Financing NDC Implementation through Blended Finance and Green Bonds

December 19th, 2018, New Delhi, India
India Habitat Centre

Workshop Proceeding Report

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Acknowledgement

The workshop on “Financing NDC Implementation through Blended Finance and Green Bonds” was held at the India Habitat Center in New Delhi, India on the 19th of December 2018. The workshop was organised by the Asia LEDS Partnership (ALP) with technical support from the Finance Working Group of LEDS Global Partnership (LEDS GP) and the Climate Bonds Initiative, knowledge partner on “Green Bonds”.

ALP would like to acknowledge the support of the facilitators and resource persons from the Finance Working Group of LEDS Global Partnership (LEDS GP); UNDP Regional Bureau for Asia and the Pacific cKers Finance, India; GIZ, Beijing; GGGI, India; Asian Development Bank (ADB); Climate Bonds Initiative, India and other individuals, for sharing their knowledge and insights.

ALP would also like to extend special thanks and gratitude to all participants from Bangladesh, Bhutan, India, Sri Lanka, Nepal, Cambodia, Malaysia and Indonesia. A list of resource persons, session facilitators and dignitaries is included in Annexure – I.
Background

Asian countries are rapidly developing readiness/implementation plans to move ahead on implementing their Nationally Determined Contributions (NDCs). Investment in low carbon infrastructure, with enhanced participation of the private finance community, remains central to realizing these commitments. Thus, building a strong partnership between the public and private sector to create enabling environments for finance mobilization, combined with targeted capital market interventions to address existing gaps in the climate finance landscape, are urgently needed to accelerate progress.

The Asia Low Emissions Development Strategies Partnership (ALP), organised a workshop for its member countries on “Financing NDC Implementation through Blended Finance and Green Bonds” on 19th December, 2018 with an objective to facilitate enhanced learning on how blended finance and green bonds can be leveraged to meet the finance gaps identified in NDCs.

The ALP convenes Communities of Practice (CoP), comprising a group of practitioners, member country representatives and business sector representatives, to learn together on a common area of interest/need that would enable and/or inform policy development and implementation. In 2018, ALP convened four CoPs on Grid-scale Renewable Energy, Clean Mobility, NDC Finance, and Multi-Level Climate Governance. ALP designs activities of each CoP to include online and in-person bilateral and multilateral exchanges; training and technical assistance on tools, policies and approaches; support to early mover countries; compilation of good practices and lessons learned; and generating thought leadership on innovative concepts.

The workshop was organised as part of ALP’s NDC Finance CoP, providing a training and knowledge-sharing platform to participants from member countries. NDC Finance Community of Practice (CoP) is an interactive network comprised of national and subnational governments, with engagement from business and private sector actors, technical institutions, non-profits, and other international organizations. It is a platform for sustained engagement among countries to enable peer-learning, technical collaboration, and continuous access to tools and expert assistance. The NDC Finance CoP seeks to enable countries in Asia to access finance to achieve and enhance goals for NDC implementation.

The workshop was structured to enable participants to learn from each other and other international sector experts with decades’ worth of experience with innovative financing mechanisms. Hypothetical case studies based on real-time market and financing situations were discussed and participants were given an opportunity to discuss issues and suggest solutions. This enabled some highly interactive sessions, with participants arriving at common as well as unique conclusions, utilizing their vivid experience and knowledge.

A detailed agenda of the workshop is attached at the end of this document as Annexure II.
Key Takeaways

- Climate finance is a key enabler for NDC implementation and helps limit temperature rise to within 2-degrees C.
- There is an urgent need to address constraints plaguing the climate finance landscape, especially the missing link of leveraging private finance, through seeding of public finance.
- Blended Finance and Green Bonds are two emerging financing mechanisms responding to both micro-level and macro-level needs for financing NDC targets across Asian countries.
- Green bonds financing large solar projects whereas Blended Finance is able to fund industrial energy efficiency measures as well.

Blended Finance

- Blended finance mechanism is the use of public or philanthropic capital to attract private sector investment.
- Blended finance is a structuring approach that allows different types of capital (whether impact or commercially oriented), to invest alongside each other while each achieving their own objectives.
- Blending capital can address the mismatch between risks and returns, and thereby attract private sector investment for NDC and LEDs financing.
- Key steps in designing a blended capital facility include a clear understanding of the financing gaps, barriers, and challenges for bringing in private sector investment.
- For public sector and governments, it is essential to diagnose the areas where there is a need for additional finance and understand how the private sector can contribute and narrow the gaps.
- It has been found that national development priorities such as poverty reduction and climate change adaptation are difficult to translate into private investment plans and budgets. This requires more research and discussion.
- Climate Public Expenditure and Institutional Reviews (CPEIRs), a diagnostic tool, is being used by many Asian countries, such as Indonesia and Nepal, to link climate change with national and sub-national policies and programs.
- Key challenges in mobilizing private finance are mainly two: a) insufficient knowledge/capacity of personnel to price the risk appropriately and b) lack of sufficient debt servicing track records in different Decentralised Renewable Energy (DRE) segments to clearly articulate the risks.
- Solutions to balance risk and returns: a) underwrite few risks in new segments to promote investments; b) draw systemic approaches for blended financing and strengthening of the financing ecosystem, c) aggregate projects, and develop a menu of impact matrix indicators to reduce compliance cost.

Green Bonds

- The size of the green bond market is USD 90 trillion globally, with renewable energy, building and transport emerging as top sectors for investment.
- Among Asian countries such as China, Indonesia, Thailand, Japan, Malaysia and India there is a growing interest in the Green Bond market and supporting regulations are being set-up.
- Green bonds are debt securities issued by financial, non-financial or public entities where the proceeds are used to finance 100% green projects and assets. Unlike regular vanilla bonds, “green”
is a bonus feature to the bond, ascertaining and certifying green features of the projects. It’s about the projects and assets, not the issuer.

- Green Bond Principles (by International Capital Market Association, (ICMA)), Green Loan Principles (under Loan Market Association (LMA)), Climate Bonds Taxonomy, Standard and Sector Criteria and ASEAN Green Bond Standards (ASEAN Capital Markets Forum) are the principles and standards which are followed to certify projects.

- There are five main steps for issuance and reporting on Green Bonds:
  - Preparation stage:
    - Identifying green assets and define the framework to use bond proceeds
    - Engaging verifier for pre and post-issuance certification
  - Certification and Issuance of Bond:
    - Submitting the certification report and issuance of bond
  - Post issuance
    - Submission of the post-issuance report after 12 months
    - Reporting each year on project financing and performance

- Development agencies such as United Nation Development Program (UNDP), Asian Development Bank (ADB), GIZ, as well as development programs like Global Green Growth Institute (GGGI) are working in tandem with many Asian countries by supporting them in identifying financing avenues either through blended mechanism or through raising appropriate bond facilities.

- However, the know-how on different financing mechanisms and related knowledge products is limited to financial institutions; there is a need to discuss these and make this information available to State actors and project developers.

- ALP provides several avenues to enable continuous learning and ensure a deeper understanding of these financial mechanisms, with an aim to enhance financing for NDC implementation.
On behalf of the Asia LEDS Partnership, Mr Ashish Rao Ghorpade, Deputy Director, ICLEI South Asia, welcomed the dignitaries and eminent participants from ALP’s various member countries as well as development agencies—local governments, Non-Governmental Organisations (NGOs), financial institutions, multilateral banks, researchers, and practitioners, etc. Mr Ghorpade said that climate finance is a key enabler for NDC implementation in countries and to achieve the Paris agreement goals. He also stressed on the need to link private financing with public sector financing and to address the constraints of accessing climate finance. The objectives of NDC Finance CoP and the activities undertaken under it, including webinars and peer to peer learning exercises on blended finance and green bonds, were mentioned.

Ms Marylaure Crettaz, Head, Swiss Agency for Development and Cooperation (SDC)-India emphasised that the topic is of great relevance for all Asian countries which are moving towards NDC implementation. She briefly shared information on SDC funded CapaCITIES project, which aims to strengthen the capacities of Indian cities, to identify, plan and implement measures for reducing greenhouse gas (GHG) emissions and enhancing resilience to climate change in an integrated manner. Speaking about the CapaCITIES project’s implementation in India, she mentioned that learning from the project suggests that accessing finance remains a major constraint for local governments. Highlighting the example of the intent of the City of Rajkot to access finance by floating Green Bonds, she stressed upon the need for finding innovative financial solutions for implementation of LEDS in cities.
Jointly hosting the session, Ms Carishma Gokhale Welch and Ms Soumya Chaturvedula provided a detailed overview of the Low Emissions Development Strategies Global Partnership (LEDS GP) and Asia LEDS Partnership.

LEDS GP brings together more than 300 institutions across government agencies, technical institutes, international agencies, and NGOs. It operates through four regional platforms (Asia, Latin America, Eurasia and Africa) and six technical working groups that provide expertise in support of regionally identified priorities and activities.

Ms Chaturvedula informed that ALP is a voluntary regional network comprised of over 885 members (611 individuals and 274 organizations) from the public, private, and non-governmental sectors. ALP aims to advance the development of country-led and country-specific strategic plans to promote economic growth while reducing GHG emissions without causing trade-offs to other environmental pressures in the Asia and Pacific region. Seeking linkages with on-going programmes of various development partners for providing blended technical assistance, is an important element of ALP’s work, she added.

Highlighting the workshop’s agenda, Ms Carishma mentioned the three core objectives of the Finance Working Group (FWG) under the LEDS GP were:

- Deepen member understanding on how to stimulate private sector investment
- Highlight innovative financing strategies for NDC implementation
- Respond to members’ needs and requests for knowledge and skills

Highlighting the outcomes of ‘Cities & Regions Talanoa Dialogues’, it was mentioned that the devolution of NDC targets at sub-national levels has not been witnessed in most of the countries, globally. Achieving country NDC targets would need multi-level governance actions and larger participation of the private sector both in investing and innovating solutions.

The session ended with a self-introduction, where each participant informed the group about their objectives for attending and their expectations from the workshop.
Ms Joanne Manda, Climate Finance Specialist, UNDP Regional Bureau for Asia and the Pacific

Ms Joanne Manda noted that the major concerns among developing countries are “how to access and utilise climate finance and also how this climate finance can be transformative.” Talking about the role of blended finance and blending modalities, Ms Manda defined blended finance as use of public or philanthropic capital to attract private sector investment. Further defining this, she said blended finance is a structuring approach that allows different types of capital (whether impact or commercially oriented), to invest alongside each other while each achieving their own objectives. Blending capital can address the mismatch between risks and returns and thereby attract the private sector investment into NDC and LEDS financing.

She said key steps in designing a blended capital facility include a clear understanding of the financing gaps and barriers including an understanding of the challenges in bringing in private sector investment. Thus, for the public sector and governments, it is essential to diagnose the areas where there is a need for additional finance, and understand how the private sector can contribute and narrow the gaps. Sharing examples from her work, Ms Manda mentioned that often, it has been found that national development priorities such as poverty reduction and climate change adaptation are difficult to translate into private investment plans and budgets.

Citing an example on tracking national climate finance expenditure and translating climate change issues into real projects, Ms. Manda shared learnings from the use of the “Climate Public Expenditure and Institutional Review (CPEIR)” diagnostic tool by Indonesia. By implementing CPEIR, the government of Indonesia has initiated a multi-sectoral dialogue and cross-departmental co-ordination for linking climate change policies and programmes with national development plans and budgeting. This has also enabled the government to identify areas of private sector interest which then translated into productive working partnerships with businesses, to create an enabling environment to mobilize finance.

Ms Manda reminded the audience of the key design principles that should be kept in mind while establishing a “Blended Finance Facility” – a) Clear understanding of the objectives and issues that the facility targets and to address them in consultation with the private sector; b) Innovate incrementally - bend the laws of capital but don’t break them; c) Plan adequately to fund the design and set-up of the facility; this process takes 1-3 years and costs between USD 300,000-USD 1 Million ; d) Build flexibility into everything; find an anchor/lead investor - ideally one private sector and one philanthropic/public; e) Start small (unless the government is able to self-fund the facility in its entirety).

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Mr. Jayant Prasad, Executive Director, cKers Finance

Mr Jayant Prasad introduced cKers Finance, India’s first sustainable energy finance company that actively develops newer market segments. Launched in 2017, as a Non-Banking Financial Company (NBFC), cKers (pronounced: ‘seekers’) has been developing customized frameworks to provide debt in various sustainable energy segments, applying innovative asset-backed financing approaches. In select projects, it also operates as a co-developer. So far cKers has financed many decentralized renewable energy projects including roof-top solar, solar pumping and off-grid segments. cKers is also providing debt financing support to industrial energy efficiency initiatives such as improving heating and cooling efficiencies.

cKers works through a developed capital stack relevant to the sector through (a) blending different sources and (b) by raising sustainable energy bonds. The key to this work is the sectoral and financing expertise of cKers, who match the two together while mitigating risk through diligent monitoring, measurement and reporting of project performance, including GHG abatement.

Based on his experience of running the NBFC for the past year, Mr Prasad highlighted the key challenges in mobilizing private finance: insufficient knowledge/capacity of personnel to price the risk appropriately and lack of sufficient debt servicing track records in different DRE segments to clearly articulate the risks.

As a solution to lower the investment risk in DRE projects thereby building investor confidence, Mr. Prasad suggested a few key ideas: – a) explore and underwrite few risks in new segments to promote investments; b) draw systemic approaches for blended financing and strengthening of the ecosystem, c) aggregate projects and develop a menu of impact indicators to reduce compliance cost.
Session IV - Break out Group Discussion

Discussion and case study on Blended Finance Strategies and Approaches

Facilitators
Ms Joanne Manda, Climate Finance Specialist, UNDP Regional Bureau for Asia and the Pacific
Mr Jayant Prasad, Executive Director, cKers Finance

Table Facilitators
Ms Soumya Chaturvedula, ALP, ICLEI South Asia
Ms Carishma Gokhale Welch, LEDS GP, NREL
Ms Aditi Paul, ALP, ICLEI South Asia
Mr Nikhil Kolsepatil, ALP, ICLEI South Asia

This session focused on a case study based interactive discussion amongst participants and led to the documentation of key technological, financial and policy barriers perceived by them (case study & questions are provided in Annexure III). The key outcomes of these questions are as follows:

Stage of market development: In developing stage, market not yet mature.

Key risks perceived by investors
- Technology risk of new innovations
- Ambiguous government policy/ incentives on promotion of renewable energy
- Behavioural barriers to technology adoption
- Lack of confidence in the legal or contract regime
- Credit risk for renewable energy projects

Provision of tax rebates and subsidies, which could reduce the credit risk of the renewable energy projects, was suggested as a possible solution for these constraints.

Finance interventions to help accelerate investment into the market
- Accessing funds from development banks
- Incentives and tax subsidies from the Government
- Shifting subsidy expenditure from fossil fuels to clean energy
- Successful pilot implementation to generate investor confidence
- Strengthening local banks for financing DRE projects

Policy and regulatory changes
- Development of national Renewable Energy Purchase Obligations (RPOs) and feed-in-tariffs
- Clarity on renewable energy policy timeframe and implementers (public and private)
- Developing robust mechanisms for renewable energy projects’ implementation (single window clearance for availing subsidies and project approvals).
- Regulatory cost should not be more than the regulatory benefits

Key finance gaps to be addressed in the country for the design and implementation of LEDS/LTS?
- Creating new/dedicated financial institutions for renewable energy projects, for example, Indian Renewable Energy Development Agency Limited (IREDA) in India
- Conducting studies and assessments of long-term energy mix profile.
- Building the technology ecosystem and capacity would give confidence to investors as well as consumers
Ms. Neha Kumar, India Programme Manager, Climate Bonds Initiative

Ms. Neha Kumar highlighted that fundamentals of growth are being challenged by climate change globally and there is an urgency to understand and act on how we produce and consume. Ms Kumar briefly introduced the Climate Bonds Initiative, the only climate bonds certifying body in the world. She introduced the concept of bonds, green bonds, the process of green bonds issuance and its current market scenario. The green bond market has been growing rapidly and the size of the green bond market is USD 90 trillion globally, with renewable energy, building and transport emerging as top sectors for green bond investment. She also highlighted the recent issuances of green bonds and introduction of supporting regulatory guidelines in Asian countries such as China, Indonesia, Thailand, Japan, Malaysia and India.

She indicated that while awareness about green bonds remains a big challenge, however the right combination of the right source and mix of capital, green bonds can be a leading finance instrument for tackling climate change. The importance of transparency in green bonds issuance and its certification was also noted.

The presentation was followed by a discussion on the use of green bonds by municipalities. Pooled Financing Mechanisms (PFMs) are being used by Swedish municipalities to raise green bonds to finance low carbon and climate-resilient urban projects. Ms. Ulka Ganesh Kalaskar, Chief Accounts & Finance Officer from Pune Municipal Corporation (PMC) shared her experience in raising INR 2000 million (USD 28.5 million) by selling municipal bonds of 10-year tenure. She pointed out that institutional capacity and political decisions are major constraints and there is a need for formulation of municipality context specific bond regulations by the Securities and Exchange Board of India (SEBI) (specific to the Indian context).
Session VI - Mobilizing finance for NDC implementation in Asia – Panel Discussion

Panellist
Dr B. G. Mukhopadhyay, Chief General Manager (Retd.), National Bank for Agriculture and Rural Development (NABARD), Mumbai
Ms Yingying Ren, Project Officer
Sino-German Climate Partnership Project, GIZ Beijing
Mr Shantanu Gotmare, India Country Representative, GGGI - Innovative Blended Finance Facility for Off-grid Energy sector
Mr. Frédéric Asseline, Principal Climate Change Specialist (Climate Finance), Asian Development Bank (ADB)
Ms. Joanne Manda, UNDP - Indonesia Green Bond/Sukuk

This panel discussion focused on using green bonds and blended finance for NDC implementation, where the panellists highlighted learnings from project implementation and case studies.

Dr B. G. Mukhopadhyay shared his experience on Indian green climate finance landscape. He mentioned that in India, there is an operational confusion on the terminologies pertaining to green finance and its related aspects and there is an urgent requirement to standardise definitions. He mentioned that there is a need for dialogue between all the stakeholders so as to increase institutional capacities of government bodies/departments on accessing international climate finance. He underlined that innovative financial mechanisms such as green bonds do make economic sense i.e. they are more economically viable than present conventional finance options, and added that implementing pilot projects based on these innovative financing mechanisms is key to generating investor confidence.

Ms Yingying Ren shared the experience of and learnings from green bonds issuance in China. She said China became the first country in the world to introduce a policy framework for green finance as a means to stimulate more private sector funding for climate change. She also discussed the initiative of the People’s Bank of China (PBoC) in developing the Chinese green bond market.

Mr. Shantanu Gotmare, briefly presented the wide range of activities undertaken by The Global Green Growth Institute (GGGI) since 2013 in India, including Integrating Climate Resilience into Government of India’s (GoI’s) flagship programme Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA), joint declaration with International Solar Alliance (ISA) for promoting Solar in member countries, supporting Indian Renewable Energy Development Agency Limited (IREDA) in accessing Climate Finance from Green Climate Fund (GCF) ($120 million), etc. Discussing the Off-Grid Energy (OGE) sector in India, Mr Gotmare highlighted a key constraint of off-grid energy companies is that they are not able to access structured finance since traditional financing institutions lack risk appetite for OGE projects. Limited understanding of the financing sector/institutions and their slow response to addressing the needs of financing in new sectors/segments were noted as challenges.
While explaining the Access to Clean Energy (ACE) Fund, he mentioned how climate finance could be a potential trigger for increasing public and private investments for low carbon development.

**Mr Frédéric Asseline**, highlighted the Asian Development Bank (ADB’s) Initiatives to finance NDC Implementation. He mentioned that through its network of member countries and institutions, the NDC Partnership project of ADB provides targeted and coordinated assistance to help countries achieve their climate commitments while facilitating country-to-country learning and promoting enhanced financial support. He also elaborated on ADB’s Climate Change Operational Framework (CCOF) 2017-2030, and its components related to climate finance. ADB’s Strategy 2030 and CCOF 2030 prioritize the need to ramp up climate financing support for NDC implementation. ADB targets doubling its annual climate financing to USD 6 billion by 2020 with USD 4 billion dedicated to mitigation and USD 2 billion supporting climate adaptation. By 2030, ADB targets scaling up its up climate finance/operations to account for 75% of its project portfolio compared to 43% at present. Through this target, contributions to climate financing from ADB’s own resources would amount to USD 80 billion over the period from 2019-2030. Key elements and outcomes of various ADB supported initiatives and interventions for NDC implementation and climate financing, including green bonds and blended capital, such as the NDC Advance platform, Asia-Pacific Climate Finance Fund, Canadian Climate Fund for the Private Sector in Asia (CFPS) II, Credit Enhancement of Project Bonds Facility, and China Shandong Green Development Fund Catalyzing Climate Finance, were shared.

**Ms Joanne Manda** presented Indonesia’s Green Sukuk/ Islamic bond Initiative. She highlighted that in Indonesia, the climate budget tagging process enabled the government to initiate new financial instruments in combating climate change in the form of bond instruments, called the Green Sukuk. The issuance of the green bonds in the country was politically driven and meant as a statement of intent. So far Green Sukuk worth IDR 16.75 trillion (USD 1.25 billion) have been issued. Sharing project implementation experiences, she indicated that institutional capacity building on green bonds was a key intervention in Indonesia which contributed to the project’s success; the majority of existing guidance and frameworks are oriented towards corporate structures and were not geared towards the public sector. Campaigning and advocacy focusing on ensuring investor awareness about project progress and achievements, including impact reporting, were also highlighted as prime activities under this project.
Session VII – Live Case Study on Green Bonds

Mr Sandeep Bhattacharya, India Projects Manager, Climate Bonds Initiative

Mr Amit Rastogi- GM, Corporate Finance, ReNew Power

Mr Sandeep Bhattacharya and Mr Amit Rastogi jointly hosted this session. During this session, participants were presented with a case study on ‘Green Bonds Issuance by National Thermal Power Corporation (NTPC)’ (case study is at Annexure III). This session engaged participants in an interactive discussion on the case study and generated ideas on how NTPC can achieve its target of becoming a 130 GW company by 2032 with a 28% share of renewables in the energy mix. The key outcomes/interventions emerging out of this discussion are as follows:

- Need for developing human resources
- Need for technology transfer
- Need to mitigate or reduce the uncertainty of government policies on renewable energy

This interaction was followed by a brief presentation by Mr Amit Rastogi; ReNew Power’s experience on the execution of large-scale renewable energy projects in India was shared. He mentioned that creditworthiness of both the project owner and implementer is a major factor which boosts confidence among investors.
Session VIII and Session IX

Country Consultation and Strategy Session and Finance CoP 2019 - Planning and Priorities

This interactive session focused on understanding challenges and opportunities in NDC finance across Asia. Participants from mixed backgrounds were grouped and discussions focused on blended finance, green bonds, finance for NDC implementation and other financing mechanisms. Following is the list of suggestions from participants:

<table>
<thead>
<tr>
<th>Blended Finance</th>
<th>Green Bonds</th>
<th>NDC Policy and Finance</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand knowledge on blended finance to all policymakers – Sri Lanka</td>
<td>Capacity building of municipalities on the issuance of green bonds – India (Rajkot)</td>
<td>Need more information on NDC finance opportunities and support in accessing such finance (who is to be approached and what is the application process?) – Malaysia</td>
<td>Capacity building on MRV – finance. Unpacking the COP24 guidelines and rulebook – UNDP</td>
</tr>
<tr>
<td>Interested in learning from experiences of other countries – Bangladesh</td>
<td>More examples of successful issuance and discussing the issues and challenges faced during the process – Malaysia (Kota Kinabalu)</td>
<td>More awareness is required to understand the gaps in NDC Financing – Sri Lanka</td>
<td>Understanding of what is “green” – Standardisation of elements that would make a project green - CBI How to lower the cost of capital – CBI</td>
</tr>
<tr>
<td>How to engage, strengthen, and set an example for private sector participation – Nepal, Vietnam</td>
<td>What does a municipality need to do to be “bond ready”? How to bundle projects for bond issuance – UNDP</td>
<td>How to encourage state (province) governments to adopt innovative finance mechanisms to accelerate NDC implementation – India (NABARD)</td>
<td>Green Coalition, Green Jobs, Green Trading Network – some of the topics suggested by participants but not clearly articulated.</td>
</tr>
<tr>
<td>Case-studies on solar-pumping and blended finance - Cambodia</td>
<td>How to finance projects under green bonds that are developed under Green Growth Action Plans (GGAPs) – Vietnam</td>
<td>Capacity building to understand the need and exchange experiences – Nepal More awareness programs – Bangladesh (IDCOL) More knowledge exchange on possible ways of financing - CBI</td>
<td>Tradable carbon pricing for low emission investment – Vietnam</td>
</tr>
</tbody>
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Next Steps

There is tremendous interest and enthusiasm among the members to learn more about adopting blended finance and green bonds. Thus, as next steps, ALP will continue to enhance learning on the following topics, subject to funding availability and final agreement by the Steering Committee:

**Green bonds**
The CoP will focus on two aspects of floating green bonds:
1. Institutional structures and policies required to create a green bond facility
2. Enabling selection of projects that are appropriate for the green bond market and supporting project structuring.

*Approach*
Specific examples from 3 - 4 countries/cities/public institutions will be provided and hands-on training will be given to building capacities to access the green bond market and float bonds for identified projects.

**Blended finance**
The focus would be to help countries and sub-national entities in identifying projects and project structuring that can be typically financed through blended capital.

*Approach*
Support member countries through the provision of knowledge material, training and hands-on learning in project design and access to blended capital.
## Annexure I – List of Participants

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name</th>
<th>Designation</th>
<th>Department</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mr Andrin Fink</td>
<td>Thematic Advisor</td>
<td>Swiss Agency for Development and Cooperation</td>
<td>India</td>
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<tr>
<td>2</td>
<td>Ms Marylaure Crettaz Corredor</td>
<td>Head, Swiss Agency for Development and Cooperation, India</td>
<td>Swiss Agency for Development and Cooperation</td>
<td>India</td>
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<tr>
<td>3</td>
<td>Mr Mohammed Jabeed Emran</td>
<td>Chief Risk Officer (CRO)</td>
<td>Infrastructure Development Company Limited (IDCOL)</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>4</td>
<td>Mr E SEYLO</td>
<td>Head of Business Development and Strategy Division</td>
<td>Rural Development Bank of Cambodia</td>
<td>Cambodia</td>
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<tr>
<td>5</td>
<td>Mr Bijay Raj Pokharel</td>
<td>Division Chief</td>
<td>Agricultural Development Bank Ltd.</td>
<td>Nepal</td>
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<tr>
<td>6</td>
<td>Ms. Bui Hong Phuong</td>
<td>Climate Finance Expert</td>
<td>Ministry of Planning &amp; Investment</td>
<td>Vietnam</td>
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<tr>
<td>7</td>
<td>Mr B G Mukhopadhaya</td>
<td>Ex- NABARD</td>
<td>Independent Resource person</td>
<td>India</td>
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<tr>
<td>8</td>
<td>Mr Sujith Ratnayake</td>
<td>Assistant Director</td>
<td>Ministry of Mahaweli Development and Environment</td>
<td>Sri Lanka</td>
</tr>
<tr>
<td>9</td>
<td>Mr. Thusara Sanjeewa Vitharana</td>
<td>Kurunegala Mayor</td>
<td>Kurunegala City Council</td>
<td>Sri Lanka</td>
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<tr>
<td>10</td>
<td>Dr. Shishiroda</td>
<td>Project Nodal Officer CRCAP Kurunegala</td>
<td>Kurunegala, Sri Lanka</td>
<td>Sri Lanka</td>
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<tr>
<td>11</td>
<td>Mr. Abdul Sathhar</td>
<td>Project Nodal Officer CRCAP Kurunegala</td>
<td>Kurunegala, Sri Lanka</td>
<td>Sri Lanka</td>
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<tr>
<td>12</td>
<td>Ms Ulka Kalaskar</td>
<td>Chief Accounts &amp; Finance Officer</td>
<td>Pune Municipal Corporation</td>
<td>India</td>
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<tr>
<td>13</td>
<td>Mr. Chetan Nandani</td>
<td>Deputy Municipal Commissioner</td>
<td>Rajkot Municipal Corporation</td>
<td>India</td>
</tr>
<tr>
<td>14</td>
<td>Mr. Amit Savajiyani</td>
<td>Chief Accounts &amp; Finance Officer</td>
<td>Rajkot Municipal Corporation</td>
<td>India</td>
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<tr>
<td>15</td>
<td>Mr Stanley Chong Hon Chung</td>
<td>Director, Planning Division</td>
<td>Kota Kinabalu City Hall, Sabah State</td>
<td>Malaysia</td>
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<tr>
<td>16</td>
<td>Mr. Frédéric Asseline</td>
<td>Principal Climate Change Specialist (Climate Finance)</td>
<td>Asian Development Bank</td>
<td>Philippines</td>
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<td>17</td>
<td>Yingying Ren</td>
<td>Project Officer - Sino-German Climate Partnership Project</td>
<td>GIZ Office Beijing</td>
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<td>18</td>
<td>Mr. Amit Rastogi</td>
<td>GM, Corporate Finance</td>
<td>ReNew Power</td>
<td>India</td>
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<td>19</td>
<td>Mr Rahul Sharma</td>
<td>Corporate Finance</td>
<td>ReNew Power</td>
<td>India</td>
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<tr>
<td>20</td>
<td>Ms. Neha Kumar</td>
<td>Program Manager</td>
<td>Climate Bond Initiative</td>
<td>India</td>
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<td>S.No</td>
<td>Name</td>
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<tr>
<td>21</td>
<td>Mr. Sandeep Bhattacharya</td>
<td>Projects Manager</td>
<td>Climate Bond Initiative</td>
<td>India</td>
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<tr>
<td>22</td>
<td>Mr. Shantanu Gomatre</td>
<td>India Head</td>
<td>Global Green Growth Initiative</td>
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<td>23</td>
<td>Mr. Jayant Prasad</td>
<td>Executive Director</td>
<td>cKers Finance</td>
<td>India</td>
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<tr>
<td>24</td>
<td>Ms. Joan Manda</td>
<td>Climate Finance Specialist</td>
<td>UNDP</td>
<td>Indonesia</td>
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<td>25</td>
<td>Mr. Ashish Rao</td>
<td>Deputy Director</td>
<td>CELI South Asia</td>
<td>India</td>
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<tr>
<td>26</td>
<td>Ms. Aditi Paul</td>
<td>Consultant</td>
<td>ALP Secretariat</td>
<td>India</td>
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<tr>
<td>27</td>
<td>Mr. Nikhil Kolsepatil</td>
<td>Manager</td>
<td>CELI South Asia</td>
<td>India</td>
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<tr>
<td>28</td>
<td>Mr. Keshav Jha</td>
<td>Assistant Manager</td>
<td>CELI South Asia</td>
<td>India</td>
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<td>29</td>
<td>Ms. Carishma Gokhale</td>
<td>Project Leader</td>
<td>CELI South Asia</td>
<td>India</td>
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<td>30</td>
<td>Palash Srivastav</td>
<td>Principal Consultant</td>
<td>South Pole</td>
<td>India</td>
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<td>31</td>
<td>Soumya Chaturvedual</td>
<td>Deputy Director</td>
<td>CELI South Asia</td>
<td>India</td>
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<td>32</td>
<td>Bhaskar Padigala</td>
<td>Deputy Manager</td>
<td>CELI South Asia</td>
<td>India</td>
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## Annexure II – Workshop Agenda

### Financing NDCs through Blended Finance and Green Bonds

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Details</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>8:30 – 9:00</td>
<td>Check-in and Registration</td>
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<tr>
<td>9:00 – 9:20</td>
<td>Welcome Remarks</td>
<td>Mr Ashish Rao Ghorpade - Deputy Director, ICLEI South Asia</td>
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<tr>
<td></td>
<td>Inaugural Remarks</td>
<td>Ms Marylaure Crettaz, Head, Swiss Agency for Development and Cooperation (SDC), India</td>
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<tr>
<td>9:20 – 10:00</td>
<td>LEDS GP - Finance Working Group Overview</td>
<td>Ms Carishma Gokhale Welch, LEDS Global Partnership – Finance Working Group, NREL</td>
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<tr>
<td></td>
<td>Asia LEDS Partnership and Workshop Overview</td>
<td>Ms Soumya Chaturvedula, ALP, Deputy Director, ICLEI – South Asia</td>
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<tr>
<td></td>
<td>Introduction of Participants</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Finance for NDC Implementation</td>
<td>Ms Joanne Manda, Climate Finance Specialist, UNDP Regional Bureau for Asia and the Pacific</td>
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<td></td>
<td>The role of blended finance</td>
<td>Ms Alexia Kelly, Co-Chair of the LEDS GP Finance Working Group (via Skype)</td>
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<td></td>
<td>Blending modalities, successes and lessons learned</td>
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<tr>
<td>10:30 – 10:45</td>
<td>Coffee Break</td>
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<tr>
<td>10:45 – 11:30</td>
<td>Blended Finance Interactive Case Study</td>
<td>Mr Jayant Prasad, Executive Director, cKers Finance</td>
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<td></td>
<td>Interactive case study for blending finance for clean energy in India</td>
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<tr>
<td>11:30 – 12:00</td>
<td>Break Out Group Discussion</td>
<td>Facilitators: Ms Soumya Chaturvedula, ALP, ICLEI South Asia Ms Carishma Gokhale Welch, LEDS GP, NREL Ms Aditi Paul, ALP, ICLEI South Asia Mr Nikhil Kolsepatil, ALP, ICLEI South Asia</td>
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<tr>
<td></td>
<td>Discussion and case study on Blended Finance Strategies and Approaches</td>
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<tr>
<td>12:00 – 13:00</td>
<td>Lunch</td>
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<tr>
<td>13:00 – 13:40</td>
<td>Introduction / Overview of Green Bonds</td>
<td>Ms Neha Kumar, India Programme Manager, Climate Bonds Initiative</td>
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<td></td>
<td>Defining green bonds, their structure, use cases, and issuance</td>
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<tr>
<td>Time</td>
<td>Session</td>
<td>Speakers</td>
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<tr>
<td>13:40 – 14:50</td>
<td><strong>Mobilizing finance for NDC implementation in Asia – Panel Discussion</strong>&lt;br&gt;Using green bonds and blended finance for NDC implementation</td>
<td>Dr. B.G. Mukhopadhayay, Chief General Manager (Retd.), National Bank for Agriculture and Rural Development (NABARD), Mumbai&lt;br&gt;Ms Yingying Ren, Project Officer&lt;br&gt;Sino-German Climate Partnership Project, GIZ Beijing&lt;br&gt;Mr. Shantanu Gotmare, India Country Representative, GGGI - Innovative Blended Finance Facility for Off-grid Energy sector&lt;br&gt;Mr. Frédéric Asseline, Principal Climate Change Specialist (Climate Finance), Asian Development Bank (ADB)&lt;br&gt;Ms. Joanne Manda, UNDP - Indonesia Green Bond/Sukuk&lt;br&gt;Facilitator: Ms Soumya Chaturvedula, ALP, Deputy Director, ICLEI – South Asia</td>
</tr>
<tr>
<td>14:50 – 15:30</td>
<td><strong>Live Case Study on Green Bonds</strong>&lt;br&gt;<strong>Country Consultation and Strategy Session</strong>&lt;br&gt;Interactive session to understand challenges and opportunities in NDC finance across Asia. Participants will break into small groups and rotate among topic areas.</td>
<td>Mr. Sandeep Bhattacharya, India Projects Manager, Climate Bonds Initiative&lt;br&gt;Mr. Amit Rastogi- GM, Corporate Finance, ReNew Power</td>
</tr>
<tr>
<td>15:30 – 16:15</td>
<td><strong>Coffee Break</strong></td>
<td></td>
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<tr>
<td>16:15 – 17:15</td>
<td><strong>Finance CoP 2019 - Planning and Priorities</strong>&lt;br&gt;Break Out Session&lt;br&gt;report back from group discussions&lt;br&gt;members will vote on priorities for 2019 for CoP</td>
<td>Facilitators:&lt;br&gt;Ms Soumya Chaturvedula, ALP, ICLEI South Asia&lt;br&gt;Ms Carishma Gokhale Welch, LEDS GP, NREL&lt;br&gt;Ms Aditi Paul, ALP, ICLEI South Asia&lt;br&gt;Mr Nikhil Kolsepatil, ALP, ICLEI South Asia</td>
</tr>
<tr>
<td>17:15 – 17:30</td>
<td><strong>Summary and Closing</strong>&lt;br&gt;Ms Soumya Chaturvedula, ALP, ICLEI South Asia</td>
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Welcome to the Networking Dinner from 19:30 onwards in the same hall.
The LEDS GP Finance Working Group: A Case in Addressing Key Gaps in Clean Energy Scaling

Overview

Indopolam is a populous island nation with a rapidly growing industrial base and rich natural resources. It had abundant, high-quality coal, plenty of sunshine and significant hydropower. However, most of the easily accessible coal and hydro resources had been tapped over the last decades. A severe drought over the last two years had significantly reduced the supply of power from hydro and the country had experienced rolling brownouts last summer. As a result, the government-owned utility was struggling to meet rapidly rising demand for energy for its growing economy and had recently begun importing coal to feed its large fleet of coal fired power plants. This had raised the ire of its citizens over rapidly worsening air quality, increasing electricity prices and concerns over public health impacts. What’s more, the government had recently committed to ambitious emission reduction commitments under the UNFCCC Paris Agreement of a 35% reduction below business as usual by 2025 but current emissions trajectories had it projected to increase emissions by 5% over that same time period.

Fatimah Elah, the President’s Senior Climate Change Advisor, has been tasked by the President to develop an action plan to identify opportunities to scale deployment of renewable energy, in particular solar and wind. She had been directed that most of this new development would need to be financed by the private sector as the national budget was already stretched too thin. While a few renewable energy developers had completed projects and some international companies had conducted initial market analysis, they complained of difficult regulatory and permitting processes and the high cost of capital, which meant that less than a megawatt of renewable energy had been deployed. Fatimah had been assured by the President that he would move swiftly to implement her plan and was confident he had the political buy-in from the utility to make the changes necessary to accelerate scaling of renewable energy, but he needed clear recommendations on what needed to change.

Because of a long history of government subsidy of electricity prices, the average cost of energy on the island was $1.10 per Kwh, though it was projected to rise rapidly as price reforms were implemented, cheap hydropower was less abundant, demand continued to rise, and the cost of importing coal increased. Current projections indicated that by 2020 the cost of power would reach $1.15 per Kwh. Solar power was currently priced at around $0.09 per Kwh, which meant that solar was the less expensive option, but barely. Local banks had indicated that they were concerned about the application of a new technology in the market and were worried about the utility’s ability to honour additional commitments to purchase renewable energy through the recently passed Feed in Tariff of $0.12 cents per Kwh and had thus far declined to provide financing for local projects.

Conduct an assessment, based on the information above and answer the questions on the next page to help Indopolam scale its solar and wind markets.
1. What **stage** of market development is Indopalinam?

2. From an investor’s perspective, what are the **key risks** that you see associated with this market?

3. What **finance intervention** should Fatimah recommend to help accelerate investment into the market?

4. What **policy and regulatory changes** should Fatimah recommend?

5. What **key finance issues** would you most like to see addressed going forward to help your country in the design and implementation of LEDS/ LTS?
Case Study on Green Bonds Issuance

Background

National Thermal Power Corporation (NTPC) was incorporated in 1975 as a thermal generation company and is at present India’s largest power generating entity. The total installed generation capacity of the company stood at 51,383 MW (including JVs/subsidiaries) as of December 31, 2017. In FY2017, the NTPC Group generated 197.24 billion units of power, supplying about 25% of India’s power.

NTPC has established itself as the dominant market player with a presence in the entire value chain of the power generation business. NTPC has been accorded the status of Maharatna, which gives it considerable operating flexibility. Alongside continuing its core business of coal and gas-based thermal generation, the company recently diversified (in some cases through Joint Ventures) into related activities like consulting, hydro-power development, power trading, coal mining, renewable projects (like solar) and exploration for oil and gas.¹

Context of Renewables

Renewable energy technologies provide clean sources of electricity. With their abundant supply, they form the backbone for India’s energy security and ‘energy independence’ as envisaged by 2020. NTPC aims to transform itself into the country’s largest green power producer in the coming years and thus become a case for brown to green.²

Capacity addition figures from the Ministry of New and Renewable Energy (MNRE) confirm the brown to green transformation is taking place quite rapidly in India. Total renewable energy capacity additions matched thermal capacity additions for the first time in FY2016-17. In fact, the rate of thermal capacity additions actually declined 50% from the prior year while Indian solar installations doubled in 2015 and again in 2016. In addition to its own growing renewables capacity, NTPC has evolved into India’s prime off-taker of the rapidly expanding private renewable energy generation sector.

Reduction in coal imports

India imported 200 million tonnes (Mt) of coal in total in FY2015-16, accounting for around 16% of the global seaborne coal trade. India’s energy transformation aims to lessen India’s dependence on fossil fuel imports to the point of ending thermal coal imports altogether by the end of the decade. In April 2017, the Coal Secretary, Susheel Kumar, said that the Government’s strategy does not include any further Public Sector Undertakings (PSUs) to import thermal coal in FY2017-18. Achieving this goal would reduce India’s coal-import bill by around Rs17,000 crore (US$2.6bn)

Portfolio & roadmap for Renewable Power

¹ https://www.icra.in/Rationale/.../68848~NTPC%20Limited-R-30032018.pdf

² https://www.ntpc.co.in/en/power-generation/renewable-energy-and-distributed-generation
Despite its history as a fundamentally coal-based power generation utility, NTPC is now rapidly rolling out in-house, utility-scale solar projects and it is signing power purchase agreements for the off-take of solar power from private solar operators. As of May 1, 2017, NTPC had a total of 620MW of in-house solar capacity. For instance, in addition to seven projects with a capacity of 15MW each or less, the NTPC Bhadla solar project has a current installed capacity of 260MW, the Rajgarh project has 50MW of capacity and the Ananthapuram solar park project has a capacity of 250MW.

**NTPC’s impact on the rise of solar in India is greater than its solar installations suggest. The record low levelised tariff of Rs3.15 (USD 4.5 Cents)/kWh achieved at the Kadapa solar auction in April 2017 was achieved to a great extent because NTPC was the off-taker. As a state-owned entity with a strong balance sheet, NTPC is the strongest renewables power off-taker in India, and its de-risking presence is conducive to securing longer-duration loans at the most competitive borrowing rates, which in turn lowers tariffs.**

Including off-take, NTPC is responsible for 3.6GW of the current 12GW of solar capacity in India in 2016.

NTPC is also leading the way with less well-developed forms of solar energy. For example, the company inaugurated India’s largest floating solar PV plant in March 2017, a 100KW installation at the Rajiv Gandhi Combined Cycle Power Plant in Kerala. NTPC reservoirs alone have the potential for floating solar capacity of 800MW or more. The company is already working on scaling up the technology for megawatt-sized installations.

NTPC has drafted its business plan of capacity addition of about 1,000 MW through renewable resources by 2017 and in this endeavour, NTPC has already commissioned 845 MW Solar PV Projects. In addition to the solar and wind plants, the company has installed at Mandsaur in Madhya Pradesh and 8 MW Small Hydro Projects.

**Green Bond issuance**

The Indian solar market is dominated by private developers that are able to achieve lower tariffs than public companies like NTPC. As a result, NTPC is often finding it difficult to find off-takers for its own solar installations because of the competition exercised by private companies that are increasingly backed by overseas funders who can bid very aggressively. **Nevertheless, NTPC was able to attract financing as low as 7.375% for its masala bond** issuances and, at the same time, the Masala Green Bond also enabled NTPC to diversify its source of funds.

**India’s growth in RE sector:**

- Cumulative RE capacity doubled from 35500 MW in 2013-14 to 70000 in 2017-18.
- Cumulative RE capacity target for 2022 is 175000 MW, out of which 110,000 MW has either been installed/under process/tendered by 2018.
- Solar capacity increased by over 8 times in the last 4 years from 2630 MW to 22000 MW.
- Per unit cost of solar power reduced from Rs 6.17 (USD 8.81 CENTS)/ KWH (2014) to 2.44 (USD 3.48) (2018)

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3 Masala bonds are bonds issued outside India but denominated in Indian Rupees. Unlike dollar bonds, where the borrower takes the currency risk, masala bond makes the investors bear the risk. The first Masala bond was issued by the World Bank-backed IFC in November 2014 when it raised 1,000 crore bond to fund infrastructure projects in India. Later in August 2015 International Financial Cooperation for the first time issued green masala bonds and raised Rupees 3.15 Billion to be used for private sector investments that address climate change in India.
- Per unit cost of wind power reduced from Rs4.20(USD 6 Cents)/KWH (2014) to 2.43(USD 3.7 CENTS) (2018)
- 4th globally in total wind power installed
- 6th globally in total solar power installed
- 5th globally in total renewable power installed

NTPC’s future plans:
- NTPC plans to be a 130 GW company by 2032 with diversified fuel mix and a 600 BU company in terms of generation.
- Coal would continue as predominant fuel with 65% share of coal-based capacity in the portfolio.
- Non-fossil fuel-based capacity would achieve a share of 30% and Thermal-based generating capacity share would be 70%.
- The share of RE (including hydro) would be 28%
- NTPC targets a market share of 25% in ancillary services and storage
- NTPC aims to achieve 10% of the estimated market share for supply of electricity in E-mobility business

NTPC’s planned power generation mix for 2032

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<th>As on 31.03.2018</th>
<th>% Mix</th>
<th>By 2032</th>
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<tr>
<td>Coal</td>
<td>46</td>
<td>85.20</td>
<td>85</td>
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<td>Gas</td>
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<td>Hydro</td>
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<td>Solar</td>
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<td>1.85</td>
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<td>Other RE</td>
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<td>2</td>
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<tr>
<td>Nuclear</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100</td>
<td>130</td>
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As per the above projections, the increase in solar power capacity is to grow from 1 GW in 2018 to 30 GW by 2032 and hydro from 1 GW in 2018 to 5 GW by 2032.

Conclusion

Due to plans of huge capacity addition in the RE sector, there will be substantial requirements of capital inflows. The capital expenditure required from the financing of green projects could be financed through green bonds. Green bonds as an instrument have grown rapidly in recent years and it has emerged as a cost-effective investment tool to finance the transition to a low-carbon economy. Further, clarity imparted through the establishment of Green Bond Principles and laid down procedures, reporting and compliances has made issuance of green bonds quite simple. Further, third-party assurance certification has also enhanced the investor confidence.

Green bonds could help India in ensuring that the targets of the COP21 are achieved, which in turn incentivise the industry players to reduce or lower the level of emissions.