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**Waste-heat utilization – the sustainable technologies to minimize energy consumption in
Bangladesh textile sector**

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Abstract

Waste-heat utilization holds great potential for cleaner production by improving energy efficiency, reducing energy usage and enhancing engineering functionality of an industry. Utilization of waste-heat is highly neglected in textile industries of the developing countries. This study quantified the energy and cost saving potential of waste-heat utilization in textile industries with several case studies. It focused on the common waste-heat sources and readily implementable technologies considering both technical and economic aspects. A waste-heat recovery boiler with a capacity of 2.70 t/h ran by hot exhaust from onsite electricity generators was estimated to save annually 15,094 MWh of energy and energy cost of USD 141,280. Installing economizer reduced 4.9% of boiler fuel consumption. Approximately 10% of energy used in stenter-setting machines was saved by installing a heat-exchanger that extracted waste-heat of stenter exhaust to preheat fresh air supplied to stenter operations. A

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