Financing Energy Efficiency and Renewable Energy through the India Renewable Energy Development Agency
A RANGE OF FINANCIAL SUPPORT PROGRAMS

Government financial company helps India overcome barriers to finance

Renewable energy has the potential to help India increase the capacity and reliability of power generation to meet the development needs of its people. In 2010, 25 percent of the population did not have access to electricity and the country experienced an energy shortage amounting to 8.5 percent of its total energy supply. India’s installed electricity capacity is expected to grow by 16 percent, or 80,000 MW, from 2012 to 2017. Further, due to India’s dependence on coal-fired power, the power sector emits 4 percent of total global greenhouse gas emissions; and from 2002 to 2010, power sector emissions increased by 75 percent reaching 749 million metric tons of carbon dioxide per year.

To address this growth in greenhouse gas emissions, India’s National Action Plan on Climate Change sets a target of attaining 15 percent of renewable energy generation by 2020 relative to 2008 output. The plan incorporates a major initiative, the National Solar Mission, which aims to establish India as a global leader in the solar energy market and make solar cost-competitive with other fossil-based options.

The government has introduced a number of programs to stimulate and speed investments in renewable energy and energy efficiency to meet electricity demand and renewable energy targets. These include a suite of regulatory policies such as feed-in tariffs, renewable purchase obligations, a biofuel obligation and a Renewable Energy Certificate (REC) scheme launched in 2011.

Even with renewable energy policies in place, a number of financial barriers exist. These include: limited access to capital, high cost of capital, lack of familiarity in financing renewable energy and energy efficiency projects, and loan mismatches for projects that require longer loan maturities relative to those available from commercial banks. To address these barriers, India has adopted a number of financial incentive programs including capital subsidies, tax credits and public financing.

The government’s primary vehicle for delivering public financing for renewable generation and energy efficiency is the India Renewable Energy Development Agency Ltd. (IREDA).

PUBLIC FINANCING SCHEMES

In 1987, IREDA was established as a Public Limited Government Company. It is administered by the Ministry of New and Renewable Energy to provide financing schemes to project developers and is partly funded by the national government.
IREDA also receives financial and technical support from the German development bank (KfW), French development bank (AFD), Nordic Investment Bank (NIB), European Investment Bank (EIB), Japan International Cooperation Agency (JICA), World Bank, Asian Development Bank, and other international financial institutions, agencies and investors. From 2006 to 2010, IREDA’s total funding grew by 70 percent from approximately USD 391 to USD 665 million. In 2010, IREDA received approximately USD 257 million (40 percent of its financial resource base) from international lenders, as grants, loans, and credit lines. (Figure 1).

Figure 1: Breakdown of IREDA’s Sources

Eligible sectors for funding from IREDA include small hydro power; medium to large hydro projects above 25 MW, wind energy, bio-energy, solar energy, energy efficiency and energy conservation, biofuel and alternative fuels, and new and emerging technologies. The minimum loan amount is USD 90,000. In addition, IREDA provides finance for electrification of remote villages using an energy service companies (ESCO) model, and administers subsidies on behalf of other government programs.

IREDA also finances end user energy efficiency retrofit projects, utility demand-side management projects, projects promoted by ESCOs and power plants based on recovery of energy from exhaust gases.

Under IREDA, eligible renewable energy and energy efficiency project developers have access to a number of financial programs described below, as well as technical assistance.

- **Concessional loans**: Project developers are eligible for loans up to 70 percent of the project costs or energy efficient equipment. Projects implemented through an ESCO are eligible for an 11.25 percent interest rate with a 10 year maturity, or a 10.25 percent interest rate with an 8 year maturity.

- **Interest rate rebates**: Renewable energy project developers are eligible for up to a 0.5 to 1 percent reduction in the set interest rate. The rate varies depending on the regional locale of the project. Developers are also eligible for an additional interest rate rebate of 0.5 percent for timely payment of loan interest and principal.
• **Financial assistance:** Renewable energy project developers are eligible for a 50 percent discount on the initial costs of project implementation, including: processing, inspection, legal, and front-end fees related to renewable energy installations.

• **Credit lines for commercial banks:** IREDA extends a line of credit to eligible financial intermediaries to lend and/or lease energy-saving equipment for a minimum of USD 46,000 and maximum of USD 184,000 with a 10 percent interest rate and 10 year payback period.

• **Tax benefits:** Developers are eligible for up to 100 percent tax deduction for the recovery of depreciated property in the first year of the project on specified equipment. They are also exempt from import and excise taxes on energy efficiency and renewable energy technology. Some state governments provide financial assistance for conducting energy audits and provide tax exemptions for power generation projects.10

**Figure 2: Investment in Renewable Energy in India by Sector, 2011**

Source: Frankfurt School of Finance and Management.

**A RENEWABLE ENERGY SURGE**

Under current national plans, India’s renewable generation was projected to increase by 180 percent to 21,761 megawatts (MW) by 2012, and by 820 percent to 71,461 MW by 2022, relative to 2007 capacity. As of December 2011, the total installed renewable capacity was 20,162 MW (about 4 percent of total installed electric generating capacity).11

IREDA has made a significant contribution toward the surge of new renewable generation in India. In 2010, IREDA’s financing led to the commissioning of 270 MW of new renewable generation, and its loan approvals in that year will lead to new renewable generation capacity of 800 MW. The commissioned plants will generate annual saving of 0.23 million tons of oil equivalent and emission reductions of 0.80 million tons of carbon dioxide.12 As of March 2011, IREDA’s cumulative achievements included:13

- The approval of 1,941 projects with a power capacity of 4,280 MW and commissioned capacity of 1,977 MW
- Loan approvals amounting to USD 3.4 billion
- Loan disbursements of USD 1.7 billion
- Conventional fuel replacement equivalent to 1.3 million tons of coal per year
IREDA’s finance mechanisms are only one contributor driving new renewable generation in India. In 2011, India’s total renewable energy investment increased 62 percent in a single year, reaching USD 12.3 billion. In just four years, from 2006 to 2010 the IREDA finance mechanisms led to an increase of domestic lending from commercial banks by 120 percent and an increase of international assistance by 50 percent. The breakdown of investment in 2011 by sector is provided in Figure 2. Additionally, the renewable energy market expansion can be attributed to mandatory renewable energy targets (renewable portfolio standards), favorable grid access policies (fair terms to buy, sell and transmit power, access to transmission resources), and education of energy regulators, utilities and banks. Continuing this type of integrated approach for policy development and financial incentives from both the public and private sectors will be required to achieve India’s longer-term objectives for increased renewable generation.

REFERENCES

IREDA website: <http://www.ireda.gov.in/>

Note: Currencies were converted to US dollars on December 14, 2012 at the exchange rate of 1 USD = 54.3 Rupees.


6 Indian Renewable Energy Development Agency, 2011, op cit. (endnote #2)


11 Indian Renewable Energy Development Agency. 2011, op cit. (endnote #2)

12 Indian Renewable Energy Development Agency. 2011, op cit. (endnote #2)


**Figure Section**

Note: The expenditure data in figure 2 were reported in USD and do not reflect the same exchange rate used elsewhere in this paper.

**Figure 1: Breakdown of IREDA’s Sources**


**Figure 2: Investment in Renewable Energy in India by Sector, 2011.**