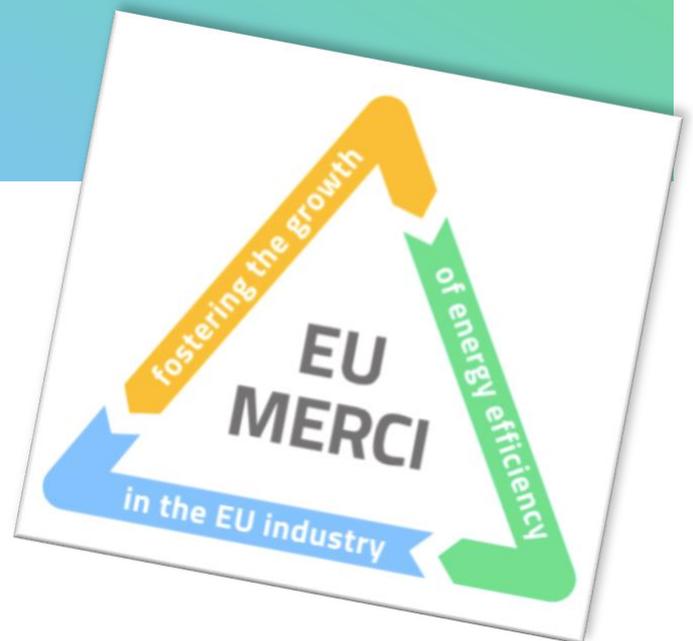


# EU-MERCI Newsletter

n° 4, January 2018

## Summary

- The results of the EU-MERCI project: the EIEEP platform
- HERA's experience in EU-MERCI KPIs validation activity
- EU-MERCI final conference
- EIEEP Platform on line: great numbers!



### **The results of the EU-MERCI project: the EIEEP platform** - *Simone Maggiore, Anna Realini (RSE)*

Many activities have been carried out in these two years by the EU-MERCI project. In order to collect all the results and to promote the adoption of Energy Efficiency “Good Practices” in EU, it has been decided to build an online platform called [European Industry Energy Efficiency good Practices \(EIEEP\) Platform](#). The platform is the main output of the EU-MERCI project and it is available at the website <http://www.eumerci-portal.eu/>. It is composed by three main sections:

- “[Database](#)”;
- “[Library](#)”;



[www.eumerci.eu](http://www.eumerci.eu)

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 693845.*

- “Surveys”.

**The EIEEP platform: Database section**

The database section has been created with the scope of allowing external users to access around 2,900 records collected and examined by the project partners: at the present moment, this is the largest publicly available database of Energy Efficiency projects in Europe.

**The EIEEP platform: Library section**

The library section has been created in order to collect the results of the elaborations made by the different partners by analysing the database. It collects and displays the main results of the work, organized through four different subsections:

- “Tutorial sectors”;
- “Sector technical analysis”;
- “Country analysis”;
- “Factsheets”.

**“Tutorial sectors” subsection**

The tutorial subsection is divided by the sectors analysed in EU-MERCI project. By clicking on the name of a sector, it is possible to see a process schematic, where the main phases of the manufacturing process are shown, and all the “Best Practices” and “Good Practices” identified for that specific sector. An example can be seen in the figure below (cement sector).

The practices with the small EU-MERCI logo on the left

are the identified “Good Practices”, while the others are the “Best Practices” found in literature. The main difference between the two is that, for the “Best Practice”, a short description and some forecasted performances are available, while for the “Good Practice” a full description, with pictures in many cases, and all the calculated KPIs are shown.

**“Sector technical analysis” subsection**

In order to have a full picture of the industrial processes, the project partners have performed huge technical analyses of the different processes of each sector, which are available for download.

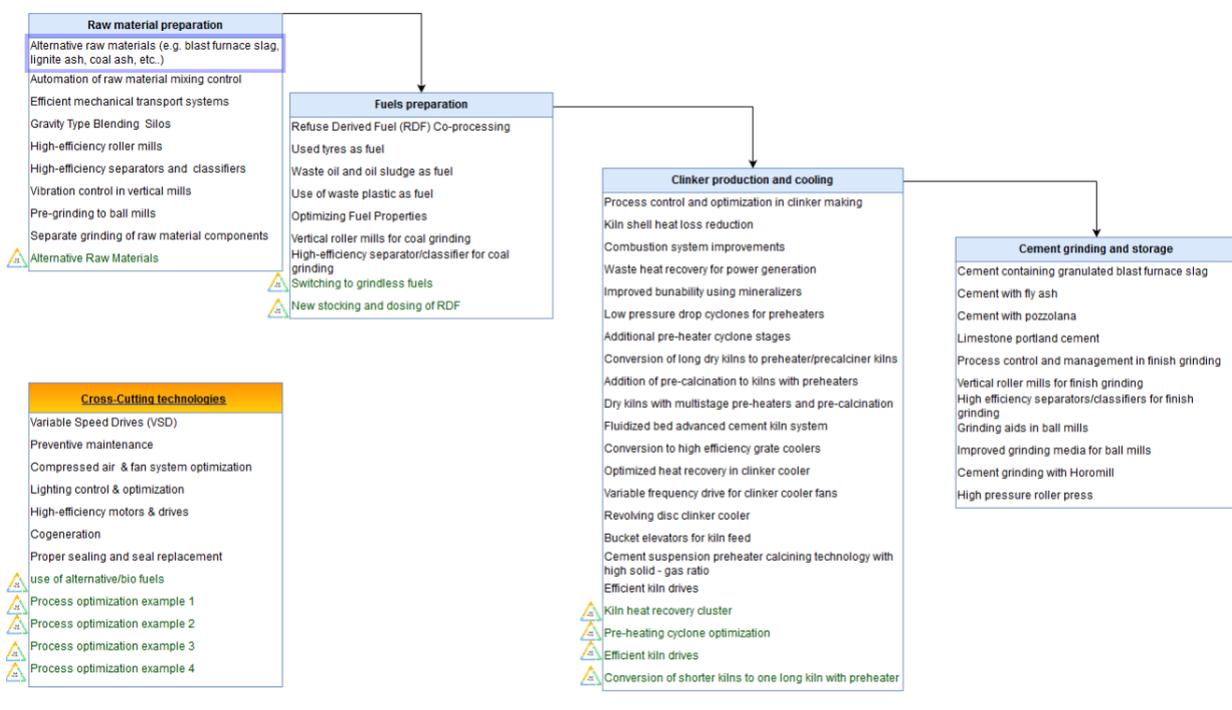
**“Country Analysis” subsection**

In order to understand which were the most important sectors and if and how was possible to insert the selected “Good Practices” in the EU economic context, the project partners have performed a full analysis of the situation of EU-28 industry, which are available for download.

**“Factsheets” subsection**

In the “Factsheets” subsection, for each sector some 2-page factsheets are collected and available for download. Each factsheet contains:

- A contextualization of the sector;
- A description of the 5 most promising “Good Practices” of the specific sector;



- Some policy recommendations about the sector;
- Some stakeholders recommendations about the sector.

#### **The EIEEP platform: Survey Section**

In the first phase of EU-MERCI project, it was chosen to directly involve industrial stakeholders in order to understand what were the needs of EU industry. This has been done by the use of surveys, focused on the type of stakeholders. The results are available for download.

#### **Conclusions**

Energy Efficiency remains one of the main ways to reach the 2020 and 2030 targets of the European Union in terms of climate change mitigation. Industry plays a key role, but it needs to be oriented towards the most effective solutions, that allow to obtain high savings, while considering also the economic return of the investment (that is one of the decision-making parameters for industrial stakeholders). One of the goals of EU-MERCI project is to act as a “guide” for all the involved stakeholders, in order to:

- Spread the existing know-how about Energy Efficiency in industry;

- Allow all the involved stakeholders to access detailed data about what implemented in their or other Countries, through the public database;

- Allow industries to take example from other companies in the same or other sectors, through the “Good Practices”.

The EIEEP platform is the ideal tool to achieve these goals, and its added value is, in fact, in the “reality” of the presented projects and results, that often lacks when analysing “Best Available Technologies”, combined with the high number of publicly available data.

Even if the project was completed in the beginning of 2018, the EU-MERCI team started a cooperation with other platforms and groups (e.g. EEFIG, EEIP) in order to be able to improve the EIEEP platform over time. Other opportunities of cooperation will be considered in the future.

### **HERA’s experience in EU-MERCI KPIs validation activity - Margherita Cumani (HERA)**

In the context of a wider protocol of cooperation signed with RSE for applied research purposes, HERA S.p.A. took part in some activities of EU-MERCI Project and, in particular, participated in the KPIs validation. HERA S.p.A is the holding company of an Italian leading Multi-Utility Group providing public services to more than 4 million of citizens on a daily basis. Since HERA was born, originating from the combination of several council-owned companies, a constant and balanced growth in all areas of activity (regulated and free-market) led to gradual incorporation of other companies until the current territorial presence in 357 municipalities. Strong local roots, aptitude for innovation and independent management are the milestones for a business model that is unique in Italy and it has been able to create true industry of public services.

HERA is today the first national operator in the waste management services business with almost 7 million

of tons of waste treated every year. As for water services (both drinking and sewage water) HERA occupies the second position on a national level, serving 3.6 million citizens and managing a drinking water network 35,000 km long. Prominent positions are performed in energy services, with gas and electricity distribution infrastructures, gas and electricity sale and several district heating networks.

In addition to improvements implemented in internal assets, mainly in water treatment plants and networks, cogeneration plants and gas decompression systems, in the last decade HERA played an active role also in promoting and developing energy efficiency measures among other industrial operators.

HERA is actually an obliged subject under Italian White Certificates (WhCs) Scheme and therefore it must meet annual energy savings corresponding to

WhCs to be obtained purchasing on the market or originating them through energy efficiency initiatives. Since the purchase on the market is very much cost and risk affected, from the start of this mechanism HERA invested resources in improving internal competences in order to combine them with historical experience in public assets management and to create a set of services broadly applicable to the industrial sector. A strategy based on: local synergies, cross-competences, technological specialists and financial solidity, has proved to be very effective in engaging with industrial operators and supporting them in scouting and developing energy efficiency measures: from 2007 to 2017 more than 160 projects have accessed WhCs incentives for an equivalent savings amount of 450,000 toe.

**KPIs quantitative validation activity:**

As part of the WhCs origination activity towards external operators, HERA got in touch with many industrial entities, of variable dimension and belonging to different sectors, experimenting technologies and energy efficiency measures in several processes. Details and numbers deriving from this experience have been used for the EU-MERCI KPIs validation activity, which has been conducted on:

- 9 “Good Practices” quantitatively analyzed: GP n°97, 98, 99, 104, 105, 108, 109, 113, 120;
- 19 real cases referring to the analyzed GPs;
- 7 industrial sectors.

Validation was mainly carried out from a quantitative point of view, comparing indicator by indicator the ranges proposed in EU-MERCI “Good Practices” sheets with those of the analyzed cases. Conversion factors and prices of energy vectors have been aligned to those used in EU-MERCI database in order to guarantee comparable results. Finally, descriptive evaluation grids have been compiled too, for adding a qualitative view to validation.

Technologies and “Good Practices” analyzed were those most frequently encountered by HERA in its partner industries: cooking/drying furnaces, heat recovery systems, upgrading of refrigeration

systems, mechanical vapor recompression (MVR), advanced control systems and global process optimization. The industrial sectors touched by KPIs validation were: food processing, textile, ceramic, plastic & metal manufacturing and chemical industry.

**Main results of validation:**

- Although the outcome of validation was positive for the majority of indicators, Cost of Implementation and Cumulative Cash Flow (CCF) were those showing best alignment;
- On the contrary the Energy intensity reduction (EIR in toe/k€) was the most critical to validate; this could be related to the fact that the quantity at the denominator (Produced Value) does not refer to the specific “site” where the measure is implemented, but to the whole industrial sector and size of the company.
- KPIs validation has been more successful for “Good Practices” obtained from wide samples of projects (high number of occurrences in database referring to a same GP).
- KPIs showed to be more solid for some GPs whose energy savings could be measured through easy and homogenous methods (e.g. heat recovery).
- Payback time periods resulted in some cases too low compared to HERA analysed cases and field experience (especially for Refrigeration Systems and MVR where lower limits of suggested ranges were close or less than 1 year);
- Sensible differences in annual energy savings associated to projects for those GPs including multiple and different energy savings measures (these differences affect the alignment of CAPEX/toe and CAPEX/CO2 indicators).

**Conclusions:**

The experience gained by HERA while promoting and developing energy efficiency measures in different industrial sectors offered several hints of analysis for EU-MERCI outputs validation. In particular KPIs quantitative validation was made using a sample of 19 real cases belonging to food processing, textile, ceramic, plastic & metal manufacturing and chemical industry sectors.

EU-MERCI KPIs more solids for GPs with homogeneous energy savings evaluation methods and derived from wider sample of cases.

Further analysis could be useful for payback periods of structural projects like Refrigeration Systems

(#97) and MVR (#104), and for GPs including various typologies of interventions, like Efficient Boilers (#113).

## EU-MERCI final conference— *Livio De Chicchis FIRE*

Final Conference of EU-MERCI project took place in London on January 23th. The first aim of the conference was to disseminate the final outcomes of the project, focusing on the larger deployment of energy efficiency “Good Practices” in industry across the European MSs according to the targets of the “Energy Efficiency” Directive (2012/27/EU-EED). Database of Good Practices, Library, factsheets, technical and country analysis, all available on EIEEP Platform, are the main results of the project, described during the conference.

The conference has also gathered EU-MERCI stakeholders and discussed the wider trends and needs of energy efficiency in the European Industry, as well as issues and solutions regarding energy efficiency financing and policies. In this respect, the European Commission Project Advisor presented some tools to support energy efficiency in industry, available through the Horizon 2020 Energy Efficiency Calls for 2018 and 2019. The collaboration between EU-MERCI and EEFIG (Energy Efficiency Financial Institutions Group) was also confirmed: DEEP

Platform, developed by EEFIG, will allow to encourage the implementation of energy efficiency measures combining the technical requirements of the projects with financial instruments to implement them.

Examples of energy efficiency projects implemented in industry were also described, some of which aimed to validate EU-MERCI “Good Practices”: the results have been satisfactory, despite some small discrepancies in certain KPIs, that will be a starting point for future developments. In the final panel, in fact, four external experts, coming from different fields, discussed about possible solutions to develop energy efficiency in industry and, more specifically, about the follow-up of EU-MERCI project. The latter is right now the main issue for the partners, since the two-years are running out and it is important to not let these precious outcomes die once the project is over. Some possible solutions were proposed by participants, and they will be evaluated in the next period, trying to consolidate the appreciation so far received by the stakeholders community.

## EIEEP platform on line: great numbers! *Elena Taxeri - Cres*

The EU-MERCI Database was presented on May 2017 and since then it was viewed around 20.000 times. The EIEEP – European Industrial Energy Efficiency good Practices platform, was launched on October 2017. Up to January 2018 the EIEEP Platform had 2,467 page views, with 1,391 unique visitors

The most visited sectors in the Library are the Food & Beverage, Aluminium and Cement industry while the most downloaded documents are Iron&Steel, Food and Cement sector technical analyses and the EU-28 and “Other countries” statistical analyses.

The most visited Good Practices per sector are: Aluminium (Furnace Cluster- Heat recovery cluster), Ammonia, (Heat recovery Cluster- Free cooling) Cement (kiln heat recovery cluster), Ceramics (Replace the steam boiler with process humidification), Coke and Petroleum (Revamping of the pre-heating line of the de-sulphurisation and replacement of the reactor - Intervention in the H2S absorption plant), Copper (Optimised electrolysis in primary copper production) Food & Beverage (Refrigeration systems cluster - Combined Heat and Power - Heat recovery), Glass (Motors with Variable Speed Drives), Iron and steel (Surface combustion furnace revamping/replacement - High speed burner for ladle heating), Machinery (optimisation of painting and coating cluster - High Efficiency Burner) Pulp & Paper (Refiner optimization to allow Low Consistency Refining - Use of vertical axis mixer in re-pulping) Last but not least, the 3 surveys pages were viewed about 1000 times each and the relative excel files were downloaded about 50 times each.

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