



ENERGY EFFICIENCY PROJECT DEVELOPMENT

CASE STUDY: HABECO ID HUNG YEN

→ FROM IDEAS TO MATURE EE PROJECT



Company/Factory

Hanoi Beer Alcohol Beverages Investment Development JSC.
HABECO ID Hưng Yên

Sector

Beer production

Brief information

Total Beer production

- 2021: 387,708 hl
- 2022: 431,068 hl
- 2023: 378,849 hl



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ENERGY AUDIT

Key identified solutions

Solution 1:

- Enhancing internal management and regular maintenance and minor repairs of equipment
- Annual cost savings: 3.57 TOE/year
- Annual investment savings: 300 million VND

Solution 2:

- Installing economizer to utilize waste heat from boiler flue gas
- Annual cost savings: 9.4 TOE/year
- Annual investment savings: 358 million VND
- Net present value: 398 million VND

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ENERGY AUDIT

Key identified solutions

Solution 3*:

- Conversion of coal-fired boiler to biomass boiler
- Annual cost savings: 636 TOE/year
- Annual investment savings: 15 billion VND
- Net present value: 4,366.3 million VND

Solution 4:

- Removing scale and enhancing heat exchange efficiency for the cooling tower using ewater scale treatment equipment
- Annual cost savings: 12.9 TOE/year
- Annual investment savings: 364.6 million VND
- Net present value: 491.3 million VND

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* Chosen solution to be implemented

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ENERGY AUDIT

Key identified solutions

Solution 5:

- Utilizing the waste cold released during the evaporation of CO₂ to cool NH₃ after the condenser
- Annual cost savings: 3.5 TOE/year
- Annual investment savings: 120 million VND
- Net present value: 114.3 million VND

Solution 6:

- Using solar energy lighting system
- Annual cost savings: 3.04 TOE/year
- Annual investment savings: 96 million VND
- Net present value: 102,2 million VND

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ENERGY AUDIT

Key identified solutions

Solution 7:

- Name: Install a variable frequency drive (VFD) and control system to reduce the unload time of compressor number 2
- Annual cost savings: 12.74 TOE/year
- Annual investment savings: 301.3 million VND
- Net present value: 631.5 million VND

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IMPLEMENTED SOLUTIONS

Conversion of coal-fired boiler to biomass-fired boiler

- Replacing all old coal-fired boilers by a 6-ton biomass-fired boiler
 - Total investment: 15 billion VND
 - Year of installation and operation: 2024
 - Simple payback period: 56.4 months
- Benefits:
- Energy saved: 535.8 tons of coal/year
 - CO2 reduction: 980.5 tons/year
 - Cost savings: 3.2 million VND/year
 - Old boiler efficiency: 73%
 - New boiler efficiency: 89%

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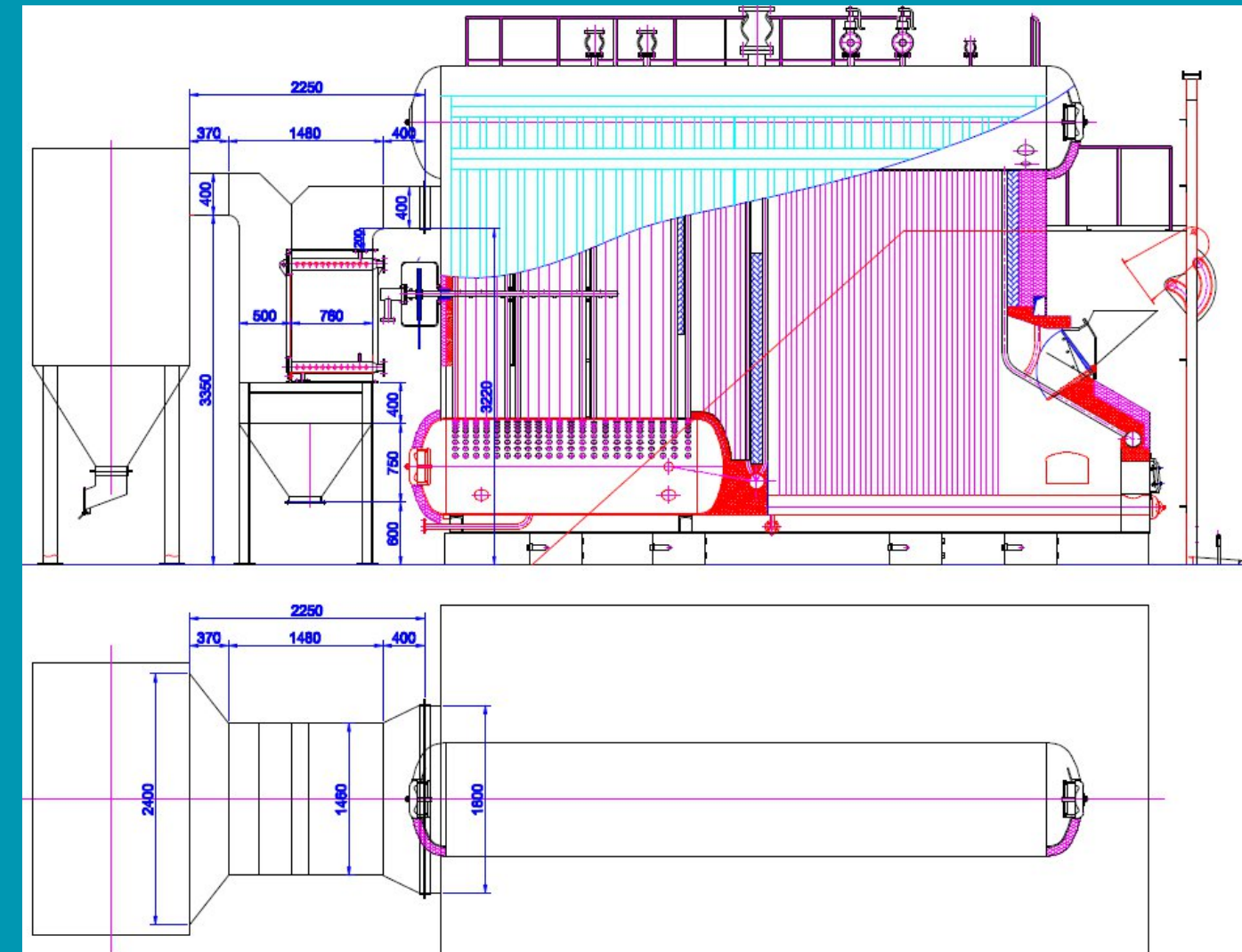
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IMPLEMENTED SOLUTIONS

Conversion of coal-fired boiler to biomass-fired boiler

Overall diagram of converting coal-fired boiler to biomass boiler



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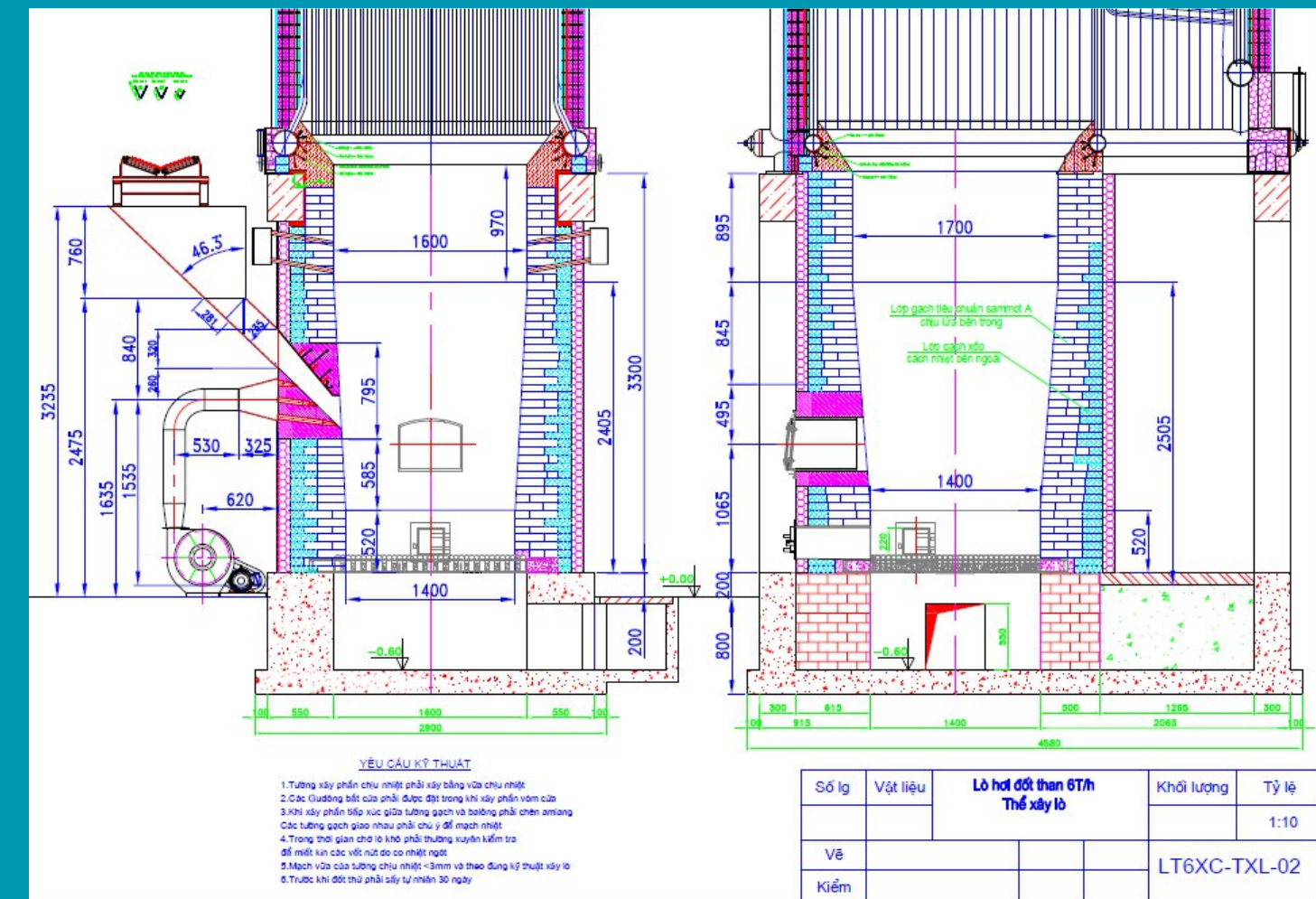
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IMPLEMENTED SOLUTIONS

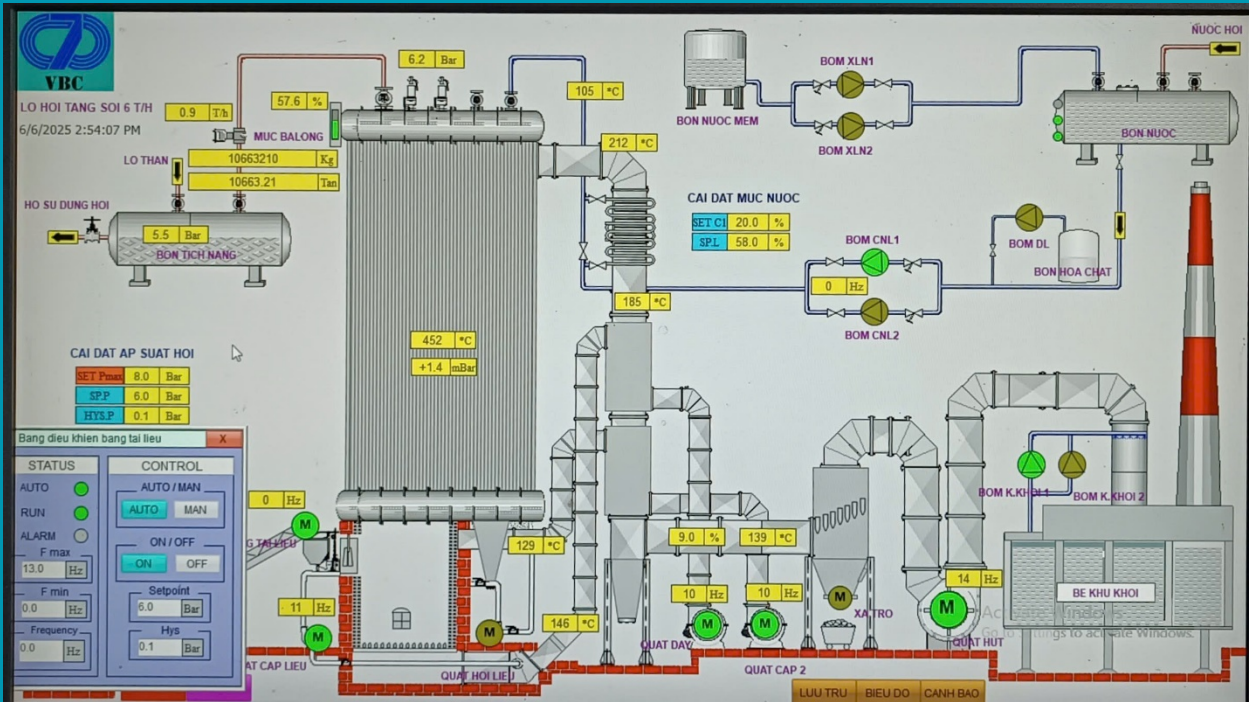
Conversion of coal-fired boiler to biomass-fired boiler

Structural diagram of new installed biomass boiler



IMPLEMENTED SOLUTIONS

Conversion of coal-fired boiler to biomass-fired boiler



Images extracted from operation system

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03

IMPLEMENTED SOLUTIONS

Conversion of coal-fired boiler to biomass-fired boiler



New biomass-fired boiler system



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