FIRECE Final Event, 16th September 2020

Analysis of some public investments addressed to suport indutry low carbon transition

FIRECE CE1131 | RDA ARLEG | Iwona Hajduk

THE GOAL OF PILOT ACTION

To assess the public investments to support Industry low carbon transition through the analysis of projects (investment plans) elaborated by SMEs on energy efficiency and renewable energy sources to verify their quality and quantity contribute to achieve the Energy Plans' targets.

REGIONS COVERED BY THE ANALYSIS

INVOLVED PROJECT PARTNERS REGIONS

Pilot Action was carried out

in five partner countries:

- *Italy (LP),*
- *Austria*
- *Germany*
- *Poland*
- *Czech Republic*

using the Project Level IT Tool

developed by ENVIROS and

adapted to national conditions

TARGET GROUPS
AND FINANCIAL INSTRUMENTS INVOLVED

SMALL AND MEDIUM ENTERPRISES which made investmens aimed at reducing energy consumption, supported by public funding in a form of grants, loans under ERDF Operation Programmes 2007-2013 and 2014-2020, supplemented by own resources.

In each of the partner countries participating in the assessment 8 projects implemented by SMEs were evaluated using the IT Tool

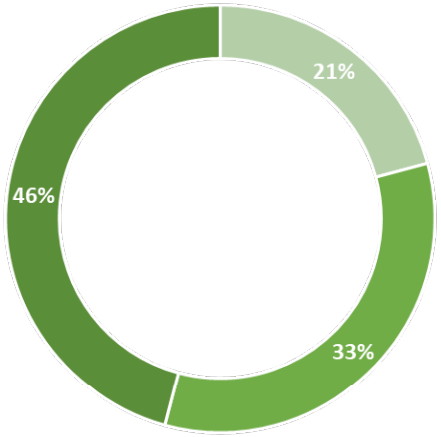
The total number of SMEs analysed = 32 SME's + set of data of in total 176 SME's project

STAKEHOLDERS INVOLVED: Regional Authorities, Financial and Business Intermediaries

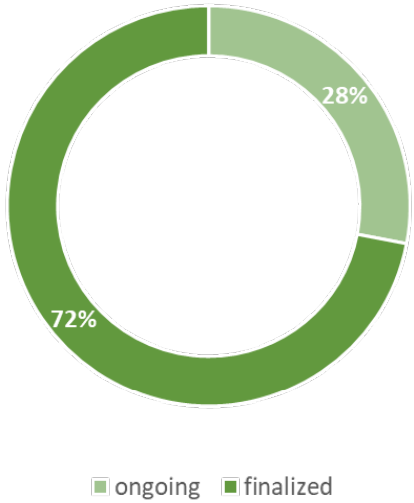
TYPE OF SME's PROJECTS ANALYSED

SME's investment projects selected and analysed

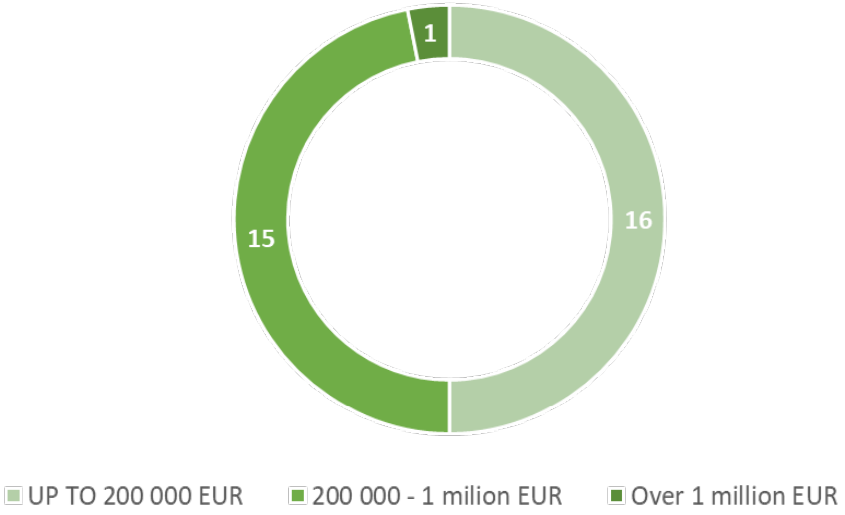
SIZE OF A COMPANY



TYPE OF PROJECTS



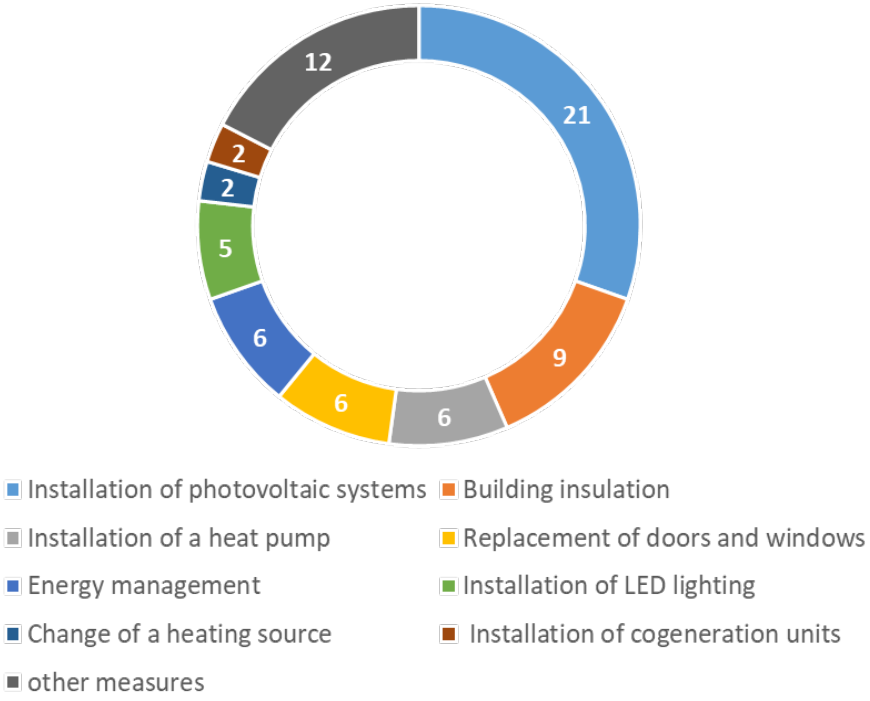
SIZE OF AN INVESTMENT



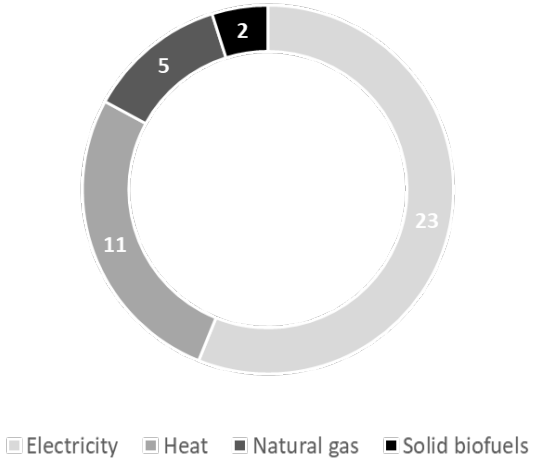
TYPE OF EE MEASURES ANALYSED

SME's investment projects selected and analysed

APPLIED ENERGY EFFICIENCY MEASURES ANALYSED



ENERGY CARRIERS SAVED



SUMMARY OF THE RESULTS OBTAINED FROM THE IT TOOL CALCULATION

The following table shows the total data available from the 4 countries participating in the pilot action.

Country	Total investment	Expected savings in MWh	Savings in kg of CO2eq	Cost of MWh	Cost of kg CO2eq
Italy	1 205 217,25 €	1 190,26	632 025,405	1 012,57 €	1,91 €
Czech Republic	4 743 305,00 €	4758	2 061 260,73	996,91 €	2,30 €
Austria	1 277 250,00 €	1 093,35	56 924,41	1 168,20 €	22,44 €
Poland	2 272 230,00 €	3004	10 14 893,55	756,40 €	2,24 €

- The very high cost of achieving the emission savings of a kilogram CO2 equivalent in Austria is 10 times higher than in other countries. This is due to the structure of energy production in Austria based on a 70% share of hydroelectric power plants in electricity generation

- Low cost of energy savings in Poland at 70% of the average cost in the analysed countries. This results from the structure of the analysed project in Poland based mainly on building insulation.

SUMMARY OF THE RESULTS OBTAINED FROM THE IT TOOL CALCULATION

The IT tool gives the opportunity to determine CO2 savings and compare with other project validation factors - for example MWh savings.

A summary of country CO2 /MWh ratio is shown in the table below

Country	Expected savings in MWh	Savings in kg of CO2eq	kg of CO2 eq / MWh
Italy	1190,26	632025,41	531
Czech Republic	4758	2061260,73	433
Austria	1093,35	56924,41	52
Poland	3004	1014893,55	338

The IT tool provides:

- a quick assessment of simple projects based on different energy sources
- an easy way to compare complex projects using different energy sources
- a collective assessment of the effectiveness of a set of complex projects

SUMMARY OF THE RESULTS OBTAINED FROM THE IT TOOL CALCULATION

The applied measures in the partners countries shown that the most common measure chosen by SME's was installation of photovoltaic system.

A summary of the PV projects is shown in the table below

Country	Type of Economy activity	Investment	Expected savings in MWh	Savings in kg of CO2eq	Cost of MWh	Cost of kg CO2eq	Simple return period
Italy	N. d.	83 100,00 €	79,13	42 131,22	1 050,17 €	0,51 €	5
	N. d.	196 250,00 €	348,23	185 408,23	563,56 €	0,94 €	3
	N. d.	40 100,00 €	39,13	20 834,00	1 024,79 €	0,52 €	5
	N. d.	84 275,10 €	118,05	62 853,41	713,89 €	0,75 €	4
	N. d.	290 138,00 €	104,88	55 838,64	2 766,38 €	0,19 €	14
	N. d.	202 750,00 €	152,77	81 339,39	1 327,16 €	0,40 €	7
	N. d.	152 750,00 €	203,56	108 381,53	750,39 €	0,71 €	4
	N. d.	155 844,15 €	144,51	76 941,52	1 078,43 €	0,49 €	5
Czech Republic	Manufacturing of machinery for quarrying	89 451,00 €	55	48 388,64	1 626,38 €	0,54 €	17
	Processing of plastics (injection moulding)	442 882,00 €	323,4	284 525,26	1 369,46 €	0,64 €	20
	Construction and buildings	225 700,00 €	143	125 810,49	1 578,32 €	0,56 €	26
	Logistics and storage of frozen and chilled foodstuffs	85 463,00 €	85	74 782,46	1 005,45 €	0,88 €	16
Austria	Technical engineering	295 450,00 €	160	8 754,88	1 846,56 €	0,03 €	22
	Food-processing	85 000,00 €	257,2	7 240,37	330,48 €	0,09 €	8
Average		175 510,00 €	158	84516,00	1 110,82 €	0,48 €	11

CONCLUSION OF THE INDUSTRIAL SECTOR ENERGY EFFICIENCY PROJECTS ASSESSMENT ANALYSIS

In order to assess an impact of the different types of instruments and different shares of financial support on the economic and environmental parameters of the projects, different alternative scenarios were developed and analysed in some partner countries:

1. Subsidy + loan = the use of financial instruments (soft loans) instead of own resources
2. Soft loan + own resources = no use of subsidies

Conclusions

- **All the projects have the ability to generate energy and GHG savings, and so to contribute to the goals of national/region energy plans.** However, to make the projects also economically viable, a certain level of a subsidy component seems to be necessary to be involved into the financing schemes.

- **The use of financial instrument (subsidies)** instead of own resources for financing of the project **can increase its NPV and decrease the CF breakpoint**.

- In turn, the use of subsidized interest rate loans allows companies to avoid eroding their own capital, which would have to face liquidity problems, making the intervention economically sustainable and advantageous.

The Tool was developed on basic calculations with the aim to provide a calculation of energy, environmental and economic performance of the energy-related projects, and to allow the user to simulate and compare different possibilities of financing.

User friendliness of the IT Tool

- Easy way of inserting of the SME's input data
- The tool includes internal control mechanisms that prevent data to be inserted in a wrong format
- For data on energy savings and energy prices, several units can be used (kWh, MWh, GWh, MJ, GJ, TJ), and they are automatically recalculated to he common unit selected by the user
- The outputs are displayed also in charts

The tool can certainly be used at national level, but in-depth analyses are required.

The use of IT Tool to compare the way how funds are spent in different countries in comparable areas gives great opportunities for analysis to assess the impact and effectiveness of financial instruments implemented on the national level on the obtained environmental effects.

THANK YOU

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