

Biomass Power Projects in India

ADB's Support for SAEL Biomass Energy Projects

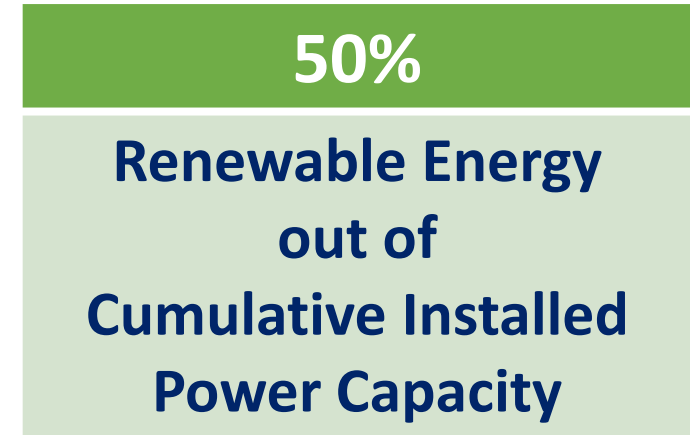
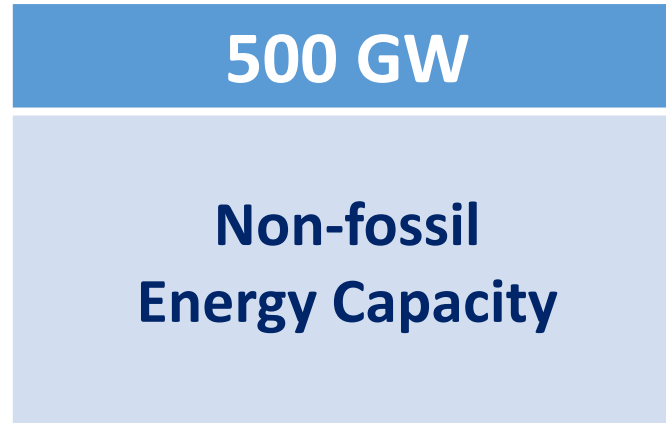
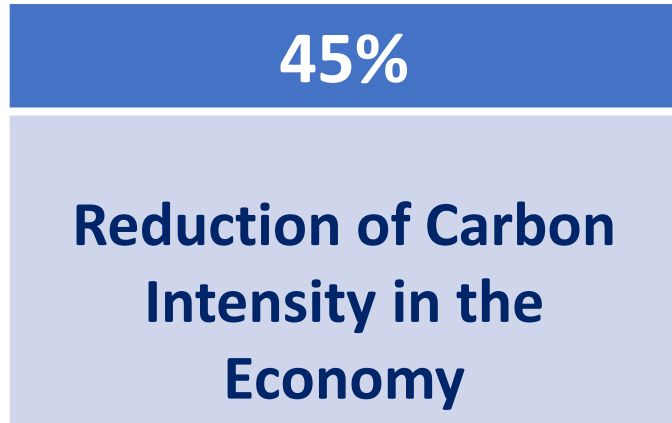
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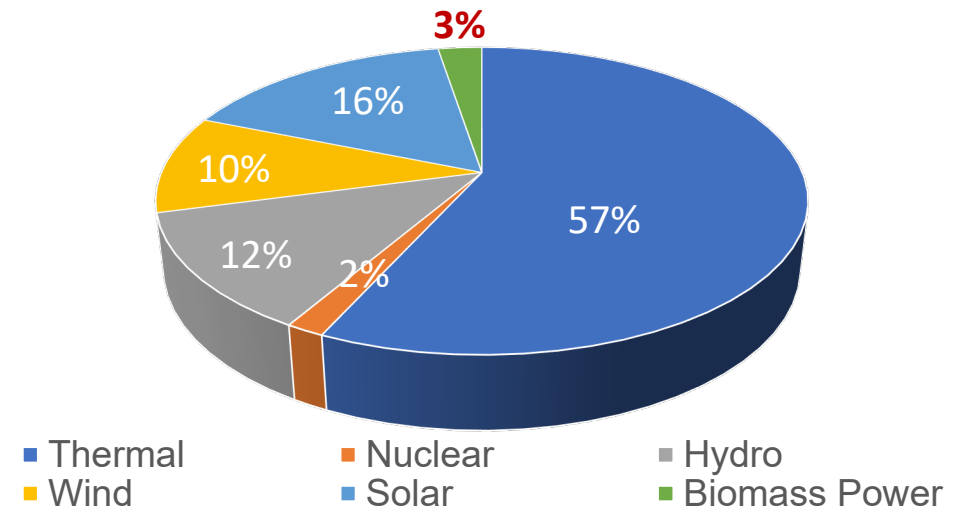
Government's Initiative for Renewable Energy

- Government of India targets by 2030:



- **Biomass is still untapped** renewable energy source - agricultural residues in India has potential for biomass power generation of 28 GW.

Power Generation Breakdown in India





Stubble Burning in Northern India

A large portion of agricultural residue is **burned on-farm** between harvest and sowing of the next crop, as local farmers “*do not have other options*” for disposal, causing **severe air pollution** in Northern India.



Source: REUTERS



Source: THE TIMES OF INDIA

Biomass Power could supply **baseload renewable power** from agricultural residues otherwise burned and provide **additional income to local farmers**.



Biomass Power Generation Process

**Feedstock
Purchase**

Transportation

Storage

**Power
Generation**





SAEL Biomass Energy Project – Supported by ADB

Project

Five **14.9 MW biomass power plants** (in total 74.5 MW) in Rajasthan, India.

Project Sponsor

SAEL Industries Limited, a renewable energy company under SAEL Group.

Feedstock

Mustard stalk, groundnut husk, and paddy straw.

Electricity Offtake

To be sold to three state-owned distribution companies in Rajasthan.

EPC O&M

To be undertaken by SAEL Industries Limited, **with key technologies supplied from European companies.**

Regulatory Framework

Rajasthan state policy for biomass sets out:

- **Exclusive feedstock catchment area** of 90km radius from the plant location.
- **“Must-run” status** not subject to merit order dispatch.

ADB Support

- ADB provided **loans of INR7,540 million** (circa. USD90 million), signed in March 2023.
- This is **ADB’s first nonsovereign loan to a biomass energy project in India.**



Development Impact and Additionality by ADB



Development Impact

GHG Avoidance

- Up to **487,000 tons of CO2e** avoided annually.

Farmers' Income Increased

- Around **20,000 farmers** will sell agricultural wastes to the projects.

Employment Opportunities

- Number of jobs created:
2,750 - construction
1,250 - operation



Key Additionality from ADB Support

Demonstration Effect

International Environment and Social Standards

Gender Action Plan







Key Challenges and Lessons Learned

Key Challenges

- ? Feedstock Supply
- ? Supply Chain
- ? Technology
- ? Less financing options



Lessons Learned

-  Partnership with a sponsor with strong experience, extensive network with local farmers, and robust financials.
-  Selection of robust technology and equipment supplier with strong track record.
-  Project site selection considering availability of feedstock and required logistics.
-  Assessment of the regulatory framework provides support for biomass power projects.



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THANK YOU!

