

**Case study: May Forestry Joint Stock Company** 

→ FROM IDEAS TO MATURE EE PROJECT

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**Company/Factory:** May Forestry Joint Stock Company

Sector: Wood production and processing

## **Brief information:**

Primary business sectors include:

- Medium-density fiberboard (MDF) production;
- Glued board production;

May Forestry's capabilities included:

- Total area: 384,344 m2;
- Production capacity: 12,000 m3/month









# ENERGY AUDIT

#### **Opportunity 1: Installing air dryer utilizing** flue gas for the furnace

• Air heating increases air volume, speed, and maintains combustion chamber temperature, enhancing combustion efficiency.

**Opportunity 2: Using absorption chillers** to dehumidify primary air for the wood fiber drying system

- Absorption chillers improve drying efficiency, reduce drying time
- Lower operating costs by 1.5 times compared to centrifugal chillers using electric compressors.

**Opportunity 3: Utilizing superheated** steam for the grinding process

- Enhances grinding efficiency
- Reduces time, and lowers operating costs

#### **Opportunity 4: Recovering moist hot air** from wood fibers after drying

• Recovering water vapor saves water, heat, and reduces emissions to the environment

#### **Opportunity 5: Pre-drying raw materials** before the cooking process

• Installing heat exchangers to pre-dry raw materials reduces moisture and weight before cooking.





# Pre-FS

Opportunities	Utilize exhaust gas for furnace	Utilize low hum workshop for d	
Solutions	Install secondary, tertiary, and quaternary air dryers for furnaces	Install piping fro stage to the fibe	
Investment	1,300 million VND	150 million VNE	
Expected energy efficiency	<ul> <li>Fuel savings: 600 tons/year</li> <li>Cost savings: 450 million VND/year</li> <li>Payback period: 3 years</li> </ul>	<ul> <li>Heat savin</li> <li>Fuel savin</li> <li>Cost savin</li> <li>Payback p</li> </ul>	
Các cơ hội chính	<ul> <li>Increase fuel efficiency</li> <li>Save operating costs</li> <li>Reduce emissions</li> </ul>	<ul> <li>Reduce di</li> <li>Increase l</li> <li>Increase di</li> </ul>	

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ngs: 2,350,000 kJ/h ngs: 1,300 tons/year ngs: 900 million VND/year period: 2 months

Irying time line capacity drying efficiency



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## Solution 1: Installing primary air dryers for furnaces\*

- Findings:
  - Low energy saving potential for 2nd, 3rd, 0 and 4th stage air due to unstable operation
  - High energy saving potential for 1st stage 0 air due to continuous operation
  - Potential for utilizing heat from flue gas 0 return to the furnace
- Energy savings:
  - Fuel saved: 1,200 tons/year
  - Cost savings: 815 million VND/year
  - Payback period: 2 years & 8 months

- - $\checkmark$

  - $\checkmark$
  - $\checkmark$

\* Solution chosen to implement by firm

#### • Investment: 2,200 million VND

• Non-energy benefits:

✓ Improved MDF product quality.

• Ensures product uniformity. • Improved dimensional stability. • Minimizes defects.

Enhanced production efficiency.

o Increased productivity.

• Reduced maintenance downtime.

Reduced emissions of harmful gases.

Lower risk of fire and explosion.

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## Solution 2: Installing piping from dust filters to the fiber drying fan\*

Findings:		•	Inve	stn
0	Positive actual figures		Non	-er
0	High feasibility		Ο	In
0	Increased operational accuracy			fe
0	Convenient installation		0	E
Energy savings:				ef
<ul> <li>Heat saved: 2,350,000 kJ/h</li> </ul>			0	S
0	Fuel saved: 1,300 tons/year		0	B
0	Cost savings: 900 million VND/year			e
0	Payback period: 4 months			

\* Solution chosen to implement by firm



- nent: 300 million VND
- nergy benefits:
- nproved product quality: Uniform wood fibers;
- ewer defects; improved adhesion properties
- nvironmental protection: reduced emissions;
- ffective waste management
- horter drying times
- etter workplace condition: lower risk of fire and
- xplosion; cleaner working environment





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## **Risks:**

- Project management risks.
- Security and safety risks.
- Training and workforce risks.
- Operational and maintenance risks. **Mitigation strategies:**
- Thorough system design.
- Regular maintenance schedules.
- Staff training programs.
- Partnering with reputable contractors.







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