

EPOS WP 4 – Tool validation and assessment

Lead: ArcelorMittal Maizierers Research SA

Exemplary report on the AM IS district cluster

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Summary

ArcelorMittal was chosen as the demonstration site because of ArcelorMittal's initiative in 1985 (Usinor at this time) to advance sustainable industry by starting-up a district cluster and thus creating a better global environment in Dunkirk according to industrial symbiosis principles.

The ArcelorMittal Dunkirk Iron and Steel complex is already a well-integrated complex, with a lot of process by-produced gases and materials being recycled inside the numerous processes. The complex has also developed symbiosis and exchanges with surrounding firms that use or treat by-product streams: slags are used by the cement industry, gases are used internally and excesses are sent to an external power plant, old refractory bricks are treated locally, etc.

In particular, one of the synergies of interest for the EPOS project is the use of heat recovered from sinter coolers to feed the local district heating network. Hot air coming from the cooling of the sinter product is recovered and hot water is produced via heat exchangers in order to feed the district heating network. This symbiosis comes from an initiative of local urban communities after the oil crisis in the 1970s. The first district heating network, partially fed with industrial heat recovery, was implemented in 1986 and has developed since. In 2008, a second wave of investment allowed for further heat recovery from the other sinter plant of the AM Dunkirk complex. Currently, the local urban communities are working on the extension of the district heating network. They have listed the industries that have energy in excess, compatible with the pressure and temperature required for such a district heating network. They have established opportunities for heat recovery and designed the network extensions. The current phase is addressing the consultation for concession holders in the framework of a public service delegation contract. They plan to finalize the preparation phase of this project by the end of 2017 in order to start the extensions of the district heating network in 2018. ArcelorMittal will supply a part of the energy provided by industrial partners.

Moreover, the dynamism of the French Hauts-de-France and Dunkirk regions in the field of industrial symbiosis developments, circular economy and energy efficiency is significant. The region is considered as one of the most advanced in France in this domain. A large number of associations and initiatives are in place or emerging in these domains. ArcelorMittal and the local communities are largely involved and engaged in them: amongst them you can find ECOPAL, Energie 2020, "Club des Energivores" (club of energy-intensive industries), "Troisième Révolution Industrielle" (Third Industrial Revolution) supported by CCI, etc. They allow exchanges of experience and best practices between industries, building networks, fostering the set-up of synergies and promoting innovation and developments. These networks will be a good way to further improve and promote results from the EPOS project.