# CHAPTER II
# Financial Forecast for Power Sector:

The Ministry of power has set the goal to provide '**Power on Demand**' by the year 2012 and has targeted to add 100000 MW of generation capacity for utilities along-with associated transmission & Distribution system during the X and XI five year plan to achieve the same. It is, therefore, necessary to step up investment in power sector for the revival of the sector and to sustain economic growth. The quality and competitiveness of our exports and our IT sector, too, depend on the reliability, quality and price of electricity. Despite significant reforms since 1991-92, investment in the sector and performance of the sector has not met expectations.

The Ministry of Power has formulated strategies to deal with the issues concer4ning decline in capacity addition, persisting shortages, financial health of state power utilities, under utilization of existing capacity, rural electrification, cost of power, grid discipline, technical efficiency & skills and environment management. Power sector reform has emerged as a key priority area, given the sector's complex problems.

The achievement of the various targets set for the power sector during X and XI Plan will require necessary improvements to be made in this sector. It is, therefore, of utmost importance that proper assessment of resource requirement and its availability is done to achieve the target set, for next ten years.

## Methodology and Approach

(1) For the capacity addition required to meet the target of power on demand by 2012 as projected by Central Electricity Authority (CEA), the data collected from 16$^{th}$ EPS, X Plan Working group report, Ministry of Power and Planning Commission have been taken as the basis. The capacity addition targets for the Tenth five-year Plan further allocated amongst Central, State & Private sectors as given by Ministry of Power. For the XI Plan, projected as available have been taken or estimates made.

(2) The total requirements of the funds till 2012 has been divided into two Plan periods i.e. X & XI The requirements of funds have been worked out as follows:-

For the central sector capacity addition and outlays are based on the data provided by respective CPUs which take into account figures as finalized by Planning Commission/Ministry of Power for the X Plan and estimates for the X Plan.

The capacity addition and outlays by State Power have been Compiled / estimated from the database of Ministry of Power (MOP), Planning Commission and CEA, X Plan Working group report.

The capacity addition and outlays in regard and outlays in regard to Independent Power Producers (IPPs) are on the basis of the likely capacity addition of the likely capacity addition consideration by Ministry of Power.

The projections for Transmission, Distribution Rural Electrification, Renovation and Modernization etc. are based on the data provided by

PGCIL, REC, PFC, MOP and CEA and Report of Working Group on X Plan.

The transition fund requirement has been considered as per the assessment of PFC.

The funds requirement for schemes giving benefits in XII Plan has also been taken into consideration in XI Plan targets.

(3) It is observed that the proposed investments in the Power Sector arte dependent upon the success of reforms in the Power Sector and the sector becoming financially viable. The candidate has not gone into the details of these reform initiatives and has made the important assumption that these reforms will be successful and the state sector power utilities will become financial viable during X Plan. To the extent these utilities do not become financially viable; the proposed investments may not materialize.

(4) The Candidate has made estimates of the capital investment requirements of power utilities in central, state and private sector utilities and the source3s of funding for the same. The Candidate estimates do not include non-plan or operational fund requirements to meet.

The cash deficit of state power utilities till these become financially viable, and

The reform period need of state power utilities to meet the past liabilities of outstanding dues to CPUs and other agencies, provision for accumulated employee benefits and other requirements. These are expected to be met by state governments from their budgets/sale of state power utilities/central government support/assistance from multilateral agencies.

## BRIEF REVIEW OF ACHIEVEMENTS IN IX PLAN

### Installed capacity

The total installed capacity of the electricity supply utilities in the country was 104917 MW as on 31st March 2002. Out of the total installed generation capacity, 59.33% is owned by the states, 30.12% by the centre and 10.55% by the private sector. The region wise break up of installed capacity at the end of IX Plan is given in the following table;

**Actual Installed Capacity at the end of XI Plan**

| Source/ownership | Central | State | Private | Total |
|---|---|---|---|---|
| Coal | 21418 | 36302 | 4411 | 62131 |
| Gas/Liquid | 4419 | 3245 | 4634 | 12298 |
| Sub total thermal | 25837 | 39547 | 9045 | 74429 |
| Hydro | 3049 | 22636 | 576 | 26261 |
| Nuclear | 2720 | 0 | 0 | 2720 |
| Other fuels | 0 | 63 | 1444 | 1507 |
| **Total** | **31606** | **62246** | **11065** | **104917** |

Source: Ministry of Power

# POWER SECTOR PROGRAMMES IN X AND XI PLAN

## GENERATION CAPACITY ADDITIONS: -

The Ministry of power has assessed that 41,110 MW capacity addition for utilities would be possible during the Plan. Sector-wise break-up is as follows:

**Capacity addition during X plan as finalized by Ministry of Power**

| | Hydro | Thermal | Gas | Nuclear | Total |
|---|---|---|---|---|---|
| **Central** | | | | | |
| NTPC | | 9160 | | | 9160 |
| TIHRI | 2400 | | | | 2400 |
| NHPC | 4357 | | | | 4357 |
| DVC | | 1960 | | | 1960 |
| NJPC | 1900 | | | | 1900 |
| NEEPCO | 85 | | 500 | | 585 |
| NLC | | 1170 | | | 1170 |
| NPC | | | | 1300 | 1300 |
| **TOTAL(Central)** | 8742 | 12290 | 500 | 1300 | 22832 |
| **State** | 4481 | 5754 | 922 | 0 | 11157 |
| **IPP** | 1170 | 4067 | 1884 | 0 | 7121 |
| **All India** | **14393** | **22111** | **3306** | **1300** | **41110** |

Source: Ministry of Power

In addition, about 1700MW capacity is expected to be added through non-conventional energy sources such as wind, solar etc

For the purpose of the study in the report, it is assumed that a total capacity of about 1,00,000 MW is required to be added by March, 2012 and out of which around 41097 MW will be added during X Plan and rest 59000MW will be added during XI Plan.

**Capacity Additions by Central PSUs**

The figures finalized by the MOP is given as under:-

**(MW)**

| Sl | Name of the PSU | by CPU | Working group | by MoP |
|---|---|---|---|---|
| 1 | NHPC | 5310 | 3790 | 4357 |
| 2 | NEEPCO | 585 | 585 | 585 |
| 3 | DVC | 5420 | 1920 | 1960 |
| 4 | NPC | 1300 | 1300 | 1300 |
| 5 | NTPC | 9160 | 9160 | 9160 |
| 6 | NLC | 710 | 710 | 1170 |
| 7 | NJPC | 2000 | 2000 | 1900 |
| 8 | THDC | 2400 | 2400 | 2400 |
| | **Sub total** | **26885** | **21865** | **22832** |
| 9 | TALA(Bhutan) | | 1020 | 1020 |
| 10 | NHDC | | 1520 | |
| | **Total** | **26885** | **24405** | **23852** |

For the purpose of this report, the figures finalized by the MOP are taken as the basis in arriving at the requirements of funds for possible capacity addition Programme during X and XI Plan period and advance action for the XII Plan.

During the XI Plan period Central sector has plans to add 31527 MW, out of which 10922 MW comes from Hydro, 14690 MW from Thermal and balance 5915 MW from the nuclear projects.

**(II) Capacity Addition by State Sector**

**Projection for X Plan**

The X Plan Working Group has considered the possible capacity addition of 12033 MW during X Plan in the State Sector as follows:

**Feasible capacity addition in State Sector during X Plan from Sanctioned and Ongoing (SOG), CEA approved and new schemes.**

**(MW)**

| Sl | Name of the PSU | by CPU | Working group | by MoP |
|---|---|---|---|---|
| 1 | NHPC | 5310 | 3790 | 4357 |
| 2 | NEEPCO | 585 | 585 | 585 |
| 3 | DVC | 5420 | 1920 | 1960 |
| 4 | NPC | 1300 | 1300 | 1300 |
| 5 | NTPC | 9160 | 9160 | 9160 |
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| 9 | TALA(Bhutan) | | 1020 | 1020 |
| 10 | NHDC | | 1520 | |
| | **Total** | **26885** | **24405** | **23852** |

However, MOP in consultation with concerned authorities and utilities, identified the projects capacity addition in Thermal/Hydro/Nuclear mode of power generation during X Plan and arrived that state sector will additional capacity of 11157 MW. The details are given below: -

| Hydro | Thermal | | | | Total | Nuclear | Total |
|---|---|---|---|---|---|---|---|
| | Coal | Lignite | Gas | Liquid | Thermal | | |
| 4481 | 5335 | 325 | 922 | 94 | 6676 | 0 | 11157 |

The above generation programme by MoP, and committee for the purpose of arriving at cost estimates for X Plan considers the same.

**Projection for XI Plan**

The Working generation programme as estimated by MoP, and the same is considered by the Committee Plan as per details given below:-

| Sector | Hydro | Thermal | Nuclear | Total |
|---|---|---|---|---|
| Central | 12408 | 5960 | 5915 | 24283 |
| State | 5040 | 7300 | 0 | 12340 |
| Private | 1838.5 | 23751.1 | 0 | 25589.6 |
| **Total** | **19286.5** | **37011.1** | **5915** | **62212.6** |

Based on Working Group projections and taking spill over capacity addition from the X Plan, the Committee has considered a projection of 12500 MW is XI Plan from the state sector. To the extent generating SPUs are privatized, these projections will shift to private sector.

However, with the privatization of SPUs, it is likely that some of this capacity addition may shift to private sector.

**III) Capacity Addition by Private Sector**

**Projection for X Plan**

The IPPs are likely to be cautious in entering the sector in the medium term till the sector become economically viable. The working group has considered the possible capacity addition of 10501 MW during X Plan in the private as follows:

**Feasible capacity addition by Private Sector during X Plan from SOG, CEA and New schemes**

| Particulars | Hydro | Thermal | Nuclear | Total |
|---|---|---|---|---|
| Feasible SOG Schemes | 28 | 1694 | 0 | 1722 |
| Feasible CEA Cleared Projects | 1500 | 3886 | 0 | 5386 |
| Feasible State Cleared Projects | 15 | 476 | 0 | 491 |
| New Schemes during X Plan | 49 | 2853 | 0 | 2902 |
| **Total** | **1592** | **8909** | **0** | **10501** |

Seeing the performance of the private sector during IX Plan, Ministry of Power after consultant with concerned authorities and utilities, identified the projects for capacity addition in thermal/hydro, made of power generation during X Plan in private power sector to add generation capacity of 7121 MW during X Plan as given below: -

| Hydro | Th | er | Ma | l | Total | Nuclear | Total |
|---|---|---|---|---|---|---|---|
| | Coal | Lignite | Gas | Liquid | Thermal | | |
| 1170 | 1853 | 250 | 1884 | 1964 | 5941 | 0 | 7121 |

**Projections for XI Plan**

Since the X Plan period has been considered as a reform period and SPUs are expected to become financially viable, it has been estimated that the possible capacity additions during the XI Plan period by the IPPs will increase and it may of the order of 15000 MW. As generating SPUs are privatised. This figure may go up.

**Summary**

To summarise the total capacity addition during the X and XI Plan for various sectors, the following position emerges:

**X Plan Period**

| **Sector** | **Total** |
|---|---|
| Central | 22832 |
| State | 11157 |
| Private | 7121 |
| **Total** | **41110** |

**XI Plan Period**

| **Sector** | **Total** |
|---|---|
| Central | 31500 |
| State | 12500 |
| Private | 15000 |
| **Total** | **59000** |

**Renovation and Modernization ( R&M)**

One of the ways of increasing the capacity addition is the Renovation & Modernization of the existing power stations. Particularly in India there is a lot of scope of increasing the capacity through R & M schemes, as many of the SPUs plants are generating below the National Average PLF. R & M undertaken for these projects will increase the overall capacity at a lower cost.

**Renovation, Modernization and Life Extension Programme for Thermal Power Projects to be taken up during X Plan** (as per the national perspective plan prepared by CEA in June 2000) is given below:

(i) **R & M Programme:** 68 nos. of units with capacity of 17310 MW to accrue benefit of 4250 MU/Year (equivalent to 650 MW) at an estimated cost of Rs.1, 903 crore.

(ii) **Life Extension Programme:** 107 nos. of units with capacity of 11022 MW at an estimated cost of Rs. 7497.5 crore the capacity after Life Extension works would be 11292 MW, which will the benefit of 270 MW.

**Renovation, Modernization and Updating Programme for Hydro Power projects to be taken up during X Plan** (as per the national perspective plan prepared by CEA in June 2000) is given below:

(i) **R & M Programme** -45 nos. of units with capacity of 2309 MW at an estimated cost of Rs. 196 crore.

(ii) **Uprating Programme**: 21 nos. of units with capacity of 1210 MW at an estimated cost of Rs. 238 crore to accrue benefit of 167 MW.

(iii) **Uprating with Life Extension Programme** -48 nos. of units with capacity of 2146 MW at an estimated cost of Rs. 1093 crore to accrue benefit of 2483 MW.

(iv) **Life Extension Programme** :92 nos. of units with capacity of 1696 MW at an estimated cost of Rs. 1288 crore to accrue benefit of 1,592 MW

(v) **Restoration Programme**: 3 nos. of units with capacity of 198 MW at an estimated cost of Rs. 6 crores to accrue benefit of 18 MW.

**Thus, total cost of X Plan R&M programme is estimated as Rs.** 11,322. However, some of this may spill over to XI Plan, therefore and estimate of Rs. 10,000 crores has been included under R&M in the X Plan. The requirement for XI Plan R&M Programme has not been estimated. Considering that more power stations will require R&M and life extension, a figure of Rs. 15,000 crores has been taken for the XI Plan for R&M of central sector plants, the respective figures are included in the outlays of CPUs.

**Transmission**

The physical programme for transmission works in the X Plan has been prepared on the basis of identified projects rated at 765 KV AC, 400 KV and HVDC projects for power evacuation from generating stations and strengthening of inter-region and intra-region links as found necessary in the power system studies, the continuing schemes from the IX Plan are also included. For 220 KV AC and 132 KV Ac Projects, the norms for transmission works corresponding to the projected state-wise load have been adopted, and the continuing schemes from the IX Plan are included.

**Physical transmission Programme for the X Plan a estimated by the working group**

| | Unit | Central Sector | State Sector | Total |
|---|---|---|---|---|
| HVDC | ckm | 1500 | 0 | 1500 |
| | MW | 2500 | 0 | 2500 |
| 765 KV | ckm | 5970 | 0 | 5970 |
| 765/400kv | MVA | 21500 | 2000 | 23500 |
| 400kv | ckm | 27230 | 13050 | 40280 |

| | | | | |
|---|---|---|---|---|
| 400/200kv | MVA | 19910 | 9770 | 29680 |
| 220kv | ckm | 2650 | 31300 | 33950 |
| 220/132 KV | MVA | 1500 | 71250 | 72750 |
| 132 KV | ckm | 290 | 67610 | 67900 |
| 132/33 KV | MVA | 100 | 82350 | 82450 |

Source: Working group for X Plan

Out of this, central sector programme, Power Grid has targeted to add 35000 ckm lines of 132 KV to 800 KV lines including HVDC lines in X Plan and 15630 ckm of 132 KV to 800 KV lines including HVDC lines in XI plan.

**Distribution**

Distribution system, which include sub-transmission and L.T. lines - 33 KV & below constitute the final vital in the supply of power to the ultimate consumers. However, the sub-transmission & distribution system in the country is grossly inadequate to meet the growing demand with desired level of quality and reliability of power supply. High T&D losses & low level of reliability mar the distribution system. This is due to the fact that investment in sub-transmission and distribution sectors was grossly inadequate and expansions of most of the distribution system in our country are still characterized by high-energy losses, low reliability of supply and frequent interruptions.

Therefore, there is and urgent need to give due importance to well-developed distribution system and develop new & sound strategies for expansion & improvement of power distribution system which could result in lower T&D losses and improved quality and reliability of power supply.

**Methodology adopted for finding out the physical requirement during X Plan.**

In absence of the information independently available to the committee, the data projected by the **Working Group** for state sector is considered for X and XI Plan.

Further the distribution system (Generation–sub-Transmission & Distribution) in the country; as a whole and arriving at the applicable reasonable growth rates for different segments and unit for the future.

Details regarding 33/11 KV transformation system in each state or for the country as a whole are not available separately therefore has been assumed that the installed capacity of 33/11 KV transmission system could be about 70% of the installed capacity of distribution transformers in each state.

The requirements of capacitors have been worked out for improvement of power factor as distribution level.

Physical requirement for different segments of sub-transmission and distribution system during X plan period as estimated by the Working Group is as under:

| Sl no. | Name of segment | Units | Physical requirement |
|---|---|---|---|
| 1 | Lines | | |
| | i)33 KV | Ckt. Kms | 62110 |
| | ii)11kv | Ckt. Kms | 277066 |
| | iii) LV | Ckt. Kms | 489687 |
| 2 | Substation | | |
| | i)33 /11kv | MVA | 45853 |
| | ii)11/.4 KV | MVA | 65505 |
| 3 | Capacitors | MVAR | 15565 |
| 4 | Service connections to | | |
| | i) Domestic installations | Nos. | 28893184 |
| | ii)Commercial Installations | Nos. | 2637001 |
| | iii)Industrial installations | | |
| | a)HT | Nos. | 11626 |
| | b)LT | Nos. | 396305 |
| | iv) Public light | Nos. | 53382 |
| | v)agriculture | Nos. | 2719120 |
| 5 | A. Reconductoring of lines | | |
| | i)33 KV | Ckt. Kms | 83124 |
| | ii)11kv | Ckt. Kms | 976169 |
| | iii)LV | Ckt. Kms | 2021008 |
| | B. Augmentations of S/Ss | | |
| | i)33/11kv | MVA | 80965 |
| | ii)11/.4 KV | MVA | 115665 |

Source: Working group for X Plan

**Rural Electrification**

To give impetus to the rural electrification programme in the respective states Rural Electrification Corporation (REC) has chalked out and intensive X Plan to achieve the objective of 100% electrification of villages in all the states during the X Plan. For this purpose, funds available under Minimum Needs. Programme (MNP) and under state Plan schemes for rural electrification should be pooled into the Pradhan Mantri Gramodya Yojna (PMGY) fund earmarked for village electrification to impart a common identity to the implementation of this programme of crucial importance.

**REC Programme for electrification of villages consists of:**

Intensive electrification of Rural Area.
Pump set energisation
Rural industrialization
System improvement
Metering

**Intensive Electrification of Rural Area** – As per assessment made by the parliamentary standing Committee on Energy by the end of 31 March 2001, nearly 5.08 lakh village out of total 5.87 lakh villages (1991 Census), in the country were electrified accounting for about 86.5 % village electrification level. Thus an on 31 March 2001 a total of 78,700 villages still remain to be electrified. Further the level of household electrification in rural areas at 48% is still very low as compared to 91% in urban areas and 60% in the country as a

whole. A Programme for intensive electrification of rural areas consists of household electrification under Kutir Jyoti Programme for giving single point light connections to the households of rural poor Below Poverty Line (BPL). And Rural Household Electrification (Non BPL).

**Pump set energisation** – Another aspect of rural electrification programme is to take special steps on the part of central and state Govt. concerned to gear up the efforts for launching much larger programme for pump sets energisation to help expand minor irrigation facilities for increasing food grains productions. During the IX Plan the no of pump sets energized is estimated to be only 15 lakh. It has been estimated that during the X Plan period 25 lakh pump sets would need to be energized and it has been estimated that Rs. 11500 crores would be required to achieve the target.

**Estimated requirements of funds for the energisation of pump sets**

| Year | No. of pump sets proposed for energisation | Estimated unit Cost Per pumps set (in Rs.) | Total cost (In Cr.) |
|---|---|---|---|
| 2002-03 | 5 lakh | 36000 | 1800 |
| 2003-04 | 5 lakh | 40000 | 2000 |
| 2004-05 | 5 lakh | 45500 | 2275 |
| 2005-06 | 5 lakh | 51000 | 2550 |
| 2006-07 | 5 lakh | 57500 | 2875 |
| **Total** | **25 lakh** | **46000** | **11500** |

Source: REC

**Rural Industrialisation by System Improvement and Metering-** The scope for expansion of rural industry is immense. Industry will be attracted towards establishing plant in rural areas only when adequate power supply will be made available to them. Rural industrialization is possible, when adequate transmission and distribution system is installed. One of the major factors of poor performance of the power sector is that it suffers from the high Transmission and Distribution losses. The investment made by various SPUs in system improvement through REC assistance during VIII Plan period were only Rs. 876 crore and during IX Plan period it increased by Rs. 3000 crore (approx.). It is estimated that during X Plan period, Rx. 13000 crore would be required for system improvement programme.

**Metering** – It has been estimated by the Rural Electrification Corporation (REC) that the total requirements of meters during the X Plan period as under:

| Sl No. | Particulars | No. of Meters |
|---|---|---|
| 1 | For new rural consumers including that of agricultural | 145 |
| 2 | For metering 0f unmetered agricultural connection | 90 |
| 3 | For replacement of old defective inefficient meters of existing connections with high precision tamper proof meters | 215 |
| | **Total requirement** | **450** |

Source: REC

## Proposed Requirements of Funds and their funding

To implement its plan of promoting rural electrification projects all over the country it has been estimated that total investment of around Rs. 39920 crore would be required during the X Plan. The proposed Plan and their funding is as under:

### Requirement of Funds in the X Plan:

| Sl No. | Programme head | Amount(cr.) |
|---|---|---|
| 1 | Village Electrification(PMGY) | 5720 |
| 2 | Intensive load Development9incl pump set energ. Cost) | 15800 |
| 3 | System improvement | 13000 |
| 4 | Metering | 5400 |
| | **Total funds requirements** | **39920** |

Source: REC

### Resources to fund the X Plan:

| Sl No. | Particulars | Amount(cr.) |
|---|---|---|
| 1 | PMGY GoI loans direct to States | 5720 |
| 2 | Internal resources | 4500 |
| 3 | GoI grant for Kutir Jyothi | 500 |
| 4 | Market borrowings | 22000 |
| 5 | NBS from GoI(resource Gap) | 7200 |
| | **Total funds requirements** | **39920** |

Source: REC

*Note: it is expected that REC shall continue to channelise Central Government grant under the Kutir Jyothi Programme, therefore Rs. 500 cr. grant is kept for the Kutir Jyothi Yojna based on the sanctioned grant during the year 2001-02*

No projections are available for XI Plan. In view of the fact that considerable investments will be needed in the rural electrification are for taking the additional power to rural households, industries, pump sets etc, the investment needed may be about one and a half time of the investment in the X Plan.

# FUNDS REQUIREMENTS OF CENTRAL POWER UTILITES

## NATIONAL THERMAL POWER CORPORATION LIMITED

NTPC is one of the Navratna public sector undertakings. With in a short span of 27 years. It has installed 13 Coal based stations and 7 gas-based stations with a total commissioned capacity of 19935 MW supplying 26% of the total power requirement of the country with 19% of the all India capacity as on 31.3.2002. Market line International (UK) has ranked NTPC as sixth largest thermal generator in terms of generation and second most efficient in capacity utilization globally on the basis of data for the year 1998.

During IX Plan NTPC had a capacity addition target of 5300 MW, against which it added 2700 MW. The capacity addition of NTPC was raised to 3140 MW including 440 MW of Tanda TPS taken over from UPSEB. Shortfall of 2600 MW is mainly due to rescheduling of 4 Naphtha based Project which were not taken up as Naphtha price in international market, rose tremendously, resulting in increased cost of generation and major beneficiaries expressed their unwillingness to buy power at that high cost.

### X AND XI PLAN OUTLAY

During X and XI Plan NTPC envisages the total capacity addition to the extent of 19970 MW with total outlay of Rs. 119506 crores (included Rs. crores for XII Plan) in order to realize its corporate plan of becoming 40000 MW at the end of XI Plan. Project-wise proposed capacity addition during X and XI Plan period is as under.

**Project wise details of Capacity Addition**

| Projects | X plan capacity addition | XI Plan capacity addition |
|---|---|---|
| Simhadri TPP | 500 | |
| Talcher-II | 2000 | |
| Rihand-II | 1000 | |
| Ramagundam-III | 500 | |
| Sipat-I | 1320 | 660 |
| Koldam | | 800 |
| Kahalgaon-II | 660 | 660 |
| Barh | 660 | 1320 |
| Vindhyachal-III | 500 | 500 |
| North Karanpura | 660 | 1320 |
| Sipat-II | 660 | |
| NCTPP-II | 490 | |
| Unchahar-III | 210 | |
| Kawas-II | | 650 |
| Gandhar-II | | 650 |
| Anta-II | | 650 |

| | | |
|---|---|---|
| Auriya-II | | 650 |
| Kayamkulam-II | | 1950 |
| Cheyyur | | 1000 |
| **Total** | **9160** | **10810** |
| **Total Capacity Addition** | | **19970** |

**Funding of Outlays**

NTPC plans to finance these projects with a debt equity ratio of 70:30 the equity portion was envisaged to be funded out of internal resources of NTPC. However the CERC vide their order Dt. 21st December 2000, has changed the tariff principles, which impacted the resource of Rs. 20968 crore during X Plan and Rs 17603 crore during the XI Plan the availability of internal resources to fund the equity component has been estimated by NTPC as Rs. &&%(crore during X Plan and 1777 crore during XI Plan considering the tariff norms as per CERC's order dated 21 December 2000.

NTPC has assessed that internal resources available will be sufficient only to meet the equity requirement of presently on-going schemes and Koldam hydro project. Therefore NTPC has sought Budgetary support from GoI of Rs. 13209 crore and Rs. 15826 crore to find the proposed fund requirement of X and XI Plan outlay of Rs. 119506 crore. **This is includes and amount of Rs 9800 crore required during XI Plan for the advance action for the project benefiting in XII Plan, of which Rs. 2940 crore has to be funded through the internal resources /equity**

The plan –wise funding of proposed outlay of Rs. 119506 crore is as under

**Plan wise requirements of funds**

| **Particulars** | **X plan** | **XI Plan** | **Total** |
|---|---|---|---|
| Internal Resources | 7759 | 1777 | 9536 |
| NBS in the form of GoI equity | 13209 | 15826 | 29035 |
| Domestic borrowing incl. bonds | 18965 | 20301 | 39266 |
| ECB/ECA/Euro bonds | 23747 | 17922 | 41699 |
| **Total** | **63680** | **55826** | **119506** |

The above outlay of Rs. 63680 crore includes provision for on-going schemes (Simhadri, Teacher –II, Rihand-II and Ramagundam –III), other capital schemes R&M schemes and investment in JVs companies.

**The above assessment of requirement of funds has been done on the completion cost basis over the implementation period of the project.**

The overall shortfall in internal resources availability is assessed to be of the order of Rs. 29035 crore during X and XI Plan period. In order to implement the above capacity addition programme NBS (in the form of equity) from GeI to the extent of Rs.13209 crore and Rs. 13209 during the X Plan Rs. 3300 crore only has been considered by the Planning Commission, thus leaving a gap of Rs. 9909 crore during the X Plan.

**Bridging the Gap**

The resource gap of Rs. 9900 crore in the X Plan could possibly undergo a change be bridged due to following:

**Implementation of MSA Report** – The implementation of Montek Singh Ahluwalia (MSA) a positive impact on cash flows of NTPC. As per the assessment made by NOP the value of the Bonds which NTPC is likely to receive is of the order of Rs. 19123 crore. So far 14 States have signed the Tripartite Agreement and the corresponding value of bonds to be received by NTPC will be Rs. 12,800 crores. . The impact of the scheme and its impact on cash flows will be visible when the scheme is implemented.

**Recovery of Development Surcharge**- As per the CERC order, a 'Development Surcharge' (DS) of 5 percent of the fixed charges can be levied on the beneficiaries. DS can be recovered only in respect of the power stations supplying power to more than one state and the amount so objected is required to be utilized for capacity expansion of new projects up-to one-third of the equity component of the projects to be implemented in the same region from which the surcharge has been recovered. Further as per the CERC order, the equity component funded out of the DS will not be entitled for any return on equity. NTPC has estimated that DS of Rs. 4178 crore only could be utilized out of Rs. 5064 crore which would be collected. After considering reduction in ROE IR availability would increase by Rs. 2,415 crore. During the X Plan period an amount of Rs. 1141 crore would be available in case Ds is levied and collect.

**Divided Plough–back**- One option of bridging the gap could be waiver of Divided payment by NTPC to augment its internal resources for gainful employment in capacity expansion during X and XI Plan. NTPC paid a dividend Rs.747 crore as dividend in 200102. Presuming NTPC continues to pay Divided at the same rate, this could provide the internal resources over Rs. 5000 crore approximately.

**Depreciation Norms** – The CERC's revised tariff norms have adversely affected the cash flows due to change in the rate of depreciation. In case of the depreciation rates being restored to the pre-existing levels, NTPC is likely to have additional cash flows to the extent of Rs. 5600 crore in the X Plan period.

**Raising HydroElectric Power Corporation Limited (NHPD).**

National Hydro – electric Power corporation limited (NHPC), it plays a significant role in the integrated and efficient development of hydro – electric, tidal, wind and geo-thermal power in the central sector covering all aspects such as investigation, planning, design, construction, operation & maintenance of hydro-electric plant. The operating power stations of NHPC as on 31.3.2002 are as follows:

| | | |
|---|---|---|
| 1 | Baira Siul | 180 MW |
| 2 | Loktak | 105 MW |
| 3 | Salal | 690 MW |
| 4 | Chamera | 540 MW |
| 5 | Tanakpur | 120 MW |
| 6 | Uri | 480 MW |
| 7 | Rangit | 60 MW |
| | **Total** | **2175 MW** |

During IX Plan NHPC against the target of capacity addition of 450 MW, only 60 MW has been achieved. The shortfall is mainly due to the fact that Dulhasti (390 MW) has been delayed due to HRT works consequent to sinking of TBM.

During IX Plan NHPC has planned a total capacity addition to the extent of 15632 MW with the total outlay of Rs.98240 crore. Project-wise proposed capacity addition during X and XI Plan period is as under:

**Project wise details of Capacity Addition during X & XI Plan period**

**(In MW)**

| Projects | X plan capacity addition | XI Plan capacity addition |
|---|---|---|
| Dulhasti | 390 | |
| Chamera-II | 300 | |
| Dhauli Ganga-I | 280 | |
| Teesta-V | 510 | |
| Farakka Barrage | 125 | |
| Indira Sagar(JV) | 1000 | |
| Sewa-II | 120 | |
| Bav-I | 18 | |
| Bav-II | 37 | |
| Purulia PSS(JV) | 900 | |
| Omkareswar(JV) | 520 | |
| Teesta low Dam-III | 132 | |
| Teesta low Dam-IV | 168 | |
| Upper Krishna | 810 | |
| Loktak DS | | 90 |
| Parbati-II | | 800 |
| Parbati-III | | 501 |
| Pakal Dul | | 1000 |
| Bursur | | 1020 |
| Chamera -III | | 231 |
| Siang lower site | | 700 |
| Siang middle site | | 700 |
| Subansiri middle site | | 2000 |
| Subansiri lower site. | | 2000 |
| Uri-II | | 280 |
| **Total** | **5310** | **10322** |
| **Total Capacity addition** | | **15632** |

However the total capacity addition by NHPC as finalised by MoP during X Plan period is only 4357 MW, the difference being Farrakka Barrage (125MW), Bav-I (18MW) and Upper Krishna (810MW) which are not expected to be commissioned in the X Plan.

During the X Plan, to add 5310 MW Hydel power the Company expects to invest about Rs. 40000 crore and in XI Plan to add 10322 MW it has to invest about Rs. 55000 crore. These plans include on-going schemes of 1480 MW and projects of 2420 MW proposed under joint Venture with the State Government. Availability of internal resources to fund the equity component is of the order of Rs. 7021 crore (during X Plans Rs. 1159 crore and during XI Plans 5862 crore. The balance assessed considering the capacity addition planned for X Plan benefit and projects to start in X Plan for benefit in XI plan have been proposed by the company to be funded by equity support from GoI through NBS. These investment requirements are on the basis of completion costs of projects
The proposed financing X and XI Plan outlay of 98340 crore as projected by NHPC is as under:

**Plan wise requirements of Funds**

| Particulars | X plan | XI Plan | Total |
|---|---|---|---|
| Internal Resources | 1159 | 5862 | 7021 |
| NBS in the form of GoI equity | 22589 | 9124 | 31713 |
| Domestic borrowing incl. Bonds | 15577 | 42472 | 58049 |
| ECB/ECA/Euro bonds | 829 | | 829 |
| Development Surcharge | 461 | 267 | 728 |
| **Total** | **40615** | **57725** | **98340** |

**Resources Gap**

An allocation of Rs. 14200 crore has been made in the X Plan to NHPC as against the requirement of Rs. 22589 crore, thus leaving a gap of Rs. 8389 crore. However the requirement of funds in the X Plan could also be lower due to downsizing the capacity from 5310 MW to 4357 MW.

**Bridging the Gap**

**1. MSA Committee Report Impact** – The impact of Montek Singh Ahluwalia Report on X Five Year Plan, is additional internal generation of resources to the extent of Rs. 360 crores approximately and for XI Five Year Plan to the extent of Rs. 100 crores.

**2. Depreciation** - The CERC's revised tariff norms have adversely affected the cash flows of power CPUs due to change in the rate of depreciation. In case of the depreciation rates being restored to the pre-existing levels, NHPC is likely to have additional cash flows to the extent of Rs. 400 crore in the X Plan period and Rs. 1580 crore during XI Plan (considering the impact of 1% on the Present Gross Block and CWIP of Rs. 11602 crore and Possible Addition in Gross block during X Plan Rs. 20000 crore.).

**3. Dividend plough back** – The Gap in availability of resources can also be filed by considering the waiver of Dividend payment by NHPC to agues its availability of internal resources, to the extent necessary during X and XI Plan. During the financial year 2001-02 NHPC has paid a dividend of Rs. 30 crore. Presuming NHPC continues to pay Dividend at the same rate, this should provide the internal resources over Rs. 150 crore approximately during X Plan. Considering the capacity addition during X Plan consequent increase in Profit after tax, it has been assumed that NHPC would be able to pay a total dividend of Rs. 300 crore during XI Plan.

**Power-Grid Corporation of India Limited**

Power Grid Corporation of India Limited (POWERGRID) was incorporated as a Government of India enterprise with the mission of "Establishment and Operation of Regional and National Power Grids to facilitate transfer of power within and across the regions with reliability security and

economy on sound commercial principles. POWERGRID has been recognized as a "Miniratna (category-I)" by the Government of India w.e.f. October 1998. With amendments in Indian Electricity Act in 1998 and followed by Govt. of India notification, POWERGRID has been recognized as Central Transmission Utility (CTU) of the country.

The company's performance from the year 1992-93, when it started commercial operation, has been commendable. The company has an impressive track record which is reckoned both at national and level .As on 31st March 2002 power grid is operating about 40,550ckt km of transmission lines consisting of 562 Ckt km of 220 KV 1630 Ckt km of HVDC system, 2930 Ckt km of 400 KV 6952 Ckt km of 220 KV and 2042 Ckt km of 132 KV lines along with 68 sub –stations with 34254 MVA transformation capacity. The transmission system availability is maintained consistently over 98.5 per cent by deploying best operation and maintenance practices at par with international utilities and today POWERGRID is one of the largest transmission utilities in the world. Presently about 40% of total power generated in the country is being transferred over POWERGRID transmission network.

**IX Plan performance**

During IX plan period. POWERGRID has invested Rs. 8,473 crore as against the 'targeted outlay of Rs. 10,780 crore and commissioned 12,436 Ckt km of transmission lines.

**Future Investment Programme**

The detail of the fund plan for the above investment programme is given below:

| Particulars | X plan | XI Plan | Total |
|---|---|---|---|
| **Proposed Outlay** | **21370** | **28258** | **49628** |
| Internal Resources | 2938 | 5081 | 8019 |
| Development Surcharge | 1216 | 1867 | 3083 |
| Domestic borrowing incl. Bonds | 8002 | 14917 | 22919 |
| Foreign Borrowings | 8214 | 6393 | 14607 |
| IEFR | 20370 | 28258 | 48628 |
| **NBS** | **1000** | **0** | **1000** |

**Filling the Resources Gap**

**Impact of Securitisation (MSA Committee)** – The net impact of securitisation of outstanding dues during X and XI plan are about Rs. 122 crore respectively. This impact has already been factored in internal resources projection.

**Impact of Changing Depreciation Rate It has been considered that if the Depreciation norms has been changed to pre**-CERC norms in tariff calculation (I.E. 6% instead of 2.92%) and advance against depreciation is not taken into account, the availability of internal resources will be increased by Rs. 1638 crore during X Plan and Rs. 4267 crore during XI Plan.

**Development surcharge** – As indicated in the table. The development surcharge has been taken into consideration.

**Dividend Plough back** – In the year 2001-02 Rs. 50 crore as Dividend has been paid to Govt. of India. It has been assumed that dividend payment of Rs. 50 crore will continue up-to 200304 and subsequently Rs. 100 crore till 2006-07. Thus, in X plan period total Rs. 400 crore will be paid as Dividend considering the dividend payment @ 30% of profit after tax. This should provide the internal resources over Rs. 400 crore approximately in X Plan and Rs. 3510 crore during XI Plan.

**North Eastern Electric Power Corporation Limited (NEEPCO)**

NEEPCO was registered as a company under the companies Act 1956 the objectives to plan promote, investigate, survey design, construct generate, operate and maintain power station in the northeast Region. The corporation has a total installed capacity of 600 MW under operation.

Project identifies during X and XI Plan benefit is as under:

| Projects | X plan capacity addition | XI Plan capacity addition |
|---|---|---|
| Kopli-II | 25 | |
| Tuirial | 60 | |
| Tipura Gas | 500 | |
| Lower Kopli HE-II | | 150 |
| Ranganadi HE-II | | 130 |
| Dikrong HE | | 100 |
| Tuivai HE | | 210 |
| Kameng HE | | 600 |
| Papumpam HE | | 100 |
| **Total** | **585** | **1290** |

The proposed financing of X and XI Plan outlay of 8394 crore is proposed as under:

**Plan wise requirement of Funds**

| Particulars | X plan | XI Plan | Total |
|---|---|---|---|
| Internal Resources | 0 | 0 | 0 |
| NBS in the form of GoI equity | 749 | 2220 | 2969 |
| Domestic borrowing incl. Bonds | 1441 | 3671 | 5112 |
| ECB/ECA/Euro bonds | 313 | 0 | 313 |
| **Total** | **2503** | **5891** | **8394** |

**Tehri Hydro Development Corporation Limited (THDC)**

Tehri Hydro Development Corporation Limited (THDC), a joint venture corporation of the Govt. of India and Govt. of U.P. (now Govt. of Uttaranchal) was incorporated as a limited company to plan, promote and organize an integrated and efficient development of hydro resources of Bhagirathi river and its tributaries at Tehri and complementary downstream development for power generation and other purpose in all its aspect and to undertake the development and harnessing of such hydro-electric sites project in Bhagirathi valley.

During Ix plan against the targeted capacity addition of 1000 MW, THDC has not been able to add any capacity due to various Environment protests and due to non vacation of old Tehri town and delay in closure of Tunnels T3 and T4

The company has a plan to add 2400 MW hydropower during the X plan period with the total outlay of Rs. 7209 crore. The cost of the project is being shared in the ratio of 75:25 for power component. While the irrigation component is to be entirely funded by the State Government. The entire outlay is provided by Central Government Net Budgetary Support.

**Naphtha Jhakri Power corporation Limited (NJPC)**

The Naphtha Jhakri Power Corporation Limited (NJPC) was incorporated on May 24, 1988 as a joint venture of the Govt. of India (GoI) and the Govt. of Himachal Pradesh (GOHP) with an authorized share capital of Rs. 10000 crores. The present authorized share capital of NJPC is Rs. 4500 crores. The equity-sharing ratio of GoI and GOHP is 3:1, respectively

Naphtha Jhakri Power Corporation Limited (NJPC) is the first project undertaken by NJPC. With the 1500 MW Mega Nathpa Jhakri Hydro-electric Power Project at hand, the corporation plans to take up more projects in Satluj Basin in Himachal Pradesh in future. Some of the Projects identified in Satluj Basin are:

| | |
|---|---|
| Rampur | 440 MW |
| Shong tong Karcham | 400 MW |
| Thopan Powari | 400 MW |

Based on the approval of the GoI, presently NJPC is taking up the survey, investigation and preparation of detailed project report for the proposed Rampur Hydro-electric Project, During the X Plan, the Corporation is planned to add capacity of 2000 MW with the total outlay of Rs. 4047 crores to be financed by Rs. 700 crores as NBS and remaining loans from banks etc. However, MOP while finalizing the generation capacity of the Corporation for the X Plan, estimated the addition of 1900 MW during X Plan. In the XI Plan, the Corporation has projected to add additional capacity of 600 MW with the total planned outlay of Rs. 2542 crores.

**Damodar Valley Corporation (DVC)**

Damodar Valley Corporation (DVC) got incorporated on the 7th July 1948 under Damodar Valley Corporation Act (XIV of 1948) as the first multipurpose river valley project of independent India.

**Generation Programme**

DVC would add 1960 MW during X Plan and 3340 MW in XI Plan period. These are also a number of transmission lines (1732 ckm in X Plan and 1480 ckm in XI Plan) and substations. The following projects are identified by DVC to add the capacity during X Plan:

| Project | Capacity(MW) |
|---|---|
| Mejia 4 | 210 |
| Mejia 5 | 250 |
| Maithon | 1000 |
| Chandrapur | 500 |
| Total | 1960 |

| Particulars | X plan | XI Plan | Total |
|---|---|---|---|
| Internal Resources | 309 | 900 | 1209 |
| NBS in the form of GoI equity | 0 | 5244 | 5244 |
| Loan from banks | 13197 | 7988 | 21185 |
| Direct market borrowing | 1900 | 1600 | 3500 |
| ECB/ECA/Euro bonds | 0 | 0 | 0 |
| **Total** | **15406** | **15732** | **31138** |

**Neyvelli Lignite Corporation Limited (NLC)**

Neyvelli Lignite Corporation Limited (NLC) is a public sector enterprise of Dept. Of Coal was set up in 1956. It has an installed capacity of_____ MW as on March 2002.

During X Plan NLC processes to add 960 MW with the total outlay of Rs. 8007.64 which also includes the advance expenditure for the projects to be commissioned in XI Plan (i.e. 2202 MW) the proposed plan during X and XI Plan is as under:

| Sl. | Project Name | Capacity Addition in MW | | Capacity In MW | Total |
|---|---|---|---|---|---|
| | | X Plan | XI Plan | | |
| 1 | TPS I Expansion | 210 | | 420 | 630 |
| 2 | TPS II Expansion | 500 | | 500 | 1000 |
| 3 | TPS III | | 1000 | 1000 | 2000 |
| 4 | Barsinger | 250 | | 250 | 500 |
| 5 | Refinery based Power Plant Chennai | | 492 | 492 | 984 |
| 6 | Lignite based PP, B&C site | | 210 | 210 | 420 |
| 7 | Coal based PP, Tuticorin | | 500 | 500 | 1000 |
| | **Total** | **960** | **2202** | **3372** | **6534** |

The fund requirement during X and XI Plan is as under;

**Plan Wise Requirements of Funds**

| Particulars | X plan | XI Plan | Total |
|---|---|---|---|
| Internal Resources | 2803.67 | 577 | 3380.67 |
| Domestic borrowing including Bonds | 5203.97 | 1071 | 6274.97 |
| **Total** | **8007.64** | **1648** | **9655.64** |

**Nuclear Power Corporation of India Limited (NPCIL)**

Nuclear Power Corporation of India Limited (NPCIL) is a public enterprise of the department of atomic energy, registered under the companies act 1956 presently, the total installed capacity is about 2720 MW. NPCIL planned a

capacity addition of about 1300 MW during the X Plan and about 5915 MW during the XI Plan Further and installed capacity of 20000 MW is expected to be achieved by 2020 AD

The project-wise capacity addition plan under the X and XI plan periods is as under:

**Table 4.14**

| Project | X Plan Capacity Addition | XI Plan Capacity Addition |
|---|---|---|
| TAPP 3&4 | 1080 | |
| Kaiga-3 | 220 | |
| Kaiga-4 | | 220 |
| RAPP -5&6 | | 440 |
| Kudankulam -1&2 | | 2000 |
| Capacity addition of 3255 MW being contemplated by a mix of the Following during XI Plan. Light water reactors(1000 MW) PHW Rs of 680 Mwe (upgraded version of 540 Mwe) Advanced heavy water reactor (AHWR) of 235 Mwe (being up-graded to 300 Mwe)( The locations for setting up these units will be decided later) Prototype fast Breeder Reactor(PFBR) of 500 MW at Kalpakkam, Tamil Nadu | | 3255 |
| **Total** | **1300** | **5915** |

**Funding of Outlays**

NPCIL plans to finance the above projects with a debt-equity ratio of 2:1 expect for TAPP -3&4, which is being funded with a debt; equity ratio of 1:1 while funding of PFBR and AHWR is to be done mostly through budgetary support. Equity capital would be provided through budgetary support of the Govt. of India and internal surplus generated by NPCIL. It is expected that NPCIL would be able to generate internal surplus of about Rs. 3450 cr. during each of the five-year plans periods. The total requirements of funds would be about Rs. 22290 cr. In the X plan for completion of the projects as well as start of projects to be completed in the XI plan as indicated above. About Rs. 27000 cr. would be needed as outlay for capacity addition planed in the XI Plan and for new starts to be completed in the next plan. The requirements of funds beyond the equity capital as indicated above would be through debt financing from Indian Capital Market.

**Summary**

To sum up funds requirements of CPUs for X plan as provided by the respective CPU are as follows.

| | Capacity Addition | IR | Direct Market Borrow | bank loans | ECB | DS | NBS | Total |
|---|---|---|---|---|---|---|---|---|
| **Generation** | | | | | | | | |
| 1 NHPC | 5310 | 1159 | | 15577 | 829 | 461 | 22589 | 40615 |
| 2 NEEPCO | 585 | | | 1750 | 463 | | 2011 | 4224 |
| 3 DVC | 1960 | 309 | 1900 | 13197 | | | | 25406 |
| 4 NPC | 1300 | 3450 | 3472 | 3218 | 5654 | | 6496 | 22290 |
| 5 NTPC | 9160 | 7759 | | 18965 | 23747 | | 13209 | 63680 |
| 6 NLC | 960 | 2804 | | 5204 | | | | 8008 |
| 7 NJPC | 2000 | | | 3347 | | | 700 | 4047 |
| 8 THDC | 2400 | 791 | | 3471 | 1790 | | 1157 | 7209 |
| **Total Generation** | 23675 | 16272 | 5372 | 64279 | 32483 | 461 | 46162 | 165479 |
| **Transmission** | | | | | | | | |
| 9 PGCIL | | 2938 | | 8002 | 8214 | 1216 | 1000 | 21370 |
| **Total Transmission** | | 2938 | | 8002 | 8214 | 1216 | 1000 | 21370 |
| **TOTAL** | **23675** | **19209** | **5372** | **72371** | **40697** | **1677** | **47162** | **186848** |

*In addition, about 1700 MW capacity is expected to be added through non conventional energy source such as wind solar etc. with a total outlay of 4015 cr. for which IREDA planned to fund through Rs.996 cr. as IR, Rs. 1275 cr. as Direct market borrowing, Rs. 1051 cr. ECB, Rs. 75 cr. institutional equity and Rs. 614 cr. as NBS*

Now, the planning Commission has also approved the budgetary support to the various CPUs for X Plan. The budgetary support approved by the Planning Commission in all the cases is lower than the actually demanded by the respective CPU. The Ministry of Power has also down sized the capacity addition programme of NHPC and NJPC for X Plan. Accordingly, the funding requirements of these organizations are also downsized by the CPUs and as approved by the Ministry of Power. The difference in the budgetary support demanded by the Ministry of Power. The difference in the budgetary support demanded by the CPUs and as approved by the Ministry of Power is viewed as equity gap. In view of this, the funding requirement of the CPUs for X plan arrives as follows;

| Company | IEBR | NBS | Equity Gap | Total |
|---|---|---|---|---|
| **Generation** | | | | |
| NHPC | 18026 | 14200 | | 32226 |
| NEEPCO | 2213 | 2011 | | 4224 |
| DVC | 15406 | 0 | | 15406 |
| NPC | 15794 | 6496 | | 22290 |
| NTPC | 50471 | 3000 | 10209 | 63680 |
| NLC | 8008 | 0 | | 8008 |
| NJPC | 2554 | 700 | | 3254 |
| THDC | 6052 | 600 | 557 | 7209 |
| **Total Generation** | 118524 | 27007 | 10766 | 156297 |

| | | | |
|---|---|---|---|
| **Transmission** | | | |
| PGCIL | 20370 | 1000 | 21370 |
| **Total** | **138894** | **28007** | **10766** | **177667** |

The funding requirement for XI Plan for CPUs is taken on the basis of the estimates given by the respective CPUs. The details are given below: -

| | Capacity Addition | IR | Direct Market Borrowing | bank loans | ECB | DS | NBS | Total |
|---|---|---|---|---|---|---|---|---|
| Genern. | | | | | | | | |
| NHPC | 10322 | 5862 | | 42472 | | 267 | 9124 | 57725 |
| NEEPCO | 1290 | | 3671 | | | | 2220 | 5891 |
| DVC | 3340 | 900 | 1600 | 7988 | | | 5244 | 15731 |
| NPC | 5915 | 3450 | 5276 | 3486 | 7393 | | 7395 | 27000 |
| NTPC | 10350 | 1777 | | 20301 | 17922 | | 15826 | 55826 |
| NLC | 2202 | 577 | | 1071 | | | | 1648 |
| NJPC | 600 | | | 2542 | | | | 2542 |
| THDC | | | | | | | | |
| Total Genern. | 34019 | 12566 | 10547 | 77860 | 25315 | 267 | 39809 | 166363 |
| Transmission | | | | | | | | |
| PGCIL | | 5081 | | 14917 | 6393 | 1867 | | 28258 |
| Total Trans. | | 5081 | | 14917 | 6393 | 1867 | | 28258 |
| **TOTAL** | **34019** | **17647** | **10547** | **92777** | **31708** | **2134** | **39809** | **194622** |

# FUND REQUIREMENTS OF STATE POWER UTILITIES (SPUs)

**Requirements of funds**

The committee requisitioned the data from State Power Utilities but except two - three utilities, none has responded. In absence of any data, the committee adopted the following methodology.

The actual expenditure pattern during IX Plan in State Power Sector is as follows: -

**State power sector Expenditure**

| Year | Amount (Rs. in Cr.) Gen., T&D, R&M, RE & others | Capacity (MW) |
|---|---|---|
| 1997-98 | 12552.3(A) | 1676 |
| 1998-99 | 1301.93(A) | 1675.4 |
| 1999-00 | 12538.98(A) | 2329.1 |
| 2000-01 | 15146(RE) | 2375.7 |
| 2001-02 | 14996.3(App.) | 1393.9 |

Total A= Actual, RE= Revised Estimates, App. = Approved

Source: Planning commission Annual reports (2001-02) on the working of SEBs and Electricity departments on May 2002

Based on the capacity addition, R&M T&D and rural electrification programme of SPUs, the requirements of fund for state sector during X & XI Plan period are estimated as follows: -

| Particulars | Amount (Rs in cr.) X Plan | XI Plan |
|---|---|---|
| 1. Generation | 56000 | 65000 |
| 2. Transmission & Distribution | 71000 | 80000 |
| 3. Renovation & Modernisation | 10000 | 15000 |
| 4. Rural Electrification | 39920 | 60000 |
| **Total** | **176920** | **220000** |

**Transition Requirement**

It is well recognized that in the initial years of the reforms in the state Power sector, the losses will continue. Hence it is essential to see that the transition phase is managed in a smooth manner. Unless a credible support program is put in place, the very survival of new utilities formed as a result of the reform process may become doubtful.

The structural support to the state power sector is crucial and would be required for the X plan period by which time, It is expected that results of reforms will enable the utilities to operate on self sustainable commercially viable basis.

The total quantum of the funds required as transition support as per rough estimates made by PFC would be in the region of Rs. 84.500 crores (given below) requirement of funds to meet past unfounded

liabilities on account of staff benefits viz. pension, gradually and other retirement benefits. Dues of central and other agencies, working Capital requirement and taken together with current cash deficits, the transition adjustment cash may reach up to Rs. 1.00.000 crores over the X Plan period

**(Rs. in cr.)**

| State | Transition support required |
|---|---|
| Andhra Pradesh | 10000 |
| Assam | 2000 |
| Chattisgarh | 2000 |
| Delhi | 4000 |
| Goa | 500 |
| Gujarat | 6000 |
| Haryana | 3000 |
| Himachal Pradesh | 750 |
| J&K | 500 |
| Jharkhand | 1000 |
| Karnataka | 8000 |
| Kerala | 1000 |
| M.P | 5000 |
| Maharashtra | 10000 |
| Manipur | 250 |
| Meghalaya | 250 |
| Punjab | 3500 |
| Rajasthan | 3500 |
| Tamil Nadu | 8000 |
| Tripura | 250 |
| U.P | 10000 |
| Uttaranchal | 1000 |
| West Bengal | 4000 |

Raising resources of this magnitude will be more difficult while the bulk of the burden will have to borne by the State Government itself. It is assumed that GoI will be support the states to meet the some these costs arising out of reforms through ADRDP. This is estimated as Rs. 20,000 crores grand portion of APRDP, which will be linked to achievement of reform and efficiency milestones. The State Govt. support will come from budget and from sale of state power utilities all of that can be channelised through state power restructuring fund. Additionally grants/loans may be available for restricting from multilateral/bilateral agencies. All these fund requirements have not been included estimates of the Committee that has focused only as investment requirements.

**Source of funds**

The sources of funds for a project traditionally comprise internal resources, debt finance and equity support. But financial condition of Indian State power sector is in very bad shape. The commercial losses (without subsidy) of SEBs increased from Rs. 4560 crores in 1992-93 to Rs. 25259 crores in 2000-01 (RE). It is projected that the same will increase to Rs. 33177 crore in 2001-02. As a result the SEBs has been earning negative net internal resources (IR).

The sources and quantum of funds that state sector can tap during X and XI plans are discussed in separately. The present available sources are briefed below.

**Internal Resources (IR)**

It is seems difficult for State Power Utilities (SPUs) to generate any appreciable IR during X Plan Assuming that reform of some SPUs will be during the X Plan and benefits of reforms will start accrue towards the latter part of end of X Plan, the SPUs may be able to generate IR of the order of Rs. 5000 crores during X Plan. After the reforms are completed in the XI Plan, this will considerably increase to a level of Rx. 25,000 crores.

**Plan Support by State Government**

States have provided subvention in IX Plan totaling to about Rs. 50,416 crores as given in the following table. This is expected to increase during reform period.

| Year | Agricultur subsidy | Domestic subsidy | Interstate sales | Gross Subsidy | Subventi on Fr. St. | Net sub. | Surplus | Uncover ed sub. |
|---|---|---|---|---|---|---|---|---|
| 1996-97 (Actual) | 15585.2 | 4386 | 238.75 | 20210 | 6630.7 | 13579.4 | 7774.3 | 5805.03 |
| 1997-98 (Actual) | 1706.7 | 5258.4 | 457.1 | 23422.3 | 6364.75 | 17057.5 | 9010.9 | 8046.61 |
| 1998-99 (Actual) | 20693.9 | 6332.5 | 455.9 | 27482.23 | 10351.55 | 17130.68 | 8345.26 | 8785.42 |
| 1999-00 (Prov.) | 22508.6 | 8121.1 | 373.6 | 31003.2 | 11264.5 | 19738.7 | 5307.1 | 14431.7 |
| 2000-01 (RE) | 24699.18 | 10036.1 | 344.6 | 35079.85 | 7465.33 | 27614.5 | 5747.2 | 21867.3 |
| 2001-02 (AP) | 28123.27 | 12238.51 | 358.8 | 40721.6 | 8339.6 | 32382 | 5743.55 | 26638.4 |

Source: Planning commission Annual reports (2001-02) on the working of SEBs and Electricity departments on May 2002

For the X Plan, it is felt that after providing subsidy, the financial position of state Government would be the deciding factor for their ability to provide plan support to the power sector. This support has consistently declined, as will be seen from the following table:

| Plan | % Budgetary support for State govt. |
|---|---|

It is suggested that their support be increased during X Plan to Rs. 5,000 crores

**Market Borrowing**

State Power Utilities (SPUs) are mobilizing funds from domestic markets to finance projects. SPUs are generally taking money through various debt instruments. It realistic terms, there is very little possibility in enhancement of market borrowing by state Power Sector due to their deteriorated financial health and squeezed capacity of state governments to provide further guarantees. However, in IX Plan, the scenario will change after reform of SEBs.

**Institutional Support**

In terms of long term lending to power sector projects. Power Finance Corporation Limited and Rural Electricity Corporation are two key institutions for providing financial assistance. In addition to these, Life Insurance Corporation is also providing financial assistance to Power Sector. Some All India Financial Institutions and Commercial Bank may provide limited financial assistance to SPUs for power projects.

# FUND REQUIREMENT OF PRIVATE SECTOR UTILITIES

In early nineties when the power sector was opened up for investment, it was expected that large private sector investment- domestic and overseas will take place. However, actual experience has been quite dismal. In VIII Plan, very little IPP capacity materialized. During Ix Plan against a target of 17589 MW, outlay 5061 MW was achieved.

**Requirement of Funds**

Apart from generation, private sector investments are also expected in the transmission and distribution areas. However, in this report, all investment requirements for distribution have been shown under state power utilities. To the extent these are privatized, corresponding requirements will shift to private sector. The Committee has assessed the following requirements of funds.

| Particulars | | X Plan | XI Plan |
|---|---|---|---|
| 1. Generation | | 35500 | 75000 |
| 2. Transmission | | 9710 | 11200 |
| | **Total** | **45210** | **86200** |

**Source of Funds**

To finance the projects, typically promoters are required to bring equity and arrange debt including supplier's credit etc from Indian as well as international finance institutions, commercial bank and financial, institutions and banks generally require promoters to bring to arrange the equity to the extent of 30% and rest of the funds will be arranged by the various debt instruments. Both the promoters and lenders look for adequate payment security mechanism as Indian power sector is operating in highly monopolistic environment and the SPUs who are respectively for the distribution of electricity are not able to meet their payment commitments due to moderate collection, high financial losses etc. This is the main deterrent for private investment in power sector and also the basic reason for not getting financial closures in the most of IPPs cases. This is also creating hurdles in finalization of tariffs and delaying PPA finalization. Besides this, many infrastructure project is also exposed to number of financial risks which include market risk, regulatory risk, country risk, interest rate risk, currency risk, political risk, liquidity risk, counter party risk, credit risk, valuation risk, operating risk, and arrears risk. Power projects also carry a management risk and technological risk due to project complexity and management often has no relevant experience or track record handling these projects. In these circumstances, it is a difficult task for the IPP developer to arrange the equity as well as debt funds. To overcome this problem, several attempts have been made in the past to develop different security mechanisms. The real solution lies in the financial viabilities of SPUs of distribution utilities through reforms and restructuring. Till then the security mechanism may have to provide for restructuring LCs, escrow accounts, state government guarantees, etc. These may also be limited resource of corporate financing of IPP, which may be structured, with greater balance sheet supports of promoters. The corporate finance will benefit the power sector in three ways. Firstly, the promoters' balance sheet support offers greater security to lenders and

enhances their access to cheaper long-term debt- critical to sustainable power sector financing giving that IPPs typically depend on debt for 70 to 75 percent of total financing requirement. Secondly, while promoters based on their balance sheet support these can be accessed to public equity market bring in equity, which can provide cheaper funds. Thirdly, the reforms of power sector may also unbundled the generation, transmission and distribution and new legislation may expand choice for the generating companies to choose for wholesale and (Potentially) retail consumers, the balance sheet support of promoters may be seen a corollary to the restructuring in power sector.

It is felt that limited or full recourse financing of IPPs will make it possible for IPP promoters to raise funds both equity and debt from wider, deeper and cheaper sources. But to achieve this, the regulatory authorities, lenders, promoters will have to adopt innovative strategies. Some of these strategies are suggested below: -

Separate private sector generation companies with large capital base should be encouraged. Such generation companies can be promoted by private sector or jointly with state/central sector.

CPUs/SPUs should encourage divestiture of commercially operating generating plants especially under performing plants to IPP developers. These sales could have a condition that IPP developers will make the specified investments in the given time frame. These commercially operating, running projects will give positive revenue streams to IPP immediately and will also provide the required financial base to further investment in multiple plants.

IPP participation from the promoter group whose business as are already listed in the stock exchange having good credit rating and their group balance sheets are quite sizeable, should be encouraged through proper regulatory measure.

As the private participation in India in Power Sector is still at its infancy, the IPP developers could use their balance sheet support for project financing including for subordinated debt and quasi capital funds. This should be adopted as transitional strategy for meeting the immediate requirements of large funds till the projects reaches at self-sustainable stage.

The resource financing of power projects, will also help in the keeping the overall cost of project (because of financially advantage for both debt and equity) at lower side as the lenders can have the information about the IPP developers as regards to their performance through stock markets, rating agencies etc.

Thus senior debt may have the highest debt service priority and it may have the largest debt maturity and lowest relative interest rate or spreads. This category of debt would attract banks and other financial institutions. Subordinated debt could be more expensive to make it attractive not only to banks and financial institutions but also to equipment vendors and financial investors.

Once the finance structure is developed the IPP developers and investors may be able to make use of and incorporate a number of techniques and instruments to manage the various requirements of funds. Some of the resources are discussed.

**Equity.** In addition to promoter's share of equity capital domestic as well as overseas equity market can be tapped. But at domestic front it is difficult to raise equity for power sector in the prevailing condit8ons. However, after reforms power sector would move from monopolistic market to competitive market (single distribution utility system to multi distribution utilities) and it may enable private companies to tap capital market. The proposed India Power Fund (discussed later) can help the IPPs to get equity over and above promoter's own

equity. Tapping the foreign equity market on the strength of the promoters group's balance sheets of the established IPP developers is also possible

**Debt- Domestic Market**: In the domestic market; funds can be raised through short term, medium term and long term loans from All India Financial Institutions (AIFIs), State level financial institutions and commercial banks. An IPP developer can also raise money through bonds/debentures and other debt instruments both through private and public issues. These issues can target the investments from contractual savings (Provident Fund/ Pension Fund /Gratuity Funds), Mutual Funds and General Public.

**Debt- Foreign Market** - An IPP developer can also tap the foreign debt market through various sources of ECB.

**ECA/Supplier's credit**- IPP developers can also avail the credit support from Exports Credit Agencies (ECAs)/Suppliers credit.

## TOTAL REQUIREMENT OF FUND FOR POWER SECTOR

Based on the analysis given, the funds required for achieving the mission of " Power for all by 2012" for Power Sector during X and XI Plans have been summarized in this chapter. The funds required for generation, transmission and distribution schemes as well as for R&M, Rural Electrification etc. have been worked out for projects which are being envisaged for commissioning during X Plan and also advance expenditure for the projects which will be commissioned in XI Plan and starts to be made for the XII Plan.

**Fund Requirements of 10th Plan (1.4.2002 - 31.3.2007)**

**(Rs. in Crore)**

| Fund Requirement | Central sector | State sector | Private sector | Total |
|---|---|---|---|---|
| Generation | 1,56,300 | 56,000 | 35,500 | 2,47,800 |
| Transmission | 21,400 | 26,000 | 9,700 | 57,100 |
| Distribution | - | 45,000 | - | 45,000 |
| Rural electrification | - | 39,900 | - | 39,900 |
| Renovation & Modernisation | - | 10,000 | - | 10,000 |

| | | | | |
|---|---|---|---|---|
| Total | 1,77,700 | 1,76,900 | 45,200 | **3,99,800** |

**Fund Requirements of11th Plan (1.4.2007 - 31.3.2012)**

**(Rs. in Crore)**

| Fund Requirement | Central sector | State sector | Private sector | Total |
|---|---|---|---|---|
| Generation | 1,66,450 | 65,000 | 75,000 | 3,06,450 |
| Transmission | 28,250 | 30,000 | 11,200 | 69,450 |
| Distribution | - | 50,000 | - | 50,000 |
| Rural electrification | - | 60,000 | - | 60,000 |
| Renovation & Modernisation | - | 15,000 | - | 15,000 |
| Total | 1,94,718 | 2,20,000 | 86,200 | **5,00,900** |

**Note:**

1. To the extent distribution system/ Generation etc are privatised, the fund requirements shown under state sector will shift to the private sector column.

2. These fund estimates do not include about Rs. 100000 cr. required during the transition period of reform and restructure of state power utilities, which will be of non- investment nature and take care of a liabilities, working capital, VRS etc. These are expected to be met by grants from Central govt. under APDRP and from State government as well as restructuring loans from multilateral bodies like World Bank.

3. Besides, IREDA has projected for Rs. 4011 cr. during X Plan.

# SOURCES OF FUNDING AND FUNDING PLAN

## Sources of Financing

The requirement of funds for the investment in Power Sector as stated with earlier chapter is large enough to be met by traditional pattern of funding used so far. The Committee has estimated the expected funding from various agencies, to the extent of possible, based on the availability of information about ability of various sources to provide the desired level of funding. As a quantum jump in funding by various categories of investors is envisaged, the Committee, feel, there is a meet to provide certain incentives for attracting the investors. Whenever possible, the types of incentives required for each category have been mentioned along with the size of funding expected from that source.

The last decade has seen a significant change in the international capital flows and also within the domestic capital markets and debt markets. Change in the interest rate scenario, which has witnessed a fall of about 4-6 % in last 2 years, has set an ideal background for large-scale resource mobilization for infrastructure sector. Such changes keep affecting the priorities of companies in accessing different capital markets at different times. It is not possible to assume that the existing conditions will prevail in the same pattern for the next decade also. Therefore, the decision to shift from one source of financing to other source of financing before starting the projects or attempting debt substitution after the debts have been raised, will have to be decided by different project agencies from time to time. With the above background, the Committee has made attempts to assess the fund availability for Indian Power Sector from following groups.

**1.Internal Resources/Promoters Funds**
**2.Government Net Budgetary Support(NBS)**
**3.Mutilateral Credits**
**4.Domestic Capital Market**
**5.Domestic Institutional and Bank Finance**
**6.External Commercial Funds**
**7.Market Borrowings**
**8.Power Finance Corporation Limited (PFC)**
**9.Rural Electrification Corporation Limited (REC)**

**Internal Resources/Promoter's Funds**

**Central Power Utilities**

In the X Plan the CPUs are estimated to generate internal resources to the tune of Rs. 19,000 crores. This gives about 10.67% of the investment requirement of the X Plan. However, CPUs has projected to generate Rs. 18,000 crores as internal resources for XI Plan.

**State Power Utilities**

As most of the power utilities have recently started reforms and are not cash Surplus, there is not much scope for depending upon internal resources of SPUs which can be deployed as new capital investment. But, assuming that reform of some SPUs will be during X Plan and benefits of reform will start accruing towards, in the XI Plan the internal resources are expected to increase significantly due to the impact of reforms materializing and the SPUs may be in a position to reinvest the same in new projects. Accordingly, it is expected that

about 9% of the total investment in the XI Plan aggregating to Rs. 20,000 crores will be met out of redeployment of the internal resources by SPUs.

**Private Sector**

In the private sector internal generation of resources has been assumed to be re-invested within the overall financing target as equity or debts so that it is able to earn defined returns for equity or debts for new investment in power sector. In Addition the promoters are expected to bring up their funds to the tune of 11% of the total requirement of funds during X and XI Plan Period. The remaining equity gap will have to be filled in through institutional investment/IPOs.

**Government Net Budgetary Support**

**Central Power Utilities (CPUs)**

For the X Plan, a budgetary support of Rs. 28,000 crores has been provided for the central sector as finalized by the Ministry of Power. AS the CPUs are contemplating to add 31,500 MW in XI Plan, period, the budgetary support from the Government will also require to be maintained at the same level of X Plan, i.e. Rs. 28,000 crores.

**State Power Utilities SPUs)**

For the X Plan, it is estimated that CPUs will get a budgetary support of Rs. 25,000 crores (5,000 from state government and 20,000 from central governments including APDRP). This does not cover the requirement of reforming states for the transition period funding gap. It is estimated that their transition period funding requirement itself is about Rs. 100.00- crores in the Tenth Plan which needs separate resource mobilization during the X Plan, period. The transition period funding is expected to be met by additional Govt. support, multilateral assistance, and domestic Institutional supports and through ADRDP grants assistance.

During the XI Plan, the investment requirement of SPUs is estimated to be at Rs. 29,000 crores and it is estimated that the state Govt. budgetary support of Rs. 5,000 crores will be needed in the XI Plan also.

**EXTERNAL COMMERCIAL BORROWINGS**

## DEFINITION:

ECBs include

. Commercial bank loans;
Buyer's credit
. Supplier's credit.
Securitised instruments (Floating Rates Notes and Fixed Rate Bonds)
Credit from official export credit agencies.

Borrowings from Multilateral Financial Institutions such as International Bank for Reconstruction & Development (IBRD), International Finance Corporation, ADB, AFIC, CDC. etc.

## ECB CAP:

Ministry of Finance, Government of India sets ail annual cap for the Indian Corporate on the total ECBs that can be accessed in a year with a view to manage the country's external debt prudently. Similarly, to discourage' very short-term borrowings, it -also places restrictions on the maturity profile of the borrowings. The Ceiling for this Fiscal is US$ 9 billion.

## AVERAGE MATURITY:

Under the various schemes through which ECB~ can be raised Average Maturity is main condition to be satisfied for getting approval of sanctioning authority. Average maturity is defined as *"weighted average of all disbursements taking each disbursement individually and its period of retention IIY the borrower for the purpose of ECBs."*

External Commercial Borrowings which are equal to or less than US $20 million in respect of all sectors except 100% EOUs ,should have at least 3 years of average maturity.

For external commercial borrowings greater than US $20 million equivalent in respect of all sectors except 100% EOUs should have average maturity of at least 5 years.

For Normal Projects" All in costs ceilings" is 300 points over six months LIBOR in respective currency the loan raised.

## SCHEMES:

In the process of simplification and de-regulation for the benefit of corporate and institutions, Ministry of Finance has delegated sanctioning powers to the RBI.

1. *Short Term Loan Scheme*

2. *US* $5 *Million*

3. *US $10 Million*

1. *Short term loan Scheme:*

Foreign Currency Credit given to Importer of Goods to finance import of goods into India by the overseas supplier of goods, provided the period of maturity of credit is more than six months but less than three years. .
Foreign Currency loan/credit extended by any bank or financial institution outside)
India to an importer in India for financial imports into India, provided the period
of maturity of loan/credit is less than three years.

b *US* $ 5 *MILLION SCHEME (earlier US* $ 3 *Million Scheme):*

/ All Indian entities can raise ECB up to US $ 5 million or its equivalent for general
purposes at minimum simple maturity of 3 years, I
/ There are no end-use restrictions excluding investments in stock markets or in real estate.
/ Corporate can raise in one or more tranches subject to the condition that total outstanding loan should not exceed US $ 5 ,million under this scheme.
/ Interest Rate on borrowings under this scheme should not exceed LIBOR plus 1.5% - 2% in the respective currencies loan is raised.
/ RBI is the Sanctioning Authority.

3. *US $10 Million Scheme:* ,

Indian entity is allowed to Borrow in foreign exchange not exceeding US $10 million or ! its equivalent for the following purposes:

**i) Infrastructure Project Financing**
**ii) Exporter/Foreign Exchange Earner Borrowing**
**iii) Long Term Borrower**

i) Infrastrucure Project Financing:

For financing equity investments in subsidiary/joint venture company promoted by the Indian entity for implementing infrastructure projects, with condition that minimum average maturity of loan is 3 years.

If loan has to be raised by more than one promoter entity for a single project then all promoter's aggregate should be more than US $ 10 million.

Indian entity can raise loan in foreign currency provided minimum average maturity is not less than 3 years.

In order to enable domestic investors in Infrastructure projects to meet the minimum domestic equity requirements GOI has

permitted Holding companies or promoters to raise ECB up to maximum of *US* $200 million equivalent to finance equity.

If more than one promoter are raising debt for single project then total quantum of loan by all promoters should not exceed *US* $200 million.

The All in costs for the Projects is 400 points above the LIBOR over six months period in the currency loan is raised.

RBI IS the Sanctioning Authority.

*ii.* **Exporter / Foreign Exchange Earner; Borrowing:**

Maximum of *US* $200 million without .end-use restrictions can be raised by corporate as ECB up to thrice the average: amount of annual exports during the previous 3 years.

For *US* $ 20 million equivalent minimum.. average maturity will be up to 3 years and for ECBs exceeding the *US* $ 20 million the minimum average maturity will be 5 years.

iii) Long Term Borrowers:

Eight years average maturity and above will be outside the ECB ceiling though MOF/RBI prior approval will be; necessary for borrowings. The debt limit under, this window will be reviewed by the government .periodically.

The restrictions on the end-use will be there only relating to investment in real estate and stock market up to the extent mentioned above.

ECB raised above two limits will be subject to the normal end conditions mentioned under the ECB guideline.

Long-term debt instruments should not include any "PUT" or "CALL" options potentially reducing the stated maturities to be eligible for this purpose.

. In addition to their normal yearly. allocation covered by the Cap, Development Financial Institutions can raise ECB under this window.

Borrowings, which are exempted from the.cap under this long-term window, are not eligible for the purpose of enhancing the maturity of shorter-term borrowing mentioned under the ECB window to adhere the required average maturity. Borrowings of 8 years maturity & above are used to lengthen the maturity of shorter term borrowing, then the whole amount will be treated as within the cap.

ECB approved utilization earlier under the regular cap will not be a limiting factor for considering proposals under the long-term maturity window. Additional borrowing under either window (regular or long term maturity) is subject to utilization of earlier approvals in the same window.

The All in costs for this projects is 450 points over Six months LIBOR for the if respective currency in which loan is raised:

As. long as the maturity and the. interest spread are maintained as per the guide-lines, Indian entities may raise ECB either through FRN/Bond Issues syndicated loan etc.

(i) Subject to the limits mentioned above Project appraisal report is not necessary if funds are raised under the long-term maturity window, which is to be utilized for general corporate objectives.

**ECB entitlement for New Projects:**

Subject to the fulfillment of other ECB guidelines, infrastructure and Greenfield projects will be permitted to avail ECB' to an extent of 50% of the total project cost, appraised by a recognized Financial Institution / Bank.

The ECB entitlement for the telecom projects has been increased *from* present ! 35% to 50% of the Project cost (including license fee). Greater flexibility may also be allowed in case of power projects and other infrastructure projects based on merits.

Foreign currency exposure up to 60% of title Project cost is allowed to 100% EOUs.

**End-User Requirements :**

ECBs must be utilized for capital goods import and services and for project related expenditure in all sectors. The following conditions do apply:

*i. Project-related rupee expenditure raised through ECBs must be brought into the country immediately.*
*ii. Indian Entities are not permitted to invest ECB raised in stock market or in real estate*
*iii. ECB raised for import of capital .goods and services should be utilized at the earliest and Indian entities should strictly comply with RBIs exact guidelines on parking ECBs outside till actual imports.*

To acquire ships/vessels from Indian shipyards corporate borrowers win be permitted to raise ECB.

ECB proceeds should not be utilized for following under any circumstances:

(i) *Investment in stock or secondary markets*

(ii) *Real Estate speculation.*

**Bonds. FRNs & Syndicated loans: ;**

13% per annum + interest tax (i.e. the corporation bank's PLR + interest tax) subject to revision from time to time along with the revision of PLR of the bank.

The interest has to be paid on a quarterly basis.

Tenure:

The loan is repayable within 10 years in equal half yearly installments of Rs. 5 crore each, after the initial moratorium of 5 years.

Covenants:

1. The borrower will submit its audited Financial Statements together with explanatory notes within the specified time frame.
2. The borrower shall ensure that the shareholding of the Government of India does not fall below 51% during the tenure of the loan.
3. The borrower shall supply any information concerning the borrower's financial situation or any other information that the bank may require.
4. The lender or its servants shall be allowed to inspect the project and the related installations and the accounts, records and statements.
5. All the rules of the business of the bank that are now in force or hereafter come into force as per the guidelines, shall in all respects be binding on the borrower.
6. The corporation shall obtain prior permission/NOC from the bank for availing credit facilities from other banks/FIs.
7. Rate of interest / commission and other terms applicable to the credit facilities are subject to review from time to time and are liable to be modified at the sole discretion of the bank.
8. Legal/other charges incurred by the bank in connection with documentation shall be charged to the borrower's account.
9. Documentation shall be done under due legal advice.
10. The Corporation shall submit stock, book debts, quarterly information system statements and other financial statements/data to enable supervision and follow up of the advance within the time limit prescribed for the purpose.
11. The current assets/fixed assets hypothecated/mortgaged to the bank shall be kept comprehensively insured against all risks at the corporation's cost.
12. In case of default in payment on the due date, the bank or the RBI will have a right to publish the name of the corporation and its directors as defaulters in the manner and medium that the bank/RBI may deem fit.
13. Proper sign boards should be displayed on the premises of the factory/godown giving notice of the bank's charges over the assets of the unit. Name plat on each item of the machinery stating that it is hypothecated to the bank should be affixed on the machineries.
14. The company is prohibited from using the loan amount or any part thereof for the purpose other than for which it has been sanctioned.
15. The bank revoke or stop the financial assistance at any stage without any notice or giving any reasons for any purpose whatsoever.
16. The bank will have the liberty to have the property, assets which are charged in favour of the bank valued by an appraiser appointed by the bank and the fees and expenses on such appraisal shall be paid by the borrower.
17. The company shall give a declaration that none of its directors is a relative of any senior officer of the financing bank.
18. A certified copy of the resolution passed by the shareholders at the General Meeting of the company conferring the authority on the directors specifying the total amount upto which the Directors are permitted to borrow.

19. The borrower agrees to pay service and incidental charges and all fees that the bank may charge and the charges for the periodical inspection of the hypothecated movables.

20. The borrower shall not create any charge, mortgage, lien or encumbrance that would prejudice the security of the bank.

If overall approval taken together satisfies the maturity criteria prescribed in the ECB guidelines, Bonds and FRNs can be raised in tranches of different maturities.

The longer-term borrowings would necessarily precede that of the shorter tenors in such cases. Within the average maturity, if .the initial tenor is longer the subsequent tranches will be shorter.

ECB raised for import of capital goods and services through Bonds/FRN/Syndicated loans by Corporate are allowed to remit funds into India. According to business judgment of the Corporate, funds can be utilized except for investment in stock market or in real estate up to one year or till the actual import of capital goods and services takes place, whichever is earlier.

In case, Corporate decide to deploy funds' abroad till the approved end use requirement arises, they can do so as per RBIs exact guidelines. RBI would be monitoring ECB proceeds parked outside.

Additional ECB for the corporate can be 'sanctioned only after the company has certified, that it has fully utilized the amount for the purposes they were raised.

**Project Financing - Interest Rate:**

According to new guidelines Corporate are eligible for raising ECBs.

(i) For project related rupee expenditure up to 35% of the total project cost

(ii) To get credit enhancements from international banks/ international financial institutions /joint partners for their domestic rupee denominated Structural obligations.

Interest spreads above LIBOR/US Treasury are to be higher than for normal ECB, at present for ECB project financing. Some flexibility will be permitted in determining the spread on merits keeping market conditions in view.

For giving Borrowers greater flexibility in designing a debt strategy, up to 50% of the Permissible debt may be allowed in the form of sub-ordinate debit at higher interest rate.

Composite spread for senior and sub-ordinate debt taken together comes within the overall project-financing limit.

**Default Interest Rate: .**

ECBs interest rate should not be higher than 2% above the LIBOR of the currency in which the borrowings taken.

The interest rate applicable will be incorporated in the approval letter or letter itself. No further approval will be required from G9I/RBI.

ECB securitization is permitted" but liquidation of the assets given as security will require prior approval of the RBI.

On specific approval, RBI encourages and permit& Indian companies to receive interest-free loans from their parent companies.

Interest free advance against equity from the foreign collaborator to meet pre-operative expenses in India if an application for foreign investment approval is pending with the Ministry of Industry.

**Operating Expenses:**

Expenses incurred which are of operati1g' and out-of-pocket nature for ECB approvals, which did not result in loans will be allowed as per prevailing RBI guidelines on current account transaction, subject to cap.

Companies need to take specific, approval of the RBI for remittance of such expenses, instructions in these regard will be issued by the RBI.


**Structured Obligations:**

To hedge exchange rate risks and raise resources domestically by Corporate, Domestic Rupee Denominated Structured obligations will be allowed for credit enhanced by I International Financial Institutions/Joint venture Partners subject to following conditions.

(i) After bringing equivalent amount of foreign exchange into the country, foreign banks giving guarantee will have to make payment of defaulted amount of principal and interest, in the event of default.
(ii) Clearance should be obtained from RBI in advance of issuance under FERA.
(iii) For rupee bonds/debenture clearance should be obtained from RBI/SEB prior only.
(iv) The default should be foreign exchange equivalent amount equal to the principal and interest outstanding calculated in rupee terms, term, in the event of default.
(v) Indian company liability will always be rupee denominated and the debt servicing may be done in the equivalent foreign exchange funds. In post default situation Debt service may be in rupees or in forex as mentioned in the contract document.
(vi) Expenses like guarantee fee/commission/charges and other incidental expenses to the Indian company should be in rupee terms only. All in cost, on this account should not exceed 3% p.a. in rupee terms.
(vii) Clearances should be obtained in advance for the proposals relating to sectors where conditions apply.
(viii) The interest rate could be coupon on the Bond/or 250 bps over prevailing, secondary market yield of 5-year GOI security, whichever is higher

**Structured Obligation Facility for NBFCs**

On .compliance with the following additional conditions, NBFC's would be eligible to avail the credit enhancement scheme:

NBFC should be registered with RBI

Credit Rating Agency should have bestowed it with "AA" or equivalent rating & it should have earned profits during the last three years.

If Parent Company of NBFC provides credit enhancement guarantee on non-recourse and 4 non-repatriable basis then condition of three years track record of profit will not be applicable. The credit rating of 'A or equivalent' would also be acceptable in such cases.

**Other Terms and Conditions:**

The financial terms and conditions of each ECB. proposal are required to be reasonable and market related. It Is up to Borrowers to decide the source of ECB I.e., currency of loan, and the interest rate basis (floating or fixed).

**Security:**

Borrowers can decide on the security to be provided to the lenders/suppliers. But, when the security is in the form of a guarantee from an Indian Financial Institutions or from an Indian Schedule commercial bank, counter guarantee or confirmation of the guarantee by a Foreign Bank/Foreign institution will not be permitted.

Condition that Government will continue to hold at least 50% of equity in PSU concerned should not be incorporated in the Loan Agreement, in the view of ongoing disinvestments program.

Interest payable by an Industrial undertaking in India, related to ECB as approved by the GOI/RBI is eligible for Tax exemptions.

**FEMA Approval:**

> Applicant is required to obtain approval from RBI under the FEMA, 1999 after receiving the approval from ECB DIVISION, Department of Economic Affairs, ,Ministry of Finance. To submit and executed copy of the Loan Agreement to this Dept for taking the same on record, before obtaining the clearance from RBI for drawing the loan. End use of ECB will be continued to be monitored by the RBI"

RBI is endorsed to approve all the ECBs under U'S'$ 3 million scheme *(enhanced to US $ 5 Million)* and all other ECB proposals are processed in DEA. Government as step towards further simplification and rationalization has decided to delegate the *ECB* sanctioning *power to RBI up to US $ 100 million under all the ECB schemes except structured obligation.*

Validity of Approvals: ;

For period of six months the approval is valid, it is required to submit an executed copy of the loan agreement within this period.

In case of FRNs and Bonds, the same are required to be launched within Six months period.

For Power projects, the approval will be valid for One Year and in the case of Telecom sector it will be valid for the period of 9 Months.

For all the ECB approvals, which use Bonds, Debentures, FRNs and other such instruments will have additional validity of 3 months period. No extension is given for the validity period.

Borrowers need to submit fresh application, after gap of one month from the expiry of validity period, which will be evaluated in the light of the guidelines applicable at that time.

Extension of validity will be considered on merits for the Infrastructure projects as financial closure may get delayed for reasons beyond the investor's control.

**ECB Repayments:**

*(a) If foreign equity inflow is met then the prepayment facility will be permitted.*

*(b) Corporate can avail following two options for prepayment of ECB in. addition to above option*

With permission from Government, prepayment can be undertaken within permitted period, of all ECBs with residual maturity up to one year:

OR

Of outstanding ECB, up to 10% can be permitted for prepayment once during the life of the loan, subject to ECB approval terms. Companies, which have already availed prepayment facility of 20% earlier, are not eligible.

100% prepayment can be made out of funds in EEFC account with permission of the Government.

*(c) For the above two options validity of permission is as under:*

(i) ECBs for prepayment other than bonds/debentures/FRNs will be up to 15 days or up to next interest payment date, whichever is later.

(ii) Valid permission will not be more than 15 days in case of Bonds/FRNS.

As per guidelines on prepayment, even in cases where ECBs have been approved earlier by MOF,RBI will give all such approval. The following information duly certified by the Statutory Auditors should be forwarded with request for Prepayments:

/ *Loan amount, Sanction Letter No. and Date (Loan Key No.)*
/ *After making payment for fee/commission etc. Net amount drawn.*
/ *The necessary documentary "evidence must be submitted to the concerned Regional Office of RBI indicating the amount utilized for approved end-use and balance un utilized amount, if any,*

/ *If ECB proceeds are parked abroad then the amount parked, Name of the Bank, Account No. and also RBIs sanction letter, certified copy of latest statement etc. should be submitted.*
/ *Amount of loan repaid and balance outstanding.*

/ *Last date of repayment and the residual maturity of the loan.*
/ *Details of the prepayment approval that company has obtained in past should be given, if so*

/ *Prepayment premium (excluding Bonds/FRN issues).*
/ *Source of funds from which the prepayment is proposed to be effected.*
/ *Proposed prepayment Date*
/ *The certificate from the authorized dealer indicating the amount outstanding in EEFC Account, if the prepayment is proposed to be made from that EEFC account.*

**Foreign currency loan refinancing:**

On case-to-case basis, outstanding amounts under existing loans can be refinanced by raising fresh loans at lower costs, subject to the condition that the original loan's outstanding maturity is maintained. Rolling over of ECB will not be permitted.

For financing Rupee related expenditure' and swapping its ECBs with another corporate, which requires foreign currency funds, corporate cannot borrow overseas.

**Liability Management:**

Liability Management can be undertaken, by Corporate for hedging the interest and/or exchange rate risk on their underlying currency exposure. Prior approval 'of this from Department or RBI has been dispensed with for concluding or winding up of the following transactions:

*(i)* *Interest Rate Swaps*
*(ii)* *Currency Swaps Coupon Swaps*
(iii) *Interest Rate Caps/Collars purchase*
(iv) *Forward Rate Agreement.*

***ECB APPROVAL- DOCUMENT TO BE FURNISHED WITH APPLICATION:***

Documents to be filed by the Corporate:

(i) *Offer letter from the lender with the details of the and conditions.*
(ii) *Project Appraisal report from a recognized Financial Institution/Bank if applicable.*
(iii) *Copies of Relevant documents and approvals from central/state governments wherever applicable should be submitted.*

**EOUs:**

*For any amount, 100% EOUs are permitted ECB at minimum average maturity of three years.*

*EOUs are permitted to raise* 60% *of the Project cost* as *ECBs,*

**Latest amendments of ECB Guidelines:**

- ♣ Permission would be granted to the Corporate to make necessary draw-downs under the automatic route without prior permission from the Reserve Bank.
- ♣ Quarterly returns in prescribed format should be filed through authorized dealer.
- ♣ Ministry of Finance will grant the withholding tax exemption.
- ♣ For prepayment of outstanding ECBs, authorized dealers should obtain prior permission from the RBI.
- ♣ RBI prior approval is required for the opening of foreign currency account for parking ECB proceeds pending utilization for temporarily.
- ♣ With a view to liberalize ECB: approvals, the Government has operationalized the automatic route for fresh ECB approvals up to' US $ 50 million and for all refinancing of existing ECBs with effect from SEP 1, 2000.
- ♣ It must be ensured by the Corporate that raised ECB is from an internationally accepted lender, such as export credit agencies, suppliers of equipment's, foreign collaborators, foreign equity holders, international capital. markets, reputed International banks and financial Institutions, etc.
- ♣ Loan should be organized through a reputed merchant banker registered with the regulatory authorities of the host countries.
- ♣ Lenders should be recognized and registered in the host countries for the purpose of extending international finance.
- ♣RBI is delegated with powers of sanctioning' fresh ECB approvals for amount upto US $ 100 MILLION.

**** the Government of India vide its notification no *F.No 4(32)-2000 ECB dated Sept 1st 2000* has operationalized the automatic route for fresh ECB approvals up to US $ 50 million and for all refinancing of existing ECBs.

≅ Under the automatic route arrangement, any corporate being a legal entity, registered under the Companies Act, Societies Registration Act, Cooperative Societies Act, including proprietorship / partnership. concerns, will henceforth be eligible to enter into loan agreement with overseas lender (s) for raising fresh ECB for an amount up to USD 50,Million or for refinancing an existing ECB provided it is in compliance with ECB guidelines framed by Ministry of Finance and regulations / directions / *circulars issued by RBI in this regard.*

≅ Corporate would not be required to obtain any prior approval for raising ECBs up to USD 50 million or for refinancing of an existing ECBs from Ministry of Finance or RBI.

≅ The Reserve Bank of India would issue necessary regulations/directions in respect of the automatic route for ECB approval and refinancing.

**Features :**

*i) Consortium of bank loan is arranged by classified into lead managers, managers, participant & agent.*
*ii) Syndication starts with the process of granting exclusive mandate to the lead managers.*
*iii) Loan amounts are normally a minimum of $10 million. iv) Maturities do not normally exceed 10 years.*
*iv) Loans do not usually revolve because of funding problems.*
*v) Pricing in terms of management commitments & fee & interest spread all net of local taxes. However it is not unusual to find elements of compensating balances, facility fees etc.*
*vi) Bulk of the proposals cover sovereign risk hybrid borrowers.*
*vii) Documentation can cover stiff clauses such as crossed default clause to, include Government or its agencies, sovereign immunity clause, substitute 'basis of covering clause amongst other usual warranties & covenants.*
*viii) Lead managers draw full understanding with managers & participants about underwriting liability.*
*ix) Amount of many loans are in excess substantially of legal lending limits of a bank.*
*x) Loans are usually publicize*

In revolving line of credit facility, the banks commits themselves to make funds available to the borrowers up to a certain date until which the borrower is free to draw down, repay & redraw the funds by giving appropriate notice. The commitment by banks subject to amortization.

Syndicated loan is also made available as a combination if the term loan & revolving line of credit. Under these arrangements bank commitment remains till a given period & any part of the commitment drawn down on the date of expiration is converted into term loan at that time. Any un-drawn commitment is cancelled.

**Procedure**

1) Constituents in syndication are the lead bank, managing bank & participating banks. Lead bank is one or are two but managing banks & participating banks may be more in number.
2) Offers are invited from Banks either one or many & on basis of these offer choice of bank can be made which may act as a lead bank in providing funds. Sometimes banks may also be asked to give bids in confidence & in that basis selection of lead bank could be made, the bank offer document is a very comprehensive: document containing Detailed information & Broad terms & conditions

3) Lead bank obtains mandate from the borrower after negotiation to raise funds.
4) Lead banks makes management group with managing & participating banks, which underwrite the loan or take steps to procure underwriting for the loan.

5) Lead bank prepares a memorandum known as *'placement memorandum'* which contains the following information:

*i) terms of the loan;*

*ii) description of the borrowe*

*iii) latest financial statement of the borrower. If borrower is a Government, latest financial statement of the economy.*

*iv) other useful material if warranted by circumstances or needed by the participating banks for evaluating the proposal.*

6) Lead bank also assists in preparation of loan documents & execution thereof by the borrower & all participating banks. .
7) Lead bank appoints one of the banks as agent, which controls payments of interests & principal & handles other matters between borrower & the participating banks over the life of the loans.

**Pricine of the Loan**

***Interest Cost .***

Interest on syndicated loan is computed by *adding a spread unto the LIB9R..The* rate on any loan is readjusted every 3 to 6 months! irrespective of change in LIBOR.

*Lending banks with the borrower negotiates the spread. It may remain constant over the life of the loan or may change after. a certain number of years as may be agreed*
*between lender & borrower.*

The *margin* is usually between 25bps to 100 bps depending upon the creditworthiness of the borrower, maturity of the loan & prevailing market conditions. .

*Other costs*

In addition to interest, the borrower is required to pay the following fees:

≅ *Commitment fees - are charged as a percentage of the un-drawn portion of the loan within stipulated time (generally 0.5~0. 75% annually)*
≅ *Front-end fees - it is a one time charge imposed upon grant of the loan (0.5-1% of Loan)*
≅ *Annual agent fee - charged annually as per the term of contract.*

**Repayment**
The loan is required to be repaid within tl1e stipulated period. If the borrower wishes to pay the loan prior to the maturity it may incur a penalty fee as per the terms 6f the loan agreement. Borrower may under these circumstances, be required to pay the cost to the bank of re-lending the funds at current market rate which may be lower than the original lending rate.

**DEFINITION & MECHANISM**

FRN is an issue of Bonds for medium to long-term, which pay coupons that are tied to the level of some floating index, which is termed as *reference index.*

Consider a five-year FRN with coupons referenced to six-moth LIBOR paying coupon interest semiannually. Also the default risk premium is set at 0.125 %. So if the current LIBOR is 6.6% then the next coupon payment on a $ 1000 FRN will be;

*0.5* (0.066+ 0.00125) * 1000* = $ 33.625.

If one the next reset date six month LIB OR is say 5.7% the following semiannual coupon will be set at $29.125.

In a basic floating rate note there are five important variables of interest besides the stated maturity of the floater. They are:

REFERENCE INDEX

Every FRN has a reference index upon which the calculation of each successive new coupon is based. The most commonly used is LIB OR i.e. London Inter-bank. Offer Rate. LIBOR is a European market rate, used where European banks negotiate loan agreement. The BRITISH BANK ASSOCIATION publishes it; Which is a consortium of 24 British banks.

*Other reference indexes are:*

U.S 90 day treasury bill rates

Prime rates

Commercial paper rates

Other quarterly or semiannual short term rates

Indexes used in India are:

MIBOR - Mumbai Inter-bank offer rate

Bank Rate

10 Year government bond rate

3 year Fixed deposit rat of SBI

## QUOTED MARGIN TO REFERENCE RATE

An issuer of an FRN specifies that each new coupon paid by that issue would be set at a quoted margin or spread to the specified reference index. On each reset date, this spread ! will be added to or subtracted from the reference index to determine the coupon rate the issue will pay over its next coupon period. So we have.

**Reference Index + X**

Where X is the quoted margin or the default risk premium above the reference index, which the issuer must pay, based on its credit worthiness i.e. it is compensation for the credit risk of the issuer. The spread over the indexed rate could be either fixed or variable. This spread can be linked to the difference between the corporate rate (short term) and the short term T-Bill rates. The default risk depends mainly on the security offered by the issuer and his creditworthiness. Companies like Reliance and TAT A's would be able to issue FRN at extremely competitive margins.

## RESET FREQUENCY

The market standard for an FRN is that coupon-reset frequency is identical payment frequency. However, on some FRNs the coupon interest might be paid only quarters. Examples of reset-frequency rules are 15th of every month; the , last day of March, June, September and December. The actual payment could also occur with a lag of one reset period.

## OBSERVATION DATA

The rules for determining the dates upon which the value of the reference index is observed for the purpose of setting the next coupon

vary. The rule for specifying the observation date generally. includes not only a specific time but a specific place also. For example, the observation date for 3-month LIBOR might be specified as the average offered rate for 3-month Eurodollar deposits at a list of reference banks in London at 12 noon on the second business day preceding the reset rate.

**MATURITY DATE.**

FRNs could have a designated maturity date at which the principal of the bond issue is promised to be repaid along with the last coupon payment

**The first FRN issue was made for ENEL, an Italian power utility company, in 1970. FRNs became popular as it provided the note holders the benefits of ,sec9ndary market liquidity and assured them a rate of return that was linked to LIBOR.**

**FRN TYPES**

In view of shifts in investor preferences- and borrowers funding specifications, variations have been included in the basic FRN concepts. FRNs thus structured are referred to as flip-flop mismatch, caps and collars. The most important of these variations are perpetual floaters and the recent variable rate notes.

**FLIP-FLOP FRNs**

The World Bank carne out with an issue of FRNs in 1985, with a spread of 50 basis points over the three-month US Treasure rate and a perpetual life. Every six month, the note holder's had the options of converting the FRN into a three-month note with a flat three-month yield. The investor could change his mind and convert the said three-month, note into a perpetual note once again at maturity.

**MISMATCH FRNs**

The note issued under this caption pay interest annually though the actual rate is fixed monthly. The formula enables investors to benefit from arbitrage arising on account of differentials in interest rates for different maturities. These are also called rolling rate FRN.

**MINII-MAX FRNs**

The notes embody minimum and maximum coupons. Investors benefits in terms of high spread (over LIB OR), but have a agree to', a minimum rate as well as a maximum rate on their notes, the differential between the two being very small. These are also referred to as collared FRNs.

e.g.

Issuer: World Bank

Maturity: 10 Years.

Coupon: 6 month

LIBOR- 0.25% subject cap of 8.25% and floor of 4.5%

**CAPPED FRNs:**

Under capping arrangements, the FRNs issued are tied to an interest rate cap. This cap provides a ceiling above which the borrower is not required to service the notes, even if normally applicable. It may be noted that caps are traded in the small margins higher than are makes such FRNs attractive to fund managers

*e.g.*

*Issuer: Freddie Mac* ,

*Maturity: 5 years*

*Coupon: LIBOR + 0.5%, capped at 7%*

*This note would float at LIBOR + 0.5% until the coupon reaches 7% i.e. LIBOR reaches 6.5%. If LIBOR rises' above 6.5%, the coupon remains capped at 7%.*

**VRN-STRUCTURED FRNs**

This latest innovation represents long dated paper (often perpetual) with variable interest spreads, with margins over LIBOR going up for the later maturities. Margins for the subsequent dates in this regard are fixed either by auction or mutual agreement.

**PERPETUAL FRNs**

As the name suggests, these FRN s are not redeemable at all and hence called perpetual floaters or undated issues. In this case, because the FRN has no mandatory repayment date, in may count as a form of capital, until the borrower calls it because the coupon has risen to unattractive levels.

**DELEVERAGED FRN**

A variant in this structure is the deleveraged FRN. The term deleveraging implies that the coupon index is based on a fraction of LIBOR or Prime.

e.g.

Issuer: Federal Home Loan Bank

Maturity: 3 years

Coupon: 0.5 *Primer + 0.8%

By this, the investor is able to receive an upfront floating rate coupon that is higher than attainable with a plain LIBOR or prime FRN. However, the downside is that the investor is able to only partially participate in any upside if rates should rise.

Inverse Floating Rate Note (IFRN)

An IFRN's coupon increases when the. floating index decreases and vice-versa. This permits investors to benefits from a lowering rate environment.

eg.

Issuer: 2 years

Coupon: 1st 6 months: 10%- 6 months LIBOR

2nd months: 11%- 6 months LIBOR

3rd 6 month: 12%- 6 months LIBOR

4th 6 months: 13% 6 months LIBOR

## THE CONCEPT OF CAP AND THE FLOOR

Some FRNs are convertible to fixed rate debt, whereas other have limits; caps, floors and collars on how or low the yield can go.

The coupon rules may provide a FLOOR level below, which the coupon may never fall. With a floor, the borrower has in effect sold the Investor an option. If interest rates fall below the floor level, the investor in effect exercise his option and continues to receive interest at floor rate even though market interest rates are below it. e.g. . *Issuer: Fannie Mae Maturity: 10 years Coupon:* 3 *month LIBOR + 0.05%, subject to coupon floor of* 4.5%We also have a CAP level or a ceiling above which the coupon may never go, With a cap, the investor has in effect sold the borrower an option. If interest rates rise above the cap level, which may be thought of as a strike price, the borrower effectively exercises his option, and does not pay more than the cap rate.

**Other options .**

Issuers may include a call provision, which enables them to call away the floater at par, Floaters also provide put option whereby the issuers may put the notes at par. We can also have the option of receiving the coupon payments in prespecified currency of choice .

**INDIAN EXAMPLES OF FRN .**

The *Power Finance Corporation* had accessed the, markets with a *$100 million* floating rate note issue to raise funds for financing various power projects,

ANB Amro was the lead manager to the issue. Toe float was launched on *June* 28 *and closed on July* 9 1999. The issue carried a coupon of 145 basis point over LIBOR and came with green shoe option of $50 million. *The seven-year issue due to mature in 2006 carries a call and put option at the end of five years.*

Road shows were held in Singapore, Mumbai, Dubai, London and three other European' cities to promote the issue, The Bank of Baroda, Natexis Banque, Bank of India and Rabobank were appointed as the senior Co-lead managers on the issue that was underwritten by ABN Amro.

PFC was accorded the same long-term foreign currency debt rating as the Indian sovereign by Moody's and S&P Amro was targeting banks and institutional investors mainly in Europe and Asia.

*Sterlite* had raised $80 million through a floating rate note issued in 1998, lead-managed by UBS, Most of the funds (Rs 287.51 crore) were still lying locked up in Merrill Lynch's international bank in London when sterilite had ,made a open offer for INDAI:

IRFS (Indian Railway Finance Corporation) has raised $150 million (Rs. 540 crore) through floating rate notes sold in the US,:Europe and Southeast Asia in August 1997 at an extremely cheap rate of 75 basis points above the London inter-bank offer rate

Arvind Mills Ltd has also issued floating rate' notes '(FRNs) of $125 million in the overseas market.

Spic Electric Power Corporation, a company promoted by Tamilnadu Petro-products Ltd, has issued during 1996-97, FRN (floating rate convertible notes) for Swiss France 45 million, to be repaid at par on December 9,2003. These notes are convertible a~ the option of investors at Rs. 21.03 per share at any time during the period April 1, 1997 -to maturity date. The Chennai-based fertilizer major SPIC also retired through market operations its $ 120 million floating rate not (FRN). The buy-back was done by borrowing money in the local markets in rupees and buying out the FRN, which was being quoted at a heavy discount.

Industrial Development Bank of India has floated bonds outside India, which include dollar denominated floating rate note maturing on 2002 and a similar dollar denominated FRN maturing on 2004. The outstanding of FRN maturing on 2002 and FRN -maturing on 2004 stood at Rs.987.37 crore and Rs.582.17 crore.. respectively.

## STANDARD TERMS AND CONDITIONS

At the outset it must be noted that there are no conditions attached to the use of funds and hence borrowers are free to use them fot; their general corporate needs, although many of these issues are unsecured, sovereign. borrowers in developing countries are required to obtain a state guarantee while corporate entities require a bank guarantee.

## ISSUE PROCEDURE

### *Bidding And A warding Mandate*

Compared to syndicated credits or issuance of euro notes, the mechanics of borrowing by means of a bond issue are different, complex and elaborate. Each market has stipulated specific procedures. Bonds issued in euro market, even though free from regulation, have to be carefully designed and executed, especially as these are placed amongst international clientele.

Borrowers have to monitor cash flow position, assess the requirements and determine the quantum of funds that is sort to be raised by: means of a bond issue. In addition, borrowers have to make serious preparations for launching the issue and completing documentation formalities while treasury departments.. have to be suitably oriented towards this task. .

While it is necessary to invite bids and undertake, the standard comparative scrutiny, the success of the bond issue, both in terms of initial response and interest in secondary markets, depends not so much on costs as the position and capabilities of the .bidders. The cheapest bid therefore may not be the best bid because the track record and the current market standing of the bidder would have to be carefully weighed while choosing the lead manager.

### *Launching, Offering And Closing*

Placement of new bond issue in market follows a. standard route. The first major task of lead manager is to launch the issue in markets. On receipt of various approvals and authorization by the issuer, news concerning the bond issue floatation is carried through the media. Invitations are sent to underwriters and selling group members inviting their support. The main function of the underwriters is to take up the issue on execution of the underwriting agreement. It is customary for them to sell the issue subsequently.

The next stage in bond floatation is the offering: During this phase, terms consisting of coupon rate and issue price are finalized. Pricing is determined on the basis of the underwriters' response and is undertaken

one day before the offering. The lead manager jointly With co- managers has to assess the mood and response of the market and with the response of the underwriters accordingly,
During the offering period the issuer and the lead manager organize a sales campaign. There are investor meetings where the offering of a bond is formally *presented* to investors. Offering of the bonds issue is organized by sending out an offering circular.

***Outline of offering circular***
The cover page describes the offering of bond along with the coupon rate, issue price, date of offering and redemption and the fact that the listing is sought on one or more stock exchanges (London, Luxembourg" Singapore)

*Details of terms and conditions:* Form and denomination of certificates, title of bonds, status of bonds, negative pledge, interest calculations and payment, redemption, purchase and cancellation of bonds, payments arrangements, taxation, events of default, meetings of bondholders, notices of governing law and jurisdiction etc.

*The issuer:* Textual description, history status' in the industry, business outlook management and employees, capitalization and annual report details.

*Description of guarantor and details of guarantee agreement*

*Status of governmental and/or central bank approvals in the country concerned. Subscription and sale of bonds:* Details of understanding between lead manager and the issuer regarding subscription to bond issues, handling if allotments and restriction on sale of bonds.

*Miscellaneous information:* Auditors certification details of legal counsels whose opinions are being obtained and details of clearing arrangements

*The last page:* Names and addresses of the issuer, trustees, paying agents, legal advisors and auditors.

The offering phase is with the actual sale of bonds, signing of necessary agreements and when publicity regarding the transaction is completed.

The closing of the issue is the third and the final stage when the bond is finally closed and payments effected. Conditions preceding. payments have to be completed by executing the necessary documents. At this' stage, underwriters and selling group members tender payments, usually net of their commission to the clearinghouse. This is followed by delivery of the notes,

The 3 stages of bond issue mechanics are not distinct and often overlap. Side by side other important functions also have ,to be performed. These are *documentation, listing, and tombstone advertisements.*

# ***Asian Development Bank .***
# ***(ADB)***

**1. Nature and details of assistance:**

Assistance is in the form of loan and Technical Assistance.

**2. Sectors in which assistance is offered:**

The assistance is offered in Energy, Transport and Communications, Financial, Social Infrastructure, Housing and Industry etc.

**3. Aid policy, including objectives:**

Social and economic development activities aimed at improving the welfare of the people of the region - to foster economic growth reduce poverty - support human development (including population planning) - improve the status of women, and protect the environment.

4. **Terms and conditions of assistance:**

Ordinary Capital Resources comprising of subscribed capital reserves and funds raised through borrowings-Normally repayable in 20 years' including grace period of 5 years; carry a variable lending rate of interest which varies from six to seven per cent. In addition, *commitment fee* of 0.75 % on un-disbursed loan on graded scale and *front -end fee* of 1 %.

5. **General requirements/pre-conditions of eligibility for aid:**

It should be within the framework of Strategy of ADB.

6. **Major projects assisted:**

*1. Railways*
2. *Unchahar Thermal Power Ext.*
3. *Second North Madras Thermal Power ."*
4. *Coal Ports*
5. *National Highways*
6, *Karnataka Urban Infrastructure Dev*
7. *Rajasthan Urban Infrastructure Development Project*
8. *Karnataka Urban and Coastal Environmental Management Project*
9. *MP Public Resource Management Program*

***Private Sector***

11. *Industrial Energy Efficiency*

12. *Karnataka Urban Infrastructure Development (HDFC loan) . .*
13. *Power Transmission Sector Project*
14. *Renewable Energy Development*
15. *ICICI*
16. *IFCI*
17. *Housing Finance (NHB)*
18. *Housing Finance (HUDCO)*
19. *Housing Finance (HDFC)*
20. *Mumbai Port Trust*
21. *Chennai Port Trust*
22. *LPG Terminal*
23. *HUDCO*
24. *ICICI .*
25. *IDFC*

ADB assistance is generally available for projects being implemented .by . Central Ministries, State Governments and of Central Public Sector Undertakings and reputed financial institutions. the Bank extends assistance to those projects, which meet the Bank's requirements on economic, financial and 'technical' aspects and within the policy and objectives framework defined by the Bank.

**Products & Offerings:**

The Asian Development Bank (ADB) offers its public and private sector borrowers *UBOR-based loan (LBL)* carrying a floating lending rate that consists of six-month LIBOR and a spread fixed over the life of the loan.

The LBL is a timely response to borrower demand for new ADB financial loan products that can meet borrower's needs to tailor currencies and interest rate basis to suit the project needs and/or external debt risk management strategies.

LBL has market-based features including a fixed spread and pricing relative to standard ADB loan products with those of other lenders and to be amendable 'to efficient intermediation by ADB on the finest possible terms.

With the new LBL lending facility, a high degree of flexibility is given to borrowers:

1. *choice of currency and interest rate basis*
2. *options to link repayment schedules to actual disbursements for financial intermediary borrowers.*
3. *change the original loan terms (currency and interest rate basis) any time during the life of the loans; and*
4. *options to cap or collar the floating lending rate at any time during the life of the loans.*

LBL terms are available for all new loans for which the invitation to negotiate is issued on or after 1 July 2001. LBLs are also extended to

borrowers who wish to convert Un-disbursed amounts of presently effective pool-based single currency loan in US dollars,if this constitutes at least 40 percent of the original loan amount.

In order to become a full-fledged LIBOR-based1ender, however, ADB will retire all its presently existing loan products.

1 July 2001: the existing pool-based multi-currency and market-based lending facilities will no longer be offered. '

1 July 2002: the pool-based single currency loan in US dollar will be retired. Thus, as of the 1st of July 2002, ADB's loan product menu will consist only of LBL.

# ***International Bank for Reconstruction and Develt (IBRD) .***

1. **Nature and details of assistance:**
*International Bank for Reconstruction and Development (IBRD):* Popularly known as World Bank, the bank provides loans in. various; sectors to borrowers for projects that promise high real rates of economic return to the' borrower country. The Bank in turn borrows most of the money it lends, through medium and long-term borrowings in capital markets across the globe, and also from central banks and other government institutions at market based rates. Bank provides *technical Assistance Loans (TALs)* to borrowers for ! a variety of development programs such as initial operations for new borrowers, etc. ! Along with the loans the World Bank also provides advice and technical assistance.

2. **Sectors in which assistance is offered:**
IBRD and IDA provide assistance in various sectors such as Agriculture, Irrigation Power, Oil and Gas, Railways, Urban Development, Water Supply, Transport, Fertilizers Industry, Telecommunications, Health, Nutrition; Education, Poverty Alleviation, Population, Environment, Forestry, Rural Development etc. IDA mainly provides assistance for projects in social sectors, rural development and agriculture, th9ugh there is no restriction for any sector, as such.

3. **Aid policy, including objectives:**
The World Bank has. one overarching goal: helping its borrowers reduce poverty and is a partner in strengthening economies and expanding markets to Improve the quality of life for people everywhere, especially the poorest; The IBRP and IDA provide loans to borrower governments for projects and programs-that promote economic and sound. progress by helping raise productivity so that people may have better lives.

4.**Terms and conditions of assistance.**
*IBRD Loans:*
The repayment period for IBRD loans is. at present 20 years, inclusive of 5 years grace period. The interest rate is variable an4 revised semi-annually in accordance with the Bank's own cost of borrowing funds. The current rate of interest is around 6.94%. The commitment charge on un-disbursed balance is at present 0.75%. A front-end fee of 1 % of the loan amount is also payable. A rebate of 0.5% is permitted for timely repayment of World Bank loans and interest waiver of 0.25% is available.

5. General requirements/pre-conditions of eligibility for aid:

For obtaining assistance from the World Bank the borrower country must be member of the International Monetary Fund.

6. Details of major projects assisted:
*Some major projects signed from April* 1991 *to March 2000 with the World Bank are:*

*IBRD*
1. *Industrial Pollution Control* '. '
2. *Oil and Gas Sector Development*
3. *Power Utilities Efficiency*
4. *Second National Highway*
5. *Second Maharashtra Power*
6. *Financial Sector Development*
7. *Bombay Sewage Disposal*
8. *Orissa Power Sector Restructuring*
9. *Andhra Pradesh Irrigation*
10. *Andhra Pradesh Economic Restructuring*
11. *Andhra Pradesh Power Sector*
12. *Tamil Nadu Urban Development*

7. **How to pose the projects**:
*(a)* ***What kind of project?*** .
The World Bank lends for developmental projects. The Bank's main business is to lend for specific projects, carefully selected and prepared, thoroughly appraised, closely supervised, and systematically evaluated.

Mainly the Bank lends for specific projects such as schools, crop-production programmes, hydroelectric power dams, roads, and fertilizer plants. The Bank is both a developmental and financial institution, and each project for which it lends must satisfy' both features. Every Bank - assisted project must contribute substantially to development objectives and be economically, technically and financially sound.

*(b)* ***Who can borrow?***

Borrowers from the Bank include a member government, a public agency or corporation, or a private body or corporation with the government's guarantee

**Products & Offering:**

The International Bank for Reconstruction and Development (IBRD) currently offers two loan products for new loan commitments. These products are LIBOR based fixed- spread loans (FSLs) and LIB OR-based variable-spread loans (VSLs) *(formerly Variable-Rate Single Currency Loans - VSCLs).*

This product offering is intended to provide, borrowers flexibility to select terms that are consistent with their debt management strategy and suited for their debt servicing capability.

The main features and differences between FSLs and VSLs are highlighted below.
The principal terms and conditions of these products are set out in the accompanying ,table.

## FIXED-SPREAD LOANS (FSLs)

**CURRENCY**: FSLs are available in EUR, JPY USD and other currencies, which
the IBRD can efficiently intermediate. .

**LENDING RATE**: The lending rate for .FSLs is tied to six-month LIB OR in each loan currency. It is reset semiannually. The spread over LIB OR is fixed for the life of the loan.

**REPAYMENT TERMS**: Borrowers have flexibility during project preparation to tailor the FSL.s repayment terms (i.e., grace period, repayment .period, and amortization structure) within existing financial policy limits.
Borrowers have a choice of two types of repayment schedules for FSLs: commitment-linked repayment schedules, in Which the loan's repayment schedule commences from the beginning of the interest period following loan approval, and disbursement-linked repayment schedules in which disbursed amounts have individual repayment schedules that' commence from the beginning of the interest period following disbursement.

**EMBEDDED CONVERSION OPTIONS**: The.. FSL has embedded flexibility over the - life of the loan to:

- Change the loan currency on disbursed and un-disbursed amounts;

- Fix or unfix the interest rate on disbursed amounts;

- Cap or collar the interest rate on disbursed amounts;

## VARIABLE-SPREAD LOANS (VS.LS)

**CURRENCY: FSLs** are available in EUR, JPY, U~D and other currencies, which the IBRD can efficiently intermediate.

**LENDING RATE**: The lending rate for VSLs is tied to six-month LIBOR in each loan currency. It is reset semiannually. The spread is a pass-through

to borrowers of the IBRD's weighted average cost margin relative to 6-month LIBOR for funding allocated to these loans, and is recalculated semiannually.

**REPAYMENT TERMS**: The repayment terms for VSLs are based on country criteria.

## FSLS AND VSLS: A COMPARISON

The main similarities between FSLs and VSLs are that:

≡ *Both have a variable interest .rate with six-month LIBOR as their base rate;*

≡ *Both are available in EUR, JPY, USD and any other currency which the IBRD can efficiently intermediate;*

≡ *Both are eligible for any loan charge waivers (commitment fee and interest. waiver), as annually determined by the IBRD's Board of Executive Directors;*

≡ *In the event of full or partial prepayment, the pre-payment premium, if any, is based on the IBRD' s redeployment cost of the prepaid loan amount.*

**The main differences are:**

- VSLs do not have the currency and interest rate conversion features that are embedded in FSLs;

- The spread over LIBOR for. V:SLs is fixed for the life of the loan, while the spread over LIBORfor VSLs is reset every semester;

- VSL repayment terms are governed by 'standard country terms and have limited flexibility, while FSL: re- payment terms can be tailored during project preparation to the needs .of borrowers.

- FSL loan charges are slightly higher :.than those of the VSL.. The FSL commitment fee incorporates a funding risk premium for the first four years of the loans life, and the" FSL . spread includes a refinancing risk premium.

- In case of delays in disbursements beyond the grace period, repayment installments for VSLs are fixed amounts based on the total loan amount committed, whereas in the case of FSLs repayment installments are calculated as a percentage of the disbursed and outstanding loan amount

- IFC offers a wide variety of financial products to private sector projects in developing countries.

**1. Financial Products**

IFC offers:

- *Loans for IFC's own account: A-loans*
- *Equity Finance*
- *Quasi-Equity Finance: C-loans*
- *Syndicated Loans: B-loans*
- *Risk Management Products*
- *Intermediary Finance*
- IFC can provide a mix of financing that: is tailored to meet the needs of each project. However, the bulk of the funding, as well as leadership and management responsibility,
lie with private sector owners.

IFC operates on a commercial basis. It invests exclusively in for-profit projects and charges market rates for its products and services.

There is no standard application form for IFC financing. A company or entrepreneur, foreign or domestic seeking to establish a new venture be expand an existing enterprise' can approach IFC directly and submitting an Investment Proposal to the appropriate IFC department or the IFC field office that is closest to the ..location of the proposed project.. After these initial contacts and a preliminary review, IFC will request a detailed feasibility study or business plan to determine whether or not to appraise the project.

*As a rule, the enterprises IFC finances must be majority private sector owned and* I *controlled. Exceptions can be made for state-owned enterprises, which are in the* ! *process of being privatized.* Although IFC does not take any government guarantees for its financing, IFC's work often requires close co-operation with government agencies in developing countries.

*2.* **How to Apply for IFC Financing:**

IFC offers a wide variety of financial products. to private sector projects in developing countries. In order to be eligible for IFC funding, a project must meet a number of IFC criteria:

*/ The project must be located in a developing country, which is a member of IFC.*

*/ It must be in the private sector.*

*/ It must be technically sound. .*

*/ It must have good prospects of being profitable.*

/ *It must benefit the local economy.*

/ *It must be environmentally and socially sound, satisfying IFC environmental and social standards as well as those of the host country.*

A company or entrepreneur, foreign or domestic, seeking to establish a new venture or expand an existing enterprise can approach IFC directly by submitting an. Investment Proposal. After this initial contact and a preliminary review, IFC may proceed by requesting a detailed feasibility study or business plan to determine whether or not to appraise the project.

The proposal can be submitted to an IFC industry sector department or to an IFC regional department at IFC headquarters in Washington, DC. To determine to which department to, submit the proposal, read more about IFC's Corporate Structure. The proposal can also be submitted to the IFC field office that is closest to the location of the proposed project.

3. **Government Cooperation**

Although IFC is primarily a financier of private, sector projects, it may provide finance for a company with some government ownership, provided there is private sector participation and the venture is run on a commercial basis. Although IFC does not accept government guarantees for its financing, IFC's work often requires close cooperation with : government agencies in developing countries:

4. **Pricing and Financing Ceilings**

To ensure the participation of investors and lenders from the private sector, IFC limits the total amount of own-account debt and equity financing it will provide f9r any single project. For new projects the maximum is 25 percent of the total estimated project costs, or, on an exceptional basis, up to 35% in small projects. For expansion projects IFC may provide up to 50% of the project cost, provided it investments do not exceed 25% of the total capitalization of the project company.

IFC provides a wide variety of financial products and services to its clients and can offer a mix of financing and advice that is tailored to meet the needs of each project. However, the bulk of the funding, as well as leadership and management responsibility, lie with, private sector owners.

Like other private sector investors and commercial lenders, IFC:

. *Seeks profitable returns.*

*Prices its finance and services* in *line with the market.*

. *Fully shares risks with its partners.*

Projects in sectors such as information technology may be located in an industrialized country if the benefits of the project primarily accrue to a developing country or countries.

## Multilateral credits.

Various multilateral funding agencies viz. World Bank and ADB etc. are already actively participating in investment and reform programs through the Central Government as well as directly with State Governments. The multilateral agencies have now started lending directly to the Government owned PSUs and Utilities, also with Government Guarantee. The current policy of the multilateral agencies is to offer 20 year funding for power projects and also the option to borrow at LIBOR linked rates. The requirement of guarantee from the Central Government involves payment of guarantee fees at the rat of 1.20 % p.a., which adds to a huge financial burden on the projects.

In cases where multilateral funding is channelised through the budget of Government of India, no guarantee cost is involved, but the GoI's Rupee lending rates e.g. as applicable for Power PSU is 13% fixed or the Government may consider to lend such credits on back to back basis by adding certain margin over its borrowing costs. In such cases, the lending rate will be notified by the Government every half yearly based on the cost of borrowing notified by the multilateral agencies. It may be recalled that the interest rates on long term borrowings by the government have come down significantly for example on the sizeable PF and national saving schemes, the rates o interest have been brought down from 12 to 11% and finally to 9.5% in the last years budget. Similarly, on the funds parked by PSUs in the Public Deposit Accounts, the rate of interest has been reduced from 12% to 11% w.e.f. 1.4.2000 and further down to 7.5% w.e.f. 1.4.2001 and to 7% from 1.4.2002. The long-term 10-year G-sec yield has also come down to around 8% from 10.26% (as on 1.4.2001). All this indicates that there is a strong case to re-align the rates of lending by the Central Govt. for infrastructure projects including Power.

The total multilateral credits received for power sector during IX Plan are around $ 1,992 million and JPY 1,123,000 million. The plan wise external assistance received from major sources is given below: -

**PLAN WISE EXTERNAL ASSISTANCE RECEIVED FROM MAJOR SOURCES (MILLIONS IN DONOR CURRENCY)**

| Plan period | IBRD (USD) | IDA (USD) | IBRD+ IDA (USD) | ADB (USD) | Japan (JPY) | France (FF) | Ger many (GM) | UK (UKP | Kuwait (KD) |
|---|---|---|---|---|---|---|---|---|---|
| I | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| II | 18.7 | 0 | 18.7 | 0 | 0 | 0 | 0 | 0 | 0 |
| III | 63.98 | 270.4 | 334 | 0 | 0 | 0 | 0 | 0 | 0 |
| IV | 0 | 158 | 158 | 0 | 0 | 0 | 0 | 0 | 0 |
| V | 155 | 929 | 1084 | 0 | 9246 | 0 | 0 | 13 | 24 |
| VI | 1106 | 525 | 1631 | 0 | 47437 | 0 | 126 | 0 | 25 |
| VII | 3133 | 0 | 3133 | 587 | 290129 | 2486 | 754 | 98 | 7 |
| VIII | 1067 | 0 | 1067 | 464 | 259876 | 306 | 76.2 | 42 | 0 |
| IX | 1042 | 0 | 1042 | 950 | 11300 | 0 | 0 | 0 | 0 |

A figure of US $ 5.2 billion (Rs.25, 000 crore has been assumed for the next 10 years

**Domestic Institutional and Bank Finance**

**I) Underlying Principles**

The following are the underlying principles based on which the estimates have been arrived at.

1. The payment security mechanism is adequately robust and no problems is envisages as far as the security structure is concerned.
2. Transmission network also is simultaneously upgraded to cope with evacuation of power on account of additional generating capacity.
3. A holistic approach to reorganizing the power sector on commercial lines would be adopted.

**(II) Approach**

**All India Financial Institutions**

The financing limits adopted by AIFIs for any specific sector, based on prudential norms, have been fixed at 15% of the outstanding assets. Further, the AIFIs are permitted to take a maximum exposure upto 40% of the specific study includes IDBI, ICICI, IFCI and IIBI, besides the insurance companies viz. LIC and GIC.

An analysis of growth in assets of the aforesaid AIFIs indicates that the loans and advances (investments by way of equity or equity related instruments are not considered here) have registered a CARG of 15.4% during FYs 1996-2000. A future CARG of 15% is considered based on which the loans and advances of AIFIs is projected to reach Rs. 19,307,132 crore by FY 2012. The current SIFIs exposure to the infrastructure sector is about 8.9% of the total assets, the power sector enjoying 79.4% of the share. Therefore, at the present level itself, there is a gap of about Rs. 368,734 crore. Further, keeping in view the 15% growth level in assets, an additional fund of about Rs. 286,070 crore could be channelised into the sector. In the event the prudential sector norms is reduced to 10% the gap at current levels would be about Rs. 136,167 crore and the additional fund that could be mobilized towards this sector. 193, 071 crore.

While the share of power sector for AIFIs as a whole appears to be on the lower side, it may be mentioned that institutions like IDBI, ICICI and IFCI are close to reaching the prudential norms. This, therefore, would necessitate mobilization of larger funds from institutions like LIC, GIC and UTI.

It may be mentioned that some of the AIFIs viz. ICICI, IDBI, IFCI and IIBI are in the process of being converted into universal banks. In case the banking sector prudential norms of 10% are applied for being AIFIs well after they being converted into universal banks, lower funds would be available for be9ng channelised into power sector. Vide the Para 3.2 the gap at the present level may be placed at Rs. 1,36,167 crores and the additional fund that could be mobilized towards this sector by FY 2012 may be placed at Rs. 1,93,071 crore.

Further, AIFIs after being converted into universal banks, will be required to adhere to norms relating to priority sector lending which in turn would reduce fund availability for term lending to power sector in particular, all and sectors in general. Therefore, it is suggested that lending to infrastructure may be considered as priority sector lending norms 15% total exposure rather than the tightened norms of 10% applicable to banking sector.

**Banks**

(1) The overall Bank financing available for the sector as a whole has been estimated as per the prudential norms adopted by various Banks. The following guiding principles have been adopted.

a. Industry specific norm at 10% of Non-food advances

b. Total term loan outstanding at any time for the Bank 30% of the total term deposit

c. Total term loan outstanding at any time for the Bank 30% of the total non-food advance

d. Sub-limit for infrastructure advance for certain banks fixed at 7% of the total non-food advances at 57%.

e) Non-food credit is assumed to constitute 90% of the total advances

**The following is the present position of the Banks as far as the exposure is concerned.**

**Present Exposure of Banks**

| Type of lender | Term deposits Rs. in Cr. | Term loans o/s Rs. in Cr. | Term loans as a % of Term deposits |
|---|---|---|---|

| | | | |
|---|---|---|---|
| SBI Group | 197759 | 49413 | 25% |
| Nationalised Banks | 353572 | 98370 | 27.80% |
| Old Private Sector Banks | 55806 | 13026 | 23.30% |
| New Private Sector Banks | 48028 | 9083 | 18.90% |
| **Total** | **655165** | **169892** | **25.90%** |

(3) Based on the above the following levels of appetite could be estimated from different categories of Banks keeping in view that the aggregate Term loan would not exceed 30% of the total time deposit.

| **Type of lender** | **Gap in Term loan o/s Rs. in Cr.** |
|---|---|
| SBI Group | 9888 |
| Nationalised Banks | 11314 |
| Old Private Sector Banks | 3739 |
| New Private Sector Banks | 4814 |
| **Total** | **29755** |

(4) An analysis of the non-food credit demonstrates that the aggregate non-food credit from the Banking sector as on March 2001 was Rs. 471443 crore. Therefore, the term loan exposure from the banking sector would be limited to Rs. 141432 crore. The present exposure in term loan is about 36% Therefore, as on march 31, 2001 the Banks in aggregate had already breached the ceiling of 30%

(4) The aggregate exposure of the Banks in the Infrastructure sector as on March, 2001 was about Rs. 11,349 crore which account for about 2.4% of the aggregate non-food credit advances. Therefore, the banks could churn there existing portfolio to the extent of Rs. 21,652 crore so as to enable channelising funds in the infrastructure sector. In absence of a secondary debt market, churning of the portfolio by Banks may not be an easy task. Hence we may necessarily rely on the future credit opportunities.

(6) The aggregate time deposits of the banks were about 820.066 crore as on March 31,2001. The accretion till October 2001 was about Rs. 86,951 crore. A modest growth of 15% in the aggregate deposit would entail an absolute growth of Rs. 2,995,202 crore till FY 2012. The available funds for non-food credit would be about Rs 1,536,539.

(7) Keeping in view the 30% ceiling, the funds that could be Rs. 1,508079 crore (after adjustment for the anomaly of 36% as against 30%). Keeping in view the 7% ceiling of the banks for infrastructure as a whole would be about Rs. 129,210 crore in aggregate.

(8) Till last year the power sector used to receive a share of about 48% to 50% of the entire funds being lent to infrastructure sector. However, this share appears to be quite aggressive since the other sectors under the infrastructure sector umbrella have started progressing and receiving overwhelming response from the banks. If we

assume a share of about 40% towards the power sector, the total funds that could be made available to this sector would be about 51,684 crore.

(9)

Reserve Bank of India (RBI) could explore possibilities of relaxing the prudential norms so that the banks could channelise more funds into the infrastructure sector. The other option could be to consider funding to the infrastructure sector as priority sector lending. This would ensure larger participation of banks in this sector.

**Power Finance Corporation Limited (PFC)**

Power Finance Corporation Ltd. (PFC) was incorporated as a limited liability company under the Companies Act, 1956 on 16th July 1986 and declared as a Public Financial Institution u/s 4A of the Companies Act in August 1990. It is wholly owned by Government of India (GoI) and acts as a Development Financial Institution (DFI) dedicated to funding and development of power and allied sectors. Formally PFC started working from January 1988.

PFC has proved to be the concept of utmost importance as it revived the sinking hopes of the power sector. It has moved swiftly on its nimble free to grow from infancy to a robust young financial institution with shoulders broad enough to carry higher and higher expectation. It has proved the prophets of dooms wrong by actively providing policy-based finance, and yet achieving growth and profitability unrivalled in the industry. PFC has laid emphasis on making the Power Sector efficient and commercially viable. PFC is fully involved in this process and helping in bringing out the reforms in the power sector.

PFC has distributed a total amount of Rs. 16507 crores, out of which the term loans amounted to Rs. 13381.43 crores during IX Plan. The details are given below: -

**Disbursement for last 5 years**

**(Rs. in cr.)**

| | State | Private | FCL | Central | Total |
|---|---|---|---|---|---|
| 97-98 | 1,990 | - | - | - | 1,990 |
| 98-99 | 2,327 | 152 | - | - | 2,479 |
| 99-00 | 2,162 | 214 | 1 | 274 | 2,651 |
| 00-01 | 1,766 | 75 | 178 | 415 | 2,435 |
| 01-02 | 2,836 | 25 | 70 | 896 | 3,827 |
| **Total** | **11,081** | **466** | **249** | **1,585** | **13,382** |

As per the PFC's projections for X & XI Plans planning to provide funds to the extent of Rs. 43000 crores in X Plan and Rs. 115000 crores in XI Plan. It is estimated that around 20% of the total funding plan projected by PFC would be provided in the form of working capital Therefore the net investment from PFC will be available to the extent of Rs. 34,400 crores in X Plan and Rs. 92,000 crores in XI Plan.

**Rural Electrification Corporation Limited (REC)**

Rural Electrification Corporation Limited (REC) has made a disbursement of Rs. 15179 crores in Ix Plan. The year wise details of the loan sanctioned and loan disbursed is as follows: -

(Rs. In Cr.)

| Particulars | 97-98 | 98-99 | 99-00 | 00-01 | 01-02 | Total |
|---|---|---|---|---|---|---|
| Loan sanctioned | 1214 | 2879 | 4678 | 6308 | 6764 | 21843 |
| Loan Disbursed | 1094 | 2203 | 3051 | 4109 | 4722 | 15179 |

The REC has projected to disburse Rs, 40,000 crores in X Plan, it is estimated, keeping in view the growth rate of REC will be able to increase its funding one and half time of the X Plan funding level and accordingly, it will be able to provide Rs. 60,000 crores in XI Plan. It is estimated that out of the total funding plans of REC, only 80% will be available for investment through term loans.

**Pension and Provident Fund**

Banks and institutions viz. SBI, IDBI and LIC are managing the large pension and provident funds. The annual accretion to these funds by way of interest and inflows are about Rs. 15000 crore. As per the present policy, 25% of the accretion would be required to be invested in Government securities, 20% in Special Deposits, 15% in State Government guarantee papers and balance 40% in PSU papers. Out of the 40% relaxations have been made to permit investment into private sector bonds having dual rating. These norms could be amended in order to accommodate infrastructure as a priority sector. This would lead to channelising about Rs. 3000 crore per year based on present estimates.

**Domestic Capital Market**

The market borrowings includes direct raising of debts either through public issue or as private placement, either from public or from other institutional investors (excluding term lending institutions discussed separately). While most of the central PSUs in the Power Sector enjoy highest credit ratings for raising domestic debts and are able to raise funds at every competitive rate, some state utilities have also successfully raised debts from the commercial market with credit enhancement from their respective state Govt. The committee estimates that a large gap in the funding has to be plugged in thorough market borrowing by power sector companies. In the X Plan, the central PSUs are expected to mobilize Rs 5,000 crores, the private sector companies Rs. 5000 crores and state sector utilities Rs 10,000 crores.

These targets cannot be achieved with current market sentiments for power sector investments associated risks. It is expected that with the reform picking up in the X Plan, the commercial viability of power utilities will enable them to raise money from the market without govt. guarantees. Without this, the funding gap cannot be plugged in.

During the XI Plan, the total market borrowings is targeted to be Rs. 30000 crores.

## Domestic Capital Market

The financial market in India mainly comprises the Credit Market, the Money Market the Foreign Exchange Market, the Debt Market and the Capital Market.

### Credit Market

The Credit Market can be broadly categorized in institutional and non-institutional players. The major institutional players of credit in India are banks and non-Banking Financial Institutions like Development Financial institutions or un-organised sources for credit includes money lenders, indigenous bankers and sellers for trade credits. The banks and NBFCs generally cater to short-term funds while DFIs/AIFIs provide mostly medium and long-term funds. This distinction is rather becoming less visible as many banks are not providing medium and long-term funds and AIFIs are merging with commercial banks.

### Money Market

The money market instruments mainly comprise: call Money, certificate of deposits, Treasury bills, and Government Securities transactions such as Reports, Banker acceptance/commercial bills, Commercial Paper and Inter corporate funds. Normally the duration of instruments traded in Money Market is for one year.

### Foreign Exchange Market

In India, it comprises customer, authorized dealers and the Reserves of India. With the transition to a Market Determined Exchange Rate System in market 1996 and the subsequent gradual but significant liberlisation of restriction on various transactions, the Forex market in India has acquire more depth.

### The Domestic Debt Market

IT comprises Government securities, Private Corporate Debt, PSU bonds Instruments floated by Development financial Institution.

### Capital Market

Capital market in India is being regulated by Securities & Exchange Board of India (SEBI). While considering the capital market data for the period of study of availability of funds for Power Sector, the following sources of funds are considered: -

1. The public issue of equity share, preferential shares, debentures and bonds.
2. Private placement of bonds/debentures

As such, the data related to the private placement of the equity funds, not readily available and also being negligible amount has not been considered for this study. The information is given as under: -

**Funds Mobilised in the Primary Market**

**(Rs in Cr.)**

| Sources of funds | Total funds mobilised | | | | | Funds mobilised by the power sector | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 98-99 | 99-00 | 00-01 | 01-02 |
| Public issue of Equity pref.shares Debentures bonds | 4569.9 | 5586.5 | 7816.7 | 6107 | 6422.5 | 13.1 | 15 | 0 | 0 |
| Private placement | 30944.3 | 38932.8 | 54701.3 | 52433.5 | 46220 | 7072.6 | 8440.7 | 7407 | 7219.3 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| of Bonds/ Debentures | | | | | | | | | |
| **Total** | **35514.2** | **44519.2** | **62518.1** | **58540.5** | **52642.5** | **7085.7** | **8455.7** | **7407** | **7219.3** |

Source: Securities and Exchange Board of India (SEBI) except for 2001-02 which is taken from PRIME (Publication of Praxis Consulting and Information Services Private Limited

It may be seen from the table of the funds mobilisation in the primary market that there are hardly any funds mobilised through the public issue of equity shares etc. in Power Sector in last 6 years. The maximum funds in the Power Sector have been mobilized through the private placement of bonds/debentures.

The total funds mobilized by the Mutual funds from the primary market are quite substantial and are increasing every year. But these funds are not considered to be available in Capital Market as out of the total funds mobilized by the Mutual funds from the primary market, substantial part of it is also deployed in subscription of bonds/debentures from private placement as well in equity shares, preferential shares and bond/debentures offered through public issue.

**Availability of Funds in Capital Market-Projections**

It is evident from the past that the power sector could mobilize 12% to 13% of total funds mobilized in capital market. While primary market is an important source of mobilizing funds for the Indian power sector, the availability of funds in Indian capital market has varied from year to year. The funds raised from the primary market inversed form Rs. 35514.29 crores in 1997-98 to Rs. 52642.47 crores in 2001-02 But simultaneously the funds raised from public issue has increased marginally form Rs.14569.95 crores in 1997-98 to Rs. 6422.52 crores in 2000-01. The trend shows the shift of focus from public issue to private placement. If we try to study the funds mobilised in capital market with respect to the GDP, it is around 2.5% to 3.5%. The average for the last 5 years of the capital raised in the primary market with respect to the GDP, is at 2.8% and similarly the average of the capital raised in the power sector in primary market with respect to GDP is 0.31% the maximum capital raised in the power sector in primary market was 0.47% of GDP in 1999-00, but, it is declined to 0.31% in 2001-02 as given below: -

**Macro Economic Indicators and Relativeness with Power Sector**

| Particulars/Years | 1997-98 | 1998-99 | 1999-00 | 2000-01 | Average of Last 5 years |
|---|---|---|---|---|---|
| GDP at current prices | 1390042 | 16161033 | 1786459 | 1978042 | 1802824 |
| Capital Raised wrt GDP | 2.55% | 2.75% | 3.5% | 2.96% | 2.84% |
| Capital Raised in Power Sector wrt GDP | 0.27% | 0.44% | 0.47% | 0.37% | 0.36% |

Based on this, increasing trend of the mobilization of funds in capital market by power sector cannot be predicted. Therefore, to forecast the availability of funds in capital market for power sector, the strength of present power sector with respect to GDP (at current prices) is studied. If is presumed that there general economic and investment environment level of the country will remain constant, the level of the funds in power sector from the capital market will be around0.3% on conservative side of the GDP and at optimistic side will be around at 0.5% of the GDP. Keeping in view of this, Availability of funds is calculated for different scenario of taking GDP increment @ 6%,

7%, 8% and funds availability in capital market for power sector at 0.3%, 0.35%, 0.4%, 0.45% and 0.5% of GDP of respective year.

### Projections for Availability of funds for power sector

| GDP | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **GDP Incremental at 6%** | | | | | | | | | | | |
| | 2096725 | 2222528 | 2355880 | 2497232 | 2647066 | 2805890 | 2974244 | 3152698 | 3341860 | 3542372 | 27636496 |
| 0.3 | 6290 | 6668 | 7058 | 7492 | 7941 | 8418 | 8923 | 9458 | 10026 | 10627 | **82909** |
| 0.35 | 7339 | 7779 | 8246 | 8780 | 9265 | 9821 | 10410 | 11034 | 11697 | 12398 | 96728 |
| 0.4 | 8387 | 8890 | 9424 | 9989 | 10588 | 11224 | 11897 | 12611 | 13367 | 14169 | 110546 |
| 0.45 | 9435 | 10001 | 10601 | 11238 | 11912 | 12627 | 13384 | 14187 | 15038 | 15941 | 124364 |
| 0.5 | 10484 | 11113 | 11779 | 12486 | 13235 | 14029 | 14871 | 15763 | 16709 | 17712 | 138182 |
| **GDP Incremental at 7%** | | | | | | | | | | | |
| | 2116505 | 2264660 | 2423187 | 2592810 | 2774306 | 2968508 | 3176303 | 3398644 | 3636550 | 3891108 | 29242580 |
| 0.3 | 6350 | 6794 | 7270 | 7778 | 8323 | 8906 | 9529 | 10196 | 10910 | 11673 | 87728 |
| 0.35 | 7408 | 7926 | 8481 | 9075 | 9710 | 10390 | 11117 | 11895 | 12728 | 13619 | 102349 |
| 0.4 | 8466 | 9059 | 9693 | 10371 | 11097 | 11874 | 12705 | 13595 | 14546 | 15564 | 116970 |
| 0.45 | 9524 | 10191 | 10904 | 11668 | 12484 | 13358 | 14293 | 15294 | 16364 | 17510 | 131592 |
| 0.5 | 10583 | 11323 | 12116 | 12964 | 13872 | 14483 | 15882 | 16993 | 18183 | 19456 | 146213 |
| **GDP Incremental at 8%** | | | | | | | | | | | |
| | 2136285 | 2307188 | 2491763 | 2691104 | 2906393 | 3138904 | 3390016 | 3661218 | 3954115 | 4270444 | 30947431 |
| 0.3 | 6409 | 6922 | 7475 | 8073 | 8719 | 9417 | 10170 | 10984 | 11862 | 12811 | 92842 |
| 0.35 | 7477 | 8075 | 8721 | 9419 | 10172 | 10986 | 11865 | 12814 | 13839 | 14947 | 108316 |
| 0.4 | 8545 | 9229 | 9967 | 10764 | 11626 | 12556 | 13560 | 14645 | 15816 | 17082 | 123790 |
| 0.45 | 9613 | 10382 | 11213 | 12110 | 13079 | 14125 | 15255 | 16475 | 17794 | 19217 | 139263 |
| 0.5 | 10681 | 11536 | 12459 | 13456 | 14532 | 15695 | 16950 | 18306 | 19771 | 21352 | **154737** |

The in all the different scenarios, the minimum availability of funds in the capital market for power sector ranges from Rs. 82909 crores to Rs. 154737 crores from 2002 to 2012. On a realistic-basis, a figure of Rs. 100000 crores has been estimated.

The reasons for lack of capital issues by power sector attributes mainly to its control which vests with government and the entities were not allowed to raise equity and also the problems associated with power sector due to poor financial status. Further, the mobilisation of funds through public issue is costlier in comparison of mobilization through private placements. But with the penetration of private companies, power sector will also be able to mobilize good amount of funds through issue of capital instruments. As far as availability of funds is concerned, it may be seen the debt raised from the capital market ultimately flow from the household savings in the d0mestic economy. These savings in financial assets amounts to approx. Rs. 1.80,000 crores to 2, 30,000 crores the last three-four financial years as given below: -

### Changes in Financial Assets/Liabilities of the Household Sector (At current Prices)

| 1 year | Change in fin assets2 | 3 curren cy | 4 Bank deposits | 5 non bank deposi ts | 6 Life insura nce fund | 7 PF&P ension Fund | 8 Claim s on govt | 9 Share s & Deben tures | 10 Units if UTI | 11 Trade debt (net) | 12Cha nges in fin. liabiliti es | 13 Bank advan ces | 14 Loan & adv. From FIs | 15 L&A from govt. | 16 L&A co non-co. Soc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70-71 | 2110 | 355 | 754 | 67 | 207 | 490 | 105 | 68 | 14 | 50 | 591 | 509 | 38 | 69 | -25 |
| 71-72 | 2319 | 404 | 1024 | 104 | 251 | 474 | -2 | 20 | 12 | 32 | 696 | 492 | 53 | 132 | 19 |
| 72-73 | 2982 | 637 | 1214 | 108 | 307 | 523 | 80 | 27 | 19 | 67 | 615 | 493 | 45 | 66 | 11 |
| 73-74 | 3578 | 769 | 1511 | 45 | 356 | 603 | 87 | -16 | 24 | 199 | 775 | 674 | 44 | 21 | 36 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74-75 | 3371 | 18 | 1654 | 92 | 344 | 787 | 72 | 62 | -3 | 345 | 770 | 605 | 79 | 60 | 26 |
| 75-76 | 5067 | 342 | 2120 | 130 | 423 | 1224 | 899 | 41 | 16 | -128 | 1069 | 899 | 78 | 67 | 25 |
| 76-77 | 6651 | 1140 | 3920 | 114 | 524 | 1172 | 19 | -5 | 20 | -253 | 1456 | 1232 | 87 | 118 | 19 |
| 77-78 | 7154 | 703 | 3521 | 227 | 592 | 1316 | 325 | 201 | 34 | 235 | 1711 | 1481 | 125 | 95 | 10 |
| 78-79 | 9483 | 1430 | 4626 | 232 | 683 | 1605 | 227 | 204 | 79 | 397 | 2738 | 2125 | 352 | 181 | 80 |
| 79-80 | 10249 | 1332 | 4659 | 477 | 773 | 1748 | 531 | 253 | 41 | 435 | 3551 | 2868 | 393 | 197 | 93 |
| 80-81 | 12118 | 1625 | 5550 | 378 | 915 | 2122 | 712 | 412 | 31 | 373 | 3508 | 3093 | 182 | 151 | 82 |
| 81-82 | 13621 | 965 | 5194 | 894 | 1037 | 2480 | 1784 | 510 | 114 | 643 | 4033 | 3507 | 244 | 148 | 134 |
| 82-83 | 16097 | 2026 | 6661 | 870 | 1235 | 2865 | 1243 | 645 | 122 | 429 | 3531 | 2946 | 349 | 133 | 103 |
| 83-84 | 19790 | 2776 | 7978 | 1019 | 1376 | 3052 | 1976 | 555 | 222 | -164 | 5238 | 4469 | 460 | 203 | 106 |
| 84-85 | 23549 | 2938 | 9859 | 960 | 1556 | 3759 | 3107 | 762 | 567 | 41 | 5733 | 5002 | 420 | 197 | 114 |
| 85-86 | 25562 | 2220 | 10603 | 1423 | 1779 | 4188 | 3413 | 1394 | 586 | -44 | 6983 | 6043 | 646 | 205 | 89 |
| 86-87 | 31849 | 3090 | 14510 | 1512 | 2159 | 5055 | 3092 | 1768 | 943 | -280 | 8510 | 7345 | 522 | 435 | 208 |
| 87-88 | 36106 | 4815 | 14674 | 1326 | 2589 | 6509 | 3680 | 813 | 1196 | 504 | 9287 | 8159 | 555 | 347 | 226 |
| 88-89 | 39958 | 4256 | 14747 | 1580 | 3423 | 7552 | 5478 | 1136 | 1427 | 359 | 12826 | 11436 | 713 | 474 | 203 |
| 89-90 | 48233 | 7655 | 13987 | 1839 | 4415 | 9508 | 6758 | 2655 | 2179 | -763 | 10188 | 8303 | 1053 | 747 | 85 |
| 90-91 | 58908 | 6251 | 18777 | 1286 | 5599 | 11155 | 7883 | 4972 | 3438 | -453 | 9267 | 7429 | 1154 | 611 | 73 |
| 91-92 | 68045 | 8157 | 17848 | 2218 | 7003 | 12501 | 4845 | 6800 | 9087 | -414 | 5997 | 3689 | 1551 | 469 | 280 |
| 92-93 | 80354 | 6562 | 29518 | 6035 | 7114 | 14814 | 3885 | 8212 | 5612 | -1398 | 15056 | 11421 | 2897 | 443 | 295 |
| 93-94 | 109618 | 13367 | 36236 | 11654 | 9548 | 18323 | 6908 | 10067 | 4705 | -1190 | 14859 | 11972 | 1867 | 710 | 310 |
| 94-95 | 145501 | 15916 | 55835 | 11547 | 11370 | 21414 | 13186 | 13473 | 3908 | -1148 | 24770 | 21618 | 2409 | 417 | 326 |
| 95-96 | 124338 | 16525 | 39941 | 13198 | 13894 | 22343 | 9588 | 8839 | 262 | -252 | 18620 | 15605 | 2398 | 275 | 342 |
| 96-97 | 158518 | 13643 | 50902 | 25980 | 16121 | 30390 | 11783 | 6631 | 3776 | -708 | 16857 | 13675 | 2593 | 229 | 360 |
| 97-98 | 171740 | 12780 | 74099 | 6733 | 19410 | 32267 | 22162 | 4464 | 595 | -770 | 24919 | 19885 | 4203 | 488 | 343 |
| 98-99 | 209664 | 21846 | 75670 | 7663 | 23428 | 46350 | 28220 | 5625 | 1887 | -1025 | 26687 | 20830 | 4643 | 866 | 348 |
| 99-00 | 244143 | 20822 | 90190 | 6351 | 28678 | 54762 | 28951 | 13706 | 1811 | -1128 | 35762 | 29030 | 5242 | 1140 | 350 |
| 00-01 | 284699 | 16901 | 109400 | 8979 | 34455 | 53937 | 34806 | 8579 | -1343 | -1015 | 35829 | 29186 | 5293 | 1003 | 347 |

Source: Reserve Bank of India

Out of the total savings in financial assets, investments in shares and debentures were of the order of approx. Rs. 7,000 to Rs. 15,000 crores and contractual savings essentially comprising of life insurance, provident and pension fund were of the order of approx. Rs70, 000 to Rs. 85,000 crores. The maximum portion of house hold savings goes to Bank Deposit, which has increased from Rs. 39941 crores in 1994-95 to Rs. 109400 crores in 2000-01. It may be noted that only a very small portion of the savings in financial assets has been held in the form of shares and debentures, which essentially comprises of the capital market instruments. The contractual savings account for approximately 1/2 rd of the overall household savings held in financial assets and meet to be tapped for funding the long gestation period capital intensive projects in power generation, transmission and distribution sectors. To enable the power sector to mobilize substantial funds from the Capital market, there should be drive to increase the level and efficient usage of domestic savings and investments. A proper institutional framework needs to be established to attract domestic and contractual savings to Power Sector.

# Securitisation for Infrastructure

Securitisation is a process through which illiquid assets are transferred into a more liquid form of assets and distributed to a broad range of investors through capital markets. The lending institution's assets are removed from its balance sheet and are instead funded by investors through a negotiable financial instrument. The security is backed by the expected sash flows of the assets. The concept can be explained by the following example.

**Conversion of assets into tradable paper**

The assets, mostly a receivable, are an "agreement" which cannot be sold or traded. Securitisation converts this into tradable papers,

If you have huge receivables, securitisation will unlock this working capital

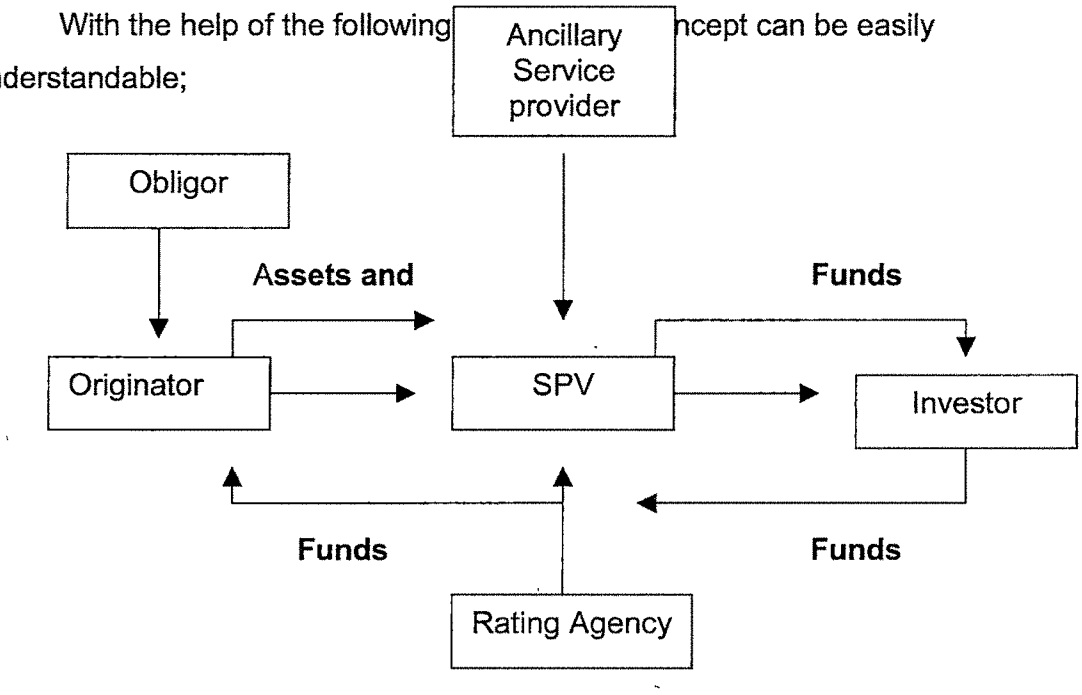
The capital is now free for further asset creation. Securitisation is a good tool for refinancing

In the normal lending-borrowing transaction, the lending can be a plain vanilla lending. One step further could be structuring the pay back, and getting a hold on it- here comes, escrow mechanism. Pure securitisation refers to transfer of risks, and there should be no recourse to the originator.

## Process of Securitisation

**Diagramatic representation**

With the help of the following ncept can be easily understandable;



The process begins when the lender (or originator) segregates loans/ lease/ receivables into pools, which are relatively homogeneous in regard to types of credit maturity and interest rate risk. The pools of assets then transferred into a Special Purpose Vehicle (SPV) usually constituted as a trust. The originator may float the SPV as a subsidiary in the form of a limited company. Another option could be for the SPVs to be floated jointly by the originator/ individual/ banks/ institutions that are interested in securitisation deal. Based on these, the SPV issues asset backed securities in the form of debts, certificate of beneficial ownership and other instruments. The securities issue may be with or without recourse. Interest and principal payments on the loans, leases and receivables in the underlying pool of assets are collected by the servicer (who could also be originator) and transmitted to the investors. Credit enhancement can add features to boost investor confidence. This could be in the form of a provision of recourse, a guarantee requiring the originator to cover losses, a letter of credit from the bank or over collaterisation.

There could be three basic methods for transfer of assets;

1. Novation
2. Assignment
3. Sub participation

1. **Novation:** It is the clearest way of selling a loan and effectively transferring both the rights and obligations. In novation, the existing loans between the originator and borrower cancelled and a new agreement between the investor and borrower is substituted. The buyer steps into the shoes of the original lender or seller who ceases to have any obligation to the borrower. The loan is therefore, excluded from the balance sheet of the seller.

2. Assignment transfers: Assignment transfer from the seller to the buyer, all rights to the principal and interest. Assignments for the purpose of disposing of the assets may fall into two basic legal categories. The first is statutory assignment,

transferring both legal and beneficial title. A statutory assignment will pass and transfer from the seller to the buyer all the legal rights to principal and interest. In most cases, it will also pass on all the legal remedies available against the borrower to ensure discharge of debt. In other words, the buyer acquires the full legal and beneficial interest in the loan. The second is equitable assignment, transferring only beneficial title. It does not transfer legal frights. Thus a buyer may not be able to proceed directly against a borrower. The seller must be joined in the action. However, the seller is not liable for the debt.

3. Sub participation: It does not transfer any of the seller's right, remedies or obligations against the borrower to the buyer. But, it is an entirely separate, back to back, non-recourse-funding arrangement, under which the buyer places the funds with the seller. In return the seller passes on to the buyer, payments under the underlying loans, which the borrower makes to him. But, the loan itself is not transferred.

## Kinds of Securitisation

1. Pass-through
2. Mortgage or receivable backed bonds
3. Pay-through
4. Collaterised mortgage obligation bonds

**1. Pass-through**

In pass through structure, the tagged receivables are assigned in favour of the SPV and then SPV issues ABN indicating undivided beneficial interest to the investors. And for that, investors pay for the present value of tagged receivables. That was the creation that how the structure is to be created. And after that, the issuer collects the payment. The installment collected by the issuer is passed through to the investors. Any pre-payment, pre mature closures etc is also passed through. Hence, the amount raised cannot be regarded as a loan or deposit, it qualifies for sale treatment. As a result, amount raised will become, off balance sheet for the issuer.

**2. Mortgage or receivable backed bonds**

The creation of this type of bonds is that the tagged receivables are assigned in favour of the SPV for the singular purpose of holding them for collateral and the issuer issues bonds backed by receivables or mortgage transferred to the SPV and in return the investor pay for the present value of the tagged receivables and the payment is collected by the issuer and the investors are pays according to the terms of bonds, irrespective of collection in this type of the bond and the issuer is free to reinvest any prepayments, pre mature closures etc.

**3. Pay-through**

The creation of this type of structure is the tagged receivables are assigned in favour of the SPV. Then SPV issue ABNs indicating undivided beneficial interest to the investors and investors pay for the present values of the tagged receivables and the issuer in this case also collects the payment. The amounts released to the issuer are as imputed in the pre fixed installments. Any pre-payments, pre-mature closures etc are deposited in the reinvestment account.

**4. Collaterised mortgage obligation bonds**

In collaterised mortgage obligation bonds, the issuer will set up different tenures for different classes of the investor. But in all the type of the bonds, investors don't have the facility of differing tenure choice and different repayment choice. But CMO bonds have solved this problem. In this type of the bonds the receivables are assigned in favour of the SPV. Then, SPV issues ABNs indicating undivided beneficial to the investors and investors pay for the present value of the tagged receivables and payment in this case is also collected by the issuer. The amount released to the investor is as imputed in the pre-fixed installments. Any pre payments, pre mature closures etc is deposited in the re investment.

## Characteristics of Special Purpose Vehicle

SPV plays a very important role in the whole transaction because the investor invests on the credit rating of SPV. So it must satisfy, the following characteristics;

It must be capable of acquiring holding and disposing off assets.

It should undertake only the activity of asset securitisation and no other activity.

It must be bankruptcy remote i.e. the bankruptcy of the originator should not affect the interest of holders of the instruments issues by the SPV.

An SPV must have an identity totally different from its promoters /shareholders /sponsors.

It must be bankruptcy proof i.e. it should not be capable of being taken into bankruptcy in the event of any inability to service the securitised paper issued by it.

An SPV must be tax neutral i.e. there should no additional tax liability or double transaction on account of the SPV acting as a conduit.

**Kinds of securities issued by SPV**

The securities that can be issued by SPV can be either pay through security or pass through security. The difference with respect to the two kinds is brought out below;

| | Pass through structure | Pay through structure |
|---|---|---|
| 1 | There will homogeneous lot of securities | Different issues of securities can be ranked and hence price differently |
| 2 | The SPV cannot reinvest short term surpluses | The SPV has a discretion to reinvest short term surpluses |
| 3 | Prepayments are passed on to investors who have to tackle reinvestment risk. | There is less reinvestment risk. |
| 4 | Investors take a direct exposure on the performance of the securitised asset. | It gives investor only a charge against the securitised asset where as the assets are themselves owned by the SPV. |

Securitisation is designed to offer a number of advantages to the seller, investor and debt markets.

**For seller or originator;**

Securitisation is believed to be most advantageous for an originator. The advantage does not mean that they are earning anything extra than what they should.

One advantage of securitisation over other forms of funding is the fact that the paper gets a stand-alone rating, separate from the rate of the originator.

From the capital adequacy point of view, as it is an off balance sheet transaction, it is also a means for them to transfer the receivables from their books to another books. Securitisation mainly results in receivables being replace by cash thereby

improving the liquidity position. It removes the asset from the balance sheet of the originator, thus liberating capital for the other uses, and enhancing restructuring of the balance sheet by reducing large exposures or sectoral concentration.

It facilitates better asset liability management by reducing market risks resulting from interest rate mismatches. The process also enables the issuer to recycle assets more frequently and thereby improve earning. Finally, transparency may be improved since securitisation results in identifiable assets in the balance sheet

**For investors**

Specifically mortgage-backed securities are the safest since the underlying asset (in case of houses) keep on appreciating generally while the loan outstanding would keep decreasing over a period of time. Thus investor of MBS are getting a safer deal with the passage of time. It is also felt that, securitisation is a process of trading of expertise and diffusion of risk. This is because of the lightly broken up process that is followed in these deals. As each of the parts is highly specialized, a better result can be expected. Nationalised banks and financial institution will be benefited from securitisation deals. This is because of their longer maturity periods resulting in asset liability management mismatches. Securitisation essentially provides an avenue for relatively risk free investments. The credit enhancement provides an opportunity for investors to acquire good quality assets and to diversify their portfolios. It also provides an opportunity for matching cash flows and managing asset liability management since a securitised instrument carries regular monthly cash flows and has varying maturities. The prevalence of secondary market operation offers liquidity.

From the point of view of the financial system as a whole, securitisation increases the number of debt instruments in the market, and provides additional liquidity in the market. It also facilities unbundling, better allocation and management of project risks. It could widen the market by attracting new players on account of superior quality assets being available.

**Misconceptions by Different parties**

**Following are the misconceptions by different parties**

1. It is widely felt that it is cheaper for the high rated corporate to go in other forms of funding rather securitisation. This view says that the instrument is only required for lower rated corporate and not for the AAA corporate.

However even a good corporate can soon realize that of balance sheet is always a cheaper option because funding something on your own balance sheet has many hidden cost. A certain amount of the capital has to be maintained in order to service those assets. The increase in the capital has a cost, which most Indian corporate cannot actually calculate. Thus they feel that securitisation has no advantage for them if they are AAA corporate.

2. Another view is that, securitised paper can never become a retailed instrument because of the complexity of the instrument. This is basically flawed. If tomorrow, IOC AAA securitised papers trades on the wholesale segment of the NSE debt market, and the investor is made to understand that it is safer than the other avenues available in the corporate debt market, the investor would buy the IOC AAA securitised paper rather than IOC AAA debenture.
3. Legal factor: The legal framework related to securitisation was not very clear out, and this is one of the reasons for the hesitation to by the securitised paper. This one of the major factors that has curtailed the growth of the securitised papers in the markets in India. There is another element of legal ambiguity. There are certain benefits that accrue to the obligors when he takes a loan from housing finance companies. What happened to the benefits in the aftermath of securitisation? Who gives the TDS certificate? Interest on a housing loan up to a value of Rs. 1 lakh is exempt from tax if the loan is taken from housing finance companies and is for self-occupation. What happens when the loan gets transferred to the investor? Can the obligor claim these benefits
4. Lack of liquidity: The main reason for them not wanting to invest in corporate debt securities is lack of liquidity. As these papers are not yet freely transferable, they are not taken to buy them. As in case they want to sell these papers, they will have no buyers. The point of liquidity is important to them since liquidity is very essential.
5. No retailing route: These papers have no retail market as yet, hence does not interest the bank's too muck, May be if there is a proper retail market, like an equity market is established, then they will tend to buy these papers.
6. Stamp duty: The dual payments of stamp duty and the unclear guidelines related to this is another negative aspect to securitisation.

7. Default risk: They are not sure how the various investors would be compensated in case of default, and how you can hold over the assets when the papers are divided among several investors.
8. High risk weightage: Another problem faced by the banker if he goes in for securitised paper is that the risk weight allotted to that paper is 100%. This high-risk weightage affect him while calculating his capital adequacy. i.e. the ratio between the risk weighted asset and the capital.
9. Conflict of interest: ear of default and the fact that no trustee will take any action in case of default is another apprehension faced by the bankers. They feels that even if the originator is one who acts as a servicer, he will not take a keen interest in collecting installments from those people whose loans have been securitised. He feels that there is a potential clash of interest. Say an originator has an asset of 400 crores out of which 100 crores has been securitised, if tomorrow the default rate goes up from 10% -50% of the originator staff would obviously concentrate on recovering their own loans rather than the securitised chunk.
10. Lack of awareness: It is also felt that a lack of conceptual knowledge is prevalent and people are not very clear with the concept.

**Case Study: Rural Electrification Corporation Limited**

**REC Ltd. Vs APEB**

Rural Electrification Corporation Limited, a government of India enterprise is the first PSU that used the securitisation concept, and was successful. I discuss the whole concept used in REC with Mr. A.B.L Srivastav (Chief of Finance), they told me that, we are the first corporate to use the securitisation concept and become successful, it has been one and a half year, there has been no instance of default. I asked them the following question

Why did you choose securitisation instead of choosing domestic or international source of funding?

They said securitisation normally requires less capital to support it than traditional on balance sheet funding, hence securitisation can be a cheap source of funding. With this RoA will improve. It also diversifies the source of funding that can be accessed, so that dependence on banking and retail funds are reduced.

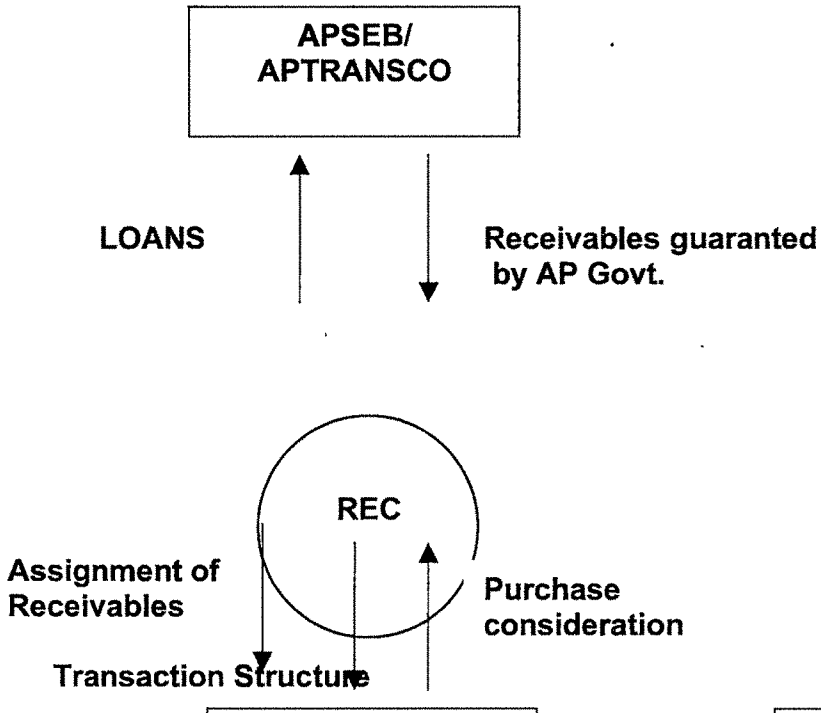
Why REC needs securitisation?

In pursuance of its corporate objectives, REC has been extending loans to APSEB. At present, we need fund for further project, for this we have a different option either to borrow from the domestic market or from the international market but on the other hand we have already amount due towards APSEB. These overdue loan and interest both are the future cash inflows and would be come by monthly installments, so instead of getting in installments, we sold a part of our receivables to SPV, a trust i.e. REC securitisation Trust. Rs.216 crore bill receivables are due to APSEB and the trust issues the instrument (PTCs) to the investor. For this, REC signed a MOA with APSEB on July 19, 1999 to reschedule the outstanding loan amounts together with the overdue loan or interest. These loan amounts are secured by a guarantee from government of Andhra Pradesh and standing payment instruction to state Bank of Hyderabad.

**Memorandum of association; REC with APSEB on July 19,1999**

Rural Electrification Corporation Limited, a government of India enterprise has been extending loans to APSEB. REC signed Memorandum of association with APSEB to reschedule the outstanding loan amounts together with the overdue loan and interest. These loan amounts are secured by a guarantee from government of AP. The Memorandum setting out the terms and conditions pertaining to private placements of PTCs aggregating Rs. 100 crore, with a right to retain over subscription.

**Diagramatic representation of the Structure**




In th would assign th APSEB/APTRANSCO together with the associated government of Andhra Pradesh guarantee and a payment mechanism **Purchase consideration** ill issue PTCs to investor.

| | |
|---|---|
| Originator | Rural Electrification Corporation Limited |
| Obligor | Transmission Corporation of Andhra Pradesh |
| Trust name | REC securitisation Trust |
| Instrument | Pass Through Certificate (PTCs) |
| Documentation | MOA between REC and the trust, Power of attorney by REC in favour of trust, unconditional and irrevocable letter of authority to bank |
| Rating | AAA (SO) by CRISIL, indicating highest degree of certainly regarding timely payment and interest on PTCs |
| Purchase consideration | The discount rate for the purchase |

| | |
|---|---|
| | consideration will be the cut off rate determined through the book building procedure. |
| Guarantor | Government of Andhra Pradesh, this guarantee would be assigned to the investor |
| Trustee | IL & FS Trust Company Limited. |

Originator: In this case, the originator is REC which sold its assets ( bills receivable) to a trust with specifically designed purposes.

Declaration of Trust (REC Securitisation Trust): This means a declaration of trust made by REC acceptable to trustees declaring there under that REC holding pending the transfer and assignment of securitised receivables to the trust, all receivables, together with all rights title, interest and benefit including the right to receive payment under the AP government guarantee thereof in trust for and for the benefit of the beneficiaries.

Legal status of the PTCs: The PTCs are in nature of trust certificates of legal and beneficial interest. Each PTC represents a proportionate undivided legal and beneficial interest in the pool of receivables.

Payment:

Standing instruction for APTRANSCO to SBH. There is also a default escrow mechanism wherein, if there is any default by AP TRANSCO, all other payment from the account are stopped until REC installment is paid-off

Issuing highlights

| | |
|---|---|
| Issue amount | Rs. 100 crore |
| Credit rating | AAA (SO) by CRISIL |
| Instrument | Pass through certificates (PTCs) |
| Issue price | Rs. 10,00,000 per PTC |
| Annualised yield | 10.7% to 11.3% |
| Interest on application money | The dates of credit of application money to the trust account and upto the date prior to the deemed date of |

| | |
|---|---|
| | allotment. |
| Tenor | 61 months |
| Redemption | In 61 EMIs |

## Highlights in the whole transaction

**Deemed date of allotment:**

Interest on PTCs will accrue on the PTC holders from the deemed date of the allotment i.e. 01/03/2001

**PTCs in Dematerialised form**

PTCs would be issue in Dematerialised form, in case any investor wishes to hold the PTC in physical form, the investor is required to make a request in writing addressed to the trust along with the application form.

**Repayment of Principal and Interest**

The PTCs shall have a final redemption of 51 months and repayment will be made every month from the deemed date of allotment. Then the stipulated periodical repayment amount would include principal repayment as well as the interest at the cut off rate. The repayment would be made from the first of every month.

**Interest in the PTCs**

The PTCs are being priced under the book building method, the annualised yield band being 11% p.a.

**Priority of Payment**

Each of the PTCs issued by the trust in all tranches of the transaction shall rank pari passi interest without any preference to or priority of one over the other.

**Payment of Final Installment**

The final repayment installment (61$^{st}$ EMI) will be made only against the surrender of the PTC duly discharge by the PTC holder. For the purpose the holder of the PTC in due course should discharge the PTC and lodge the same along with the certified true copy of the power of attorney or such other authority as may be required by the trust in 15 days advance of the redemption date.

**Duties and Responsibilities of the Trustees**

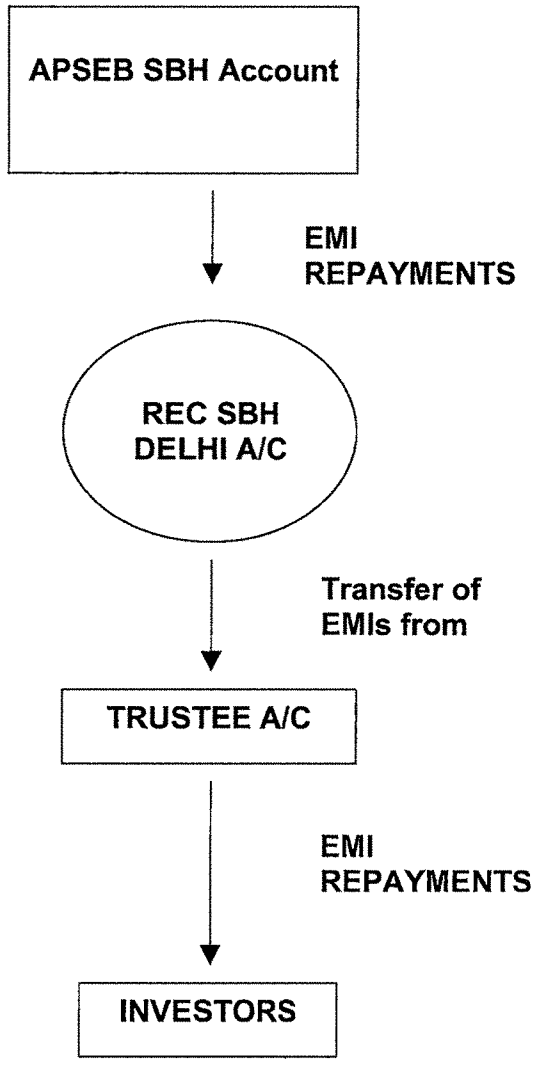
The trustees will issue PTCs to the successful bidders, hold the receivables in trust on behalf of the beneficiaries, make the stipulated periodical payments to the

PTC holders and in case default by APTRANSCO, will seek recourse to REC, seek the payment from APTRANSCO and invoke the GoAP guarantee.

**Duties and Responsibilities of REC**

REC will transfer the receivables to the trust in consideration to the sale of proceeds transferred by the trust to REC, proportionately assign the GoAP guarantee to the trust, receive the EMI from APTRANSCO, transfer the stipulated periodical payments to the trust account and in case of default, make the stipulated periodical payments to the trust account and invoke the GoAP guarantee.

**Diagramatic Representation of Payment mechanism**




**Payment mechanism**

REC undertakes to transfer by 27th of each month from its SBH account where EMIs of APTRANSCO are being received, to the trust account, a sum equal to the amount of periodical payments to be made on the 1st day of each month by the trust to the PTC holder.

Upon receiving the payment on 27th of each month from REC, the trust shall make the stipulated periodical payments to the PTC holders on the 1st of every month.

REC irrevocably and unconditionally undertakes to make the stipulated periodical payments on principal and interest due on the PTC on the 27th of each month. The amount so paid buy the REC shall be credited in the trust account and the same shall form part of the amount from which the periodical payments will be made to the beneficiary by the trust.