This study assesses the potential of waste heat thermoelectric power generation for diesel cycle and gas turbine cogeneration in the manufacturing industrial sector in Thailand. To this end, data from more than 27,000 factories from different sectors, namely, chemical product, food processing, oil refining, palm oil mills, petrochemical, pulp and paper rice mills, sugar mills, and textiles, were used.

The potential of waste heat thermoelectric power generators was analyzed using an annual cost method based on stack exhaust from a cogeneration system for different operation hours, system life spans, bank interest rates, system prices, maintenance costs, depreciation, internal rates of return, and electricity buy back rates sold to the grid line.

Gas turbine and diesel cycle cogeneration systems produced electricity estimated at 33% and 40% of fuel input, respectively. The useful waste heat from stack exhaust of cogeneration systems was estimated at 20% for gas turbine and 10% for diesel cycle. The corresponding net power generation is about 100 MWe.