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PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	X

Scope

This deliverable comprises a consistent base case which enables evaluating the results of the whole project in an industrial environment. The base case includes extensive data from the site as well as reference results obtained from standard tools and methods.

Process modelling has been used as assisting data source e.g. if no measured data of important energy consumers is available. Pinch studies of the single production units and a total site analysis of the cluster with common available tools have been done in order to define a reference case.

The following steps need to be done:

- Data collection:
 - Heat streams for each unit
 - Design data for the utility system
- Conventional analysis of the cluster
 - Static pinch analysis of the existing units
 - Perform a static total-site-analysis of the cluster
 - Rough evaluation of improvement measures in terms of energy and financial savings potential, investment costs and feasibility/operability.

The resulting outcome from this analysis for this deliverable is the base case for pinch-analysis and total site analysis which will be used for evaluation of the methods to be developed during the project

Static pinch analysis of the existing units

Based on the heat streams provided in D5.1 a static pinch analysis was carried out for each plant individually.

Plant level Composite Curves

The resulting composite curves for each plant have been constructed and pinch targets are obtained.

Plant level Grand Composite Curves

The resulting composite curves for each plant have been constructed and pinch targets are obtained.

Plant level Energy Targets

Pinch targets base case

Plant No	Minimal cooling duty [kW]	Minimal heating duty [kW]

Static total-site-analysis of the cluster

For the construction of the total site grand composite curve all process-to-process heat exchange has been eliminated.

Total Site Profiles

Total Site Profiles and Combined Cluster Composite Curves have been constructed

Figure 5 – Combined Cluster Composite Curves

The combined composite curves of the total demo cluster including heat streams that are satisfied with process-to-process interchangers have been analysed and the corresponding pinch target of X MW cold utility consumption determined.

Evaluation of improvement measures by heat integration

Plant by plant heat integration potentials and proposed improvements analysed

Steam cluster

1. Steam cluster retrofit options determined

Summary of identified heat integration measures

Table 4 - Total savings by proposed measures

Plant	Savings [kW]
X	
...	
...	
Steam Cluster	
Steam Cluster (el.)	
Total	