

Design, Development and Implementation of Credit Risk Rating System

CRRS (Phase I) Completion and Validation Report

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Acronyms

Indian Renewal Energy Development Agency	IREDA
Credit Risk Rating System	CRRS
System Requirement Study	SRS
Energy Efficiency	EE
Renewal Energy	RE

1. Executive Summary

As a part of providing technical assistance support to IREDA under the KfW funded project IREDA – *Sustainable Energy Programme and IREDA – Promotion of New Renewable Energies, Component 1* – GFA Consulting contracted Trident Information Systems for the design, development and implementation of centralized Credit Risk Rating System (CRRS) using Microsoft Dynamics. Trident has recently completed Phase I development of CRRS under the guidance of GFA experts and in close interaction and collaboration with IREDA. The phase I development included the design of the centralized CRRS system using Microsoft Dynamics Axapta 2009 with the following key outcomes: -

1. IREDA now has a centralized CRRS application implemented that allows to automate start-to-end process of credit risks related steps through a use of standardized and unified CRRS IT platform;
2. IREDA now has the centralized CRRS IT platform with new predetermined sector wise parameters and weightages/scores assigned thereby allowing all the sector-wise departments (including finance) to effectively process their respective credit risks aspects through a common IT platform;
3. The adoption of new sector wise parameters and weightages are in line with the sector-wise standard and practices applicable in Indian context;
4. IREDA now has the IT platform that is more scalable and configurable (user definable) based system that allows changing or modifying sector-wise parameters as per the future needs, demands and growth. Such change of parameters and weightages are fully user configurable that need not rely on any IT programming but rather can easily be done by an **authorized** user through the system user interface;
5. IREDA is now able to maintain and track the history of any change or modifications applied in the parameters over a period of time;

2. MOU Compliance Statement

The achievement of above outcome is evident that CRRS IT platform is now able to automate the Credit risk rating processes for all sectors. The system now has been successfully installed, tested and configured in IREDA's centralized server and access has been provided for each of the sectors for its use. The recently concluded CRP and training session is also an evident that the system is able to address all of the sector's functionality requirements. While the system's fine tuning and further improvisations are gradual process which Trident team is fully committed doing so, GFA's CRRS and IT experts hereby would like to validate that newly developed and installed CRRS is now ready to be implemented for automating business process of IREDA with regard to credit risk rating for all sectors. In this regard, GFA also pleased to outline that the system is ready for deployment on the expected date (31st December 2014) as agreed on MOU.

While IREDA can now continue using the system from now onwards, Trident is expected to continuously work with IREDA and GFA experts to accomplish the tasks under Phase II which is also a part of the CRRS development task, which include: -

- Development of CRRS in Enterprise Portal
- Design, development and Implementation of Online application module

Trident is expected to complete all the above tasks by January end 2015. In addition, it is to be noted that Trident is expected to provide a warranty services of CRRS and Online application module for a period of one year.

3. The Design Methodology

The following section outlines the key design methodologies¹ adopted while designing the parameters, weightages/scores and overall systems that is currently is successfully installed, configured and operational within IREDA network. This document also provides a snapshot of the CRRS application, its overall functionality including the details of the system requirement specifications conducted by the firm based on which the CRRS was designed and developed.

4. The Design Methodology

The following outlines the key areas of invention that led to the successful design, development and implementation of CRRS.

¹ The Steering Committee was set up by IREDA, comprising all sector heads (including technical

4.1 Diagnostic review and System Requirement Study

- As part of GFAs technical assistance methodology an initial institutional and system needs analysis was conducted to closer understand the structure of the existing rating system, the existing and possible future business logic/flows and functional needs of all stakeholders within the organization. Based on this system requirement study, a detailed system requirement document was developed that includes the overall start-to-end process flows and description of CRRS. Please refer to Annex 2 for SRS.
- After having analyzed the needs and the previous CRRS system capabilities and limitations a series of meetings with each technical department was held with the purpose of creating a risk parameter set for each major project commonly being sanctioned by IREDA as well as for those likely to be sanctioned in the near future. The purpose of this was to determine parameters, which are more objective so that individual interpretation of the rating is minimized as far as possible. Parameters are most usually constructed in such a way so that answers would be in the form of numbers; conditions fulfilled such as existing/non-existing type of answers, YES/NO type of answers or multiple choice range choice answers.
- The refinement of the final present parameters underwent several iterations between GFAs consultants and IREDA staff as well as internally within the sectors between practicing technical staff to senior management for their inputs and decisions. When the existing common rating framework was suggested to be adopted as appropriate – parameter sets were classified and weighted and where deemed necessary created to conform to the frameworks seven risk groups as depicted below:
 - Sponsor risks
 - Funding and financial risks
 - Permitting risks
 - Execution risks
 - Operating risks
 - Generation/Fuel availability risks
 - Off take/counterparty credit risks
- The following sector parameter sets were created whereas the Sponsor parameter set was modified and reduced to the most appropriate and measurable parameters. In addition existing parameters were converted into quantifiable more objective definitions. The following parameter sets did not exist and were created in the process:

- 1) Five solar subsector project types
- 2) Energy Efficiency
- 3) Energy Efficiency with ESCO model
- 4) Three Waste to Energy models
- 5) Biomass Bagasse Cogeneration
- 6) Hydro power run off the river

4.2 CRRS Model Design Concept

The CRRS model is based on numerous sets of parameters that simulate and evaluate risk for different EE/RE projects under different scenarios.

The constituents and levels of organization are as follows:

1. The basic **Risk Parameter** describing a particular risk aspect for a particular type of project each project type e.g. a wind project has particular risks particular to its operation as an example. A uniform rating range for vast majority of the parameters has been standardized to the following values: 0, 2, 4, 6, and 8 – where 0 is the lowest and 8 is considered the best.
2. All parameters that exist for a particular sub sector are divided into **Seven Risk Groups** associated to risks such as Permitting Risks or Execution Risks in setting up the project as an example. Within each the risk groups each Risk Parameter is weighted for importance within the group. Thus each rating for each parameter is multiplied by its weight to give a subtotal score and then normalized as a percentage of its score within its respective risk group.
3. Each Subsector project has different risks associated to different parts of its implementation and operation as compared to the other sectors. This is reflected in the applied Overall Sector Weighting Matrix implemented in the new CRRS. Thus as can be seen in the table below Generation Risk for Biomass Power is higher in reality than in Wind Power and thus Generation Risk has a higher weighting in Biomass Power, whereas Off Take risks are higher in Wind Power than in Biomass power than more frequently is associated with captive off take.

	Grid Connected Power	Sponsor Risks	Funding and Financial Risks	Permitting Risks	Execution Risks	Operating Risks	Generation/ Fuel Availability Risks	Off take / Counterparty Credit Risks	Total
1	Wind Power	30	20	5	10	5	10	20	100
2.1	Biomass power	30	20	5	10	5	20	10	100

4. The subtotals of parameters within each of the ***Seven Risk Groups*** are multiplied with the weights for each Risk Group to give Risk Group subtotal rating score. Each of these is then added to give the total Rating Score.
5. The Rated Score is then compared to a Grade Master resulting in the ten existing ratings used in IREDA – the first eight are investment grade and the last two are non-investment grade. The scale is equivalent to the one provided by the external rating agencies used by IREDA I to 8 or -BBB to AAA.
6. Apart from changing the old three risk groups to seven to better reflect RE/EE project financing – the rating process has also been changed. In the new system the Finance Department (CRRS cell) is responsible for rating Promoter and Funding Risk groups, whereas each particular technical department rates sector specific parameters that is: as Permitting Risks, Execution Risks, Operating Risks, Generation/Fuel Availability Risks, Off take / Counterparty Credit Risks. As mentioned above the decision for the final rating score will lie with the rating committee.
7. The design of the CRRS software version allows continuous updating of parameters and all parameter weightages foreseen giving IREDA unprecedented ability to adapt its risk evaluations and set competitive interest rates for good and strong projects – while at the same time charging a risk premium for weaker but still investment grade projects. In addition as the markets evolve at high speed e.g. Solar sector new sub sectors can be formed in the system by IREDA independently.
8. The system incorporates CIBIL reports in the Promoter parameters. External ratings if existing are factored in with a weight of 5% of the total score. The percentage can be changed by IREDA according in the future and will be able to be discounted in case it is deemed that the quality of the external rating is lower than average.

4.3 Validation of parameters and values

- All parameter values and weightage matrixes have been crosschecked by all sectors and the final value assignment has then been proposed and determined by the GFA consultant. The validity of these has been determined through testing of old historical cases for each sector both for Financial and Technical parameter groups. To crosscheck values produced by the model, actual performance feedback for these tested cases has been filled in by the

sector staff for each parameter group. In case of discrepancies the model can be calibrated by changing Parameter Design, Score or Weight as well as the Parameter group weightages. Parameters can be excluded or created to proximate the scores to reality in terms of risk.

	Wind Parameter Weightages	7 Category Score	Real Performance Check Feedbak	Inferences/Modifi- cation
Sponsor Risks	30		The promoters are having good track record with IREDA and other lenders. The promoters have experience in implementing and operating wind energy projects	
Funding and Financial Risks	20		Sponsors have infused more than 100% of their promoters contribution. The borrower is in process of balance debt tie up. Based on Sponsors track record, they are capable of tying up the balance debt funds.	
Permitting Risks	5		The EPC contractor has obtained all permission for setting up the project. The capacity transfer will be effected upon achieving COD. The EPC has entered into agreement to purchase project land. However final transfer of project land to the borrower will happen upon achieving COD. 12 months time is provided for creation of mortgage from SOCD/ COD , whichever is earlier and thereafter additional interest will be charged.	
Execution Risks	10		Fixed cost Purchase order has been placed with EPC Contractor. Supplies yet to start. Upon financial closure, project implementation activities would commence. Dsbusement would be made based on satisfactory physical progress and promoters contribution brought in.	
Operating Risks	5		Project implementation is yet to commence. However WTG model has a proven record.	
Generation/Fuel Availability Risks	10		M/s Entura Hydro Tasmania Consulting, a reputed consultants has carried out the WRA studies. Project implementation is yet to commence. Sensitivity analysis has been carried out p-90 levels	
Off take / Counterparty Credit Risks	20		power will be sold to Third party of repute. PPA will be executed and submittd before valoang dsbursement beyond 75% of laon amount. The Sponors have entered into third party sale arrangement in some of their other wind energy projects	

4.4 Development of CRRS application

Along with the identification of new sector wise parameters and weightages, Trident developed the system based on the agreed system requirement document. The system is being developed in Microsoft Dynamics – Axapta 2009 framework as is considered Phase I development. The reason being that it was realized that it would be more time taking to develop the system in Enterprise portal (EP) and may possibly not be able to December 2014 MOU deadline. Considering this, it was agreed with Trident that it would first develop the system in MS Axapta 2009 to meet the MOU deadline and then continue developing the system in EP to meet the CRRS contractual requirements between GFA and Trident. While developing CRRS in EP, Trident is expected to also develop Online Application module that integrates with CRRS to avoid redundant data entry.

The design of CRRS application adheres to the following guiding principle: -

Configurable: the application allows “authorized” user to define new/enable/disable parameters as decided by IREDA without having to change the underlying database structure.

Scalability: the application architecture is scalable to meet the current and future demand and growth on any new sectors and define its own business logic (parameters) thereby providing a much needed scalability factor.

User friendly: the application allows to efficiently navigating within modules and/or interfaces with click of a button with minimum amount of user training.

Secure: the application is secure which can only be accessed with user login id and password. Once the user logs into the system, any major change in key data is tracked and maintained in the system.

Strong Audit trail: the application maintains the database of all the changes being made by the user, timestamp and the change history.

4.5 Conference Room Piloting

As the system developed was completed, Trident team organized a week-long Conference Room Pilot (CRP) for all the sectors. The CRP was conducted to demonstrate the system and obtain the first-hand comments/suggestions/feedback from the operational team of IREDA of all the sectors. All such comments/suggestions were documented and were incorporated into the system functionality. **Please refer to Annex x for outcome of the CRP.**

4.6 System Testing and training

Followed by the CRP, Trident team conducted a week-long system testing and training for all sectors for CRRS implementation. During this period, for each sector, CRRS application was installed on the desktop computers for further rating and testing in first quarter of 2015 on live projects. In this regard, the team tested for different cases for each sub sectors, such as, commissioned/not commissioned, financed/rejected, below average performance, average performance, above average performance with combinations thereof. For each subsector a mix of the above was tested.

The CRRS is now accessible within IREDA's internal network.

4.7 System Deployment

With the successful completion of CRP and training, GFA now recommends IREDA to start using the system with real data effective from 6th January 2015.

4.8 System Warranty

With the deployment of the system, it may be likely to encounter few technical and functional challenges while operating the system. For any kind of issues, GFA in close collaboration with Trident will resolve the issues. It is to be noted that

Trident will provide 12 months warranty support effective from the date of the system deployment.

4.9 Development of CRRS on EP and Online application

Trident is now expected to focus on the development of CRRS in EP and the online application module. These activities are expected to be completed by 31st January 2015.

5. Key Achievements and dates

Following outlines the key dates and activities conducted during the design and development of CRRS.

Dates	Major Achievements/Activities	Personnel Involved
15-28th June 14	Orientation - Introduction to IREDA structure & existing CRR system - initial general needs analysis.	<ul style="list-style-type: none"> • Ilan Wolkov (CRRS Expert); • Douglas Liner (Team Leader); • Ashish Joshi (IT Advisor); • Trident team;
23rd Aug - 3rd September 14	In depth discussions with all technical sectors on applicable parameters relevant to subsector project risks. Discussions and agreements on design with Trident implementing software vendor.	<ul style="list-style-type: none"> • Ilan Wolkov • Thiloatham Kolanu (Local Energy and Environmental expert); • Trident team;
7th-19th October 14	Near completion of several sector parameter sets. Meetings with local Rating Agencies, introduction of team to common rating framework methodology. CRRS model concept presentation to steering committee and subsequent presentation and acceptance by CMD of overall model e.g. Seven risk groups model, Technical department involvement in rating, rating committee structure and parameter update committee. Software System requirements acceptance. Advise on online application form.	<ul style="list-style-type: none"> • Ilan Wolkov; • Thiloatham Kolanu; • Trident team;
24th-31st November 14	Parameter set build for over half of the sectors.	<ul style="list-style-type: none"> • Thiloatham Kolanu;

30th Nov - 8th December 14	Parameter set acceptance as ready for model testing, commencement of historical and some live cases for testing for possible adjustments. Coordination with Trident and IREDA IT department on further testing and development activities.	<ul style="list-style-type: none"> • Ilan Wolkov • Ashish Joshi • Trident team
8th-12th December 14	CRRS sector parameter model testing	<ul style="list-style-type: none"> • Ashish Joshi • Trident team
23rd Dec- 30th December 14	Participation and supervision in User Training and Testing of the CRRS system with several different departments, coordination with several subsectors on ongoing testing, outlining of future development in CRRS online version. Close coordination with Trident on final steps. Quality control of the existing system and debugging for model and IT system improvements.	<ul style="list-style-type: none"> • Ilan Wolkov • Ashish Joshi • Trident team

6. Key Recommendations

The Consultant recommends the following:

1. To rate every project with the new system parallel to the old system from 5th – 31st January 2015. The applicable rating will be that of the old system unless management decides to use the one from the new system. The old system shall be discontinued effective from April 2015.
2. From January 5th 2015, every rating will be reviewed by a rating committee with one representative from CRRS, one technical personnel from the applicable subsector and the applicable sector head. Decisions are made a majority vote on the rating. For the sake of making it logistically simpler the rating committee can be done telephonically between IHC/Bhikaji Cama offices, with evidence provided from each side through scans of documents. The rating committee can sit as many times on one case as is needed.
3. It is highly recommended for the Existing Steering committee to have a meeting at least once in January around 15th of the month to review the status of the testing and once more on the 15th February to review the implementation of the online version of the CRRS.
4. The CRRS update committee should sit first time on March 23rd to prepare official changes in parameters, weightages, scenarios and functionality to ready the online application form and online version of CRRS into full commissioning for the 1st of April.

7. Key decisions to be made by IREDA

Validate the above timelines and points from the consultant's recommendations.

Validate decisions on:

- a. Setting up rating committees (with its constituent members)
- b. Setting up CRRS update committee (with its constituent members)
- c. Assigning Promoter and Finance risks to Finance Department (CRRS cell)
- d. Assigning five technical risk categories to the appropriate technical department

8. Next Steps

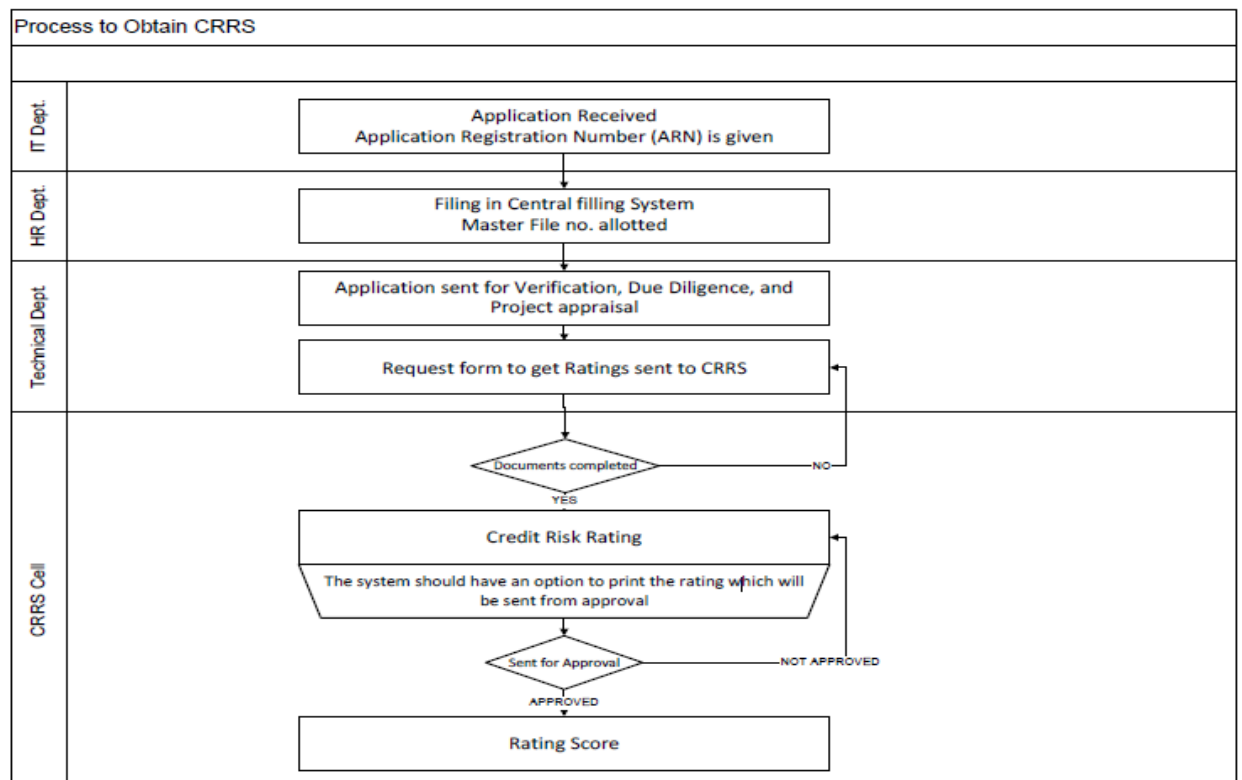
Following identifies the key points as the next step for CRRS implementation.

1. Commissioning of MOU CRRS – January 5th 2015
2. Delivery of IT manual by Trident (done)
3. Trident to continue working on the Online application module and EP version of CRRS with aim to complete all the tasks by January 2015.
4. Delivery of CRRS model manual by GFA
5. Delivery of draft Rating Committee procedure by GFA
6. Delivery of draft CRRS update procedure by GFA
7. Debugging of MOU CRRS solution by inputting already 21 tested cases. This will also serve as a check for debugging the online version. (Promoter/Financial/Technical)
8. Review until 20th February of an additional two cases by each subsector historical cases for debugging online version.
9. Review until 20st February of all new cases in new system parallel to using old rating model.
10. Calibration of model by GFA and debugging of software until 20th February.
11. Creation of online application form and online version of CRRS until 20th February (depending on sector availability).
12. 21st February user training for online application form and online version of CRRS by Trident.
13. Installation of online application form and online version of CRRS 23rd February.
14. Testing by users on new live cases and five historical cases to debug and test new model improvements such as advanced scenarios (e.g. Greenfield versus Take over scenarios)
15. Calibration and updating of model up until the 23rd of March when Update committee will sit and decide on the final changes before commissioning of online system on the 1st April.
16. Various reports to be used in MIS will be discussed with end users and implemented before 31st March.

9. Annexes

9.1 Annex 0: CRRS Functionality Report

1. Existing CRRS Process



- ❖ The loan seeker would apply for the loan
- ❖ Get an ARN no. IREDA will get all the necessary documents for the loan sanction from the borrower
- ❖ File the all the documents through their central file system and sent it for verification.
- ❖ The documents are sent to the CRRS department so that it can be scored against parameters of each sector.
- ❖ This rating has to be approved.
- ❖ If not approved the CRRS Cell will have to correct any mistakes.
- ❖ Once approved the score is submitted and no further changes can be made.
- ❖ Before the generation the final score sheet a provision for archiving the modifications should made. It should be saved as versions available for review.

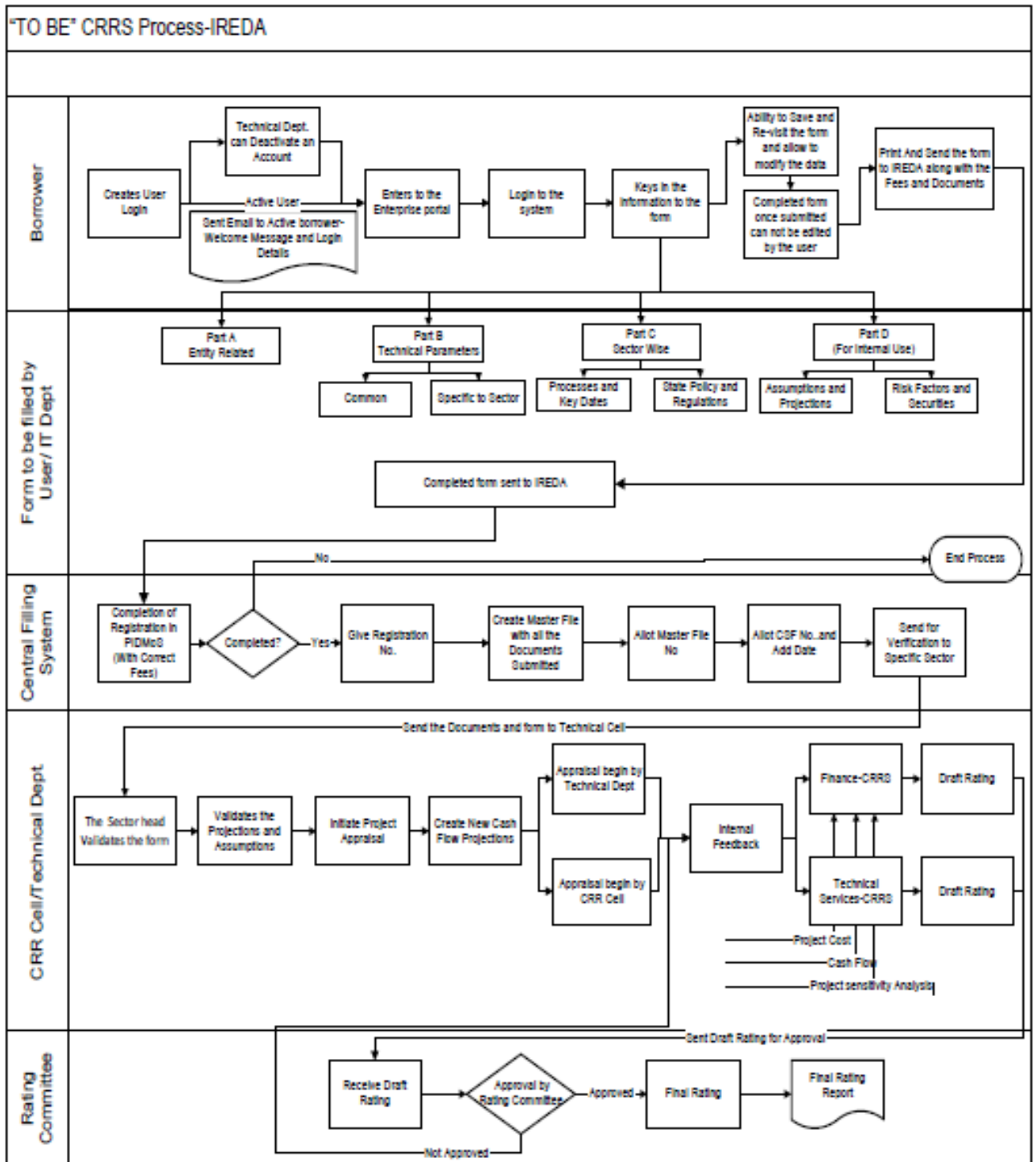
The above process flow will be common to all the sectors, only the parameters and their respective values might differ.

2. System in Dynamics AX

1.	Availability of the loan application form (Part A and Part B) online.
2.	Ability to submit the form A and B online in a secure environment by providing a unique User ID and Password.
3.	Part C and Part D of the loan application form is for internal process and monitoring and has to be updated by Technical Dept/ IT Dept
4.	To Sent a welcome note, login information and other details through email to the new borrower applying online.
5.	Forms available to IREDA Technical cell and IT Staff to validate the data.
6.	Part B1 and Part B2 of the Form will be available to sector specific IREDA Staff to view/validate it and if needed to modify/update it by obtaining permission from the concerned authorized personnel.
7.	Map the input data in the application forms with those to be used in the CRRS model where ever possible.
8.	Automatically let the application data be available in a temporary initial proposed scoring at parameter level.
9.	In case of missing data the staff must be able to manually fill/modify each field.
10.	To maintain the Audit trail for any modifications made in any information by maintaining a log such as the information modified, modified and validated by, date and time of modification
11.	The staff can at any moment be able to save the work in progress and at any moment come back after an unlimited period break to complete the scoring.
12.	The IREDA staff should at any moment be able to move freely from data to data and through short-cuts move from parameter or groups of parameters.
13.	At the end of the scoring the CRRS staff will press a button to finalize the scoring and a version number of the score will be issued automatically by the system as well as the complete score parameter values will be stored in an archive.
14.	CRRS staff need to modify this score a new version number is issued and the complete score set saved in an archive.
15.	Each session of the CRRS staffs work should be stored with changes made during the period. I.e. time entered and changes made in system should be recorded.

The online forms can be filled either by the borrowers through a web portal, or by the IT or technical staff at IREDA. The system will have the following functionalities:

3.



4. Calculation of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate

options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.

- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.
- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

5. Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges.

		Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

- The model for compiling and producing a rating has been prepared in AX which contains the above mentioned functionality.
- The CRR module has been created in AX and the demonstration for the same has been given to all the stakeholders and steering committee members of IREDA.
- Post the demonstration, the training and testing was scheduled for the steering committee members to train them how to use the software module to rate a project for loan sanction.
- The following suggestions/changes/recommendations were provided by the steering committee members during the two phases. The solution against these changes has been added to the system:

6. Inputs on the system by IREDA/GFA

S. No	Suggestions by IREDA/GFA	Solution by Trident
1.	Some technical Parameters are not completely correct	The Technical parameters will be re-visited by GFA. The system has the functionality to add new parameters and the same will be added to the rating sheet.
2.	To add certain alarms where a project can be clearly identified as a "NO-GO" Condition.	These alarms will be added in the system provided IREDA/GFA gives the specific parameters where these alarms have to be added. Currently no alarms are shared for "NO-GO" Condition
3.	To be able to capture the External Model as per the	Added two text boxes where actual score and Max Score of the external rating can be

	IREDA Format (1-8 where 1 is Highest)	Captured. This will allow the committee to put the actual score which is relevant and the system will calculate the %age
4.	To give Flexibility for External Rating as in some situations the some part of the external rating score may not be relevant and satisfactory	To meet this requirement, in the final draft rating two boxes are added to capture Actual score and the Maximum Score of the external Rating, which will have calculate a %age score in the system.
5.	To allow the End User, rating a Project to Save the Data before submitting which allows the User as well has his superior to View and change the scoring.	Any data which is not submitted by the user can be viewed by the senior at any time. Before request for approval a function to save the data will be added where before sending, the data can be viewed and changed by the user.
6.	1. The parameter value codes will be difficult to use and description should be visible in drop down.	1. The parameter value statement are added along with the codes and will be visible in the drop down menu.
7.	The "Not Applicable" button that if clicked excludes a parameter from calculation of the rating, can be used to manipulate the rating.	The button currently exists to provide flexibility to the Rating officer to make the rating scenario specific. With the usage of the system, once the user is able to identify the various scenarios the freezed upon the button will be excluded. Only in the case of Solar sector the Not applicable button is removed as they have identified the Parameters relevant in each scenario.
8.	To add a validation to recalculate the Draft Rating before submitting the score.	Validation will be given at the time of the submission of the score. An alarm will come before submitting a score.
9.	To link the Sponsor and Financial & funding parameter Master form directly with Sector	The linking of Sponsor and Financial & funding parameter Master form is completed as it is directly captured from Registration No. / Master File No. as mention in the Master form Master.
10.	Capture Date for Approval as well as Disapproval of the Rating	The column for date to be filled is added and made mandatory for disapproval as well.
11.	Make Remarks column for each parameter category in final draft rating and also a combined remarks box	The remarks column in final draft rating is added.
12.	Add remarks column for Senior's Validation of scores, suggestion text column for CRR in Technical Score and for Technical in CRR Scores to explain any suggestions	The Specific columns are added.

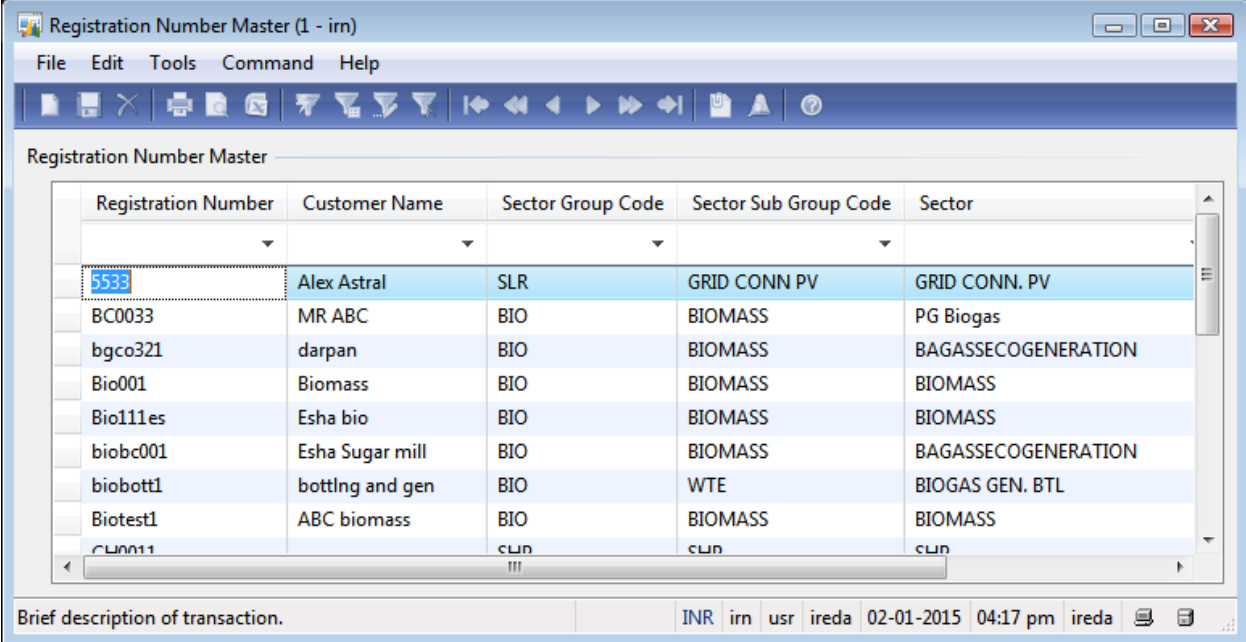
	made by them	
13.	Drop Down for Master File No. in each master for Score.	The functionality will be added.
14.	The final Score for a project will be submitted to the rating committee by the Senior only who approves the score.	Functionality is provided and the relevant rights are given to the reporting officer in each sector.
15.	Create form for External Rating and CIBIL Rating that will be reflected to the final report	The functionality is added
16.	The final draft Rating must have the following Functionality to open the actual parameter score for the rating committee and review the same.	To final draft Rating form will now as follows: 1. Each Risk Category will have a click button. 2. When this button is clicked by the rating committee a view form will open and the rating committee can view all parameter score in each risk category. 3. 2 Columns will be added in the view form where the 1st column is to tick the parameters to be reviewed and 2 nd column for the comments/remarks for this judgment. 4. In the review form only the marked parameters will be seen which have to be reviewed. 5. All the non marked parameters will have the same score. 6. The reviewed score will be submitted and replace the old score for those parameters for the final draft rating.

9.2 Annex 1: CRRS User Manual

1. Create Registration No.

1. Click Area Page node: **Credit Risk Rating -> Master Forms -> Registration Number Master.**

Form name: Registration Number Master



The screenshot shows a software window titled "Registration Number Master (1 - irn)". The window contains a menu bar (File, Edit, Tools, Command, Help) and a toolbar with various icons. Below the toolbar is a table with the following columns: Registration Number, Customer Name, Sector Group Code, Sector Sub Group Code, and Sector. The table contains several records, with the first record highlighted in blue. The status bar at the bottom of the window displays "Brief description of transaction." and "INR irn usr ireda 02-01-2015 04:17 pm ireda".

Registration Number	Customer Name	Sector Group Code	Sector Sub Group Code	Sector
5533	Alex Astral	SLR	GRID CONN PV	GRID CONN. PV
BC0033	MR ABC	BIO	BIOMASS	PG Biogas
bgco321	darpan	BIO	BIOMASS	BAGASSECOGENERATION
Bio001	Biomass	BIO	BIOMASS	BIOMASS
Bio111es	Esha bio	BIO	BIOMASS	BIOMASS
biobc001	Esha Sugar mill	BIO	BIOMASS	BAGASSECOGENERATION
biobott1	bottling and gen	BIO	WTE	BIOGAS GEN. BTL
Biotest1	ABC biomass	BIO	BIOMASS	BIOMASS
CU0011		CU00	CU00	CU00

2. Create a new record in the **Registration Number Master** form.
3. Enter Unique **Registration Number** eg: 'Hydro2'.
4. Enter **Customer Name** 'Alex Hydro Power'.
5. Select **Sector Group Code** from drop down menu for sector Code - 'SHP' (Hydro).
6. Select **Sector Sub Group Code** from drop down menu for sub-group code 'SHP'.
7. Select **Sector** from drop down menu as 'SHP'.
8. Save the record in the **Registration Number Master** form.

9. Close the **Registration Number Master** form.

2. Sector Specific Rating (Technical Sector)

1. Click Area Page node: **Credit Risk Rating -> Common -> Hydro Parameters.**

Form name: Hydro Parameter

Parameter Code	Parameter	Not applicable	Weightage	Parameter Value Code	Parameter Value
PCSHHP0015	Environmental Clearance & Forest Departm...	<input type="checkbox"/>	3.00		
PCSHHP0013	Project Allotment	<input type="checkbox"/>	5.00		
PCSHHP0016	Project land - Mortgagable (%)	<input type="checkbox"/>	1.00		
PCSHHP0014	Water Resources or Irrigation Permission O...	<input type="checkbox"/>	4.00		

2. Select **Master File No:** from drop down as 'Hydro2'.

3. Enter the data for each category of Risk:

- Permitting Risk
- Execution Risk
- Generation Risk
- Operating Risk
- Off Taker Counter party Risk

Hydro Parameter (1 - irn) - Submitted: No, OnHold: No, Created by: ireda

File Edit Tools Command Help

Hydro Parameter Review

Registration No: Hydro2

Permitting Risk Execution Risk Generation Risk Off Taker Counter Party Risk

Parameter Code	Parameter	Not applicable	Weightage	Parameter V...	Description
PCSH0025	Accounting for current and future Charges ...	<input type="checkbox"/>	12.00	PVCSHP080	All increase in charges & cost
PCSH0023	Captive/third party use estimates reliable	<input type="checkbox"/>	14.00		
PCSH0032	Extent of power proposed for short term sal...	<input type="checkbox"/>	4.00		
PCSH0035	Free Power (Percentage)	<input type="checkbox"/>	2.00		
PCSH0041	If 3rd party payment backed by default escr...	<input type="checkbox"/>	6.00		
PCSH0031	If 3rd party PPA confirms that for sale cost ...	<input type="checkbox"/>	5.00		
PCSH0030	If 3rd party sale cost of power is treated as ...	<input type="checkbox"/>	7.00		
PCSH0029	If 3rd party sale payment security measures...	<input type="checkbox"/>	8.00		
PCSH0028	If 3rd Party Sale with PPA for less than loan ...	<input type="checkbox"/>	9.00		
PCSH0026	Payment Security	<input type="checkbox"/>	11.00		
PCSH0024	Plan for PPA power sale (minimum 10 years)	<input type="checkbox"/>	13.00		

Parameter Value Code	Score	Parameter Value
PVCSHP080	8.00	All increase in charges & costs on account .
PVCSHP081	6.00	75% of all increase in charges & costs on ac
PVCSHP082	4.00	50% of all increase in charges & costs on ac
PVCSHP083	2.00	More than 50% of all increase in charges&c
PVCSHP084	0.00	All increase in costs & charges are on proje.

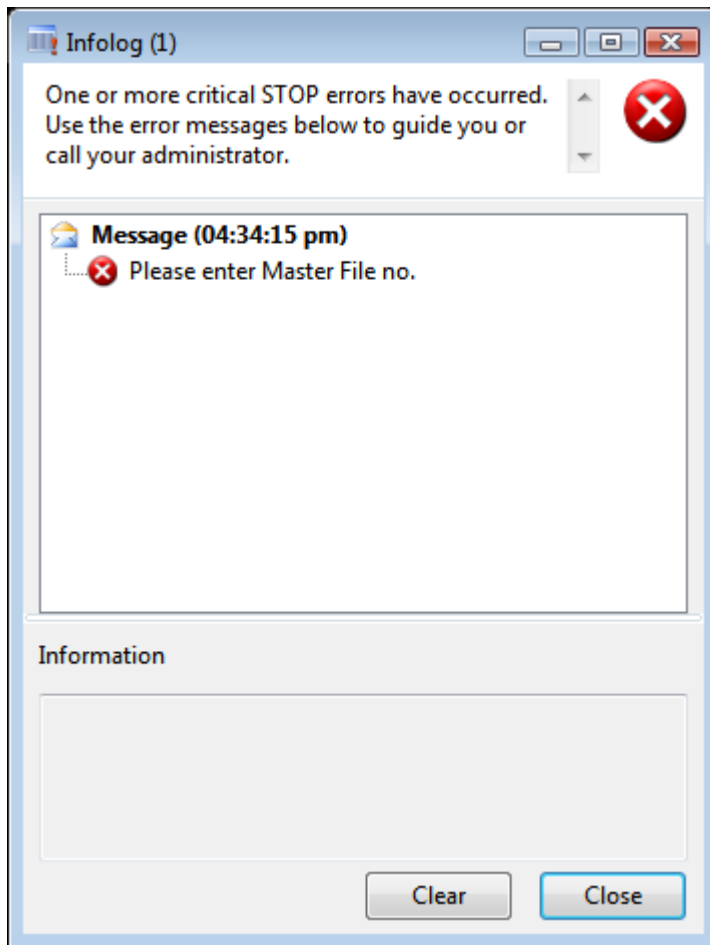
Off taker counter Risks Score: 0.00 %

Weightage: 10.00 %

Buttons: Load, Request For Approve, Approve (b), Submit, Calculate Draft Rating, Total Draft Rating

4. The dealing officer must do one of the following before closing the form:
 1. Complete the rating and press **Request for Approval** and submit to his/her Reporting officer
 2. **Save as Draft** to revisit the form before submitting to reporting officer

5. Once the form is closed to reopen the old form the following steps are to be taken:

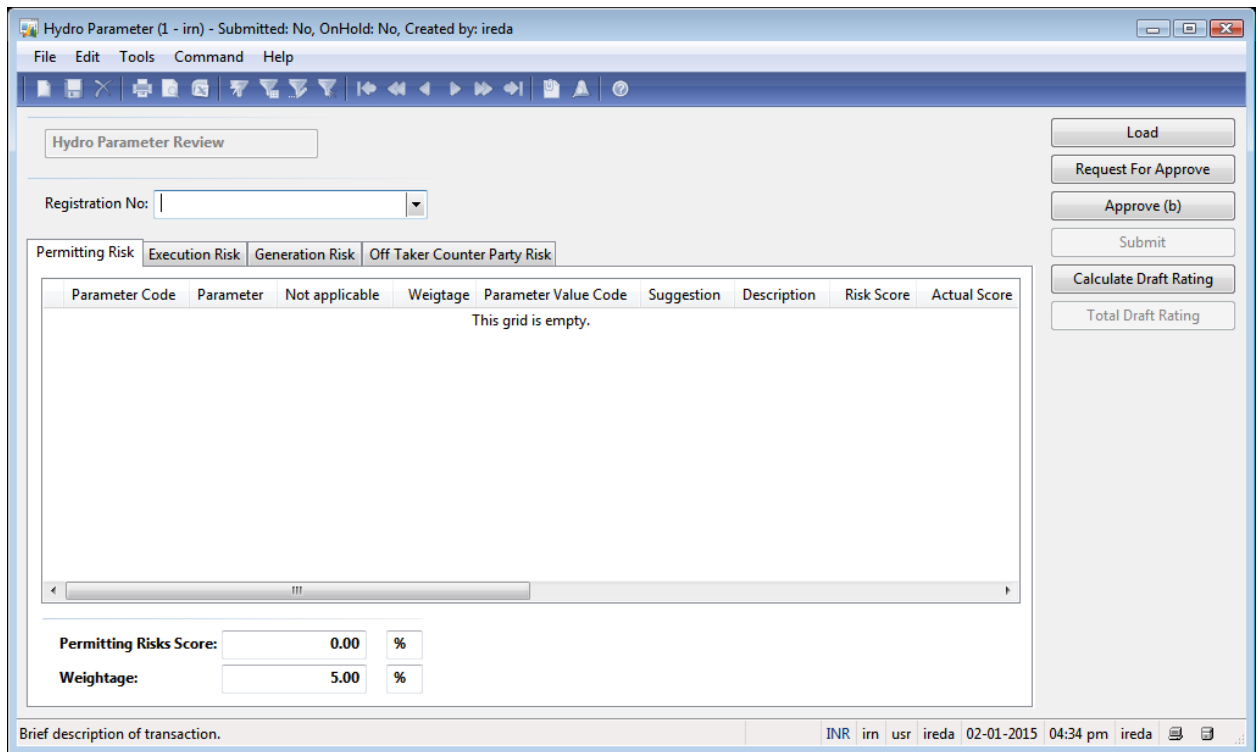


3. Click the **Close** button.

4. Enter the **Master File No:** from drop down menu which has been saved as 'hydro2'.

5. Click the **Load Draft** button.

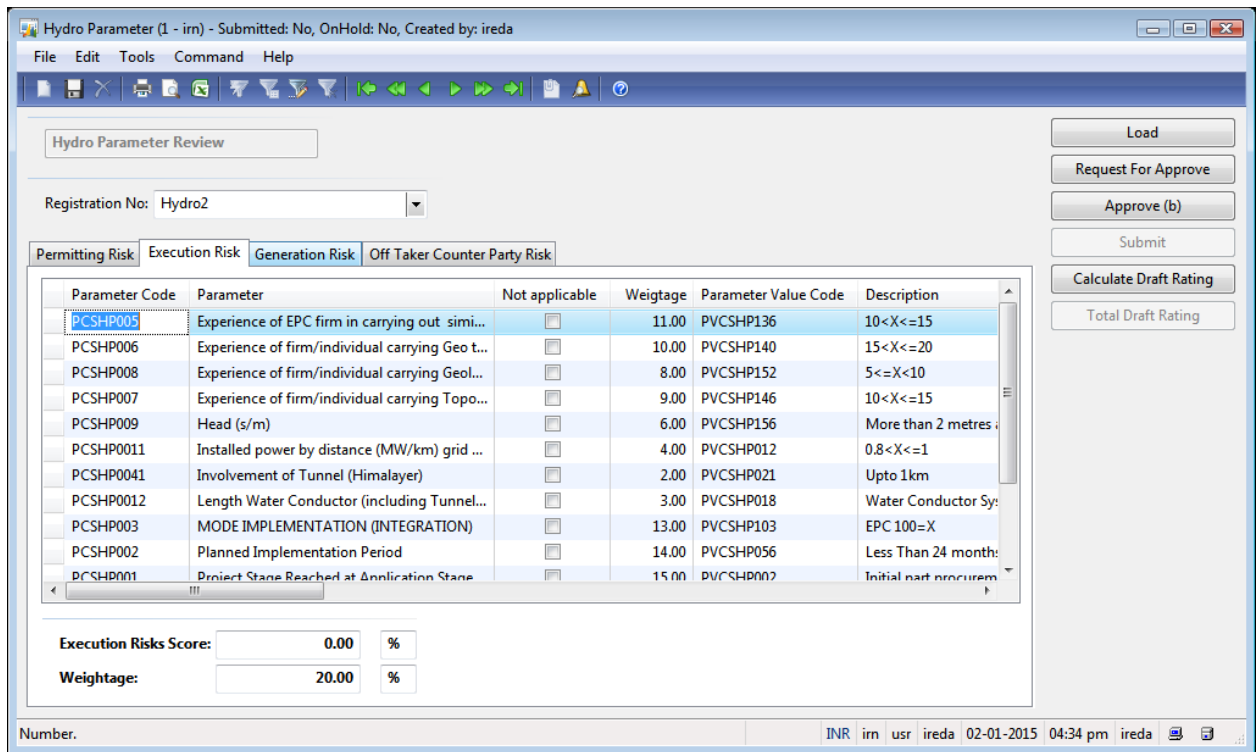
Form name: Hydro Parameter



6. Enter **Registration No** from drop down 'Hydro2'.

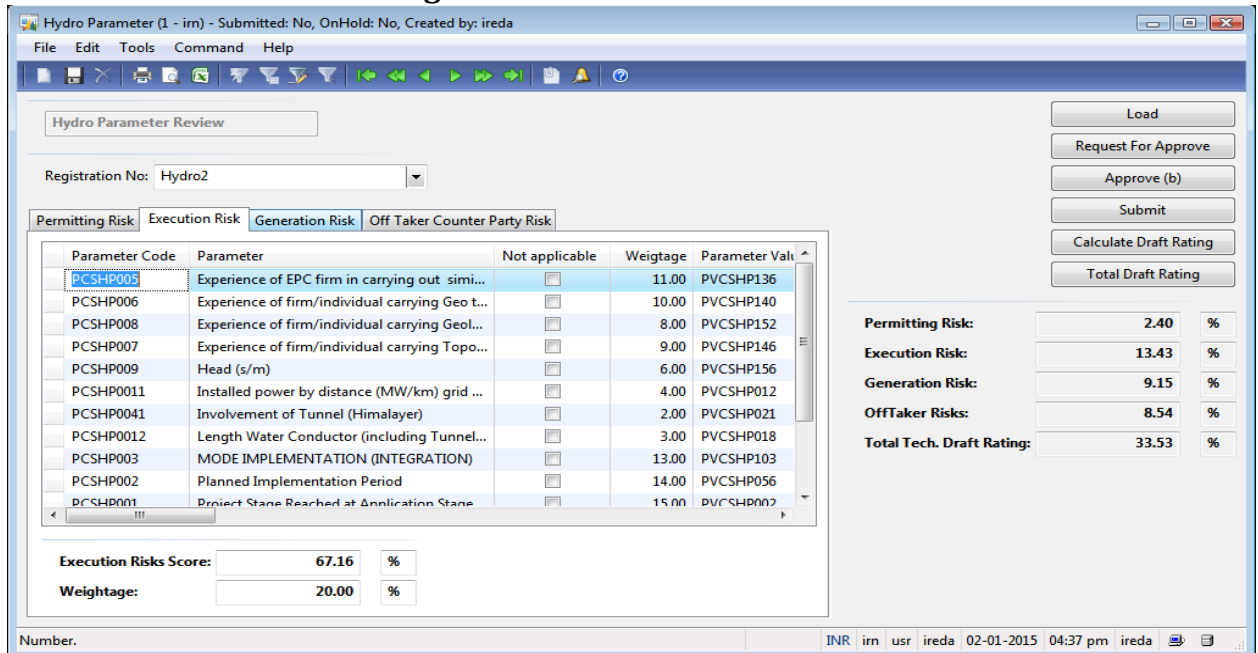
7. Click the **Load** button.

8. Switch between the tabs to rate the parameters on the **Hydro Parameter** form.



9. Click the **Calculate Draft Rating** button.

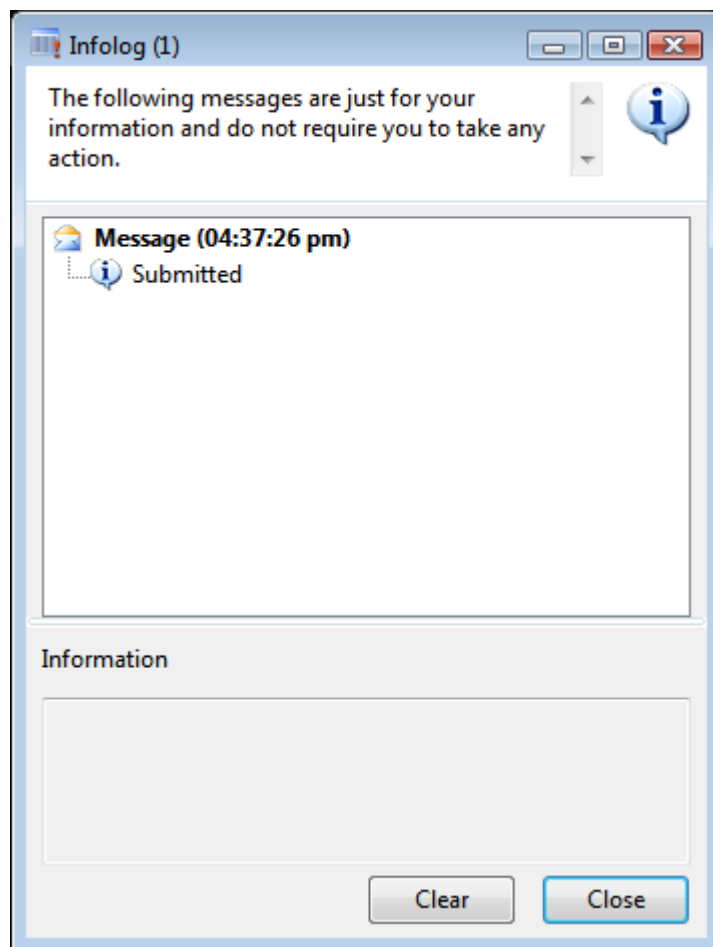
10. Click the **Total Draft Rating** button.



11. Click the **Request For Approval** button and sent it to reporting officer for the specific sector/group.

12. The reporting officer will validate the score and press the **Approve** button.
21. The reporting officer will click the **Submit** button.
22. Click **Yes** in the **Confirm** form.
“Do you want to Submit?”
23. Close the **Hydro Parameter** form.

Form name: Infolog



24. Click the **Close** button.

3. Check in Final Draft Rating

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Final Draft Rating.**
(User right only to rating committee)

Form name: Draft Rating Approval Form

The screenshot shows a software window titled "Draft Rating Approval Form (1 - irm)". The interface includes a menu bar (File, Edit, Tools, Command, Help) and a toolbar with various icons. The main form area contains several input fields and a table of risk categories. On the right side, there are buttons for "Load", "Calculate Ext", "Approv", "DisApp", and "Final Rep". The status bar at the bottom displays the user's name (ireda), date (02-01-2015), and time (04:42 pm).

2. Enter **Master File Number:** 'hydro2'.
3. Click the **Load** button.
4. Close the **Draft Rating Approval Form** form.

4. Rating by CRR Cell

As the Technical group will rate a project's Loan application paralleling the Finance CRR cell will be rating the Project on the following risk Categories:

1. Sponsor Risk
2. Funding and Financial Risk

Sponsor Risk

Click Area Page node: **Credit Risk Rating -> Common -> Sponsor Risk Parameters.**

Form name: Sponsor Risk Parameter Master

The screenshot shows the 'Sponsor Risk Parameter Master' application window. The title bar reads 'Sponsor Risk Parameter Master (1 - irn)'. The menu bar includes 'File', 'Edit', 'Tools', 'Command', and 'Help'. The toolbar contains various navigation and action icons. The form fields are as follows:

- Master File Number: [Dropdown menu]
- Promoter Name: [Text input field]
- Promoter Type: [Dropdown menu, currently set to 'Promoter As Individual']
- Sector group code: [Text input field]
- Sector Sub Group Code: [Text input field]
- Sector: [Text input field]

Below the form fields are two tabs: 'Individual Promoters' and 'Individual Financial Strength'. The 'Individual Financial Strength' tab is active, displaying a table with the following columns: 'C. Parameter', 'Pa...', 'Wei...', 'Parameter Valu...', 'Parameter Val...', 'Score', and 'Actual Scor'. The table contains 13 rows of parameters with their respective weights, value codes, scores, and actual scores.

At the bottom of the table, there is a field for 'Individual Promoter:' with a value of '0.00'. To the right of the table is a vertical stack of buttons: 'Save As Draft', 'Load Draft', 'Request for Approval', 'For Approved', 'Submit', 'Calculate Draft Rating', and 'Calculate Total Draft Rating'. The status bar at the bottom right shows 'INR | irn | usr | ireda | 02-01-2015 | 04:42 pm | ireda'.

1. Enter **Master File Number:** 'hydro2'.
2. Enter Promoter 1 name in **Promoter Name:** as 'Alex'.
3. Select **Promoter Type** from “Promoter as Individual” or “Promoter as Company”
4. Rate for each parameter by selecting the parameter value code from drop down
5. Switch to the **Individual Financial Strength** tab on the **Sponsor Risk Parameter Master** form.

Sponsor Risk Parameter Master (L - irm)

File Edit Tools Command Help

Master File Number: hydro2 Sector group code: SHP

Promoter Name: Alex Sector Sub Group Code: SHP

Promoter Type: Promoter As Individual Sector: SHP

Individual Promoters Individual Financial Strength

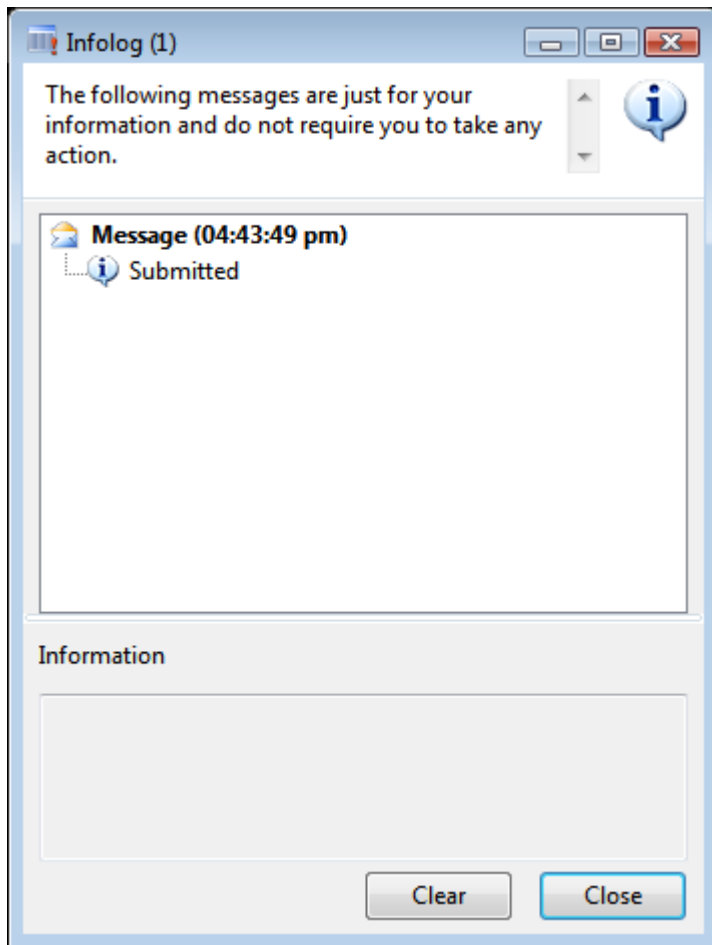
Code	Parameter	Parameter Not ...	Weightage	Parameter Valu...	Parameter Value	Score
PCSRJ0016	Active Bank relationsh...	<input type="checkbox"/>	2.00			0.00
PCSRJ0017	Third Party Rating	<input type="checkbox"/>	1.00			0.00
PCSRJ0019	Type of collateral	<input type="checkbox"/>	3.00			0.00
PCSRJ0018	Value of Collateral of ...	<input type="checkbox"/>	3.00			0.00

Individual Financial Strength: 0.00

Number. INR | irm | usr | ireda | 02-01-2015 | 04:43 pm | ireda

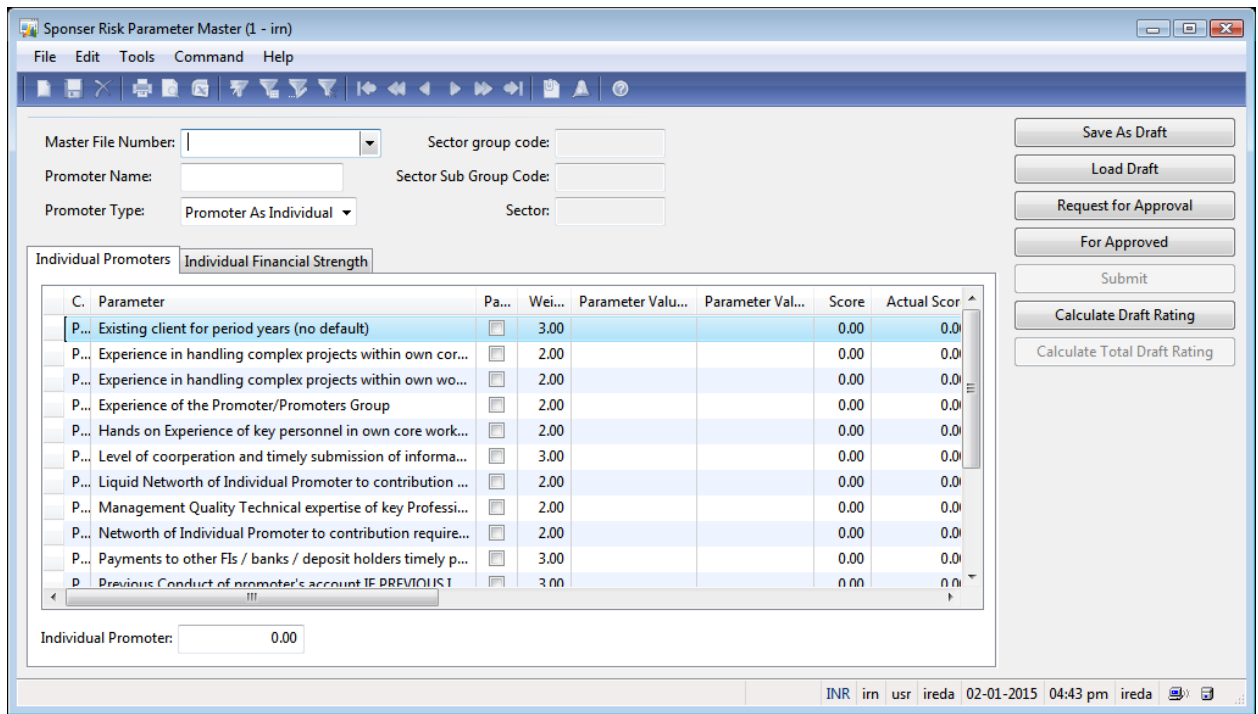
1. Click the **Calculate Draft Rating** button.
2. Click the **Calculate Total Draft Rating** button.
3. Click the **Request for Approval** button and sent for approval to higher authority.
4. The higher authority validates the score and clicks the **Approve** button
5. Click the **Submit** button.
6. Click **Yes** in the **Confirm** form.
"Do you want to Submit?"
7. Close the **Sponsor Risk Parameter Master** form.

Form name: Infolog

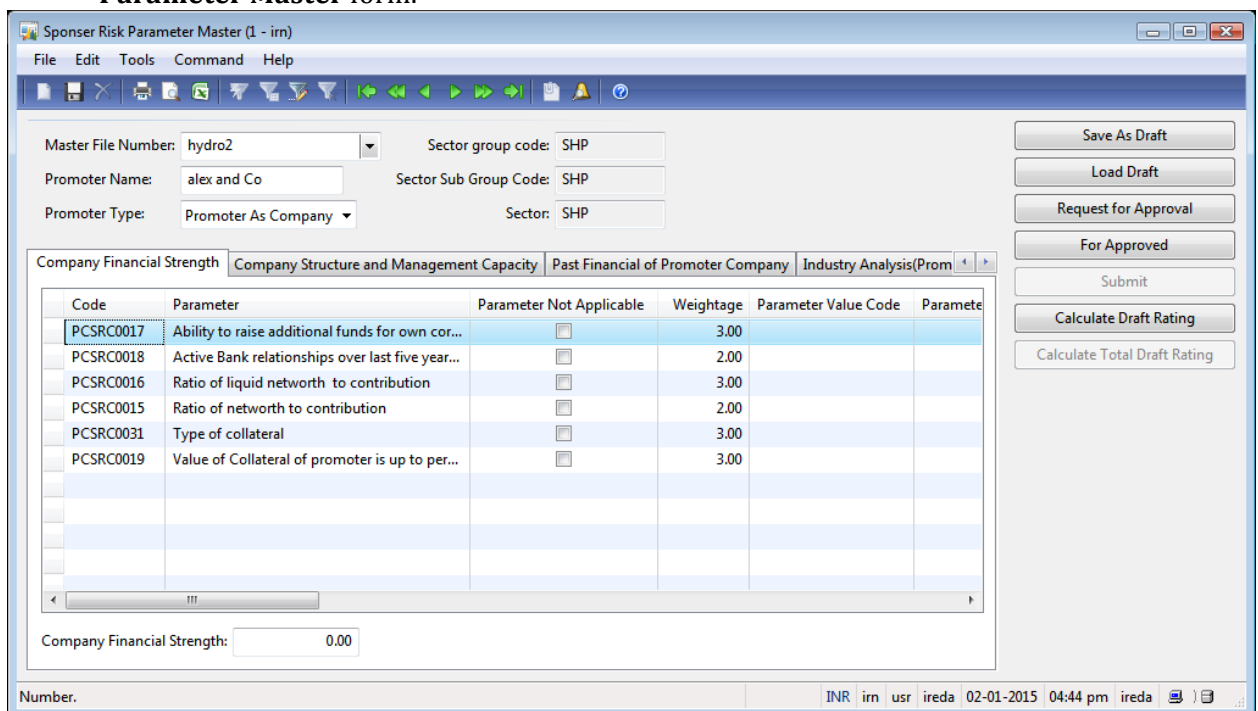


8. Click the **Close** button.
9. Repeat the process for all the Promoters
10. . Click Area Page node: **Credit Risk Rating -> Common -> Sponsor Risk Parameters.**

Form name: Sponser Risk Parameter Master

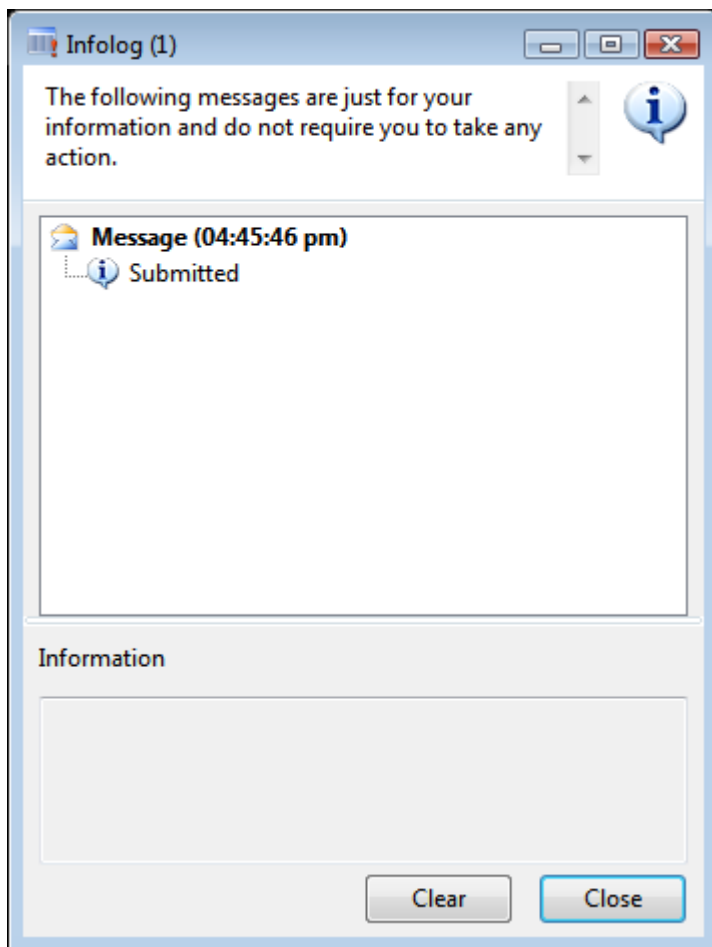


11. Enter **Master File Number:** 'hydro2'.
12. Enter **Promoter Name:** 'alex and Co'.
13. Change **Promoter Type** from 'Promoter As Individual' to 'Promoter As Company'.
14. Switch to the **Company Financial Strength** tab on the **Sponser Risk Parameter Master** form.



15. Click the **Calculate Draft Rating** button.
16. Click the **Calculate Total Draft Rating** button.
17. Click the **Request for Approval** button.
18. Click the **For Approved** button.
19. Click the **Submit** button.
20. Click **Yes** in the **Confirm** form.
"Do you want to Submit?"
21. Close the **Sponsor Risk Parameter Master** form.

Form name: Infolog



To get the weightage for each promoter continue the following steps:

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Sponsor Risk Calculation.**

1. Form name: Sponsor Risk Calculation

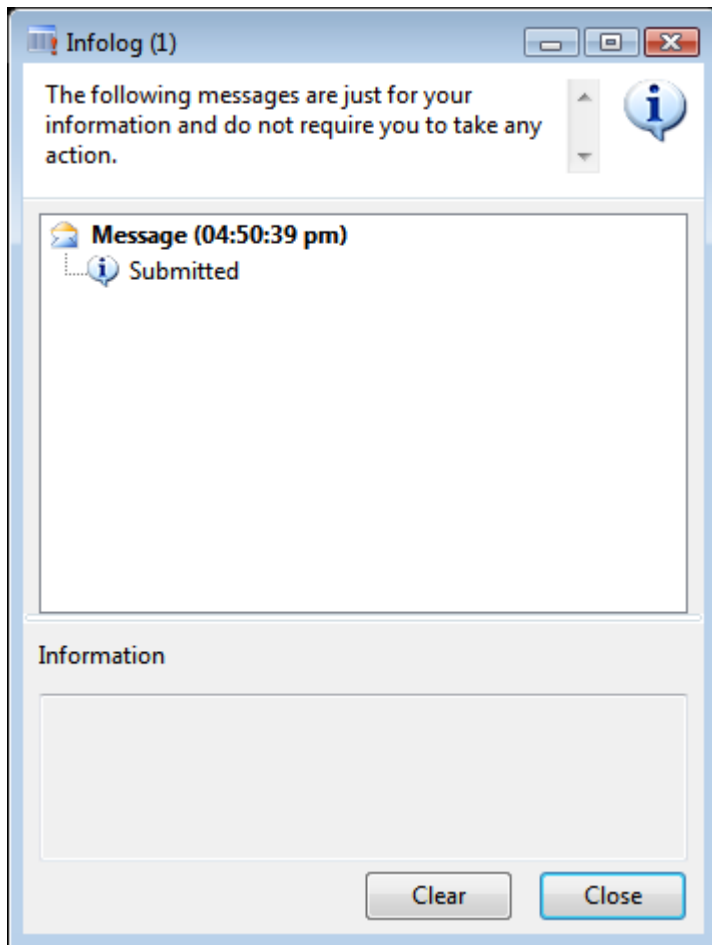
The screenshot shows a web application window titled "Sponsor Risk Calculation (1 - irm)". The window has a menu bar with "File", "Edit", "Tools", "Command", and "Help". Below the menu bar is a toolbar with various icons. The main content area contains several input fields and buttons:

- Master File Number:** A text input field with a "Load" button next to it.
- Sector group code:** A text input field.
- Sector sub group:** A text input field.
- Sector:** A text input field.
- Submit** and **Calculate** buttons are located on the right side of the form.

Below the input fields is a table titled "Sponsor Risk Calculation". The table has the following columns: Master File Number, Sponser Name, Type, Network, Proposed Share %, Sub Total, Participation Percent, Score, and Re. The table is currently empty, with the text "This grid is empty." displayed in the center. At the bottom of the window, there is a status bar showing "INR | irm | usr | ireda | 02-01-2015 | 04:49 pm | ireda".

2. Enter **Master File Number:** 'hydro2'.
3. Click the **Load** button.
4. Enter **Networth** for each promoter
5. Enter **Proposed Share%** for each promoter
6. Click the **Calculate** button.
7. Click the **Submit** button.
8. Close the **Sponsor Risk Calculation** form.

Form name: Infolog



9. Click the **Close** button.

Final Draft Rating

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Final Draft Rating.**

Form name: Draft Rating Approval Form

The screenshot displays the 'Draft Rating Approval Form (1 - irn)' interface. The form is organized into several sections:

- Header Section:** Master File Number (input field), External Rating (checkbox), Sector Group Code (input field), Ext. Actual Score (input field), Sector Sub Group (input field), Ext. Max Score (input field), and Sector (input field).
- Risk Categories Table:** A table with 7 rows, each representing a risk category. Each row contains a button for the risk name, and columns for Score, Weightage, Weighted Score, Review Needed (checkbox), and Remarks (input field).

Risk Category	Score	Weightage	Weighted Score	Review Needed	Remarks
Sponser Risk				<input type="checkbox"/>	
Funding Risk				<input type="checkbox"/>	
Permitting Risk				<input type="checkbox"/>	
Generation Risk				<input type="checkbox"/>	
Execution Risk				<input type="checkbox"/>	
Operating Risk				<input type="checkbox"/>	
Off Taker Risk				<input type="checkbox"/>	
- Summary Section:** Actual Score (input field), Weighted Score (input field), Score (input field), Total Rating (input field), Approval Date (input field), Dis-Approval Date (input field), and Remarks (text area).
- Status Bar:** INR | irn | usr | ireda | 02-01-2015 | 04:50 pm | ireda

2. Enter **Master File Number:** 'hydro2'.
3. Click the **Load** button.
4. Close the **Draft Rating Approval Form** form.

Funding and Financial Risk

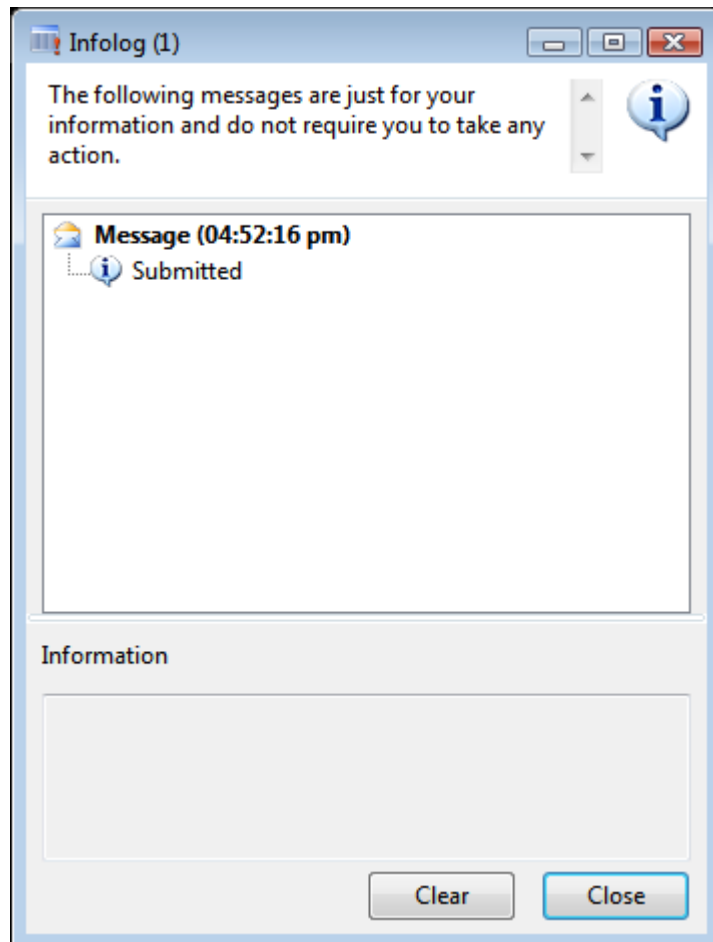
1. Click Area Page node: **Credit Risk Rating -> Common -> Funding & Financial Risk Parameters.**

Form name: Funding and Financial Risk Parameter Master

Code	Parameter	Paramete...	Weightage	Parameter Value Code	Parameter Value	Score
PCFFR002	Ability to raise funds - from third ...	<input type="checkbox"/>	3.00			0.00
PCFFR001	Ability to raise funds on the basis ...	<input type="checkbox"/>	3.00			0.00
PCFFR0011	Cost overrun of project project to...	<input type="checkbox"/>	2.00			0.00
PCFFR0021	Furnishing of Bank Guarantee/FD...	<input type="checkbox"/>	2.00			0.00
PCFFR009	If Third party extends Senior Debt...	<input type="checkbox"/>	3.00			0.00
PCFFR003	Number of shareholders composi...	<input type="checkbox"/>	3.00			0.00
PCFFR0010	Percentage spent or brough in of ...	<input type="checkbox"/>	1.00			0.00
PCFFR004	Promoters Contribution from ow...	<input type="checkbox"/>	3.00			0.00
PCFFR008	Reputation of third party Financie...	<input type="checkbox"/>	1.00			0.00
PCFFR006	Structure of contribution of Third...	<input type="checkbox"/>	3.00			0.00
PCFFR005	Total Contribution from promote...	<input type="checkbox"/>	3.00			0.00

2. Click the **Calculate Draft Rating** button.
3. Click the **Calculate Total Draft Rating** button.
4. Click the **Request for Approval** button.
5. Click the **Suggest** button for Technical Cell.
6. Click the **Approve** button.
7. Click the **Submit** button.
8. Click **Yes** in the **Confirm** form.
"Do you want to Submit?"
9. Close the **Funding and Financial Risk Parameter Master** form.

Form name: Infolog



10. Click the **Close** button.

5. Final Draft Rating Form with all risk category

Form name: Draft Rating Approval Form

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Final Draft Rating.**

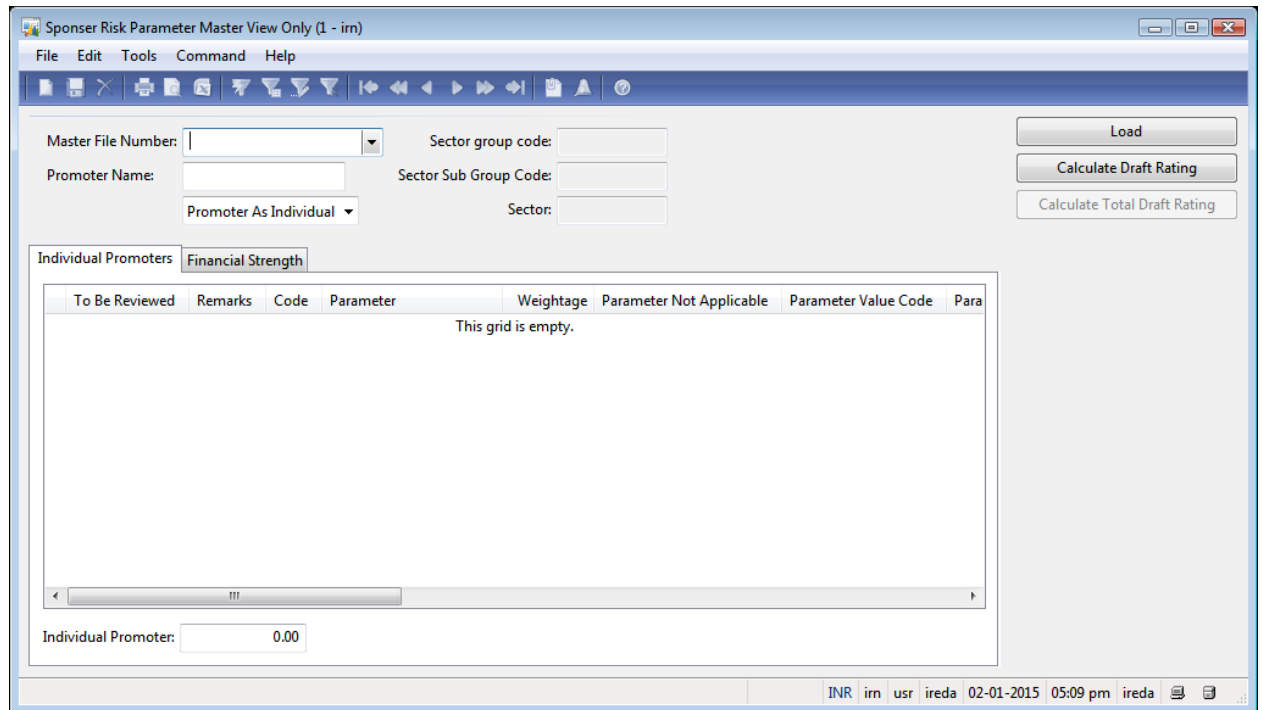
The screenshot displays the 'Draft Rating Approval Form (1 - irm)' interface. The form is organized into several sections:

- Header Section:** Includes 'Master File Number' (text input), 'External Rating' (checkbox), 'Sector Group Code', 'Sector Sub Group', and 'Sector' (text inputs). Summary fields include 'Ext. Actual Score', 'Ext. Max Score', and 'External Rating'.
- Risk Categories Table:** A table with 7 rows, each representing a risk category: Sponser Risk, Funding Risk, Permitting Risk, Generation Risk, Execution Risk, Operating Risk, and Off Taker Risk. Each row contains fields for 'Score', 'Weightage', 'Weighted Score', 'Review Needed' (checkbox), and 'Remarks'.
- Summary Section:** Contains 'Actual Score', 'Weighted Score', and 'Score' (text inputs).
- Approval Section:** Includes 'Total Rating', 'Approval Date', 'Dis-Approval Date', and 'Remarks' (text inputs).
- Right Sidebar:** Contains buttons for 'Load', 'Calculate External Rating', 'Approve', 'DisApprove', and 'Final Review'.
- Status Bar:** Located at the bottom, showing user information: 'INR | irm | usr | ireda | 02-01-2015 | 04:52 pm | ireda'.

2. Enter **Master File Number:** 'hydro2'.
3. Click the **Load** button.
4. In case there is External Rating enter as follows:
5. Change the **External Rating** boolean from 'false' to 'true'.
6. Enter **Ext. Actual Score** from '0.00' to '600.00'.
7. Enter **Ext. Max Score** from '0.00' to '800.00'.
8. Click the **Load** button.
9. Click the **Calculate External Rating** button.

10. To view the rating of the project in each risk category click on the risk category wise button to view it
11. Click the **Sponsor Risk** button to open sponsor risk view only form (A View only form is a form where the score for each parameter can be viewed only and nothing is editable).

Form name: Sponsor Risk Parameter Master View Only



12. Enter **Master File Number:** as 'hydro2' to view the sponsor risk rating for this case.
13. Enter **Promoter Name:** 'alex'.
14. Click the **Load** button.
15. Switch between the tabs to view the various heads in the **Sponsor Risk Parameter Master View Only** form.

Sponser Risk Parameter Master View Only (1 - irm)

File Edit Tools Command Help

Master File Number: hydro2 Sector group code: SHP

Promoter Name: alex Sector Sub Group Code: SHP

Promoter As Individual Sector: SHP

Buttons: Load, Calculate Draft Rating, Calculate Total Draft Rating

To Be Reviewed	Remarks	Code	Parameter	Weightage	Parameter Not Applicable
<input type="checkbox"/>		PCSRI0016	Active Bank relationships over last five years in...	2.00	<input type="checkbox"/>
<input type="checkbox"/>		PCSRI0017	Third Party Rating	1.00	<input type="checkbox"/>
<input type="checkbox"/>		PCSRI0019	Type of collateral	3.00	<input type="checkbox"/>

Individual Financial Strength: 0.00

Standard item description. INR irm usr ireda 02-01-2015 05:10 pm ireda

16. Click the **Calculate Draft Rating** button.

17. Click the **Calculate Total Draft Rating** button.

18. After viewing Close the **Sponser Risk Parameter Master View Only** form.

19. To disapprove a rating click on the boolean against the risk category to disapprove it and sent it for review to the respective reporting officer.

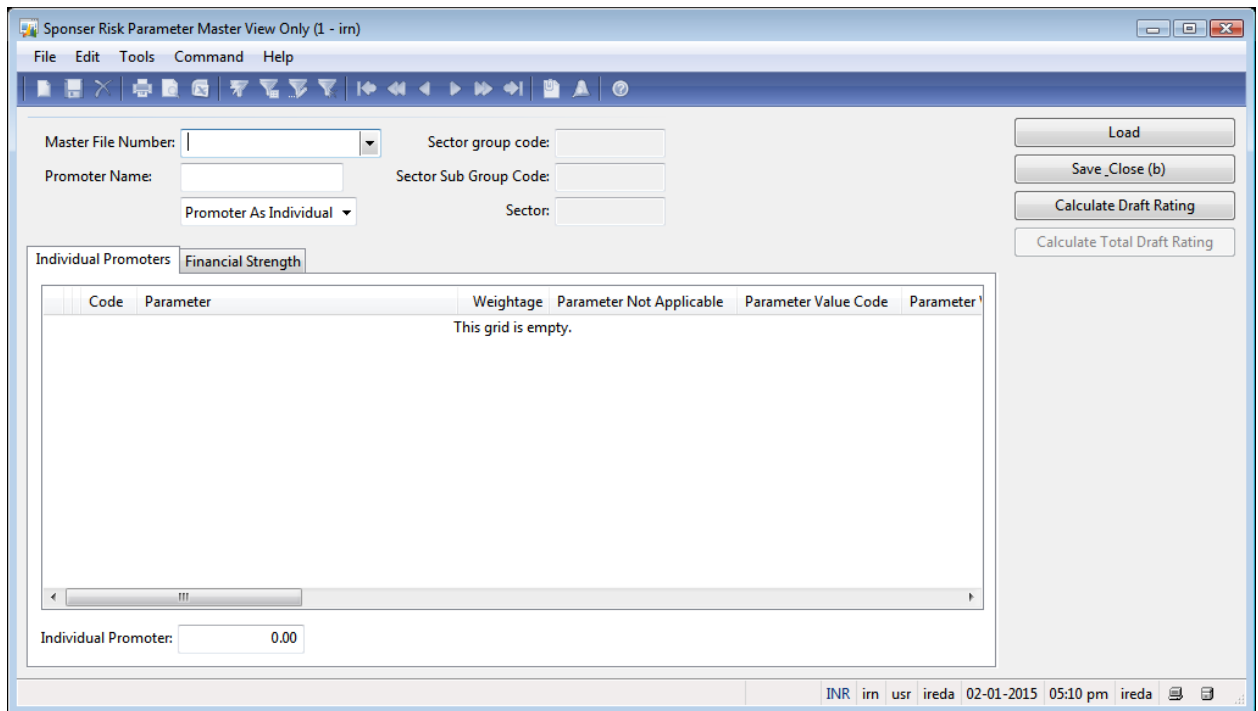
20. When the disapprove boolean is clicked to True a **Confirm** form opens and reads as follows:

“Do you want to DisApprove & get Scores Reviewed? Changes can't be Revert Back !!”

21. Click **Yes** in the **Confirm** form.

22. Repress the **Sponser Risk** button to open the view form for selecting the score that is to be reviewed.

Form name: Sponser Risk Parameter Master View Only



23. Enter **Master File Number:** 'Hydro2'.
24. Enter **Promoter Name:** 'alex'.
25. Click the **Load** button.
26. Change **To Be Reviewed** from 'No' to 'Yes'.
27. Make sure the selection is changed in table Individual Promoters to:

To Be Reviewed	Remarks	Code	Parameter	Weightage	Parameter Not Applicable	Parameter Value Code	Parameter Value	Score	Suggestions	Actual Score	Max Score	Source of Information	Suggested by Technical Team	Remarks
No		PC SRI 009	Hands on Experience of key personnel in	2.00	No	PVC SRI 039	Absent	0.00		0.00	16.00			

			own core work /busi ness											
--	--	--	--------------------------------------	--	--	--	--	--	--	--	--	--	--	--

28. Change **To Be Reviewed** from 'No' to 'Yes'.

29. Make sure the selection is changed in table Individual Promoters to:

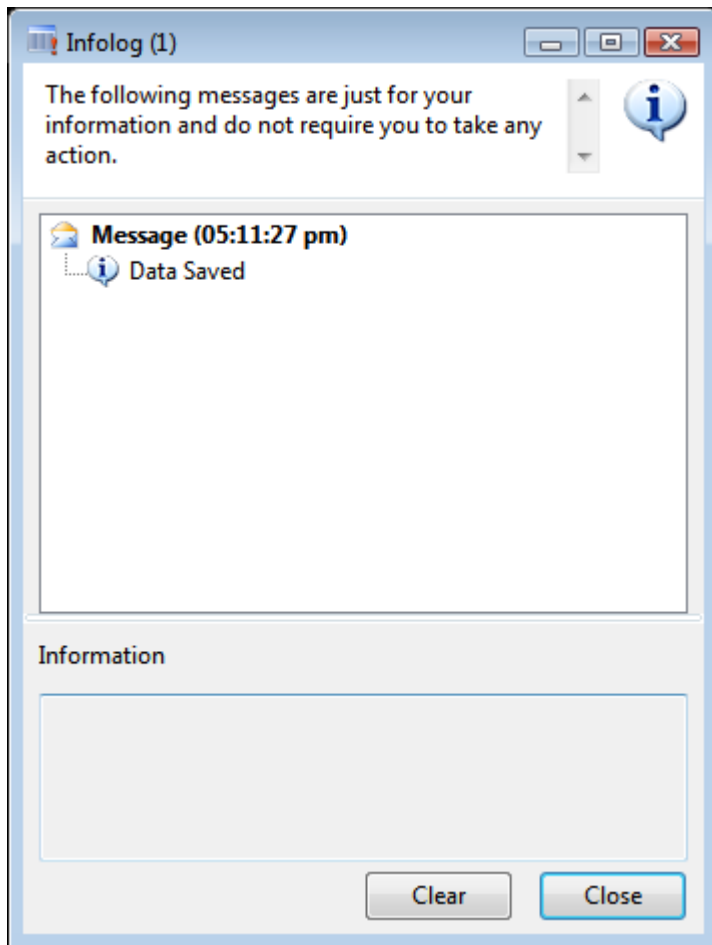
To Be Reviewed	Remarks	Code	Parameter	Weightage	Parameter Not Applicable	Parameter Value Code	Parameter Value	Score	Suggestions	Actual Score	Max Score	Source of Information	Suggested by Technical Team	Remarks
No		PCS R10 010	Level of cooperation and timely submission of information requirements with IRE DA	3.00	No	PVC SRI 041	Delayed	2.00		6.00	24.00			

30. To repeat the above process for all the score entries that are to be reviewed

31. Once completed click the **Save & Close** button.

32. Close the **Sponsor Risk Parameter Master View Only** form.

33. Get Infolog Form name: Infolog

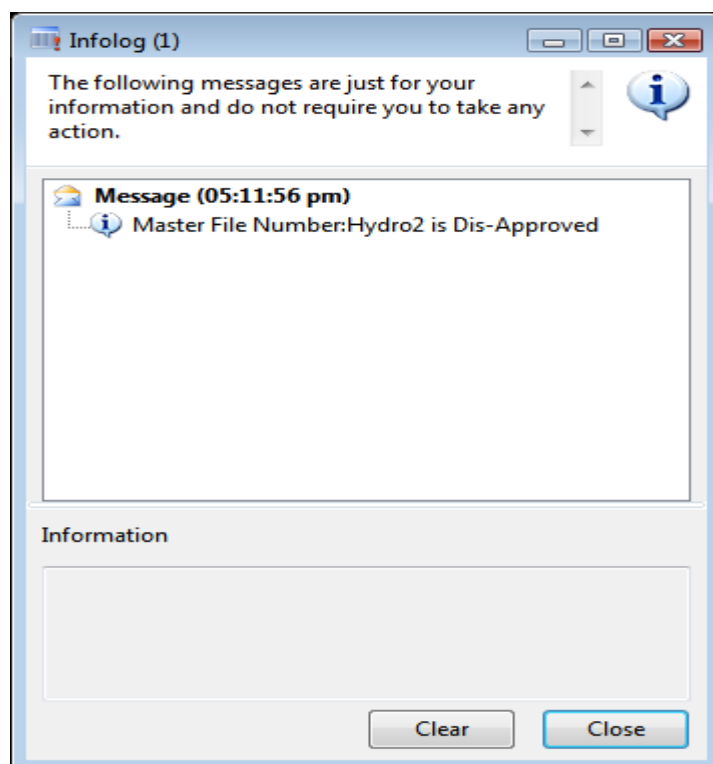


34. Click the **Close** button.
35. Enter **Dis-Approval Date** from '' to '29-12-2014'.
36. Enter **Remarks:**'please check for Promoter- Alex'.
37. Click the **DisApprove** button.
38. Click **Yes** in the **Confirm** form.

“Do you want to Dis-Approve?”

39. Close the **Draft Rating Approval Form** form.

Form name: Infolog



38. Click the **Close** button.

6. Review the disapproved score

When a score is disapproved an email will be sent to the reporting officer to inform and review the score suggested by the rating committee.

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Sponsor Risk -> Sponsor Risk Parameters Review.**

Form name: Sponsor Risk Parameter Master View Only

Sponsor Risk Parameter Master View Only (1 - irn)

File Edit Tools Command Help

Master File Number: Sector group code:

Promoter Name: Sector Sub Group Code:

Promoter As Individual Sector:

Individual Promoters **Financial Strength**

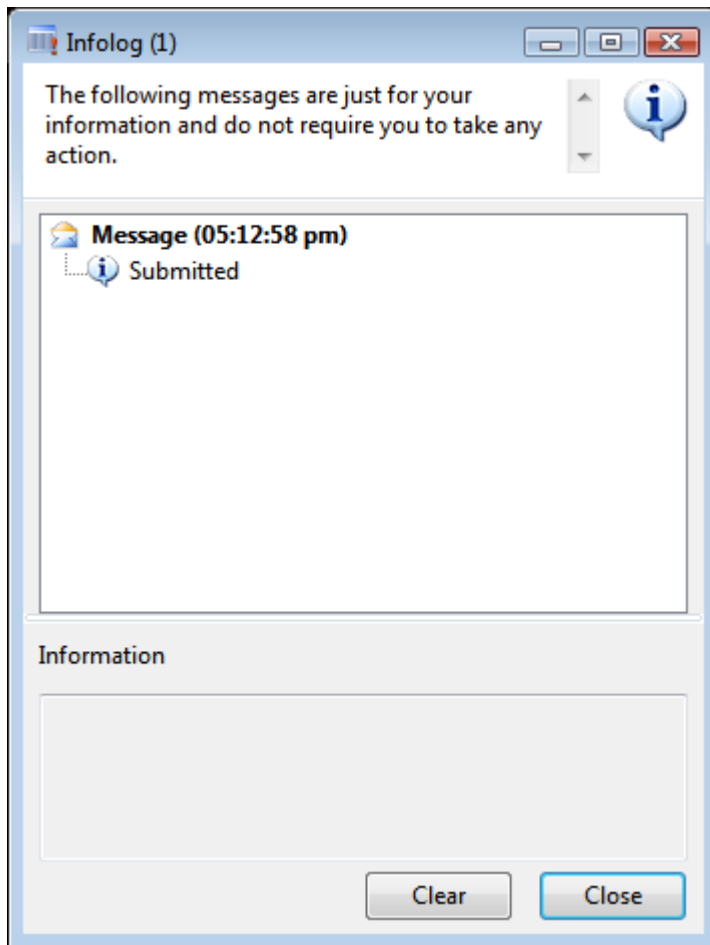
To Be Reviewed	Remarks	Code	Parameter	Weightage	Parameter Not Applicable
This grid is empty.					

Individual Promoter: 0.00

INR | irn | usr | ireda | 02-01-2015 | 05:12 pm | ireda

2. Enter **Master File Number**: 'Hydro2'.
3. Enter **Promoter Name**: 'alex'.
4. Click the **Load** button.
5. Click the **Review** button.
6. Review the score as per the remarks filled by the rating committee
7. Click the **Calculate Draft Rating** button.
8. Click the **Calculate Total Draft Rating** button.
9. Click the **Submit** button.
10. Click **Yes** in the **Confirm** form.
"Do you want to Submit?"
11. Close the **Sponsor Risk Parameter Master View Only** form.

Form name: Infolog



55. Click the **Close** button.

7. Reviewed score submitted

The Rating committee will receive a mail to approve/disapprove a score that has been reviewed and submitted by the respective dealing officer

1. Click Area Page node: **Credit Risk Rating -> Inquires -> Final Draft Rating.**

Form name: Draft Rating Approval Form

Draft Rating Approval Form (1 - irm)

File Edit Tools Command Help

Master File Number: External Rating:

Sector Group Code: Ext. Actual Score:

Sector Sub Group: Ext. Max Score:

Sector: External Rating:

Sponsor Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Funding Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Permitting Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Generation Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Execution Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Operating Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>
Off Taker Risk	Score: <input type="text"/>	Weightage: <input type="text"/>	Weighted Score: <input type="text"/>	Review Needed: <input type="checkbox"/>	Remarks: <input type="text"/>

Actual Score: Weighted Score: Score:

Total Rating:

Approval Date:

Dis-Approval Date:

Remarks:

INR | irm | usr | ireda | 02-01-2015 | 05:13 pm | ireda

2. Enter **Master File Number:** from '' to 'hydro2'.
3. Click the **Load** button.
4. view the submitted score by clicking on the Tab Button for each risk category, approve/disapprove the score
5. Enter **Approval Date** from '01-01-2015' to '31-12-2014'.
6. Enter **Remarks** from 'ok get report' to 'ok- get report'.
7. Click the **Approve** button.
8. Click the **Final Report** button.

8. Role of updating Committee

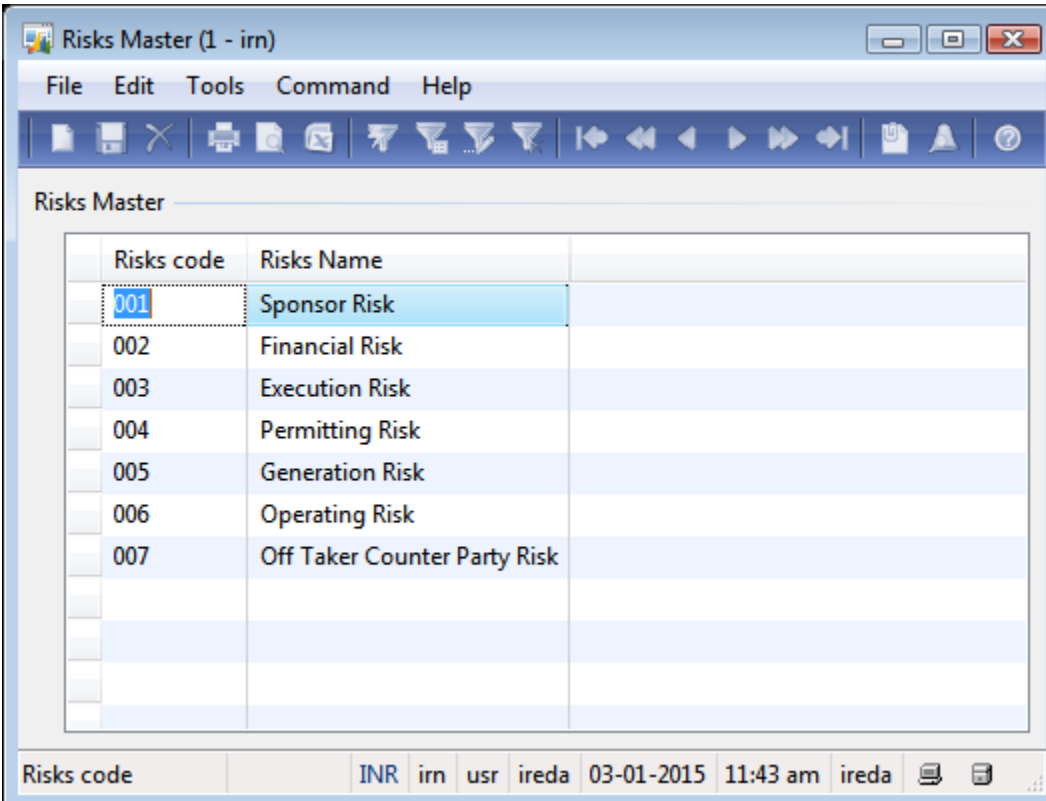
The updating committee is a committee who will view and review the existing parameters, risk categories, Risk weightage master, etc and if needed add new, deactivate the existing or modify the above masters.

Updating Risk Master

To Add new risk category by the Updating Committee

1. Click Area Page node: **Credit Risk Rating -> Master Forms -> Risks Master.**

Form name: Risks Master



The screenshot shows a software window titled "Risks Master (1 - irn)". The window has a menu bar with "File", "Edit", "Tools", "Command", and "Help". Below the menu bar is a toolbar with various icons. The main area contains a table with the following data:

Risks code	Risks Name
001	Sponsor Risk
002	Financial Risk
003	Execution Risk
004	Permitting Risk
005	Generation Risk
006	Operating Risk
007	Off Taker Counter Party Risk

At the bottom of the window, there is a status bar with the following information: "Risks code", "INR", "irn", "usr", "ireda", "03-01-2015", "11:43 am", "ireda", and some icons.

2. Create a new record in the **Risks Master** form.

3. Change **Risks code** from '' to '008'.

4. Change **Risks Name** from '' to 'External Risk'.

5. Make sure the selection is changed in table Risks Master to:

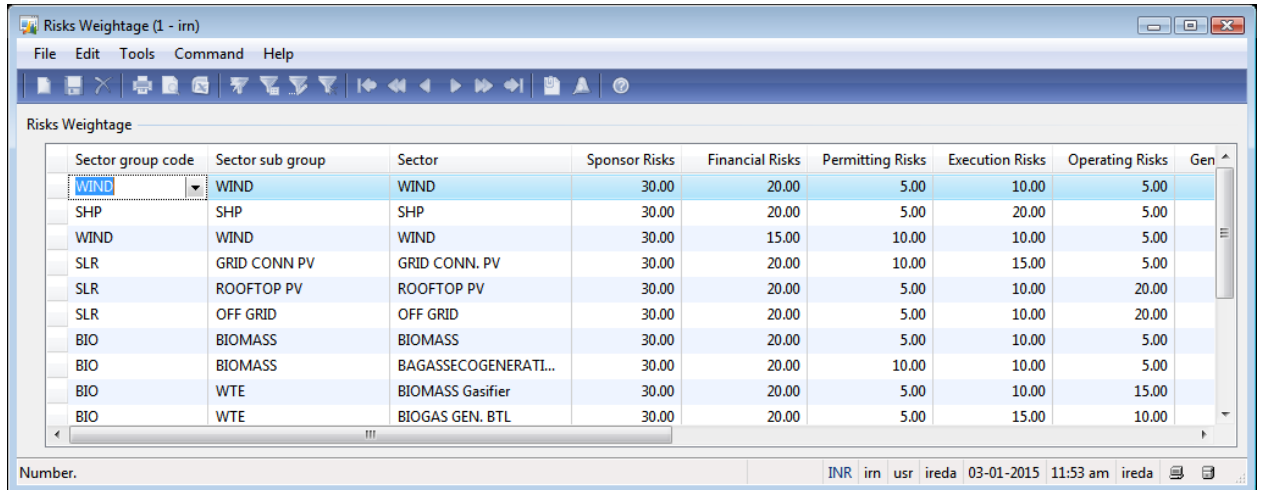
Risks code	Risks Name
008	External Risk

6. Close the **Risks Master** form.

Updating Sector Weightage

3. Click Area Page node: **Credit Risk Rating -> Master Forms -> Risks Weightage**.

Form name: Risks Weightage



Sector group code	Sector sub group	Sector	Sponsor Risks	Financial Risks	Permitting Risks	Execution Risks	Operating Risks	Gen
WIND	WIND	WIND	30.00	20.00	5.00	10.00	5.00	
SHP	SHP	SHP	30.00	20.00	5.00	20.00	5.00	
WIND	WIND	WIND	30.00	15.00	10.00	10.00	5.00	
SLR	GRID CONN PV	GRID CONN. PV	30.00	20.00	10.00	15.00	5.00	
SLR	ROOFTOP PV	ROOFTOP PV	30.00	20.00	5.00	10.00	20.00	
SLR	OFF GRID	OFF GRID	30.00	20.00	5.00	10.00	20.00	
BIO	BIOMASS	BIOMASS	30.00	20.00	5.00	10.00	5.00	
BIO	BIOMASS	BAGASSECOGENERATI...	30.00	20.00	10.00	10.00	5.00	
BIO	WTE	BIOMASS Gasifier	30.00	20.00	5.00	10.00	15.00	
BIO	WTE	BIOGAS GEN. BTL	30.00	20.00	5.00	15.00	10.00	

2. Create a new record in the **Risks Weightage** form.
3. Change **Sector group code** from "" to 'SLR'.
4. Change **Sector sub group** from "" to 'GRID CONN PV'.
5. Change **Sector** from "" to 'GRID CONN. PV'.
6. Change **Sponsor Risks** from '0.00' to '30.00'.
7. Change **Financial Risks** from '0.00' to '20.00'.
8. Change **Permitting Risks** from '0.00' to '5.00'.
9. Change **Operating Risks** from '0.00' to '10.00'.
10. Change **Execution Risks** from '0.00' to '20.00'.
11. Change **Generation Risks** from '0.00' to '10.00'.
12. Change **Off Taker CounterParty Risks** from '0.00' to '5.00'.
13. Enter **From date** from '03-01-2019'.

14. Make sure the selection is changed in table Risk Group to:

Se cto r gr ou p co de	Se cto r su b gr ou p	Se cto r	Spo nso r Ris ks	Fin anc ia l Ris ks	Per m it ting Ris ks	Exc e c u t i o n Ris ks	Oper a t ing Ris ks	Gene ra t io n Ris ks	Off T a k er C o u n t er P a r t y Ris ks	Fr o m da te	To da te	Act i vat e
SL R	GR ID CO NN PV	GR ID CO NN .PV	30.0 0	20.0 0	5.00	20.0 0	10.0 0	10.00	5.00	03 - 01 - 20 19	03 - 01 - 20 15	No

15. Save the record in the **Risks Weightage** form.

16. Close the **Risks Weightage** form.

in the same way the parameter master and other master form will be generated.

9.3 Annex 2: CRRS System Requirement Study

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1 Project Overview

1.1 Company Overview

Indian Renewable Energy Development Agency Ltd

Indian Renewable Energy Development Agency Limited (IREDA) was established on 11th March, 1987 as a Public limited Government Company under the Companies Act, 1956 and it promotes, develops and extends financial assistance for Renewable Energy and Energy Efficiency/Conservation Projects. IREDA has been notified as a “Public Financial Institution” under section 4 ‘A’ of the Companies Act, 1956 and registered as Non-Banking Financial Company (NFBC) with Reserve Bank of India (RBI).

The main objectives of IREDA are:

1. To give financial support to specific projects and schemes for generating electricity and / or energy through new and renewable sources and conserving energy through energy efficiency.
2. To maintain its position as a leading organization to provide efficient and effective financing in renewable energy and energy efficiency / conservation projects.
3. To increase IREDA`s share in the renewable energy sector by way of innovative financing.
4. Improvement in the efficiency of services provided to customers through continual improvement of systems, processes and resources.
5. To strive to be competitive institution through customer satisfaction.

Over the past several years, IREDA has been using Enterprise Resource Planning (ERP) solution called Microsoft Dynamics AX 2009 (MS Axapta). At present, the ERP has been successfully running and being implemented for some of the major day-today functions of IREDA, such as, Financial Management, Loan Accounting, Human Resources, Payroll, Document Management System, Workflow and Inventory Management. However, it is also evident that not all business area of IREDA is fully automated through a unified ERP application. This is because there exist some of the legacy systems that are still running due to absence of all the necessary functionality in ERP solution.

Credit Risk Rating System is one of such fragmented system that is currently running in MS Excel files that do not have any provision of linkages to the ERP application. Given that the existing CRRS application is build on an Excel file, has numerous technical limitations, which evidently is not sustainable nor is scalable or user friendly. Due to this reason, IREDA is facing a major challenge in terms of managing the Credit Risk rating of the firms, which is considered one of the basic foundations of the IREDA business

objective. Even though the existing CRRS does meet basic level of functional requirements, it has several limitations, such as

- The CRRS application was designed in MS Excel using Visual Basic codes and Macros. Hence it is not a database system rather works in a filing system approach;
- Most of the business rules and parameters used in CRRS application are hardcoded and cannot be modified due as no source codes are available to modify the system;
- The application does not have a provision for its scalability and linkages to other systems, such as ERP application;
- While the demands and requirements for IREDA has evolved in recent times, the same cannot be implemented due to lack of source code and other technical limitations.

1.2 Project Scope

The project for IREDA is Credit Risk Rating System – Design, Development & Implementation. The following are the high-level functional requirements for CRRS:

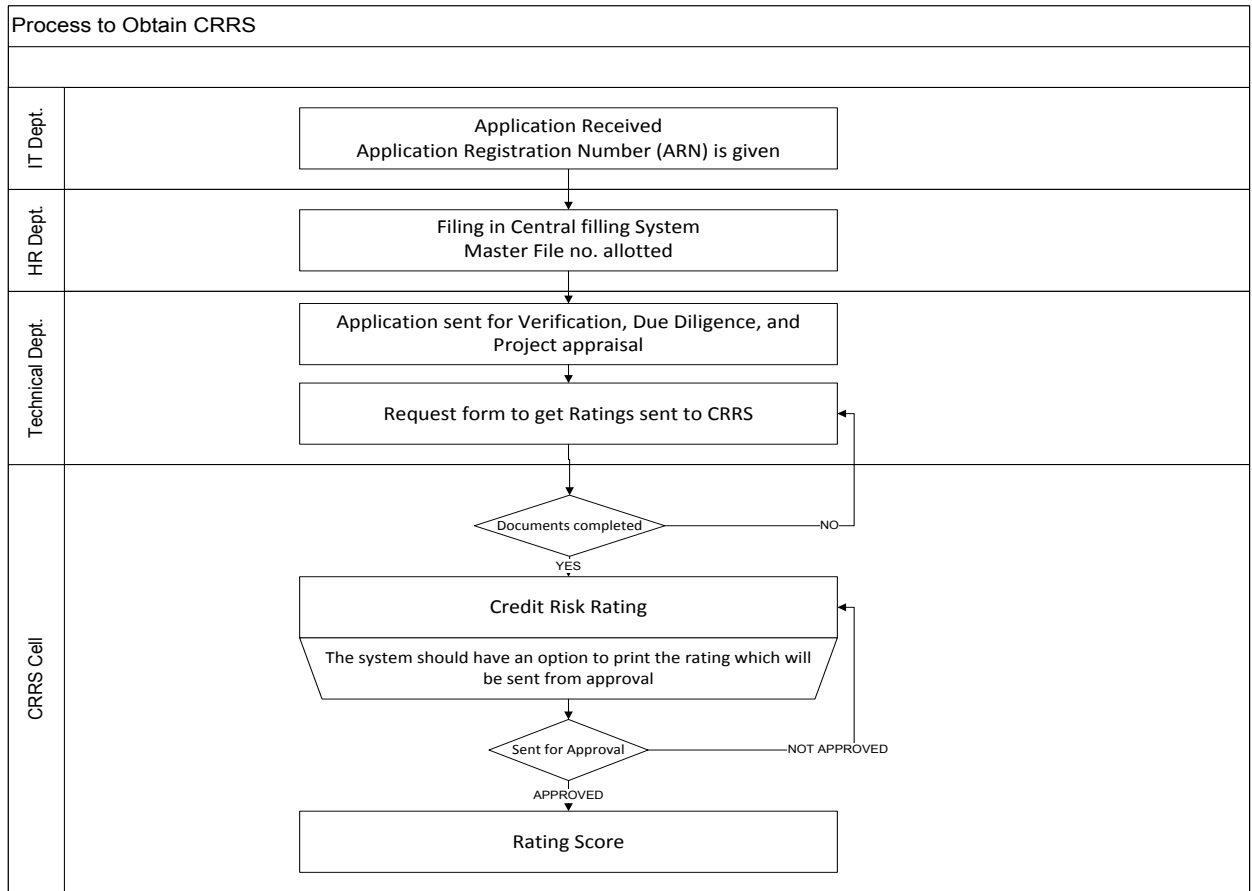
- Functionality to capture detailed information about the loan seekers, such as, but not limited to Name, contact address, phone number, fax, email etc of the firm; promoters details, etc., including,
 - Sector of the firm;
 - Stage of the project;
 - Project constitution;
- Functionality to capture and evaluate the loan proposals received in various sectors that IREDA currently practices;
- Functionality to uniquely identify each proposal submitted by the firm and be able to keep track of the firm's past credentials and credit rating history;
- Functionality of evaluate the proposals based on the number of business parameters in each of the sectors;
- Functionality to provide a weighted score for the probability of success of the projects that are being considered for financing by IREDA.
- Risk Rating Report for each project will be given on the basis of the following Categories of Risk:
 - Sponsor Risks
 - Funding and Financial Risks
 - Permitting Risks
 - Execution Risks
 - Operating Risks
 - Generation/Fuel Availability Risks

- Off take/Counterparty Credit Risks
- The Risk Rating Report should also consist of pre-rating criteria satisfied in the risk rating and which are not fulfilled;
- Alarms functionality should indicate specific attention to aspects that need to be considered in more depth to understand, explain and mitigate these possible above the average risks during the due diligence / risk analysis of the project application for financing;
- The basis of the system design should constitute a series of risk variables/ parameters outlined in the manual CRRS guideline and new ones being set up by the CRRS expert especially for Solar Power Projects and Energy Efficiency projects;
- Broadly speaking, the system is expected to have the following functionality:
- Create/Modify new parameters
 - Create/Modify ranges of parameter values to, which scores are assigned in terms of probability of success of project. The resulting parameter value is an absolute value contributing to the overall rating scores
 - Assign/Modify scores to each parameter
 - Assign/Modify each parameter to groups of parameters
 - Create/Modify sub groups of parameters
 - Assign/Modify cut-off limits to each parameter
 - Assign/Modify Text Notes to each parameter
 - Assign/Modify weighting values of each parameters scores in each group or subgroup
 - Assign/Modify weighting values of each group or subgroup scores in relation to each other in the overall risk score for the main output scores i.e.
 - Sponsor Risks
 - Funding and Financial Risks
 - Permitting Risks
 - Execution Risks
 - Operating Risks
 - Generation/Fuel Availability Risks
 - Off take/Counterparty Credit Risks
 - Set up/Modify pre-rating criteria
 - Set up/Modify Alarms
- Once the model has been setup an initial version number e.g. 1-10 will be assigned. For any future changes in any of the above mentioned from point 1-10 the administrator needs to create a new CRRS version number e.g. 1.1, i.e., the previous parameter configuration analyzed

and approved can be compared to the version used for its initial appraisal.

- The CRRS specialist will in addition to the existing parameters include the external rating agencies rating as well.
- The CRRS will be connected to each projects later status and performance as follows:
 - Project status such as Approved/Rejected, Under Construction, Commissioned, which needs to be ascertained in understanding the IREDA approval process by the contractor during the MIS analysis.
 - Projects later project performance / repayment behaviour data enabling the CRRS department to undertake statistical analysis on the CRRS model and its component parameter constituents in the future.
- The system will generate reports for communication and reporting among the various departments of IRDEA. The list of these report requirements and format separately must be provided by IREDA to us for designing them.
- Provision for upto 15 MIS reports, to be delivered during implementation phase, has been kept. Additional reports, if any to be delivered during maintenance phase, will be finalised during FRS phase.
- The CRRS application needs to be integrated in to and fro mode with the existing Loan Management System.

1.3 Existing Process Followed for CRRS



- ❖ The loan seeker would apply for the loan
- ❖ Get an ARN no. IREDA will get all the necessary documents for the loan sanction from the borrower
- ❖ File the all the documents through their central file system and sent it for verification.
- ❖ The documents are sent to the CRRS department so that it can be scored against parameters of each sector.
- ❖ This rating has to be approved.
- ❖ If not approved the CRRS Cell will have to correct any mistakes.
- ❖ Once approved the score is submitted and no further changes can be made.
- ❖ Before the generation the final score sheet a provision for archiving the modifications should made. It should be saved as versions available for review.

The above process flow will be common to all the sectors, only the parameters and their respective values might differ.

1.4 Purpose of the Document

The System Requirement Study Document (SRS) is the starting point of the solution and system development and is a collaborative effort between all business and technology stakeholders.

The purpose of the SRS is to communicate business needs in common terms to all project and technical team members to ensure the end product meets the business objectives. It is the first phase of the Systems Development Life Cycle. During later phases, the SRS will be used to:

- Design how the solution will be delivered.
- Test that requirements are delivered correctly.
- Measure the quality of the project deliverables and outcome.

This document defines the current project scope by listing the functionalities required by users of as per discussions held with Trident consultants. This document forms the basis for implementing Microsoft Dynamics Axapta (AX) 2009 in IREDA.

This document defines the current loan application process and CRRS process followed at IREDA, as discussed during requirement analysis phase, and how it will be map into MS Dynamics AX 2009.

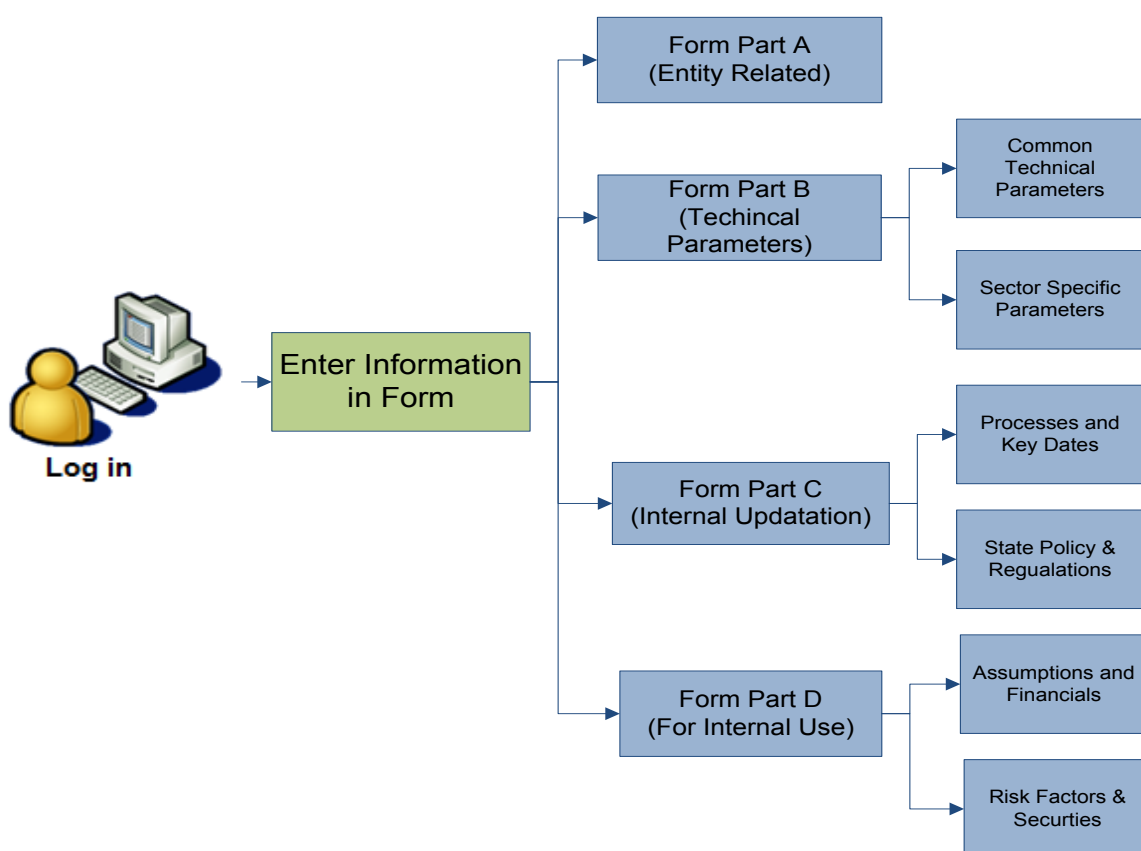
Where the understanding of the Implementer gathered in the Analysis Phase is not found to be in line with the business rule and transaction flow at IREDA, it may be brought to the notice of the Implementer at the earliest and before signing this document. It may be observed that this document would serve the foundation stone in development of the future Online Loan Application Process and Credit Risk Rating System (CRRS) for IREDA. Any material errors / omissions in the present document may be brought to the notice of the Implementer by the concerned department.

It may be noted that wherever formats of Reports/Functionalities are required to be given by IREDA, which has not been provided until now or is not provided in a timely manner in the time to come as per the Project Plan already submitted, it would result in non-availability of such Report/Functionality in the system. Any implications/costs arising out such delay or non-availability would be on IREDA.

2 Application Process

The new IREDA's project application form consists of 4 sections-Part A, Part B, Part C and Part D. Part B, Part C & Part D further consists of 2 parts each. A and B are for the borrower to fill and Part C and D are for internal Use where IREDA's Team can record details pertaining to a particular applicant. The application forms will be submitted online in a secure environment where the applicant for the loan will have a unique user ID and password. This will allow the user to apply, save and submit the form through a web portal. This form can be filled by the customer himself and verified by the IT department or the technical department at IREDA.

APPLICATION PROCESS



The new application form will be broadly divided into four parts:

PART A- Part A of the application is a generalised form common for all the sectors that will capture the information of the entity/promoter of the project.

PART B- Part B consists of the technical parameters for the project.

Part B1-Common Technical Parameters-It consists of technical parameters common for all sectors and

Part B2- Specific Technical Parameters- It consists of technical parameters that are specific to a particular sector. The various Sectors are:-

Sector	Sub-Sector
Solar Energy	Solar Power Rooftop PV Off-grid Land based Grid Connected PV CSP Grid CSP Industrial
Wind Energy	
Hydro Energy	
Energy Efficiency	Energy Efficiency ESCO
Biomass	Biomass Bagasse Cogeneration
Waste to Energy	Biomass Gasifier Biogas Generation Boiling Power Generation from Biogas

PART C- Part C of the form relates to internal upgradation of the information on the form. The sub parts of the form are:

Part C1- Processing and Key Dates: Update on the form processing internally in IREDA.

Part C2- State and Policy Regulations: Update on the State/ Policy regulations that relate to the Project location.

PART D- This part is used for internal purpose only. This part contains the following subparts:

Part D1- Assumptions and Financials- This contains any assumptions that the verifying officer makes when they view the form to analyse the financial data.

Part D2- Risk Factors Securities: This field contains information on the various risks such as sponsor risk, permitting risk, execution risk, operating risk, Generation Risk, off take Risk, etc.

3 Application Process for all the Sectors

The form will have the flexibility which will allow the user to freely move among the content of the form. The content of the existing form for which the information is currently required is as follows:

3.1 Common Parameters

The Common parameters as per the existing loan application form are common for all the sectors and the information it captures is as follows:

S no.	Particulars	Details
1	Summary of the Proposal	This field describes the brief detail of the project such as cost, Capacity of plant, sector and details of the mode of payment of the application fee
2	Particulars of the applicant company	This field contains the information of the applicant such as name, address telephone, email etc.
3	Legal status of the applicant	This field contains the information of the company such as the legal status, date of incorporation etc.
4	Existing activities of applicant	This field describes the existing activities and the business of the borrower.
5	Performance details of the applicant	This field includes the detailed information of the client such as the rating information, financial performance, RBI creditability etc.
6	Security offered	This field describes the source of the security offered by the client to borrow the loan such as bank Guarantee, Government Guarantee, Mortgage, etc., and the list of the guarantors
7	Risk factors as perceived by the applicant	This field indicates the list of risk factors in the project as perceived by the applicant
8	Employment generation	This field has the information for the manpower required in the project.
9	Social & economic benefits	This field has information for items such as Import Substitution, Import Substitution, end-products etc.
10	List of enclosures	This will be a check list for the list of enclosed documents with the such as Demand Draft, Copies of DPR, and other documents to support the information furnished in the application form.

3.2 Sector Wise Parameters for Application Form

3.2.1 Grid Interactive Solar Power Generation Project

S no.	Particulars	Details
-------	-------------	---------

1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc
2	Technical	Captures the information for solar PV grid connected project and solar thermal grid connected project in the areas such as Metrological parameters for the site, PV module type, technical details PV module, solar thermal technology, area requirement, etc.
3	Procurement Procedure	Captures the information on details of procurement procedure, detailed quotation evaluation report, mode of implementation of the project, etc
4	Commercial	Captures the information in the areas of proposed project cost estimates, proposed means of financing, purpose of proposed project, status of state regulatory commission approved PPA in case of sale to SEB / DISCOM, captive consumption, and performance indicators
5	Environmental Impact	Captures details of environmental benefits expected by putting up Grid Interactive Solar PV Power Generation Projects

3.2.2 Wind Farm Project

S no.	Particulars	Details
1	General	This field contains the information of the proposed plant capacity, proposed location and other details of the project.
2	Technical	This field contains information of details relating to resources, estimation of power generation, project configuration, procurement procedure, power evacuation and mode of implementation
3	Commercial	This field contains information of proposed project cost, estimates, proposed means of financing, purpose of proposed project, marketing arrangement, status of commissioning, assumptions taken for performance indicators and financial

		performance indicators.
4	Environmental Impact	This field contains information of environmental benefits expected by putting up Wind farm project.
5	Sector Specific Any Other Information	Captures any other information related to the sector.
6	Sector Specific Approvals-	This field contains information of Enclosed Documents/Papers issued by any authority and list of other enclosed documents.

3.2.3 Hydro Power Project

S no.	Particulars	Details
1	General	This field contains the information of name of the project, proposed installed capacity of the project, proposed location of the project, etc.
2	Technical	This field captures the information for details relating to resources, estimation of power generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Impact Assessment	Analysis to be provided as per the guidelines for issues such as environmental mitigation or management plan, access road to site, minimum water flow and major environmental issues
5	Social Impact Assessment	Analysis to be provided as per the guidelines for issues pertaining to details of land under different tenure system such as forest, dongar/hills, river bed, etc., and it

		patterns of current use.
6	Other Information	Captures any other important information
7	Enclosures (Essential for Registration)	Captures the list of the enclosures with the form. Some of the items in the list are Letter of Intent / MOU with the state, copy of wheeling agreement for captive use, power purchase agreement, three copies of the detailed project report and latest annual report of third party purchaser.

This form also contains the format for Environmental and social impact assessment

3.2.4 Biomass Power Project

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information relating to details of resources, estimation of energy generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Benefits	This field captures information to Provide details of environmental benefits expected by putting up Biomass Power project and Impact of such a project on Environment
5	Expected Social Benefits	This field captures the information of the social benefits, envisaged through the proposed project, which includes direct and indirect employment, income generation, impact on the cultivation patterns etc.
6	Sector Specific	The list of approvals and copy of such

	Approvals	registration to be enclosed with the form. some of them are copy of project site & project capacity registration, in-principle consent / clearance from state pollution control board, clearance for the project from department of environment & forest, etc.
7	Other Documents to be Submitted with Application	This contains the checklist for the documents to be submitted along with the form. some of these documents are copies of DPR, agreement related to land and site, EIA report, etc.

3.2.4.1 Biomass /Bagasse Based Cogeneration Project

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information relating to details of resources, estimation of energy generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Benefits	This field captures information to Provide details of environmental benefits expected by putting up Biomass Power project and Impact of such a project on Environment
5	Expected Social Benefits	This field captures the information of the social benefits, envisaged through the proposed project, which includes direct and indirect employment, income generation, impact on the cultivation patterns etc.
6	Sector Specific	The list of approvals and copy of such registration to be enclosed with the form.

	Approvals	some of them are copy of project site & project capacity registration, in-principle consent / clearance from state pollution control board, clearance for the project from department of environment & forest, etc.
7	Other Documents to be Submitted with Application	This contains the checklist for the documents to be submitted along with the form. some of these documents are copies of DPR, agreement related to land and site, EIA report, etc.

3.2.5 Waste to Energy Project

S no.	Particulars	Details
1	Project Highlights	This segment of the form captures information of type of project, Proposed Installed Capacity of the Project in MW, Proposed Technology, Capacity Utilisation factor in %, etc.
2	Location Feature	This field captures information for proposed location of the project, accessibility to proposed location of the project, special category for location and details of proposed project land.
3	Technical	This field captures information on Details of the consultant, Proposed technology supplier, Basis of selection of the proposed Technology, Type of wastes and Characteristics of wastes
4	Commercial	This field captures information in schedules namely proposed project cost estimates, proposed means of financing, performance indicators, assumptions taken for performance indicator, implementation schedule, fund drawl schedule and applicants perception of the risk involved in the project
5	Environmental Benefits	Provide details of environmental benefits expected by putting up the project
6	Sector Specific Approvals	Captures information for the list of approvals and clearances to be taken up by authorities such as Pollution Control Board's

		Clearance, State Government clearance for setting up the project
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3.2.6 Energy Efficiency & Conservation

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information in the fields of present energy usage details, estimated energy savings from the project, project configuration, procurement procedure, specific energy consumption and mode of implementation etc.
3	Commercial	This field captures information in schedules namely proposed project cost estimates, proposed means of financing, implementation schedule, fund drawl schedule, expected month & year of commissioning, assumptions taken for performance indicator and performance indicators.
4	Environmental Impact	Capture details of environmental benefits expected by setting up Energy Efficiency/Conservation Project.
5	Social Impact	Provide details of social benefits expected by setting up Energy Efficiency /Conservation Project.
6	Sector Specific and Other Information	Capture information in the fields of Energy Auditor's/Consultant's Details, Name & Address of the Consultant who has prepared the DPR etc.
7	Sector Specific Approvals	Contains the list of approvals and documents to be attached with the form. Some of them are Schematic diagram of the process/system, Organization Chart, Energy Audit Report, MOU/Agreement with third party, Detailed Project Report among others.

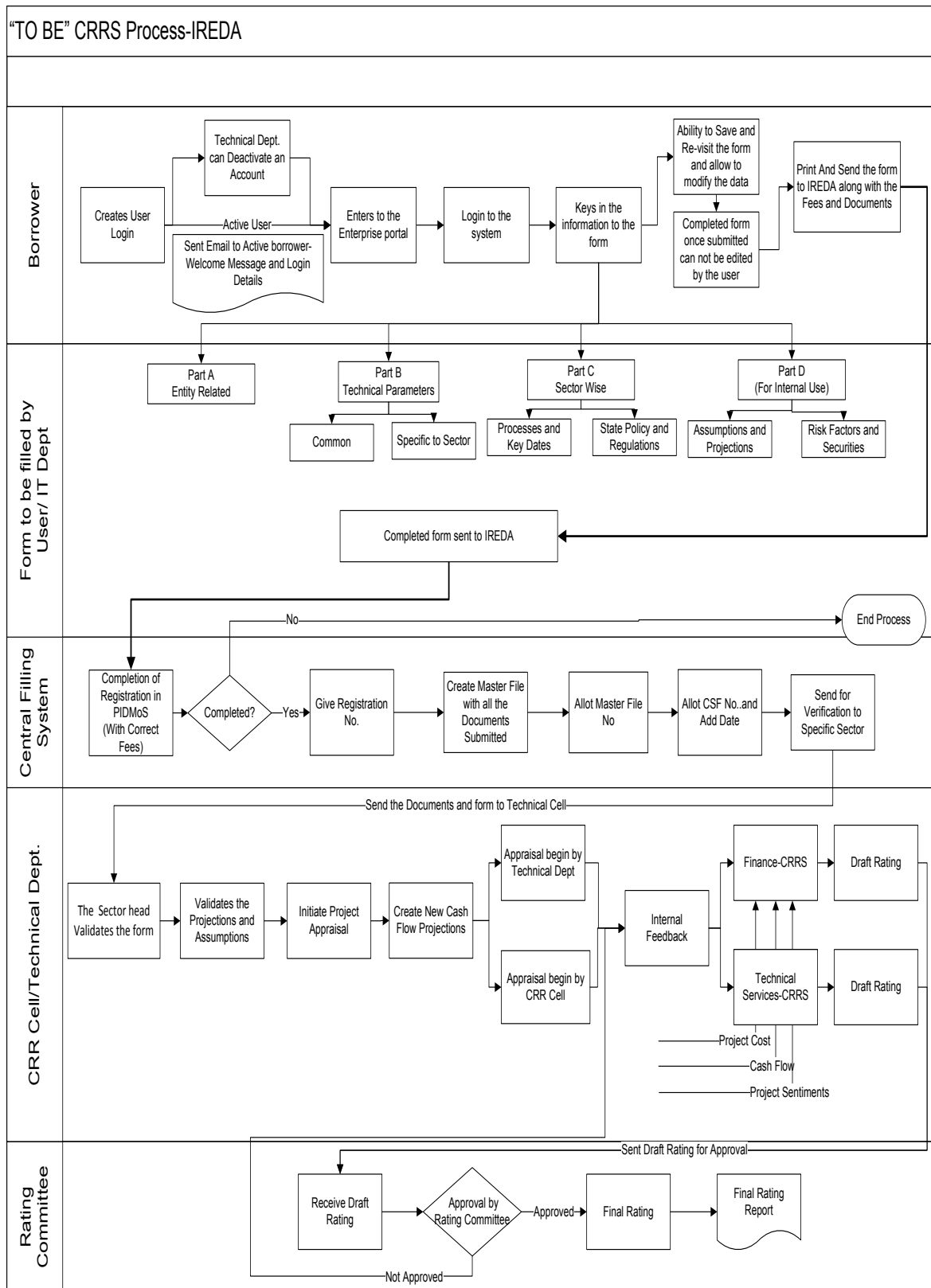
4 System in Dynamics AX

The online forms can be filled either by the borrowers through a web portal, or by the IT or technical staff at IREDA. The system will have the following functionalities:

16.	Availability of the loan application form (Part A and Part B) online.
17.	Ablity to submit the form A and B online in a secure environment by providing a unique User ID and Password.
18.	Part C and Part D of the loan application form is for internal process and monitoring and has to be updated by Technical Dept/ IT Dept.
19.	To Sent a welcome note, login information and other details through email to the new borrower applying online.
20.	Forms available to IREDA Technical cell and IT Staff to validate the data.
21.	Part B1 and Part B2 of the Form will be available to sector specific IREDA Staff to view/validate it and if needed to modify/update it by obtaining permmision from the concerned authorized personnel.
22.	Map the input data in the application forms with those to be used in the CRRS model where ever possible.
23.	Automatically let the application data be available in a temporary initial proposed scoring at parameter level.
24.	In case of missing data/incorrect data the IREDA staff must be able to fill/appraise the existing information in the form.
25.	To maintain the Audit trail for any modifications made in any information by maintaining a log such as the information modified, modified and validated by, date and time of modification
26.	The staff can at any moment be able to save the work in progress and at any moment come back after an unlimited period break to complete the scoring.
27.	The IREDA staff should at any moment be able to move freely from data to data and through short-cuts move from parameter or groups of parameters.
28.	At the end of the scoring the CRRS staff will press a button to finalize the scoring and a version number of the score will be issued automatically by the system as well as the complete score parameter values will be stored in an archive.
29.	CRRS staff need to modify this score a new version number is issued and the complete score set saved in an

	archive.
30.	Each session of the CRRS staffs work should be stored with changes made during the period. I.e. time entered and changes made in system should be recorded.

5 "TO BE" CRRS Process-Solar Power Grid Plant



5.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

5.1.1 Grid Interactive Solar Power Generation Project

The following are the existing fields of the loan application form for Solar Sector which will be amended as per the new form format.

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc
2	Technical	Captures the information for solar PV grid connected project and solar thermal grid connected project in the areas such as Metrological parameters for the site, PV module type, technical details PV module, solar thermal technology, area requirement, etc.
3	Procurement Procedure	Captures the information on details of procurement procedure, detailed quotation evaluation report, mode of implementation of the project, etc
4	Commercial	Captures the information in the areas of proposed project cost estimates, proposed means of financing, purpose of proposed project, status of state regulatory commission approved PPA in case of sale to SEB / DISCOM, captive consumption, and performance indicators
5	Environmental Impact	Captures details of environmental benefits expected by putting up Grid Interactive Solar PV Power Generation Projects

5.1.2 Solar Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a

score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating in the existing model are divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Solar Grid Power Plant: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the grid, etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

5.1.3 Balance sheet Analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

5.1.4 Existing Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>

Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILD T	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX
Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX

(figures in bracket indicate % of total Income)

XYZ Ltd			
Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii.Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX
Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX

G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project)

This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

5.1.5 List of ratios to be calculated for the analysis

Ratios	Formulas
Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / (\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory} / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods} / 2)$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors} / 2))$
Profitability Ratios (%)	

a. PBILDT margin	$(\text{PBILDT}/\text{Total Income or Sales}) * 100$
b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networkth	$\text{PAT} * 100 / ((\text{Current Tangible Networkth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total Networkth	$\text{Contingent Liabilities}/\text{Tangible Networkth}$

5.1.6 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

income					
Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/ (Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))

application money					
Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

5.1.7 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A	Entity/Promoter	(1)	(2) User Defined	(3) Master	(4)	(5) (2*4)	(6)	(7) Master	(8) (6*7)
	Ratio of Network contribution	8 6 4 2 0	6	1	3	18			
	Ratio of liquid Network worth to contribution	8 4 2 0	8	3	1	8			
	Ability to raise additional funds	8 4 0	8	2	2	16			
	Total A				6	42	87.5	0.4	<u>35</u>
B	State/Policy								
	Setting up of SE	8 4 0	8	1	3	24			
	Achieved / implemented								
	In process								
	Not achieved / implemented								

C	Unbundling of SEB⁸		4		2	2	8			
	Achieved / implemented	4			2					
	In process									
	Not achieved / implemented	0								
	Privatisation of SEBs activities		4		3	1	4			
	Achieved / implemented	8								
	In process	4								
	Not achieved / implemented	0								
	Total B		16				36	75	0.4	<u>30</u>
	Project									
	Available Solar Power Density	8	8		2	2	16			
	Adequate	4			2					
	Satisfactory	0								
	Inadequate									
	Variation in solar Power Density	8	4		1	3	12			
	Low variation	4								
Moderate variation	0									
High variation										
Location of the Plant	8	4		3	1	4				
Good	4									
Average	0									
Below average										
Total C		16		1	8	32	67	0.2	<u>13.4</u>	
Grand Total (A+B+C)									<u>78.4</u>	

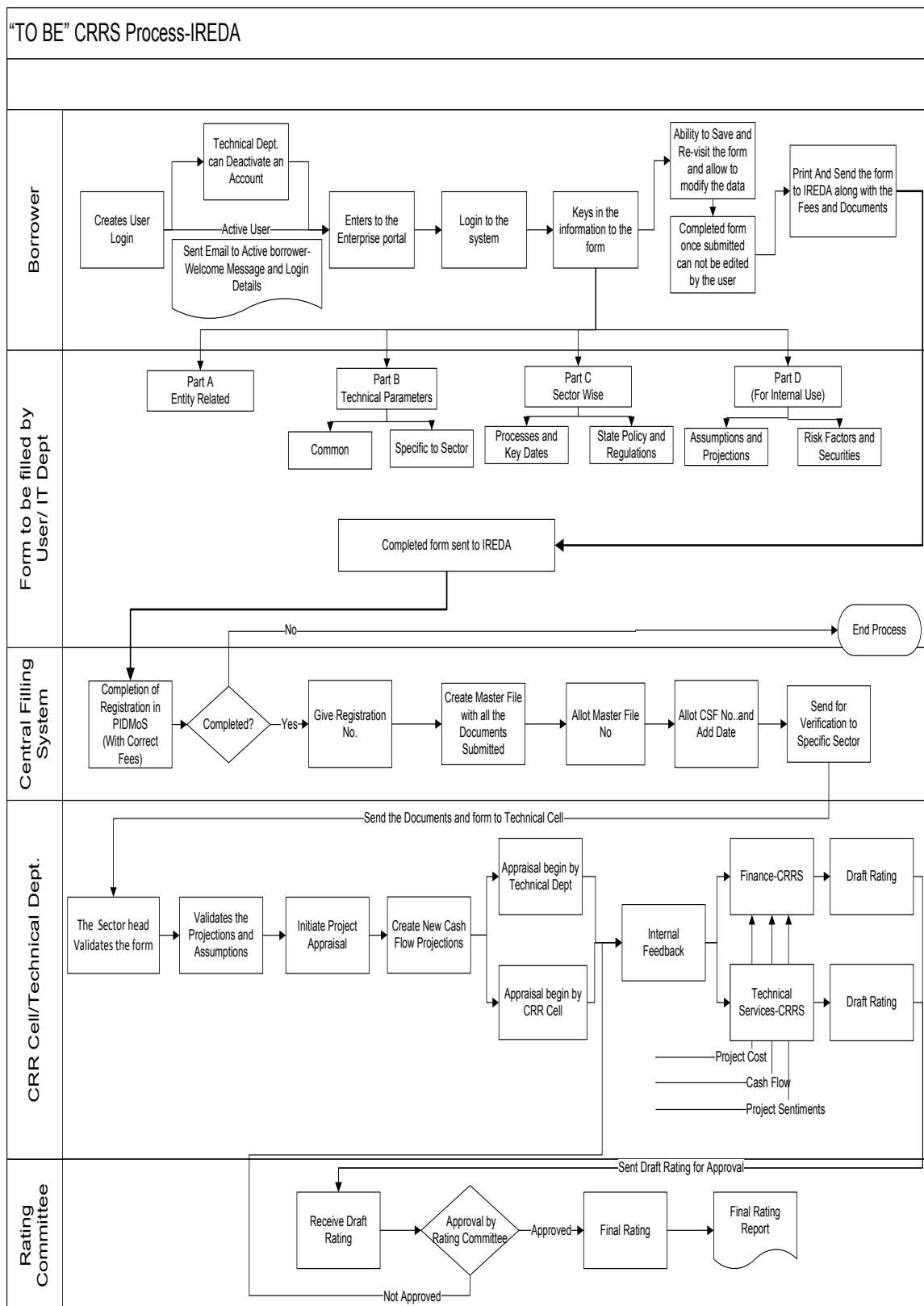
Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

5.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

6 "TO BE" CRRS Process-Wind farm Project



6.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

6.1.1 Wind Farm Project

The following are the existing fields of the loan application form for Wind Sector which will be amended as per the new form format.

S no.	Particulars	Details
1	General	This field contains the information of the proposed plant capacity, proposed location and other details of the project.
2	Technical	This field contains information of details relating to resources, estimation of power generation, project configuration, procurement procedure, power evacuation and mode of implementation
3	Commercial	This field contains information of proposed project cost, estimates, proposed means of financing, purpose of proposed project, marketing arrangement, status of commissioning, assumptions taken for performance indicators and financial performance indicators.
4	Environmental Impact	This field contains information of environmental benefits expected by putting up Wind farm project.
5	Sector Specific Any Other Information	Captures any other information related to the sector.
6	Sector Specific Approvals-	This field contains information of Enclosed Documents/Papers issued by any authority and list of other enclosed documents.

6.1.2 Wind Sector Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a

score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating are Currently divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Wind Farm Project: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the plant, etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

6.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

6.1.4 Existing Sample Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010

Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILDT	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX
Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			

XYZ Ltd			
Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii. Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX
Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)

- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project). This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

Ratios	Formulas
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6.1.1 List of ratios to be calculated for the analysis

Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / ((\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory}) / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods}) / 2)$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors}) / 2))$
Profitability Ratios (%)	
a. PBILDT margin	$(\text{PBILDT} / \text{Total Income or Sales}) * 100$

b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networkth	$\text{PAT} * 100 / ((\text{Current Tangible Networkth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total Networkth	$\text{Contingent Liabilities}/\text{Tangible Networkth}$

6.1.2 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other income	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/ (Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share application money	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))

Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

6.1.3 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Crit eria	Parameter Name	Scor e Standard	Score Actual	Level Of Importa nce	Weig htag e	Actual weight ed Score	%Wei ghted Score	Weigh t for Criteri a	Total Weightage Score
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A	Entity/Prom		User Defined			(2*4)		Master	(6*7)
	Ratio of Net contribution	8	6	1	3	18			
	X > 5	6							
	5 > X > 3	4							
	3 > X > 2	2							
	2 > X > 1	0							
	X < 1								
	Ratio of liqui								
	Networth to contribution	8	8	3	1	8			
	X > 3	4							
	3 > X > 1	2							
	1 > X > 0.75	0							
	X < 0.75								
	Ability to raise additional fu	8	8	2	2	16			
	High	4							
	Adequate	0							
	Inadequate								
	Total A				6	42	87.5	0.4	<u>35</u>
B	State/Policy								
	Setting up o	8	8	1	3	24			
	Achieved / implemented	4							
	In process	0							
	Not achieved implemented								
		8		2	2	8			

C	Unbundling of SEB	4							
	Achieved / implemented	4							
	In process	0							
	Not achieved / implemented								
	Privatisation of SEBs activities	8	4	3	1	4			
	Achieved / implemented	4							
	In process	0							
	Not achieved / implemented								
	Total B		16				36	75	0.4
	Project								
Available Solar Power Density	8	8	2	2	16				
Adequate	0								
Satisfactory									
Inadequate	8								
Variation in solar Power Density	4	4	1	3	12				
Low variation	0								
Moderate variation									
High variation	8								
Location of the Plant	4	4	3	1	4				
Good	0								
Average									
Below average									
Total C		16	1	8	32	67	0.2	13.4	
Grand Total (A+B+C)								78.4	

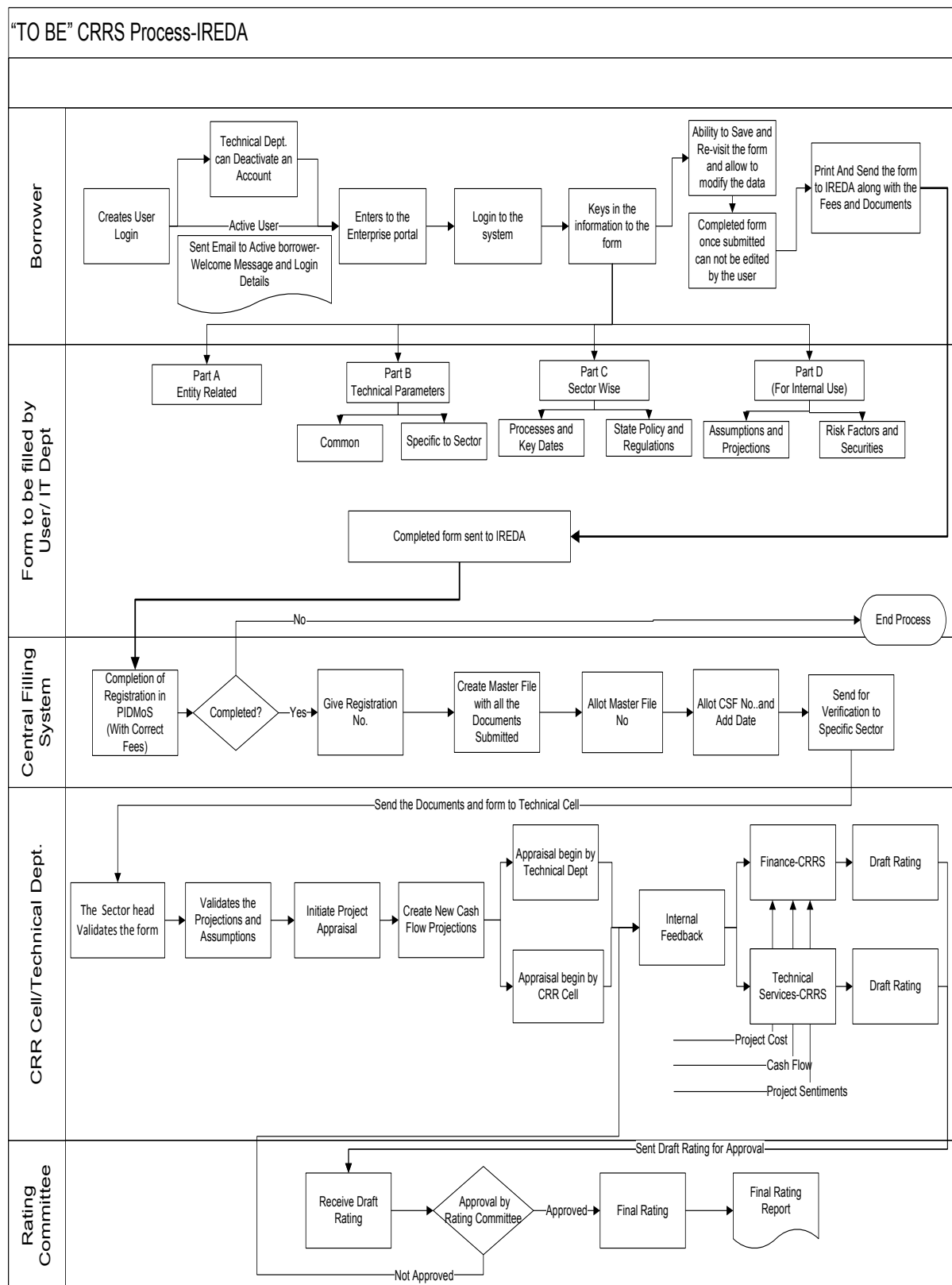
Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

6.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

7 "TO BE" CRRS Process- Small Hydro Power Project



7.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission.

7.1.1 Small Hydro Power Project

The following are the existing fields of the loan application form for Hydro Sector which will be amended as per the new form format.

S no.	Particulars	Details
1	General	This field contains the information of name of the project, proposed installed capacity of the project, proposed location of the project, etc.
2	Technical	This field captures the information for details relating to resources, estimation of power generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Impact Assessment	Analysis to be provided as per the guidelines for issues such as environmental mitigation or management plan, access road to site, minimum water flow and major environmental issues
5	Social Impact Assessment	Analysis to be provided as per the guidelines for issues pertaining to details of land under different tenure system such as forest, dongar/hills, river bed, etc., and it patterns of current use.
6	Other Information	Captures any other important information
7	Enclosures (Essential	Captures the list of the enclosures with the

	for Registration)	form. Some of the items in the list are Letter of Intent / MOU with the state, copy of wheeling agreement for captive use, power purchase agreement, three copies of the detailed project report and latest annual report of third party purchaser.
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7.1.2 Small Hydro Power Plant Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the existing rating model is divided in three categories:

- 1 Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Small hydro power plant: This field pertains to the various attributes of the sector such as size/ capacity of the project, location, source of water, capacity of turbine etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

7.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

7.1.4 Existing Format for Financial Statement Analysis

XYZ Ltd			
Past Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILDT	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)

Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX
Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			
XYZ Ltd			
Past Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii.Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX

e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX
Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project). This Sheet will be a part of the application form where this will be filled by the Borrower and also a

Ratios	Formulas
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part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

7.1.5 List of ratios to be calculated for the analysis

Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / ((\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory}) / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods}) / 2$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors}) / 2)$
Profitability Ratios (%)	
a. PBILDT margin	$(\text{PBILDT} / \text{Total Income or Sales}) * 100$

b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networkth	$\text{PAT} * 100 / ((\text{Current Tangible Networkth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total networkth	$\text{Contingent Liabilities}/\text{Tangible Networkth}$

7.1.6 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other income	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less:	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

Extraordinary items (income net of expenses)					
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share application money	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)

e) in Long term debt)))))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

7.1.7 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.
- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained

in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.

- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entity/Promoter		User Defined			(2*4)		Master	(6*7)
	Ratio of Network contribution	8 6 4 2 0	6	1	3	18			
	X > 5 5 > X > 3 3 > X > 2 2 > X > 1 X < 1								
B	Ratio of liquid Network to contribution	8 4 2 0	8	3	1	8			
	X > 3 3 > X > 1 1 > X > 0.75 X < 0.75								
	Ability to raise additional funds	8 4 0	8	2	2	16			
	High Adequate Inadequate								
	Total A				6	42	87.5		<u>35</u>
B	State/Policy							0.4	
	Setting up of S	8 4 0	8	1	3	24			
	Achieved / implemented In process Not achieved / implemented								
	Unbundling of	8 4	4	2	2	8			
	Achieved /								

C	implemented	0								
	In process									
	Not achieved / implemented									
	Privatisation of SEBs activities	8	4	3	1	4				
	Achieved / implemented	4								
	In process	0								
	Not achieved / implemented									
	Total B		16				36	75	0.4	<u>30</u>
	Project									
	Available Solar Power Density	8	8	2	2	16				
	Adequate	0								
	Satisfactory									
	Inadequate	8		1	3	12				
	Variation in solar Power Density	4	4							
	Low variation	0								
Moderate variation										
High variation	8		3	1	4					
Location of the Plant	4	4								
Good	0									
Average										
Below average			1	8	32		67		<u>13.4</u>	
Total C		16						0.2	<u>78.4</u>	
Grand Total (A+B+C)										

Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

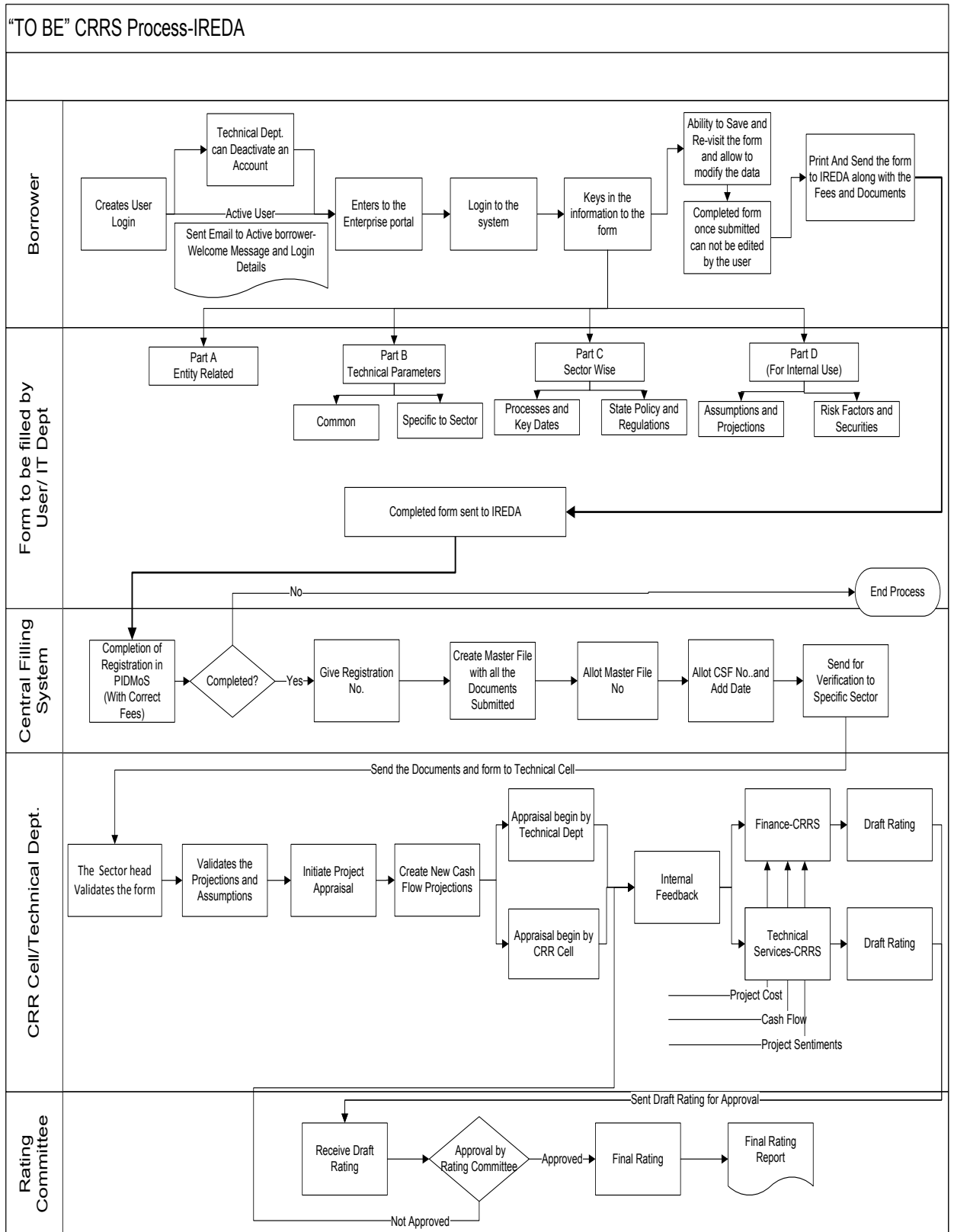
This total weighted score of all the parameters is translated to get the ratings.

7.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel.

		Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

8 "TO BE" CRRS Process- Biomass Power Project



8.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

8.1.1 Biomass Power Project

The following are the existing fields of the loan application form for Biomass Power Sector which will be amended as per the new form format.

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information relating to details of resources, estimation of energy generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Benefits	This field captures information to Provide details of environmental benefits expected by putting up Biomass Power project and Impact of such a project on Environment
5	Expected Social Benefits	This field captures the information of the social benefits, envisaged through the proposed project, which includes direct and indirect employment, income generation, impact on the cultivation patterns etc.
6	Sector Specific Approvals	The list of approvals and copy of such registration to be enclosed with the form. some of them are copy of project site & project capacity registration, in-principle

		consent / clearance from state pollution control board, clearance for the project from department of environment & forest, etc.
7	Other Documents to be Submitted with Application	This contains the checklist for the documents to be submitted along with the form. some of these documents are copies of DPR, agreement related to land and site, EIA report, etc.

8.1.2 Biomass Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating are presently divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Biomass Power Project: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the plant, ease of substitution of energy etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

8.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be

verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

8.1.4 Existing Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILD T	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX

Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			

XYZ Ltd			
Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii.Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX

Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project)

This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

8.1.5 List of ratios to be calculated for the analysis

Ratios	Formulas
Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / (\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory} / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods} / 2)$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors} / 2))$

Profitability Ratios (%)	
a. PBILD margin	$(\text{PBILD}/\text{Total Income or Sales}) * 100$
b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2)$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Network	$\text{PAT} * 100 / ((\text{Current Tangible Network} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2) * 100$
Contingent Liabilities to total Network	$\text{Contingent Liabilities}/\text{Tangible Network}$

8.1.6 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

income/other income					
Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)	XXX/(XXX)

e) in Share application money)))))
Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

8.1.7 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entity/Prom		User Defined			(2*4)		Master	(6*7)
	Ratio of Net contribution	8 6 4 2 0	6	1	3	18			
	X > 5 5 > X > 3 3 > X > 2 2 > X > 1 X < 1								
A	Ratio of liq Networth t contribution	8 4 2 0	8	3	1	8			
	X > 3 3 > X > 1 1 > X > 0.75 X < 0.75								
	Ability to ra additional f	8 4 0	8	2	2	16			
	High Adequate Inadequate								
B	Total A				6	42	87.5	0.4	<u>35</u>
	State/Policy								
	Setting up	8 4 0	8	1	3	24			
	Achieved / implemented In process Not achieved implemented								
		8	4	2	2	8			

C	Unbundling of SEB							
	Achieved / implemented	4						
	In process	0						
	Not achieved / implemented							
	Privatisation of SEBs activities	8	4	3	1	4		
	Achieved / implemented	4						
	In process	0						
	Not achieved / implemented		16			36	75	0.4
	Total B							
	Project							
	Available Solar Power Density	8	8	2	2	16		
	Adequate	0						
	Satisfactory							
	Inadequate	8	4	1	3	12		
Variation in solar Power Density	4							
Low variation	0							
Moderate variation								
High variation	8	4	3	1	4			
Location of the Plant	0							
Good								
Average								
Below average		16	1	8	32	67	0.2	
Total C								
Grand Total (A+B+C)							<u>78.4</u>	

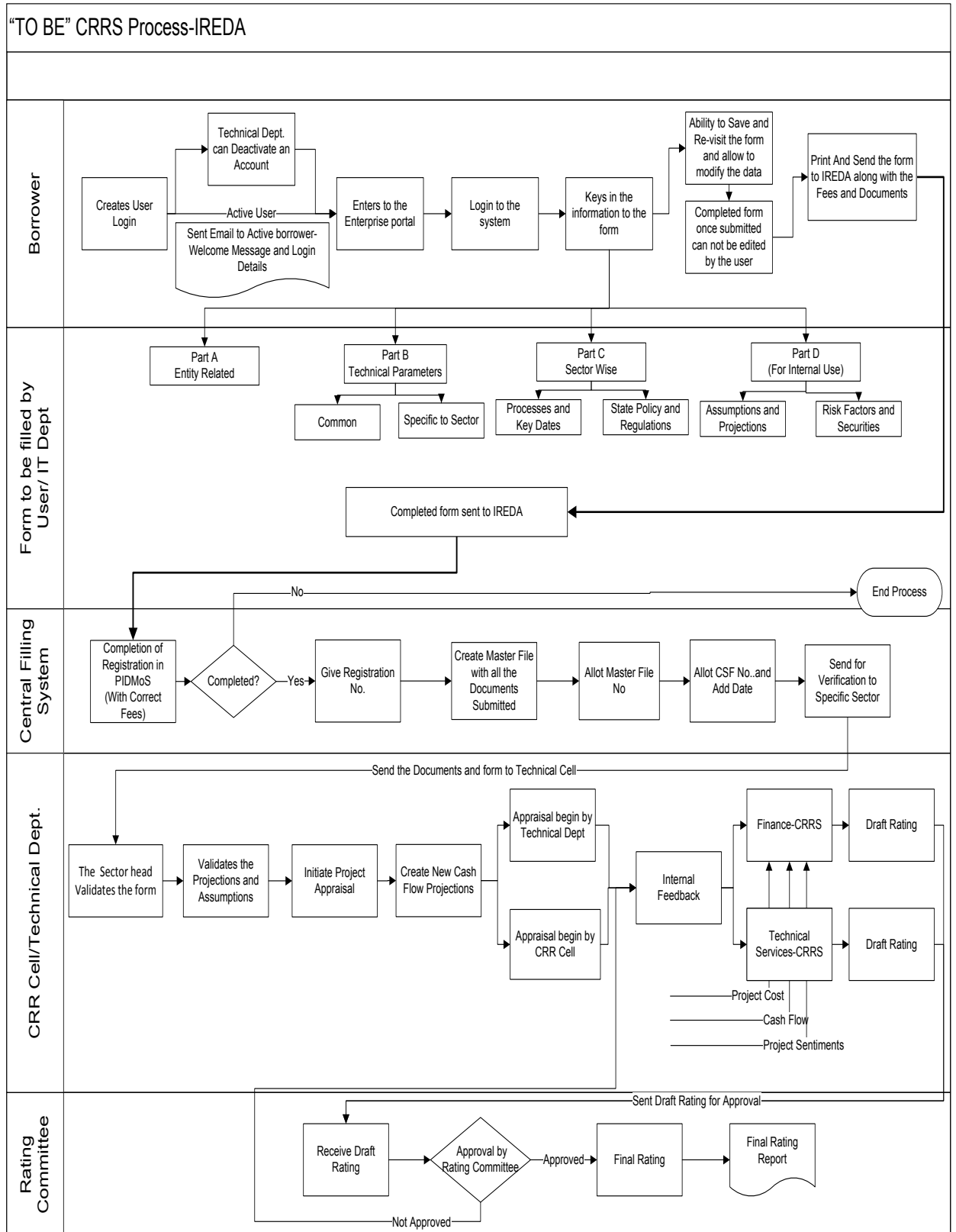
Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

8.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

9 "TO BE" CRRS Process- Biomass/ Bagasse based cogeneration Project



9.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

9.1.1 Biomass /Baggesse Based Cogeneration Project

The following are the existing fields of the loan application form for Biomass /Baggesse Sector which will be amended as per the new form format.

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information relating to details of resources, estimation of energy generation, project configuration procurement procedure, power evacuation and mode of implementation.
3	Commercial	This field captures the information for proposed project cost estimates, proposed means of financing, purpose of the project, marketing arrangement, implementation schedule, assumptions taken for performance indicators and performance indicators.
4	Environmental Benefits	This field captures information to Provide details of environmental benefits expected by putting up Biomass Power project and Impact of such a project on Environment
5	Expected Social Benefits	This field captures the information of the social benefits, envisaged through the proposed project, which includes direct and indirect employment, income generation, impact on the cultivation patterns etc.
6	Sector Specific Approvals	The list of approvals and copy of such registration to be enclosed with the form. some of them are copy of project site &

		project capacity registration, in-principle consent / clearance from state pollution control board, clearance for the project from department of environment & forest, etc.
7	Other Documents to be Submitted with Application	This contains the checklist for the documents to be submitted along with the form. some of these documents are copies of DPR, agreement related to land and site, EIA report, etc.

9.1.2 Biomass/ Bagasse Cogeneration Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating are presently divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Biomass/Bagasse Cogeneration Project: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the plant, ease of substitution of energy etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

9.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

9.1.4 Existing Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILDT	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX

less Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX
Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			

XYZ Ltd			
Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii.Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX

d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX
Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current

Ratios	Formulas
--------	----------

Year and N is maximum Length to complete the project)

This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

9.1.5 List of ratios to be calculated for the analysis

Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / ((\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory}) / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods}) / 2$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors}) / 2)$
Profitability Ratios (%)	
a. PBILDT margin	$(\text{PBILDT} / \text{Total Income or Sales}) * 100$

b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networkth	$\text{PAT} * 100 / ((\text{Current Tangible Networkth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total Networkth	$\text{Contingent Liabilities}/\text{Tangible Networkth}$

9.1.6 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other income	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/ (Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share application money	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))

Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

9.1.7 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entity/Pro		User Define			(2*4)		Master	(6*7)
	Ratio of Net contribut	8 6 4 2 0	6	1	3	18			
	X > 5								
	5 > X > 3								
	3 > X > 2								
	2 > X > 1								
	X < 1								
	Ratio of li	8 4 2 0	8	3	1	8			
	Networth contribut								
X > 3									
3 > X > 1									
1 > X > 0.									
X < 0.75									
Ability to additional	8 4 0	8	2	2	16				
High									
Adequate									
Inadequat									
Total A					6	42	87.5	0.4	<u>35</u>
B	State/Pol								
	Setting up	8 4 0	8	1	3	24			
	Achieved implement								
In process									
Not achieved									
implement									

C	Unbundling of SEB								
	Achieved / implemented	8	4	2	2	8			
	In process	4							
	Not achieved / implemented	0							
	Privatisation of SEBs activities								
	Achieved / implemented	8	4	3	1	4			
	In process	4							
	Not achieved / implemented	0							
	Total B					36	75	0.4	<u>30</u>
	Project		16						
	Available Solar Power Density								
	Adequate	8		2	2	16			
	Satisfactory	4	8						
	Inadequate	0							
	Variation in solar Power Density								
	Low variation	8	4	1	3	12			
Moderate variation	4								
High variation	0								
Location of the Plant									
Good	8	4	3	1	4				
Average	4								
Below average	0								
Total C			1	8	32	67	0.2	<u>13.4</u>	
Grand Total (A+B+C)		16						<u>78.4</u>	

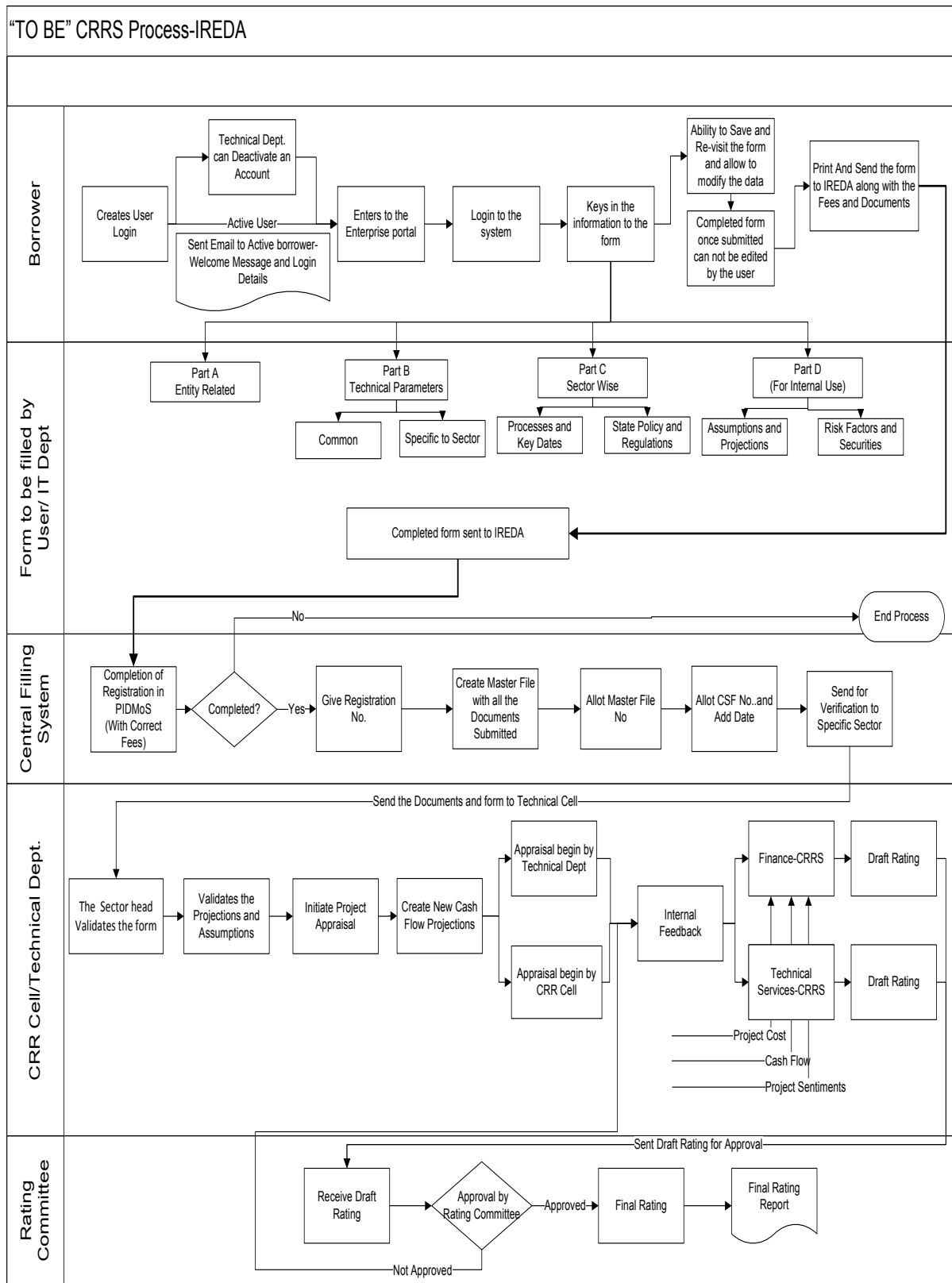
Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

9.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

10 TO BE" CRRS Process- Waste to Energy Project



10.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

10.1.1 Waste to Energy Project

The following are the existing fields of the loan application form for Waste to Energy Project which will be amended as per the new form format.

S no.	Particulars	Details
1	Project Highlights	This segment of the form captures information of type of project, Proposed Installed Capacity of the Project in MW, Proposed Technology, Capacity Utilisation factor in %, etc.
2	Location Feature	This field captures information for proposed location of the project, accessibility to proposed location of the project, special category for location and details of proposed project land.
3	Technical	This field captures information on Details of the consultant, Proposed technology supplier, Basis of selection of the proposed Technology, Type of wastes and Characteristics of wastes
4	Commercial	This field captures information in schedules namely proposed project cost estimates, proposed means of financing, performance indicators, assumptions taken for performance indicator, implementation schedule, fund drawl schedule and applicants perception of the risk involved in the project
5	Environmental Benefits	Provide details of environmental benefits expected by putting up the project
6	Sector Specific Approvals	Captures information for the list of approvals and clearances to be taken up by authorities such as Pollution Control Board's Clearance, State Government clearance for

	setting up the project
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10.1.2 Waste to Energy Project Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating are presently divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Biomass/Baggasse Cogeneration Project: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the plant, ease of substitution of energy etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

10.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

10.1.4 Existing Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILD T	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX
Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX

Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			

XYZ Ltd			
Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii. Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX
Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX

e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project)

This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

10.1.4 List of ratios to be calculated for the analysis

Ratios	Formulas
Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / (\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory} / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods} / 2)$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors} / 2))$
Profitability Ratios (%)	

a. PBILDT margin	$(\text{PBILDT}/\text{Total Income or Sales}) * 100$
b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networth	$\text{PAT} * 100 / ((\text{Current Tangible Networth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total Networth	$\text{Contingent Liabilities}/\text{Tangible Networth}$

10.1.5 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other income	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/ (Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share application money	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))

Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

10.1.6 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Entity/Promoter		User Defined			(2*4)		Master	(6*7)
	Ratio of Net contribution	8	6	1	3	18			
	X > 5	4							
	5 > X > 3	2							
	3 > X > 2	0							
	2 > X > 1								
	X < 1								
	Ratio of liquid Networth to contribution	8	8	3	1	8			
	X > 3	4							
3 > X > 1	2								
1 > X > 0.75	0								
X < 0.75									
Ability to raise additional funds	8	8	2	2	16				
High	4								
Adequate	0								
Inadequate									
Total A					6	42	87.5	0.4	<u>35</u>
B	State/Policy								
	Setting up of	8	8	1	3	24			
	Achieved / implemented	4							
In process	0								
Not achieved									
implemented	8		2	2	8				

C	Unbundling of SEB	4							
	Achieved / implemented	4							
	In process	0							
	Not achieved / implemented								
	Privatisation of SEBs activities	8	4	3	1	4			
	Achieved / implemented	4							
	In process	0							
	Not achieved / implemented								
	Total B		16				36	75	0.4
	Project								
	Available Solar Power Density	8	8	2	2	16			
	Adequate	0							
	Satisfactory								
	Inadequate	8							
	Variation in solar Power Density	4	4	1	3	12			
	Low variation	0							
Moderate variation									
High variation	8		3	1	4				
Location of the Plant	4	4							
Good	0								
Average									
Below average			1	8	32	67	0.2	<u>13.4</u>	
Total C		16							
Grand Total (A+B+C)								<u>78.4</u>	

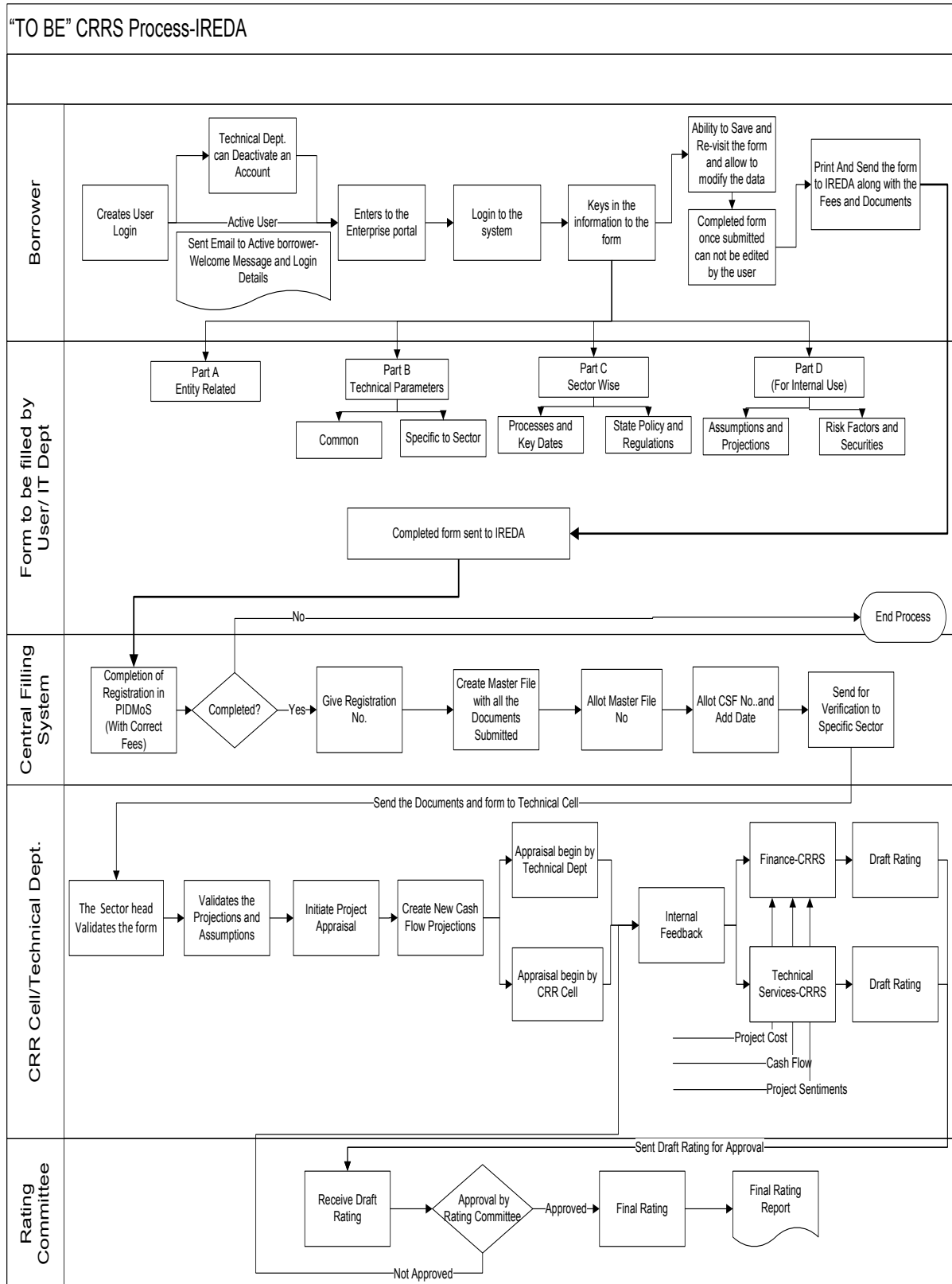
Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

10.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

11 "TO BE" CRRS Process- Energy Efficiency and Conservation Project



11.1 Application Form

The Application forms can be submitted using an Enterprise Portal. The Enterprise Portal for Microsoft Dynamics AX provides a web-based application framework that allows for users to interact with data in Microsoft Dynamics AX through a web browser. The user can be the borrower, member of IT or Technical department at IREDA who can fill and submit an application form. The new user can fill a form in the Enterprise Portal, and also modify existing content till the time of submission. Certain information from the form will be used for CRRS.

11.1.1 Energy Efficiency & Conservation

The following are the existing fields of the loan application form for Energy Efficiency and Conservation which will be amended as per the new form format.

S no.	Particulars	Details
1	General	Captures the information in the fields of proposed capacity of the project, proposed location of the project, accessibility to proposed location of the project etc.
2	Technical	Captures the information in the fields of present energy usage details, estimated energy savings from the project, project configuration, procurement procedure, specific energy consumption and mode of implementation etc.
3	Commercial	This field captures information in schedules namely proposed project cost estimates, proposed means of financing, implementation schedule, fund drawl schedule, expected month & year of commissioning, assumptions taken for performance indicator and performance indicators.
4	Environmental Impact	Capture details of environmental benefits expected by setting up Energy Efficiency/Conservation Project
5	Social Impact	Provide details of social benefits expected by setting up Energy Efficiency /Conservation Project
6	Sector Specific and Other Information	Capture information in the fields of Energy Auditor's/Consultant's Details, Name & Address of the Consultant who has prepared the DPR etc.

7	Sector Specific Approvals	Contains the list of approvals and documents to be attached with the form. Some of them are Schematic diagram of the process/system, Organization Chart, Energy Audit Report, MOU/Agreement with third party, Detailed Project Report among others .
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11.1.2 Energy Efficiency and Conservation Project Based Parameters

Parameters are a collection of scoring criteria that allows the CRRS cell to evaluate the creditability of a borrower. These parameters help the CRRS cell determine a score against which a rating is given. Higher the rating greater is the creditability of the borrower. The Criteria for the rating are presently divided in three categories:

1. Promoter Based criteria: This evaluates the creditability of the individual and the company seeking the loan.
 - a. For an individual the criteria are financial strength, project management Skills and past record with IREDA;
 - b. For the company the analysis is done for company past performance, management skills, project management skills and repayment track record;
 - c. For Industry the analysis is for the financial, regulatory framework, dependence on other industry and level of competition.
2. State analysis: This includes the analysis for the policies governing the individual state. such as PPA, Nodal agency etc.
3. Sector specific analysis- Biomass/Bagasse Cogeneration Project: This field pertains to the various attributes of the sector such as size/ capacity of the project, location of the plant, ease of substitution of energy etc.

The new model will have a seven risk analysis criteria to measure the creditability of the project.

- Sponsor Risks
- Funding and Financial Risks
- Permitting Risks
- Execution Risks
- Operating Risks
- Generation/Fuel Availability Risks
- Off take/Counterparty Credit Risks

11.1.3 Balance sheet analysis

The loan application form must capture details from the balance sheet/s of the applicant company. The information entered in the balance sheet must be

verified by the technical Department. Through this information the system should be able to conduct a financial ratio analysis. Using these ratios the CRRS cell can input the parameter wise score required for rating. The sample format for the balance sheet and the ratios that are presently calculated are listed in the following sections.

11.1.4 Sample Format for Financial Statement Analysis

XYZ Ltd			
Profit & Loss Account			
			<i>(In Rs.)</i>
Year Ended Dec 31,	2008	2009	2010
Sales	XXX	XXX	XXX
Traded Sales	XXX	XXX	XXX
Gross Sales	XXX	XXX	XXX
Net Sales	XXX	XXX	XXX
Add : other operational income	XXX	XXX	XXX
Total Income	XXX	XXX	XXX
Cost of Sales			
a. Raw Material	XXX	XXX	XXX
b. (Increase)/decrease in stock	XXX	XXX	XXX
c. Purchases of traded goods	XXX	XXX	XXX
d. Power & Fuel	XXX	XXX	XXX
e. Stores & consumables	XXX	XXX	XXX
f. Salaries & Wages	XXX	XXX	XXX
g. Other manufacturing expenses	XXX	XXX	XXX
h. Other administrative expenses	XXX	XXX	XXX
i. Marketing expenses	XXX	XXX	XXX
Total Cost of Sales	XXX	XXX	XXX
Gross Profit : PBILD T	XXX	XXX	XXX
<i>less</i> : Depreciation	(XXX)	(XXX)	(XXX)
PBILT	XXX	XXX	XXX
<i>less</i> : Interest	(XXX)	(XXX)	(XXX)
Profit From Operations	XXX	XXX	XXX
<i>add</i> Non Operational Income	XXX	XXX	XXX
Extra ordinary income	XXX	XXX	XXX
Extra ordinary expenses	XXX	XXX	XXX
<i>less</i> Misc. expn written off	(XXX)	(XXX)	(XXX)
Profit Before Tax	XXX	XXX	XXX
TAX			
Tax-current	XXX	XXX	XXX

Tax Deferred	XXX	XXX	XXX
Profit after Tax	XXX	XXX	XXX
Prior Period Adjustments	XXX	XXX	XXX
PAT After prior period adjustments	XXX	XXX	XXX
Gross Cash Accruals	XXX	XXX	XXX
Dividend (Amount)-incl div tax	XXX	XXX	XXX
Dividend (%)	XXX	XXX	XXX
Net Cash Accruals			
Retained Profit	XXX	XXX	XXX
<i>(figures in bracket indicate % of total Income)</i>			

XYZ Ltd			
Past Balance Sheets			
			(In Rs.)
As at March 31,	2008	2009	2010
A. Fixed Assets			
Gross Block-Own	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Own			
Gross Block-Leased	XXX	XXX	XXX
Less : Depreciation	(XXX)	(XXX)	(XXX)
Net Fixed Assets-Leased	XXX	XXX	XXX
Add : Capital Work in progress	XXX	XXX	XXX
B. Total Fixed Assets	XXX	XXX	XXX
Current assets			
a. Inventories			
i. Raw materials	XXX	XXX	XXX
ii. Stock in process	XXX	XXX	XXX
iii. Finished goods	XXX	XXX	XXX
iv. Stores & Spares	XXX	XXX	XXX
Total Inventories	XXX	XXX	XXX
b.i. Sundry debtors more than six months	XXX	XXX	XXX
b.ii. Sundry debtors less than six months	XXX	XXX	XXX
b. Sundry debtors	XXX	XXX	XXX
c. Deposits	XXX	XXX	XXX
d. Loans & Advances/other current assets	XXX	XXX	XXX
e. Cash & Bank Balance	XXX	XXX	XXX
e. Advance taxes	XXX	XXX	XXX
C. Total Current Assets	XXX	XXX	XXX

Current Liabilities & Provisions			
a. Sundry Creditors	XXX	XXX	XXX
c. Interest accrued but not due	XXX	XXX	XXX
d. Other liabilities	XXX	XXX	XXX
e. Provisions	XXX	XXX	XXX
D. Total Current Liabilities	XXX	XXX	XXX
E. Net Working Capital (C-D)	XXX	XXX	XXX
F. Operating Capital Empl (B+E)	XXX	XXX	XXX
G. Add Investments	XXX	XXX	XXX
- Investments in group / associate cos.	(XXX)	(XXX)	(XXX)
- Liquid investments	(XXX)	(XXX)	(XXX)
Total Capital Employed (F+G)	XXX	XXX	XXX
H. Liabilities			
Non convertible debentures	XXX	XXX	XXX
Foreign Currency Loans	XXX	XXX	XXX
Term Loan from FIs/banks	XXX	XXX	XXX
Fixed Deposits/Other Unsecured long term loans	XXX	XXX	XXX
Deferred payment credit	XXX	XXX	XXX
Deferred Tax Liability	XXX	XXX	XXX
Working capital loans	XXX	XXX	XXX
Other Short term loans/CP	XXX	XXX	XXX
H. Total Liabilities	XXX	XXX	XXX
Equity Share Capital	XXX	XXX	XXX
Share premium	XXX	XXX	XXX
Reserves and surplus	XXX	XXX	XXX
less : Misc. expenditure to be w/o	(XXX)	(XXX)	(XXX)
TANGIBLE NETWORTH	XXX	XXX	XXX

This format of Balance Sheet can be used to capture both –

- The past year data for the entity/promoter.
- The future/ projected P & L Account and Balance Sheet Data for the project.

The Past data of the promoter must be captured for upto Y-3 years and the projected balance sheet and P&L Account for Y+N years (Y is the current Year and N is maximum Length to complete the project)

This Sheet will be a part of the application form where this will be filled by the Borrower and also a part of verification where the verifying officer can view the data filled by the applicant and verify it and make the various changes on it. The amended document will go to the CRRS Cell.

Ratios	Formulas
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11.1.5 List of ratios to be calculated for the analysis

Growth Ratios (%)	
a. Increase in Total Income	$(\text{Current year's total Income} / \text{Previous Year's Total Income}) * 100$
b. Increase in PBILDT	$(\text{Current year's PBILDT} / \text{Previous Year's PBILDT}) * 100$
c. Increase in PBILT	$(\text{Current year's PBILT} / \text{Previous Year's PBILT}) * 100$
d. Increase in PAT	$(\text{Current year's PAT} / \text{Previous Year's PAT}) * 100$
e. Increase in Profit from operations	$(\text{Current year's Profit From Operations} / \text{Previous Year's Profit From operation}) * 100$
Solvency Ratios	
Long Term	
a. Debt Equity	$(\text{Total Liabilities-working capital Loans-other short term loans}) / \text{Tangible Network}$
a1. Debt Equity (w/o Def. tax.)	$(\text{Total Liabilities-working capital Loans-other short term loans-Deferred tax Liability}) / \text{Tangible Network}$
b. Total Debt Equity	$\text{Total Liabilities} / \text{Tangible Network}$
b1. Total Debt Equity (w/o Def. tax)	$(\text{Total Liabilities-Deferred Tax Liability}) / \text{Tangible Network}$
c. Interest Coverage (times)	$\text{PBILT} / \text{Interest}$
d. Cash Interest Coverage	$\text{PBILDT} / \text{Interest}$
d. Total Debt / Gross Cash Accruals	$\text{Total Liabilities} / \text{Gross Cash Accruals}$
e. Term Debt / EBIDTA	$(\text{Non convertible debentures} + \text{Foreign Currency Loans} + \text{Term Loan from FIs/banks} + \text{Fixed Deposits} / \text{Other Unsecured long term loans} + \text{Deferred Tax Liability}) / \text{Gross Profit}$
Short Term	
a. Current Ratio	$(\text{Total Current Assets} + \text{Liquid Investments}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
b. Quick Ratio	$(\text{Total Current Assets} + \text{Liquid Investments} - \text{Total Inventories}) / (\text{Total Current Liability} + \text{Working Capital Loans} + \text{Other Short term Loans})$
c. Average Collection days	$(\text{Opening Sundry Debtors} + \text{Closing Sundry Debtors}) / 2 * (365 / \text{Gross Sales})$
d. Average Inventory (days)	$365 / ((\text{Cost of Sales} * (\text{Current Year's Inventories} - \text{Previous Year's Inventory}) / 2))$
e. Average RM Inventory (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Opening Raw Materials} + \text{Closing Raw Materials}) / 2)$
f. Average FG Inventory (days)	$365 / \text{Cost of Sales} * (\text{Opening Finished Goods} + \text{Closing Finished Goods}) / 2)$
g. Average Creditors (days)	$365 / ((\text{Raw Material} + \text{Purchases}) * (\text{Current Year's Creditors} - \text{Previous Year's Creditors}) / 2))$
Profitability Ratios (%)	
a. PBILDT margin	$(\text{PBILDT} / \text{Total Income or Sales}) * 100$

b. PBILT margin	$(\text{PBILT}/\text{Total Income or Sales}) * 100$
c. PAT margin	$(\text{PAT}/\text{Total Income or Sales}) * 100$
d. Net Profit Margin	$(\text{PAT}/(\text{Total Sales} + \text{Operating Income})) * 100$
e. ROCE (on operating cap. employed)	$\text{PBILT}/(\text{Current Year's Operating Capital Employed} + \text{Previous Year's Operating Capital Employed} - \text{Current Year's Capital Work-in-progress} - \text{Previous Year's Capital Work in Progress})/2$
f. ROCE (on total cap. emply.)	$(\text{PBILT} + \text{Non Operating Income}) * (100/(\text{Current Year's Total Capital Employed} + \text{Previous Year's Total Capital Employed})/2)$
f. Return on Networkth	$\text{PAT} * 100 / ((\text{Current Tangible Networkth} + \text{Last Year's Tangible Net Worth})/2)$
Turnover Ratios	
a. Capital Turnover Ratio	$\text{Total Income}/((\text{Current Operating Capital Employed} + \text{Previous Year's Operating Capital Employed})/2)$
b. Fixed Assets Turnover Ratio	$\text{Total Income}/((\text{Current Year's Total Fixed Assets} + \text{Previous Year's Total Fixed Assets})/2)$
c. Working Cap Turnover Ratio	$\text{Total Income}/((\text{Current Year's Net Working Capital} + \text{Previous Year's Net Working Capital})/2)$
Earnings Ratios	
b. Dividend Payout (%)	$(\text{Dividend}/\text{Profit After Tax}) * 100$
Interest / Avg. borrowed funds (%)	$\text{Interest}/(\text{Current Year's Total Liabilities} + \text{Previous Year's Total Liabilities} - \text{Current Year's Deferred Tax Liability} - \text{Previous Year's Deferred Tax Liability})/2 * 100$
Contingent Liabilities to total Networkth	$\text{Contingent Liabilities}/\text{Tangible Networkth}$

11.1.6 Format for Projected Cash Flows

	(in Rs. Lakh)				
For the year ended March 31,	Y + 1	Y + 2	Y + 3	Y + 4	Y + 5
Cash Flow from operations					
Net profit before tax	XXX	XXX	XXX	XXX	XXX
Add: Depreciation and amortization	XXX	XXX	XXX	XXX	XXX
Add: Interest paid	XXX	XXX	XXX	XXX	XXX
Less : Non Operating income/other income	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)

Less: Extraordinary items (income net of expenses)	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
(Increase)/Decrease in Receivables	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Inventory	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in other current assets (excl. cash and related items)	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Increase/(Decrease) in payables	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/ (Decrease) in other current liab. & provisions	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Taxes paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net operating cash flow	XXX	XXX	XXX	XXX	XXX
Cash Flow from Investments					
(Increase)/Decrease in Fixed Assets	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
(Increase)/Decrease in Investments	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X	(XXX)/XX X
Add : Non Operating income/other income	XXX	XXX	XXX	XXX	XXX
Add: Extraordinary items (income net of expenses)	XXX	XXX	XXX	XXX	XXX
Net Cash Flow from Investments	XXX	XXX	XXX	XXX	XXX
Cash Flow from Financing					
Increase/(Decrease) in equity capital and share premium	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Share application money	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))

Increase/(Decrease) in Long term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Increase/(Decrease) in Short Term debt	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Less : Interest paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Less : Dividends paid	(XXX)	(XXX)	(XXX)	(XXX)	(XXX)
Net cash flow from financing	XXX	XXX	XXX	XXX	XXX
Net surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Opening cash and bank balance	XXX	XXX	XXX	XXX	XXX
Add : Surplus/(Deficit)	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))	XXX/(XXX))
Closing cash and bank balance	XXX	XXX	XXX	XXX	XXX

11.1.7 Calculation Of Rating

- The credit rating for a promoter is the cumulative weighted score obtained by taking the weighted individual score for each of the parameter in various criteria.
- The system will have a master for the parameters with the alternate options and scores. These parameters will be mapped into sector-wise and criteria-wise parameters to make templates. There will be some pre-defined templates for the sectors and the system will have provision to create more templates by using the existing parameters or the new parameters.
- Each of the parameters must have a set of alternative options and each option will have a different score. Each parameter will also have an individual weightage.
- The individual weightage for a parameter will be determined by the order of merit where the parameter which is most critical will have the highest weightage and the parameter which is least critical will have lowest weightage.
- Eg: If the total number of parameters is 50. The parameter with the highest relevance will be ranked 1 and will be given the weightage of 1 and the parameter ranked 50 will be given a weightage of 1.
- The final score for each parameter is obtained by multiplying the parameter weight with the individual score. Like this score for all the parameters are calculated.

- The sum for each criteria is calculated. The system will also calculate the maximum weighted score for each criteria and get a percentage score obtained in criteria. This is obtained by dividing the weighted score obtained with the maximum weighted score.
- Once the weighted %age score is obtained for each criteria, the criteria will also have weights which have to be determined by CRRS cell and Technical Dept. The percentage score is multiplied with the weights to get the total weighted score for a criteria. This score is sum total and has to be approved.
- The scoring has to be approved by the rating committee. Rating committee will be headed by the Technical head and the members of the rating committee will be one from technical department and one from CRRS cell.
- Once approved the Score will automatically get converted into rating based on predefined rating slabs.

The example of Credit Risk Rating System as per the Existing Parameters is defined below:

Criteria	Parameter Name	Score Standard	Score Actual	Level Of Importance	Weightage	Actual weighted Score	%Weighted Score	Weight for Criteria	Total Weightage Score
A		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			User Defined			(2*4)		Master	(6*7)
	Entity/Prom								
	Ratio of Net contribution	8	6	1	3	18			
	X > 5	6							
	5 > X > 3	4							
	3 > X > 2	2							
	2 > X > 1	0							
	X < 1								
	Ratio of liqu								
Networth to contribution	8	8	3	1	8				
X > 3	4								
3 > X > 1	2								
1 > X > 0.75	0								
X < 0.75									
Ability to raise additional fu	8	8	2	2	16				
High	4								
Adequate	0								
Inadequate									
Total A					6	42	87.5	0.4	<u>35</u>
B	State/Policy								
	Setting up o								
	Achieved / implemented	8	8	1	3	24			
	In process	4							
Not achieved	0								
implemented									

C	Unbundling of SEB	4	2	2	8				
	Achieved / implemented	4							
	In process								
	Not achieved / implemented	0							
	Privatisation of SEBs activities	8	4	3	1	4			
	Achieved / implemented	8							
	In process	4							
	Not achieved / implemented	0							
	Total B		16			36	75	0.4	<u>30</u>
	Project								
Available Solar Power Density	8	8	2	2	16				
Adequate	4								
Satisfactory	0								
Inadequate									
Variation in solar Power Density	8	4	1	3	12				
Low variation	4								
Moderate variation	0								
High variation									
Location of the Plant	8	4	3	1	4				
Good	4								
Average	0								
Below average									
Total C		16	1	8	32	67	0.2	<u>13.4</u>	
Grand Total (A+B+C)								<u>78.4</u>	

Parameter Name	This field describes the various parameters in a particular criteria and the alternative options available in each parameter
Parameter Score Standard	This field describes the scoring range allotted to the alternate options of a parameter
Parameter Score Actual	This field describes the actual score obtained by a borrower in a particular parameter.
Level of Importance	This field describes the rank of the parameter based on its criticality
Weightage	This field describes the weight allotted to each parameter based on its order of merit.
Parameter Weighted Score	This field describes the weighted score obtained by multiplying the parameter weights with the actual score obtained
% Weighted Score	This field describes the score of a parameter as a percentage calculated as- The Weighted score of the criteria/(Sum of weights * Highest weight)
Weightage for Criteria	This field describes the weight for a criteria
Total Weightage Score	This field describes the total weighted score obtained by multiplying the %age score with the weight of the criteria

This total weighted score of all the parameters is translated to get the ratings.

11.2 Requirement for the parameters

S. no.	Particulars	Validation/ Approvals
1.	Ability to Add new criteria/ modify existing criteria	Allowed to limited personnel. Any change must be approved by the concerned Department.
2.	Ability to add/modify/delete the parameters	Restricted to only Department/ sector in-charges. Change must be approved.
3.	Ability to change the weightage for criteria	Any change must be approved and authorized by the concerned head.
4.	Change in the weightage of parameters	Must be approved by sector heads/ finance department/ CRRS head.
5.	Score for each condition of the parameter can be changed	Any change must be approved and authorized by the concerned head.
6.	Ability to set minimum Criteria for a parameter and raise alarm/notification when criteria is not met	The alarms can be defined by the CRRS cell with approvals.
7.	Ability to add/modify/delete the Sectors	Restricted to only Department/ sector in-charges. Change must be approved.
8.	Others- Changes required which are within the scope mention above.	Recommendations given by updating Committee.

12 Reports Generated in CRRS

The list of existing reports that will be available and created in the Dynamics AX are:

1. Rational Reports- This Report contains the information of the selected alternative of the parameter.
2. Credit Risk Rating Report-This Report contains the rating received by a project and also the details for qualification for a loan. This report also contains the list of alarms that need to be highlighted.
3. Quality Report- This is the report that is forwarded to the Technical Department to process the project appraisal. This Report contains the details

of the project, Score in each criteria and the final rating. This report also contains details for the CIBIL Report(sample format added).

The system will provide 15 reports at the implementation stage and more can be added later in the support stage. The formats for reports are yet to be shared by IREDA/ GFA and the same will be required as it has to be incorporated in this Document.

9.4 Annex 3: Other relevant Documents

There are other key documents that are relevant to the design and development of CRRS. These have been annexed as the separate documents due to its large size. Please refer to the following set of documents for more information.

- Annex 1- Parameter-Master.xlsx
- Annex 2- Sector Weights.xlsx
- Annex 5-Grade Master.xlsx

