

Summary of study: GHP for Foundry (Investment Casting): Unit - 1

Industry : Foundry (Investment Casting)

Unit profile : A foundry located in Rajkot (Gujarat) engaged in production of precision steel and alloy castings

Technology : Gas heat pump (GHP)

Application : Replacement of packaged air-conditioners (ACs) with GHP



Key features:

- Desired room temperature : 25° C
- Existing system : Packaged ACs (various sizes)
- Proposed system : GHP units

Year of investigation : 2012

Energy and cost saving

		Existing System (packaged ACs) (1)	Proposed System (GHPs) (2)	Reduction (1) – (2)
Primary energy consumption	MWh/year	2,891	1,208	1,684
CO ₂ emissions	t-CO ₂ /year	602	246	356
Energy costs	Rs/year	4,112,742	2,693,072	1,419,671
Electricity cost	Rs/kWh	6.35		
Natural gas cost	Rs/SCM	27.55		

Note:

This report is an example for investigating the potential of application of Japanese low carbon technology (LCT) in Indian industries. GHP is the LCT which can generate greater benefits for air conditioning applications using waste heat source.