



*advancing with ESIF financial instruments*



# The potential for investment in energy efficiency through financial instruments in the European Union

Italy in-depth analysis

May 2020



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## Objective of the document

The objective of this report is to give an overview of the state and progress of energy efficiency developments in Italy, and a preliminary assessment of investment needs and potential use of ESIF financial instruments to cover them. This report would serve as an input to the negotiations of operational programmes for the period 2021-2027.

This document is based on data and information released prior to the outbreak of the Coronavirus (COVID-19) pandemic. Although it is still not possible to properly estimate the impact of COVID-19, a severe economic recession is currently (May 2020) forecasted for year 2020 in the European Union (EU).

The recession may have deep repercussions in the years to come in the economic and financial systems of EU Member States (MS), therefore economic and financial context reported in the document may sharply deteriorate in the near future. Cohesion Policy resources, and public resources in general, are expected to play a crucial role to support the economic recovery in the next programming period.

Energy efficiency (EE) investments can play an important role to support the economic recovery, as (i) they have a considerable job creation effect; (ii) they contribute to reduce energy costs and greenhouse gas emissions; and (iii) they increase MS energy security.

There is a risk that, at least in the short run, the crisis will lead to lower energy costs due to a lower demand, thus can create lower incentives for EE investments. An appropriate use of financial instruments to support EE investments enables the use of Cohesion Policy resources in a revolving way and to generate leverage by crowding-in private co-financing in order to meet significant investment needs.

Information reported in the following sections is based on publicly available sources, in particular:

- Eurostat national statistics
- Final and draft version of the National Energy and Climate Plan of Italy;
- EC assessment of the draft National Energy and Climate Plan of Italy;
- Odysee-mure, Italy country profile
- EU building stock observatory
- EU Energy Poverty Observatory Member State Report Italy
- JRC Science for Policy Report, Accelerating energy renovation investments in buildings 2019
- Commission staff working document. The EU Environmental Implementation Review 2019 Country Report Portugal 2019
- Commission Staff Working Document Country Report Portugal 2020
- Allocation of Cohesion policy funding to Member States for 2021-2027. European Court of Auditors. March 2019
- EC; fi-compass; Multi-Region Assistance Project Revolving Investment for Cities in Europe (MRA-RICE). Case Study – Milan. 2018
- Puglia Sviluppo, Ex-ante assessment on loan based financial instruments to be implemented in the 2014 – 2020 programming period in the Apulia Region. 2015
- t33, Ex-ante assessment Marche Region / Energy Fund. 2015
- CLES, Ex-ante assessment Piedmont Region. 2017



- Lombardy Regio, Ex-ante assessment Lombardy Region. 2015
- PwC, Ex-ante assessment Emilia Romagna Region. 2016
- KPMG, Ex-ante assessment Lazio Region. 2016
- Moderari, Ex-ante assessment National OP on Enterprises and Competitiveness. 2016

The following interviews were conducted:

- Italian Cohesion Agency
- Marche Region Managing Authority
- Emilia Romagna Region Managing Authority
- Finpiemonte
- Finlombarda
- Arigiancassa
- Sinloc
- Puglia Sviluppo
- DG REGIO – Italian desk



## 1. Context overview

Italy has about **60.35mIn inhabitants** as of January 2019, which has (13.1% of the EU27) slightly decreased (-0.7% in the last 5 years)<sup>1</sup>, however by 2030 the population is expected to reach 63.3mIn inhabitants<sup>2</sup>.

**Real Gross Domestic Product (GDP) per capita** in 2018 was about **EUR 26 760** (3% lower than the EU27 average) and has decreased by 5.21% in the last 10 years<sup>3</sup>. It should be highlighted that Italy has deep regional disparities (e.g. inhabitants of northern regions have a much higher GDP per capita than southern regions inhabitants).

### Impact of the COVID-19 crisis

Based on the European Commission “Spring 2020 Economic Forecast”, released in May 2020, due to the COVID-19 outbreak, Italy will suffer a sharp recession in 2020 with the **GDP expected to contract by 9.5%**, before rebounding and grow by 6.5% in 2021.

The **unemployment rate** is expected to increase from 10% (2019) to 11.8% (2020) and it is expected to return to pre-crisis levels (10.7%) in 2021

To support the national economy a strong public fiscal stimulus will be deployed, with the **Government deficit** expected to reach 11.1% of 2020 GDP and to remain high in 2021 too (5.6%).

Due to the combined impact of the decrease of the GDP and the increase in the government deficit, the **debt/GDP ratio is expected to reach 158.9% in 2020** (it was 134.8% in 2019) and to remain at a similar level in 2021 (153.6%).

**The crisis could have a dual negative impact on EE investments**, by both **reducing the demand** (e.g. households and enterprises may decide/be forced to postpone investments) **and the financial supply** (e.g. financial intermediaries may become more selective in their lending activity) **therefore increasing the importance of EE related supporting schemes**.

**Final energy consumption (FEC)** in 2018 was 116.5Mtoe (11.8% of the EU27) and it has **decreased by 15.1% since 2005**, while at the EU27 level it decreased by 4.9%<sup>4</sup>.

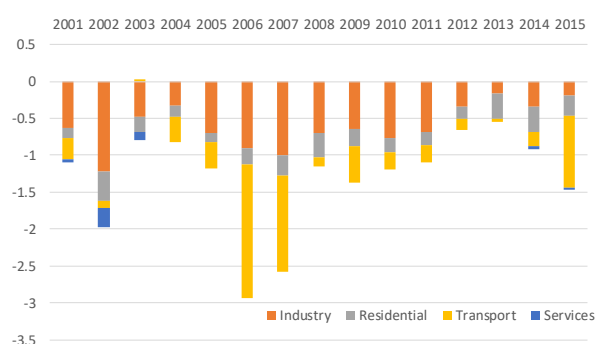
**Consumption per capita** in 2018 (1.9toe/person) was 13% lower than the EU27 average (2.2 toe/person) and it has decreased by 16% in the last 10 years (while at the EU27 level it decreased by 6%)<sup>5</sup>.

**Energy productivity** (GDP over the gross available energy) in 2018 was 10.1 Euro per Kg of oil equivalent (24.7% higher than the EU average), showing limited reliance on energy to generate GDP<sup>6</sup>.

**Sectors** contributing to FEC are: transport (36% of the total), households (28%), industry (21%) and services (16%)<sup>7</sup>.

Regarding energy efficiency (EE): during the 2001 - 2016 period, Italy reported about 19.74Mtoe of cumulative (technical) final energy savings<sup>8</sup> mainly related to the industry (46%), transport (33%) and residential sector (18%).

### Annual technical energy savings by sector (Mtoe)





## 1.1. Overview of the residential sector

As reported in the NECP: Italy has **12.42 million buildings** intended for residential use, with nearly **32 million dwellings**. More than 60% of this stock is over 45 years old (built before the first energy-saving law came into force). Of these buildings, over 25% have annual consumption ranging from a minimum of 160 kWh/sqm per year to over 220 kWh/sqm. The following table reports the main information about Italian building stock.

**Residential buildings per type and year of construction**

Period of construction	Number of buildings	SQM	% of buildings	Cumulated % of buildings
<1919	1 832 503	824 318 007	15%	15%
19-45	1 327 007	596 929 863	11%	25%
46-60	1 700 834	765 089 112	14%	39%
61-70	2 050 830	922 528 420	17%	56%
71-80	2 117 649	952 585 727	17%	73%
81-90	1 462 766	657 998 570	12%	84%
91-2000	871 017	391 811 090	7%	91%
2001-2005	465 092	209 213 142	4%	95%
2006-2011	359 991	161 935 377	3%	98%
2011-2018	232 714	104 682 143	2%	100%
Total	12 420 403	5 587 091 450	100%	100%

Energy consumption in the residential (households) sector:

- In 2018, energy consumption was 32.06Mtoe (13% of EU27)<sup>9</sup> having decreased by 16% over the last 10 years (2008 – 2018) and by 18.1% compared with 2005 (while at the EU27 level it decreased by 7%);
- Consumption per dwelling as of 2016 was 1.4toe (in line with the EU average)<sup>10</sup> but it has decreased by 5% over the last 10 years.

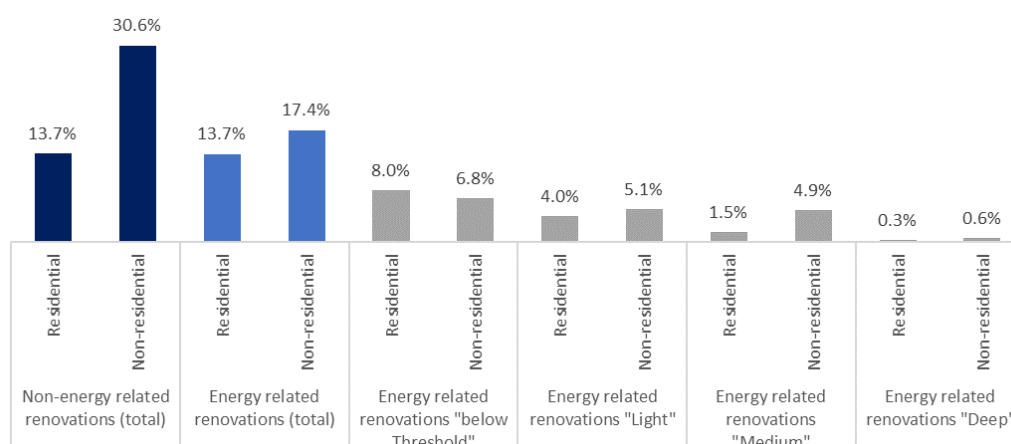
**During the 2011 – 2017 period** the residential sector generated **annual energy savings equal to 3.6Mtoe/year**, in line with the target foreseen in the Italian Energy Efficiency Action Plan<sup>11</sup>.

The NECP performs an analysis of the **EE renovation rate of the building stock** (using the Virtual Deep Renovation Rate - VDRR) and it identified that the annual VDRR for Italy's building stock is **about 0.26%**.

As presented in the following figure, the VDRR is much lower than the **non-energy renovation rate** (i.e. building renovation is not driven by energy reasons) that is reported to be circa **13.7%** in the residential sector.



Renovation rate [%/stock], average 2012-2016<sup>12</sup>

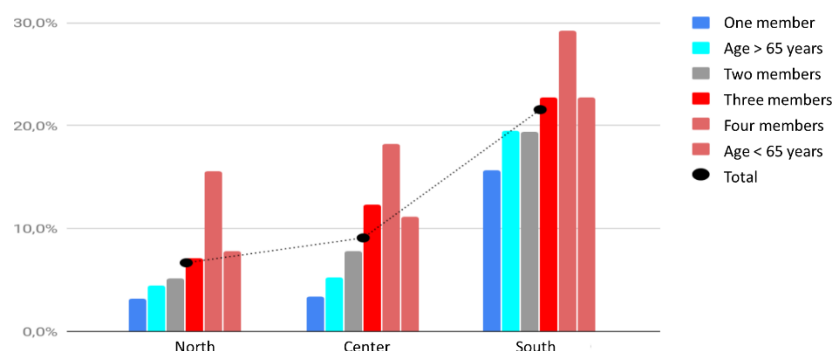


In the **coming years**, the activity in the construction sector is expected to be heavily influenced by the obligation (from 2021) that **all newly constructed buildings will be nearly-zero energy (nZEB)**. As of 2018, circa 1,400 nearly Zero energy Buildings (nZEB) were recorded, representing only **0.03% of the existing building stock**.

An **increase in the deep renovation rate will be needed** to achieve the targets of the NECP, in particular during the **2020 – 2030** period, the annual VDRR for the residential sector should **accelerate to around 0.7%** (from 0.26% reported in the last years).

### ENERGY POVERTY<sup>13</sup>

Although Italy has no official definition of energy poverty, in the Italian energy strategy of 2017, an *ad hoc* indicator has been developed to quantify households in energy poverty conditions. According to that indicator, in the period **2005-2016** the proportion of **households in energy poverty** was, on average, approximately **8% of all households**. However, **the percentage has grown in recent years, to about 8.6%**, which equated to circa **2.2 million households**. As reported in the following figure (describing the % of households in energy poverty per geographical area and for households characteristics), there are important differences between northern and southern regions.



Based on NECP's assumptions, it is expected that the incidence of energy poverty could decrease in the coming years, to it will remain between 7% and 8%, with a reduction of about 1 percentage point with respect to the 2016 figure (which would correspond to a reduction of about 230,000 households in energy poverty).

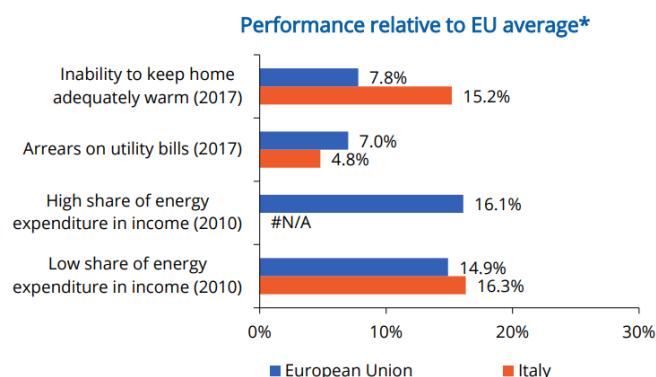




To compare the Italian data about energy poverty with the other EU Member States, the data of the EU observatory can be utilised.

As presented in the adjacent figure, Italy has a much higher percentage of population that is not able to keep their home adequately warm (15.2% VS 7.8%) and also a higher percentage of population that has a low expenditure for energy (as a fraction of the household's income) while the data of arrears on utility bills is much lower in Italy than in the EU average (4.8% VS 7%).

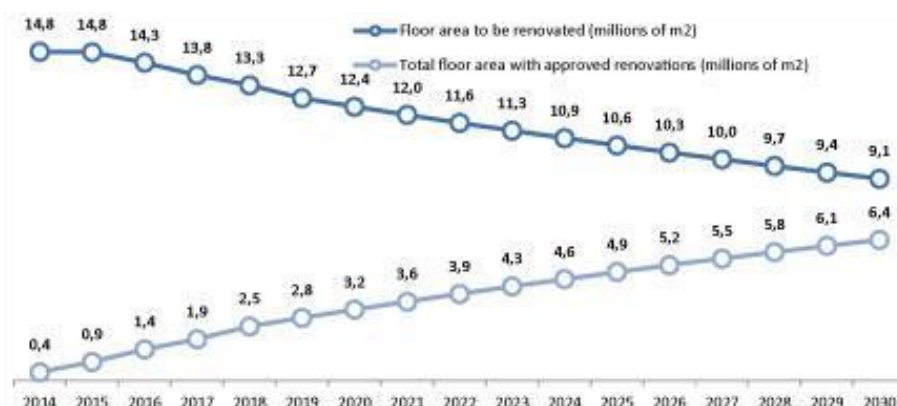
The current COVID-19 related economic crisis can have a severe impact on Italian households, potentially leading (at least in the short run) to an increase of households living in energy poverty conditions.



## 1.2. Overview of the public sector

The public administration's building stock accounts for approximately **250mln sqm**, of which 55 % is occupied by the public administration itself<sup>14</sup>. In 2017, energy consumption in services (including public administration) was 18.2Mtoe, increasing over time (15% last 5 years VS +2.3% in EU28). During the **2014 – 2017 period, energy renovation in buildings of the General State Administration** were undertaken addressing a floor area of **1.9mln sqm** (out of a stock of 15.2mln sqm)<sup>15</sup>. In order to cope with the requirements of Art.5 of the EE Directive, during the 2021 – 2030 period, 3.2m sqm of floor area of buildings associated with the central public administration will need to be subjected to energy renovation (in the following figure, the renovation rate of aforementioned buildings is reported).

Trend in renovations of the building stock of the central public administration<sup>16</sup>



## 1.3. Overview of services and industry sectors

The **industrial sector** accounts for 23.9% of the national GDP (in 2017)<sup>17</sup> and in 2018, industry consumed 24.3Mtoe (10% of EU27) with a decrease by 30% in the last 10 years<sup>18</sup>. During the 2011 – 2017 period, the industry sector generated annual energy savings equal to **2.5Mtoe/year**, circa 50% of the target foreseen in the Italian Energy Efficiency Action Plan<sup>19</sup>. The **services sector** account for 73.9% of the national GDP (in 2017)<sup>20</sup> while its energy consumption in 2018 was 35.6Mtoe (12.4% of EU27) reducing by 12.6% over the last 10 years (while at the EU27 level it remained stable).





## 2. EE targets, measures in place and proposed

Italy has a number of policies and measures in place to support EE, the most important are: (i) tax deductions connected to EE interventions in (residential and tertiary) buildings; (ii) the energy savings obligation scheme (white certificates) targeting electricity and gas distributor companies; (iii) the subsidy scheme (*conto termico*) for private entities and public bodies performing EE interventions; and (iv) the recently constituted National Energy Efficiency Fund. A brief description of these measures is reported in provided below.

For the **2021 - 2030 period**, the National Energy and Climate Plan (NECP) largely builds on the 2017 Italian Energy Strategy and is intended to implement a vision of broad economic transformation, in which decarbonisation, EE and renewables (RES) priorities contribute to the objectives of a more environmentally friendly economy. In the following table, the key targets related to EE are reported.

NECP overall targets	EE targets (Mtoe)	2017 data	Target 2020	Target 2030
	Primary energy consumption	148.9	158	125
	Final energy consumption	115.2	115.2	115.2

From a sectorial perspective, under the measures proposed by the NECP, in the 2005 (baseline) – 2030 period<sup>21</sup>:

- Energy industries will experience a drastic reduction of emissions (-65%), mainly due to the significant growth in electricity production from renewable sources that is needed to achieve the targets;
- The transport sector will reduce emissions by 36% due to the substantial electrification of car transport and, to a lesser extent, to the infiltration of biofuels;
- The residential sector will reduce emissions by 39% due to the significant building renovation rate, the continued efficiency and increasing electrification of the sector, mainly with regard to heating;
- Industry will reduce emissions by 41%, both as regards energy consumption and processes.

In the following table, information on the main measures for the residential, industry and public sectors are presented.

	Context/targets	Existing and planned actions/priority objectives
<b>Residential Sector</b>	<ul style="list-style-type: none"> <li>• The sector is expected to contribute to circa <b>35% of total savings</b> foreseen in the NECP<sup>22</sup></li> <li>• Savings are expected to be related to mainly: structural EE renovations, installation of heat pumps and improved efficiency of end-use devices</li> </ul>	<p><u>Existing measures (list of):</u></p> <ul style="list-style-type: none"> <li>• The <b>tax deduction scheme for EE interventions in (residential and tertiary) buildings</b> is one of the most important national EE measures. Introduced in 2007, the tax credit is typically equal to 65% of the investment cost. Circa 2.9mln interventions benefitted from this measures and in 2017 the financial impact on the State budget of this measure was circa EUR 1.4bn</li> <li>• The <b>national grant scheme (<i>conto termico</i>)</b> can provide support to residential buildings, mainly for renovations to transform existing buildings into near Zero Energy Buildings (nZEB) and for RES based solutions. The annual budget of the scheme is EUR 900mln (EUR 200mln dedicated to the public administration and the rest for private entities)</li> <li>• The <b>National Energy Efficiency Fund</b> can support EE interventions in the residential sector. During 2014 – 2020 the Fund could receive resources for maximum EUR 490mln (national budget) and currently the Fund has an endowment of EUR 185mln. The Fund</li> </ul>



		<p>can (i) provide guarantees to loans connected to EE activities (30% of the Fund's budget); and (ii) it can provided soft loans to EE initiatives. The Fund is managed by the national company Invitalia.</p> <p><u>New planned measures/priority objectives (NECP):</u></p> <p>Existing measures are expected to be continued in the post 2020 period, with some improvements, in particular the <b>tax deduction scheme</b> will be improved with (i) new provisions to facilitate the transferability of the tax credit (already possible in some cases) – in order to provide an immediate incentive to households and other beneficiaries of the scheme; and (ii) it will be complemented with a guarantee fund to support loans targeting EE renovations [no further information was provided about this proposal]</p>
Public Sector	<ul style="list-style-type: none"> <li>During the <b>2021 – 2030 period</b>, <b>3.2 mln sqm of floor area</b> of buildings associated with the central public administration will be <b>subjected to energy renovation</b></li> </ul>	<p><u>Existing measures:</u></p> <ul style="list-style-type: none"> <li>The aforementioned national <b>grant scheme</b> (<i>conto termico</i>) can be used by the public administration for EE interventions (to refurbish buildings and other infrastructure, such as public lighting), soft loans from the <b>National Energy Efficiency Fund</b> (that can also support ESCOs) can also be used.</li> <li><b>EISF backed grants</b> for EE in public buildings/infrastructures have been implemented and are in place in various regions, moreover some <b>ESIF backed EE Financial Instruments (FI)</b> are operating in some regions, for instance: Marche and Lombardy (further information in the next section)</li> </ul> <p><u>New planned measures/priorities (NECP):</u></p> <ul style="list-style-type: none"> <li>Existing measures are expected to be continued in the post 2020 period</li> <li>New measures (regulatory) to promote the use of Energy Performance Contracting (EPC) solutions are expected</li> </ul>
Industry	<ul style="list-style-type: none"> <li>The sector is expected to contribute to circa <b>11% of total savings</b> foreseen in the NECP<sup>23</sup></li> </ul>	<p><u>Existing measures:</u></p> <ul style="list-style-type: none"> <li>When performing EE interventions, enterprises can receive support (as guarantees or soft loans) from the <b>National Energy Efficiency Fund</b> (briefly presented above)</li> <li>Enterprises performing EE interventions can also receive support under the <b>white certificates</b> mechanism (connected to the national EE obligation scheme)</li> <li><b>ESIF backed grants</b> for EE activities performed by enterprises (in particular SMEs) have been implemented and are in place in various regions, moreover some <b>ESIF backed EE Financial Instruments</b> are</li> </ul>



	<p>operating in some regions, for instance: Puglia, Piedmont, Emilia Romagna, Lazio (further information in the next section)</p> <p><u>New planned measures/priorities (NECP):</u></p> <ul style="list-style-type: none"><li>• Existing measures are expected to be continued in the post 2020 period</li></ul>
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### 3. Market failures, main issues and barriers to investment

In the following table some information about the main (financial and non-financial) barriers preventing EE investments are reported per each sector. To the extent possible, the main potential implications of the COVID-19 crisis on barriers to EE investments have been considered.

	Financial issues and gaps	Non-financial issues
<b>Residential Sector</b>	<ul style="list-style-type: none"> <li>• Typical barriers preventing EE investments (besides externalities and asymmetric information) are related to: <ul style="list-style-type: none"> <li>- Limited financial resources to devote to EE initiatives (in particular for poor households that in Italy are located mainly in Southern regions). The COVID-19 crisis could have a further negative impact as it could reduce further households' disposable income/ financial resources</li> <li>- Limited financial returns of EE interventions (in particular for deep renovations, in particular in Southern regions where energy consumption in buildings tend to be lower than in other regions). Financial returns could be further lowered if current low energy prices will endure in the future</li> </ul> </li> <li>• Due to the uncertainty about future economic conditions, generated by the COVID-19 crisis, households may decide to postpone long-term investments, such as EE renovations</li> <li>• Banks are reported to be reluctant to lend to condominiums due to their peculiar legal structure, however some products and experiences have been developed on a small scale<sup>24</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Typical non-financial barriers preventing EE investments: <ul style="list-style-type: none"> <li>- Limited awareness about benefits of EE interventions</li> <li>- Difficulties, especially in large multi apartment buildings, to agree on renovation activities</li> </ul> </li> </ul>
<b>Public Sector</b>	<ul style="list-style-type: none"> <li>• Italy has the second highest public debt compared to GDP in Europe and public administrations tend to have limited debt capacity, preventing them to perform EE interventions (the Italian debt to GDP ratio is moreover expected to sharply further increase, to support the economic during the COVID-19 triggered recession)</li> <li>• Based on interviews with national practitioners and financial instrument managers it has been reported that EE</li> </ul>	<p>Based on interviews with national practitioners and financial instrument managers:</p> <ul style="list-style-type: none"> <li>• Public Authorities have difficulties (lack of skills and financial resources) to manage: <ul style="list-style-type: none"> <li>- Preparatory activities (e.g. baseline, project structuring, contractual framework, etc.)</li> <li>- procurement process and monitoring activities, in particular for EPC</li> </ul> </li> </ul>



	<p>projects, in many cases, lacks financial viability because of:</p> <ul style="list-style-type: none"> <li>- The limited level of energy consumption of buildings (especially in Southern regions)</li> <li>- The need to incorporate in the renovation also anti-seismic works (not generating any positive cash flow for the project)</li> </ul> <ul style="list-style-type: none"> <li>• Banks tend to be reluctant to provide long terms financing (with limited or no recourse) to ESCOs for Energy Performance Contracting (EPC) type transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative procedures to prepare, procure and award projects is very complex and long, thus prevents preventing public works to be implemented</li> <li>• The limited size of projects reduce the effectiveness of relatively complex solutions (such as EPC), however important difficulties are related with the aggregation of projects</li> </ul>
Industry	<ul style="list-style-type: none"> <li>• Barriers to EE investments include: <ul style="list-style-type: none"> <li>- Long pay-back period of several EE interventions</li> <li>- Difficulties to obtain financing based on cash flows generated by EE activities</li> </ul> </li> <li>• A recently passed law allows households to transfer the EE tax deduction to the enterprises providing EE interventions, thus obtaining a discount on the final bill (circa 50%- 65% of total costs). This is creating severe negative financial implications for enterprises (especially SMEs) performing EE works.</li> <li>• The COVID-19 triggered economic recession will have negative impacts on enterprises that could have more difficulties to access the credit sector (due to the less performing economic and financial ratios). Due to future uncertainty, enterprises may moreover reduce further their investment plans and they could postpone non-core investments.</li> </ul>	<ul style="list-style-type: none"> <li>• Typical non-financial barriers preventing EE investments: <ul style="list-style-type: none"> <li>- Limited awareness about benefits of EE interventions and difficulties in structuring EE interventions</li> <li>- Reluctance of enterprises to use their borrowing capacity for non-core activities (like EE)</li> </ul> </li> </ul>



## 4. Investment needs, gaps and implications for financial instruments

As reported in the following figure, considering all measures foreseen in the NECP, between **2017 and 2030 a cumulated investment of circa 1.2tn will be needed** (circa EUR 91bn per year).

Compared with current measures, the NECP implies an **additional investment of circa EUR 184bn** during the 2017 – 2030 period (equivalent to an 18% increase).

As reported in the following table, the **transport sector will require the large majority of investment** (64% of the all investment). The **residential sector** is the second sector in terms of investment (15% of the total), with circa **EUR 180bn** during the planning period (circa **EUR 14bn per year**). For **industry**, circa **EUR 33bn** (3% of the total) will need to be invested (circa **EUR 2.5bn per year**)

Values in EUR bn	Investment needs (2017 - 2030)		(a-b)
	Under current measures (a)	As foreseen in the NEC (b)	
Residential	117	180	63
Tertiary	55	90	35
Industry	27	33	6
District heating (distribution only)	1	2	1
Transport (vehicles only)	732	759	27
Electrical sector (power plants)	47	83	36
Electrical system (networks, storage)	30	46	16
<b>Total</b>	<b>1,008</b>	<b>1,192</b>	<b>184</b>

With respect to **EE** measures (excluding the transport sector), an **investment of circa EUR 118bn is planned for the 2021 – 20130 period**, connected to the following measures:

- **White certificates** are expected to generate an **investment of EUR 13.7bn**, with a budgetary commitment from the State of EUR 6.8bn. This measure is a national energy saving obligation scheme targeting mainly electricity and gas distribution companies.
- **Tax deductions for EE retrofitting and renovation of existing buildings** are expected to generate an **investment of EUR 82.5bn**, with a budgetary commitment for the State (tax loss) of EUR 45.4bn. This measure targets both residential and tertiary buildings.
- **Conto termico** is expected to generate an **investment of EUR 17.5bn**, with a budgetary commitment for the State of EUR 7.5bn. This measure targets residential and tertiary buildings and the public sector.

**The National Fund for Energy Efficiency** is expected to generate an **investment of EUR 4.4 bn**, with a budgetary commitment for the State of EUR 80mln per year, this would be an increase compared with the current activities and would require a scale up of the initiative. This measure targets enterprises and public bodies and it will target also the civil sector (i.e. residential and tertiary buildings).



## 5. ESIF resource, existing financial instruments and main grant programmes

For the 2014 – 2020 period, Italy benefits from ESIF funding of EUR 44.7bn (circa EUR 735 per person)<sup>25</sup> of which, **EE related support** is estimated at **EUR 1.9bn**<sup>26</sup>.

In the following table (Italian Ministry for Economy and Finance) data per thematic objective (TO) is reported as of 31/10/2019. As it can be observed, **TO 4 is the least performing** in terms of allocation and the third least performing regarding payments.

TO	Planned (EUR m)	Allocated (EUR m)	Paid (EUR m)	Allocated/Planned	Paid/Planned
TO 1	5,981	3,841	1,497	64.23%	25.03%
TO 2	2,332	1,394	516	59.79%	22.11%
TO 3	6,129	3,520	1,601	57.43%	26.12%
<b>TO 4</b>	<b>5,225</b>	<b>2,024</b>	<b>1,030</b>	<b>38.74%</b>	<b>19.71%</b>
TO 5	1,581	635	350	40.17%	22.11%
TO 6	4,060	1,623	908	39.98%	22.38%
TO 7	3,385	2,422	1,166	71.56%	34.44%
TO 8	8,935	5,244	3,117	58.69%	34.88%
TO 9	5,696	2,383	1,002	41.84%	17.58%
TO 10	6,961	4,237	2,458	60.87%	35.31%
TO 11	1,218	539	197	44.31%	16.21%
<b>Total</b>	<b>51,501</b>	<b>27,863</b>	<b>13,840</b>	<b>ns</b>	<b>ns</b>

Information related to resources that MAs have committed is also relevant (i.e. calls for tenders launched or other procedures commenced to allocate resources). In the following table (based on data of the Italian Cohesion Agency updated to 31.12.2019) information is reported for 2 **EE sub-measures of the TO4** (i) EE in **public buildings and facilities** (circa EUR 1.2bn committed); and (ii) EE in enterprises (circa EUR 1.8bn committed)<sup>27</sup>.

Operational Programme	EE in public sector			EE in enterprises		
	Endowment committed by the MA EUR m	Allocated to beneficiaries % of endowment	Paid to beneficiaries % of endowment	Endowment committed by the MA EUR m	Allocated to beneficiaries % of endowment	Paid to beneficiaries % of endowment
PON Città metropolitane	88.78	55%	30%	-		





PON Imprese e competitività	-			1 184.1	55%	17%
POR Abruzzo FESR	3.82	100%	92%	2.81	100%	33%
POR Basilicata FESR	18.50	67%	33%	42.51	43%	7%
POR Calabria FESR FSE	55.56	43%	33%	-		
POR Campania FESR	105.06	56%	25%	6.61	33%	18%
POR Emilia Romagna FESR	167.78	23%	6%	38.01	94%	63%
POR Friuli V.G. FESR	87.79	26%	14%	-		
POR Lazio FESR	53.94	13%	3%	141.00	39%	30%
POR Liguria FESR	25.78	78%	49%	6.25	76%	0%
POR Lombardia FESR	73.55	43%	18%	-		
POR Marche FESR	26.85	28%	2%	8.58	33%	0%
POR Molise FESR FSE	6.70	100%	0%	5.67	39%	10%
POR PA Bolzano FESR	27.79	100%	36%	-		
POR PA Trento FESR	11.26	56%	54%	18.91	22%	15%
POR Piemonte FESR	61.72	19%	8%	184.66	42%	35%
POR Puglia FESR FSE	79.79	100%	71%	-		
POR Sardegna FESR	115.13	31%	21%	-		
POR Sicilia FESR	63.86	11%	6%	14.46	46%	18%
POR Toscana FESR	107.89	8%	5%	94.02	46%	18%
POR Umbria FESR	24.20	69%	64%	11.57	29%	29%
POR Valle D'Aosta FESR	9.99	38%	16%	-		
POR Veneto FESR	26.16	66%	56%	52.54	20%	19%
<b>Total</b>	<b>1 241.91</b>	<b>40%</b>	<b>22%</b>	<b>1 811.7</b>	<b>51%</b>	<b>21%</b>

As reported in the previous table, no significant differences in the expenditure/payment levels can be observed between the 2 sub-measures, however (although it has not been possible to collect the relevant supporting data)

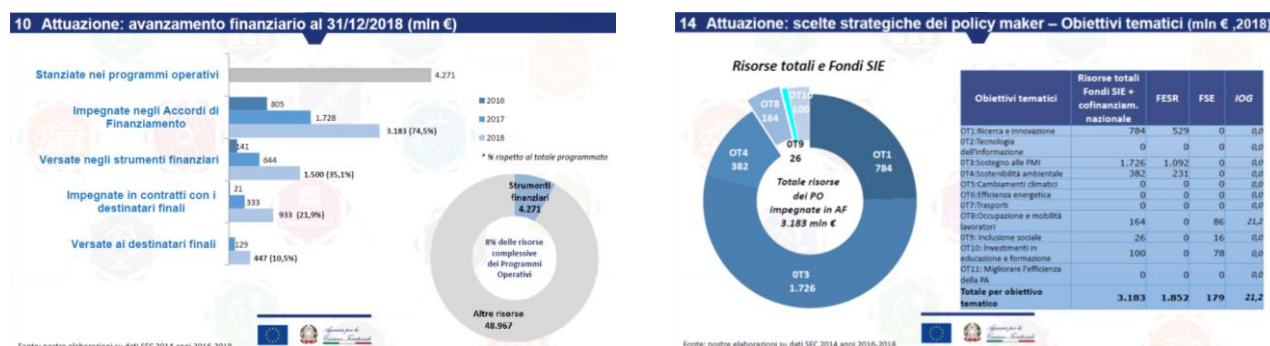


following discussions with the Italian Cohesion Agency, the **difference between planned and committed resources** may be higher in the EE in public sector sub-measure than in the EE for enterprises measure.

## 5.1. Financial Instruments

Based on the data provided by the Italian Cohesion Agency (reported in the following tables) as of 31/12/2018:

- Planned financial instruments are worth **EUR 4.27bn** (circa 8% of the total allocation of Italians' OPs);
- So far 105 financial instruments have been created (funding agreement signed) with an allocation of EUR 3.18bn OP resources;
- OP resources of the TO4 contributed to financial instruments are circa EUR 382m (EUR 231m ERDF)



Based on the data provided by DG REGIO (Geographical Unit for Italy), in 14 OPs it is foreseen to allocate resources of the TO4 to Financial instruments (EUR 365m), however so far Financial instruments have been implemented only in 8 OPs (EUR 241m)<sup>28</sup>.

Operational programmes	Programmed	Selected	Expenditures
Basilicata	5 063 504	0	0
Calabria	28 825 591	0	0
Emilia-romagna	36 000 000	36 000 000	13 590 841
Lazio	10 000 000	10 000 000	8 507 462
Liguria	4 000 000	4 000 000	0
Lombardia	57 820 000	24 571 430	10 535 000
Marche	16 427 999	16 427 999	13 191 424
Molise	6 700 000	6 700 000	1 675 000
Piemonte	71 853 000	71 853 000	71 853 000
Sardegna	11 264 625	0	0
Sicilia	30 000 000	0	0



Toscana	12 790 216	0	0
Umbria	3 500 000	0	0
PON imprese	71 548 480	71 548 480	23 291 424
<b>Total</b>	<b>365 793 415</b>	<b>241 100 909</b>	<b>142 644 151</b>

Below a brief description of the existing financial instruments is reported, on the basis of both desk information and interviews.

#### Marche region, mobility and energy fund<sup>29</sup>

This financial instrument received an OP endowment of EUR 16.4m, and it is managed by Artigiancassa, a dedicated company of the BNP Paribas group, selected by the MA through an open call for tenders. The financial instrument supports, with soft loans, public and private entities performing EE interventions in public buildings, public lighting, public transport means and EE in SMEs. The financial instrument was created in 2016 and based on available information, as of 31/12/2018<sup>30</sup> EUR 12.3m of the OP endowment was paid to the fund and EUR 7.6m was paid to final recipients.

All supported initiatives combine financial instrument and grant resources (under two separate operations). The financial instrument operated over three measures:

- **EE in public buildings**, this measure is related to the regeneration of five health care buildings identified by the Regional Authorities. This project (circa EUR 12m overall investment costs) is a pioneering initiative and its preparation has been also supported by the Intelligent Energy Europe programme (MARTE project). The project () has been performed under an Energy Performance Contract (EPC), therefore the selected ESCO will have to build, finance and manage the project. Combined ESIF grant and financial instrument resources have been provided to the selected ESCO.
- **Regeneration of public transport means**, this measure is fronted by the Regional Authorities that provide grant resources to the public transport companies operating in the region, to support up to 50% of the cost of new buses. Companies receiving the aforementioned grants can also benefit from a zero percent loan provided by the financial instrument (covering up to 35% of the total costs). As of the end of 2018, 10 public transport companies were eligible to receive the grant and six of them requested also the financial instrument support worth circa EUR 6.8m (51 buses).
- **EE in enterprises**, also in this case, the relevant Regional Authorities have prepared (with the support of the FI) a call for tenders to allocate grant resources to enterprises performing EE interventions. Eligible enterprises can moreover benefit from a soft loan provided by the FI. As of the end of 2018, 106 requests were submitted (82 requests were accepted).

Based on the feedback of the MA, this experience is considered to be positive although some complexity was found in the combination of grant and financial instrument resources.

#### Piedmont region, energy efficiency and renewable energies fund for enterprises<sup>31</sup>

The financial instrument is managed by the Regional Development Agency of Piedmont Region (FinPiemonte) and it supports enterprises (i) performing EE activities in production processes and/or buildings; and (ii) investing in renewable energies.

As of 31/12/2018<sup>32</sup>, the total amount committed to the financial instrument (EUR 71.8m) has also been paid to the financial instrument and payments to final recipients were EUR 50.2m.



The measure builds upon a similar supporting scheme developed in Piedmont during the 2007 – 2013 period. The product combines: a grant component (20% of investment costs); a zero percent interest rate loan (60%) and a loan provided by commercial banks (20%). Supported investments range between EUR 50 000 and EUR 3mIn (for SMEs) and between EUR 100,000 and EUR 5mIn (for larger companies).

The grant/financial instrument combination is done within 2 operations.

To access resources, enterprises have to submit a technical proposal to Finpiemonte (both about the company itself and about the EE project). A dedicated committee assess the proposals, with the support of partner commercial banks (for the economic and financial assessment), and a feedback is provided to potential recipients within 60 – 90 days.

Part of the resources (e.g. soft loan and commercial banks resources) are transferred to selected final recipients prior to the start of the projects, while the grant component is paid after works have been performed. At the end of the project, enterprises need to submit some technical documentation to prove they performed the works and to provide information about achieved savings.

The following information has been provided by the financial instrument manager:

- The financial instrument is now closed as all allocated resources have been used. Regional Authorities are working to re-generate and re-start (with some changes) the initiative in the first quarter 2020, as some OP resources are still available and there are important reflows from the initiative;
- The programme achieved important results, an OP endowment of EUR 96m (circa EUR 72m financial instrument loans and EUR 24m grants) has been committed to final recipients;
- According to different criteria, final recipients can be classified as:
  - “energy intense” enterprises (70 enterprises, 30% of allocated resources) and “non-energy intense” enterprises (135 enterprises);
  - with respect to their size, final recipients are: micro and small enterprises (90); medium size enterprises (60) and large enterprises (30);
  - Considering the type of investment undertake, supported initiatives can be divided into EE (70 enterprises); RES (90 enterprises) and a combination of the two (50 enterprises).

The measure is well perceived by local enterprises and there is potential to replicate it in the next programming period.

#### **Lombardy region, EE fund<sup>33</sup>**

This financial instrument was created in 2016 and it is managed by Finlombarda, the regional development agency.

As of 31/12/2018<sup>34</sup>, the total amount committed to the financial instrument was EUR 24.5m, the amount paid to the financial instrument was EUR 19.3m; the amount committed to final recipients was EUR 5.3m and payments to final recipients were EUR 2.8m.

The financial instrument supports public entities (i.e. Municipalities) and private enterprises operating for public entities (e.g. concessionaires, etc.) performing EE activities in buildings and other infrastructure.

The fund offers a product combining: a grant component (30% of investment costs) and a soft loan (up to 40% of investment costs).

The financial instrument can finance:

- Municipalities (municipal lending) performing EE initiatives under traditional public procurement procedures (*appalti*); and



- Private enterprises (e.g. ESCOs), selected by municipalities to perform EE initiatives under Energy Performance Contracts (EPC), thus avoiding to increase the debt level of municipalities.

The process to access the grant/financial instrument is the same in both cases:

- 1) Prior to launching the public procurement/EPC procedure, the municipality can submit Finlombarda a grant/financial instrument request, on the basis of the EE preliminary project;
- 2) Finlombarda performs an assessment of the request and can award the grant/financial instrument contribution;
- 3) The municipality performs the procurement procedure (either public procurement or EPC) to award the EE works contract;
- 4) Once the procedure has been finalised and a contractor has been selected, the municipality has to submit Finlombarda the awarded project and the contract, to receive the final confirmation of the award of the grant/financial instrument contribution;
- 5) If the municipality performs a traditional public procurement, then the grant/financial instrument is provided to the municipality; while if the procedure is an EPC, then the grant/financial instrument contribution is provided directly to the private enterprise selected (without impact for the balance sheet of the municipality).

Based on information provided by the financial instrument manager, as of February 2020, 60 projects have requested the support of the FI/grant scheme (12 EPC and 48 traditional public procurement) and all available grant and financial instrument resources (EUR 40m) have been allocated, although not yet paid.

Some issues have been encountered during the deployment of the FI:

- Procurement procedures are very long and complex, implying considerable delays from the moment the grant/financial instrument is initially awarded (before the public procedure starts) until the moment the expenditure is completed;
- In many cases (in particular in smaller municipalities) awarding authorities lack the competence to ensure procedures are implemented under the best possible practices (in particular for EPC) thus increasing the likelihood of litigations with bidders;
- Price reductions, following the public procedure have implications on the expenditure of the financial instrument (i.e. the initially awarded grant/financial instrument contribution is in many case higher than the final contribution);
- Other national and regional measures (mainly grant based, such as *conto termico*, etc.) to support EE are not always coordinated/compatible with the FI, therefore in several cases the financial instrument contribution is not utilised.

#### Apulia region, EE loan fund<sup>35</sup>

This financial instrument was set up in 2017 and it is managed by the regional development agency Puglia Sviluppo. The fund offers a product combining: a grant component (40% of investment costs); a zero percent interest rate loan (30%) and a loan provided by commercial banks (30%).

SMEs performing EE/RES interventions can access the fund. Investments can span from EUR 80,000 to EUR 4mIn and they must generate energy savings of at least 10% of the ex-ante consumption.

As of 31/12/2018<sup>36</sup>, the total amount committed to the financial instrument was EUR 25m, the amount paid to the financial instrument was EUR 6.2m; the amount committed to final recipients was EUR 112,232 while no payments to final recipients were made.



*It was not possible to collect information about the most recent performance of the FI.*

#### **Emilia Romagna region, EE fund<sup>37</sup>**

This financial instrument was created in 2017 and received an initial OP endowment of EUR 36m (during interviews the MA informed that the endowment has been subsequently increased to EUR 40m), and it is managed by a private financial intermediary (UNIFIDI Emilia Romagna) selected by the Region via a competitive procedure.

As of 31/12/2018<sup>38</sup>, the total amount committed to the financial instrument was EUR 36m, the amount paid to the financial instrument was EUR 18m; the amount committed and paid to final recipients was EUR 17m. The fund offers:

- A grant component (technical support) for the project preparation;
- A soft loan, covering up to 100% of project costs, funded by OP resources (70% of the total, no interest rate charged) and resources contributed by the financial instrument manager (30% of the overall loan, market based interest rate).

Loans provided by the financial instrument are unsecured, with a tenor spanning between 36 and 96 months (including a maximum grace period of 12 months), and an amount ranging from a minimum of EUR 25,000 to a maximum of EUR 750,000. Loans are provided once at least 30% of the underlying investment has been completed (this measure was taken to mitigate the risk of resources de-commitment, however it is reducing the appetite of final recipients and thus limiting the uptake of the measure).

Based on information provided by the MA, as of February 2020 the fund allocated circa EUR 26m, mainly related to renewable energies investments (photovoltaics) and building envelopes.

#### **Lazio region, energy fund<sup>39</sup>**

The Lazio Region has created a financial instrument to support SMEs (Revolving Fund for small credit) and this financial instrument received also an endowment of OT4 resources, contributed as a dedicated compartment (*Piccolo Credito Energia*).

The overall FINANCIAL INSTRUMENT (Revolving Fund for Small Credit) has an OP endowment of circa EUR 39m while the energy compartment has an OP endowment of circa EUR 9.6m (recently reduced).

The financial instrument is managed by a private consortium including two financial intermediaries (Artigiancassa and Banca del Mezzogiorno – Medio Credito Centrale) selected by the Regional Development Agency (Lazio Innova) via a competitive procedure.

The Energy compartment of the financial instrument provides soft loans (no interest rate) to SMEs to support investments targeting energy consumption reduction and renewable energies (for self-consumption only).

Loans cover EE investment related expenditures, including project preparation costs and investment related working capital (up to 30% of the investment costs).

Loans span between EUR 10,000 - 50,000 with a tenor between 12 and 36 months.

The entire financing procedure is organised online, via a dedicated web page ([farelazio.it](http://farelazio.it)):

- 1) Enterprises interested in the financing need to register to the online platform and to submit an application that can follow two different routes (i) for the most common 10 EE interventions (e.g. LED lighting, PV systems, envelope related improvements, etc.) a simplified form needs to be filled, providing limited information; while (ii) for less standardised measures, specific documents need to be provided. In both cases applicants need to perform an estimate (based on an excel sheet provided on the online platform) of expected savings;



- 2) The financial instrument manager appraises proposals received and if a proposal is approved, then an online version of the credit agreement is sent to the project promotor, who can sign it electronically
- 3) Once the financing contract is signed, resources are disbursed to the bank account of the recipient.

When the investment is finalised, the recipient needs to upload, on the web page of the FI, invoices related to the project and a brief documentation of the implemented project (including an ex-post estimate of potential savings).

Although the Lazio financial instrument (Revolving Fund for small credit) is reported to have a very good uptake (more than 2,000 proposals received so far), the EE compartment (*Piccolo Credito Energia*) is experiencing a very low uptake (only 28 proposals since July 2017) therefore the dedicated endowment (EUR 9.6m) has been recently lowered (to EUR 3.8m).

The main issues seem to be connected with the other existing national grant schemes (e.g. *conto termico*) that are more appealing to final recipients and perhaps also relate to the lack of a grant component and to the small amount of loans.

#### Molise region, energy fund<sup>40</sup>

This financial instrument was created in 2018 with an OP endowment of EUR 6.7m (including management fees), and it is managed by the regional development agency FinMolise.

The financial instrument targets EE/RE projects in the public sector (e.g. EE in buildings, street lighting renovation, REs plants for self-consumption, etc.) providing zero percent loans ranging from EUR 20,000 to EUR 1m with up to 10 years tenor. To access financial instrument resources the potential recipients have to submit a project proposal, including an energy audit.

As of 31/12/2018<sup>41</sup>, the total amount committed to the financial instrument was EUR 6.7m, the amount paid to the financial instrument was EUR 4.0m while no resources were committed/paid to final recipients.

*It was not possible to collect information about the latest performance of the FI.*

#### Liguria region, energy fund<sup>42</sup>

This financial instrument was implemented in 2018 with an OP endowment of EUR 4m, and it is managed by the regional development agency FILSE and it is combined with an ESIF grant (also managed by FILSE) worth EUR 4m.

The financial instrument supports EE in SMEs providing:

- A soft loan, with a 0.5% interest rate, covering 40% of investment costs (up to EUR 200,000) provided upfront, with a tenor of up to 8 years with a grace period of up to 1 year; and
- A grant covering up to 40% of investment costs, provided 40% in advance and the remaining 60% at the end of the project.

Investments can range from EUR 25,000 and EUR 400,000. Regarding State Aid, the *de-minimis* regime was used. SMEs had 10 days to submit their proposals (from 1/3/2019 until 11/3/2019) on the online page of the financial instrument manager providing, among others: project documentation, energy audit, investment timetable, business plan, quotations.

It is understood that the measure has been closed, however *it was not possible to collect information about the latest performance of the FI.*

#### Southern Regions energy/environmental fund<sup>43</sup>

This measure (*Contratto di Sviluppo per la tutela ambientale*) received an endowment of circa EUR 100m drawing upon the National OP Competitiveness and Enterprises (TO4). The national development agency Invitalia is





managing the measure that combines financial instrument (circa EUR 71.5m) and grants (both capital grants and interest rate subsidies).

The measure supports projects of important size (more than EUR 20m or more than EUR 7.5m for agriculture processing companies) promoted by enterprises in the five southern regions, to reduce energy consumption and greenhouse gases.

Eligible recipients can be either (i) enterprises operating in the context of a so called “environmental protection development plan” (*piano di sviluppo di tutela ambientale*) in the energy sector; or (ii) energy intensive companies. Interested enterprises need to submit a detailed proposal using the web page of the programme.

As of 31/12/2018<sup>44</sup>, the total amount committed to the financial instrument was EUR 71.5m, the amount paid to the financial instrument was EUR 17.9m while no resources were committed/paid to final recipients.

*It was not possible to collect information about the latest performance of the FI.*

Besides existing financial instruments drawing upon 2014 – 2020 ESIF, it is also worth mentioning the JESSICA instruments implemented during the 2007 – 2013 period, that was also targeting EE investments and the centralised PF4EE instrument.

### **JESSICA instrument**

During the 2007 – 2013 programming period, EE was a sector covered under the various **JESSICA** funds implemented in Sardinia, Sicily, Campania.

JESSICA funds (in the EE sector) were targeting mainly public authorities, mostly supporting the energy renovation of buildings and street lighting systems.

The projects supported had very different sizes (e.g. from the renovation of circa 60,000 lighting points in Naples to very small scale EE projects in Sardinian municipalities) and were mainly deployed under traditional public procurement solutions, although some cases of ESCO financing were also reported.

Projects were mainly in the public sector (e.g. renovation of public lighting systems, EE in public buildings, etc.), therefore the financial instrument was mainly granting soft loans to municipalities.

JESSICA funds were implemented via commercial intermediaries that were supported by technical experts having the role of scouting projects and providing a limited high level support to potential final recipients with respect to projects. This element proved to be important for both increasing awareness raising among potential recipients and to originate and finance a pipeline of projects.

### **Private Finance for Energy Efficiency (PF4EE)**

Private Financial for Energy Efficiency (PF4EE) is a joint agreement between the EIB and the European Commission which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments, supporting the implementation of National Energy Efficiency Action Plans or other energy efficiency programmes of EU Member States. The instrument is managed by the EIB and funded by the Programme for the Environment and Climate Action (LIFE programme).

During the current programming period, the PF4EE instrument has been implemented in Italy via the commercial bank BPER. The PF4EE Italy (called Life4Energy) targets EE in industry, providing loans ranging from EUR 40,000 to EUR 5m to enterprises. Based on the most recent information 18 loans have been originated so far and more transactions should be supported in the next future.



## NOTES

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<sup>1</sup> EUROSTAT; Population on 1 January by age and sex [demo\_pjan]; extracted on 13/02/2020

<sup>2</sup> National Energy and Climate Plan

<sup>3</sup> EUROSTAT; Real GDP per capita [SDG\_08\_10]; extracted on 13/02/2020

<sup>4</sup> EUROSTAT; Final energy consumption (Europe 2020-2030); Energy efficiency [nrg\_ind\_eff]; extracted on 13/02/2020

<sup>5</sup> Ratio between: EUROSTAT; Final energy consumption (Europe 2020-2030); Energy efficiency [nrg\_ind\_eff] and EUROSTAT; Population on 1 January by age and sex [demo\_pjan]; extracted on 13/02/2020

<sup>6</sup> EUROSTAT; Energy productivity [T2020\_RD310]; data in Euro per kilogram of oil equivalent (KGOE); extracted on 13/02/2020

<sup>7</sup> EUROSTAT

<sup>8</sup> This data refers to technical final energy savings

<sup>9</sup> EUROSTAT; Final consumption - other sectors - households - energy use; Complete energy balances [nrg\_bal\_c]; extracted on 13/02/2020

<sup>10</sup> Odyssee database, Consumption per dwelling with climatic corrections, year 2016

<sup>11</sup> National Energy and Climate Plan

<sup>12</sup> EC. Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU; 2019

<sup>13</sup> National Energy and Climate Plan

<sup>14</sup> National Energy and Climate Plan

<sup>15</sup> National Energy and Climate Plan

<sup>16</sup> National Energy and Climate Plan

<sup>17</sup> Central Intelligence Agency, the world fact book

<sup>18</sup> EUROSTAT; Final consumption in industry; Complete energy balances [nrg\_bal\_c]; extracted on 13/02/2020

<sup>19</sup> National Energy and Climate Plan

<sup>20</sup> Central Intelligence Agency, the world fact book

<sup>21</sup> National Energy and Climate Plan

<sup>22</sup> National Energy and Climate Plan

<sup>23</sup> National Energy and Climate Plan

<sup>24</sup> EC; fi-compass; Multi-Region Assistance Project Revolving Investment for Cities in Europe (MRA-RICE). Case Study – Milan. 2018

<sup>25</sup> <https://cohesiondata.ec.europa.eu>

<sup>26</sup> Data provided by DG Regio based on an analysis of fields of intervention

<sup>27</sup> Under the TO4 there are 4 sub-measures, however only 2 can be related to EE, as the others are related to smart grids, renewables and smart mobility

<sup>28</sup> Another regional instrument drawing upon TO4 resources has been moreover implemented in the Puglia Region (EUR 25m)

<sup>29</sup> Information is based on both documents reported on the web page of the FINANCIAL INSTRUMENT and of an interview with the Marche MA

<sup>30</sup> <https://cohesiondata.ec.europa.eu>

<sup>31</sup> Information is based on both documents reported on the web page of the FINANCIAL INSTRUMENT and of an interview with FinPiemonte

<sup>32</sup> <https://cohesiondata.ec.europa.eu>

<sup>33</sup> Information is based on both documents reported on the web page of the FINANCIAL INSTRUMENT and of an interview with FinLombarda

<sup>34</sup> <https://cohesiondata.ec.europa.eu>

<sup>35</sup> Information is based on documents reported on the web page of the FI

<sup>36</sup> <https://cohesiondata.ec.europa.eu>

<sup>37</sup> Information is based on both documents reported on the web page of the FINANCIAL INSTRUMENT and of an interview with the Emilia Romagna MA

<sup>38</sup> <https://cohesiondata.ec.europa.eu>

<sup>39</sup> Information is based on both documents reported on the web page of the FINANCIAL INSTRUMENT and of an interview with the FINANCIAL INSTRUMENT manager (Artigiancassa)

<sup>40</sup> Information is based on documents reported on the web page of the FI

<sup>41</sup> <https://cohesiondata.ec.europa.eu>

<sup>42</sup> Information is based on documents reported on the web page of the FI

<sup>43</sup> Information is based on documents reported on the web page of the FI

<sup>44</sup> <https://cohesiondata.ec.europa.eu>

