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NATIONAL CONFERENCE

INCLUSIVE CLEAN ENERGY SOLUTIONS IN ADB OPERATIONS

TP Renewable Microgrid

Transforming Lives of Bharat

10-11 December 2024 • Chennai



Manoj Gupta, CEO TPRMG

Reliable Power Supply Options for Rural Consumers

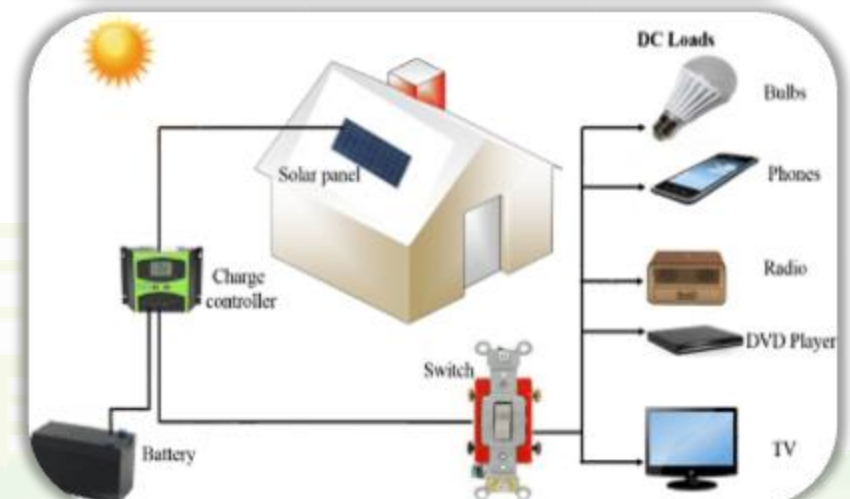
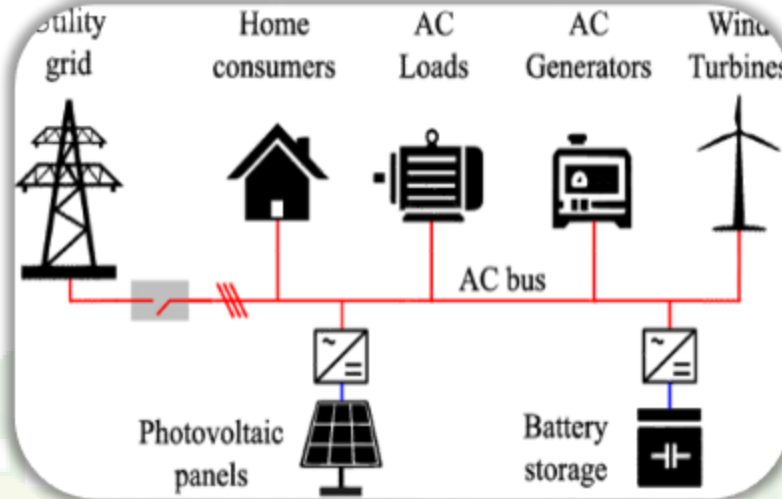
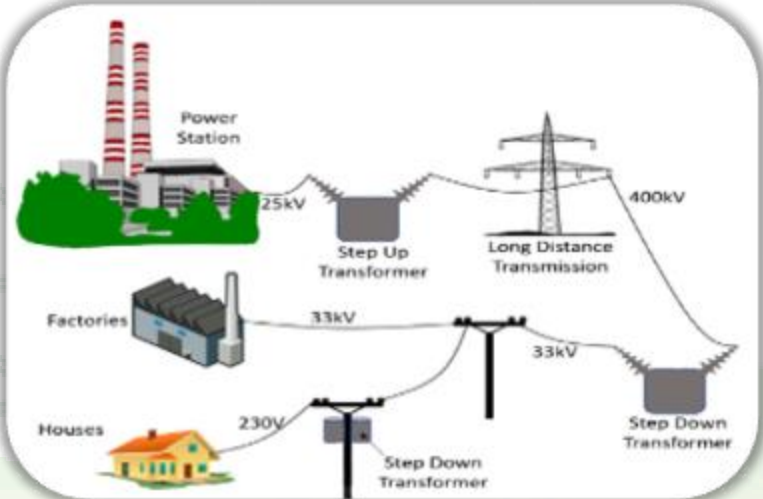
National Grid Systems



Renewable Microgrid Systems



DC Home Solar Systems



Launch of TP Renewable Microgrid Ltd.



TP Renewable Microgrid Ltd., a wholly owned subsidiary of The Tata Power Company Ltd., India's largest Integrated Power Company, was launched on **4th Nov 2019** with a **Vision** of **Transforming Rural India powered by Rural Microgrid**



Mission

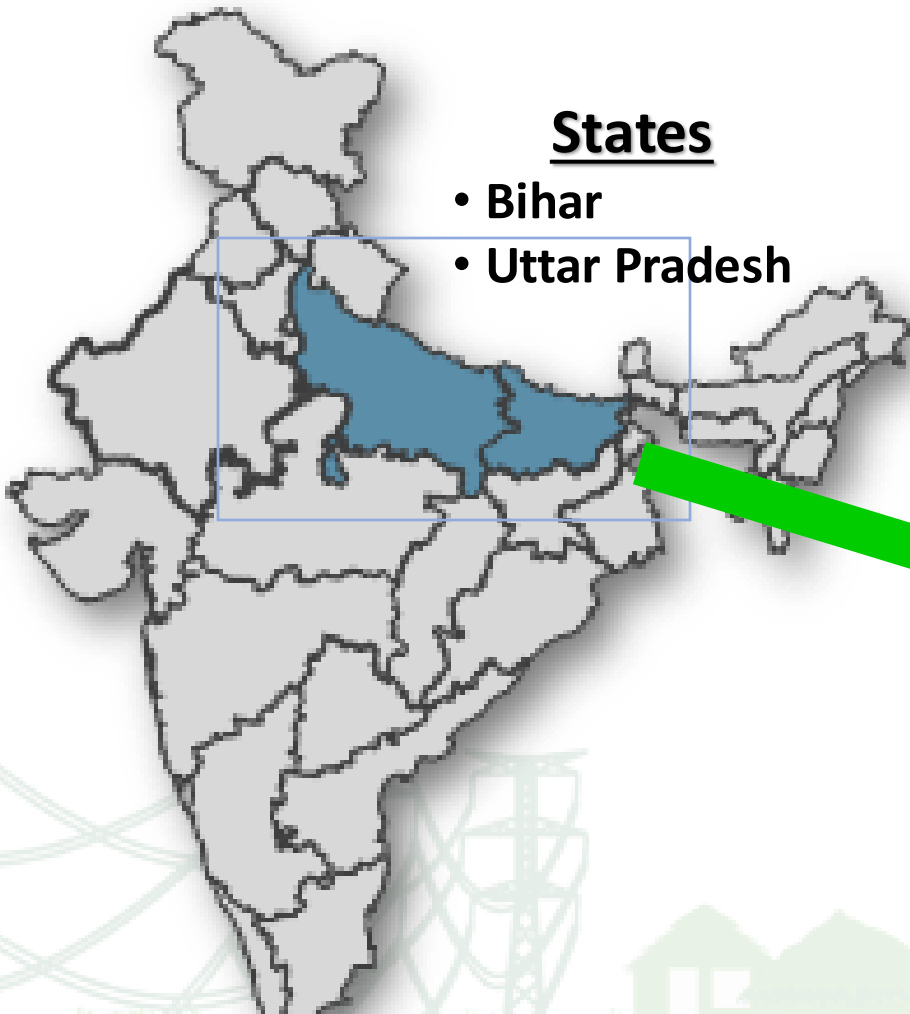
- i. **Electrify 10,000 villages** using solar mini-grids in selected states of India
- ii. Provide **affordable, reliable, quality 24x7 service** to 25+ million customers
- iii. Roll out **value-added services** like water treatment to provide clean drinking water to rural communities
- iv. Drive **economic growth** via small enterprises and agriculture
- v. Promoting **affordable, energy-efficient appliances**
- vi. Work with relevant central and state governmental bodies to advance thoughtful **policy reforms**



Solar based Off-Grid Generating plant with energy storage system supplying power to remote areas of India



TPRMG has been creating Green Jobs for rural youth, livelihood for women, enabling circular economy with focus on Agri value thus fuelling economy growth of BHARAT. TPRMG is **Alleviating Economic poverty** and **Energy poverty** through Access to Clean & Sustainable Energy from **Renewable Microgrid**.



States

- Bihar
- Uttar Pradesh

Districts

1. Gonda
2. Bahraich
3. Shrasvasti
4. Balrampur
5. Siddhart Nagar
6. Lakhimpur
7. Sitapur
8. Santkabir Nagar



Districts

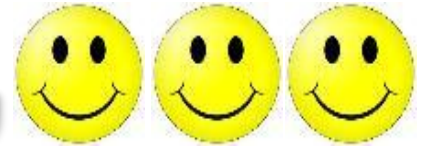
1. Muzaffarpur
2. Samastipur
3. Vaishali

~200 Microgrids

Commissioned

in last 5 years

Serving around

23, 

Smiling Rural Consumers

Providing Affordable, Clean, Reliable & Quality Power Supply to Rural Consumers

Creating Local Employability - Green Jobs & Businesses



Engagement of Local Youth for Microgrid Construction



Engagement of Local Youth for Microgrid O&M & in projects



Direct Impact

- 1 Providing Clean, Reliable, Quality & Affordable power to rural Community
- 2 Partnership with Landowners for Microgrid Project Site
- 3 Engagement of local Youth for Microgrid BD and O&M
- 4 Engagement of Local Youth for Microgrid Project Construction Services
- 5 Engagement of Local Entrepreneur for Microgrid Construction supply

In-Direct Impact

- 1 Development of New entrepreneurs in Agri Business
- 2 Development of New entrepreneurs in water & irrigation
- 3 Generation of New Green jobs



Partnership with Local Landowners for Microgrid Plot



Procurement of construction material from Local Vendors

Utilization of Local Rural Resources for Green Initiatives (Men & Material)

Improving the village circular economy – Access to income generating assets

Water Treatment Unit



Bulk Milk Chiller



Flour Mill



Oil Expeller



Saw Mill



Electric Sewing Machine



E-Rickshaw Charging



Deep Freezer



Micro Cold Room



Irrigation Services



Empowering Rural Entrepreneurs through facilitating EMI based loan/ financing options at competitive rates

Migration from Diesel Engines to Electricity Operated Motors



Micro-Enterprises saved ~ 30% to 35% of expenses on account of non-usage of Diesel

“Em-Power” Farmers, an Income Generation Activity



Green Power provided from Microgrid to run electricity operated 5 to 10 kW pump. VLE provides irrigation services to the nearby ~50 Farmers thru' ~ 1 Km long water pipeline. VLE's Avg. income up by ~60% & Farmers\'s Avg. expenses down by ~35%

Biomethane operated Gas Generator at Microgrid Site – Hub & Spoke Model



Portable Biomethane/ CNG Cylinder Cascade operating 40 kVA Gas-Generator to produce & feed electricity into Microgrid

Social & Environmental Impact of TPRMG's Initiatives

~200 plants in rural area

~ 6 MW Installed Capacity

Cost Reduction by more than **25%**

Environment

Reduction in Carbon Emission **8,300+** Tons of CO₂/Year



Reduction in Diesel Consumption **31+** Lakhs Liters of Diesel/Year



Social

Promotion of Energy-Efficient Devices

LED Bulbs, BLDC Fans



Energy Efficient Deep Freezers, Motors & Pumps



5 Water Treatment Units



1,000 lives impacted

Integrated Irrigation Model



145

Irrigation Pumps through VLEs



Earning potential of **INR 15K** per VLE

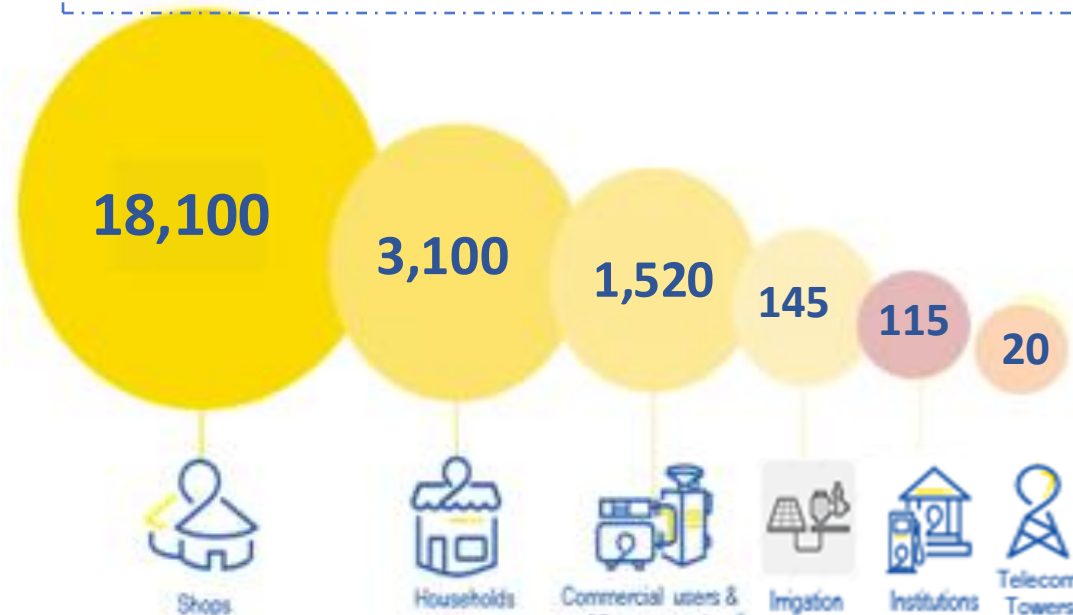


Servicing **350+** Farmers



Cultivating **1100+** acres

~23,000
Overall Customers



Impacting Lives of **3+ Lakhs** people

High Impact Thermal Energy Based Projects

Green Fuel for Thermal use by Farmers - (LPG to Biogas based cooking)



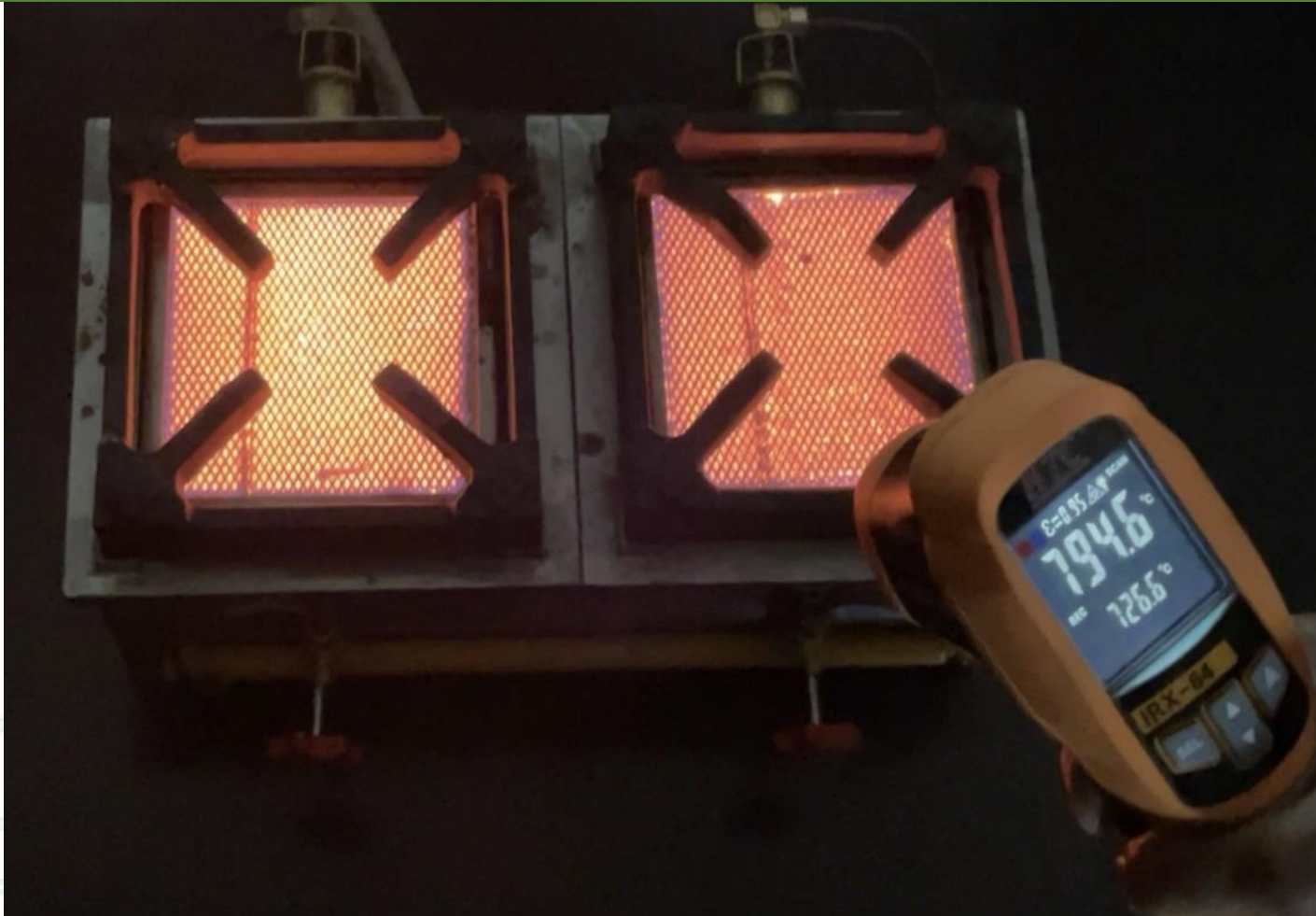
Bio Methane Gas from Animal Waste (Dung) - Enabling farmers to access clean & affordable fuel plus income generation

Green “Jaggery Manufacturing” - (Diesel & Bagasse to Microgrid & Biogas)



Enabling Rural Entrepreneurs to have access to Green Energy

Green "Radiant Heat Energy Efficient Commercial Cooking" - (LPG/Coal to Biogas)



"Flameless, Smokeless, Noiseless" Commercial Cookstove
(~30% Gas & 50% water savings)



"Coal to Biogas fired Tandoor
(~35% Coal saving & 50% faster)

Thank You

