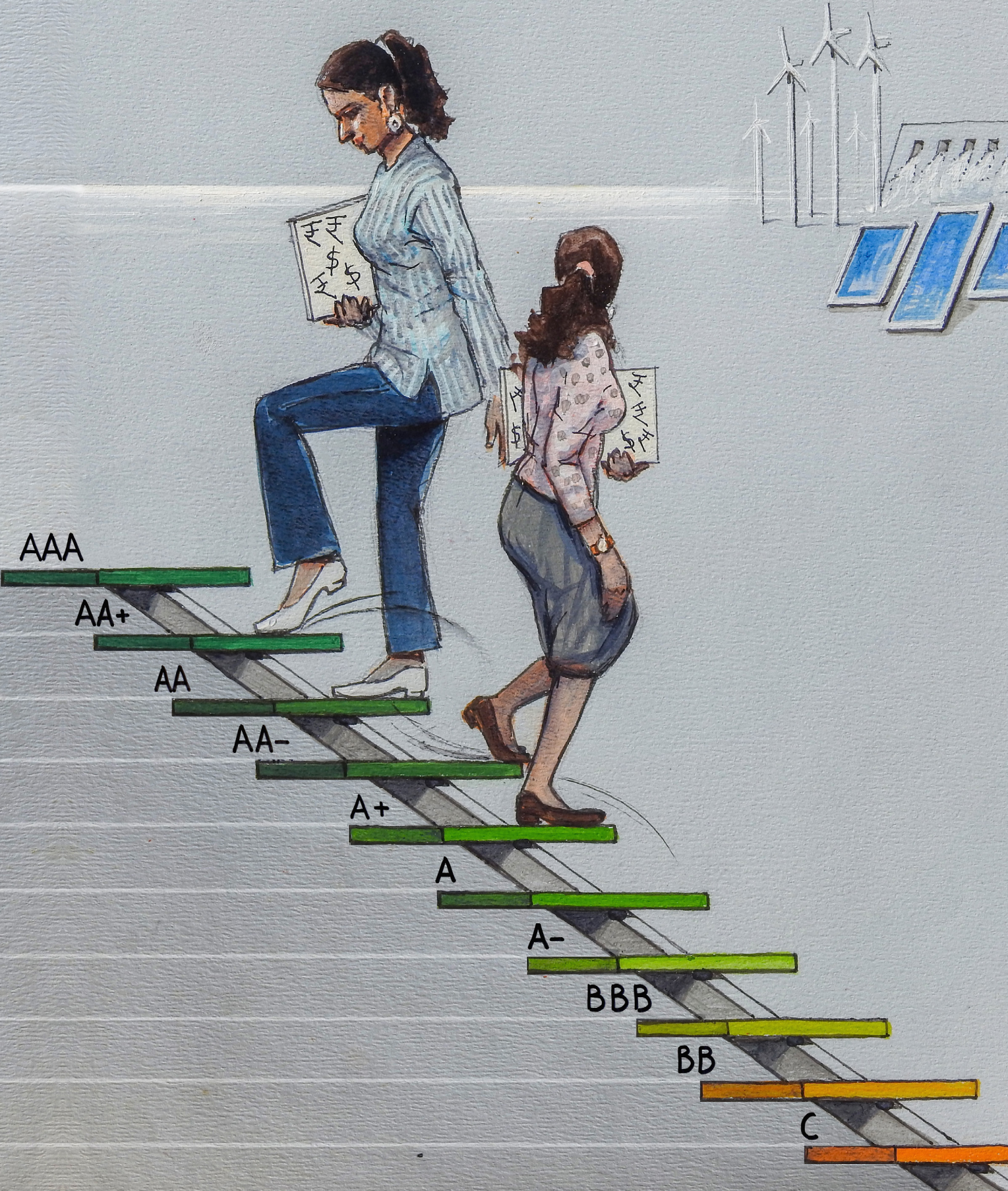# Expected Loss Ratings Scale:
Unexpected outcomes

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Sonali Gokhale

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Prayas (Energy Group)

About Prayas

Prayas (Initiatives in Health, Energy, Learning and Parenthood) is a non-Governmental, non-profit organization based in Pune, India. Members of Prayas are professionals working to protect and promote public interest in general, and interests of the disadvantaged sections of the society, in particular. Prayas (Energy Group) works on theoretical, conceptual, regulatory and policy issues in the energy and electricity sectors. Our activities cover research and engagement in policy and regulatory matters, as well as training, awareness, and support to civil society groups. Prayas (Energy Group) has contributed to policy development in the energy sector as part of several official committees constituted by Ministries, Regulatory Commissions and the Planning Commission / NITI Aayog. Prayas is registered as SIRO (Scientific and Industrial Research Organization) with Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

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Expected Loss Ratings Scale:
Unexpected outcomes

At the recently concluded COP26 conference in October 2021, India has proposed an increase in its non-fossil fuel-based energy capacity to 500 GW by 2030. As of January 2022, the total RE capacity was 152.3 GW (38.6% of the total installed capacity), with the majority from solar and large hydro (12% each) followed by wind (10%).

This translates to ~ Rs. 17 Lakh Crore of capital requirement to make the additional utility scale RE target of 340 GW possible[1]. At a debt: equity financing ratio of 80:20, the debt requirement for a 340 GW RE target works out to ~ Rs. 14 Lakh Cr over a period of 9 years. To put the required debt number in perspective, the entire loan book of State Bank of India (which is the largest bank in India) as of March 31 2021 was Rs. 25.39 Lakh crores. The 2nd largest loan book was of HDFC Bank at Rs. 11.85 Lakh Cr. as of March 31 2021. Hence, there is a real need for hitherto unseen amounts of long term RE finance to help achieve the tall target for the country.

Meanwhile, the Indian power sector continues to be riddled with the legacy of bad loans to the coal fired thermal projects, many of which are stranded even today for want of PPA tie up or fuel linkage. For example, as of March 2018, 34 thermal coal fired projects aggregating to 40.13 GW with outstanding debt of Rs. 1.74 lakh Cr (as of March 2018[2]) were facing serious financial stress. The resolution plans for this stressed debt have translated into massive haircuts for the project lenders which is an irrevocable loss of public money. The resolution plan for Jaypee Power's subsidiary, Prayagraj Power Generation Company Ltd (PPGCL) which owns and operates the 1,980 MW Prayagraj Thermal Power Plant in Uttar Pradesh led to a Rs. 5000 Cr haircut for the bankers consortium led by State bank of India (SBI)[3]. A similar trend of Non Performing Assets (NPAs) is already evolving in the Indian RE space with the three primary Government owned NBFC participants (PFC, REC and IREDA) put together accounting for ~ Rs. 2800 Cr of NPAs vs. a cumulative outstanding of Rs. ~75000 Cr to RE as of March 31 2021[4].

Key Risks for operational RE projects:

The tariffs for RE projects have fallen significantly over the past couple of years as developers have bid aggressively on falling technology prices. Prices are expected to fall further in the future. The two main high impact risk determinants for an RE project are capital cost and financing costs. RE tariffs discovered through competitive bidding are based on nearly 80%-85% of total project cost being funded out of long-term debt with tenors between 15 to 20 years. The entire onus of the debt serviceability (i.e. interest payment and principal repayment) rests only on two main factors once an RE project becomes operational: generation and timely receipt of generation dues from the offtaker. Hence, for RE projects, debt financing has to take on more and more equity like risks, leaving limited skin in the game for the equity promoter over the life of the project.

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1. We have assumed capex cost per MW for solar at Rs. 4 Cr and for wind at Rs. 7 Cr. We have also assumed the incremental 400 GW of RE will be a mix of 60:40 of solar:wind.

2. http://164.100.47.193/lsscommittee/Energy/16_Energy_37.pdf

3. https://ieefa.org/wp-content/uploads/2019/12/The-Burden-of-NonPerforming-Assets-in-India-Thermal-Power-Sector_December-2019.pdf

4. https://eparlib.nic.in/bitstream/123456789/835464/1/17_Energy_21.pdf

As RE projects have levelized tariffs paid per unit of generation, the capital cost of the project is also recovered with every unit of power sold. Any large dip in generation will automatically lead to stress for the project level debt. Most RE loans are financed at base case debt coverage ratios of between 1.20x to 1.15x (depending upon the PPA counterparty). This means that for an annual debt service burden of 10, the available cashflow is 12. In case of a 20% dip in annual generation (as was the case in CY2020 for wind power projects, https://www.ceew.in/publications/studying-the-impact-of-unexpected-climate-change-on-wind-energy-sector-in-india), this would lead to available cashflows for debt service of 9.6 vs the annual debt service burden of 10. This shortfall has not considered any delay in receipt of dues from the offtaker.

Further, the current dues from discoms to electricity generators continue to mount and aggregate to the tune of Rs. 97458 Cr (out of which Rs. 19675 Cr are towards RE projects) as of January 2022. These overdue payments for RE projects mean that for some state discoms such as Tamil Nadu, Andhra Pradesh, Rajasthan and Maharashtra, the overdues are equivalent of a 8-10 months worth of invoiced energy[5]. Some of this delay in payment in many states could be due to ongoing disputes as well. Thus, the counterparty risks as well as the regulatory risk is significant in many cases.

In this context, given the scope, speed and debt funding dependence of India's RE foray, it is now more critical than ever for investment policy especially for public money entities be informed by appropriate risk perception of RE finance. This article is an attempt in this direction.

Credit ratings which are assessment-based opinions on the probability of a borrower defaulting on their loan are assigned by Credit Rating Agencies (CRAs). CRAs are governed by Securities and Exchange Board of India (SEBI) and credit ratings by these agencies are one of the critical signaling tools for investment decision makers. The heightened credit risk perception of lending to the infrastructure sector (nearly half of which is towards the power sector) is reflected in more than ~75% of debt instruments being in the BBB credit rating category or lower by CRAs[6] (BBB is a rating which denotes a moderate credit quality compared to AAA which is the highest credit rating possible). Historically, prudential norms governing investments for pension and insurance funds in India have restricted investments in low rated debt instruments (normatively below the AA rating category).

The Insurance Regulatory and Development Authority of India (IRDAI) has recently permitted insurers to participate in infrastructure investments with a minimum credit rating of A alongwith an Expected Loss Rating of EL1. This is a remarkable departure from the earlier investment policy which permitted investments in corporate bonds or debentures rated not less than credit rating of AA (a three notch downgrade from AA to A). This new EL based rating scale from EL1(best rating) till EL7 (weakest rating) is designed to bolster the risk perception of debt instruments of infrastructure projects as it includes the concept of post default recovery prospects of a project.

In theory, the concept of a post default recovery prospect-based credit view (as proposed for the EL based rating scale) of RE projects sounds rational. The long period of contractually bound fixed power purchase at very low costs (hence attractive for the

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5. https://praapti.in/

6. https://www.icra.in/Rating/ShowMethodologyReport/?id=677

offtaker), modular nature of solar projects leading to lower construction phase risks and low probability of cost overruns, minimal operation and maintenance cost (O&M), do make for a steady cashflow stream for low risk low return type of investors. However, the current framework for calculating this post default recovery for RE projects and the translation of the same into credit ratings leaves a lot to be desired. EL based ratings are a promising idea for encouraging institutional capital participation in the RE finance story; and if modified in some key areas, may yield the desired results. This issue is discussed in detail over the course of this article.

The current framework for credit risk measurement for RE:

CRAs assign credit ratings to debt instruments and their issuers based on 'Probability of Default' (PD) of 'Single Rupee Shortfall Single Day Delay' paradigm normally starting from AAA (highest rating) to D (lowest rating)[7]. Credit ratings are assessment based opinions of risk of default: the higher the rating, the lower the probability of default should be.

Following is the SEBI approved long term Probability of Default (PD) rating scale[8]:

Credit Rating	Credit Risk Measurement
AAA	Highest degree of safety regarding timely servicing of financial obligations. Such instruments carry lowest credit risk.
AA	High degree of safety regarding timely servicing of financial obligations. Such instruments carry very low credit risk
A	Adequate degree of safety regarding timely servicing of financial obligations. Such instruments carry low credit risk.
BBB	Instruments with this rating are considered to have moderate degree of safety regarding timely servicing of financial obligations. Such instruments carry moderate credit risk.
BB	Instruments with this rating are considered to have moderate risk of default regarding timely servicing of financial obligations.
B	Instruments with this rating are considered to have high risk of default regarding timely servicing of financial obligations.
C	Instruments with this rating are considered to have very high risk of default regarding timely servicing of financial obligations.
D	Instruments with this rating are in default or are expected to be in default soon.

Modifiers {"+" (plus) / "-"(minus)} can be used with the rating symbols for the categories AA to C. The modifiers reflect the comparative standing within the category.

CRAs have specific set of criteria for assigning ratings to RE projects. These are largely similar across various CRAs. However, the interpretation of each scoring point for ratings assignment varies from CRA to CRA[9].

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7. https://www.crisil.com/content/dam/crisil/criteria_methodology/basics-of-ratings/CRISILs_rating_and_rating_scales.pdf

8. https://www.sebi.gov.in/legal/circulars/jun-2011/standardisation-of-rating-symbols-and-definitions_19860.html

9. Detailed notes about the same are available Annexure 1

As a result of low ratings on the PD scale, debt instruments for RE projects are finding it difficult to raise money in the debt capital markets. Most private banks and Financial Institutions (FIs) cherry pick the relatively safest looking projects to finance. Banks and FIs are structurally constrained from taking on long term financing (>10 years) due to asset liability mismatches. Further, most capital market entities such as pension funds and insurance companies are precluded from investments in the low rated bonds and debt instruments as they had regulatory restrictions from making investments in debt instruments with ratings less than AA on the PD scale as they hold funds relating to social security purposes for the country's common citizenry.

While SEBI regulates CRAs and their activities, each CRA has its own independent credit risk measurement methodology and approach. This leads to considerable divergence between the Cumulative Default Rates for similar rating grades as is seen in the below table.

CDR	CRISIL (FY11 - FY21)			ICRA (FY11 - FY21)			INDIA RATINGS (FY10 - FY20)			CARE (FY10 - FY20)		
	1 year	2 years	3 years	1 year	2 years	3 years	1 year	2 years	3 years	1 year	2 years	3 years
AAA	0.00%	0.00%	**0.00%**	0.10%	0.20%	**0.40%**	0.60%	1.31%	**1.88%**	0.29%	0.83%	**0.97%**
AA	0.03%	0.11%	0.22%	0.10%	0.20%	0.40%	0.22%	0.56%	1.08%	0.30%	0.69%	1.11%
A	0.16%	0.72%	**1.39%**	0.30%	1.10%	**1.90%**	1.18%	3.28%	**5.82%**	0.52%	1.55%	**2.99%**
BBB	0.75%	2.06%	3.62%	1.70%	4.00%	6.00%	2.83%	6.63%	10.57%	1.63%	3.86%	5.98%
BB	3.50%	7.43%	11.31%	4.50%	8.30%	11.40%	4.47%	8.68%	12.76%	4.29%	7.72%	10.71%
B	8.41%	16.90%	24.03%	6.50%	12.00%	16.30%	6.28%	12.78%	20.49%	7.50%	12.92%	15.91%
C	20.83%	34.89%	45.24%	24.80%	35.70%	40.30%	23.91%	35.69%	40.49%	26.19%	33.92%	36.47%

Note: Each rating band above from AA to B, also has modifiers of '+' and '-' indicating the positioning of the rating in the particular rating band. For eg a loan rated AA+ is on higher end of the AA band compared to AA- which is at the lowest end of the AA band. The CDRs declared by the CRAs presented in the table above have aggregated band level defaults. Hence, the granular data on how an A+ loan behaves vs how an A- loan behaves over a 1, 2 and 3 year time horizon cannot be ascertained.

Source: The Default and Rating Transition Study published by each CRA annually. Same are available on each CRA's website. Similar Default Study for Infomerics, Acuite and Brickworks is not available for the length of period of FY10 to FY20 as these three CRAs commenced bank loan ratings business post FY14.

The changing credit risk measurement landscape for RE:

It has long been argued that risk contours of debt assistance in the form of long term project finance are considerably different from debt assistance to the industrial sector. Most if not all RE projects are tendered, executed and operated in partnership with the Government under the PPP (Public Private Partnership) route one way or other. Hence, one may believe that though there may be short term cashflow mismatches (and the possibility of ensuing delay in debt servicing), the long term economic value proposition of RE projects is largely untarnished over a long term given their near policy prioritization in the context of India's climate change response, the undisputed need for their services, sovereign involvement through special schemes, etc.

In this context, the then Finance Minister in his Budget speech for 2016-17[10], proposed 'a new credit rating system for infrastructure projects which gives emphasis to various in-built credit enhancement structures will be developed, instead of relying upon a standard perception of risk which often result in mispriced loans.'

In January 2017, CRISIL and other CRAs such as India Ratings[11], in consultation with the Ministry of Finance and other stakeholders developed a new credit rating framework for infrastructure projects based on the expected loss (EL) methodology. EL focussed on recovery of dues to investors and lenders over the life cycle of an infrastructure project, by taking into account the possibility of refinance/restructuring, and the presence of embedded safeguards (such as termination payments).

The approach to calculating was mentioned as Expected Loss (EL) = Probability of Default (PD) X Loss Given Default (LGD).

LGD is the amount of money a bank or other financial institution loses when a borrower defaults on a loan, depicted as a percentage of total exposure at the time of default. The same is expressed as a percentage. Value and liquidity of any collateral security offered against the loan taken has a large role to play in estimating LGD. Refer to Annexure 1 for more details of the PD and EL methodologies.

Below EL rating scale was developed in consultation with Department of Economic Affairs (DEA), Ministry of Finance (MoF) and adopted by all CRAs:

Rating	Consideration of expected loss over the life of the instrument	Indicative EL Ranges
INFRA EL 1	Lowest	≤ 1.25%
INFRA EL 2	Very Low	$1.25 < X ≤ 3.5\%$
INFRA EL 3	Low	$3.5 < X ≤ 7.5\%$
INFRA EL 4	Moderate	$7.5 < X ≤ 15\%$
INFRA EL 5	High	$15 < X ≤ 25\%$
INFRA EL 6	Very High	$25 < X ≤ 35\%$
INFRA EL 7	Highest	> 35%

It is a point worth noting that back then, there was no circular issued by SEBI regarding this new scale. Nor was there any computation methodology common to all CRAs made available in the public domain. The concept of EL ratings did not make much dent in the funds flow to the infrastructure sector as the investment guidelines for most large public finance entities still lacked guidelines recognizing EL ratings as investment thresholds. Not many developers actually utilized the EL ratings to access the debt capital markets which continued to respond to capital market debt instrument ratings on the PD scale.

In April 2020, the Task Force of the Department of Economic Affairs, Ministry of Finance in their report on the National Infrastructure Pipeline (Volume II)[12], recommended that *"regulations should facilitate use of Expected Loss Rating Scale (ELRS) as it will help attract long term capital market investors to invest in infrastructure projects. Given the long-term nature of the infrastructure projects, long-term patient capital is more suited for funding them. Existing investment guidelines for patient capital, i.e. insurance and pension funds,*

10. https://www.indiabudget.gov.in/budget2016-2017/ub2016-17/bs/bs.pdf

11. https://www.business-standard.com/article/economy-policy/crisil-launches-new-credit-rating-system-for-infrastructure-projects-117011200778_1.html

12. Report of the Task Force National Infrastructure Pipeline (NIP) - volume-ii_0.pdf (dea.gov.in)

are not aligned to meet this requirement. Strict regulatory requirements require these funds to invest only in highly safe government and public sector bonds, even at the cost of earning lower returns. The investment guidelines of IRDAI, EPFO and PFRDA need to be revamped to enable investment by pension and insurance funds in project bonds, municipal bonds and Infrastructure Investment Trusts (InvITs). The Task Force recommends that Department of Financial Services (DFS) may examine this with IRDAI, EPFO and PFRDA in enabling this. DFS may work out a strategy for growing the pool of pension and insurance assets through sector reforms including FDI reforms.

In keeping with the aforementioned DOE MOF recommendation of encouraging participation in infrastructure sector, IRDAI published a circular on January 5 2021[13], permitting insurers to participate in Infrastructure investments with a minimum credit rating of A alongwith an Expected Loss Rating of EL1. This is a remarkable departure from the earlier investment policy which permitted investments in Corporate bonds or debentures rated not less than AA or its equivalent[14].

We found no draft or working paper on this issue in the public domain. There is no public record of any consultation with insurers in the country. Ideally a change with far reaching implications of this nature on the investment philosophy of private and especially public insurers warrants much more public deliberation.

Post this IRDAI circular, SEBI issued a circular on July 16 2021 titled 'Introduction of Expected Loss (EL) based Rating Scale and Standardization of Rating Scales Used by Credit Rating Agencies'[15], where it introduced the following rating scale based on EL:

Rating symbols should have CRA's first name as prefix	
Rating symbol	**Definition**
EL 1	Instruments rated "EL 1" are considered to have the lowest expected loss, over the life of the instrument
EL 2	Instruments rated "EL 2" are considered to have very low expected loss, over the life of the instrument
EL 3	Instruments rated "EL 3" are considered to have low expected loss, over the life of the instrument
EL 4	Instruments rated "EL 4" are considered to have moderate expected loss over the life of the instrument.
EL 5	Instruments rated "EL 5" are considered to have high expected loss, over the life of the instrument
EL 6	Instruments rated "EL 6" are considered to have very high expected loss, over the life of the instrument
EL 7	Instruments rated "EL 7" are considered to have highest expected loss, over the life of the instrument

13. https://www.irdai.gov.in/ADMINCMS/cms/whatsNew_Layout.aspx?page=PageNo4331&flag=1

14. https://www.irdai.gov.in/admincms/cms/frmGeneral_Layout.aspx?page=PageNo2934&flag=1

15. https://www.sebi.gov.in/legal/circulars/jul-2021/introduction-of-expected-loss-el-based-rating-scale-and-standardisation-of-rating-scales-used-by-credit-rating-agencies_51197.html

The SEBI circular has no mention of any methodology or definitions of Probability of Default (PD) or (LGD). Further, the circular also does not mention any numerical ranges of EL as are referenced in the methodology documents of various CRAs as per their mutual adoption under the aegis of the DEA, MOF. The circular came into immediate effect with an outside date of March 31 2022 for compliance by all CRAs.

Similar to the IRDAI January 5 2021 circular, we found no draft or working paper on this issue in the public domain.

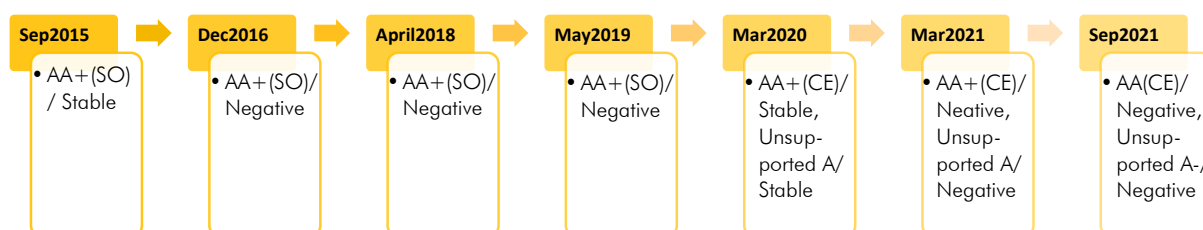## The issues with the EL rating framework of today:

Based on our perusal of the various EL rating methodology documents publicly available on various CRA websites, it is evident that there is material divergence as well as a lack of transparency in the approach to EL computation by each CRA. Each CRA has their own computation formula albeit operating within similar risk contours. Further, the assumptions utilized at arriving at the recoverability ratio are also not clearly stated. This is a critical issue that needs to be addressed by SEBI to ensure consistent computational approach to EL ratings[16].

As of today, even while assigning ratings on the PD scale, there are myriad instances of inconsistent treatment of events within a project SPV. Case study 1 presented below discusses the inconsistent assignment of ratings for the same RE project SPV debt by two CRAs. Case Study 2 is an example of an RE project having the highest EL rating while its ratings on the PD scale may be considered moderate at best[17].

Case Study 1:

Company A is a wholly owned subsidiary of XYZ group. Company A was formed in 2012 to build and operate and 85 MW wind power plant in Maharashtra. Project cost of Rs. 600 Cr was funded in a debt: equity ratio of 75:25. The project has a 13 year PPA with Maharashtra State Electricity Distribution Company Limited (MSEDCL) for the entire 85 MW capacity. Tariff per unit is Rs. 5.70. Project debt has partial credit support from Infrastructure Finance Company Limited (IIFCL) for value higher of a) 26% of outstanding principal or b) Rs. 60 Cr. As is clear from the below table the rating trajectories of both the Credit Rating Agencies for the same debt instrument started out at the same point but then diverged materially.

CRA 1 rating trajectory:

Sep2015	Dec2016	April2018	May2019	Mar2020	Mar2021	Sep2021
• AA+(SO) / Stable	• AA+(SO)/ Negative	• AA+(SO)/ Negative	• AA+(SO)/ Negative	• AA+(CE)/ Stable, Unsupported A/ Stable	• AA+(CE)/ Neative, Unsupported A/ Negative	• AA(CE)/ Negative, Unsupported A-/ Negative

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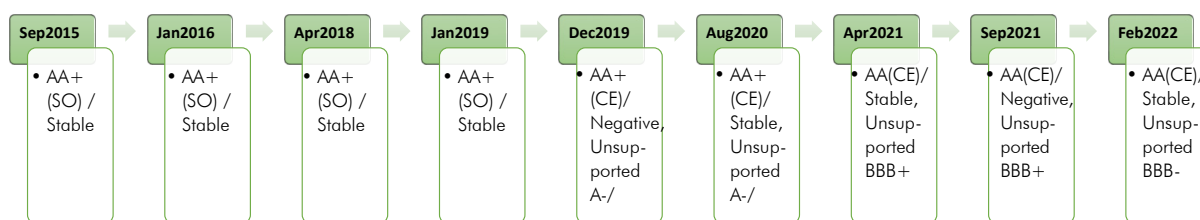
16. Detailed notes about the same are available Annexure 1

17. A detailed breakdown of the rating trajectory for both case studies is available in Annexure 2

CRA 2 rating trajectory:

Sep2015	Jan2016	Apr2018	Jan2019	Dec2019	Aug2020	Apr2021	Sep2021	Feb2022
• AA+ (SO) / Stable	• AA+ (SO) / Stable	• AA+ (SO) / Stable	• AA+ (SO) / Stable	• AA+ (CE)/ Negative, Unsupported A-/	• AA+ (CE)/ Stable, Unsupported A-/	• AA(CE)/ Stable, Unsupported BBB+	• AA(CE)/ Negative, Unsupported BBB+	• AA(CE)/ Stable, Unsupported BBB-

1. The downgrade to negative outlook for the first time came 11 months later for CRA1 as compared to CRA2.

2. The assignment of first time unsupported rating was higher at A for CRA1 and lower at A- for CRA2.

3. The rating downgrade from AA+(SO) to AA(SO) came slower for CRA1 in September 2021 vs. April 2021 for CRA2.

4. The downgrade for unsupported rating for CRA1 was a one notch dip from A to A-. Same was from A- to BBB+ which is a band change for CRA2. A band change translates to an exponential increase in credit risk.

5. CRA 2 revised the outlook from negative to stable while maintaning the rating (both CE and unsupported rating) based on the receivable cycle from MSEDCL improving to 10 months from 17 months leading to better liquidity. (Note: the fact that a 10 months receivable cycle for a single project entity with a single offtaker is a precarious situation for project viability raises questions on the assignment of the 'stable rating outlook').

Note: SO stands for Structured Obligation due to the presence of partial first loss guarantee from IIFCL. CE stands for Credit Enhancement which means the same thing as Structured Obligation; this was a nomenclature change introduced by SEBI in June 2019. The same SEBI guideline also made it mandatory for CRAs to state the unsupported rating which does not factor in the explicit credit enhancement for every such instrument.

Case Study 2:

Company B is a special purpose vehicle (SPV) housing a 50 MW wind power project in Andhra Pradesh. Company B has a PPA with Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL) at a tariff of Rs. 4.83 per unit. Estimated project cost of Rs. 370 Cr was funded in a ratio of debt:equity of 80:20. This SPV was part of asset pool acquired by ABC group in FY19.

The initial rating for the debt instrument was at the lower end of the BBB range and the rating was also put on watch due to the high RE tariff issue as well as extremely delayed payments (7/8 months by July 2019) from AP Discom. AP Discom was also deducting GBI from the monthly bill which it paid with great delay. Despite these facts, and the PD rating being BBB with rating watch which could have led to a downgrade in the medium term, the EL rating assigned to this instrument was EL1 which was the highest EL Rating possible.

The publicly available rating rationale for this instrument has no explanation or detailing as how the EL grade was assigned, what the scores of the PD and LGD estimates were, key themes contributing to each estimate, etc.

Going by the current framework of assigning EL ratings, the transparency of underlying factors leading to a particular EL rating grade is low. Further, given the lack of a clear methodology stipulated by SEBI for calculating EL, there is a possibility of a wide variance

in the EL ratings assigned by the 7 CRAs in the country leading to avoidable distortion in credit risk measurement and subsequent influence on credit risk perception of RE finance instruments. For these reasons, some changes are warranted to strengthen the EL ratings framework.

Commentary:

Attracting institutional finance to the RE sector is critical and requires a comprehensive policy response from various regulators to ensure a risk sentient approach.

The EL ratings scale introduced back in 2017 and now the SEBI EL rating scale in 2021, have both been developed by CRAs in consultation with SEBI, DEA (MoF) and perhaps other high level stake holders without much public consultation. While CRAs were formed to provide opinions on credit quality, they are also used by regulators as one of the gatekeepers for the type and quality of investments that can be made by large public fund entities, the latest example being IRDAI permitting infrastructure investments with minimum credit rating of A alongwith EL1 vs. earlier restriction of minimum credit rating of AA (a three notch downgrade). This puts a large responsibility on the CRAs to conduct EL assessments with utmost care. The credit risk measurement and signaling by CRAs for the same should be done in a manner which is consistent across the CRA eco system, based in analytical rigor, with conservative assumptions, transparency in ratings process and which is not prone to creating unsustainable debt bubbles.

While Indian public insurance companies have a large investible corpus[18], it needs to be categorically mentioned that they are the last and most often the only source of social security for India's most vulnerable population groups. The EL ratings scale's attempt to shift the focus from single rupee single day default to a more relaxed stance on default tolerance becoming part of the investment thesis for capital market participants (especially for public insurance companies and pension companies) is an area which needs to be handled with great care and regulatory forethought.

Following are some high regulatory impact areas which we believe may warrant attention to add robustness and safety features to risk assessment practices for the RE finance debt pool:

1. **Better transparency in the credit rating process will lend credence to the credit opinions provided by CRAs.**

Transparent credit opinions may help with better informed investment decisions by investment managers while building their RE finance portfolio. Over the years, SEBI has been coming up with various regulatory measures to bring discipline to the rating process alongwith better disclosures for CRAs. For e.g. the SEBI June 2019 circular on 'Guidelines for Enhanced Disclosures by Credit Rating Agencies (CRAs)'[19] stipulated the computation methodology for Cumulative Default Rates (CDR) and its disclosure, introduced Probability of Default (PD) benchmarks and its disclosure for CRAs, disclosure of rating sensitivities and disclosures on liquidity indicators in CRA press releases.

- To build upon this progress, we suggest that EL, PD and LGD definitions and their specific computation methodology may be made be a part of the SEBI EL rating circular and be commonly applicable to all CRAs.

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18. A detailed overview of the same is available in Annexure 3

19. https://www.sebi.gov.in/legal/circulars/jun-2019/guidelines-for-enhanced-disclosures-by-credit-rating-agencies-cras-_43268.html

- The numerical EL ranges may be standardized across the board through the SEBI EL rating circular. CRAs may be directed to make the assumptions underlying their LGD methodology public for scrutiny ensuring transparency. CRAs may clearly state the assumptions and actual results of their PD and LGD estimates in the rating commentary while assigning EL ratings.

- It would also be prudent for the LGD methodology to be back tested basis the actual losses in the RE sector especially absorbing losses in conjunction with the Reserve Bank of India (RBI) on an annual basis. A formal platform for information sharing between SEBI, CRAs and RBI may be explored. A task force may be empowered at SEBI to make the necessary changes to the EL rating approach if deviations are observed between assumed recovery rates for various RE projects and actual recoveries. This back testing approach will also be in keeping with the spirit of the Basel protocol on credit risk measurement (adopted by the RBI), which states *'LGD estimates must be grounded in historical recovery rates and, when applicable, must not solely be based on the collateral's estimated market value. This requirement recognizes the potential inability of banks to gain both control of their collateral and liquidate it expeditiously'*[20].

2. Innovative debt instrument structuring may offer optimization of measured credit risk:

While the intent of lowering the guardrail of the investment threshold by IRDAI from credit rating of AA to A for infrastructure investments may be in spirit of unshackling the participation of insurers in the RE growth story, it behooves the regulators to contemplate if there are any prudent alternatives.

The recently raised debt instrument for an RE InVIT[21] is an illustrative example of how conservative packaging of a debt instrument that acknowledges the various risks and attempts to provide some protection from the same results in strong credit ratings. This may be a workable way to encourage RE developers to innovate financial instrument structures to improve the bankability of RE projects.

The mitigants may be in the form of innovations in instrument structuring, creating a common pool of liquidity reserve for a group of lenders akin to paying up a small insurance premium on annual basis, specific reserves, creating short, medium and long tenor tranches of one instrument, higher debt service coverage ratios for various tranches of tenors, trigger based deleveraging actions such as cash traps, etc.

Given the possibilities of strong credit ratings for such innovative instruments with robust credit protection features, it may not, therefore, be necessary to lower the credit ratings-based investment threshold for public insurers from AA to A.

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20. https://www.bis.org/basel_framework/chapter/CRE/36. htm?inforce=20191215&published=20191215#paragraph_CRE_36_20191215_36_86%20(Point%20 36.87)

21. ttps://www.crisil.com/mnt/winshare/Ratings/RatingList/RatingDocs/VirescentRenewableEnergyTrust_ October%2029,%202021_RR_281097.html Rating Rationale (crisil.com)

3. Support from Ministry of Power (MoP) and allied entities for better information symmetry may encourage RE financiers to participate in the sector

The successful servicing of RE sector project debt heavily depends on the correlation between actual generation vs estimates and payment track record of the power offtaker. As of today, there exists considerable information asymmetry on both of these points. The Payment Ratification and Analysis in Power procurement for bringing Transparency in Invoicing of generators (PRAAPTI) portal has shown good promise on the path to better information sharing on dues to generators. PRAAPTI portal provides data about RE generator wise monthly dues. However, we believe that there is a need for robust and timely RE project level monthly generation data and invoicing details monitoring platform. This information presents a twofold advantage; 1. if any stress is building in a particular project, the same may be caught early and attempted to be remedied and 2. Data on generation trends may alert developers and financiers on which technologies and geographies are performing as per expectations or below. Such insights may ultimately contribute to reasonable bidding for RE projects in future auctions.

Annexures

Annexure 1:

Credit Risk Measurement for RE projects:

Credit Risk measurement methodology by lenders is drawn from the Basel Accords which are global recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision of the Bank of International Settlements (BIS, which is owned by 63 central banks, including the Reserve Bank of India). Basel Accords guide that each lender should calculate the Expected Loss (EL) on any loan provided to a borrower which is the sum of the values of all possible losses, each multiplied by the probability of that loss occurring. This EL estimate is a critical input for determining the credit quality of a lender's loan book and monitoring the same for protecting depositors' interests and maintaining solvency of the lender.

Expected Loss (EL) = Exposure at Default (EAD) X Probability of Default (PD) X Loss Given Default (LGD)

EAD: The total value a bank or financial institution is exposed to when a loan defaults. This is expressed in rupees.

PD: A term describing the likelihood of a default that a borrower will be unable to meet its debt obligations over a particular time horizon. The same is expressed as a percentage.

Brief overview of PD credit rating frameworks for RE projects by CRAs:

CRISIL	ICRA	India Ratings	CARE
Under implementation projects: • Implementation Risk • Funding Risk • Offtake and pricing Risk	Business Risk Drivers: • Permitting Risk • Funding Risk • Construction Risk • Operating Risk: PLF • Demand and tariff Risk • Counterparty credit Risk • Force Majeure Risk	Completion Risk: contractors, cost structure, delay risk, technology risk, internal and external liquidity support or credit enhancement and other terms of the construction phase contracts.	Evaluation of promoter group and management team (Note: CARE Credit ratings of the solar power projects critically factor promoter group & above-said project risks when it is at the project stage. However, once it becomes operational, weightage to promoter group is relatively on the lower side as it being an infrastructure project which is financed without any recourse to the promoter group. Accordingly, for an operational solar project, higher weightage is given to the quality of the asset.)

CRISIL	ICRA	India Ratings	CARE
Technology risk (panel quality for solar, wind turbine make for wind)	Industry Risk Drivers: Regulatory Risk	Operation, Revenue and Infrastructure Renewal Risks: ability to generate a stable cash flow based on its legal framework and fundamental economics the operating cost, demand, revenue and infrastructure renewal risks that affect the ability to make debt service payments.	Evaluation of Project Risk parameters: • Land availability and requisite approvals • Project Location, power generation potential and quality of resource assessment study • Technology, equipment supplier, EPC contractors and quality of contracts • Evacuation infrastructure • Financial closure • Evaluation of regulatory risk
Management Risk: • Integrity • Risk Appetite • Competency	Financial Risk Drivers: • Adequacy of Future Cash Flows • Profitability: Internal Rate of Return (IRR) • Leverage indicator: Total Debt/ Operating Profit Before Interest, Tax, Depreciation and Amortization (OPBITDA) • Coverage indicator: DSCR • Liquidity	Debt Structure: Structures may include holding company and operating company debt or senior and subordinate instruments. Financial analysis considers each of the issuer's rated debt instruments separately, taking into account the debt structure, including priorities, amortization, maturity, interest risk and associated hedging, liquidity, reserves, financial covenants, and triggers in the context of the project's operating environment. Security package and creditors' rights are also analysed where applicable.	Business Risk: • Quality of O&M contractor and contract • Operating performance of the plant: PLF

CRISIL	ICRA	India Ratings	CARE
Operational Risk: • PLF and Debt Service Coverage Ratio (DSCR) performance • Counterparty Payment Track Record • Liquidity at project level	Management Risk: • Quality • Financial Policy • Governance Structure and Practices • Parentage	Financial Profile: Financial flexibility against the stresses expected to occur over the forecast period. Metrics are used to evaluate the issuer's liquidity profile, coverages and leverage. Counterparty risk (off-takers, concession grantors, warranty providers, etc.) is assessed for each risk factor to which it relates for its impact on the rated debt.	Off taker Risk: • Tenure, quantum and renewal of Power Purchase Agreement • Tariff • Offtaker quality • Offtaker payment track record
Others: • Parent/Group Support Notch Up • External Credit Enhancement	Other elements: • Financial flexibility: Project Life Coverage Ratio (PLCR) & Loan Life Coverage Ratio (LLCR) • Tenure mismatches, interest rate risk and refinancing Risk • Foreign Currency Risk • Debt Transaction Structure • Accounting Quality • Contingent Liabilities/ Off-balance sheet items • Event Risk	Structure and Information: Any risk or risk mitigation flowing from the quality and experience of sponsors, strength of legal structure and/or the quality of information is considered.	Evaluation of financial risk and credit enhancements: • Revenue & profitability • Leverage • DSCR • Liquidity back ups • Refinancing Risk

LGD: The amount of money a bank or other financial institution loses when a borrower defaults on a loan, depicted as a percentage of total exposure at the time of default. The same is expressed as a percentage. Value and liquidity of any collateral security offered against the loan taken has a large role to play in estimating LGD.

In case of RE projects, LGD computation will revolve around various scenarios including but not limited to the following:

Expected loss computation: an illustration

Say, for a three-year bond of an issuer rated 'BBB' with annual debt service (principal and interest) of Rs. 10, there are four mutually exclusive and exhaustive scenarios (for the purpose of this analysis, default is assumed to be an absorbing state. That is, an instrument in default is assumed to remain in default forever).

Scenario 1 represents the possibility of the issuer defaulting on the very first instalment of debt service. Scenario 2 represents the issuer successfully servicing the first instalment but defaulting on the second, and so on. The last scenario (no.4) represents the possibility of the issuer servicing all three years of debt successfully. Each scenario is associated with a probability that is derived from CRA's proprietary default statistics. Also, each scenario represents a particular estimate of the shortfall in debt service on the rated instrument. The table below illustrates the scenario-based analysis for the above example for an entity rated 'BBB', with no recoveries assumed. Typically, EL factors in time value, but for simplicity of presentation, time value has been ignored in the below table.

Scenario	Probability of scenario**	Shortfall in debt servicing
Scenario 1: *There is a drop in PLF by xxx bps*	*4%*	*30 = (3 payments * Rs.10)*
Scenario 2: *There is a xxx% reduction in PPA tariff*	*5%*	*20 = (2 payments * Rs.10)*
Scenario 3: *There is xxx% increase in O&M costs budgeted in the project*	*6%*	*10 = (1 payments * Rs.10)*
Scenario 4	*85%*	*0*

*2.8 (= 30 * 4% + 20 * 5% + 10 * 6% + 0 * 85%) represents 9.3% (=2.8 / 30) of cumulative debt service obligations on the instrument** In this example, the cumulative default rates of 'BBB' are assumed as 4% for Year 1, 9% for Year 2, and 15% for Year 3, solely for illustrative purposes.*

Note: The above illustration has been taken from CRISIL's EL Rating Methodology document from July 2021. Each CRAs rating methodology is expressed uniquely as there is no diktat from SEBI on a single common methodology for calculating EL.

Below is a comparison of various CRA's approach to computation of PD & LGD taken from their publicly available methodology documents:

Sr. No.	Name of Rating Agency	Date of methodology document	Approach towards PD calculation	Approach towards LGD calculation	EL formula prescribed
1	CRISIL[22]	July 2021	Ratings on the PD approach, i.e., the existing rating scale AAA to D, is an important input for arriving at the ratings based on EL approach. A default under PD ratings is recognised on a 'one-day, one-rupee' basis – which means, even if there is a delay of one day, or a shortfall of one rupee in fulfilling the debt obligations, the instrument is considered to be in default	LGD indicates the extent of loss on a debt instrument over its life, after an issuer has defaulted on its repayment obligations on the particular instrument, and the PD rating has gone into default category. The LGDs of projects are broadly categorized as high, low or moderate depending upon the overall recoverability. While evaluating LGD for a particular debt instrument, CRISIL considers several scenarios. 1. Cash flow-based recovery: This takes into account the extent of debt servicing obligations that can be covered through the cash flows generated from the project. 2. Refinancing/restructuring based recovery: Infrastructure projects have long economic lives that is typically longer than the debt tenure. 3. Security based recovery: termination payments etc. Infrastructure projects may have some form of security that place a ceiling on the losses suffered by the lender/investors. CRISIL factors in some element of delay in receipt of the termination payments to arrive at LGD based on termination payments etc. The concession agreements may also have substitution clauses, which enable the lender to opt for the substitution of the concessionaire, and replace it with a management under certain circumstances. Such a step may help shield losses due to exposure to a certain concessionaire. All the above are factored in when arriving at the LGD to be used for a given asset	EL= PD * LGD

22. https://www.crisil.com/content/dam/crisil/criteria_methodology/expected-loss-ratings/crisils-criteria-for-expected-loss-ratings-for-infrastructure-projects.pdf

Sr. No.	Name of Rating Agency	Date of methodology document	Approach towards PD calculation	Approach towards LGD calculation	EL formula prescribed
2	ICRA[23]	February 2020	ICRA starts with an evaluation of the credit risks associated with the project being rated on the basis of its published rating methodologies for various infrastructure sectors like toll roads, independent power producers, wind energy projects etc. These form the basis for determining the rating on the conventional long-term rating scale of [ICRA]AAA to [ICRA]D. Based on historical data on default rates for each rating, ICRA has estimated a yearly PD for each rating. The conventional rating arrived at above is mapped with this data to estimate PD associated with the project.	ICRA evaluates all the scenarios which can lead to a default and the expected recoveries in these scenarios for each of the time intervals. These scenarios can be related to the decline in revenue/cash flows which can be structural or cyclical, termination/ abandoning of project, etc. Each of the default scenarios is assigned a probability of occurrence, based on **historical data/estimates, or judgment.** Subsequently, for each of the default-scenarios, the recovery amount is estimated based on the expected cash flows, waterfall mechanism for utilisation of funds, and security including termination payment, residual asset value etc. The following aspects of infrastructure projects are generally considered while evaluating the recovery: » Adequacy of termination payments (PPP projects) in conjunction with the credit quality of the concessioning authority or Loan to value (LTV) in case of non-PPP projects » Sponsor's undertaking to fund shortfalls and its strength » Step-in/substitution rights available with lenders » Adequacy of the insurance cover » Project's expected cash flows and sensitivity to key variables o Project Life Coverage Ratio (PLCR) o Project and Equity IRRs to determine project viability over its life cycle under various scenarios. For scenarios in which the outcome is dependent on certain variables (e.g. PLF, coal price in case of a thermal power plant), ICRA also assumes a probability distribution of key variables, impacting the recovery prospects. A separate framework is used to assign LGDs to the various scenarios. Subsequently, the weighted average LGD for each time interval is estimated with the weights being the likelihood of each scenario.	$EL = PD * LGD * EAD/(1+r)^t$ EAD = Exposure at Default r = average cost of debt t = residual project life Above EL is then mapped to the EL scale

23. https://www.icra.in/Content/PDF/InfraRatingScale-Brochure.pdf

Sr. No.	Name of Rating Agency	Date of methodology document	Approach towards PD calculation	Approach towards LGD calculation	EL formula prescribed
3	India Ratings[24]	No separate document in the public domain. Only a press release from January 2017	None mentioned in public domain.	None mentioned in public domain.	EL shall reflect India Ratings' estimate on the loss expected as a percentage of the debt outstanding on the date of the evaluation
4	CARE[25]	November 2021	PD is determined by the credit rating of the debt instrument (CARE AAA to CARE D scale) and the tenor of the project debt. CARE periodically estimates long run and short run default rates for each rating category based on historical data. The rating on the conventional rating scale i.e. AAA to D is arrived at for the infrastructure projects. Expected Loss Ratings for Infrastructure Projects as per CARE's applicable rating methodologies of various infrastructure segments. The rating so arrived is mapped to the CARE's long run default rates as computed from time to time. This is considered for the determination of PD in the EL rating system.	Loss Given Default (LGD) = 1 – Recovery Ratio. To compute recovery prospects, CARE computes the present value (PV) of future free cash flows of the project and the coverage it can provide to the outstanding debt being rated. The free cash flows are computed in various stress case scenarios that may lead to default situations. Keeping the in-built strengths of infrastructure projects into consideration, CARE carries out a scenario analysis taking into account the various scenarios that can lead to default. Free cash flows are computed in each stress case scenario and the coverage they provide (on PV basis) to underlying debt is assessed over the loan repayment period. Scenario analysis comprising of various default scenarios is done and the likely recovery or coverage to outstanding debt is computed to assess the 'overall recovery prospects' in a project.	Expected Loss = PD X LGD where LGD is defined as = (1 - Recovery Ratio) and EAD is Exposure at Default i.e the outstanding project debt at the time default occurs

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24. https://www.indiaratings.co.in/PressRelease?pressReleaseID=26143&title=India-Ratings%E2%80%99-New-Credit-Rating-Scale-for-Infrastructure-Projects-to-Focus-on-Expected-Losses

25. https://www.careratings.com/upload/NewsFiles/GetRated/Infrastructure%20EL%20Ratings%20Methodology%2019-11-21.pdf

Sr. No.	Name of Rating Agency	Date of methodology document	Approach towards PD calculation	Approach towards LGD calculation	EL formula prescribed
5	Brickworks[26]	September 2021	Infrastructure projects being highly vulnerable to volatile cashflows, results in lower credit ratings on a conventional rating scale, which is based on PD principle. It is based on the rating of a debt instrument and is valid for the tenure of the project debt. BWR estimates yearly PD for each year based on historical default rates, which will be mapped with the associated projects.	Loss Given Default (LGD) = 1- Recovery Rate = 1- (Amount recovered post default) /(Total amount outstanding at the time of the default) Following aspects of infrastructure projects projects are generally considered while evaluative recover: Adequacy of termination payments (PPP projects) in conjunction with the credit quality of the concessioning authority or loan-to-value (LTV) in case of non-PPP projects Sponsor's undertaking to fund shortfalls and strength of the sponsor Step-in/substitution rights available with lenders (would be helpful in scenario where sponsor group is in stress) Adequacy of the insurance cover and the expected timelines for receipt of the same Project's expected cash flows and sensitivity to key variables Analyzing recovery rates involves detailed analysis of the following scenarios: Cash flow based recovery Restructuring based recovery Security based recovery	EL = PD *LGD
6	Acuite	Not Available in the public domain			
7	Infomerics	Not Available in the public domain			

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26. https://www.brickworkratings.com/download/Criteria-Rating%20Criteria%20for%20Expected%20Loss%20 for%20Infrastructure%20Projects%201-NEW.pdf

Annexure 2:

Rating Trajectory for Case Study 1:

CRA 1				CRA 2			
Year	Instrument	Rating	Rating Direction	Year	Instrument	Rating	Rating Direction
Sep. 2015	Non Convertible Bond (NCD) of Rs. 451 Cr.	AA+(SO)/ Outlook Stable	First time rating. Strength drawn from First Partial Credit Guarantee from IIFCL	Sep. 2015	Non Convertible Bond (NCD) of Rs. 451 Cr.	AA+(SO)	First time rating. Strength drawn from First Loss Partial Guarantee from IIFCL
Dec. 2016	NCD of Rs. 436 Cr	AA+(SO)/ Outlook Negative	Outlook downgraded to negative. Lengthening of receivables cycle from MSEDCL for over 12 months and receivable days of 400	Jan. 2016	NCD of Rs. 436 Cr	AA+(SO)/ Outlook Negative	Outlook downgraded to negative. Lengthening of receivables cycle from MSEDCL
April 2018	NCD of Rs. 415 Cr	AA+(SO)/ Outlook Negative	MSEDCL receivables of 180 days and fall in PLF by 9% y-o-y due to low wind speeds	April 2018	NCD of 423 Cr	AA+(SO)/ Outlook Negative	Delay in receiving payments from MSEDCL against sale of power and lower generation than envisaged P90 levels.
May 2019	NCD of 393 Cr	AA+(SO)/ Outlook Negative	MSEDCL receivables of 150 days (peak 223 days) and PLF has been lower than P90 estimate of 22.84% for consecutive three years since close of transaction in September 2015.	Jan. 2019	NCD of Rs. 400 Cr	AA+(SO)/ Outlook Negative	Continued delay in receiving payments from MSEDCL against sale of power and lower generation than envisaged P90 levels
March 2020	NCD 380 Cr	AA+(CE)/ Outlook Stable Unsupported Rating : A/ Outlook Stable	Outlook upgrade from negative to stable. Expectation of improvement in receivable days in near to medium term as demonstrated by 9MFY20 performance. Slight improvement in PLF though same below P90.	Dec. 2019	NCD Rs. 380 Cr	AA+(CE)/ Outlook Negative Unsupported Rating : A-/ Outlook Negative	Continued delay in receiving payments from MSEDCL against sale of power and lower generation than envisaged P90 levels

CRA 1				CRA 2			
Year	Instrument	Rating	Rating Direction	Year	Instrument	Rating	Rating Direction
March 2021	NCD 353 Cr	AA+/CE/ Outlook Negative Unsupported Rating: A/ Outlook Negative	Outlook downgraded to negative. MSEDCL receivable period elongated to 12 months. PLF missed P90 estimates for 7 years consecutively since project became operational. Entire debt servicing done out of internal reserves and timely sponsor support.	August 31 2020	NCD Rs. 366 Cr	AA+(CE)/ Outlook Stable Unsupported Rating : A-	Outlook upgrade from negative to stable. Improvement in payment pattern from MSEDCL and in generation levels during FY19 and FY20, though they continue to remain below the P-90 estimated originally.
Sep. 2021	NCD of Rs. 337 Cr	AA(CE)/ Outlook Negative Unsupported Rating: A-/ Outlook Negative	One notch downgrade and outlook negative No payment received from MSEDCL for 17 months. Legal proceedings commenced against MERC. PLF consistently below P90 estimates for project since becoming operational 7.5 years ago.	April 2021	NCD of Rs. 366 Cr	AA(CE)/ Outlook Stable Unsupported Rating: BBB+	One notch downgrade and outlook stable Persistent elongation in the receivable cycle with the company not having received any payment from MSEDCL during the entire FY21, adversely affecting the company's liquidity position. Additionally, the rating revision considers the significant decline in generation in FY21 to levels unprecedented over the past seven years of the project's operations and consistently lower than the envisaged P90 levels.
				Sep. 2021	NCD of Rs. 366 Cr	AA(CE)/ Outlook Negative Unsupported Rating: BBB+	Further deterioration in receipt of payment from MSEDCL to 17 months currently from 12 months.
				Feb. 2022	NCD of Rs. 320 Cr	AA(CE)/ Outlook Stable Unsupported Rating: BBB+	The receivable cycle has improved to 10 months from 17 months.

Rating Trajectory for Case Study 2:

Year	Instrument	Rating	Rating direction
April 2017	Bank Loan of Rs. 74.2 Cr	BBB-/Positive	Assignment
July 2018	Bank Loan of Rs. 74.2 Cr	BBB/Stable	Upgrade
Feb. 2019	Bank Loan of Rs. 74.2 Cr	BBB	Rating watch due to impending ownership change
July 2019	Bank Loan of Rs. 74.2 Cr	BBB	Rating watch continues due to AP Govt. plan to form High Level Negotiation Committee (HLNC) to review and bring down the high wind and solar energy purchases prices in AP. At this juncture, the AP South discom overdues are 7-8 months. GBI also deducted while making the already delayed payments.
Feb. 2020	Bank Loan of Rs. 296.8 Cr	INFRA EL 1	Withdrawn

Annexure 3:

Size of the IRDAI regulated entities investment portfolio and recent changes to IRDAI investment guidelines:

Public and private sector insurance companies are regulated by the Insurance Regulatory and Development Authority of India (IRDAI). IRDAI was set up as autonomous body under the IRDA Act, 1999. IRDAI's mission is to protect the interests of policyholders, to regulate, promote and ensure orderly growth of the insurance industry.

IRDAI frames regulations for insurance industry in terms of Section 114A of the Insurance Act 1938, from the year 2000 has registered new insurance companies in accordance with regulations and monitors insurance sector activities for healthy development of the industry and protection of policyholders' interests. IRDAI regulates the investments made by insurers through IRDAI (Investments) Regulations, 2016.

Following is a snapshot of the investment portfolio of the entire insurance sector in India as of March 31 2020 (in Rs. Cr.):

Sector	Life Insurers	General Insurers	Reinsurers	Total
Public	30,70,852	1,36,291	58,757	32,65,901
Private	8,19,422	1,55,895	11,712	9,87,029
Total	38,90,274	2,92,187	70,469	42,52,930

Source: IRDAI Annual Report 2019-20[27]

Out of the above pool, Life Insurance Corporation of India (LIC) holds Rs. 30,70,852 Cr investments making up 72% of total investment portfolio of Indian Insurance sector.

IRDAI (investments) Regulations, 2016 Section 5, No. V[28], investment in infrastructure and housing jointly is to form a minimum 15% of the total invested funds by an insurer. Life insurers (mainly LIC) have fallen way short of this regulation.

27. https://www.irdai.gov.in/admincms/cms/uploadedfiles/annual%20reports/IRDAI%20Annual%20 Report%202019-20_English.pdf
28. https://www.irdai.gov.in/admincms/cms/frmGeneral_Layout.aspx?page=PageNo2934&flag=1

Below is a brief snapshot of the category of investments for Life Insurers as of March 31 2020:

Sr. No.	Category	Rs. Cr.	% Contribution
A	Traditional Products		
1	Central Government Securities	14,05,754	39.97%
2	State Government and Other Approved Securities	9,65,846	27.46%
3	Housing and Infrastructure	2,75,434	7.83%
4	Approved Investments	7,32,023	20.81%
5	Other Investments	1,38,145	3.93%
	Total	35,17,202	100.00%
B	ULIP Funds		
6	Approved Investments	3,49,193	93.60%
7	Other Investments	23,879	6.40%
	Total	3,73,072	100.00%
	Grand Total	38,90,274	100.00%

Source: IRDAI Annual Report 2019-20

Below is a brief snapshot of the category of investments for General Insurers & Reinsurers (total) as of March 31 2020:

Sr. No.	Category	Rs. Cr.	% Contribution
1	Central Government Securities	94,199	25.97%
2	State Government and Other Approved Securities	62,105	17.12%
3	Housing and Loans to State Government for Housing and Fire Fighting Equipment	33,176	9.15%
4	Infrastructure Investments	54,931	15.15%
5	Approved Investments	1,02,536	28.27%
6	Other Investments	15,709	4.33%
	Total	3,62,656	100.00%

Source: IRDAI Annual Report 2019-20

As per LIC's Annual report 2019-20[29], investments in the loans/debentures/equity in various entities for infrastructure and social purpose as of March 31 2020 was Rs. 52297.79 Cr (out of this Rs. 24803 Cr was towards the power sector) amounting to 1.70% of the total investments. Further, for all life insurers put together, the investment in housing and infrastructure sector was 7.83% of total investments as of March 31 2020. Break up of this number into housing and infrastructure sector separately is not available at an aggregate life insurer investment portfolio level. The reason for this low participation in the infrastructure sector is that IRDAI investment guidelines hitherto never permitted investments in debt instruments of infrastructure sector below a long-term credit rating of AA. This made the insurers unable to participate in a sector where >75% of the debt is in the BBB rating band.

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29. https://licindia.in/getattachment/Bottom-Links/annual-report/LIC-Annual-Report-2019-20.pdf.aspx
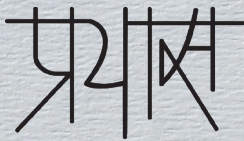
(Note: There is a difference of Rs. 910.33 Cr. in the total investments of LIC as per LIC's FY19-20 Annual Report (Rs. 30,69,941.67 Cr) and that in the IRDAI's FY19-20 Annual Report (Rs. 30,70,852 Cr))

Hence, as is clearly visible from the above data, that there is plenty of headroom for life insurers for investing in the RE sector. For LIC itself, a move from 1.7% of total investments to the infrastructure sector (as of March 31 2020) to the mandated 15% would mean further investments of Rs. 408194 Cr would be made into the infrastructure sector basis the investment size of LIC as of March 31 2020 (which would obviously grow over the years). As of March 31 2021, the size of LIC's investment corpus has grown to Rs. 36,76,170 Cr (LIC Annual Report FY20-21).

It has long been argued that risk contours of debt assistance in the form of long term project finance to the infrastructure sector are considerably different from debt assistance to the industrial sector. That though there may be short term cashflow mismatches (and ensuing delay in debt servicing), the long term economic value proposition of such projects is largely untarnished over a long term given their policy prioritization, the undisputed need for their services, sovereign involvement through special schemes, etc. It is observed that Renewable Energy (RE) projects in India find it challenging to raise finance due to financiers' taking a shorter time, liquidity based view of the business model and finding the same to be risky.

On these lines, the Securities and Exchange Board of India (SEBI) introduced the Expected Loss (EL) Rating Scale meant specifically for the infrastructure sector in July 2021. Credit Rating Agencies (CRAs) have now been empowered to assign EL ratings based on their assessment of the Probability of Default of a loan facility seen together with scenario-based recoverability of the underlying project's economic value post such default. Public money funded financing entities such as Life Insurance Corporation of India (LIC) have reduced their credit rating based investment threshold for the infrastructure sector by factoring in the EL based ratings scale. This move has profound implications on the participation of such large public money funded financiers in the evolving Indian RE story with its vast need for finance.

The EL ratings scale's attempt to shift the focus from single rupee single day default to a more relaxed stance on default tolerance becoming part of the investment thesis for capital market participants (especially for public insurance companies and pension companies) is an area which needs to be handled with great care and regulatory forethought. This paper attempts to discuss the nuances of the same and carries some recommendations for adding robustness to risk assessment practices for the RE finance debt pool.

प्रयास

Prayas (Energy Group)