

# Stakeholder Workshop

## Expert Report on Budgetary, Fiscal & Financial Reforms for Development of Renewable Energy in India

### Session 1

### Understanding the NAPCC Target

## Agenda

- Background
- Context
- Our Approach
- Understanding the NAPCC Target

## Background (1/2)

- India has given voluntary commitment to reduce its carbon intensity of economy by 20-25% below 2005 levels by 2020
- NAPCC is one of the key instruments for the same
- NAPCC aims at grid RE purchase to be 15% of grid electricity by 2020
- SERCs have issued Renewable Purchase Obligations (RPOs) for obligated entities
- Unfortunately the state RPOs don't add up to NAPCC target
- Further, very few states have enforced compliance of RPOs
- Government of India has also dithered on its various policies

### Background (2/2)

- Policy uncertainty surrounding AD & GBI in wind has caused, capacity addition to drop in the 1st year of the 12th FYP
- Contribution of RE to the total power generation has been:



Year	NAPCC Target	Actual Contribution of RE to total power generation
2010-11	6%	4.7%
2011-12	7%	5.5%
2012-13	8%	6.4%

**If India wishes to fulfill its voluntary commitment, it is necessary to meet the NAPCC targets**

RE Capacity Addition in MW

## Context (1/4)

- Climate Parliament is a global network of concerned legislators working to combat climate change by promoting policy solutions in national Parliaments
- Climate Parliament has undertaken to identify *“Parliamentarians’ actions for achieving Renewable Energy targets of the 12th Five Year Plan, to promote Indian Government’s low carbon inclusive growth agenda”*
- Idam Infrastructure Advisory is assisting Climate Parliament in preparation of *“Expert report on Budgetary, Fiscal & Financial Reforms for development of RE in India”*

### Context (2/4)

- Mr. V. Subramanian, Former Secretary, MNRE and Dr S. Narayan, Former Principal Economic Advisor to Prime Minister have been providing constant guidance in the execution of this assignment
- The project execution team consists of experienced professionals from Idam Infra, Athena Infonomics and Praxis Partners



**Dr. S. Narayan**  
Economic Advisor



**V. Subramanian**  
Policy Advisor



**Dr. Krishnaswamy  
Rajivan**  
Financial Advisor



**Balawant Joshi**  
Project Director



**Ajit pandit**  
Project Manager



**Sanjay Sen**  
Legal Advisor

- The team is closely working with private sector and public sector to understand issues affecting renewable energy sector

## Objectives of the Study

- To critically analyze the existing policies, schemes, programmes etc. for their adequacy to meet the target of 15% RE by 2020
- To recommend measures on the budgetary, financial, fiscal front with respect to Central & State government policies to achieve above target
- To devise a chronological implementation plan for the above recommendations

## Anticipated Impact of the study

- Increased cognizance amongst the relevant stakeholders regarding the current status, progress and requirements of the sector in view of the NAPCC target
- Increased awareness amongst parliamentarians regarding the opportunities and issues of the sector
- Uptake of the recommendations provided in the report by respective implementing agencies
- Increased activity and initiatives amongst parliamentarians to garner attention from the Government and step towards fast-tracking Government actions towards this goal



# Our Approach (1/2)

## Project Execution

Activities →	Policy and Regulatory Reforms	Financial Reforms	Budgetary and Fiscal Reforms	Institutional Reforms	Cross Sectoral Reforms
Current Status	Critique of Existing Regulations and Policies on RE	Effectiveness of the existing fin. Instruments & schemes	Existing and past budget allocations and Fiscal Provisions	Existing Institutional structure and its shortfalls	Status of RE provisions in major Govt. Initiatives/Schemes
Recommended Reforms	Suggested policy and regulatory provisions for accelerated RE development	Innovative financial instruments and financing mechanisms	New ideas for fiscal incentives and need for higher budget allocation	Suggestions for restructuring and improving the existing institutions	Identified schemes with adequate scope for inclusion of RE
Implementation Roadmap	Detailed plan of implementation of the suggested policy measures	Detailed plan for implementation of the suggested ideas	Detailed plan for implementation of the suggested reforms	Detailed plan of implementation of the suggested reforms	Detailed plan of implementation of the suggested reforms

## Our Approach (2/2)

### Outreach and Stakeholder Interaction

- Consensus building is an extremely critical component
- Idam Infra conducted stakeholder consultations at 3 levels

#### 1. Steering & Advisory Group

- Group of eminent persons who provided the necessary guidance and support during the execution of the project

#### 2. Stakeholder Meetings

- One on one meeting with about 20 stakeholders who work in various fields in the RE sector (Policy, Finance, Regulation, etc.)

#### 3. Stakeholder Workshop

- To share the proposed recommendations in the report
- To seek comments and suggestions on the proposed recommendations.
- To ensure that the recommendations cover all aspects of RE

# Progress

- Understanding the target of 15% by 2020
- Analysis of the current scenario
- Identifying challenges and constraints
- International Experience on budgetary, fiscal and financial reforms in Renewable Energy
- Stakeholder consultations
- Evolving Recommendations
- Steering & Advisory Group Meeting
- Evolving Implementation Roadmap
- Envisioning India's renewable energy Scenario beyond 2020
- Stakeholder Workshop

Completed

Ongoing

# National Action Plan on Climate Change (1/2)

- One of the targets as defined in the NAPCC states that, *“national renewable standard may be set at 5% of total grid purchase, to increase by 1% each year for 10 years. SERCs may set higher percentages than this minimum at any point in time.”*
- Other RE related provisions in NAPCC are:
  - Central/State Govt. to set up verification mechanism to ensure that certain minimum RE is purchased
  - Over and above the RPO, the purchase of RE should be done through competitive bidding replacing conventional energy
  - National Solar Mission so that solar energy could compete against fossil fuel options within 20-25 years.

# National Action Plan on Climate Change (2/2)

- As per the Integrated Energy Policy Report (IEPR), the electricity demand in 2020 will be approximately 1700 BU
- If NAPCC target is to be achieved, it creates a market for 255 BU of RE
- In order to achieve this target of 255 BU of RE generation, an annual RE capacity addition of around 12,000 MW is required during period 2013-2020
- The capacity addition trend in the past 3 years has averaged around 4000 MW/annum peaking to almost 5000 MW in FY 2011-12

# Capacity required to meet NAPCC targets

<b>Total Electricity Demand in 2020 (BU)</b>				1700
<b>RE Target (%)</b>				15%
<b>Installed Capacity (as of 28/02/2013)(MW)</b>				27294
<b>RE demand in 2020 (BU)</b>				255
<b>Case</b>	<b>CUF</b>	<b>Total Capacity (MW)</b>	<b>Minus Current Capacity (MW)</b>	<b>Annual Capacity Addition (MW/year)</b>
Case 1	26%	111960	84665	<b>12095</b>
Case 2	28%	103963	76668	<b>10952</b>
Case 3	30%	97032	69737	<b>9962</b>
Case 4	32%	90967	63672	<b>9096</b>

# Ambiguity about the real target

- NAPCC Target, though critical, the government itself does not factor it into the planning process

12th FYP Document	MNRE Strategic Plan	NAPCC Target
9% by 2017 16% by 2030	41383 MW by 2017 i.e. approx 6.5-7% by 2017	12% by 2017 15% by 2020

■ Actual Installed Capacity  
■ 11th Plan Target (Planning Commission)  
■ 12th FYP Target (Planning Commission)  
■ NAPCC Target upto 2017 (Assuming 26% CUF)  
■ MNRE Strategic Plan

# Scenario Analysis - Assumptions

- Two scenarios have been developed to understand capacity addition possibilities if NAPCC target of 15% Renewable energy by 2020 is to be achieved.
- Assumptions undertaken for the scenarios are:-

	Wind-dominant Scenario	Solar-significant Scenario
<b>Description</b>	Wind is the prominent source	Solar is the prominent source
<b>Wind</b>	To grow at a CAGR of 26%	To grow at a CAGR of 20%
<b>Solar</b>	Solar, we let it achieve the lower targets of NSM, along with 50% successful achievement of state level targets	Solar achieves its full JNNSM targets, also includes 70% successful achievement of state level targets
<b>Small Hydro Power</b>	To grow at their historical trends of 10%	To grow at their historical trends of 10%
<b>Bio-power</b>	To grow at their historical trends of 21%. It includes power generated from biomass and bagasse based cogen	To grow at their historical trends of 21%. It includes power generated from biomass and bagasse based cogen



## Scenario Analysis - Cumulative Achievement

- Cumulative achievement till 2020, for all renewable energy technologies are stated under each scenario:-

	Wind Dominant Scenario	Contribution of technology	Solar Significant Scenario	Contribution of technology
<b>Wind</b>	52,000 MW	59%	45,000 MW	23%
<b>Solar</b>	19,000 MW	22%	31,000 MW	33%
<b>Small Hydro Power</b>	6,000 MW	7%	6,000 MW	6%
<b>Bio-power</b>	11,000 MW	13%	11,000 MW	12%
<b>RPO Fulfillment till 2020</b>	<b>11.3%</b>		<b>11.5%</b>	

\* Numbers have been rounded off

## Scenario Analysis - Financing Requirement

- Financing required for all renewable energy technologies are stated for each scenario under 3 different cost/MW assumptions:-

Rs Crores						
	Wind Dominant Scenario			Solar Significant Scenario		
	Case 1 - 6crore/MW	Case 2 - 7crore/MW	Case 3 - 8crore/MW	Case 1 - 6crore/MW	Case 2 - 7crore/MW	Case 3 - 8crore/MW
<b>Wind</b>	312,000	364,000	416,000	270,000	315,000	360,000
<b>Solar</b>	114,000	133,000	192,000	186,000	217,000	248,000
<b>Others</b>	102,000	119,000	136,000	102,000	119,000	136,000
<b>Total</b>	528,000	616,000	744,000	558,000	651,000	744,000

Even for reduced target of approx 11.5%, average investment of about Rs. 600,000 crore would be required over next seven years.

**Government need to undertake radical measures to be able to generate such investment in Renewable Energy Sector.**

# Thank You