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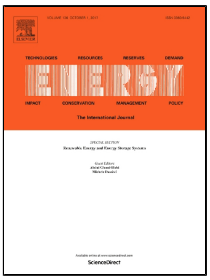

Profitability analysis of power generation using waste heat of sponge iron process

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Nomenclature

C	specific heat, (J/kgK)
D	diameter of kiln, m
G	gas
h	heat transfer coefficient, kJ/h m^2
L	length of kiln, m
m	mass flow rate, kg/h
Q	Heat Load, kW
S	solid
T	temperature
t	tonne (=1000 kg)
NHV	net heating value, kJ/kg
CC	capital cost, Rupees
PI	Process Integration
T_{pa}	Primary air temperature
T_d	Kiln air
T_{sc}	Secondary air temperature
t_p	Reaction temperature
t_a	Ambient temperature

Subscript

a	air
c	coal
m	moisture
p	process
h_u	hot utility
s	ore, supply
t	target
r	radiation
loss	loss from kiln
i	inlet to kiln
pa	Primary air temperature

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