



ENERGY EFFICIENCY PROJECT DEVELOPMENT

VAS/DEPP3 Programme

RECOVERING LOW-HUMIDITY AIR TO IMPROVE FIBER DRYING EFFICIENCY

Sector: Wood processing
Energy focus: Heat recovery

At this MDF manufacturing facility, the wood-fiber drying process was a major driver of energy consumption and production costs. The plant's drying system relied on drawing in high-humidity ambient air, which reduced drying efficiency and required excessive amounts of biomass fuel to heat. Meanwhile, low-humidity, warm air generated in the nearby pressing workshop was being completely unutilized and vented away.

Through the feasibility study, the enterprise decided to **invest in a heat recovery system to capture the dry air from the pressing area and redirect it directly into the fiber drying system.**

This proposed solution will:

- Optimize the use of available waste heat streams within the plant;
- Improve overall wood-fiber drying efficiency;
- Save **over 1,050 tons of biomass fuel annually;**
- Reduce greenhouse gas emissions by approximately **2,149 tons per year.**

FINANCIAL PERFORMANCE SUMMARY



**NET PRESENT
VALUE***

**~10.5
MILLION VND**



**SIMPLE PAYBACK
PERIOD**

**~5
MONTHS**



**INTERNAL RATE OF
RETURN (IRR)***

297.4%

*= baseline scenario

ENERGY BENEFITS



**FUEL
SAVINGS**

**~1,054
TONS/YEAR**



**ANNUAL CO₂
REDUCTIONS**

**~2,149
tCO₂e/YEAR**

NON-ENERGY BENEFITS

- Increased MDF production capacity.
- More stable production process control.
- Improved drying efficiency and product quality.

7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



13 CLIMATE
ACTION



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



17 PARTNERSHIPS
FOR THE GOALS



WHY THIS CASE MATTERS?

The wood processing and MDF industry is a major energy consumer in Viet Nam. With export markets placing increasingly strict demands on sustainable manufacturing and lowering product carbon footprints, improving energy efficiency has become an urgent priority for the sector.

This case proves that major efficiency gains do not always require replacing core production equipment. By capturing and recycling existing, underutilized energy streams - like recovering dry air from one workshop to feed another - factories can significantly reduce their fuel consumption. This highly replicable heat recovery model offers wood processors a practical pathway to lower operating costs, improve resource efficiency, and maintain competitiveness in global green supply chains.

EXPLORE SIMILAR OPPORTUNITIES

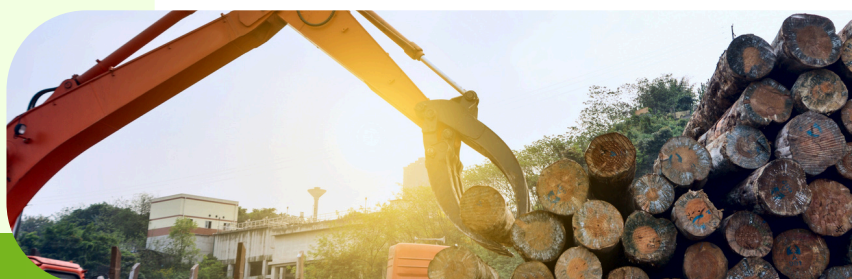
For more information and additional case studies, please visit:



**Vietnam – Denmark
Energy Partnership Programme
2020-2025**



**Energy Efficiency
Center of Excellence**



This case was developed under the Voluntary Agreement Scheme (VAS) for the Vietnamese Industrial Sector, part of the DEPP3 Programme (Vietnam – Denmark Energy Partnership Programme Phase III).

VAS supports industrial enterprises in identifying, preparing, and implementing bankable energy efficiency investments through structured audit, pre-feasibility and feasibility assessment processes.