

Case example 1: Energy audit for Phu Yen Beer-Bverage joint-stock company

| | |
|----------------------------|------------------|
| Main Products | beer |
| Number of Employee | 151 |
| Production amount in 2006 | 4,733,770 liters |
| Energy Consumption in 2006 | - |
| Coal (Tons/y) | 544 |
| Electric Power (kWh/y) | 912,210 |
| Cost of electricity | 45,000USD |
| Cost of coal | 54,400USD |

Refrigerating system - compressor

➤ Status :

- Factory have 4 compressors (1x80kW, 2x75kW, 1x60kW).
- Using old piston compressor, low efficiency.
- COP of system 1.5.

➤ Solutions :

- Replacing piston compressor by screw compressor with high efficiency.
- Improve COP of system to 3.98.

➤ Results :

- Electricity saving : 304,000kWh/y
- Money saving : 14,900USD/y



Case example 2 : Energy audit for Majestic Hotel

Vietnam
(ECC-HCMC)

Air conditioner system

➤ **Status:**

- Cooling capacity is low and fluctuate depend on the environment temperature in the day. But the chilled flow supplied to each FCU is constant.
- The water chiller system always has amount of chilled water which bypassed to come back the system. Base on the survey, the bypass chilled water is around 10% of total the supply chilled water. In the other hand, the pump system is too old and has a low efficiency

➤ **Solutions:**

- Replace the old chilled pump by the high efficiency pump controlled VSD to help the pump can supply a suitable chilled water flow to the FCU .

➤ **Result :**

- Electricity saving: 148,311 kWh/y
- Money saving : 14,379 USD/y



The water chiller system



Variable speed Drive (VSD) control chilled pump and cooling tower pump

Total energy conserved from applied technical solutions

| No | Technical solutions | Conserved electrical energy (kWh/yr) | Saved money (VND/yr) |
|--------------|--|--------------------------------------|----------------------|
| 1 | Replacing filament lamps (high pressure) by compact lamps (economic) | 253,165 | 360,000,000 |
| 2 | Replacing local air conditioner (high efficiency) | 120,724 | 205,600,000 |
| 3 | Taking full advantage of excess power from center water and boiler system for more 36 rooms instead of using electrical water heating tank | 52,000 | 74,000,000 |
| 4 | Installing solar hot water system with a capacity of 13,000 l/day for 85 rooms in block A | 232,770 | 331,000,000 |
| 5 | Installing an additional inverter to control the operation of 5Hp drinking water pump | 9,855 | 14,000,000 |
| 6 | Adding Euro Window and US Window to existing windows and balcony doors | 45,727 | 65,000,000 |
| 7 | Installing additional remote control device for AHU at hall | 5,625 | 8,000,000 |
| Total | | 719,866 | 1,057,600,000 |