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UNCTAD Expert Meeting:
Green and Renewable Technologies
as
Energy Solutions for Rural Development

Poverty, Energy and Climate Change:
Employment and Power Partnership Program

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Poverty, Energy and Climate Change: Employment and Power Partnership Program

Why are new energy and power solutions imperative in the Industrialised as well as the Third World ?

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Global Reasons

Dwindling Reserves of Fossil Fuels.
Severe External Impacts of Fossil Fuel Combustion.
Unaffordable Life Styles and Wasteful Consumption.
High Risk of Climate Change.

Third World Reasons

The current energy and power policies have not worked for billions in the Third World.
Conventional Rural Electrification, linked to the Centralised Power Sector Is a failure in the rural areas in the Third World

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HUGE D I S P A R I T I E S

in

Energy Consumption

Income

Carbon-Emissions

Even today

300-400 million people in India

and 1.6 billion people world wide

have no access to

any form of modern commercial energy.

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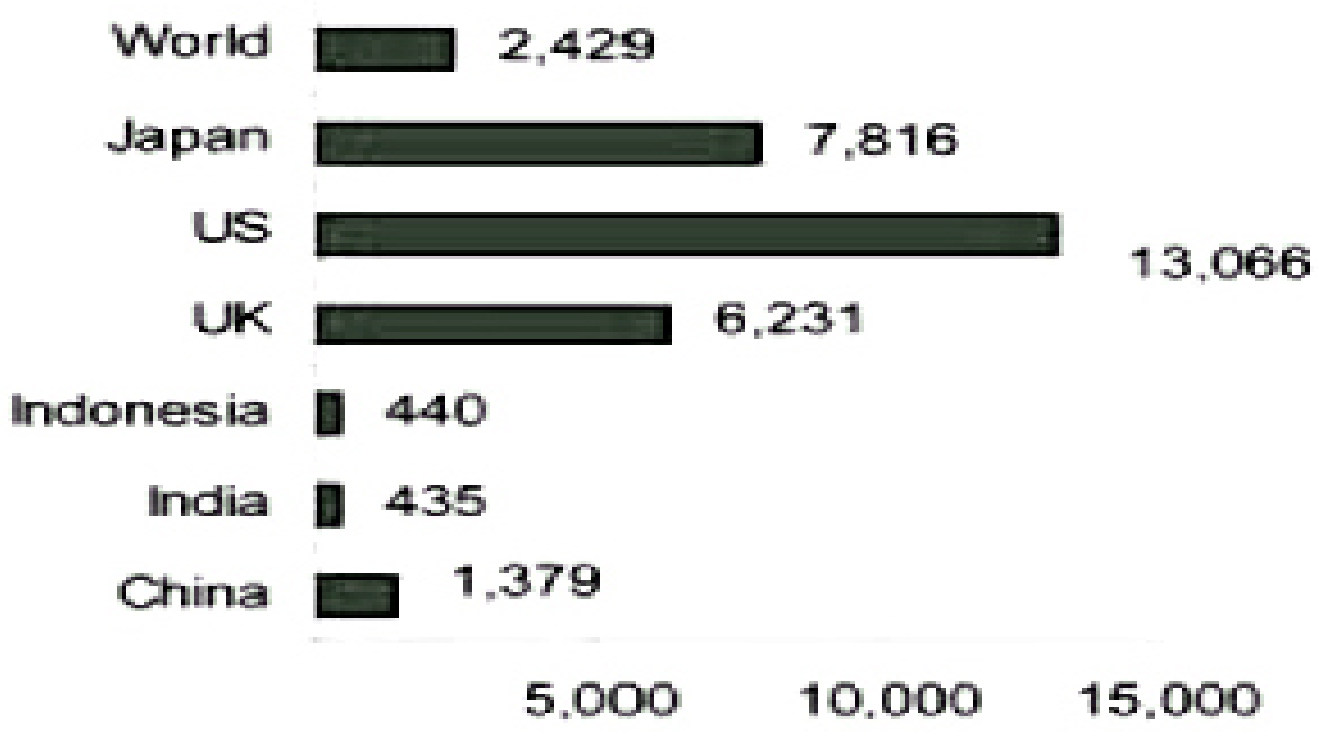
DISPARITIES in ENERGY CONSUMPTION
Per Capita Electricity Consumption kWh / year (2003)



Source: IEA

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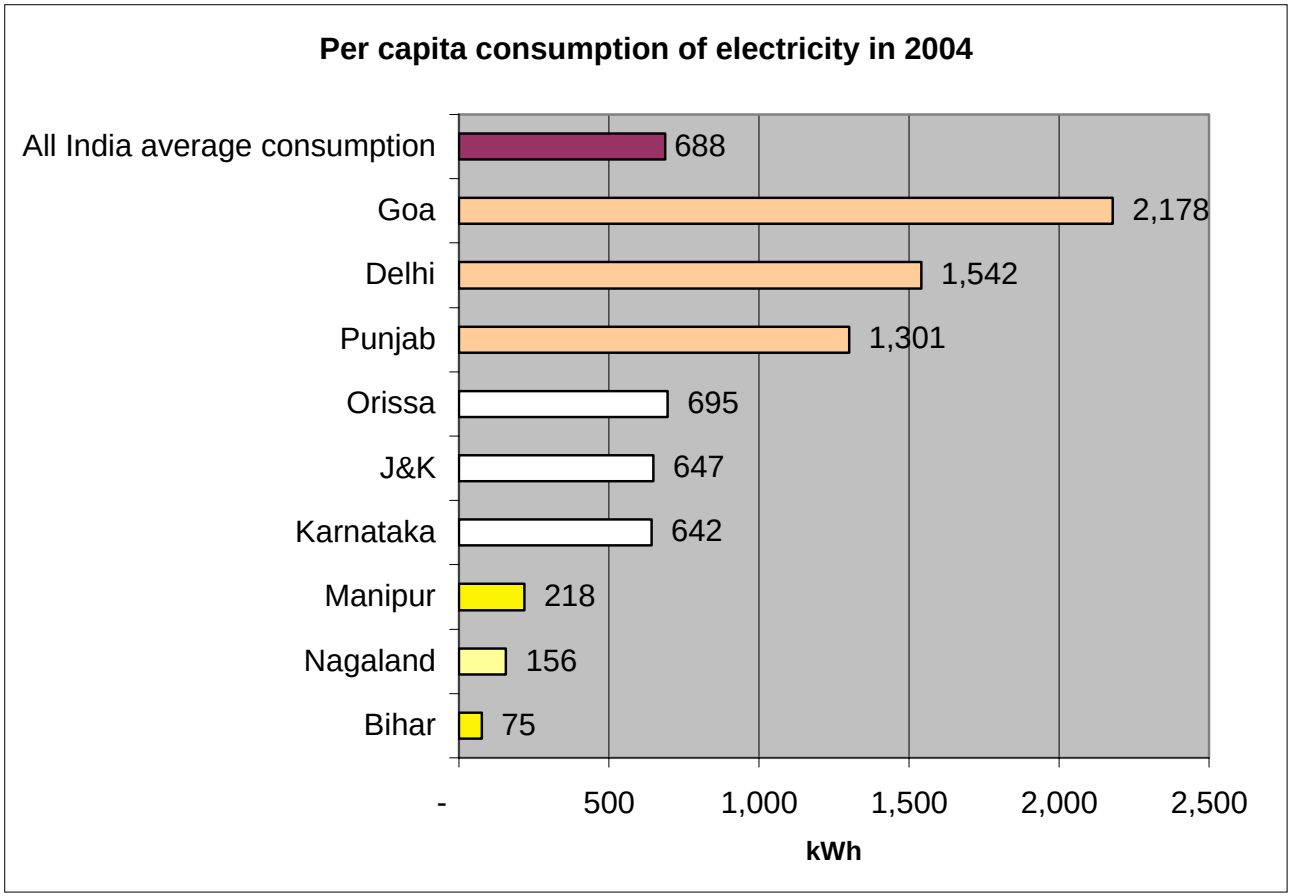
DISPARITIES in ENERGY CONSUMPTION in INDIA



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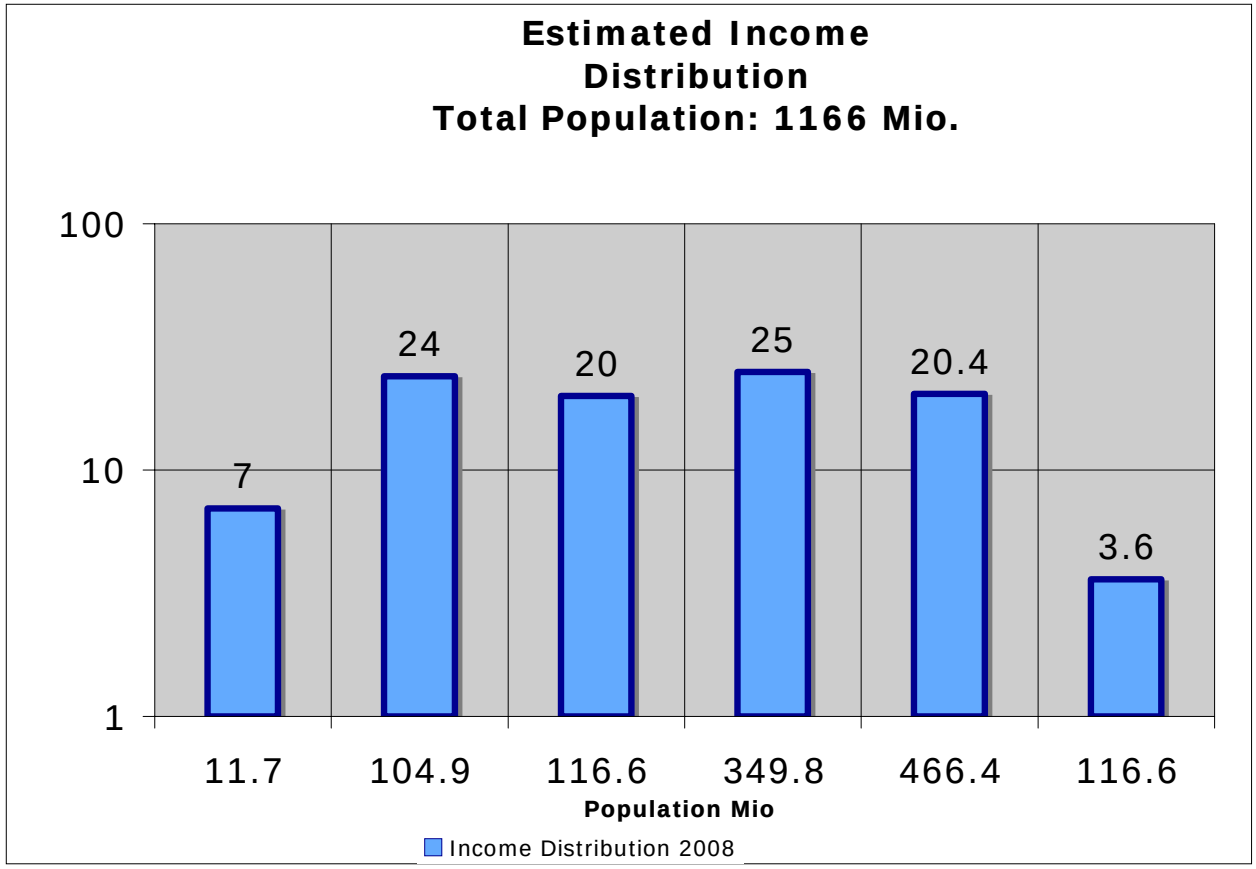
DISPARITIES in INCOME in INDIA



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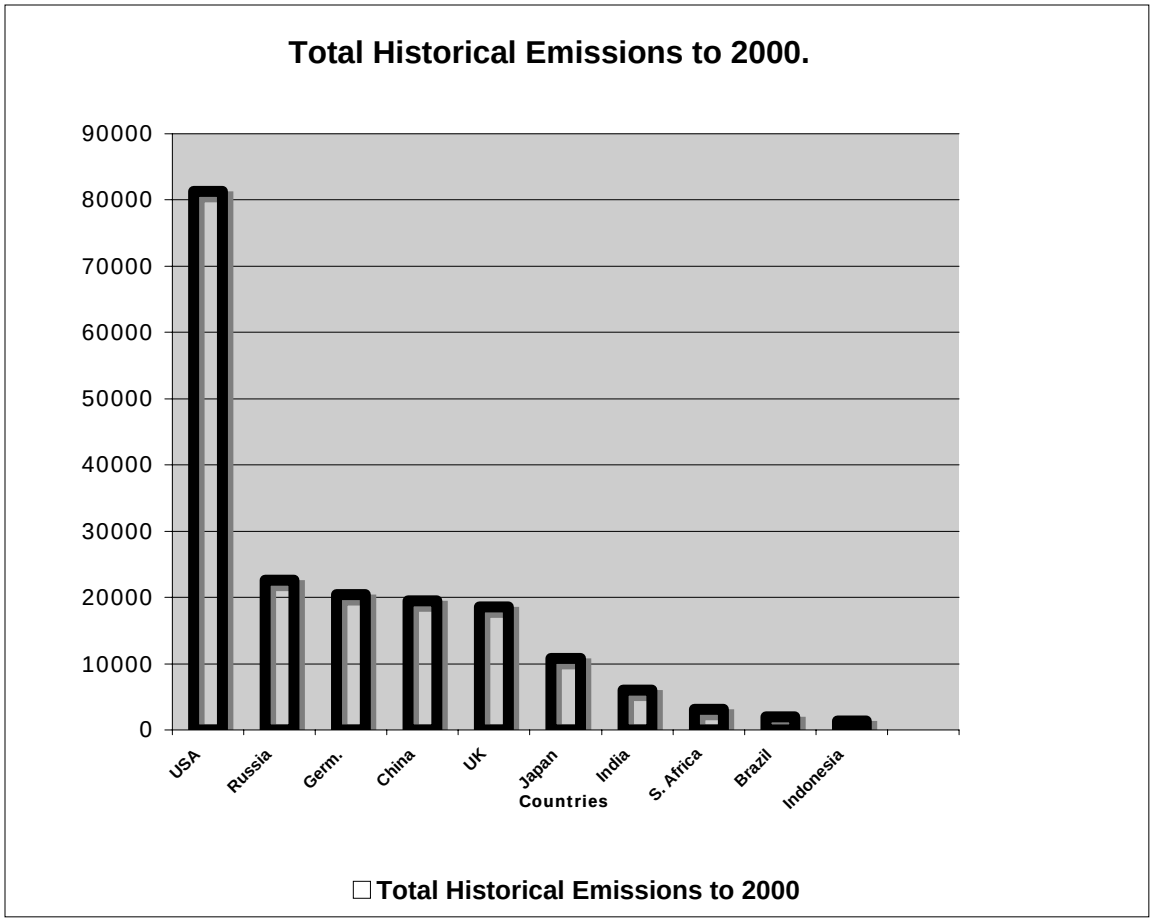
DISPARITIES in C-EMISSIONS



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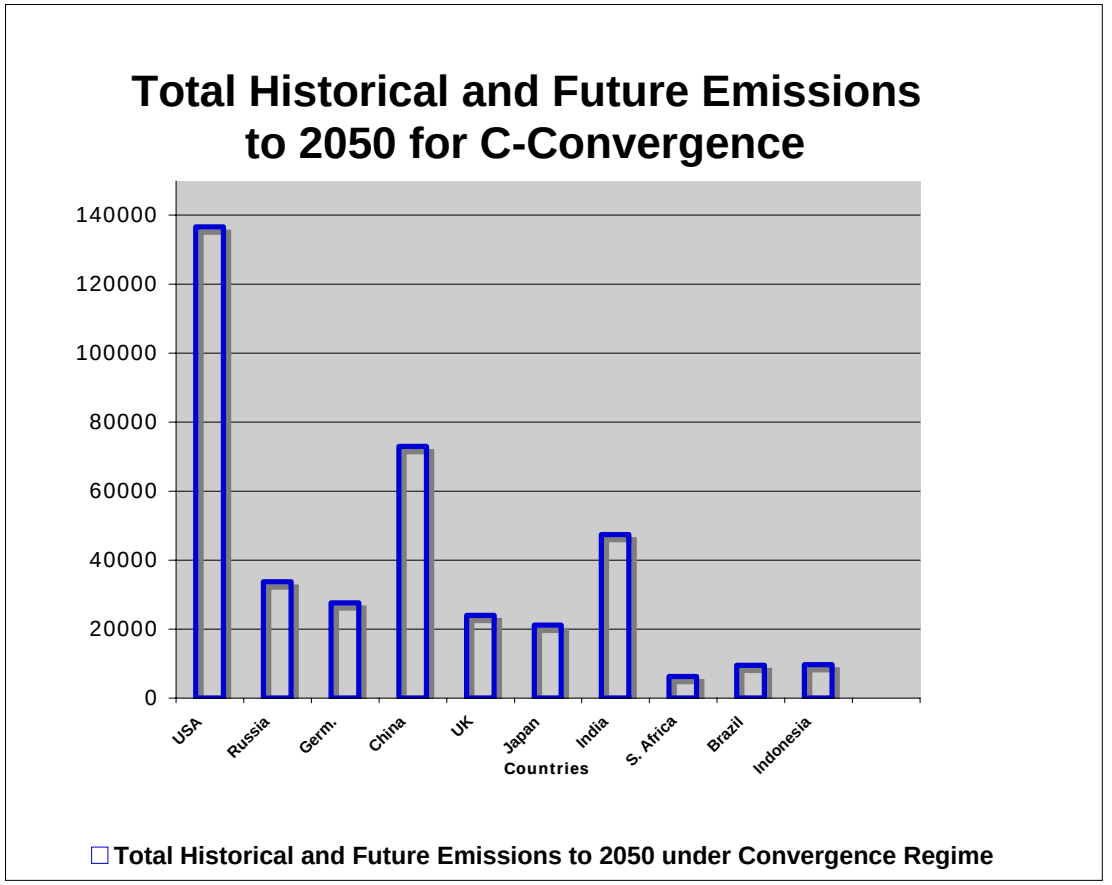
Total C-Emissions to 2050 with a Convergence Target of 1.5 t-CO2/ cap



Centralised Rural Electrification has Failed Third World Villages

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A New Energy Paradigm Needed for the Third World:

Centralised and Decentralised Sectors should have their own framework to function as equal partners.

The centralised power sector should serve primarily the industrial, infrastructure and urban sectors.

The decentralised power sector, primarily based on renewable sources, should serve the rural and peri-urban areas.

An level playing field should be provided for the decentralised power sector.

A Systemic Approach is Needed to Make A New Energy Paradigm Succeed

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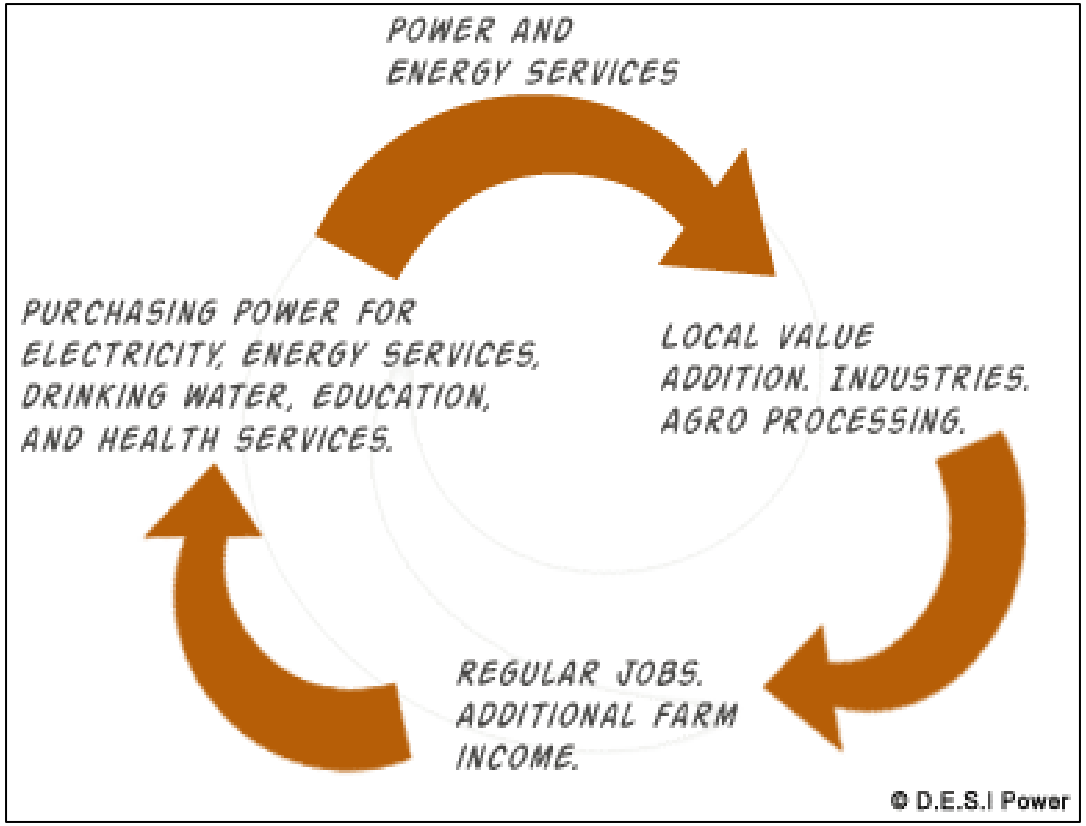
Breaking the vicious cycle of rural poverty with electricity as the driving force for sustainable rural livelihoods



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- Biomass: residues / generation
- Bio-fuels: food vs. fuel
- Land use: food, shelter, energy
- Energy services:
  water pumping / recharging
  cooking/lighting/drinking water
- Saving GHG emissions

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An Example: DESI Power's 100 Village Employment and Power Program in Araria District, Bihar.

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Phase 1/100 Village EmPower Partnership Program

1. 100 Village Program registered under CDM for carbon trading.
2. Wins WB Development Market Place Award.
3. 3 plants financed and functioning in new villages.
4. Loads still inadequate for profitability.
5. Biomass supply & management being stabilised.
6. Management Training Centre DESI_MANTRA set up and functioning.

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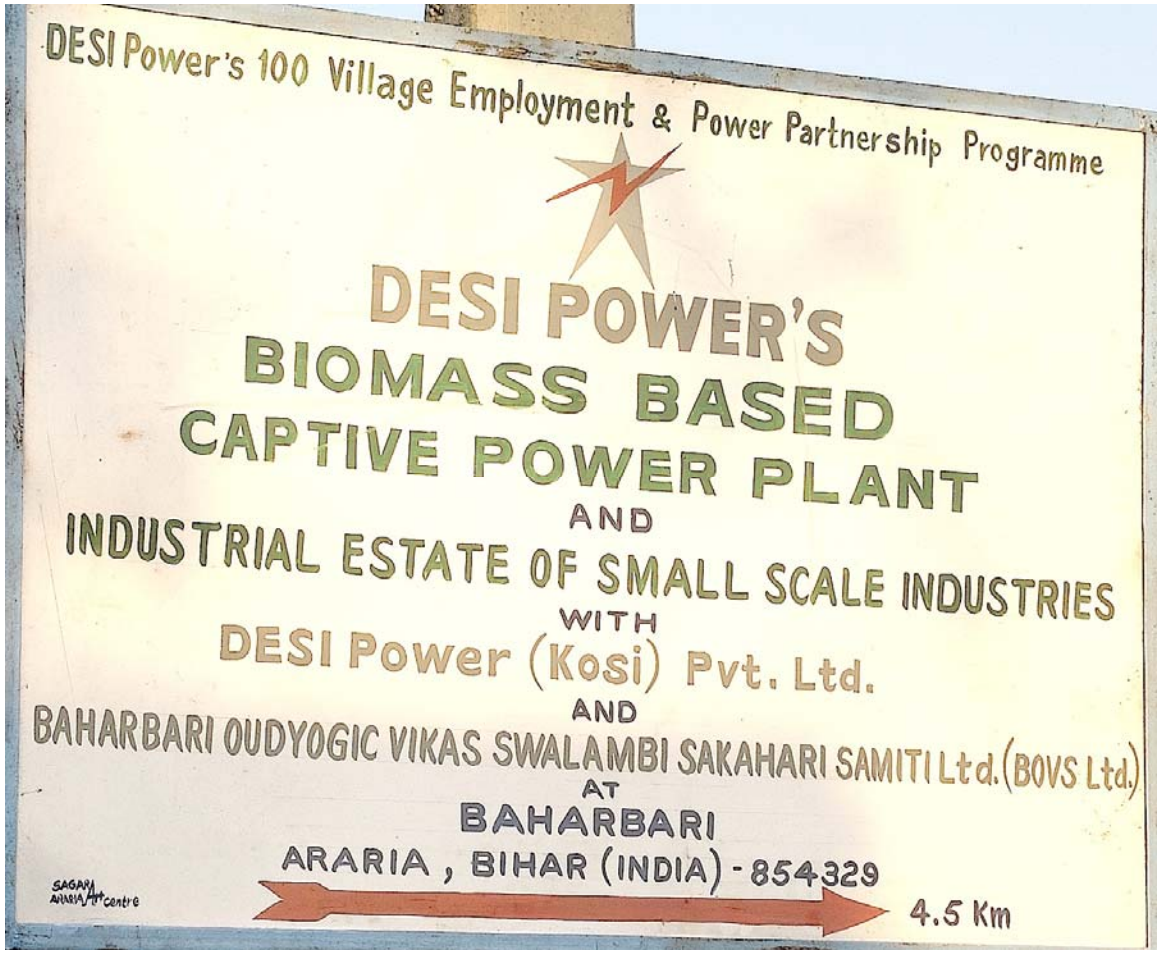

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Ipomea Field in Orchha

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Growing Ipomea and Daincha in Baharbari

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Growing Daincha in Other Villages

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An Example of Energy Service Business under the EmPower Partnership Model

A Lighting Service called “DESI_Roshni”

Decentralised Energy Systems India Pvt. Ltd.
(DESI Power)

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Phase 2/100 Village Program

COURSE CORRECTION BASED ON PHASE 1 EXPERIENCE

1. **10 to 20 villages depending on funds.**
2. **Business plans finalised for micro-enterprises, new business units and energy / water services.**
3. **Biomass growing, supply and processing now a Business Unit.**
4. **Diversifying engine supply and support services underway.**

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Phase 2/100 Village Program (continued)

5. Won Tech Museum - Accenture Technology Innovation Award ($50’000).
6. Agreement with SBI for direct bank loans to villagers for micro enterprises and businesses.
7. Raising investment finance: several alternatives packages under discussion.
8. Village data collection and project planning underway.

Implementation Plans for Phase 2 Ready

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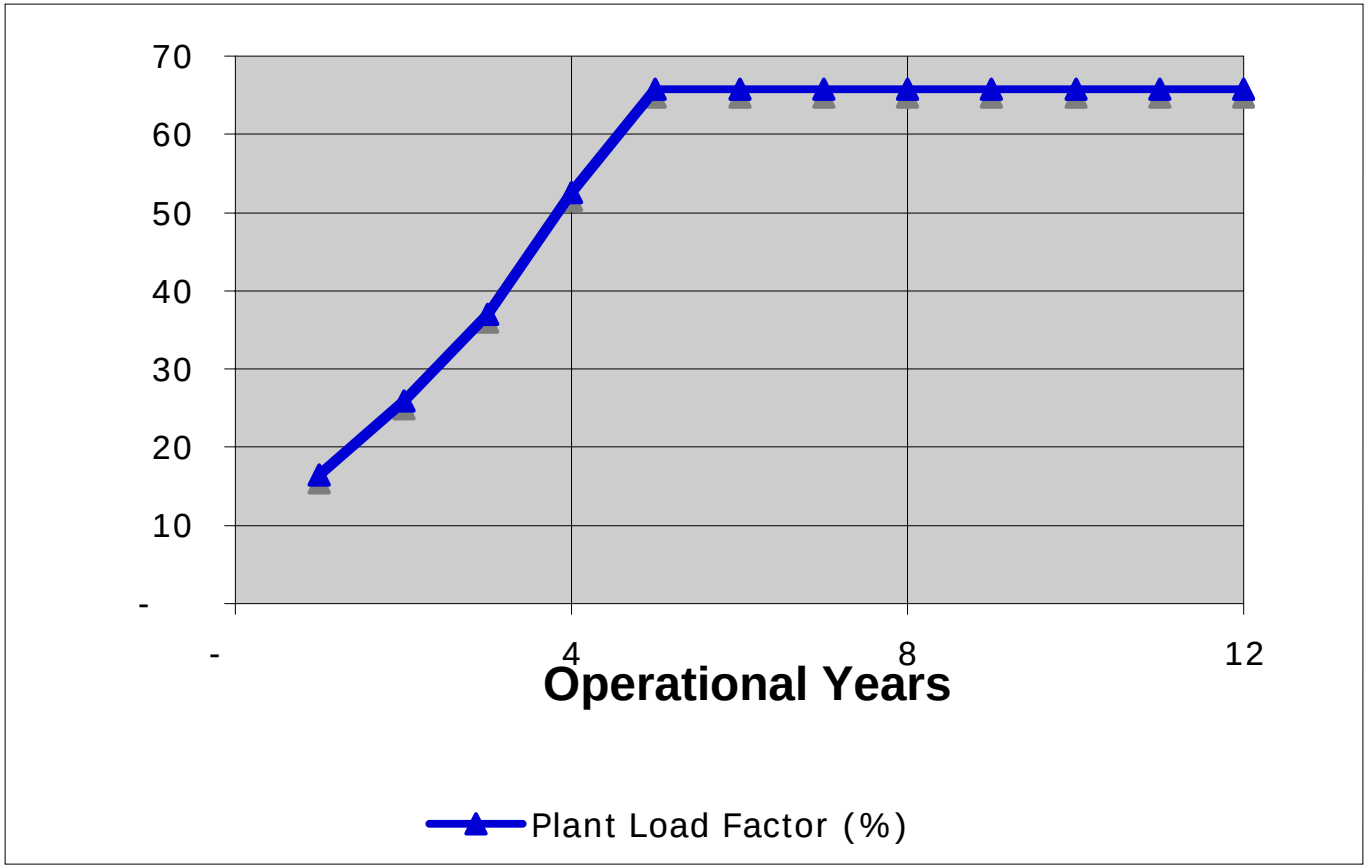
BASIS for ACHIEVING PROFITABILTY



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1. Dividend can start to be paid after the 4th year.
2. Equity investors can exit after a minimum period of 6 years with an agreed p
3. The total cumulative amount of dividend + retained earnings over 10 years can be between 180 - 220% % of the equ

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Forms of Investment

1. **Local Commitment Investment:** Villagers and local entrepreneurs to ensure local participation and commitment.
2. **Carbon Footprint Investment** in exchange for CERs to compensate for Investor's GHG emissions.
3. **Socially Responsible Investment**: Long term equity or loan with a fair return on financial, social and ecological parameters.
4. **Up-Front Carbon Investment**: Paying for a part of the anticipated CERs as an advance to built the project.
5. **Commercial loans** with or without social and ecological bonus.

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Investment in Power Plants and Biomass Processing. Lacs	50
Investment in Capacity Building, Training and Running Cluster Centres for 12 years, Lacs	36
Investment in Business Units, Lacs	33
Total Investment Lacs	119
Subsidy.Lacs	7.5
Bank Loan Lacs	20
External Equity Lcs	92
CERs: Estimated generation over 12 years tCO2	169000
Income from CERs, Lacs	81.1
Income from CERs % Equity	89%

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To

SUMMARISE

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Innovations Make The EmPower Partnership Program Successful

1. Making Complex RETs reliable for villages and manageable by local staff.
2. Integrating electricity supply and creating local demand: both profitable.
3. Creating non-agricltural jobs in micro-enterprises, businesses, and energy and water services.
4. Building partnerships with villagers: organisations, infrastructure, capacity building and training, with focus on women (DESIMANTRA).
5. Cluster Centres: continuing extension services and performance audit.
6. New financing mechanisms: integrating carbon credits and making non-government village projects bankable.

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Thank you