EU MERCI

EU coordinated **ME**thods and procedures based on **R**eal **C**ases for the effective implementation of policies and measures supporting energy efficiency in the **I**ndustry

Fostering the growth of energy efficiency in the EU industry

www.eumerci.eu

Buone pratiche per l'efficienza energetica: il progetto europeo EU-MERCI

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Rome, GSE Headquarters

28 Febbraio 2018

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

Il progetto europeo EU-MERCI

EU-MERCI - **EU coordinated MEthods and procedures, based on Real Cases, for the effective implementation of policies and measures supporting Energy Efficiency in the Industry** è un "Coordination and Support Action" approvato all'interno del programma di finanziamento Horizon 2020 della Comunità Europea (Nr 693845)

L'obiettivo di EU-MERCI è di supportare la crescita dell'Efficienza Energetica nell'industria all'interno dell'Unione Europea, attraverso l'identificazione e la disseminazione di "Good practices" e condividere l'esperienza sull'implementazione di politiche, schemi e meccanismi di supporto all'Efficienza Energetica fra i vari paesi europei.

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Drivers del progetto: l'uso razionale dell'energia

Il settore industriale è responsabile del 25% dei consumi di energia finale in Europa.

La ricerca europea pone particolare attenzione sull'efficienza energetica nell'industria.

Tra le 10 key actions dello **Strategic Energy Technology Plan** (**SET-Plan**), una riguarda «**Energy Efficiency in Industry**»

Il **driver tecnologico** è ritenuto prioritario per incrementare l'efficienza energetica nell'industria. Tecnologie efficienti suddivise in:

- **settoriali**, che si applicano a materiali/processi di uno specifico settore industriale
- **trasversali**, che trovano applicazione in più processi, ad esempio componenti ad alta efficienza, recuperi di calore/freddo, sistemi per il controllo di processo integrato

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Uno studio della Commissione Europea sull'efficienza energetica nell'industria

Il 98% dei consumi di energia finale in EU-28 è riconducibile a otto raggruppamenti di settori industriali:

Sector	Final energy consumption	EE Economic potential (payback <=5 year)	EE Technical Potential	Energy cost/ Value Added	No. of employed	Value added, gross
	Mtoe	Mtoe	Mtoe		Million	€ billion
Pulp and paper	34.3	1.4	7.2	16%	1.43	79.0
Iron and steel	50.8	3.1	16.3	36%	0.63	39.7
Non-metallic mineral	34.2	1.3	7.1	23%	1.29	63.9
Chemical and pharmaceutical	51.5	3.2	16.5	12%	1.72	229.8
Non-ferrous metal	9.4	0.5	1.9	23%	0.46	23.7
Petroleum refineries	44.7	1.9	10.6	44%	0.12	24.3
Food and beverage	28.4	1.7	6.8	10%	4.53	251.4
Machinery	19.3	1.3	5.3	3%	9.03	579.8
Total	**272.5**	**14.4**	**71.7**			

Fonte: ICF 2015

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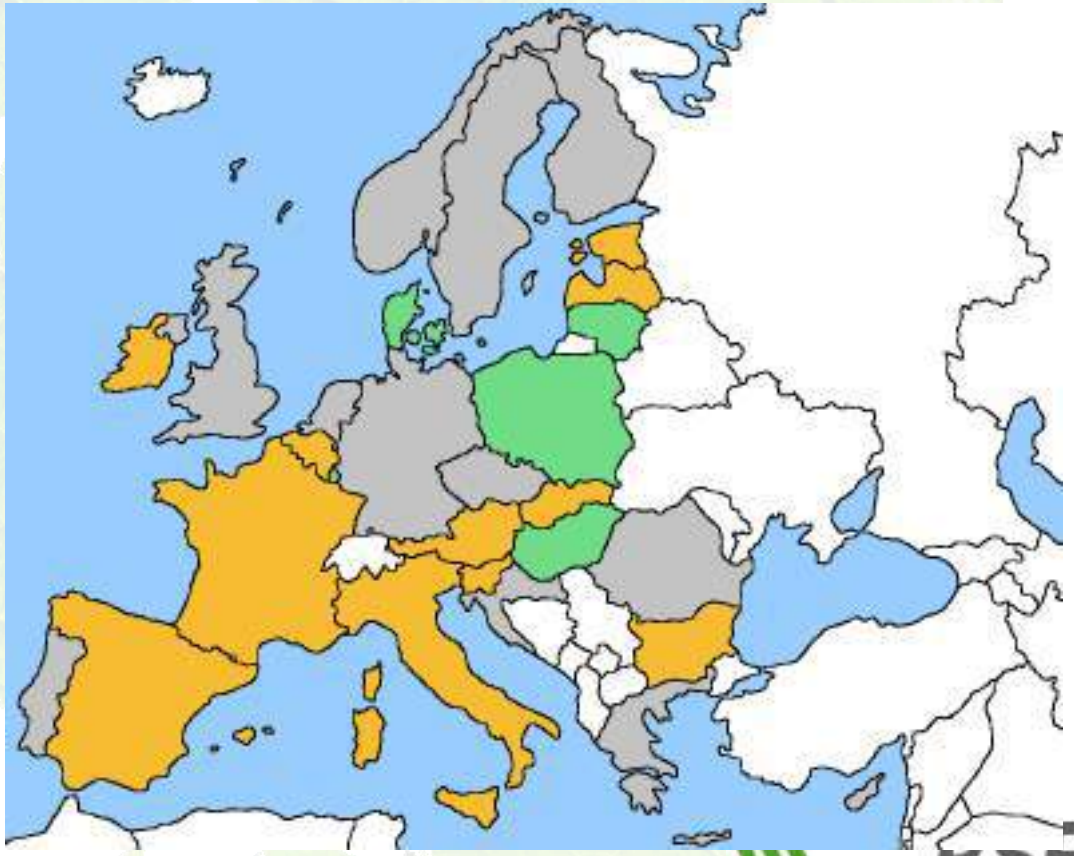
Drivers del progetto: implementare la direttiva europea sull'Efficienza Energetica (2012/27/EU)

16 paesi hanno implementato **Energy Efficiency Obligation Schemes** (EEOS) rivolte all'industria,

- di cui la maggior parte combinato con misure alternative
- in 5 paesi (Danimarca, Ungheria, Lituania, Lussemburgo e Polonia) gli EEOS sono le uniche misure rilevanti rivolte all'industria
- 13 paesi hanno implementato solo misure alternative

Metodologie differenti per il calcolo e il monitoraggio dei risparmi



Fonte: EU-MERCI Deliverable D1.1

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Drivers del progetto: Migliorare le Politiche e gli Schemi di supporto all'Efficienza Energetica

REPORT on the implementation report on the Energy Efficiency Directive 012/27/EU) - (2015/2232(INI)) – CIRE - June 2016

…to promote the **exchange of best practices across Member States** in order to speed up the achievement of targets and the **diffusion of innovative products and services**, and to promote **cross-country convergence in energy efficiency**

Stresses that better **harmonization of the methods of calculating additionality** (capacity to promote technologies that perform above the market average) and materiality (promoting action that would not necessarily have been taken) and for the **measurement and verification of energy savings** could contribute to the more effective implementation of Article 7

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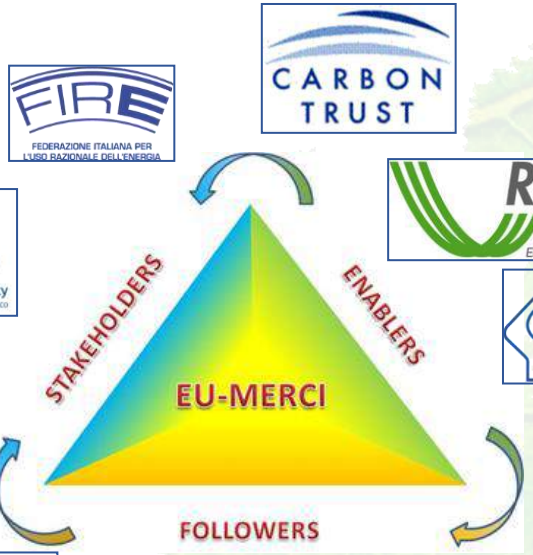
L'idea alla base del progetto EU-MERCI: uno studio dal basso per analizzare i dati sul campo

Usare l'analisi approfondita di un gran numero di progetti di efficienza energetica e audits nei processi industriali effettuati a livello europeo per rispondere a domande del tipo:

- Quali sono i **progetti più efficaci** al fine di migliorare l'efficienza nei processi manifatturieri?
- Come implementarli nello specifico, **quali tecnologie** o loro combinazione sono ritenute le più appropriate nel settore o processo industriale considerato?
- Qual'è il **miglioramento di efficienza ottenibile** con ciascuna azione?
- C'è una qualche forma di correlazione tra **efficienza, redditività, produttività, competitività?**
- Quali sono i **costi associati e la profittabilità economica** di ciascuna azione?
- Come sono appropriate le **politiche e le misure correnti**, al fine di favorire lo sviluppo dell'efficienza energetica nell'industria europea?
- Come misurare e come **monitorare, registrare e riportare** i risparmi, come richiesto in alcuni meccanismi di incentivazione?

I partners di EU-MERCI



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Obiettivi e Risultati concreti

- "Good Practices" per l'Efficienza Energetica disponibili sul web all'interno della **Piattaforma EIEEP** *(European Industrial Energy Efficiency "good Practices" platform)*
- Key Performance Indicators per la valutazione dei progetti di Efficienza Energetica secondo diversi criteri (tecnico, ambientale, produttività e competitività, costi di investimento, PBT, etc.)
- Metodi standardizzati (incluso baseline, algoritmi, procedure e requisiti per il monitoraggio) per la valutazione dell'Efficienza Energetica
- Strumenti di supporto per implementare i progetti di Efficienza Energetica e rendicontarne correttamente i risparmi
- Database contenente le informazioni grezze sui progetti analizzati da EU-MERCI, disponibile all'interno del EU-MERCI Portal

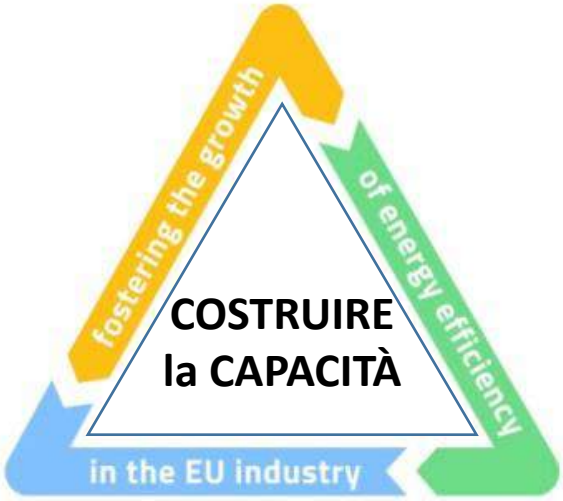
- Analisi sull'efficacia degli schemi e delle politiche di supporto ed incentivazione all'Efficienza Energetica nei 28 Stati Membri in Europa
- Scenari ragionati sull'implementazione di misure di Efficienza Energetica e analisi del loro impatto
- Raccomandazioni su misura rivolte ai diversi stakeholders per migliorare gli schemi e le politiche di supporto ed incentivazione all'Efficienza Energetica Energetica in Europa

- Migliorare ed estendere la Capacità negli stati membri di implementare progetti di Efficienza Energetica => favorire il mercato e la creazione di posti di lavoro

3 passi strategici

- Specificità dei singoli paesi
- Percezione del mercato

- KPIs Tecnici, Economici e Sociali
- Valore aggiunto per l'Efficienza Energetica



- Diffondere le "Good Practices"
- Migliorare la conoscenza

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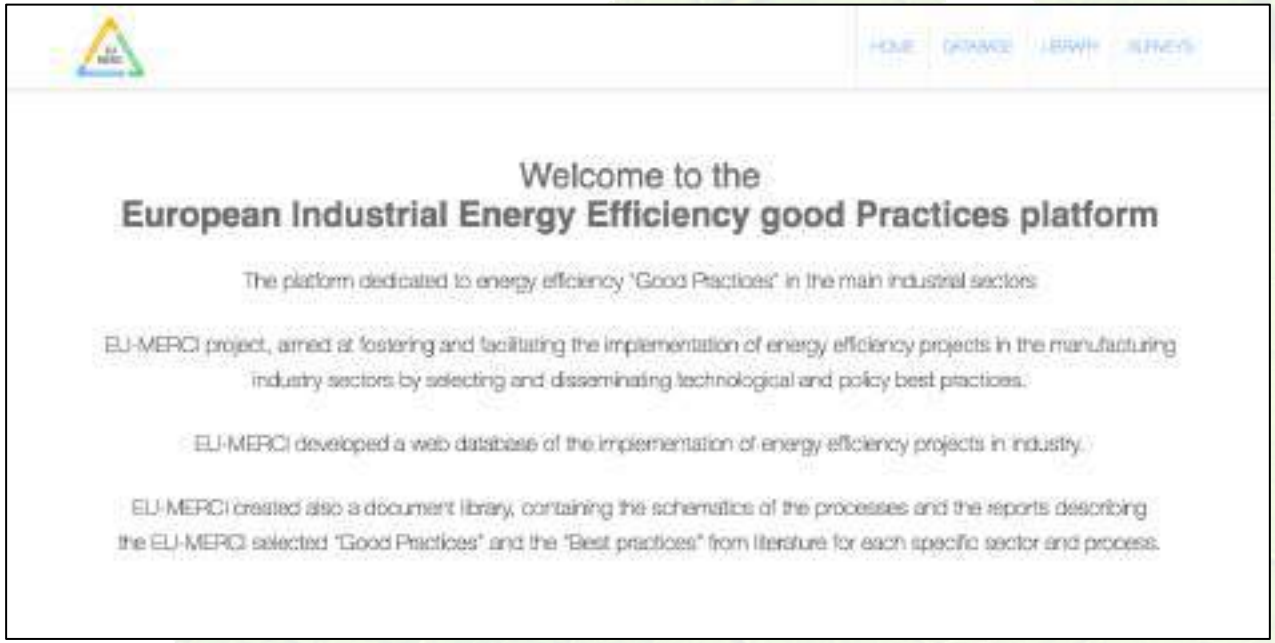
Struttura della Piattaforma EIEEP



Database

Library

Surveys

Indirizzo: http://www.eumerci-portal.eu/

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Struttura del Piattaforma EIEEP

EU-MERCI DATABASE
contenente le informazioni grezze sui progetti di efficienza energetica analizzati da EU-MERCI

EU-MERCI LIBRARY
contenente le "Best practices" da letteratura e le "Good practices" secondo EU-MERCI per l'efficienza energetica

EU-MERCI SURVEYS
contenente i risultati dei Survey svolti con diversi stakeholders (Aziende, ESCO ed associazioni di settore) per la caratterizzazione dell'Efficienza Energetica in Industria

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I settori analizzati

I **settori** sono stati **scelti** in base ai seguenti **parametri**:

1. Consumi di energia finale,
2. Costo dell'energia per unità di valore aggiunto,
3. Numero di addetti,
4. Valore aggiunto lordo,
5. Potenziale economico di efficientamento energetico (PBT < 5 anni),
6. Potenziale tecnico di efficientamento energetico

- ❑ Industria alimentare e delle bevande – NACE C10-C11
- ❑ Fabbricazione di Carta e di prodotti di carta – NACE C17
- ❑ Fabbricazione di coke e prodotti derivanti dalla raffinazione del petrolio – NACE C19
- ❑ Fabbricazione di prodotti chimici – NACE C20
- ❑ Fabbricazione di altri prodotti della lavorazione di minerali non metalliferi – NACE C23
- ❑ Metallurgia – NACE C24
- ❑ Macchine – NACE C25-28

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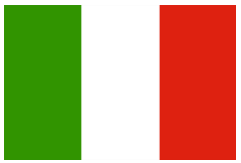
Raccolta dei dati

Enablers



2.906 progetti di efficienza energetica legati alle fasi di processo

ARMONIZZAZIONE DEI DATI

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Library: introduction

EU-MERCI LIBRARY

Country analysis

Analisi dettagliata dello **stato dell'industria** in diversi **Paesi Europei**

Technical analysis

Analisi tecnica dei **processi** di produzione legati ai settori selezionati

Schemi di processo con relative BP e GP

Schemi di processo dei settori selezionati con link alle "**Best Practices**" e "**Good Practices**"

Factsheets

Informazioni infografiche sulle top GP, analisi e statistiche sui settori selezionati, raccomandazioni per i vari stakeholders.

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"Best Practices" & "Good Practices"

Le "**Best Practices",** incluse nel portale, sono state reperite attraverso un'analisi di letteratura di diverse fonti.

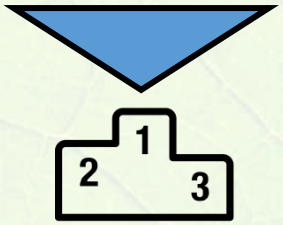
Sector	IETD	Energy star	BREF	Other*
Food and beverage			x	x
Coke and Petrolchemical		x		
Glass	x	x	x	
Cement	x	x	x	
Ceramic			x	x
Alluminium			x	
Copper			x	
Iron and steel	x	x	x	
Chemical	Ammonia		organic, inorganic	x
Pulp and Paper	x	x	x	
Machinery				

Scientific paper, data from trade associations

Le "**Good Practices"** soddisfano i seguenti criteri definiti all'interno del progetto:

- ✓ Sono energeticamente efficienti,
- ✓ Sono tecnicamente fattibili,
- ✓ Sono economicamente sostenibili.

1. Analisi statistica del database,
2. Esperienza tecnica,
3. Uso di KPI (tecnici, economici e avanzati)



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Processo di selezione delle "Good Practices"

2.909 DATABASE RECORDS

Analisi statistica

Classifica basata sui KPIs

Esperienza ingegneristica

157 Buone Pratiche

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Library: "Best Practices" & "Good Practices"

Sector	N° Best Practices	N° Good Practices	Good Practices = Best Practices
Food and Beverage	96	24	3
Coke and Petrochemical	33	11	2
Glass	59	12	8
Cement	56	16	4
Ceramic	24	8	1
Aluminium	18	7	0
Copper	24	3	0
Iron and Steel	125	34	4
Chemical	51	10	0
Pulp and Paper	103	34	14
Machinery	26	10	0
Total	615	149	36

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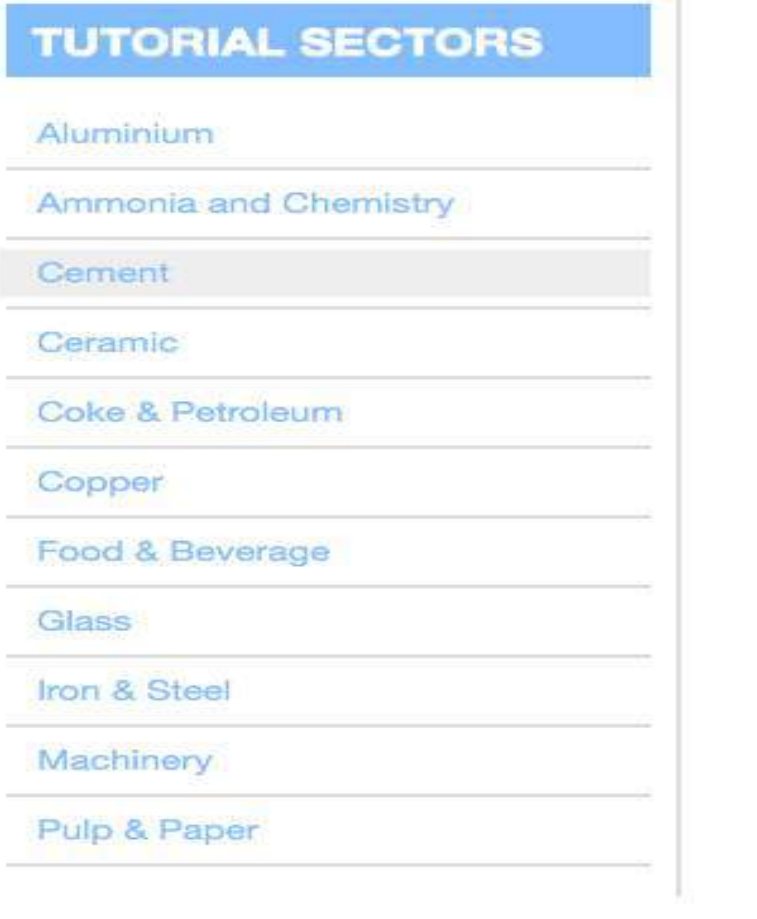
Navighiamo sulla Piattaforma

http://www.eumerci-portal.eu/web/guest/library/tutorial



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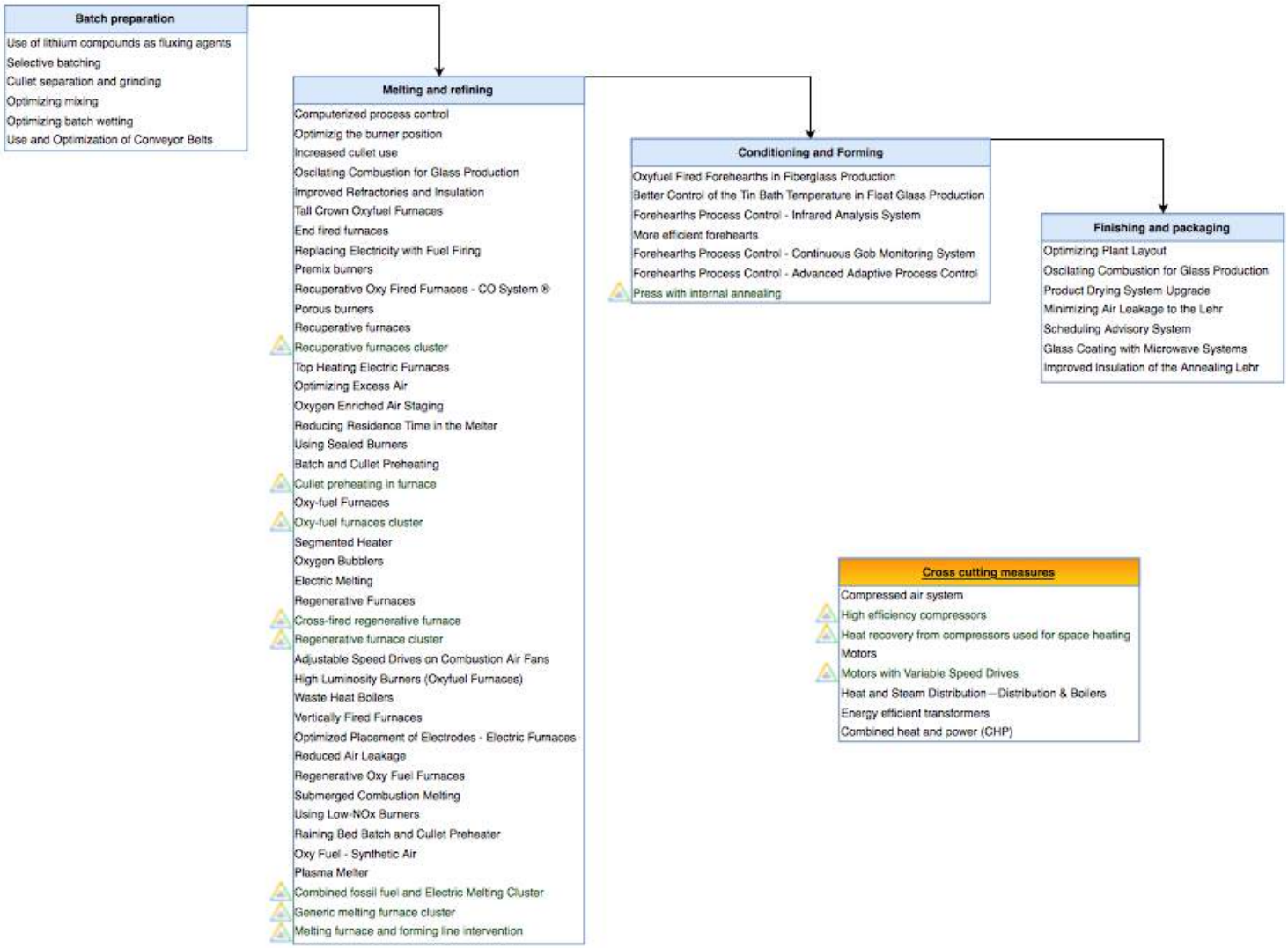
Esempio di schematics



Esempio di una "Good Practice"

GOOD PRACTICES OF IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES IN INDUSTRY

SHEET No 116

Title: Efficient potato sorting system
Sector: Food and Beverages (10, 11)
Process: reception and material preparation
Sub-Process Offered: sorting/selection, classification, cleaning and treatment
System Technology: optical sorting system
01 Measure description
Damages and dark spots on the potatoes are detected by an optical sorting system and removed by compressed air from the process. In this process, small damaged potatoes are completely sorted out and not returned to the process. In the course of the measure, a new sorting system is installed, which also identifies the damaged potatoes by an optical sensor, but cuts out the defective areas and leaves the remaining part of the potato in the process. The conversion not only saves raw material, which leads to an increased product yield, but also energy savings. Reduced use of raw material requires less heat for steam peeling (saturated steam), reducing natural gas consumption and compressed air requirements.
Sketch – Pictures
(see below)
Details on technology
One of the major components of a food processing plant is separating good food products from bad ones. Machine vision systems have automated this crucial process step. These machines, called sorters, typically accelerate product to a high speed and inspect the product via high speed cameras. The imaged data is analyzed real time, determining what's a product and what isn't and then whether a product passes various criterion. If a chunk of product does not, it is removed from the product stream, typically by blasting it out of the product stream using high pressure air. The system to remove the defect fries consist of two components: Vegtos and ADRs. Vegtos sort the fries (good or bad) and ADRs actually attempt to remove the defect from the fly. The Automated Defect Remover (ADR) is a machine specialized for the fry sorting industry in particular. Rather than just throw away a fry because it had a little defect on it, the defective portion of the fry is cut out ("nubbins") and are mechanically removed from the product stream.

Energy saving
66.2 t/a
Reference baseline
n/a
Monitoring and measurements
saving calculations are derived of the national audit report and rely on the saving calculation of the energy auditor.
Other Key Performance Indicators

Performance indicator	A/A
Energy Consumption Improvement (%)	A/A
Energy Intensity - Consumption reduction per unit product (kwh/t)	0.43
Pay back time (years)	13.8
Cumulative Cash Flow (€)	-526,174
Share of Project Cost Subsidized	4%
Cost of Carbon Savings (€/tonCO2)	1,201
Cost of Energy Savings (€/kw)	1,089
Renewable Energy Use (MWh) (%)	0%

Costs of Implementation
662,000 €
Payback time
13.8 y
Reference scheme (e.g. white certificates)
National Support Scheme
Subsidies
Subsidies were received, approximately 10 30% Euro

Measures identified through external audit (Art.8 EED)
Hot potatoes
Occurrence in the energy data set
Unique measure
Occurrence in different countries
Unique measure
Applicability in other sectors
This process can be adapted and expected to other sectors, that use such kind of sorting systems

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Esempio di una "Best Practice"

BEST PRACTICES OF IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES IN INDUSTRY

Food&Beverage (NACE 10-11) - "BEST PRACTICE" n° 77

Title: *Fiber dewatering*
Sector *Food and beverage (10-11)*
Process *Starch manufacturing*
Sub-Process (Phase) *Size reduction processes, mixing and mold*
System Technology *Cutting, slicing, chopping, pulping, grinding and pressing*
EE Measure description Single screw presses are currently used almost exclusively to mechanically dewater fiber, though twin screw presses are available. Fiber enters each of the presses with an 80 to 90% moisture content and leaves the screw process with about 60%. Each has a recommended maintenance period of once per year. Capacity for single screw presses is 20,000 to 75,000 bu/day using 40 to 125 HP. Twin screw press capacity is less on both accounts, just 13,333 to 40,000 bu/day, using 50- 150 HP. Twin roll presses and solid bowl centrifuges have also been used.
Sketch – Pictures
Details on technology and process
Estimated savings, additional benefits, replicability and recommendations The British Sugar Beet Factory at Wissington (UK) operates six presses and three rotary dryers to dry its pulp. Water is expelled from wet beet pulp by a mechanical screw press at 8.69 kg/s, consuming energy at a rate of 23 kJ/kg of water (10 Btu/lbs). Then the dryers remove 6.88 kg/s, consuming energy at a rate of 2,907 kJ/kg of water (1,250 Btu/lbs). Using mechanical dewatering saved 55.8% in primary energy use. Applicable only to ethanol-producing plants.
Reference list • Energy Efficiency Improvement and Cost Saving Opportunities for the Corn Wet Milling Industry - An ENERGY STAR Guide for Energy and Plant Managers

Cross- cutting technology

BEST PRACTICES OF IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES IN INDUSTRY

Cross-cutting technologies

The cross-cutting technologies are special technologies or measures that can be adopted by several sectors. Many industrial sectors, for example, have fans or pumps where you can install an inverter, the illumination is a service that basically exists everywhere and allow these sectors to install LED. *A non-exhaustive list of these measures is: CHP, standard and condensing economiser, multiple effect evaporator, advanced process control, gas turbine retrofit, compressed air system, energy efficient transformers and many others.*
Sector *Mostly all the industrial sectors*
Reference list You can find a lot of information about these "cross cutting technologies" looking for them on internet. Anyway, the following sources represent a very large background to start. • Industrial efficiency technology database (IETD) - www.ietd.iipnetwork.org • Energy efficiency improvement and cost saving opportunities – An Energy Star guide for Energy and Plant Managers - https://www.energystar.gov/buildings/facility-owners-and-managers/industrial-plants/improve/energy-guides • Best Available Techniques (BAT) Reference Document - www.eippcb.jrc.ec.europa.eu/reference/ • ICF international 2015: study on energy efficiency and energy savings potential in industry and on possible policy mechanisms – https://ec.europa.eu/energy/sites/ener/files/documents/151201%20DG%20ENER%20Industrial%20EE%20study%20-%20final%20report_clean_stc.pdf

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Library: Technical Analysis e Country Analysis

Technical Analysis: analisi tecnica dei principali processi che caratterizzano i settori selezionati, con informazioni sul consumo di energia delle diverse fasi.

Country Analysis: raccolta di dati statistici sulla situazione dell'Industria in diversi Paesi Europei, con i principali risultati economici dei settori selezionati.

Possibilità di **scaricare** documenti **PDF** con la **descrizione dettagliata dei processi produttivi** e delle analisi statistiche

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Factsheets

Riassunto dei risultati principali nei settori analizzati, con statistche, presentazioni delle migliori “Good Practices” e raccomandazioni.


Energy efficiency in European industry

Food & Beverage

Introduction to the food & beverage sector

The food and beverage industry covers NACE sector codes C10 (“Manufacture of food products”) and C11 (“Manufacture of beverages”). F&B is the EU’s biggest manufacturing sector in terms of jobs. As the sector is very diverse, there is a high variety of processes in the sector. In terms of overall energy consumption, the key categories in food processing are process heat (29% of energy use) and refrigeration (16%).

GP Mechanical Vapour Recompression for concentration

54% energy savings

Concentration is a process used in food industry in order to reduce the amount of water contained in a product. In the analysed case, the ex-ante configuration is a multiple effect evaporator where the solution is concentrated in a series of stages, each of which uses the steam coming from the previous one, in order to reduce steam consumption.

This process can become more efficient with the introduction of Mechanical Vapour Recompression (MVR), that uses water evaporated from the product and then recompressed to increase the amount of steam. This implies a reduction in steam (produced by burning a fossil fuel) consumption. MVR can be used for example for whey concentration, starch concentration, or milk serum concentration.

The EU-MERCI database contains 12 cases where MVR has been applied in Italy. The measure led on average to energy savings of 54%. Where available, the payback time varied from 0.9 to 9.3 years, indicating that the potential for MVR depends largely on the individual cases. more info

GP Refrigeration systems

The EU-MERCI database contains 93 records of applications related to refrigeration systems. Various of these applications have been identified as ‘good practices’, including a refrigerant under-cooling system, inverter installation, and heat recovery.

The average energy use improvement is 16%, and payback time is in most cases less than a year. Energy efficiency in refrigeration systems is easily replicable. more info

Statistics EU food & beverage

Food and beverage: 10.4% of EU industry energy consumption

- 280,000 enterprises
- 4.9 million people employed
- Gross added value > € 250 billion
- Final energy consumption: 28.4 Mtoe per year (10.4% of EU industry energy consumption)

Based on analysing the food and beverage sectors in Austria, Italy, Poland, and the UK, most energy saving measures/interventions have been implemented in the dairy products subsector. However, this does not directly correspond to the final energy savings: the measured savings per intervention have been much higher in the fruit and vegetable subsector and especially the subsector of grain mill and starch products.

The most widely implemented intervention in the food and beverage sector has been on heat recovery and cooling, covering about 25% of all interventions and resulting in 38% of the energy savings. In this sector, standard measures (including heat recovery) have the highest potential. Process-related measures show less potential, as the processes are usually simpler than in other sectors.

Recommendations: focus on SMEs

More than 95% of companies in the food and beverage sector are SME’s (small and medium-sized enterprises). In most countries, large companies still make up the share of the production value. However, for example in Italy 70% of the production value is by SMEs. Policy-makers therefore have to take into account that complexity of policies and support schemes may act as a barrier for energy savings, as this often hinders small companies from participating. It is recommended that procedures for SMEs are simplified, or that additional support is provided for smaller companies with high energy efficiency.

An example of such a programme that is suitable for SMEs is the Carbon Trust Energy Efficiency Advice programme in the United Kingdom. The ‘Better business guide to energy saving’ shows how to identify measures where energy and cost savings can be easily made with little or no cost. For many SMEs, such low-threshold programmes may be much more useful and therefore more effective than complex EEO schemes or legislative and regulatory measures.

Recommendations: standard measures

The food and beverage sector is a diverse sector with many different subsectors. However, in many cases the processes are relatively simple, and the sector shows high potential for standard measures such as heat recovery and refrigeration systems, that are easily replicable across subsectors.

Because of this, programmes supporting companies with training and knowledge as well as raising awareness on energy efficiency achieve generally good results in the food and beverage sector, also because the costs of interventions are usually low (per unit of energy saved). However, such programmes may only work for a short period, as saturation of the sector with such measures is reached quickly.

GP Use of biomass boilers

A biomass boiler is either a steam or hot water boiler that uses biomass (i.e. wood, animal waste, cooking oil etc.) as fuel. Although biomass boilers are not necessarily more energy efficient than traditional boilers, they are considered low carbon technologies, as the amount of emissions will not exceed the amount absorbed by the biomass over its lifetime.

This measure can be implemented across different applications in the Food & Beverage sector (as well as other sectors) to produce heat for direct use or conversion to electricity. It is also possible to pair the biomass boiler with heat recovery, to recover the flue gas of the boiler and re-use it in the production cycle. more info

GP Use of waste for process heat generation

3.0 years payback time

Many of the by-products used in F&B can be used as fuel for heat generation. The use of waste as a fuel may require additional adjustment of the combustion process. Some wastes can be used with other fuels or can be a substrate for fuel production such as biogas. The waste can be used directly in the combustion process in recuperative boilers fuelled with animal fat and LPG. The new rendering system can be installed together with the intervention. The new rendering system can be installed to increase the thermal energy of the plant.

This practice does not lead to energy savings (only a change of fuels), but can lead to significant emission reductions. Investment in this practice has an average payback time of 3 years. more info

GP Optimisation of vinasse concentration process

Vinasse is a by-product of the yeast production process that can be further processed, through concentration, in order to obtain commercial products for use in zootechnics. The optimisation of the vinasse concentration process was made in 3 actions:

1. before the existing concentrator, a mechanical vapour recompression pre-concentrator has been installed to recover and re-use process vapour after retraining it to a useful pressure;
2. in the pre-concentrator, a pre-heater has been installed in order to increase the vinasse temperature to a value more suitable for the system;
3. at the final stage of the concentration, the re-concentrators (2 single effect evaporators) have been replaced with a triple-effect evaporator that increases efficiency.

The EU-MERCI database contains three cases of this optimisation scenario for the vinasse concentration process. The energy consumption improvement amounted to 36% compared to the reference baseline, based on an investment of about €2,600 per ton of energy savings. The observed payback time was 6.7 years. more info

Policies

In many EU Member States, the food and beverage industry is covered by an energy efficiency obligation (EEO) scheme. EEO schemes could provide stable savings over a longer time, and usually also target more expensive process-related innovations with higher energy savings. However, for SMEs these often complex schemes should be complemented with information and financing schemes. Other policy types focused on the F&B sector include voluntary agreements (such as the sectoral agreement in Wallonia), financial support, fiscal incentives, or requiring energy audits.

The sector shows a strong potential for using renewable energy, including biofuels based on food waste. In order to achieve a reduction of fossil energy use and reduction of CO_2 emissions, schemes could promote renewable energy in addition to energy efficiency measures.

The EU-MERCI project

EU-MERCI is an EU-funded project aimed at supporting the growth of energy efficiency in industry processes. The project shares good practices of energy efficiency measures, helps industry actors to overcome expected barriers and maximise benefits, and supports policy makers. → eumerci.eu

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

Tutti i documenti sono scaricabili in formato .pdf

Surveys

Rappresentazione grafica dei risultati emersi dalla compilazione di un **questionario** sulle misure di Efficienza Energetica in Industria da parte di 3 diversi tipi di stakeholders:

- Aziende,
- ESCO,
- Associazioni di settore.

L'analisi dettagliata dei risultati è disponibile nei documenti scaricabili dal sito http://www.eumerci.eu/ (sezione «Downloads»)

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Questionario e Feedback

http://indagini.fire-italia.org/index.php/survey/index/sid/163323/newtest/Y/lang/it

Qualora riscontraste qualche malfunzionamento o refuso all'interno del portale, potete inviare una mail a info@eumerci.eu, **specificando nell'oggetto "[BUG EIEEP]",** e segnalare all'interno della mail il tipo di problema incontrato (se possibile, allegare anhce la schermata video dove si evince il problema).

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