater GHG reductions/enhanced resilience, identifies rough estimates of cost and need for international

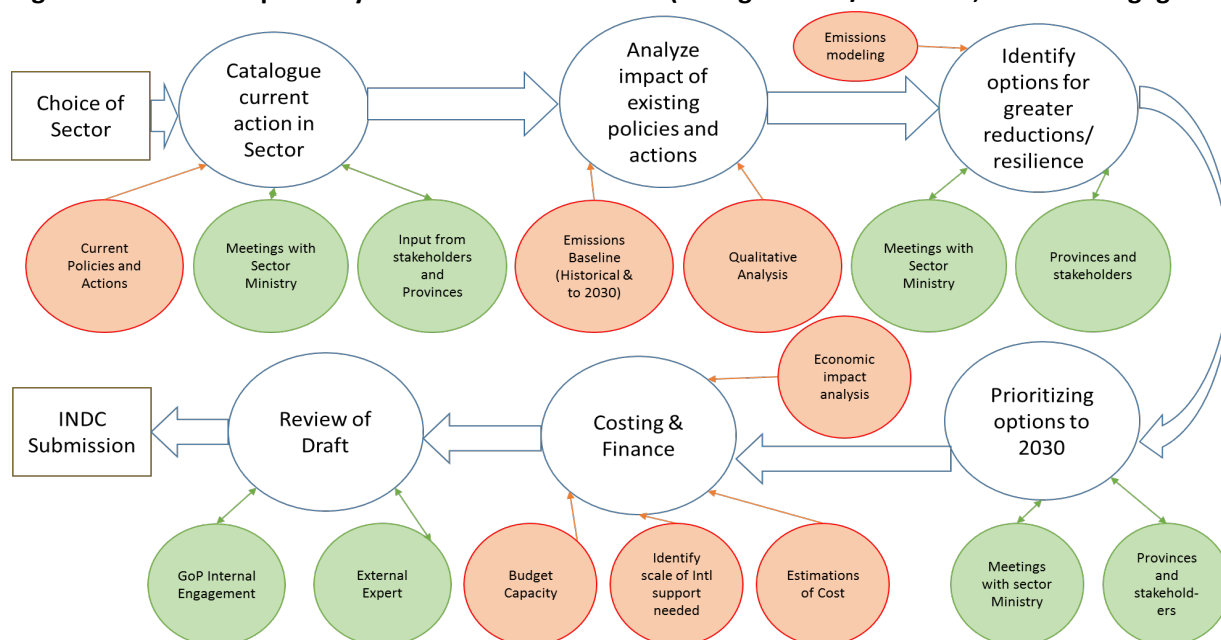
financial support, and prioritizes these options for INDC inclusion. These sectoral contributions are then fed into an INDC that combines these sectoral actions into a nationally focused contribution. This process is outlined in figure 4, while the representation of an action oriented INDC is outlined in figure 3. This approach does not preclude the inclusion of an outcome based approach to INDCs, something that the World Bank has offered that it can support Pakistan in pursuing.

Data Requirements: Sectoral plans, sectoral and action-oriented emissions data (baselines, and estimated for current actions), financial costs and impacts, climate data (in regards to resilience planning), macroeconomic sector profiles.

Data Acquisition/Identification: See Task 2.

Stakeholder Engagement: Ministries, Provinces, International bodies

Figure 4: Sectoral pathway for INDC submission (Orange: Data/Research, Green: Engagement)



Box 2: Scoping Policies and Projects for an Energy Sector INDC

A key aspect to developing sector options for INDCs is determining early the key data, policies, projects and actions that can influence adaptation and mitigation. An early analysis for the Energy Sectors identifies the following policies, projects/initiatives and data sources that would influence an INDC.

Policies:

- Vision 2025
- Climate Change Policy
- Strategic Plan for the Privatization of the Pakistan Power Sector, 1992
- Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997
- Framework for Power Cogeneration 2013 Bagasse and Biomass, 2013
- Alternative and Renewable Energy Policy, 2011
- Policy for Development of Renewable Energy for Power Generation, 2006
- 18th Amendment to the Constitution, 2010
- Pakistan Energy Efficiency and Conservation Bill 2014

Projects/Initiatives

- Long list, includes elements such as: Quaid E Azam Solar Park, Jhimpir Wind Energy Project, Waste to Energy Projects at private and public scale; USAID: Energy Policy Program; UNDP/ENERCON: Barrier to Removal of Energy Efficiency Standards and Labelling; USAID: Power Distribution Program; JICA: Load Dispatch System Upgrade Project; GIZ Renewable Energies and Energy Efficiency; WB: Power Sector Reform: Development Policy Credit

Literature/Data Sources

- Long list, includes internal external sources such as: Ministries, IEA, IRENA, NREL, NEPRA, ADB, UNFCCC, WB, AEDB, OICCI, USAID, WHO

April 2015

Overall Focus: *International engagement through LMG meeting, data collection, scoping of options for mitigation and adaptation, developing the INDC baseline.*

Task 5: Review of INDC submissions

Objective: A catalogue of existing INDC submissions, as well as collected information on still-to-be-released INDCs.

Approach: Literature review of INDC processes from other countries, with particular focus on affiliated groups (i.e. LMG, G77) to determine best practices and highlight areas of convergence on key INDC energy sector format and content questions. A number of INDCs are predicted to be released in the end-March timeframe, and these will form the basis of a catalogue.

Data Requirements: Access to information about other country INDC submissions, with particular focus on energy contributions.

Data Acquisition/Identification: Following outcomes of meetings of international bodies. Bi-lateral discussions at key meetings between parties. Regular international literature review on new submissions. Presentations of parties made at key events.

Stakeholder Engagement: Parties to the ADP process, international organizations either offering general guidance or assisting parties.

Task 6: Identifying INDC baseline for key sectors and GHG inventory

Objective: Initiation of a process to develop a baseline for the energy sector and adaptation. *Note: this process will initiate in April but will not be completed that month due to the length of time required.*

Approach: The INDC energy sector baseline and GHG inventory is necessary to determine emissions trajectory absent actions to reduce emissions or improve resiliency. An adaptation baseline will highlight expected climate impacts, using IPCC scenarios and any locally-focused climate data. The emissions baseline and inventory will highlight expected national emissions absent mitigation actions, utilizing existing emissions models and data, and where linking to the work of the low carbon scenario analysis project. Where new modelling is needed, this information may take longer to prepare. Initially the focus will be on current and planned action, with additional actions to follow inventory/baseline development.

Data Requirements: IPCC scenarios for impacts in Pakistan, local climate data (as much as possible), emissions projections (locally sources as much as possible), projections for energy production, energy use, etc.

Data Acquisition/Identification: IPCC, Government UNFCCC communications, International sources (i.e. WB, IEA, ADB), original emissions modelling.

Stakeholder Engagement: Need to obtain data from national stakeholders (this process initiated in March 2015), also obtain feedback on validity of baseline scenario.

Task 7: Initial identification of adaptation and mitigation options

Objective: An initial list of options for INDC inclusion

Approach: Once sectors are identified, and baseline data is obtained, the focus turns to identifying and quantifying options for action beyond the baseline and existing plans. Where baseline data is not yet available identification of options will have to follow development of a baseline. As such, initial focus is on initial and existing actions. IISD has developed a 'quick screen' approach¹ that it will apply to early option identification. This catalogues an extensive list of potential actions with basic characteristics. From this 'quick screen' list, specific options can be identified that are worthy of deeper analysis, which

¹ IISD's quick screen approach has been captured in an online learning course here:
<http://www.iisd.org/learning/course/info.php?id=103>

can take place over the subsequent months. Ideally all options included in the INDC list would be identified in the initial ‘quick screen’ process and, after being prioritized from this list, subjected to a detailed analysis of their potential to contribute to Pakistan’s climate change goals, which would justify their inclusion in the INDC.

Data Requirements: Energy emissions data, energy economic profiles, known challenges to resiliency (adaptation), climate data. Suggestions for options from key stakeholders including Government parties, provinces, CSOs, industry.

Data Acquisition/Identification: National sources of emissions and economic information (GoP documents, line ministries) where possible, locally-focused information from provinces. International bodies (i.e. WB) where there are gaps in national data.

Stakeholder Engagement: Climate data can be obtained from national sources where available, IPCC work can fill gaps on potential impacts. A guided checklist system for consultations with stakeholders is suggested.

Box 3: Options for Provincial INDC Engagement

Engagement with provinces is a key aspect of the development of an INDC for Pakistan. As such, a way to streamline engagement with provinces is through a checklist or survey form that will look to obtain data and information from individual provinces. Using the energy sector as an example, this form/checklist should include information on:

- Renewable energy (solar, bioenergy, wind, landfill gas etc) facilities that are installed in the province, as well as facilities that are planned;
- Existing Government support for renewable energy (including copies of regulations, policies, as well as records of budget support given to renewable energy projects);
- Current External support for renewable energy (for example, development programmes or other external programmes);
- Target or plan for future renewable energy;
- Provincial suggestions for energy sector options for INDC inclusion
- Challenges or barriers that could prevent you from reaching your targets or plans
- Locally developed data on energy distribution, transmission, production, access.
- Contact details of the agency and staff that are responsible for energy, and should be engaged through the INDC project.

May 2015

Overall Focus: *Refining format, prioritizing options for INDC inclusion, engagement on options.*

Task 8: Refining INDC format

Objective: An agreed draft format for Pakistan’s overall INDC. This provides guidance but may be refined prior to submission.

Approach: Based on LMG meeting in April, refinement of format of INDC may be desired. This will be based on international trends in INDC development, while respecting unique aspects of GoP approach to adaptation and mitigation.

Data Requirements: Presentations and feedback from LMG meeting, check-up on internationally submitted INDCs.

Data Acquisition/Identification: Presentations from LMG meeting, bi-lateral engagement with LMG partners and others.

Stakeholder Engagement: None nationally, unless major changes are envisioned, in which case key stakeholders may have to be engaged for their response to these changes.

Task 9: Initial prioritization of adaptation and mitigation options/Quantification of mitigation options

Objective: Refined list of options for INDC inclusion.

Approach: Based on the long list of initial options, key stakeholders will be engaged to provide feedback on these options and participate in a prioritization exercise that leads to a shorter list of actions that parties agree are the most feasible, and deliver the strongest results. Project team will also review the list to offer its inputs into which options are most feasible, will deliver the strongest outcomes, and most align with GoP goals for climate change and energy. The prioritized list of mitigation options will then be quantified to determine impact on the emissions baseline.

Data Requirements: feedback from stakeholders on initial options list, emissions quantification of prioritized mitigation options.

Data Acquisition/Identification: Feedback from stakeholders, original emissions modeling

Stakeholder Engagement: Directed engagement with all relevant stakeholders seeking feedback on the initial list of options (may include some parties identifying new options). While emissions impact of some options may be readily available in existing studies, it is expected that new emissions modeling will be required for some, if not all prioritize options.

June 2015

Overall Focus: Analysis of international submissions, finalizing format of INDC (Energy), financing

Task 10: Analysis of Q1 INDC Submissions

Objective: A catalogue of elements and format of submitted INDC, on which to draw direction for Pakistan's INDC.

Approach: A review of Q1 INDC submissions will provide MOCC with an early look at the level of ambition of submitted INDCs (particularly in regards to energy), as well as provide guidance on the widely accepted formatting framework for INDC submission.

Data Requirements: Existing INDC submissions

Data Acquisition: Collected INDC submissions from UNFCCC portal, as well as informal, bilateral and multilateral meetings and presentations. This acquisition will be a key task for the ADP meetings planned for June 2015.

Stakeholder Engagement: MOCC may wish to provide communications for stakeholders on the common INDC formatting elements, as well as the level of ambition for Q1 submitted INDCs, in order to place Pakistan's INDC in the proper global context.

Task 11: Final Determination of INDC format

Objective: A template for Pakistan's INDC

Approach: Based on the analysis of Task 10, feedback from stakeholders, and direction from the MoCC, a final determination of INDC format will be completed. This will include which common INDC elements in other country submissions will be included in Pakistan's INDC, which sectors will be addressed, and to what degree the INDC will be quantitatively based vs. qualitatively based. This template may be amended at a later date, but this finalization will provide direction for the remaining tasks. The early work on the energy sector INDC can provide guidance for format and content of INDCs in other sectors.

Data Requirements: Report of Task 10 analysis, report from stakeholders.

Data Acquisition/Identification: Existing reports.

Stakeholder engagement: Circulation of template to key stakeholders for feedback on format.

July 2015

Overall Focus: Final engagement on options for INDC (specific focus on Energy)

Task 12: Finalization of options for inclusion

Objective: A revised list of INDC options for inclusion, noting their individual impacts on emissions reduction and/or adaptation and resilience to climate change.

Approach: Based on qualitative and quantitative analysis to date, including assessment of financing requirements, emissions impact of mitigation options, and resiliency impacts of adaptation options, a final list of options for INDC inclusion will be identified. This list will be circulated with key stakeholders and following their feedback the list will present options from which the GoP can determine which options it favors for inclusion in its INDC. This determination will be made by the GoP, utilizing analysis of key partners as supporting evidence for determination.

Data Requirements: Full financing, emissions and resiliency analysis, conducted by the project team. In addition, reports of stakeholder engagement outcomes.

Data Acquisition/Identification: All data has been collected and analyzed prior to this step by the project team.

Stakeholder Engagement: By this point, external stakeholder engagement is largely complete, however the MoCC may wish to circulate the finalized list of options to key internal and external stakeholders for their final feedback. There may be desire for a workshop with stakeholders at this point to review outcomes of the INDC option development process, or this could be held after the identification of financing and resourcing needs in tasks 13 and 14.

August 2015

Overall Focus: Financing, Final INDC review

Task 13 & 14: Identification of financing requirements/Alignment of resourcing needs with budgets and need for International support.

Objective: Financing requirements for prioritized INDC options, as well as identification of where national resources can be allocated for INDC options, and where international assistance will be requested to support implementation of options identified in the INDC.

Approach: Based on the prioritized list of options (Task 9) work will be conducted to identify the cost of these options to the extent possible, a preliminary fiscal scoping exercise can also be conducted identifying where internal revenues can be reorganized to support adaptation and mitigation, as well as areas that may be subject to international financing support.

Data Requirements: Costing exercises of existing plans and approaches, international examples of similar actions where costing has been conducted, national budget information.

Data Acquisition/Identification: Information from Ministry of Finance, key stakeholders (provinces, industry, CSOs), global and generalized information from international financing bodies.

Stakeholder Engagement: Internal – Ministry of Finance, key sectoral ministries. International organizations including those with history of financing adaptation and mitigation. Engagement with provinces and other key stakeholders to build informed estimates of financing needs.

Task 15: GoP review of draft INDC and International Update

Objective: A penultimate draft of Pakistan's INDC

Approach: This is a final opportunity for internal GoP review of INDC format and content, taking into account the stakeholder engagement process through development, The progress to date of other country submission of INDCs, and review of the impacts of the options chosen for inclusion.

Data Requirements: No new requirements, full analysis of options included however, plus an update of international progress on INDC submission.

Data Acquisition/Identification: International review of INDC submissions to date. Finalized original emissions/economic modeling.

Stakeholder Engagement: Internal (MOCC and broader GOP including finance and key ministries) engagement is a necessity. MoCC may also at this time wish to host a broader workshop with stakeholders to present the INDC and garner any final feedback before proceeding to a final draft.

September 2015

Overall Focus: Submission

Task 16: Submission of INDC

Objective: INDC Submission

Approach: Submission of INDC to the UNFCCC

Data Requirements: None

Data Acquisition/Identification: None

Stakeholder Engagement: Public communication of INDC, including presentation of key elements in various venues internally within Pakistan and internationally.

References

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- IISD (2014) Summary of the Lima Climate Change Conference, International Institute for Sustainable Development, December
- NewClimate (2014) What the Lima Call for Climate Action means for Intended Nationally Determined Contributions (INDCs), December
- Bhatia, Pankaj. (2015). Design Options for INDCs, World Resources Institute
- WRI (2014) What is an INDC?, World Resources Institute

Annex 6-A: Detailed roadmap for overall INDC process

	1 (Engagement)			2 (INDC development)			3 (Linkages)	
	Engagement with MOCC	Engagement with Government bodies (non-MOCC)	Non-Government Engagement	INDC Concept/Form at	INDC Development process/Content	Tools and Methods	INDC-related international events	Linkages with Low Carbon Scenarios project
March	1. Monthly meeting (Islamabad) 2. INDC General Roadmap 3. Energy Sector Roadmap	1. Opening lines of communication with other ministries (particularly finance) and conducting data collection into existing work they have conducted related to INDC elements 2. Supporting engagement with provinces 3. End of month INDC workshop	1. Securing commitment with stakeholders and conducting data collection into existing work they have conducted related to INDC elements 2. Alignment with World Bank on their INDC support to MoCC	1. Principles for INDC Development 2. Setting INDC scope (including balance between adaptation and mitigation) 3. Developing a sector roadmap focused on the role of Energy in INDC	1. Analysis of existing policies/Gap identification 2. Analysis of energy sector inclusion in INDC 3. Identification of other priority sectors. 4. Data collection	1. Literature review (international INDC Literature) on INDC form and content 2. Review of existing government policy for potential alignment with INDC (adaptation and mitigation) 3. Engagement with MOCC on alignment of INDC with GoP priorities 4. Focused review of how countries are integrating adaptation into INDCs 5. Sectoral review for energy, identifying ways to address sector in INDC 6. Data Collection: Interviews with stakeholders and government ministries to obtain data and suggestions for INDC inclusion	1. US/EU/Other INDCs become public	1. Identification of priority areas of focus based on data gathering and inception report for LCS project 2. Data collection

April	<ol style="list-style-type: none"> 1. Monthly meeting (Islamabad) 2. Guidance on basic INDC Scope (input for LMG meeting) 3. List of priority sectors 4. Support for the process of engagement with provinces 	<ol style="list-style-type: none"> 1. Interviews and engagement with government bodies to secure required data and information for analysis. 2. Soliciting input for core INDC elements from national government and provincial contacts. 	<ol style="list-style-type: none"> 1. Support for the process of engaging stakeholders and collecting information from non-government bodies 2. End of Month WB workshop 	<ol style="list-style-type: none"> 1. Review of options for INDC design elements 2. Assessment of the INDC approvals process both domestically and within UNFCCC 	<ol style="list-style-type: none"> 1. Initial Identification of adaptation options 2. Preparation of mitigation options and baseline 	<ol style="list-style-type: none"> 1. Review of existing INDC information from other countries - drawing lessons for Pakistan 2. Gap identification (where original analysis is needed) for sectors of focus 3. Assessing INDC processes, drawing information and guidance from LMG meeting outcomes 4. Developing list of initial options for adaptation and mitigation based on GoP policy, international guidance, and INDC ambitions 5. preparation of emissions baseline based on existing data as much as possible, original analysis where needed 	1. Like Minded Group meeting	2. Analysis of mitigation options, with particular focus on gaps identified
May	<ol style="list-style-type: none"> 1. Monthly meeting (Islamabad) 2. Draft INDC outline with options for format 3. Assessment of various INDC concepts for comment/review 4. Long options list (Ad and Mi) & framework to assess. 	<ol style="list-style-type: none"> 1. Reviewing long options list with members of relevant sector ministries 	<ol style="list-style-type: none"> 1. Seeking input for core INDC elements from stakeholders 	<ol style="list-style-type: none"> 1. Refining format based on LMG meeting 	<ol style="list-style-type: none"> 1. Refinement and prioritization of adaptation and mitigation options 	<ol style="list-style-type: none"> 1. Original analysis of sector options where gaps identified in April 2. Prioritization of INDC options based on GoP and stakeholder feedback, as well as international check on INDC development 		

	5. Initial prioritization							
June	1. Monthly meeting (Bonn) 2. Preparation and review of prioritized options list 3. Summary document on other country INDCs	1. Consultation on INDC form and content with Ministries and provinces 2. Engagement with Ministry of Finance re: resourcing	1. Consultations on INDC form and content	1. Analysis of INDC Submissions to provide guidance on direction for Pakistan 2. Finalization of elements for inclusion	1. Identification of financing requirements 2. Identification of linkages with existing financing exercises, identification where additional analysis needed 3. Alignment of resourcing with budgets to determining level of financial support required.	1. Financing analysis of priority options based on data obtained from Ministry of Finance and existing MOCC and International financial sources 3. Review of INDC submissions in Q1 2015 to determine potential INDC approach options for GoP	1. 1-11 ADP2-9 2. INDC submission for countries with capacity to do so	
July	1. Monthly Meeting (Islamabad) 2. Draft INDC options for Review 3. Initiating research into financing needs			1. Refinement of formatting (what is in/what is out) in terms of format 2. Development of a defined set of INDC options/approaches	1. Finalization of content/options for inclusion on adaptation, mitigation, other elements 2. Refinement of resourcing requirements for INDC	1. Finalization of option list based on GoP and stakeholder feedback, as well as review on international state-of-play on INDC development 2. (If desired) quantification of INDC options in terms of emissions impact can take place at this time based on prioritized option list		

August	1. Monthly Meeting (Islamabad) 2. Final details on financing needs 3. Revised INDC options for approval	1. Outreach on revised INDC options	1. Outreach on revised INDC options either in workshop or targeted engagement	1. Final check against other international INDCs	1. Refinement of content based on GoP comments	1. Drafting INDC options for GoP review based on GoP ambition, international review, and current direction of UNFCCC negotiations 2. Refinement of financing requirements for INDC options, for inclusion in INDC including original financial analysis/modelling where needed	1. 31-4 Sept ADP3	1. LCS modelling where required for key sectors 2. Reference case for emissions trends
September	1. Monthly Meeting (Bonn) 2. Pre-submission briefing	1. Pre-submission briefing can include cross-government participation					1. INDC Submission target	
October				1. Outline of go-forward process post-INDC submission, particularly how LCS work will inform INDCs long-term			1. 19-23 ADP4	
November	1. Wrap meeting (Paris)						1. 30-11 Dec COP 21	

Annex 6-B: Key documents to be analyzed for the energy sector

ADB	2013	Energy Outlook for Asia and the Pacific
AEDB/Yousuf	2015	State of Pakistan Power Sector
AEDB/Zaidi	2008	Short and Medium Term Grid Interconnection Plans of Wind Power with PEPCO Grid
Bhatti et al	2012	Energy Crisis In Pakistan, Adaptation And Mitigation Measures
ENERCON/UNDP	2009	BRESL Country Report
Friends of Democratic Pakistan	2010	Integrated Energy Sector Recovery Report and Plan
GIZ/Meyhoefer	2012	Energy Sector & Energy Market of Pakistan
GoP	2005	State of Environment Report - Energy
GoP	2011	Pakistan economic survey - Energy
GoP	2006	Policy for Development of Renewable Energy for Power Generation Employing Small Hydro, Wind, and Solar Technologies
GoP/MoWP	2013	National Power Policy
GoP/UNDP	2012	National Sustainable Development Strategy
GoP/UNFCCC	2011	National Economic & Environmental Development Study (NEEDS)
HDIP	2013	Pakistan Energy Yearbook
Hong Kong Environmental Protection Department		Review of the International Energy Policies and Actions and the Latest Practice in their Environmental Evaluation and Strategic Environmental Assessment. Pakistan Energy Policies and Actions
Husain	2010	Pakistan's Energy Sector Issues: Energy Efficiency and Energy Environmental Links
IEA		Country Statistics for Pakistan
IEA	2014	CO2 Emissions from Fuel Combustion
IEA	2014	Electricity Information
IEA	2014	Energy Balances Non-OECD
IEA	2014	Energy Statistics Non-OECD
IEA/IRENA		Joint Policies and Measures Database

Jan_Mutalib	2013	Mitigation of Energy Crisis in Pakistan through Energy Conservation in Residential Sector
Kahn and Qayum	2009	The demand for electricity in Pakistan
Khan/Ahmed	2008	Energy Demand in Pakistan: A Disaggregate Analysis
MoCC	2012	National Climate Change Policy
MoCC	2013	Framework for Implementation of Climate Change Policy (2014-2030)
MoCC/CCAP	2013	Energy Efficiency Lighting in Residential, Commercial, Industrial & Outdoor sectors of Pakistan
MoE	2005	National Environmental Policy
MoF/EEG	2009	Integrated Energy Plan 2009-2022 Report of the Energy Expert Group
MoWP	2014	National Power Tariff and Subsidy Policy Guidelines
National Renewable Energy Laboratory (NREL)		Pakistan Resource Maps and Toolkit
NEPRA	2014	State of Industry Report 2013-2014
NEPRA	2014	Annual Report 2013-2014
OICCI	2012	Road Map for Energy Efficiency & Conservation in Pakistan
Petroleum Institute of Pakistan	2012	Pakistan Energy Outlook (2010-11 to 2025-26)
Pye	2013	Pakistan power sector modelling
Qasim/Kotani	2014	An Empirical Analysis of Energy Shortage in Pakistan
Rathi et al	2012	Energy Conservation through Motors in Pakistan's Industrial Sector- Need to Use of Energy Efficient Motors
Task Force on Climate Change (TFCC)	2010	Final Report
USAID	2007	Energy Sector Assessment for Pakistan
WHO	2005	Situation Analysis of Household Energy Use and Indoor Air Pollution in Pakistan
Yasmeen/Sharif	2014	Forecasting Electricity Consumption for Pakistan