
INVESTMENT OPPORTUNITIES Indian Renewable Energy Sector

A Presentation by:

Debashish Majumdar

Chairman & Managing Director

Indian Renewable Energy Development Agency Limited

New Delhi (India)

Agenda

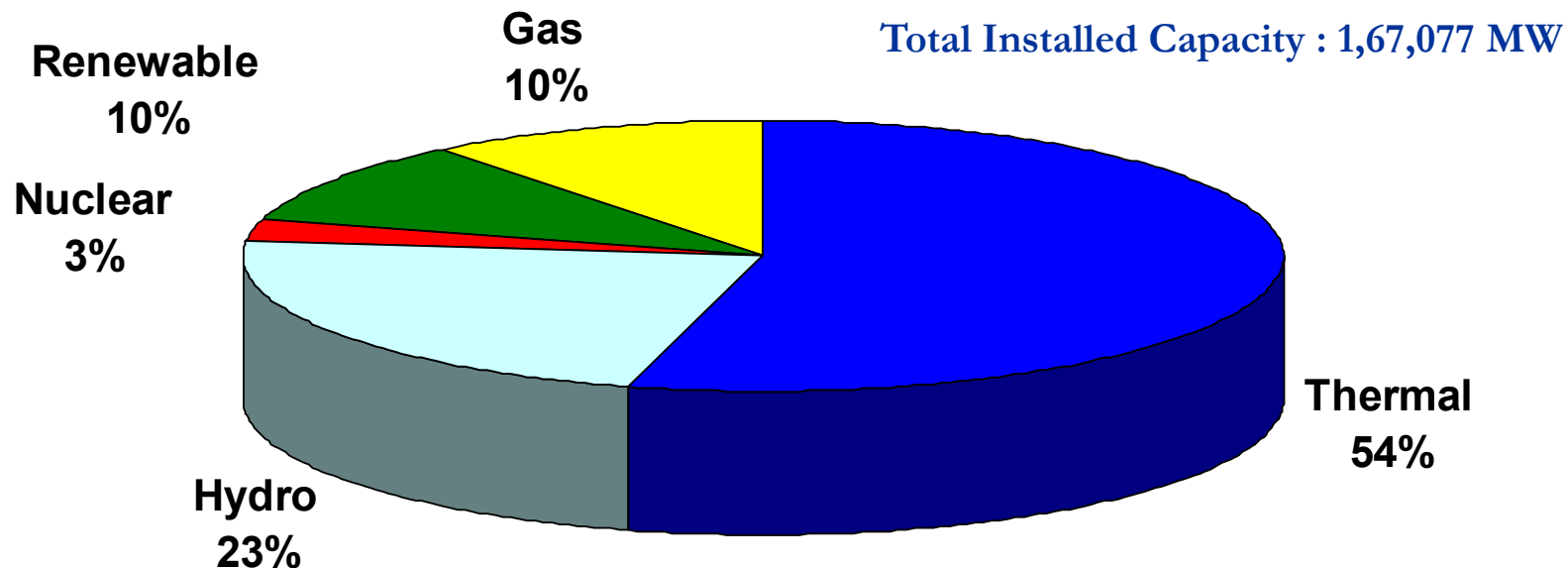


- Energy Scenario in India

 - Role of IREDA
 - Background
 - Offerings
 - Achievements

 - India: Investment Destination
 - Why India
 - RE sector Attractiveness
 - FDI in Power Sector
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Indian Power Sector at a Glance



Thermal 89,778 MW	Hydro 37,367 MW	Gas 17,385 MW	Renewable 16,786 MW	Nuclear 4560 MW
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Source: CEA

As on 31 11 2010

Challenges



- Over half of population lack access to modern forms of Energy
 - One-third of power generated lost before getting utilized (30% AT& C Losses)
 - Peak Deficit of 12% & Energy Deficit of 11%
 - Number of villages/ hamlets inaccessible to Grid
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Reform Measures

- Unbundling of utilities
- Generation & Transmission opened to Private Players
- Focused approach for Rural Areas - RGGVY
- Mega Schemes : R-APDRP & UMPP
- Creation of National Grid
- Initiated Power Trading & Open Access
- Thrust to Renewable Energy





Indian Renewable Energy Development Agency Limited

At a Glance

Evolution of IREDA



INCEPTION

Incorporated under the Companies Act on 11th March, 1987 to promote, develop and extend financial assistance for Renewable Energy and Energy Efficiency/ Conservation Projects.

OBJECTIVE

Extend financial support to Renewable Energy, Energy Efficiency & Conservation projects

MOTTO

Energy For Ever

Operational Areas

Sectors being financed:

- Wind
- Small & Medium Hydro
- Biomass Power & Cogeneration
- Solar
- Waste to Energy
- EE & Conservation
- Bio Fuels/ Alternate Fuels



- Project & Equipment Financing Schemes
- Financing Through Intermediaries

- Loan upto 70% of Project cost
- Repayment upto 13 years

Highlights

- Dedicated FI for RE Financing – Unique in the World
 - Largest share in RE Project Financing in India
 - Recognized internationally – High Brand Equity
 - Multilaterals/ Bilaterals prefer working with IREDA
 - Catalyzed Market Development
 - Profit earning & dividend paying
 - ISO 9001:2008 Certified Company
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Successes



- Developed RE through innovative financing.
- Encouraged entry of private sector in RE.
- Catalyzed market development leading to commercialization of RE
- Helped in creating manufacturing, design & engineering, O&M capabilities.
- Assisted in framing of conducive RE policies
- Highest share in RE Financing.

Cumulative Performance



- No of Projects Sanctioned : 1960 Projects
- Total Loan Sanctions : 2425 mill Euro
- Loan Disbursements : 1245 mill Euro
- Commissioned Capacity : 2154 MW
- Conventional Fuel Replacement : 1.4 M MTCR/Yr

As on January, 2011

International Partners

- Govt of Netherlands, 1991 : 18 Million Dutch Guilders
- World Bank (1st LoC), 1993 : \$ 145 Million
- DANIDA, 1993 : \$ 15 Million
- Asian Development Bank, 1997 : \$ 100 Million
- KfW, Germany (1st LoC), 1999 : € 61.35 Million
- World Bank (2nd LoC), 2001 : \$ 110 Million
- KfW, Germany(2nd LoC), 2008 : € 50 Million
- NORDIC Investment Bank,2008 : \$ 50 Million
- KfW, Germany(3rd LoC),2010 : € 19.9 Million

Lines of Credit in Pipeline

- AfD 1st LoC : € 70 Million
- AfD 2nd LoC : € 200 Million
- KfW, Germany (4th LoC) : € 200 Million
- JICA, Japan : JPY 30 Billion





India: A land of Opportunities

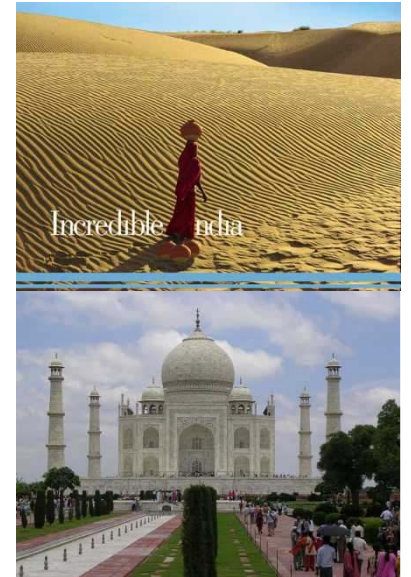


Why India

- Macroeconomic Stability
- Developed Capital Markets
- Foreign “Fortune 500” companies making larger footprints in India
- Skilled Working Age Population
- High Energy Demand projection
- Integrated Energy Policy being implemented

Incredible INDIA

- 4th Largest Global Economy
- Fastest Growing Free Market Democracy
- IT & Engineering Superpower
- Rich Mineral Base
- Vibrant Capital Market
- Impressive Infrastructure
 - ❑ 2nd largest Rail network
 - ❑ 5th largest power market
 - ❑ 334 airports, 12 major & 87 minor ports
 - ❑ 400 Million telephone connections



Green Energy Opportunities

- India is the fifth largest country in the world in terms of wind energy installed capacity
- Over 15,000 MW of renewable based capacity has already been installed
- 100% FDI allowed in RE sector. No prior approval is required
- India has a strong manufacturing and R&D orientation and is emerging as a hub of wind, solar, biomass related manufacturing and exports
- Foreign Investment Implementation Authority as a One-stop service for facilitating FDI

India ranked 4th in all Renewable Energy Attractiveness Indices *

* Ernst & Young

Potential & Achievements of RE in India

Sector	Approx. Potential (MW)	Potential Harnessed (MW)	% Achieved
Wind	45195	12010	26%
Small Hydro (upto 25MW)	15000	2767	18%
Bagasse Cogeneration	5000	1411	28%
Biomass	16881	901	5%
Waste to Energy	2700	72	2.6%
Solar Power	4-7 kWh/Sq.M/Day)	6.00	
Biomass / Cogen (Non Bagasse), Gasifier, Energy recovery from waste etc	-	417	
Total	84776	17591	21%

RE Investments in India

Sector	Capacity (MW)	Assumptions US\$ Mln/ MW	Investments (US\$ Bln)
Wind	20,000	1	20
Solar PV	15,000	3.5	52.5
Solar Thermal	5,000	2.5	12.5
Small Hydro	8,000	1	8
Biomass	7,000	1	7
TOTAL	55,000	--	100*
Existing Base	15,000		
TOTAL by 2020	70,000**		

(*) For new RE capacity envisaged by 2020

(**) 25% of total capacity

RE Policy Enablers



- Dedicated Ministry – MNRE
- Dedicated FI – IREDA
- Comprehensive Resource Assessment
 - Wind Atlas/ Solar Radiation Mapping
- Enabling Legislations
 - NAPCC/ RPO
 - Preferential Tariffs/ GBI/ RE Certificate
 - Guaranteed off-take
- RE classified under Infrastructure

Incentives to RE Projects

- Excise duty exemptions
- Income Tax Holiday
- Accelerated Depreciation
- Remunerative Returns on Equity
- Preferential Tariffs/ GBI/ REC
- Interest/ Capital subsidies
- Energy buy-back under long term PPA
- Captive, 3rd Party Sale & Trading



Jawaharlal Nehru Solar Mission

National Action Plan on Climate Change:

- Solar Mission envisaged to give boost to solar power – launched on 11 January 2010
- Large-scale solar power generation an identified thrust area

Solar Mission Aim:

- Rapid and large-scale diffusion of solar power generation technologies
- Building local manufacturing, R&D and human resource capability
- Reduction of cost to move towards grid parity.

Proposed targets (2022):

- 20,000 MW grid-power installed capacity
 - 2,000 MW off-grid power
 - 20 mln. sq.m thermal collectors
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National Solar Mission: Policy Enablers

- Solar specific RPO
 - 3% by 2022, aided by RE Certificate
 - Mandatory, with penalty provision
- Generation Based Incentive
 - Ph-I: Solar tariff @ Rs18.44 /unit
- Fiscal Incentives
 - 10-year tax holiday for utility plants
 - Custom & excise duties exemption
- Comprehensive Resource Assessment
- R&D in PPP mode



Pathway to 20GW Goal

- Solar specific Renewable Purchase Obligation (RPO)
- Concessional Finance / subsidy for decentralized, off grid systems
- Attractive feed in tariff for utility scale and rooftop solar power plants
- Tariff based bidding for large solar thermal plants
- Emphasis on Industry led research projects

GBI Policy Framework for Wind Power Projects

- Level playing field for FDI companies and domestic Companies created by implementing Generation Based Incentive (GBI) in parallel with existing fiscal incentive of accelerated depreciation
- Stage set for large wind developers to invest in India.
- Attractive feed in tariff

Thank you !



Indian Renewable Energy Development Agency Limited

3rd Floor, August Kranti Bhawan, Bhikaiji Cama Place, New Delhi – 110 066, India

Email : cmd@ireda.in

www.ireda.in
