

Additional Information for the reference boiler efficiency in Thailand

1. Survey on boilers in Thailand

According to the interviews with the major boiler suppliers Company A, B and C in Thailand, approximately, 70% of boilers installed in Thailand is fire tube type, 15% is water tube type (inclusive of once-through type), and the remaining 15% are other types such as thermal heat type or biomass type. It was conceived that the share of once-through boiler is still low in Thailand. It was also found out that installation of economizer is not commonly conducted since most customers prefer to have boilers without economizer considering initial high investment cost.

In general, oil, coal and natural gas are commonly used as a fuel of boilers in Thailand while the oil fuel boiler has the largest share among the fossil fuel boilers.

2. Reference boiler efficiency in Thailand

Oil and gas fire tube boiler is considered in setting the reference boiler efficiency. Coal fired boiler is excluded with a view to securing conservativeness.

According to two major manufactures which sell fire tube boilers in Thailand, the latest efficiency of the oil and gas fire tube boilers without economizer is 89% while the common boiler efficiency is 80 - 85%. Moreover, according to Training manual on senior energy practitioners in the field of heat set by DEDE (Department of Alternative Energy Development and Efficiency), the boiler efficiency in Thailand is stated as 85%.

Therefore, the reference boiler efficiency in Thailand is determined to be 89% taking the highest value among those figures.