

Topic: Demand Side Management Potential for Electricity in Industrial Sector in Thailand

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ABSTRACT

Currently the industrial sector in Thailand consumes 36.7% of the total final energy consumption. The major energy consumed in this sector was electricity, which shared 26.0% of its energy consumption. The industry sector is one of the largest energy-consuming markets in Thailand. In this study, using a core equation, the electric technical savings potential for Thai industrial sector in 2013 is estimated to be 11,500 GWh (17.1% of total base usage). Cost-effectiveness test by using the Benefit-to-Cost ratio represents the electric technical savings potential for Thai industrial sector in 2013, accounted for 9,635 GWh (14.4% of total base usage). According to EPPO informed in 20-year EEDP in 2010, electric technical savings potential in the year of 2030 was estimated accounted for 33,500 GWh, which is lower than our calculation accounted for 41,213GWh. Therefore, our technical potential can be feasible. Nevertheless the achievable estimation results to far from those. The fabricated sector represents the largest electric savings potential, i.e. 2,872GWh, as in technical perspective in based year 2013. The food and beverage sector represents the largest electric savings potential, i.e. 2,325GWh, as in economic perspective. As penetration rate perspective Electric achievable savings potential for Thai industrial sector cumulative 2014 – 2030 is 120,305 GWh. In addition, the cross-cutting electricity efficiency measures inference practically which demonstrate in high sequence of total achievable cumulative savings potential accounted for 98,585 GWh in the period or about 82% of the total achievable cumulative savings potential of all economic measures. Those efficiency measures involving pumps, compressed air, and fans are utility systems supporting production processes able to operate completely which are the highest range to get electric energy saving potential in Thai industrial sector as the same in the global study. Recommendation, to particularly adopt those cross-cutting efficiency measures into energy management in factories enormously obtains electricity savings also meaning cost savings.

Keywords: Energy Efficiency, Demand Side Management Potential, Thai Industrial Sector, The Benefit-to-Cost Ratio,