

ASSESSING VARIANTS OF LOW-GRADE HEAT VALORIZATION IN THE REFINING INDUSTRY

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Industrial heat recovery is one of the key features of an economical and efficient production process. Clustering of production units allows for enhanced heat and mass exchange, utilizing heat cascading efficiently, while the options to do so are limited in remote production units. If a stable and sufficiently large waste heat source is available, it can be used either to produce water steam for export (provided a demand for it exists), or to produce power with the help of either a condensing steam turbine or an Organic Rankine Cycle. The presented study investigates waste heat valorization options in a polymer production unit located within a refinery. Key factors impacting the optimal solution are highlighted, including the steam export constraints related both to variable heat demand in the refinery and the operation of marginal steam source. Basic energy and economic indicators are calculated.

Funding: This work was financially supported by the Slovak Research and Development Agency, Grant No. APVV-15-0148 and APVV-18-0134.