



D.E.S.I Power™

New Ventures India Investor Forum  
Mumbai, November 2-3, 2006

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*Power to the people!*

[www.desipower.com](http://www.desipower.com)

***DESI Power  
Employment and Power (EmPower) Partnership  
Program  
for  
Reducing Poverty and Greenhouse Gas Emissions  
with Profit***

***Dr. Hari Sharan***



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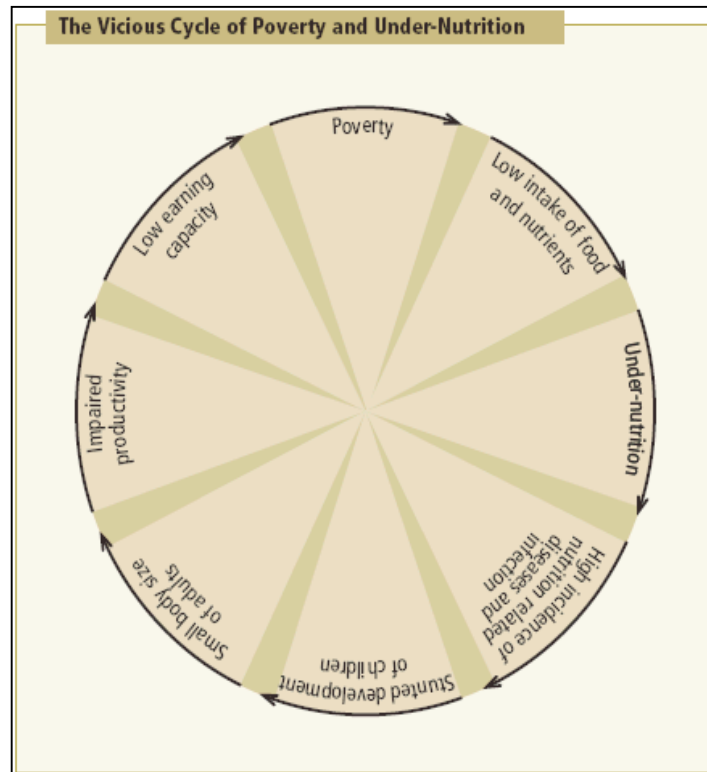
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# The Vicious Cycle of Underdevelopment



**Poverty leads to ...**  
**Under-Nutrition leads to ...**  
**Diseases lead to ...**  
**Impaired productivity leads to ...**  
**Poverty leads to ...**

Source: Human Development Report India, 2001





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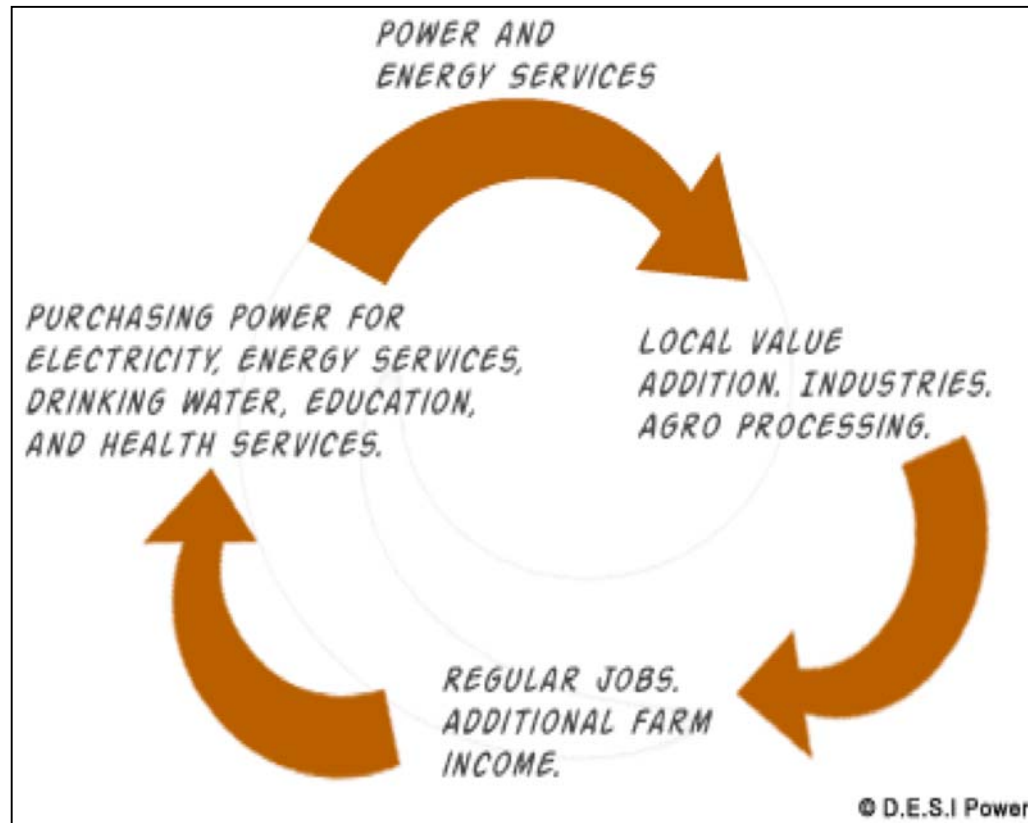
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## The DESI Cycle of Rural Development



Breaking the cycle of under-development.

With Electricity as the driving force for social and economic development.  
Improvement of living standards.

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## The Mission

**To reduce rural poverty and green house gas emissions.**

**Jointly with village partners.**

**In the private sector with public sector support.**

**Driven by renewable energy based decentralised power  
Plants.**

**Simultaneously with micro enterprises and energy services.**

**To profitably create local jobs.**

**And promote social and ecological impacts.**

**DESI Power was Founded to Fulfil the Mission**



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- A private limited company promoted by Dr. H. N. Sharan (through Dasag Engineering India Pvt. Ltd.) and Dr. Ashok Khosla (through Development Alternatives / Technology for Application in Rural Areas, Tara ).
- DESI Power being restructured for new investors and donors for implementing the 100 village EmPower Partnership Program.



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## The History

**1996: DESI Power incorporated. DESI Power Orchha.**

**1999: Second project started in 2000 in Badadhara, Orissa.**

**1999: Agreement with the Dutch Government for grants under the AIJ Pilot Phase Mechanism of the FCCCC.**

**2002: Agreement with Shell Foundation for grants for micro-enterprises.**

**2003: Completion of the first Phase of DESI Power's Programme.**

**2005: Formal launch of the 100 Village EmPower Partnership Program in Araria District.**

**2006: World Bank Development Marketplace 2006 Award /  
Become bankable / Search for investors / Start construction of  
5 projects**



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## EmPower Partnership Program

**DESI Power:**  
*for electricity supply,  
energy services and  
running Cluster  
Centres for extension  
services*

**Village partners:**  
*for local  
management, micro-  
enterprises, value  
addition and job  
creation*

**Public and  
private investors,  
Government  
subsidies, CERs,  
bank loans.**

*Simultaneous implementation  
of energy and livelihood  
projects*



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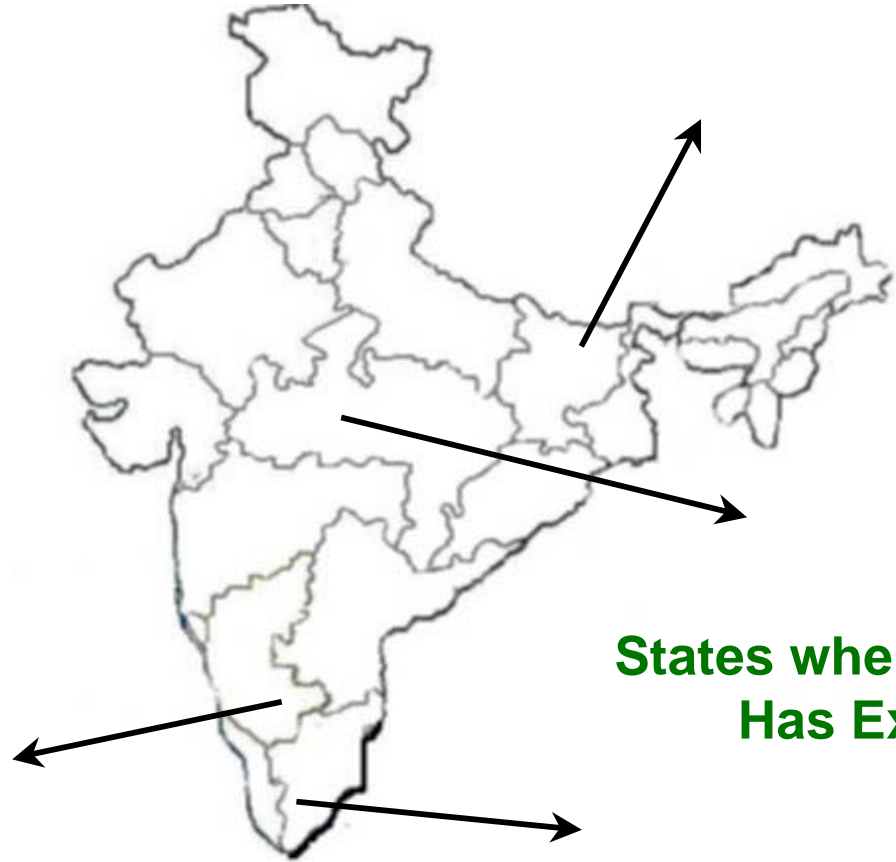
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**States where DESI Power  
Has Experience**



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## Location of the 100 Village EmPP Program



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## Proven, Reliable, Commercialised IISc - Netpro Open-Top Downdraft Biomass Gasification Technology



A large number of power plants in operation with thousands of operating hours (9 DESI Power).

Field-tested Cummins producer gas engines.

Successful setup of micro-businesses.

Plants field tested in villages.

Training centre for plant staff and village entrepreneurs.

Local fuel supply is manageable and profitable.

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Pump near power plant



One of the 6 pumps located in the fields



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# Innovations Demonstrated by EmPower Partnership Projects

*Social Governance*

*Technology Management*

*Financial Packaging*

*Service Delivery*



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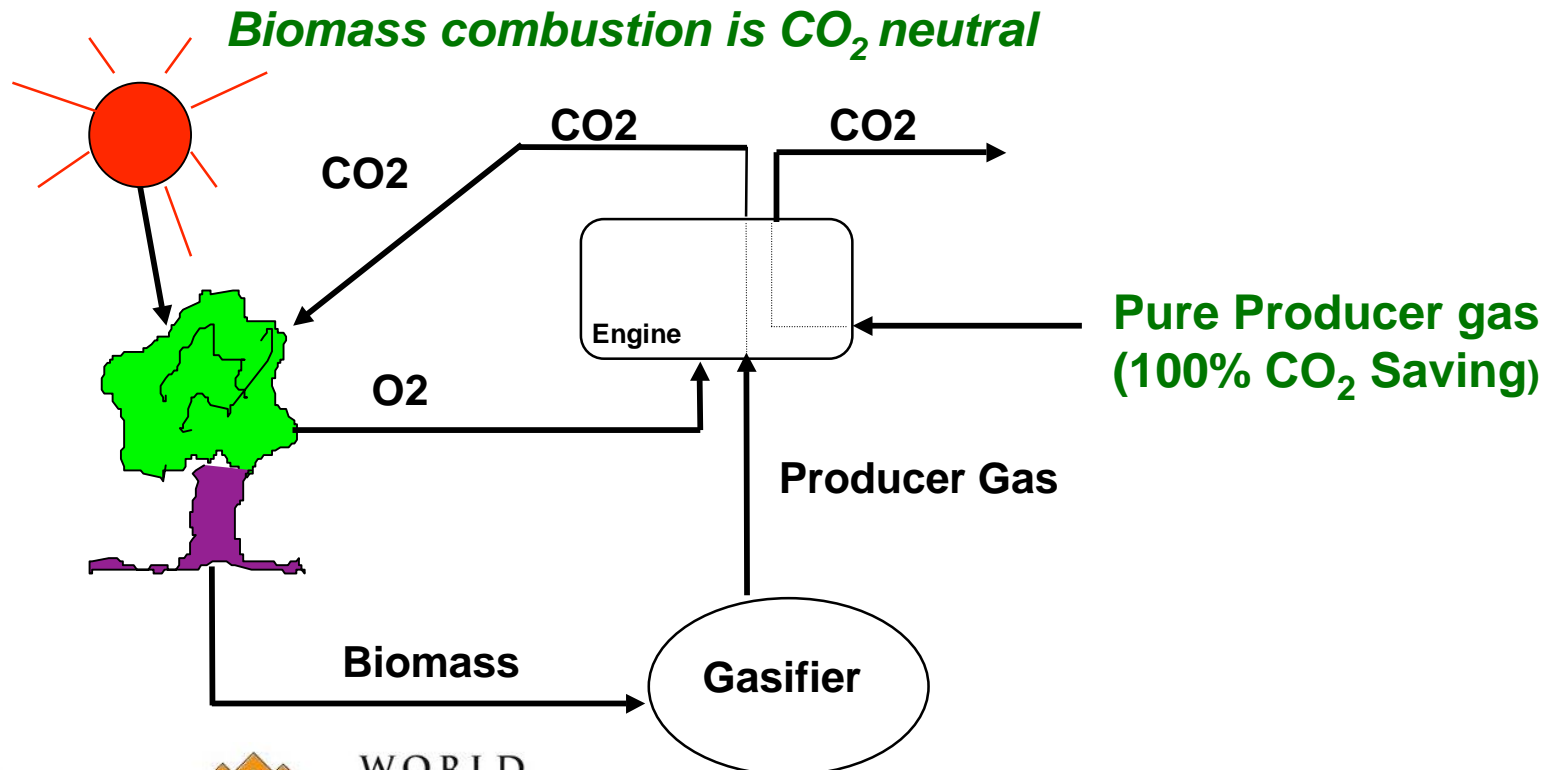
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## SAVINGS OF CO<sub>2</sub> EMISSIONS IN POWER PLANTS WITH BIOMASS GASIFICATION





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## **100 Village EmPower Partnership Program**

*50 kW Power Plant (70% PLF)*

*Energy Services; Micro Enterprises;  
BioBusinesses; Water, Communication  
and Health Services.*

*Capacity Building, Training and Support  
Services: All Levels, On-going*



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## 100 Village EmPower Partnership Program

### *Typical Data for One Village*

*50 kW<sub>e</sub> Power Plant (70% PLF): 33 lacs*

*Enough businesses with micro enterprises and energy services: 33 lacs.*

*Capacity building, training and support services (three years): 3.7 lacs.*

*Profitability: IRR (12 years) = 10 -13%*

*Avg. Profit a. tax (15 years) = 6-8% of Turnover / 25-30% of Equity*

*CERs generated over 10 years: 6000 tons of CO<sub>2</sub>*



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## Other Results

	Total Direct Jobs	Full-time Equivalent	Jobs for Women	Cost / Full-time Job	CER Price	CO2 saving (10 years)
	-	-	%	Rs Lacs /Full Time Job	Euro / t CO2	tons
<b>BU's</b>	<b>50</b>	<b>35</b>	<b>40%</b>	<b>1</b>		
<b>Power Plant</b>	<b>15</b>	<b>8</b>	<b>25%</b>	<b>4</b>		<b>6'000</b>
<b>Total EmPP</b>	<b>67</b>	<b>43</b>	<b>34%</b>	<b>1.8</b>	<b>10 - 15</b>	<b>6'000</b>



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## 100 Village EmPower Partnership Program

Financial and Performance Data  
For

A Batch of 20 Villages.

(Based on data of the first 5 Projects being built  
after due diligence and financing by ICICI)



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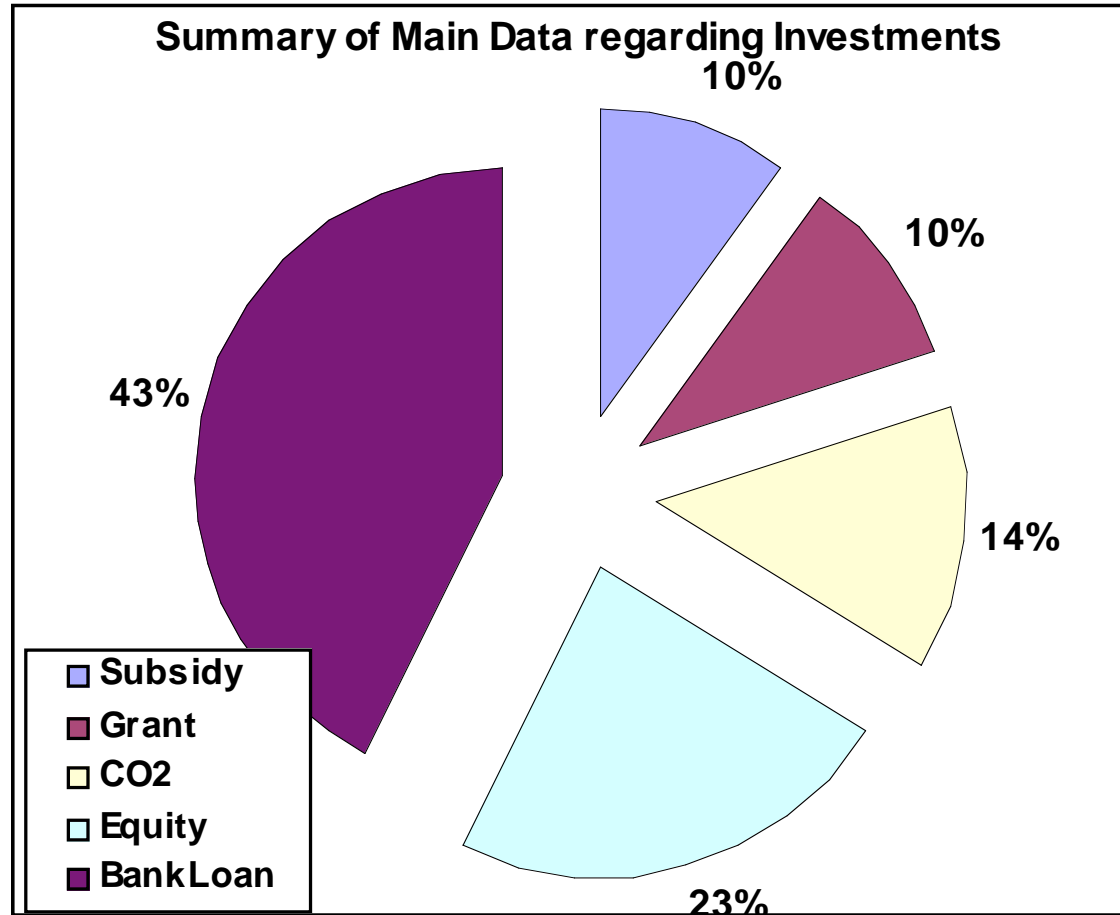
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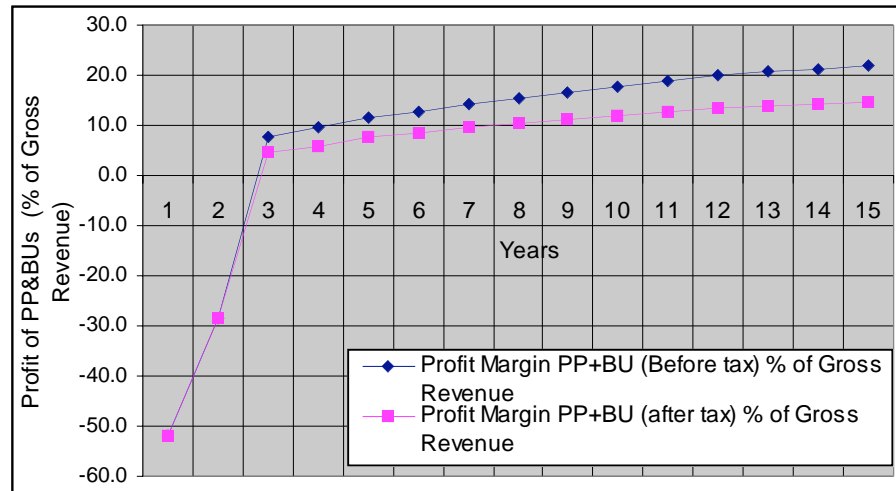
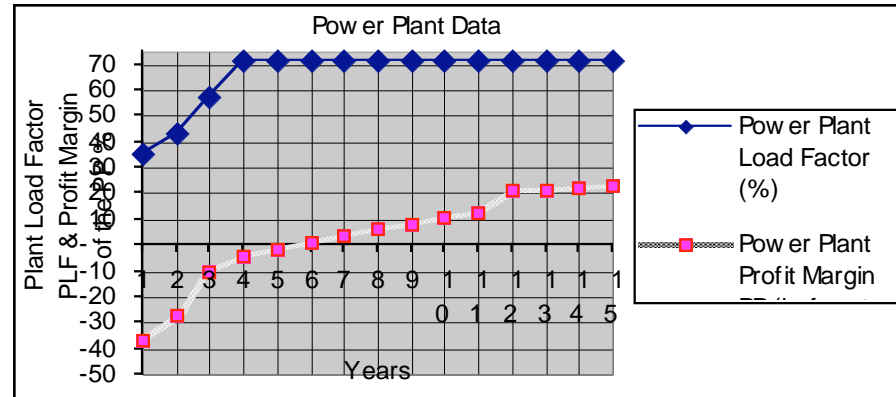
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# 100 Village EmPower Partnership Program, Araria Tentative Completion Plan

2006: 5 Villages start of construction

2007: Add 8 Villages

2008: Add 12 Villages

2009: Add 30 Villages

2010: Add 45 Villages

2012: 100 Working Villages



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***The EmPower Partnership Program  
Meets Sustainable Development Criteria***

***Economic, Social and Environmental / Ecological  
Cost Effectiveness.***

***Based on Renewable Resources and Financial  
Sustainability.***

***The 100 Village Program  
To Demonstrate  
The Triple Bottom Line Approach for Investors.***



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## ***Social, Environmental and Ecological Benefits***

**Regular Jobs. Increased farm income.**

**Increased economic activity.**

**Increased capacity to pay for basic needs.**

**Reduced migration to cities.**

**Self reliance of men and women.**

**Lower local pollution: improvement women's health.**

**Potential to reduce energy losses.**

**Reduce CO<sub>2</sub> emissions.**



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### **The EmPower Partnership Program Won A World Bank Development Market Place 2006 Award of \$ 200,000**

#### **Development Marketplace — 2006 Winners**

May 10, 2006. 30 projects, recognized for their contribution to the global environment, have been selected as winners in a global competition, Development Marketplace 2006, held at the World Bank and co-sponsored by the GEF. The winners were chosen from 118 projects, drawn from 55 countries.



Among the winners:

#### **100 Village Employment and Power Partnerships**

*To provide rural villages in the very poor rural Bihar region of India with affordable access to electricity.* This project will install biomass power plants. It will work with farmers to ensure the availability of biomass and the cultivation of crops on wastelands that would serve as bio-diesel for the plant. It will work with local micro-entrepreneurs to help them set up income-generating activities (rice mills, pumping for irrigation, briquette production, etc) that would maximize the use of this decentralized energy source.

[See full details of this project](#)



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**The EmPower Partnership Program Won A World Bank  
Development Market Place 2006 Award of \$ 200,000**



**DESI Power at World Bank's Global Development Marketplace 2006**





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***DESI\_MANTRA***  
***Management & Training Centre for Rural Women***

***Established in 2006***  
***To Train Local Managers and Staff***  
***Class Room and On-The-Job***  
***Focus on Women***

***Target:***  
***600 Villagers in Four Years - 50% Women***  
***First Batch On-The-Job***



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## ***DESI\_MANTRA: The Start-Up Class***



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MIT SLOAN SCHOOL OF MANAGEMENT



GLOBAL ENTREPRENEURSHIP LAB

***DESI Power: Host to a 4-Women G-Lab Team  
To Jointly Develop  
A Business Plan for DESI\_MANTRA  
And  
Help Find Investors and Donors  
October 06 - February 07***



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***Restructuring DESI Power  
For Implementing  
The 100 Village EmPower  
Partnership Program***



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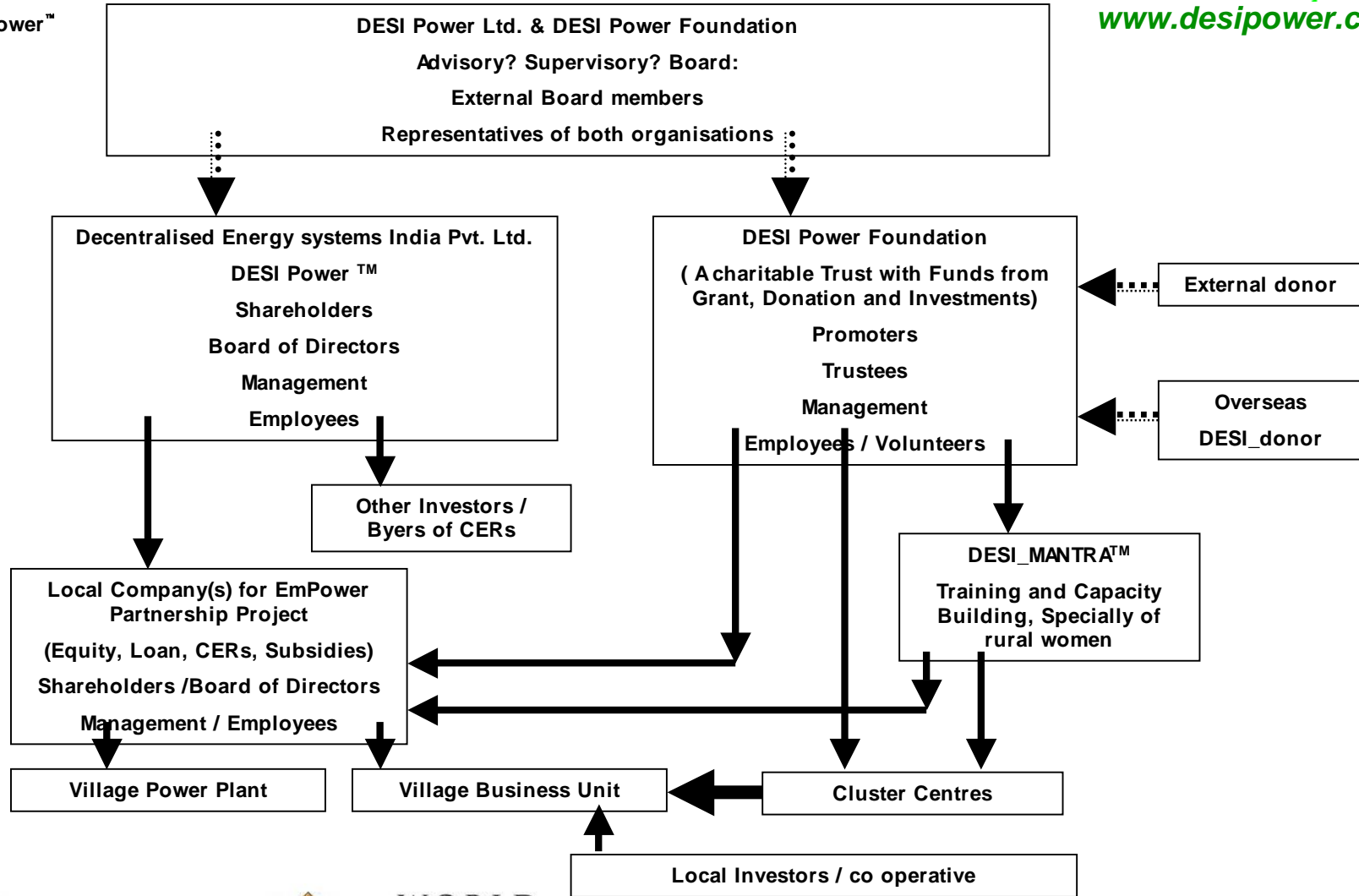
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## **Organisational Strengths**

**Village Men & Women ⇒ Co-operative ⇒ Management Team**  
**Village Staff ⇒ O&M, Energy Services, Bio Business, Financial Management**

**Program Director ⇒ Project Manager ⇒ Micro-Enterprise Manager**

**Cluster Centre ⇒ Performance Auditor ⇒ Service Provider**

**DESI\_MANTRA ⇒ Trustee ⇒ Trainers ⇒ External Volunteers**

**Corporate Centre, Bangalore**

**Program Management ⇒ Financial Planning and Control ⇒ Audit**

**Strategic Planning ⇒ Replication ⇒ Fund Raising**

**Board of Directors / Foundation Trustees**

**Strategic Direction ⇒ Fund Raising ⇒ Review ⇒ Course Correction**



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