



## **SAI SON CEMENT**

### **Recovery of heat from hot exit clinker and reuse to preheat combustion air supplied by forced draft fan**

#### **SUMMARY OF THE OPTION**

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Sai Son Cement, a joint stock company, was established in 1958 and located in Hatay province, west of Hanoi. At present, the company employs 515 staff and has an annual turnover of approximately 5.4 million US \$. The company has two identical semi-dry, vertical shaft kilns with a total annual throughput of 165 000 tons cement. This technology is much inferior to the modern day horizontal rotary kiln technology. The combustion air is presently supplied by a forced draft (FD) root blower. The hot clinker at 350-380 °C is collected from a chute at the bottom of the Kiln. It is then cooled to 100-150°C, using water spray, which means that the heat available in the hot clinker is not gainfully used. The Team indicated that this heat could be recovered to pre-heat the combustion air.

It is recommended to construct a chain grate cooling chamber to cool the hot clinker from the kiln and recover this heat to generate hot FD air. As part of this process the secondary air may first be heated to the maximum extent, as it is presently being fed to the combustion zone at ambient condition. It is envisaged that this measure has a coal saving potential of around 445 tons of coal per annum, worth 11,570 US\$ (180 million VND). The cost of the proposed grate cooler, around US\$ 9,500 (150 million VND), would be paid back within ten months.

To date this option is under consideration by the company because of following reasons:

- It is needed to assess the location for retrofitting the new air piping to the existing piping without disturbing the functioning of the Kiln.
- The location for the clinker grate cooler needs to be studied in detail.

#### **KEY WORDS**

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Cement, Vietnam, Waste heat recovery, Kiln, Forced draft fan, Combustion air

#### **FOR MORE INFORMATION**

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