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Peer Reviewed Papers

Li Sun*, Steve Doyle, Robin Smith. Heat Recovery and Power Targeting in Utility Systems, **Energy**, 2015, 84:196- 206

New heat recovery and power targeting models have been developed to evaluate and improve site-wide heat recovery and distribution, and cogeneration systematically. Previous graphical methods for utility system targeting have been proposed based on the assumption of only steam latent heat in the utility system. In this work, a practical graphical approach based on extended site composite curves to quantify site steam targeting has been proposed to provide realistic utility targeting methods, allowing for boiler feedwater (BFW) preheating and steam superheating in steam generation, and steam desuperheating for process heating. Condensate heat recovery from steam usage has also included in the graphical method. A new cogeneration targeting model has been developed including practical limits such as steam mains superheat and turbine exhaust dryness. These new realistic energy and power targeting methods improve the accuracy of the targeting, and overcome the shortcomings of previous targets.

High lights:

- New heat recovery/power targeting models improve the accuracy of the targeting
- BFW preheating and steam superheating in steam generation instead of steam latent heat
- Steam desuperheating for process heating in the graphical model
- Condensate heat recovery in the steam targeting model
- Practical limits included in cogeneration targeting model