



D.T1.4.2

Quality criteria to monitor investments on energy by industry

WP T1: Activity 1.4 Analysis of investments for industry low carbon energy transition

According to the analysis, identification of quality and quantity criteria to monitor investments by industry is provided. The criteria consider Regional Energy Plans, Operational Programmes and SEFF Programmes and capitalise best practices at national and EU level.

Prepared by	ENVIROS, s.r.o. Pavel Ruzicka, Katerina Maneva Mitrovikj
Project number and acronym	CE 1131 FIRECE
Lead partner	Chamber of Commerce of Venice Rovigo Delta-Lagunare
Address	Dykova 53/10, Praha, Czech Republic
Email	pavel.ruzicka@enviros.cz
Date, venue	29th June 2018, Prague



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Introduction

The FIRECE project aims to contribute to the achievements of targeted results of Regional Energy Plans through an increased use of (innovative) financial instruments in the Central Europe area. The particular focus is on public support to industry to invest into energy efficiency and renewable energy sources.

This report follows the analysis of financial support mechanisms for energy efficiency and use of renewable energy sources in industry (D.T1.4.1) and identifies quality and quantity criteria to monitor investments on energy by industry. The criteria consider Regional Energy Plans and capitalise best practices at national and EU level.

1 Key Rating Quality Criteria

Key Rating Criteria (indicators) to be fulfilled in order to have successfully finished Programme to support energy efficiency in Industrial sector:

- Effective ratio of the investment to the reduction of CO₂ emissions in kg per year;
- Absolute amount of energy savings (thermal or electrical) compared to the original state (values);
- Reduce the energy performance of industrial buildings and increase the use of renewable energy sources;
- Achieve a high energy standard for new industrial buildings.

In the following table list of quality criteria for Programme monitoring is presented. In chapter 2.1, list of indicators is described in more detail.



Table 1: Set of Quality Criteria

Set of Quality Criteria (Indicators)	
Programme/Project	Financial
Share of energy from renewable sources in gross final energy consumption	Overall eligible financial resources
Net final energy consumption	Number of companies receiving support
System Average Interruption Frequency Index	Number of projects supported
System Average Interruption Duration Index	Number of successfully implemented projects
Introduction and application of new low carbon technologies in industry	Savings at current energy prices
Production from primary energy sources	Value of produced renewable energy at current prices
Floor area of industrial buildings in the passive energy standard	
Energy savings in industrial buildings	
Amount of particulate matter (PM) emissions from production	
Reducing final energy consumption in industrial buildings	

Source: Content developed by the project partners



2 Programme and Project indicators

2.1 List of Programme indicators for specific goals

Set of Programme indicators can be set in order to perform quality monitoring analysis. Programme indicators are mainly considered to be of technical nature, since they are more focused on parameters which give results based on input and output data.

2.1.1 Share of energy from renewable sources in gross final energy consumption in manufacturing industries

This indicator is represented in percent (% or 1000 toe). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is Eurostat, Statistical Directorate-General of the European Commission located in Luxembourg or National Statistical Offices. This indicator is reported annually to the relevant body which is in charge of the Programme (e.g. relevant national Ministry).

2.1.2 Net final energy savings

This indicator is represented in terajoules (TJ). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is Eurostat, Statistical Directorate-General of the European Commission located in Luxembourg, National Statistical Offices or relevant Ministries. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.3 SAIFI - System Average Interruption Frequency Index

This indicator is represented as a number of total interruptions of electric supply to customers per year. Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values are certified electric grid operators in each country. This indicator is reported annually to the relevant body which is in charge of the Programme.



2.1.4 SAIDI - System Average Interruption Duration Index

This indicator is represented as duration of total interruptions of electric supply to customers per year. Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values are certified electric grid operators in each country. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.5 Introduction and application of new low carbon technologies in industry

This indicator is represented as a number of installed new technologies (per piece) which will contribute to low carbon policy of each country. Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or other governmental body. This indicator is reported continuously during the year to the relevant body which is in charge of the Programme.

2.1.6 Production from primary energy sources

Primary energy sources are the sum of domestic or imported energy sources expressed in energy units. Primary heat means heat produced in nuclear reactors. Primary electricity is electricity produced in hydroelectric power plants¹, wind and photovoltaic power plants plus the import and export balance of electricity. This indicator is represented in terajoules (TJ). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or National Statistical Office. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.7 Floor area of industrial buildings in the passive energy standard

Buildings in passive energy standard are those buildings that in addition to the specific heat demand for heating, which is 15 kWh / m²a this time, other requirements are applied such as non-renewable primary energy, the

¹ excluding pumped-storage hydroelectric power stations



impermeability of the building envelope, or the maximum frequency of exceeding the maximum allowable indoor air temperature during the summer period. This indicator is represented in meters per square (m²). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or National Statistical Office. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.8 Energy savings in industrial and manufacturing buildings

This indicator is represented in gigajoules or petajoules (GJ or PJ). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or National Statistical Office. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.9 Amount of particulate matter (PM) emissions from production

This indicator is represented by tonnes per year (t/y). Two values are compared; the first one is the original value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or National Statistical Office. This indicator is reported annually to the relevant body which is in charge of the Programme.

2.1.10 Reducing final energy consumption in industrial buildings

This indicator is represented by gigajoules per year. Two values are compared; the first one is the milestone value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant Ministry or National Statistical Office. This indicator is reported annually to the relevant body which is in charge of the Programme.



2.2 Mandatory data

2.2.1 Mandatory data for Programme evaluation

Mandatory data for verification of indicator effectiveness:

Indicator name:

Unit: %, TJ, GJ, t, m², etc.

Industrial sector: agriculture, manufacture, etc.

Region category: well developed, less developed

Programme start: year

Programme end: year

Original / Baseline value: available date/value at Programme start

Target value: measured date/value at Programme end

Data source: relevant organization, statistical office

Reporting frequency: monthly, annually, continuously

2.2.2 Mandatory data for RES projects in industrial sector

To monitor one specific project which introduces renewable energy sources into industrial processes, following indicators are necessary (indicators marked in bold are to be fulfilled by Programme monitoring team):

- Total investment cost (e.g. EUR):
- Requested grant/loan (e.g. EUR):
- **Electricity savings (comparison of start and end value) in MWh/year:**
- **Heat savings (comparison of start and end value) in GJ/year:**
- Savings at current prices (e.g. EUR/year):
- Total savings (%):
- Renewable capacity (comparison of start and end value) in MW:
- Value of produced renewable energy at current prices (e.g. EUR/year):
- CO₂ emission reduction (tones of CO₂/year):
- Primary energy savings (MWh/year):



In case of credit line or loan please include data such as:

- Simple pay-back period (years):
- Net present value (e.g. EUR):
- Internal rate of return (%):
- Cost savings (e.g. EUR):

3 Financial indicators

Financial indicator is one of the key indicators which can easily show the amount of withdrawn funding per Programme period. It shall also represent how much energy savings was achieved by the financial unit per energy unit (e.g. 1 EUR/year = ... kWh/year). As on the most complex indicator, it can be divided into number of indicators, such as Project Life Coverage Ratio, Payback period, Net Present Value, etc. General idea is to obtain “money for value” per implemented project.

3.1.1 Overall eligible financial resources

This indicator is represented in local or union currency (CZK, EUR, HRK, etc.). The volume of total eligible expenditure sent to the certification body's accounting system and certified by the certifying authority. Two values are compared; the first one is the milestone value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant implementing organization or other relevant institution (e.g. financial institutions). This indicator is reported annually to the relevant body which is in charge of the Programme/Credit line. In order to obtain full picture in regards with financial situation of the project and funds disbursement within the Programme, special attention has to be paid on following indicators:

- Net Present Value (e.g. EUR);
- Simple Payback Period (e.g. years);
- Interest rate (%);
- Cost savings (e.g. EUR);
- Number of supported business (more in chapter 3.1.2).



3.1.2 Number of companies receiving support / Number of supported projects

This indicator is represented as a total number of companies which receive financial support (grant, loan, etc.). Number of supported companies with completed physical realization, achieving the objectives of the projects. Two values are compared; the first one is the milestone value (the one when Programme started or when last measured data were available) and the second one is target value (the one when Programme finishes). Data source for input values is relevant implementing organization or other relevant institution (e.g. financial institutions). This indicator is reported annually to the relevant body which is in charge of the Programme/Credit line.



Annexes

Annex I Country reports

The Annex I provides a detailed overview of indicators used in financial support programmes in partner countries/regions.



Annex I

Country reports

The Annex I provides a detailed overview of indicators used in financial support programmes in partner countries/regions.

Czech Republic - Praha

One of the most common ways to support energy efficiency on regional level is direct subsidies from the either national or regional funds. National and regional governments publicly announce a Call which contains specific requirements for interested parties (legal persons, SMEs, industry, etc.).

OP Enterprise and Innovation for Competitiveness

Operational Programme Enterprise and Innovation for Competitiveness for period 2014 - 2020 provides the possibility of obtaining grants in four areas of support (priority axis), and one of them is priority axis No. 3 Efficient management of energy.

Entities which can apply for the support are Small, Medium and Large Enterprises with Supported Legal Form: Individuals under the Trade Register Act, Foundation, Endowment Fund, Association, Public Company, Joint Stock Company, Limited Liability Company, Limited Liability Company, Cooperative (excluding Housing Associations), a co-operative company, a natural person, a foreign company, a natural person, a foreign company or a natural person. Entities can operate in the areas of processing industry, agriculture, mining and quarrying, production and distribution of energy, water supply, waste management, sanitation, construction; wholesale and retail, transport and storage, information and communication activities, real estate activities (renting and administration), scientific and technical activities, administrative and support activities (e.g. travel agencies, employment related activities, security and search activities, administrative and other business support activities).

Each priority axis has specific goals to be achieved during subsidy period. Specific goals then contain list of indicators which have to be respected and fulfilled in order to obtain full amount of the grant/subsidy. Program-specific performance indicators according to a specific target (for ERDF and Cohesion Fund).

Table 2: List of indicators of the OP Enterprising and Innovation for Competitiveness - Czech Republic

Indicator	Unit	Region category	Original value	Base year	Target value	Data source	Reporting frequency
Share of energy from renewable sources in gross final energy consumption	%	Less developed regions	11,2	2012	13,0	Eurostat	annually
Net final energy consumption	TJ	Less developed regions	434 000	2012	455 000	MPO, ČSÚ	annually
SAIFI ²	Number of interruptions per year	Less developed regions	2,76	2013	1,93	Electric grid operators	annually
SAIDI ³	Length of interruptions per year	Less developed regions	394,44	2013	230	Electric grid operators	annually

² System Average Interruption Frequency Index

³ System Average Interruption Duration Index

Table 3: List of indicators of the OP Enterprising and Innovation for Competitiveness - Czech Republic

Indicator	Unit	Region category	Original value	Base year	Target value	Data source	Reporting frequency
Applied innovative low carbon technology	Technology	Less developed regions	0	2014	70	Ž/P	continuously
Primary energy sources	TJ	Less developed regions	380 000	2012	378 000	MPO, ČSÚ	annually
Transformation power (backbone and distribution grid)	MVA	Less developed regions	21 680	2013	23 430	Transmission system operator	continuously



Performance indicators framework of the priority axis No. 3 - Effective energy management, energy infrastructure development, and renewable energy sources, supporting the deployment of new technologies in the area energy and secondary raw materials.

Table 4: List of financial and output indicators OP Environment - Czech Republic

Indicator type	Indicator or key implementation step	Unit	Fund	Region category	Milestone (2018)	Target value (2023)	Indicator description
Financial	Overall eligible certified financial resources	EUR	ERDF	Less developed regions	196 000 000	1 217 129 658	The volume of total eligible expenditure sent to the certification body's accounting system and certified by the certifying authority.
Output	Number of companies receiving support	Companies	ERDF	Less developed regions	270	3 475	Number of supported companies with completed physical realization, achieving the objectives of the projects.



OP Environment

Operational Programme for Environment for period 2014 - 2020 provides the possibility of obtaining grants in five areas of support (priority axis), and one of them is priority axis No. 5 Energy Savings. There are two specific goals which need to be achieved:

- Reduce the energy performance of public buildings and increase the use of renewable energy sources;
- Achieve a high energy standard for new public buildings.

Common indicators and indicators specific to each program (Article 50 (2) of Regulation (EU) No 1303/2013) to be followed in order to fulfill project criteria for promoting energy efficiency, smart energy management systems and the use of renewable energy in public infrastructures, including public buildings and housing.

Table 5: List of technical indicators in OP Environment - Czech Republic

Indicator	Unit	Region category	Original value	Base year	Target value (2023)	2016	Note
Floor area of public buildings in the passive energy standard	m ²	Less developed regions	12 209 000	2013	216 000 000	12 712 000	
Energy savings in public buildings	GJ	Less developed regions	2 656 000	2013	47 000 000	2 656 000	The indicator has not been met in the monitored period, the original value is stated.

Table 6: List of technical indicators in OP Environment - Czech Republic

Indicator	Unit	Region category	Original value	Base year	Target value (2023)	2016	Note
Amount of PM 10 emissions from the tertiary sector	t / year	Less developed regions	276 000	2011	266 000	225 000	Statistical indicator - values for 2016 were not available. The issue of the reporting of indicators was discussed with the European Commission on the basis of comments to previous Annual Report 2015. EC has promised a methodical standpoint on this issue.
Amount of PM 2,5 emissions from the tertiary sector	t / year	Less developed regions	1 364 000	2011	1 312 000	1 593 000	Statistical indicator - values for 2016 were not available. The issue of the reporting of indicators was discussed with the European Commission on the basis

									of comments to previous Annual Report 2015. EC has promised a methodical standpoint on this issue.
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Milestones and targets set out in the performance framework (Article 50 (2) of Regulation (EU) No 1303/2013) - presented in the annual implementation reports from 2017.

Table 7: Information on milestones and targets set in the performance framework

Indicator type	Indicator or key implementation step	Unit	Fund	Milestone (2018)	Target value (2023)	Indicator description
Output	Reducing final energy consumption in industrial buildings	GJ / year	Cohesion Fund	500 000	2 000 000	The volume of total eligible expenditure sent to the certification body's accounting system and certified by the certifying authority.
Output	Number of supported projects of energy efficient construction	Projects	ERDF	6	25	Number of supported companies with completed physical realization, achieving the objectives of the projects.



Financial		CZK	Cohesion fund	93 638 525	599 561 120	
Financial		CZK	ERDF	3 714 745	23 529 412	



Regional Energy Policy of the City of Prague

Newly developed Regional Energy Policy of the City of Prague defined certain number of measures which need to be implemented in order to achieve greater energy savings in the Czech capital.

Table 8: Indicators to monitor the implementation of the measure are divided into each individual measure

Measures	Indicators to monitor the implementation of measures
Application of "green shopping" for selected products for the needs of organizations of CITY OF PRAGUE	The share of public procurement involving environmental rules when buying relevant equipment on the total number of public procurement
Improvement of the efficiency of the distribution network forms of energy (electricity, gas, heat)	% reduction in energy losses Fuels and energy savings (t / GJ / MWh)
Support for the above-the efficient new construction and reconstruction (other investors than the city)	The number of newly built nearly zero-objects The number of converted objects to objects with nearly zero energy standard The number of certified buildings BREEAM and LEED The difference in energy consumption compared with buildings built according to the current standard requirements. The benefits of the project related to the incurred investment (energy saving, cost saving, saving the emission of pollutants, greenhouse gas emissions savings)
Increasing the efficiency of public transport	The number of vehicles for public transport with eco drive Reduction of specific consumption of energy in transport performance (passenger-kilometre / vehicle-kilometre) The number of refunds, sources of lighting systems Energy saving in public transport Saving the emission of pollutants on public transport Greenhouse gas emissions savings in public transport



<p>Increasing the efficiency of automobile transport</p>	<p>The number of vehicles registered in the territory of Prague with the environmental cars Energy saving in automobile transport Saving the emission of pollutants in automobile transport Savings of greenhouse gas emissions in the automobile transport Energy saving light source in lieu of signalling devices</p>
<p>Improving energy recovery of waste (Waste to energy plant)</p>	<p>The efficiency of the production of electricity and heat in the W2E plant The amount of energy recovered in W2E plant The quantity of heat and electricity The emission of pollutants Greenhouse gas emissions</p>
<p>Improving wastewater treatment and sludge recovery</p>	<p>The quantity of produced biogas Production of useful energy from biogas (in the form of electricity, heat or bio-methane after deduction of own technological consumption) The amount of sewage sludge intended for energy recovery Energy saving on the preparation of drinking and industrial water Saving your own energy consumption WWTP</p>
<p>Support the introduction of alternative low emission sources of electricity and heat</p>	<p>The number of heat pumps and their total installed heat output The number of photovoltaic (PV) and their installed electrical power The number of solar thermal systems and their thermal power installed List of other alternative sources of energy and their installed thermal and electric power The annual heat production heat pumps on the territory The annual production of solar thermal systems that heat Annual electricity production from PV plant The annual production of electricity or heat other</p>



	alternative sources
Measures in case of long-term supply interruption of electric energy or gas supply	The number of seasonal changes in the distribution of stations on the territory of Prague remote supervision The number of times the decentralized energy sources to support the power supply
Reduce emissions of pollutants and greenhouse gas emissions	The number of the replaced defective heat sources Energy savings Reducing the emission of pollutants Reducing of greenhouse gas emissions The production of energy from renewable and alternative sources of energy The number of projects in educational buildings
Cross-cutting support measures to implement ÚEK	The number of training and awareness-raising actions for interested parties
International cooperation	Energy saving Saving the emission of pollutants Savings of greenhouse gas emissions The number of measures in the SECAP
Smart City	The number of projects The number of PR events The number of information brochures and presentations Benefits in the production of energy from RES Benefits in energy savings The number of implemented professionally-educational activities The number of participants in the activities undertaken The expected environmental benefits, direct or indirect The reduction of CO ₂ The number of implemented professionally-educational activities The number of participants in the activities undertaken



Croatia - Jadranska Hrvatska

OP Competitiveness and Cohesion

This Operational Programme promotes energy efficiency and renewable energy use in enterprises and increasing energy efficiency and use of RES in manufacturing industries.

Development of infrastructure for renewable energy sources in manufacturing industries and service sector (tourism and trade) including switch from conventional to alternative (RES) energy such as: installation of solar collectors, heat pumps, and high efficient co-generation.

Implementation of measures for increasing energy efficiency in manufacturing industries and service sector (tourism and trade) including:

- “soft measures”- introduction of systematic energy management, performance of energy audits, control of analyses of energy consumption, preparation of plans for more efficient management of energy, institutional and organisational assessment and proposal for optimising business processes in terms of energy savings;
- Infrastructure investments such as smart metering and physical refurbishment of objects that will contribute to achieving energy efficiency targets, improvement of the currently used technologies, implementation of pilot projects;
- Promotional activities (informational stands, brochures, commercials, spots) and advisory services for business.

Table 9: Example of indicators used in OP Competitiveness and Cohesion in Croatia

Indicator	Unit	Region category	Baseline value	Baseline year	Target value (2023)	Source of data	Reporting
RES in gross final energy consumption in the manufacturing industries	1000 toe	Less developed regions	51.00	2012	56.00	Ministry of Economy	Annually
Energy savings in manufacturing industry	PJ	Less developed regions	1.21	2010	1.91	Ministry of Economy	Annually



The indicators used for savings estimation are:

- Energy savings (in kW or PJ) and CO₂ reduction for each implemented and planned measure which are preferably taken from the Energy Renewal Project documentation or by estimation methods described in the Rulebook which are incorporated in SMIV.
- Increased building Energy Class (e.g. from C to B)
- At the end of the year the realized measures and their savings are compared with the planned and all the data is transferred into SMIV. Note that usually the realised measures are much higher than the planned as at the time of planning not all the sources of funding and the budgets from the stakeholders are known
- If there are measures to save energy by measuring consumption, then their savings are calculated in the manner described in the Ordinance on Systematic energy management in the public sector (Official Gazette 18/2015). In this order of energy saving is determined by the difference in measured energy consumption and reference energy consumption.

Reference consumption selection principles:

- The reference consumption is determined for each measurement point separately.
- If there have been no significant deviations in the consumption of energy or water per metric unit in the past three years, reference consumption is the average consumption over the past three years.
- If there have been significant deviations in the consumption of energy sources or water per metric in the last three years as reference consumption, consumption can be taken in one year or average consumption over the last 5 years of use of the building.

WeBSEFF

WeBSEFF - the Western Balkans Sustainable Financing Facility - is a financing facility under which the European Bank for Reconstruction and Development (EBRD) provides credit lines to partner banks in the Western Balkans to on-lend to businesses and municipalities wanting to invest in energy efficiency and small-scale renewable energy projects. WeBSEFF includes following countries: Croatia, Serbia, Bosnia and Herzegovina and FYR Macedonia.



WeBSEFF is part of the EBRD's Sustainable Energy Financing Facility (SEFF) family. To date, SEFFs have made available EUR 2 billion for financing projects through more than 80 local participating financing institutions in 20 different countries in the world.

WeBSEFF is part of the Regional Energy Efficiency Programme for the Western Balkans (REEPWB). REEPWB uses a combination of financing instruments (such as WeBSEFF), technical assistance and policy support to create a sustainable market for energy efficiency in the region. The programme supports energy efficiency for both private and public sectors.

WeBSEFF, similar as other SEFF Programmes (see SlovSEFF below), predicts that each project under the SEFF programme has number of indicators to be followed, in order to obtain a proper dataset in regards with programme baseline. In this case, project indicators were divided from technical and financial aspects. Some of the most basic indicators are represented in the table below.

Table 10: Basic indicators in SEFF Programme in Western Balkans

Programme / project indicators Technical parameters	Financial indicators
Total energy savings in MWh per year	Net present value in euros
Primary energy savings in MWh per year	Simple payback period in years
Total savings compared to Baseline in %	Cost savings in euros
Annual GHG savings in tones	Number of supported businesses - updated quarterly during Programme period
Reduction of CO ₂ emissions	

Regional programmes

At regional level, the following indicators are also used:

- Number of repayments of loans;
- Number of newly opened businesses/enterprises;
- Amount of production;
- Employment.



Poland - Lubelskie

Regional Operational Programme of Lubelskie Voivodship 2014-2020

Two priority Axis are dealing with energy efficiency measures in industry sector:

- Priority Axis 4 - Environmentally-friendly energy (Measure 4.2. Production of energy from RES in enterprises);
- Priority Axis 5 - Energy Efficiency and Low Emissivity (Measure 5.1. Improving the energy efficiency of enterprises).

Operational Programme focuses on:

- A. generation and distribution of renewable energy (PA 4)
 - (re)construction of the infrastructure used for the production of RES energy;
 - investments in the construction and modernization of heat production units;
 - distributed cogeneration;
- B. energy efficiency and the use of renewable energy in enterprises (PA 5)
 - deep thermal modernization of enterprises;
 - reduction of energy, heat and water losses;
 - (re)construction of RES installations.

In cases of measures 4.2 and 5.1, support is provided only for enterprises.

- Measure 4.2: The subject of the project is significant, i.e. production of energy from RES.
- Measure 5.1: Support cannot be granted to the extent that it is excluded in art. 1 of Regulation 651/2014, art. 3 par. 3 of Regulation 1301/2013 and art. 1 point 1 of the Commission Regulation (EU) No. 1407/2013.

Regional Operational Programme of Lubelskie Voivodship (2014-2020) has divided set of quality criteria into two categories:

- Product - indicator of material progress;
- Result - indicator for final result of the measure.



Table 11 Indicators of material progress and results in regional OP in Poland

Measure	Indicators of material progress (product)	Result indicators
<p>4.2 Production of energy from RES in enterprises</p>	<ol style="list-style-type: none"> 1. Number of units for generating electricity from RES. 2. Number of reconstructed units generating electricity from RES. 3. The number of units for generating thermal energy from RES. 4. The number of reconstructed units of thermal energy production from RES. 5. Number of units of heat and electric energy production from renewable sources built as part of cogeneration. 6. The number of reconstructed units of heat and electric energy production from RES under cogeneration. 7. Additional ability to generate electricity under high-efficiency cogeneration. 8. Additional heat production capacity under high-efficiency cogeneration conditions. 9. Number of enterprises receiving support (CI1). 10. Number of built installations for the production of bio-components. 11. Number of built biofuels installations. 12. Length of newly built power 	<ol style="list-style-type: none"> 1. Estimated annual reduction in greenhouse gas emissions. 2. Additional capacity to generate energy from renewable sources (CI30). 3. Additional capacity to generate electricity from renewable sources. 4. Additional heat production capacity from renewable sources. 5. Electricity production from newly built installations using RES. 6. Production of electricity from new generation capacity of installations using RES. 7. Production of electricity from newly built / new generation capacities of installations using RES. 8. Thermal energy production from newly built / new generation capacities of installations using RES. 9. Thermal energy production from newly built installations using RES. 10. Thermal energy production from new generation capacities of installations using RES. 11. Volume of bio-components produced in second and third



	<p>networks for renewable energy sources.</p> <p>13. Length of modernized power networks for renewable energy sources.</p>	<p>generation.</p> <p>12. Volume of biofuels produced in the second and third generation.</p>
<p>5.1 Improving the energy efficiency of enterprises</p>	<p>1. Number of enterprises receiving support.</p> <p>2. Number of enterprises that improved energy efficiency as a result of support.</p> <p>3. Number of energetically modernized buildings.</p> <p>4. Usable area of buildings subjected to thermo-modernization.</p> <p>5. Number of built units for generating electricity from renewable energy sources.</p> <p>6. The number of reconstructed units generating electricity from RES.</p> <p>7. Number of units for generating thermal energy from RES.</p> <p>8. Number of reconstructed units of heat energy production from RES.</p> <p>9. Number of electricity and heat generating units built as part of cogeneration.</p> <p>10. Number of rebuilt power and heat generating units under cogeneration.</p> <p>11. Number of units of thermal and electric energy production from renewable sources built as</p>	<p>1. The amount of thermal energy savings.</p> <p>2. The amount of electricity saved.</p> <p>3. Reduction of final energy consumption as a result of projects implementation</p> <p>4. Estimated annual decrease of greenhouse gas emissions (CI34).</p> <p>5. Additional capacity to generate energy from renewable sources (CI30).</p> <p>6. Additional capacity to generate electricity from renewable sources.</p> <p>7. Additional heat production capacity from renewable sources.</p> <p>8. Electricity production from newly built / new capacity creative installations using RES.</p> <p>9. Electricity production from newly built installations using RES</p> <p>10. Production of electricity from new generation capacity of installations using RES</p> <p>11. Thermal energy production from newly built / new generation capacities of</p>



	<p>part of cogeneration.</p> <p>12. Number of reconstructed units of heat and electric energy production from RES under cogeneration.</p> <p>13. Additional ability to generate electricity under high-efficiency cogeneration.</p> <p>14. Additional thermal energy production capacity under high-efficiency cogeneration conditions</p>	<p>installations using RES.</p> <p>12. Thermal energy production from newly built installations using RES.</p> <p>13. Thermal energy production from new generation capacity of installations using renewable energy sources.</p>
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Italy - Emilia Romagna

Support of Energy Audits for SMEs

Support of energy audits for small and medium enterprises is a financial scheme on regional level (e.g. Emilia-Romagna region).

Energy Fund has been established through which SMEs can apply for grants. This includes so called Innovative Financial Tool which helps to finance following activities:

- to improve energy efficiency and reduce climate-changing gases
- to produce energy from renewable sources, favouring those in self-consumption, as well as high efficiency cogeneration plants, complying with the EU Directive 2012/27 (EU Parliament and Council).

Eligible projects to obtain a grant are investments with a high technological content that, through an overall modernization of the plants, machinery and equipment are suitable to promote process, product or service innovation and have positive impacts on one or more of the following aspects⁴:

- improve production flexibility;
- introduction of enabling technologies in production processes;
- reduction of the environmental impacts of production processes (Energy efficiency as well).

Main output and result indicators for Low Carbon Economy Programme are represented in the Table below.

Table 12: Main output and result indicators for Low Carbon Economy Programme in Italy

Type of indicator	Indicator	Unit
Result	Reduction on Industry Energy consumption	GWh
Output	Number of Companies receiving financial support	No. of companies
Output	GHG emission reduction	Tons of equivalent CO ₂

⁴ <http://imprese.regione.emilia-romagna.it/Finanziamenti/industria-artigianato-cooperazione-servizi/sostegno-degli-investimenti-produttivi>



Output	Energy Savings	GWh
Output	Additional Renewable energy power	MW
Output	Reduction of particular matter emission (PM10)	kg PM10
Output	Reduction of NOx emissions	kg NOx

Each indicator has a starting level (Baseline value or data) and a final goal (Target value or date).

PERFER

“Regional Energy Plan - Renewable Sources, Energy Saving and Energy Efficiency” (PERFER) indirectly addresses the issue of energy with respect to the industry sector highlighting the levels of energy consumption, potential energy conservation plans and the potential production of energy from renewable sources. Besides these aspects, the Plan does not include specific objectives for SMEs or enterprises, but rather some incentives. It has regional level of implementation.

The monitoring of the Plan is carried out on an annual basis. It allows verifying the effectiveness and efficiency of the Plan. The results are uploaded on Veneto Region’s website. Sensitive environmental indicators useful to determine the variations within the energetic regional context are periodically updated by ARPAV (Veneto Region’s Agency for Environmental Prevention and Protection). ARPAV carries out its collection of data activities through the network of technical facilities present on the territory of the Region. The results are then sent to Veneto Region’s offices where they are interpreted with the cooperation of ARPAV.

The indicators and update deadlines are analytically listed in the PERFER and more extensively presented in the ARPAV website. Their analysis is completed with the parallel study of indicators of the context’s variation which allow determining the positive and negative effects of the Plan’s implementation on the environment.

Along with these elements, the Region also relies on:

- The evolution of the regional economic development;
- The availability of economic resources supporting planned regional activities;
- The results of the monitoring of the indicators dealing with the “burden sharing” regional objective;
- Reorganisation of national incentives and benefits.



Hungary - Dél-Dunántúl

Economy Development and Innovation Operational Programme

One of the main priorities (priority 4) of this Programme is transition to low-emission economy in all economic areas. One of the thematic focuses is also energy efficiency and RES in companies. The financial scheme is mentioned in the South Transdanubian Regional Energy Strategy as potential source of finance.

The eligibility criteria focus mainly on the general objective factors. Through these objective factors we examine the appropriateness of the completed declarations, the compliance with EU regulations, the location of the investment, the average statistical staff, the compliance with SME sector's parameters and the relevance of attached documents.

In the framework of the quality assessment we monitor the compliance with the purposes of the call, the reality of the budget, the **annual reduction of greenhouse gases, the financial cost of the renewable project part (specific cost of a solar system, biomass, heat pump system), and the economic indicators such as the ratio of operating profit, income, invested asset, and equity.**



Slovakia⁵

Sustainable energy financing facility

Sustainable energy financing facility (SEFF) scheme is a credit line developed by European Bank for Reconstruction and Development (EBRD) in various developed or developing countries and regions (Slovakia, Poland, Belarus, Western Balkans, etc.). Financing under the SEFFs is provided for sustainable energy projects in energy efficiency and small-scale renewable energy.

SlovSEFF

SlovSEFF⁶ is a Slovakian sustainable energy financing facility developed by the European Bank for Reconstruction and Development (EBRD). Its latest extension, co-funded by the Ministry of Environment of the Slovak Republic and the Ministry of Agriculture, Food and Environment of Spain, provides a credit line of up to €100 million to Slovak commercial banks. Incentive payments are funded from the proceeds of the sale of carbon credits from the Slovak Republic to Spain, facilitated by the EBRD.

Each project under the SEFF programme has number of indicators to be followed, in order to obtain a proper dataset in regards with programme baseline. In this case, project indicators were divided from technical and financial aspects. Some of the most basic indicators are represented in the table below.

Table 13: Basic indicators in SEFF Programme in Slovakia

Technical	Financial
Energy savings in MWh per year	Net present value in euros
Primary energy in MWh per year	Simple payback period in years
Total savings compared to Baseline in %	Cost savings in euros
Annual GHG savings in tones	Number of supported businesses - updated quarterly during Programme period

⁵ Although none Slovak organization is a member of the consortium, Slovakia is included in this overview as its SlovSEFF programme represents a good example of sustainable energy financing facility scheme.

⁶ <http://www.slovseff.eu/index.php/en/>