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Acknowledgement and Disclaimer:

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CLEAN ENERGY FINANCE FORUM (CEFF)

Co-chair: Uday Khemka, Khemka Foundation

Introduction

Since the launch of the CEFF during RE-Invest 2015, we have sought to answer one central question: what would it take to solicit the scale of investment required (at the lowest cost of capital) to support the Government's announced goal of achieving 175 GW of renewable power by 2022? After an extensive domestic and international consultation with all categories of financial Institutions (including pension funds, sovereign investors, insurance companies, other financial investors/funds, banks, investment banks etc.), multilateral institutions, as well as strategic investors and developers, we have synthesized key recommendations as below in four key areas:

Working Group 1: Improving the counterparty risk framework;

Working Group 2: Unlocking scale investment from domestic banking and capital markets;

Working Group 3: Significantly scaling international capital flows;

Working Group 4: Policy issues of scaling up Renewable Energy in India

Executive Summary

Over last two years, Government of India has launched many far-reaching steps to reform the renewable energy sector in India and make it more attractive for investors. Adoption of the 175GW renewable target including 100GW of Solar is an ambitious ground breaking initiative that have been lauded worldwide. In addition, important measures include the **Ujjwal Discom Assurance Yojana (UDAY)** Scheme for improving the financial health of Discoms, rapid development of “plug and play” **solar parks**, increased focus on improving the **grid/transmission infrastructure**, and increasing **RPO targets** to 8% (for solar) by 2022. As a result, capacity installation in solar has gone from ~1GW a year to 3-4GW, and India has emerged as the third biggest solar market in the world.

However, to achieve the target of 100GW by 2022, the annual capacity installation needs to significantly go up to 15GW, which will require both domestic and international capital in large quantities. In order to achieve this, CEFF has made recommendations which will help solicit greater investment into the renewable energy sector. Some of the key cross cutting recommendations across all working groups are summarized below:

1. Continue to Take Practical Steps to Improve Discom Credit Quality Including Through Greater Information and Disclosure:

While UDAY scheme is a significant step to turn around Discoms, further action is needed to improve Discom credit quality through (i) dissemination of timely, transparent and standardized financial information; (ii) disclosure of detailed methodology and financial analysis regarding credit rating of Discoms; and (iii) enhance PPA credit-worthiness of states through Central government support.

2. Extend SARFAESI Protection to International Multilateral Institutions and Commercial Banks so that foreign lenders get the same level of protection that domestic lenders enjoy today and thus are not at a disadvantage.

3. Boost and Accelerate “Open Access” Markets by enforcing RPO obligations on state Discoms, large private companies as well as by standardizing open access, wheeling and cross subsidy regulations across states.

4. Improve PPA Bankability through various measures such as (i) **Take or pay or deemed generation** clauses to protect against various issues such as grid availability; (ii) **Termination Compensation**, which would cover events such as offtaker/ solar park developer default, political force majeure, change in law, and where such compensation would provide

adequate return on equity; (iii) **Payment Security** for a minimum of 12 months, and preferably for 24-36 months.

5. **Improve Ease of Access to Domestic Banking and Capital Markets** through credit enhancement mechanisms for tapping non-banking domestic capital markets, and developing the high yield bond markets.

6. **Encourage International Debt and Equity Investments** into renewable energy by:
 - a) Removing entry and exit barriers to equity flows such as removing Accelerated Depreciation incentives, and encourage treatment of NCDs as equity;
 - b) Further improve fiscal efficiency of structures such as InvITs;
 - c) Provide credit enhancement for project debt and equity to the level required by international pensions funds and life insurance companies; and
 - d) Review constraints on ECB lending, such as on pricing and the source of ECB financing.

7. **Mitigate Currency Risk** by providing protection in case the Rupee goes below a floor value. Alternatively, provide currency risk mitigation for project debt.

While many of the recommendations above may seem familiar, this report and our correspondent response group has more detailed suggestions and ideas. We would be delighted to discuss these in detail as required. Finally, it should be noted that the CEFF has previously provided suggestions with respect to the PPA standards, which is appended to this report for your reference.

WORKING GROUP 1: IMPROVING UNDERLYING COUNTERPARTY RISK AND ARCHITECTURE

Co-Chairs: Jessica Farmer, IFC and Vineet Mittal, Welspun

Executive Summary

Specific Measures to:

- **Continue to enhance Discom credit quality and related project bankability through:** a) providing timely, standardized and **transparent financial information** using standard international procedures and tools; b) **Continue regular credit rating** of Discoms (in line with international standards and by international credit ratings agencies/their affiliates), with transparency regarding procedures; c) a credit enhancement of Discoms, either through central government pooling of Discom credit risk through NVVN/SECI, or backed by a payment security fund; and d) Enhancing payment security through backup funds, **insurance products** etc.
- **Improve project bankability through enhanced asset security:** Prepare policies for making leased land and “right to use” land (provided by the Government) collateralisable and easily and practicably, exercisable for lenders.
- **Expand the base of counterparties and use the credit capacity of blue chip companies** by a) accelerating **open access and wheeling** to bring in first tier counterparties as an alternative to State Discoms; b) enforcing **RPO obligations** (and provide for penalties) and expanding RPO **to include private companies**; c) **standardizing open access**, wheeling and cross subsidy regulations across states as far as possible.
- **Standardize PPAs and ensure enforceability** by a) encouraging **NSM format in state PPAs**; b) reinforcing PPA’s with **“take or pay”** style clauses; c) extending Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act (**SARFAESI**) protection to international lenders to remove subordination issue; and d) ensuring **PPAs are to be made assignable in favour of lenders** without approval.

Detailed Recommendations

INTRODUCTION

The two critical players in the value chain of renewable energy in India are the developers and the off-takers. Other stakeholders are policy makers, regulators, financiers etc. The policies, acts and regulations, missions, standards, contracts, covenants contribute to the eco-system.

The risk takers along the value chain have been the private sector developers and the financing agencies. The current target of 175GW of renewable energy by the year 2022 embeds the highest incremental growth in solar energy from the current 9GW to 100GW in 6 years i.e. approximately 15GW per year. This will be driven by opportunities created by the centre and the states.

De-risking the sector, specifically improving the counterparty risks, has emerged as one of the dominant contingent drivers for attracting the required finance into the sector. Significant sources of risk are the financial condition and credit-worthiness of the Discoms i.e. the final off-taker, enabling effectiveness of the policy, regulation and taxation regimes.

The tables below provide specific recommendations to improve the counterparty risk and architecture. Briefly they address the following with details provided in the document.

- Standardization of documentation and standards
- Enforceability and sanctity of contracts e.g. PPA
- Innovation in risk mitigating financial products
- Enabling legislations, regulations etc.
- Enhancing bankability of projects
- Reducing payment default risk and providing for termination compensation
- Risk diversification through expansion of counter party base

The recommendations have been made specific and are divided into two categories. Low hanging fruit which, we believe, can be implemented faster and long term recommendations which will need systemic and medium to long term intervention.

No.	KEY ISSUES & RECOMMENDATIONS
A. Low Hanging Fruit / High Impact Potential	
	<p>Standardization of PPA documents and focus on payment security</p> <p>Issue: PPA documents in their current form are not uniform across states and also not aligned with international standards. This is deterring international lenders from investing in the sector due to heightened risk perception.</p> <p>The PPA should have a robust payment security mechanism. The developer should be provided an LC or LC equivalent (such as LCs plus some hybrid mechanisms such as escrow) for 12-36 months of tariff (with twelve months of tariff being the minimum time period) as a payment security. If a central body provides this LC for all the states, the risk will be distributed. In addition, the payment security fund should also be operationalized and made available. In case of payment default or no off-take for more than two months, the developers should have usual rights for third party sale without any cross subsidy charge.</p> <p>Recommendation: The PPA documents being used in NSM contracts can be used to improve and standardize the PPAs across the states. Central incentives/support should be linked to states following a standard PPA. LCs or LCs plus some hybrid mechanism such as escrow and / or a Contingency Fund should be provided for a minimum of twelve (12) months to Developers, and preferably for 24-36 months.</p>
1.	<p>Make Sanctity and Enforceability of PPA Uniform</p> <p>Issue: SARFAESI provides only SARFAESI eligible lenders with self-help remedies when taking action against collateral security. These self-help remedies allow SARFAESI lenders to avoid the bureaucratic and time consuming judicial process that otherwise would be necessary to pursue a judgment in the Indian courts and execute that judgment against secured collateral.</p> <p>SARFAESI, in current form, is inconsistent with the basic principle of international lending i.e. all senior lenders having equal voting and recovery sharing rights in the collateral.</p> <p>Recommendation: Extend SARFAESI protection to international lenders viz. IFC, ADB, and certain foreign commercial banks lending in rupees from their Indian branches. This is already extended to NBFCs.</p>

No.	KEY ISSUES & RECOMMENDATIONS
2.	<p>Include Innovative Insurance Products for Receivables from Discoms Including MIGA Support¹</p> <p>Issue: Delayed payment by Discoms to developers impacts the returns adversely and hence is a prime source of risk for financing of the projects. Low cost insurance products are possible with appropriate assessment of risk.</p> <p>Recommendation: Policies allowing insurance products should be formulated that can make standardized insurance products available in the market. MIGA should be allowed to offer support for enabling easier access to international financing.</p>
3.	<p>Eliminate Categorization of HoldCos Investing in Subsidiaries as NBFCs</p> <p>Issue: Currently the HoldCo investing in subsidiaries are considered NBFCs since the HoldCos do not hold assets in their books. This deters them from raising capital especially through bonds for on-lending.</p> <p>Recommendation: Exempting the HoldCos from being categorized as NBFCs will ease the fund flow into projects.</p>
4.	<p>Exempt assignment of PPA from stamp duty</p> <p>Issue: Assignment of PPA to lenders attracts stamp duty making the transaction expensive and sometime time consuming.</p> <p>Recommendation: Remove the requirement of stamp duty will enhance lender comfort</p>
B. Key Recommendations	
	<p>Improve Discom Credit Quality and Clarity on offtaker Liability</p> <p>Issue: Almost all the Discoms have poor credit-worthiness due to multiple factors which tends to diminish renewable energy project bankability. Credit-worthiness of new entities viz. SECI, NVVN and solar park implementation agencies (SPVs) are yet to reach the level of maturity needed by certain international investors. Additionally, entities such as NTPC (which sign PPAs with Developers and in turn sell power to State Discoms) are defined as an “Intermediary Procurer” with lack of clarity as to who (NTPC or State Discom) will be clearly and ultimately liable for all counterparty obligations.</p>

¹ The Draft RE Act (Ref: Part IV – Economic and financial framework (incentives and pricing) – clause 28) aims to ‘encourage innovative financing instruments or synthesized financial products’.

No.	KEY ISSUES & RECOMMENDATIONS
	<p>Recommendations :</p> <ul style="list-style-type: none"> a) Ensure punctuality (timely), standardization, and transparency in financial auditing and reporting using standard international procedures. b) Ensure data sanity through uniform (across Discoms) electronic data collection. c) Establish transparency regarding the procedures for credit rating of the Discoms. Timely disclosure of detailed methodology and detailed financial analysis in public domain to enhance lender trust in the rating. d) The Government of India (GoI) should provide clarity as to who is the ultimate offtaker where Intermediate Procurers and End Procurers are envisaged, i.e. who will provide recourse to the Developer. It is critical that such an entity has an investment grade credit rating, or is suitably credit enhanced. Given the size and scale of the current program, it is recommended that NTPC be fully and directly responsible to the developer, as the contracting off taker e) Enhance the state PPA credit worthiness and also of SECI through a federal mechanism viz. liquidity enhancement and a credit risk pooling mechanism through NVVN / NTPC etc. backed by a payment security fund.⁽²⁾ <p>Recommended Specific Actions:</p> <ul style="list-style-type: none"> a) Appoint an internationally reputed auditor (e.g. from Big 4) to conduct a parallel audit and produce an internationally acceptable output. b) Appoint a consultant (with expertise in XBRL and eXML) to: <ul style="list-style-type: none"> i. Establish a common framework for internal controls over financial reporting (ICFR). ii. Establish a common data and reporting standard for all Discoms, Transcos and Generators. c) Mandate electronic data capture across the value chain through use of barcode/QR code (in revenue), RFID (in assets) etc. to ensure data sanity. d) Share the methodology and data used in credit rating of the Discoms with banks, investors etc. for their comments and opinions. e) PPA may have a fund (e.g. a Green State Fund backed by NREF) as a guaranteeing party to enhance the credit rating of off-taker f) Work with international investors to identify steps to enhance the credit worthiness of SECI and solar park implementation agencies (SPIA).
1.	<p>Improve Bankability of Projects</p> <p>Issue and Background: Different states have different policies for land acquisition.</p> <ul style="list-style-type: none"> a) Some states provide land with a “right to use” and at no charge. b) Some states provide land on a lease basis i.e. on payment of regular lease rental. c) Some states require that developers buy their own land and convert the use basis.

² The Draft RE Act has provided few provision for different funds viz. National Renewable Energy Fund and State Green Fund (Ref: Part IV – Economic and financial framework (incentives and pricing)). Some of these might be enhanced to provide for the payment security.

No.	KEY ISSUES & RECOMMENDATIONS
	<p>When land is available on a free or lease basis, the ownership of the land remains with the government and hence is not a collateral for achieving financial closure.</p> <p>Land ceiling act creates small parcels of land that need aggregation before taken by developer. As a result stamp duties can be levied twice.</p> <p>Evacuation beyond pooling substation (responsibility of off-taker) takes more time than the project.</p> <p>Recommendation: Prepare policies in coordination of lenders for making ‘right to use’ and leased land a natural collateral and also, practically exercisable by the lenders.</p> <p>Recommended Specific Actions:</p> <ol style="list-style-type: none"> a) Create a team to analyze the land policies for renewable energy in different state governments and challenges in giving right to use. b) Engage a team of lenders to share their risk registers and hold a roundtable to debate them to identify action points. c) Remove double stamp duty on lands aggregated from sellers under land ceiling act. d) Include clauses for deemed generation in the PPA if off-taker cannot provide evacuation beyond pooling substation within specified time.
2.	<p>Expand Base of Counterparties</p> <p>Issue: Expanding the base of counterparties will use the credit capacity of blue chip companies and relieve the stressed fiscal capacity of government thus reducing the sector wide credit risk.</p> <p>Recommendations:</p> <ol style="list-style-type: none"> a) Enforce RPO obligations at state, regional and central level and to obligated private companies including the penalties on the books of Discoms. Provide central oversight to the enforcement process. b) Accelerate open access and wheeling to bring in credit-worthy first tier counterparties as an alternative to state Discoms. c) Standardize open access, wheeling and cross subsidy regulations across states. d) Incentivize and accelerate private investment in transmission and distribution including dedicated RE corridors. <p>Recommended Specific Actions:</p> <ol style="list-style-type: none"> a) Create a formula to calculate the penalty for non-compliance with RPO obligations. Communicate the same through CERC and SERCs. b) MNRE should monitor the RPO compliance on a monthly basis and publish the report on its website. c) Engage with the states to remove charges like wheeling and cross subsidy etc. by the state utilities.

No.	KEY ISSUES & RECOMMENDATIONS
	<p>d) Make budgetary allocations into a fund that will provide returns to public and private Transcos (in the absence of charges) for renewable energy.</p>
3.	<p>Standardize PPAs and Ensure Enforceability</p> <p>Issue: Lack of standardized PPAs leads to variable PPA contract quality including payment security clauses and lack of PPA enforceability which hinder RE investment.</p> <p>Recommendations:</p> <ul style="list-style-type: none"> a) Standardize the PPA contract features and documentation, take or pay clauses etc. NSM (and/or CERC model PPAs) format should be enhanced for use. Approval with justification for any deviation should be obtained. b) Extend SARFAESI act to all lenders including international ones. c) PPA should be made assignable in favor of lenders without requiring approval. Stamp duty for assignment should be removed. d) PPAs should not be re-negotiated after signing. e) “Change in law” clause should be properly defined to provide flexibility to restore the financial viability of the project. Change of law should also include any political force majeure f) “Deemed generation” should be included if the solar power plant is able to generate electricity but is prevented from generating and supplying due to constraints on the system grid or transmission lines, lack of evacuation and transmission infrastructure, offtaker’s event of default or the offtaker’s inability /unwillingness to purchase power, for example. Proposed scenarios may be the following: <ul style="list-style-type: none"> i. Prior to COD: After 30 days, offtaker will pay compensation calculated at 19% CUF of installed capacity at Rs. 3/kWh. ii. Post COD: (1) Up to 90 Days: the offtaker will compensate at a 19% CUF of installed capacity; (2) After 90 Days: the Developer can terminate the PPA and it will be treated as a offtaker Event of Default g) Termination payment or penalty should be payable if PPA is terminated by off taker due to force majeure, or for the offtaker’s event of default. The termination compensation may be determined as follows (based on precedents in the infrastructure sector): <ul style="list-style-type: none"> i. Offtaker’s Event of Default / Change in Law / Political Force Majeure: (1) 100% of Debt Due, less insurance, if any; and (2) 150% of Adjusted Equity; and (3) 115% of amount representing additional termination payment, if any ii. Force Majeure: (1) 100% of Debt Due, less insurance, if any; and (2) 110% of Adjusted Equity; and (3) 100% of amount representing additional termination payment, if any iii. Lenders Protection: In case of sponsor default, step in rights should be allowed to lenders prior to termination, such that (a) Lenders have time to cure through step in or sponsor replacement, and (b) get repaid for the debt principal (at least). In line with international standards, the lender should be preferably

No.	KEY ISSUES & RECOMMENDATIONS
	<p>allowed to enter into direct agreements with the procurer in order to protect such step in rights. It is recommended that in the event that the Lender is not able to step in, the procurer would be obligated to step in and operate the project and assume the debt (equity would not be compensated in such a case)</p> <p>iv. The Intermediary Procurer’s obligation to pay termination compensation should be absolute and not contingent upon the Intermediary Procurer receiving the termination compensation from the End Procurer.</p> <p>h) Credit support / enhancement should be provided for solar park developers. In addition, the solar park agreements should survive the termination of the PPA. Furthermore, termination payments should be provided in the event of solar park developer’s event of default.</p> <p>i) Comprehensive payment security mechanism should be available to cover payments to the developer, and it can comprise of the following:</p> <ul style="list-style-type: none"> i. LC (Letter of Credit) or LC equivalent or a combination for a minimum 12 months (and preferably for 24-36 months) of billing. ii. Collateral arrangement as set out in NSM PPA (Phase I Batch 1/II) should be provided comprising of escrow mechanism between Developer and offtaker; and Agreement to Hypothecate / Deed of Hypothecation between Developer and offtaker. iii. Payment Security Fund to be set up by Gol for at least 12 months of billing, and preferably for significantly longer. <p>j) Automatic Extension of COD: Automatically extend COD period (beyond the current 3 months) if the solar park is not ready, and various measures, such as land allotment and transfer have not taken place.</p> <p>k) Maximum Time Period for Commissioning: Overall upper limit for commissioning the project (above the current 25 months) should be removed, if any delay is due to solar park developer and / or offtaker.</p> <p>Recommended Specific Actions:</p> <ul style="list-style-type: none"> a) Make the NSM/CERC model PPA as standard and issue directives accordingly to all off-takers. b) Include a condition in the RFS and PPA that it can be assigned to lenders without any further approval. c) Enact necessary regulation for SARFAESI act to be applicable to international lenders. d) Provide for termination compensation under the standard PPAs, which protects the equity returns of the investors as well as the lenders’ interests, in the event of offtaker’s default, or political force majeure.
4.	Delayed Payment / Payment Default by Discoms

No.	KEY ISSUES & RECOMMENDATIONS
	<p>Issue: Discom late payments can fundamentally undermine credit quality and equity IRRs. Paying after 6 months but in full on a consistent basis is equivalent to default in terms of financial impact on the developers.</p> <p>Recommendations:</p> <ul style="list-style-type: none"> a) A fund/pool of funds run by federal center should be created, contributed to by the states for contingency payments especially for weaker Discoms. b) Central government should be engaged with international financial institutions and insurance companies to establish uniform and low cost insurance product for state off-take non-payment risk. This should be part of the standard bid document and details should be available to all prior to bidding.³ c) Reliable subsidy payments from the States to their Discoms should be ensured. This should be linked to the central pool and the escrow account. d) Automatic right to make a third party sale with no cross subsidy charge if payment is delayed by, say, 14 days. e) Payment security mechanism with associated penalty should be part of standard PPA. <p>Recommended Specific Actions:</p> <ul style="list-style-type: none"> a) Create a fund with SECI as administrator, to be contributed from central allocation to states. This should be specific to delayed payment. b) At the earliest opportunity, engage with MIGA to identify and remove bottlenecks for their underwriting of default risks. c) Hold a roundtable of domestic and global insurers (including re-insurers) to design products to cover delayed/defaulted payment by off-takers. d) A roundtable of state power ministers should be convened at the earliest opportunity for timely release of subsidy. MNRE/RECI should monitor payment status and publish updates on their website. e) Mandate creation of a contingency reserve account by Discoms to remedy delayed payments

³ The Draft RE Act (Ref: Part IV – Economic and financial framework (incentives and pricing) – clause 28) aims to ‘encourage innovative financing instruments or synthesized financial products’

WORKING GROUP 2: DEVELOPING DOMESTIC BANKING & CAPITAL MARKETS
Co-Chairs: Mr. Rana Kapoor, Managing Director & CEO, YES BANK and Chairman,
YES INSTITUTE & Naina Lal Kidwai, Max Fin. Services

Executive Summary

Specific Measures to increase funds flow from domestic banking and capital markets into Renewable Energy:

- **Implementing Credit Enhancement mechanisms for tapping non-banking domestic capital markets that now require high credit ratings:** Facilitating increased access of Renewable Energy Projects to domestic non-banking capital markets that require high credit quality - e.g. existing **bond and institutional finance markets (pension, life insurance etc.)** in India - through structured credit enhancement programmes allowing projects to achieve required credit thresholds.
- **Push towards Take-out-financing and refinancing schemes:** increased rolling out of such schemes, on the lines of IIFCL, is vital in taking out incremental exposure of banks during this growth phase of renewable energy in India for **redeployment in green-field projects**.
- **Develop the domestic high yield bond markets** (given inherently limited credit rating of RE projects even after successful commissioning). To achieve this, importance of working with SEBI to increase liquidity in secondary corporate debt markets through 1) **technology platform infrastructure for trading;** 2) **review of burden of disclosure requirements** etc.
- **Extend the benefits of SARFAESI Act to foreign Development Financial Institutions, Export Credit Agencies & Commercial Bank lending in Renewable Energy Sector:** pari passu status and protection would increase international appetite allowing **significant refinancing** to domestic institutions.
- **Relaxation of RBI regulation restricting pledge over share capital in favor of banks over and above 30%:** the regulation restricts bank's ability to transfer ownership of project SPVs in case of event of default.

Detailed Recommendations

INTRODUCTION

Indian banks have been at the forefront in appraising and underwriting renewable energy project risks and providing longer term financing in India. However, their exposure in power sector is very high at present - INR 5.29 trillion as on June 24, 2016, which is as high as ~ 58% of Indian banking system's total exposure in infrastructure sector⁴.

Proposed renewable energy installed capacity of 175 GW by 2022 is expected to require an incremental investment of ~ INR 8.4 trillion⁵ (~ USD 160 Bn), ~ 70% of which is to be met from debt (~ INR 5.88 trillion). Given that cumulative exposure of Indian banking system is already high, to keep their appetite intact for taking required incremental exposure and to keep the engines running, it is critical to consider deep as well as holistic views for developing domestic banking and capital markets in India.

As a part of the Group 2 exercise to analyze issues and suggest recommendation for developing domestic banking and capital market, we have taken inputs from several stakeholders including IIFCL, OPIC, Citibank, Bloomberg India, SBI, L&T Infra Finance and SBICAP Securities.

⁴ RBI Press Release, *Sectoral Deployment of Bank Credit-July 2015*, available [online] www.rbi.org.in

⁵ Calculated based on GOI estimate of requirement of USD 200 billion for 175 GW installation. Exchange rate for the purpose is INR 66 per USD

No.	KEY ISSUES & RECOMMENDATIONS
Low Hanging Fruit / High Impact Potential	
1.	<p>Credit Enhancement Mechanism</p> <p>Background and Issue: Given limitations of Banks in financing entire requirement for proposed renewable energy capacity addition, limitation of bond market for instruments rated below AA, and limitation of credit rating of project even after successful commissioning and stabilization, credit enhancement products such as First Loss Guarantee, Loan Loss Reserves etc. are required. Such products enhances credit rating of operating projects and facilitates refinancing of bank exposure with bonds thereby freeing up bank capital for financing of Greenfield project.</p> <p>Recommendation: Implement robust credit enhancement mechanism and introduce suitable products having features such as First Loss Guarantee, Loan Loss Reserve, and Guarantee by Banks.</p>
2.	<p>Waive Restrictions on Pledge of Project SPV Shares in Favor of Lenders</p> <p>Issue: RBI restricts pledge of share capital of any company in favor of any Bank at 30%, which limits Bank's ability to transfer ownership of project SPV in case of an event of default under financing documents (EoD).</p> <p>Restrictions of pledge in favor of NBFCs (in cases where pledger is not incorporated in India) needs to be relaxed. Currently it is under approval route.</p> <p>Recommendation: The restriction prohibiting pledge of share capital above 30% in favour of banks should be relaxed. In addition, pledge in favour of NBFCs should come under the automatic route.</p>
3.	<p>Payments under PPAs to be mandatorily routed through Lender's Escrow account</p> <p>Issue: Escrow accounts are established in almost all renewable energy projects where project financing is availed by the developers, however, most of the payments received under PPAs from offtakers are received via cheques which are manually routed through Escrow accounts. This leaves high probability for leakage in project cash flows, resulting in lower comfort levels for project lenders.</p> <p>Recommendation: Facilitating with all Discoms and offtakers for using RTGS/real time settlement mechanism for routing of all cash flows under PPA through project escrow accounts. Towards ensuring this, PPA can covenant developers to inform the counterparty of the Escrow Account details established for the project in a predefined format, to be annexed in all PPAs.</p>

No.	KEY ISSUES & RECOMMENDATIONS
4.	<p>PPA signing and Aligning PPA Tenor with Economic Life of the Asset</p> <p>Issue: Wind Power PPAs in states like Maharashtra have a tenor of 12-15 years whereas economic life of asset is much longer around 20-25 years. Further, in wind power, PPAs are signed subsequent to project development, where delay in signing of PPAs results into economic losses.</p> <p>Recommendation: Facilitate signing of PPAs and ensure benefits under RPO compliance are provided only in case PPAs are signed on time. Further, PPA tenor should be aligned with economic life of assets, which would facilitate long term financing thereby reducing the need of front loading of tariffs.</p>
Key Recommendations	
1.	<p>Takeout Financing / Refinancing Schemes</p> <p>Background and Issue: Banking sector exposure to power sector is already very high (INR 5.29 trillion as on Jun 2016) and particularly in renewable energy (INR 775 Bn during Feb 2015 to Jun 2016 as per MNRE reports). Takeout financing schemes are vital for ensuring that fresh financing requirements of the sector are continuously met by banks/FIs. IIFCL, an important institution in this respect, has a takeout financing scheme, which has made cumulative net sanctions of INR 149 Bn and disbursed INR 123 Bn as on 30th June, 2016.</p> <p>Recommendation: Rolling out similar schemes, on the lines of IIFCL, should be considered and encouraged from leading financial institutions in power sector in India viz. IREDA, PFC, PFS, REC, for taking out incremental exposure of banks during this growth phase of the sector. Further, new large institutions can be established which can continuously release banking exposures from operational projects, for further redeployment in green-field projects in the sector.</p>
2.	<p>High-Yield Bond Markets</p> <p>Issue: Given limitation of credit rating of project even after successful commissioning and stabilization (primarily due to counter party risk), it is important to develop high yield bond market. This would provide very good opportunities both for such bond investors as well as RE project developer / lender.</p> <p>Recommendation: Encourage development of high yield bond market. For development of high yield bond market in India it is very important to get liquidity in secondary corporate bond market. The same is lacking on account of various reasons such as- lack of a technology platform to enable trading, additional disclosure requirements as compared to private placements etc. SEBI needs to work towards</p>

No.	KEY ISSUES & RECOMMENDATIONS
	increasing the liquidity in the secondary corporate bond market
3.	<p>Extend the Benefits of SARFAESI Act to Foreign Development Financial Institutions, Export Credit Agencies & Commercial Bank Lending in Renewable Energy Sector</p> <p>Issue: SARFAESI law allows Indian lenders greater latitude to originate credits, declare mandatory prepayments and events of default, and enforce collateral without resorting to local courts.</p> <p>Recommendation: Extend SARFAESI benefit to foreign lenders. Affording non-Indian financial institutions local lender status under SARFAESI would increase such institutions comfort with extending credit for clean energy projects in India and will boost their confidence to lend in the Indian markets, and thus increase the overall international credit profile of the sector.</p>
4.	<p>Design Suitable Insurance Products to Cover “Irradiation level Risk” and “Payment Default Risk” by Leading Insurance Companies</p> <p>Issue: Post commissioning of solar projects there are three key risks (1) irradiation risk, (2) counterparty risk (risk of timely payments) and (3) module performance risk. Currently, there are very few products available to cover these different risks.</p> <p>Recommendation: Insurance companies can develop suitable products to address these risks given the huge market potential of such products. While risk for individual project would be larger, risk for projects spread across geography should be considerably lower thereby requiring reasonable premium for such insurance cover. Creation of reinsurance markets and products should also be encouraged.</p>
5.	<p>Encourage Institutional investment into Green Bonds</p> <p>Issue: Currently there are many restrictions which dampen institutional interest in green bonds. In addition, the exposure norms for issuer of green bonds should also be relaxed.</p> <p>Recommendations:</p> <ol style="list-style-type: none"> a) Allow investment of a larger percentage of Long Term Fund without Board approval. At present, insurance companies are allowed to take only up to 10% of Long Term Funds without Board Approval on a per issuer basis. b) Allow Hold to Maturity (HTM) classification for investment for tenors less than 7 years as well for banks investment in green bonds. c) Lower the risk weight for investments into green bonds to popularize Green bonds. Include investment into green bonds in one of the mandatory investment category like low cost housing, etc.

No.	KEY ISSUES & RECOMMENDATIONS
6.	<p>Compliance with Renewable Purchase Obligations (RPO)</p> <p>Issue: RPO compliance is an important tool for increasing renewable energy demand levels in the country but has been rarely adhered to. Further, currently there are no RPO requirements for high usage customers and they only apply to Utilities/Discoms.</p> <p>Recommendation: Engagement with states to push towards increasing and mandatory compliance with RPO obligations including provisions for levy of penalties in case of non-compliance. Further implement RPO for High tension / high usage customers as well. This will help diversify the available sources for funding renewable projects as the funding requirements are huge and as an end user of energy the customers can be made to participate in the programme.</p>
7.	<p>Delay in payments under PPA</p> <p>Issue: Unreasonable delays from offtakers in monthly bill payments is a key issue which negatively impacts credit comfort of lender's and developers alike in a renewable project. Further, international lenders and investors take matters of delay in regular payments very strongly and this prevents flow of large pool of funds to flow into the sector.</p> <p>Recommendation: Priority engagements should be established with all offtakers to resolve matters of delay in payments. Towards this end, RPO compliance can be denied for purchases where payments were specifically delayed (say over 90 days).</p>
8.	<p>Relax Minimum Loan Quantum Requirement under 5:25 Refinancing Scheme for Renewable Sector Projects</p> <p>Issue: RBI has allowed refinancing of infrastructure projects for longer tenor (under 5:25 scheme) with certain relaxations, subject to minimum outstanding project loan of INR 500 Cr. Since debt amounts for majority of RE projects is less than INR 500 Cr, RE projects become ineligible under this guideline. (Refer: RBI DBR.No.BP.BC.53/21.04.132/2014-15 Section 4.i)</p> <p>Recommendation: Relax RBI Guidelines to allow refinancing of project loans of less than Rs. 500 Cr under the 5:25 scheme.</p>
9.	<p>Modification in Investment Insurance Regulatory and Development Authority (IRDA) Guidelines</p> <p>Issue: Currently, the IRDA Regulation restrict exposure in Investee Company up to 25% of (i) Equity + (ii) free reserves (excluding revaluation reserves); and (iii)</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>bonds/debentures (only outstanding bonds) taken together, in the case of housing finance and infrastructure finance companies.</p> <p>Recommendation: The above restrictions should be relaxed.</p>

WORKING GROUP 3: INTERNATIONAL INVESTMENT AND CONCESSIONAL FINANCE

(Co-Chairs: Uday Khemka and Bhaswar Chatterjee)

Executive Summary

Increasing International Debt Flows:

Specific Measures to:

- **Review and amend constraints on ECB lending**, specifically a) by making **limits** on permissible ECB interest rates (for loans denominated in foreign currency) much **more realistic** (current limit of LIBOR + 500 bps should be raised by 200-300 basis points); (b) Permitting all categories of NBFCs to raise foreign currency denominated ECBs in foreign currency under the automatic route; and (c) Increasing the permissible sources of ECB financing (to include PE funds for example).
- **Reduce restrictions on secondary debt distribution regime** (since unlike international norms, Indian regulations significantly restrict the nature of post facto syndication).
- **Create a level playing field for creditors** by extending **SARFAESI** protection to international lenders.

Increasing International Equity Flows

Specific Measures to:

- **Remove Entry and Exit Barriers of International Equity** by a) **Continue to replace Net Worth** qualification with wider, staged credibility test; b) **leveling the playing field** by removing **accelerated depreciation incentives** or replacing with tradeable GBI incentives; c) encouraging the treatment of fiscally efficient **NCDs as equity** by lenders; and d) reducing **exit restrictions** to COD stage only.
- **Removing Barriers to Fiscal Efficiency** by ensuring the further **fiscal efficiency** (for example with respect to intercorporate dividend distribution taxes) **of Yield structures** such as InvITs etc.
- **Launch Credit Enhanced/Tiered Instruments and Facilities** to allow project Debt and Equity to be rated to the level, e.g. **Investment Grade, required by majority of international pension funds** and life insurance companies.

- **Launch Indian “Stabilized-Yield Fund of Funds Challenge”** (with credit and/or dollar enhancement) **to bring in first generation of stabilized yield style pension and insurance companies** (to be summarized in a separate submission).
- **Launch Indian “Development Yield Fund of Funds Challenge”** (with credit and/or dollar enhancement) **to bring in first generation of development yield style mezzanine credit and infrastructure funds** and institutional investors (to be summarized in a separate submission).

Mitigating Currency Risk

It is clear that, aside from PPA/counterparty risk issues, currency risk is the most important risk factor for international institutional debt and equity providers. The GOI has already pushed forward with consultation on an important mechanism to deal with first loss devaluation risk through its “Dollar Tariff Policy” proposal. The CEFF provided feedback to Government’s consultation paper on Dollar Tariffs and feels that it is an important step forward. In addition key measures are suggested to:

- Establish an **Exchange Rate Liquidity Facility (ELRF)** which would act as a standby credit line in case the Rupee goes below a predetermined floor value (to be summarized in a separate submission).
- Provide Currency Risk Mitigation directly to ring-fenced structures created specifically to attract first tier global infrastructure–style investors such as the “Stabilized Yield Fund of Funds” or “Development Yield Fund of Funds” (cited above).
- Provide currency risk mitigation for project debt, if full currency mitigation is not viable.

Detailed Recommendations

INTRODUCTION

The preconditions for the significant flow of international finance include:

1. The belief in Government's credibility and consistency of policy, simplicity and clarity of laws and regulations and its track record of honouring legal, contractual and policy commitments, as well as credible and efficient dispute resolution mechanisms.
2. The overall commitment of policy makers to mitigating the core issue: the credit quality of counterparties / PPAs and the importance of enforcement and recovery in situations of default in timely manner without the need for RBI/governmental approval.
3. With respect to international financial flows the importance of understanding the fundamental imbalance of IRRs between domestic and international investors resulting from a) hedging costs, b) transactions costs of bringing international capital into and out of India, c) the unintended effect of accelerated depreciation benefits in creating tariffs that are too low to sustain reasonable equity IRRs, and (d) legal and regulatory impediments such as interest rate ceilings on offshore debt, end-use restrictions applicable to offshore debt, limitations on eligible offshore lenders and the exclusion of international funders from current laws which facilitate the enforcement of security by domestic lenders.

No.	KEY ISSUES & RECOMMENDATIONS
I.	Increasing International Debt Flows
A. Low Hanging Fruit / High Impact Potential	
	<p>Remove and Amend Constraints on ECB Lending</p> <p>The flow of foreign funds is constrained due to a multitude of restrictions under the ECB regulations. While some of these restrictions have been relaxed or removed recently, some issues still remain. In particular, these issues and the recommendation to resolve these issues are as follows:</p> <p>(i) Issue: the ECB interest rate is capped at six-month LIBOR + 450 bps for any foreign currency denominated ECB by a borrower in the infrastructure sector</p> <p>Recommendation: The recommendation is to relax and raise the current limits on</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>interest rate by 200-300 bps to make it more realistic</p> <p>(ii) Issue: Recent changes to the ECB Regulations permitting certain categories of NBFCs to raise foreign currency denominated loans under the ECB route are helpful and a step in the right direction. However, all NBFCs are still not allowed to raise foreign currency denominated ECBs under the automatic route Recommendation: It is recommended that all NBFCs be allowed to raise foreign currency denominated ECBs under the automatic route</p> <p>(iii) Issue: There are requirements to obtain approval of Reserve Bank of India (RBI) for repayment of the loans on an event of default or payment on an indemnification obligation, court judgment or arbitration award are impediments to international financings in India Recommendation: It is recommended that this restriction be eliminated and prior approval of the RBI should not be required for ECB loans as well</p> <p>(iv) Issue: Sources of financing exclude (for example) debt funds and private equity funds (which are significant sources of financing of renewable energy in developed markets) as well as equity holders providing subordinated funds. Recommendation: It is recommended that this restriction be removed. The list of lenders permitted to lend under the ECB route should be expanded</p> <p>(v) Issue: Withholding tax on interest payments further dis-incentivize foreign lenders Recommendation: It is recommended that withholding tax be removed from interest payments on foreign loans. A start could be made with interest on loans from certain countries, which are potential sources of funding</p> <p>The above restrictions force borrowers to live with much more expensive domestic debt (even after taking into account forex hedging costs). Resolution of these issues would be conducive to attraction of international debt capital.</p>
B. Key Recommendations	
	<p>Reduce Restrictions on Secondary Debt Distribution</p> <p>Issue: International norms allow for underwriting of debt by a few banks followed by gradual placement in the market. This allows for rapid execution on large volume transactions and eventual involvement of a wider debt market. Secondary debt also has benefit for lenders to free up their current exposure and lend to new projects. This approach has been widely used to promote innovation in developed markets (e.g. in warehouse facilities for residential solar) where a few banks have eventually opened the market to a much wider lender group. For example, corporate loan agreements in Europe normally have secondary transfer documentation as an appendix (loans are expected to be traded actively in the secondary market), which makes it easier for</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>banks to trade with one another. In India there are numerous RBI regulations in relation to debt which only allow for a ‘club’ approach, such that a deal cannot typically be closed unless all lenders are identified and signed off and/or the underwriters are prepared to keep risk for very long periods of time. Amending these regulations to allow distribution, automatic approval for 100% take out of rupee denominated construction finance debt facilities, refinancing of existing ECB loans and new ECB loans with greater average maturities or higher cost would significantly open up the international debt markets.</p> <p>Recommendation: It is recommended that the restrictions on secondary debt distribution be removed so that Indian developers can gain access to a wider international debt finance market</p>
1.	<p>Create Level Playing Field for International Creditors by Extending SARFAESI ACT Protection</p> <p>Issue: International lenders (except certain multilateral lending agencies) are not extended the benefit of the SARFAESI Act (available to Indian lenders), which provides lenders with greater flexibility to enforce collateral faster, and declare mandatory prepayments and events of default.</p> <p>Recommendation: It is recommended that international lenders be given the same status as local lenders under SARFAESI. This would increase such lenders’ willingness to finance clean energy projects in India.</p>
2.	<p>Measures to Crowd in International Institutional Debt Finance through Credit Enhancement</p> <p>Background: International bank financing is the first step in increasing liquidity – typically banks are more willing to consider the risk parameters early (as has been proven for renewable energy projects in Europe and the US). However medium term gains arise from ‘real’ money flows including life insurance companies, pension funds and sovereign wealth funds. For these investors, the long duration of these cashflows provide a natural hedge for their own long term liabilities.</p> <p>In particular life insurance companies have been active players in the debt funding of infrastructure and renewable energy projects in developed markets. The Eurobond market and the 144a market and traditional private placement market (USPP) in the US are relevant in this context. Of these, the most receptive to global project issuers is the USPP market – for example this market has been extensively used by Australian borrowers.</p> <p>Since risk weighted capital treatment of US life insurance companies in particular is directed by the NAIC (National Association of Insurance Commissioners) categorization</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>– the pricing of debt from these sources is highly correlated to the NAIC rating. Simplistically, debt rated NAIC-1 or NAIC-2 can be priced significantly tighter (typically within 5-6% in the current market, for 15 year plus maturities). NAIC-2 corresponds to a BBB equivalent rating – i.e. as long as the debt receives a rating of BBB- or better, the beneficial capital treatment is available. (Conversely for NAIC-3 rating the interest rates can be very significantly higher).</p> <p>Issue: Life insurance companies, pension funds, and sovereign wealth funds have been active players in the debt funding of infrastructure and renewable energy projects in developed markets. However, the financing (and the pricing of such financing) from such sources is highly correlated to the credit rating of such projects. With Indian renewable energy projects being rated below investment grade, they would require credit enhancement before accessing such sources of debt financing as life insurance companies and pension funds .</p> <p>Recommendation: It is recommended that credit enhancement and credit conditions be created for each deal to achieve at least an international BBB- rating (i.e. investment grade or above); in particular, PPA providers to maintain an international credit rating of BBB- or better.</p>
II.	Increasing International Equity Flows
A. Low Hanging Fruit with High Impact Potential	
1.	<p>Remove Entry and Exit Barriers to Facilitate Increased International Equity Flows</p> <p>(i) Issue: Domestic Accelerated Depreciation (AD) benefits significantly privilege profitable domestic companies over international investors. This matters because consequently reduced tariffs make available IRRs unattractive/achievable for international investors. AD also skews playing field for domestic investors. It does not help fast-growing companies that are not yet booking profits, so tends to be less useful for new entrants and favours large, diversified groups.</p> <p>Recommendation: If international equity flows are to be encouraged and provided a level playing field, it is recommended that AD benefits be either removed / faded out or be replaced by tradeable Generation Based Incentives (GBIs). Another option could be to separate AD / non AD tariffs and provide separate allocations for both such investors.</p> <p>(ii) Issue: Non treatment of subordinated capital such as Non-Convertible Debentures (NCDs) as equity by lenders and regulators impacts flow of international equity into India as such sources are typically the most fiscally efficient mechanism for inflow of international equity, particularly international</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>institutional equity into India. Recommendation: It is recommended that fiscally efficient sources of subordinated capital which are “equity like” such as NCDs should be treated as equity, without being subject to ECB Regulations.</p> <p>(iii) Issue: Some clean energy bid programs require a “Net Worth” qualification for the bidder, with the idea being to separate credible bidders from non-serious, fly by night operators. However, this criteria is discriminatory against international portfolio investors such as Private Equity funds as most of their assets are held off balance sheet and therefore, they will not meet the net worth test. Recommendation: It is recommended that the Net Worth criteria be removed and standardized across the board in accordance with the latest MNRE Guidelines. Instead, the net worth criteria can be replaced by a wider, staged credibility test. For example, at the time of signing the PPA, the successful bidder should be able to show proof of committed equity for the project, which will ensure that the project will go ahead.</p> <p>Additionally, any successful bidder who has defaulted in executing a project in the past, should be blacklisted and asked to provide additional guarantees in the future. These guarantees could include a net worth test, and providing additional bank guarantees for future projects (which will be forfeited in the case of default).</p> <p>(iv) Issue: Many clean energy bid programs have a lock in clause which prohibit a developer / investor from transferring majority control of a project for a certain period post COD. This ties up a developer’s capital for a longer period of time and prevents long term capital (such as pension funds) from coming into stabilized, operating projects. Recommendation: It is recommended that such lock in clauses and exit restrictions must be kept up to COD stage only. Post COD stage, these restrictions should be removed.</p>
B. Key Recommendations	
1.	<p>Remove Barriers to Fiscal Efficiency for Yield Vehicles</p> <p>Issue: Large pools of institutional investors exist globally who are seeking yield, yield that is readily available in India. To allow such funds to invest on large scale India needs to allow legally appropriate and fiscally efficient Investment Structures (such as Inv ITs).</p> <p>Recommendation: It is recommended that barriers to fiscal efficiency for yield structures such as Yield Cos and equivalent structures (such as Inv ITs) for international</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>investors to invest into Indian clean energy assets be removed. These barriers include allowing a “pass through” status by removing intercorporate dividend distribution taxes, in line with international best practices.</p>
2.	<p>Launch Credit Enhanced / Tiered Instruments and Facilities</p> <p>Issue: International pension funds and life insurance companies are active investors internationally in stabilized, operating pools of renewable energy projects. However, one of the investment criteria for them is that such assets be of an investment grade or above. Most or all Indian clean energy projects, however, being standalone Special Purpose Vehicles (SPVs), do not enjoy an investment grade credit rating, therefore, preventing pension funds and life insurance companies from investing in them.</p> <p>Recommendation: It is recommended that credit enhancement be provided for such assets to obtain an international investment grade rating such that long term pools of capital such as pension funds can invest in Indian clean energy assets.</p>
3.	<p>Indian Fund of Funds Challenge</p> <p>Issue: In view of India’s ambitious renewable energy targets, untapped sources of international private finance, will need to be mobilized to finance the scale up of India’s clean energy platform. These sources to be mobilized should include both “development yield” investors such as infrastructure funds and “stabilized yield” investors such as pension funds and life insurance companies.</p> <p>Recommendation: It is recommended that the Government of India (“GoI”) create a risk mitigated environment for international investors and leverage the expertise of fund managers with a successful track record. This can be achieved if the GoI, along with concessional finance providers, jointly develops concessional finance facilities designed to (i) crowd in financing into the Indian renewable sector from a variety of sources, (ii) address existing financial barriers and (iii) act as a catalyst for innovative projects and early-stage renewable businesses (“IFCF”).</p> <p>These facilities could be of 2 types:</p> <p>a) “Stabilized Yield Fund of Funds Challenge” (with credit and / or dollar enhancement) to bring in first generation of stabilized yield pension and insurance companies.</p> <p>b) “Development Yield Fund of Funds Challenge” (with credit and / or dollar enhancement) to bring in first generation of development yield style mezzanine credit and infrastructure funds and institutional investors.</p> <p>The design / architecture of the IFCF could be as follows:</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>a) The IFCF would target raising \$1B in public concessional monies in the form of capital contributions from multiple sources. Whereas a significant focus would be to raise a predominant portion of this from bilateral and multilateral “Northern” sources, some portion of the raised funds or credit enhancement or currency hedging enhancement should also be provided by India to create credibility.</p> <p>b) The public money tranche would be used to mobilize additional funds (3-4x) from alternate sources. The concessional money would have the characteristics of junior equity (first loss, lower return profile) so as to help de-risk the facility as an investment vehicle for follow-on investors.</p> <p>c) The Facility would be managed by 2-3 international fund managers with each managing a separate tranche. The managers would be selected through a competitive process focused on track record and relevant experience. Each fund manager would have fund raising responsibilities.</p> <p>d) Part of the concessional money could take the form of low-interest long-term debt so that the facility can provide a blend of both equity and debt finance.</p> <p>e) The Facility would have a fixed investment period, hurdle rate target, and potentially other impact metrics. Expectation is that public monies would ultimately re-flow back to contributors.</p> <p>f) The Facility would be used to finance renewable energy both directly at the project and company level but also in a fund-of-funds model. For instance, the IFCF could make investments in private equity funds focused on providing capital for companies that enable resource efficiency and develop low-carbon products and services in India.</p> <p>g) By sizing the facility at \$1B, we increase the odds of closing the first tranche in a timely manner and having positive results for the private sector participants.</p> <p>h) The developed countries and India would jointly make an initial pledge and work together to raise concessional monies from other public sources, including bilateral outreach, MDBs, GCF etc. There would be required threshold amounts for both the concessional money portion and private sector commitments prior to triggering a drawdown of funding from the developed countries.</p>
III.	Mitigating Currency Risk
A. Key Recommendations	
1.	Issue: Currency risk is the most important risk factor for international debt and equity providers. Measures to mitigate or reduce currency risk would be highly beneficial in

No.	KEY ISSUES & RECOMMENDATIONS
	<p>attracting international equity and debt flows.</p> <p>Recommendation: Currency risk is without question one of the three most important risk factors for international debt and equity providers (the others being credit quality and the sanctity of contract under termination). Measures to mitigate or reduce currency risk would be highly beneficial in attracting international equity and debt flows.</p> <p>Three possible approaches are outlined hereunder:</p> <p>(i) ERLF Proposal: It is recommended that an Exchange Rate Liquidity Facility (ERLF) be created which would act as a standby credit line in case the Rupee goes below a pre-determined floor value.</p> <p>An ERLF would act like a standby credit line to mitigate currency depreciation risk for a foreign loan borrower. The borrower could draw down funds from the facility when the domestic currency depreciates and the project's cash flows available for debt service (converted to \$) go below a predetermined floor value.</p> <p>The ERLF could use as its corpus funds from the Clean Energy Fund and operate as follows:</p> <ol style="list-style-type: none"> a) Project forecasts a Rupee depreciation Curve and a tolerance range (illustratively +/-5%). b) A running premium is payable to the ERLF for protection below this tolerance level (i.e. ERLF pays out for depreciation >5% from forecast). c) The size of the premium is inversely correlated to the tolerance level. (Potentially this could be simplified for bid purposes using a grid). d) The ERLF also receives any upside related to FX rate (outside of a range which benefits the project e.g. if INR appreciate >5% beyond forecast then the difference is paid over to ERLF). e) ERLF makes the project whole if FX rate depreciates beyond range (i.e. >5%). Compensation is an annual flow. <p>To be credible the ERLF must have transparent financials, defined parameters for operation and potentially a standalone credit rating from the international ratings agencies.</p> <p>(ii) Foreign Currency Hedge Limited to Defined Fund Corpus Proposal: A second proposal could envisage foreign exchanged-hedged specific catalyst funds/fund of funds wherein rupee risk mitigation directly be provided to ring fenced structures created specifically to attract global infrastructure style investors (pension funds etc.) such as the Stabilized Yield Fund of Funds, or Development Yield Fund of Funds, as mentioned in the full CEFF recommendations. This allows GOI to test the</p>

No.	KEY ISSUES & RECOMMENDATIONS
	<p>foreign exchange mitigation in a limited way and attract first tier global pension funds and other yield seeking institutions.</p> <p>(iii) Currency Debt Protection: It is recommended that even if full currency mitigation is not viable, the Government can provide currency risk support to cover the project debt payments. One option can be using the National Clean Energy Fund to provide hedging support to such payments. Such a measure will enable the greater inflow of foreign debt into the Indian renewables space.</p>

WORKING GROUP 4: POLICY ISSUES OF SCALING UP RENEWABLE ENERGY IN INDIA

(Chair: R. Tongia, Brookings India)

Executive Summary

Specific Measures to scale up Renewable Energy (RE):

- **Discom risk** is the greatest risk cited by developers, not just for RE but overall in the power sector. Often, financial (saving money), operational (grid stability), contractual (take-or-pay clauses for capital costs of other generators), and political objectives don't align, creating uncertainty if not opaqueness of operations and finances. Therefore, we suggest specific recommendations to **provide better visibility into state utility operations and risks**
 - a) Improve the granularity and details of **ratings of Discoms**.
 - b) Analyze and create a **rating of State LDCs** (Load Dispatch Centers), extending to planning functions.
 - c) Create **Independent System Operators (ISOs)** for transmission, especially at state level.
- Discoms (especially state load despatch operators) face challenges with RE, for reasons ranging from comparatively higher costs (at the margin), lack of predictability/control, not helping with the peak, etc. This sometimes manifests itself as resistance to RE, including measurable backing down of RE. There is an analogy to "open access" as mandated by the Electricity Act 2003, which is covertly and overtly resisted by some operators. We suggest recommendations that would **quantify the risks and challenges of RE (esp. for states), to better apportion risks and costs in an efficient manner**.
 - a) Analysis on "hidden costs" of RE (to be subsequently apportioned more effectively)
 - b) Quantification of "hidden costs" of non-RE – for not just a fair comparison but also to allow increased support for RE
 - c) Quantify and mitigate global issues and risks (macro, carbon, forex, etc.) for RE
- RE targets are disproportionately concentrated in ~8 states, who face the maximum challenges in managing RE (operationally and financially). Need to come up with operational and financial mechanisms to minimize these challenges. Recommendations to **help share and mitigate the risks of RE** include the following:
 - a) Create and enforce meaningful **RPOs**
 - b) Create funding mechanisms that help the states (to cover RE costs)
 - c) Broader **grid strengthening**

- d) Formal coordination between **Ministry of Power (MoP)** and MNRE/State RE Agencies
- e) Create a delta (gap) funding pool for operational grid uncertainties
- f) Strengthen RE operations to be more predictable and robust (grid tolerant)
- g) Increase inter-state power flows
- h) Facilitate greater 3rd party sales
- i) Create predictability on support mechanisms, e.g., by carving out a fraction of coal/environmental/Swachch Bharat funds for RE
- j) Enable innovation and R&D, both at a scientific and fiscal level

Detailed Recommendations

Long-term viability and growth of RE will come from the combination of project and system viability, which inherently must factor in the RE-rich states. Non-government and non-utility capital for RE projects still depends on the (state) utilities who are either buyers of said power (grid scale) or remain deeply impacted due to operational reasons, e.g., from use of infrastructure as well as consumers reducing their demand, especially so-called paying customers.

A current option in vogue for developers to deal with national entities and 3rd parties, and “by-pass” the states, or have bundled power addresses a liquidity challenge more than a solvency one, and any “by-pass” will need to be reconciled somewhere else in the system. There are extensive learnings from the failure of the 2003 Electricity Act when it came to Open Access, which was resisted by states for both rational and fear-based reasons. Similarly, if RE is viewed as only top-down, an external nuisance, or even a great risk by the states, it will face resistance, both overt and covert. Policies must help mitigate state concerns, and make them whole for any costs.

Many of the risks or challenges for scaling up RE relate to counter-party risk (CEFF Working Group 1), but issues often go beyond traditional counter-party risks to system level challenges in the power sector.

The focus of these recommendations is a synthesis of broader policy/regulatory suggestions beyond those captured in WG1-3. These can be broken into 3 categories (with expected overlap):

- 1) Recognition of broader challenges in the sector
- 2) Suggestions for increased transparency
- 3) Mechanisms to enhance acceptability of and demand for RE

No.	KEY ISSUES & RECOMMENDATIONS
A. Key Recommendations (Both Enablers & Support)	
1.	Provide better visibility into state utility operations and risks
	Higher Priority
1 (a)	<p>Improved ratings of Discoms⁶</p> <p>The current ratings of Discoms provide some visibility, but these can be enhanced increase their transparency and predictive value.</p> <ul style="list-style-type: none"> a) Provide raw data instead of just final scores. This way end-users can apply their own chosen weightages as they deem best. b) The ratings are not prospective, especially considering a future with, for example, 100% electrification, zero-load-shedding, and meeting RPO obligations. Such factors along with an achievement score (or de-rating for lack of achievement) should be incorporated. c) Instead of a single unitary rating letter across all Discoms, cohorts should be developed that factor in not only these issues, but also consumer mix, generator mix, etc.
1 (b)	<p>Analyze and create a rating of State LDCs (Load Dispatch Centers)</p> <p>States are the key operators for bringing together supply and demand (utilities downstream and generators upstream). Regional LDCs are closer to true Independent System Operators (ISOs), while state entities aren't true ISOs.</p> <p>A new LDC rating could factor in issues such as:</p> <ul style="list-style-type: none"> a) Existence and scope/reach of a SCADA system, including enforcement of norms <ul style="list-style-type: none"> i. Visibility of system from aggregated (dashboards) to granular. ii. Control over generator level discipline, including following free-governor mode of operations (much less a concern now but still remains). <p>A complementary policy suggestion is to prioritize SCADA deployments (as presently garnering central support) to the RE-rich states.</p> b) "State-of-grid" analysis and guidance <ul style="list-style-type: none"> i. What other types of generation is there? E.g., states with hydro can handle vastly more RE. ii. Ability of state to have or harness fast-ramping generation, and ancillary

⁶ A discussion note on this topic is available as: R. Tongia, "Rating of Distribution Utilities in India: Linking the Financial with Operational, with Granularity" Brookings India Discussion Paper 01-2015, October 2015.

No.	KEY ISSUES & RECOMMENDATIONS
	<p>services such as frequency regulation.</p> <ul style="list-style-type: none"> iii. Visibility on upcoming plants of all types (prospectively); there are timeframe risks, e.g., lots of coal capacity coming online soon (planned many years ago). c) Availability of software/algorithms for optimal portfolio planning d) ToD (time of day) for procurement and operations (missing for most states as of now) e) Data on Backing Down of generators (note this is allowed in RE PPAs up to a point) f) Existence of / access to (upcoming) REMCs g) Training programs for modern grid management (esp. high-RE)
1 (c)	<p>Separate transmission assets from independent operators (Independent System Operators, or ISOs)</p> <ul style="list-style-type: none"> a) This has positive implications for greater stability and predictability of operations not just for RE but for private operators overall, including under Open Access.
	<p>Additional Suggestions</p>
1 (d)	<p>Provide additional financial clarity of the states, especially in a more up-to-date manner (e.g., quarterly, instead of once per year or two years)</p> <ul style="list-style-type: none"> a) Payment history data for RE and IPPs <ul style="list-style-type: none"> i. Note: need data on delays and not just formal “restructuring” of payments/loans/contracts.⁷ b) Clarity on “Regulatory Assets” for utilities <ul style="list-style-type: none"> i. These are IOUs (deferred payments) which need to be paid down in a realistic manner c) Status of UDAY or other financial revamping plans (especially prospectively, i.e., 2 and 4 years from now)
2.	<p>Quantify the risks and challenges of RE (esp. for states)</p> <p>There is significant overt if not covert pushback against RE from the states, for not just financial reasons (which will decrease as RE costs continue to fall) but also due to operational impacts. Quantification of “hidden costs” or even socialized costs is the first step to allow more explicit funding mechanisms or instruments to cover such costs.</p>

⁷ Many payment problems result in delays instead of formal defaults or restructuring; see point **Error! Reference source not found.** for more on this issue.

No.	KEY ISSUES & RECOMMENDATIONS
	Higher Priority
2 (a)	<p>Create benchmarks and analysis on “hidden costs” of RE</p> <p>Ultimately, the sector needs mechanisms to compensate states for the same. This is akin to how retail tariff subsidies for consumers are now meant to be explicit. (in decreasing order of priority or impact)</p> <ul style="list-style-type: none"> a) Transmission costs (including but not limited to Green Corridors) b) Ancillary services and ramping/balancing needs c) Lowered PLFs of other generators <ul style="list-style-type: none"> i. Indian peak is evening so solar especially might reduce the PLF of other units d) Waiver of cross-subsidy charges e) REMC (Renewable Energy Monitoring Center) costs f) Wear and tear and heat rate penalties on other generators (thermal) <ul style="list-style-type: none"> i. There is a requirement for thermal generators to reduce output to 55% on demand. This should not apply across the board, but instead be tailored to different plants and technologies differently. Older plants especially may be unable to do so without oil support. g) Waiver of wheeling charges h) Utility Death Spiral risks (loss of “paying” consumers)
2 (b)	<p>Quantification of other (non-hidden) cash or tangible support for RE, breaking down by source (Center vs. State vs. DISCOM, etc.)</p> <ul style="list-style-type: none"> a) Land b) Tax-breaks including accelerated depreciation (AD) c) Subsidies and viability-gap funding d) GBI
	Additional Suggestions
2 (c)	<p>Quantification of externalities, in fossil, hydro, nuclear, and other power sources (for fair comparisons and allowing increased RE support)</p> <ul style="list-style-type: none"> a) Local impacts such as water, air, etc. pollution b) Land-usage impacts (especially mining) c) Global impacts such as carbon
2 (d)	<p>Quantification of global and macro externalities (carbon, foreign exchange, import risks, etc.)</p> <ul style="list-style-type: none"> a) Create roadmaps for carbon taxation/regulation/pricing. This needs long term visibility and planning

No.	KEY ISSUES & RECOMMENDATIONS
	b) Synergize “Make in India” efforts for RE production domestically
3.	Help share and mitigate the costs and risks of RE
	Higher Priority
3 (a)	<p>Create and enforce meaningful Renewable Portfolio Obligations (RPOs) The Center can only give guidance as per current rules, the State Electricity Regulatory Commissions (SERCs) have to notify RPOs</p> <p>a) Bring together states and all stakeholders to define national RPOs. b) Extend the definition of RPOs to factor in not just RE generation per se but also supporting mechanisms that enable greater RE (such as storage, balancing, demand control, etc.). E.g., hydro operating not for normal generation (kWh) but for balancing requirements can qualify as RPO (this needs a normalization factor between capacity and actual usage, if not a new market/mechanism). Korea has already allowed energy storage systems to qualify for RECs.</p>
3 (b)	<p>Broader grid strengthening (in roughly decreasing order of priority or impact)</p> <p>a) Improved transmission i) Design for dynamics, with congestion, instead of average costs b) Time of Day pricing,⁸ to enable peakers and peak pricing c) Ancillary services and balancing d) Storage systems e) Demand response, etc. f) Power pools and more use of markets</p>
	Additional Suggestions
3 (c)	<p>Make RE perform in a manner that mitigates state (operator) risks and concerns:</p> <p>a) Need improved prediction (forecasting) and penalties for deviations b) Improved generator quality, such as Fault Ride Through c) Devise mechanisms for synthetic inertia (esp. for solar) d) Encourage if not mandate reactive power support</p>
3 (d)	<p>Increase inter-state flows of power</p> <p>a) Create Larger balancing areas</p>

⁸ While ToD pricing may ostensibly hurt some RE since India’s peak demand is in the evening (as of now), the day is nearly the peak. More importantly, ToD pricing will give a signal for viable deployment of alternative solutions such as peakers, storage, demand response, etc. that would all benefit RE.

No.	KEY ISSUES & RECOMMENDATIONS
	b) Separate DSM (Deviation Settlement Mechanism) norms for RE, which will be updated as RE grows in share (e.g., based on targets)
3 (e)	<p>Move to and enforce “must-run” status for RE for state load dispatch except for technical and emergency reasons</p> <p>a) Create a neutral but empowered entity to independently declare “emergency” conditions. This would then apply to both RE backing-down and other grid operations, including Open Access. This may or may not be an ISO.</p> <p>b) Monitor and enforce consistent Open Access towards RE</p>
3 (f)	<p>Have a fraction of Renewable Energy Certificate (REC) funds to go to the states</p> <p>a) REC transactions are between buyers and generators, but not the states whose grids are impacted and possibly strained.</p>
3 (g)	<p>Formal coordination between RE departments/ministry and Power</p> <p>This is exacerbated due to the different time constants of different technologies (RE being very quick) as well as issues of ownership (public versus private). Far harder is visibility on distributed (end-user) RE, like rooftop solar, which impacts demand. As of now, much of the coordination is based on formal targets, without sufficient iteration and preparedness assessments.</p> <p>This extends, e.g., to:</p> <p>a) Transmission planning</p> <p>b) System planning (other sources of power/balancing/etc.)</p>
3 (h)	<p>Provide “delta” or gap funding mechanisms for certain types of operational risks</p> <p>While variability should be planned for, stochasticity (random events) can be rare, and the costs for the same can be socialized. May need a pooled fund for managing such happenings, e.g., unprecedented demand, low RE output, transmission congestion, etc. all at the same time). This would benefit from an ISO or other entity to declare when such emergency or stochastic conditions arise.</p>
3 (i)	<p>Create new Improved tools for handling financial challenges and risks that aren’t either-or (rather, are gradual)</p> <p>a) Update escrow to handle more than the first “issue.” Need replenishment norms for escrow funds (once drawn).</p> <p>b) New mechanisms that fall short of a “poison pill”, which ends the developer and buyer relationship. This is one reason buyers rarely call default, instead accepting delayed payments.</p>
3 (j)	<p>Allow automatic 3rd party sales of power in case the Discom is under-drawing</p> <p>This helps mitigate the challenges of the 175 hours of “allowed” backing down as</p>

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	per model PPAs. However, if there is a local transmission constraint, that would still limit offtake. ⁹
3 (k)	<p>Better terms for licensing of software/tools and analytics</p> <p>Instead of each DISCOM (or even state) considering this, regional if not national licensing can reduce costs; can tie this into the design of REMCs.</p>
3 (l)	<p>Carve out a fraction of environmental cess or Swachh Bharat funds explicitly for RE – to provide visibility and assured funds.</p> <p>a) Apply a consultative approach to help apportion some fractions to activities spanning R&D, delta (gap) funding, risk pooling funds, etc.</p>
3 (m)	<p>Design lightweight and low-impact experiments, where limited failure is acceptable, manageable, and even healthy</p>
3 (n)	<p>Support R&D and innovation in India through multiple measures</p> <p>This should support everything from basic R&D to commercialization of innovations, spanning science to engineering (incl. manufacturing) to process and business model innovations. This should apply to not just the public sector, utilities, or academia but also private industry and consortia.</p> <p>a) Consider high-risk yet high-impact R&D including commercialization plans for support, perhaps similar to ARPA-E models.</p> <p>b) Have online (live) periodic updates on R&D status instead of just episodic “compendiums” on R&D as presently available.</p>
4.	<p>Analyze and mitigate impact of GST</p>
	<p>Issue: GST is a major unknown for the RE sector, which has enjoyed support via waivers of a number of taxes. Not only is there uncertainty, but there are worries GST would raise the cost of inputs to the RE sector, especially wind and solar.</p> <p>Recommendations:</p> <p>a) Provide visibility on impact of RE, and continuation of prior support as feasible</p> <p>b) Provide a delayed payment schedule for GST compliance until a suitable timeframe for revenues to come in for developers</p> <p>Even if Taxes are a pass-through into tariffs, a developer mid-stream in a project will not realize such revenue until 1-2 years later. However, they will, mid-stream, need to increase their expenditures to pay their suppliers with higher taxes. For such cases, even if grandfathering of older tax regimes isn’t appropriate, offer them a 12-18 month window to pay the increased taxes</p>

⁹ Note that 175 hours is 2% of total hours in a year, but it can be much more than 2% of nominal PLF if the backing down corresponds to peak RE generation periods.

No.	KEY ISSUES & RECOMMENDATIONS
	subsequently, i.e., in a timeframe matching when they will realize revenues. This could be conditional on approvals and progress towards projects.