

Inquiry - Excess heat



Introduction:

In the scope of Annex XV – “*Excess Heat Recovery in Industry: Technologies and Applications*” part of IETS – *Industrial Energy related Technology and Systems*, which is an international agreement promoted by IEA (*International Energy Agency*), this inquiry was prepared with the purpose to quantify excess heat that is wasted in portuguese industry.

Therefore, we appreciate your contribution by answering the following questions.

A. Brief characterization of the company

Location/designation:	Company 02
Main activity (main CAE):	38220
Annual turnover:	12 000 000 € (year 2015) and 13 000 000 € (year 2016)
Contact person:	
E-mail:	
Mobile (optional):	

(mark your option with an X)

1. Company size:

Small company – less than 50 workers	()
Medium company – between 50 and 249 workers	(X)
Big company – 250 or more workers	()

2. What is the energy cost fraction in operational costs (if more than one industrial process, choose the one with the most significant cost)?

less than 25%	(X)
between 25% and 50%	()
More than 50%	()

3. Is the company included in SGCIE – Intensive Consumption Management System (portuguese law DL 71/2008, 15th April)?

Yes	(X)
No	()

4. Is the company framed by portuguese law DL 68-A/2015, 30th April?

Yes	(X)
No	()

B. Excess heat in facilities

1. Company annual energy consumption:

Indicate value units in the field: ().

Biofuel	Type: ----	Quantity: ----	()
	Type: ----	Quantity: ----	()
	Type: ----	Quantity: ----	()
	Type: ----	Quantity: ----	()
Fossil fuels	Type: Natural Gas	Quantity: 2771638	(kWh)
	Type: LPG	Quantity: 39,5	(ton)
	Type: Fuel oil	Quantity: 874,5	(ton)
	Type: Diesel	Quantity: 141,2	(ton)
Electricity	2162065	(kWh)	
Other	Type: ----	Quantity: ----	()

2. Do you have any of the listed excess heat dissipation operation units?
(indicate your option with an X)

Cooling towers	Yes ()	No (X)
Aircoolers	Yes (X)	No ()
Exhaust gases	Yes (X)	No ()
Hot equipment radiation	Yes ()	No (X)
Natural cooling of effluents	Yes ()	No (X)

In case of answering "No" to all heat dissipation operation units, jump to question 7.

If your answer was "Yes" to any of the previous options, provide the requested information.

Indicate value units in the field: ().

a. Cooling towers

Inlet flowrate	()
Inlet temperature	---- ()
Outlet temperature	()
Outlet flowrate	()

b. Aircoolers

Inlet flowrate	300	(kg/h)
Inlet temperature	100	(°C)
Outlet temperature	99	(°C)
Outlet flowrate	300	(kg/h)

Note: in this process the unit is a aircondenser

c. Exhaust gases

Gas composition	Combustion gas and from thermal oxidation of residues	
Inlet flowrate	10 729	(kg/h)
Inlet temperature	850	(°C)
Outlet temperature	250	(°C)
Outlet flowrate	10 729	(kg/h)

d. Hot equipment radiation

Inside temperature	()
Outside temperature	---- ()
Surface area	()
Year Running hours	()

e. Natural cooling of effluents

Flowrate	----
Average temperature of effluent	

3. Have you considered the possibility to internally audit the available excess heat of the process?

Yes (X)	No ()	Don't know ()
---------	--------	----------------

If your answer was "No" or "Don't know", jump to question 5.

4. If your answer was yes to the previous question, what was the audit conclusion?

a. Not economically profitable (X)
b. Economically profitable, but not implemented ()
c. Implemented – what was the recovered quantity of excess heat recovered and final destination? ()

5. Did you considered to provide your excess heat to an external use?

Yes ()

No (**X**)

Don't know ()

If your answer was "No" or "Don't know", jump to question 7.

6. If your answer was "Yes" to previous question, what was the conclusion?

d. Not economically profitable ()

e. Economically profitable, but not implemented ()

f. Implemented – excess heat recovered and final destination? ()

7. Additional Comments

Final note:

All provided information to this inquiry will be treated as confidential according to current legislation related to data protection.

The provided data will be exclusively treated for statistical purposes, and final conclusions may be integrated in global studies and presented in seminars on excess heat theme, but always aggregated to other data, and without referring specific information that relates data do the company.

A final summary report with all collected data will be provided to be integrated in an international study on this theme, to international correspondents.

In case of any doubts about this inquiry, please contact the following person:

E-mail: henrimatos@tecnico.ulisboa.pt

Mobile: +351 96 92 69 152