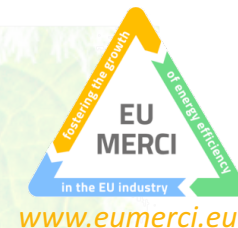


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Fostering the growth of energy efficiency in the EU industry



Scenarios of Energy Efficiency in the industry sector

Wojciech Stańczyk, Paweł Śnitko, KAPE S.A.
Webinar C, 14 December 2017

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Scenarios of EEOs/AM Improvement

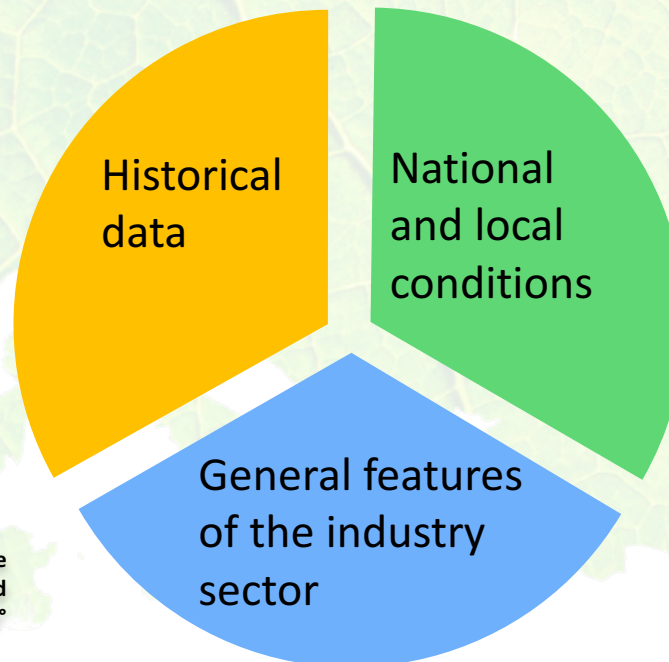


The scenarios present how selected schemes may affect chosen industry sectors in general and can be replicated to different countries taking into account the local characteristic of the sectors.

Why are the scenarios useful?

- To support to policy makers on developing or implementing EEOs or AMs.
- Share knowledge of successful ways of fostering energy efficiency in industry sectors.

How are they made?



Basis of the analysis



Analysed industry sectors:

- Food and Beverage (NACE code 10&11),
- Chemical (NACE code 20),
- Coke and Petroleum (NACE code 19),
- Iron and Steel (part of NACE code 24),
- Pulp and Paper (NACE code 17).

Analysed energy efficiency supporting schemes:

Austrian environment protection schemes:

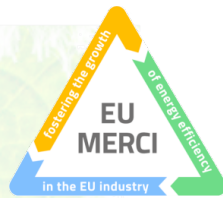
- Financial subsidy programme by Kommunalkredit Public Consulting [KPC] (2011 - 2015),
- Training programme by klimaaktiv (2008-2016),

Italian White Certificate Mechanism (2004-2016),

Polish White Certificate Scheme (2011-2015),

UK Carbon Trust Energy Efficiency Advice (2005-2010).

Methodology of the analysis – Brief description



Methodology

***Timeframe** – first five years of operation of the scheme

Quantitative analysis

KPI based quantitative analysis.

5 KPIs chosen to refer to energy, economy from the market perspective as well as from the policymaker's perspective.

5 KPIs combined in one KPI general [0-1]

Qualitative analysis

In-depth analysis of the country condition and identifying reasons behind the KPI values

Quantitative analysis outcomes



Industry	EE scheme	KPI_General	Industry	EE scheme	KPI_General
Chemical	klimaaktiv	0.59	Food and Beverage	KPC	0.82
	Polish White Certificate	0.57		CBT Energy Efficiency Advice	0.72
	CBT Energy Efficiency Advice	0.56		Polish White Certificate	0.59
	KPC	0.47		Italian White Certificate	0.57
	Italian White Certificate	0.4		klimaaktiv	0.53
Iron and Steel	Italian White Certificate	-	Pulp and Paper	CBT Energy Efficiency Advice	0.88
	CBT Energy Efficiency Advice	0.6		KPC	0.76
	Polish White Certificate	0.5		Italian White Certificate	0.7
	klimaaktiv	0.49		klimaaktiv	0.59
	KPC	0.43		Polish White Certificate	0.57
Coke and Petroleum	Polish White Certificate	0.42			
	Italian White Certificate	0.39			
	CBT Energy Efficiency Advice	-			



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Conclusions and lessons learned – Food and Beverage



Main features of the sector:

- Responds well to many supporting schemes
- Shows high potential for Energy savings from common replicable technologies such as: heat recovery, efficient refrigeration systems, CHP etc.
- High potential for Energy savings in SMEs

Lessons learned for the sector:

- Simplify the schemes to better encourage SMEs to participate in the schemes
- Training and knowledge sharing schemes efficiently support common measures and could provide high energy savings within short period of time
- High potential for biofuels and RDF use, which can be utilised with schemes focusing not only energy efficiency but also environment protection

Conclusions and lessons learned – Pulp and Paper



Main features of the sector:

- Responds well to many supporting schemes
- Different market structure in each country
- High potential of energy savings in the main production processes in the sub-branch 17.1
- High potential of energy savings in common measures in sub-branch 17.2
- Relatively low implementation cost of energy efficiency measures.

Lessons learned for the sector:

- Energy efficiency potential usually follows the market structure
- Training and knowledge sharing schemes can efficiently utilise the energy efficiency potential in common measures,
- EEOS such as White Certificate Schemes better utilise the potential in strictly process related measures.



Conclusions and lessons learned – Chemical



Main features of the sector:

- Responds to Energy efficiency schemes not as well as previously discussed sectors
- Usually dominated by either large or medium enterprises
- There is usually one largest sub-branch – 20.1, which shows highest potential for energy efficiency measures,
- High complexity and variety of production processes and products,
- Many common measures implemented, however highest energy savings are achieved by process specific measures
- Relatively high average cost of measures

Lessons learned for the sector:

- The energy efficiency scheme should focus on medium and large enterprises as there is the highest energy efficiency potential,
- The EEOs such as White Certificate Schemes support large enterprises well. Medium enterprises tend to participate in the schemes with a delay.

Conclusions and lessons learned – Coke and Petroleum



Main features of the sector:

- Very hard to stimulate with all schemes
- Dominated by large enterprises
- Relatively high share in countries' energy consumption
- Very few companies (large dominate the market)
- Most commonly consumed fuels come from production processes of the sector

Lessons learned for the sector:

- The knowledge sharing and training programmes usually result in small energy savings
- The energy efficiency potential is mainly in strictly process related measures, which is utilised best by EEOs;
- Direct support to main companies working in the sector may bring better results.



Conclusions and lessons learned – Iron and Steel



Main features of the sector:

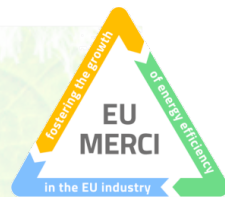
- Difficult to stimulate by most schemes
- Technical transformation
- Dominated by large enterprises
- Usually one of the main energy consumers in the country
- Highest energy efficiency potential in main production processes
- Modernisations providing highest energy savings have high implementation costs

Lessons learned for the sector:

- The EEOS such as White Certificates can achieve very high energy savings and utilise the huge potential in energy efficient process technologies very well
- There is a limited potential for Renewable Energy Sources
- The energy savings supported by the scheme would be much lower if the technical potential has already been utilised during the transformation period.
- The largest energy interventions can affect the production process also improving the quality of the product, however may limit the production as there may be a need to stop the production process temporarily.



General conclusions/Wrapup

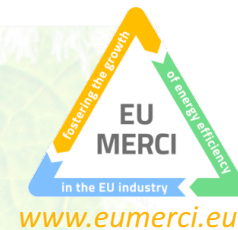


- The main goals of the energy efficiency schemes and the ways of achieving them should be monitored and adjusted constantly to the needs of the industry sectors in which they operate.
- The knowledge sharing schemes or programmes subsidizing the audits can successfully stimulate the energy efficiency projects with a low public cost. They work best in sectors with high potential for common energy efficiency measures.
- In the sectors with high share of SME it is important to enable an easy way to participate in the scheme for those enterprises to utilise their energy efficiency potential
- To allow for conscious scheme adjustment and modification, data collection is crucial. The process of gathering the data from the energy efficiency schemes should start from the beginning of the schemes to enable a better analysis of the outcomes. Sufficiently large amounts of data should be collected to allow for improvement of the scheme.
- EEOS such as White Certificate Schemes often require more time to be adjusted to the specificity of the sector and may require more time to reach their full potential.

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