COALESCCE
PEER REVIEW 12-16/02/2018, PESCARA, ITALY

1. FOCUS OF THE PEER REVIEW

1.1 Please briefly define the focus of your region's Peer Review.

The focus of our region's Peer Review will be on public and private initiatives, the need and challenges of integrating them, activities and policy instruments in the field of energy and climate change and awareness raising of community energy for everybody.

The main policy instruments and frameworks are:

- Abruzzo Regional Operational Programme (ROP) ERDF 2014-2020. Axis IV foresees energy efficiency and energy saving interventions in both public (public buildings, in particular schools) and private sector (energy efficiency of enterprises);
- Regional Plans in the field of energy and environment and the sustainable urban strategies also in line with the national strategies, in particular the National Energy Plan which introduces for the first time the concept of "energy community";
- Regional Plan of Adaptation to Climate Change also in line with the EU initiatives in the field and the National Plan of Adaptation to Climate Change;
- SEAPs (Sustainable Energy Action Plans submitted under the 2020 Covenant) to be updated into SECAPs (Sustainable Energy and Climate Action Plans to be submitted under the 2030 Covenant).

The main initiatives and activities are:

- The public and private initiatives and the Pescara Charter;
- The participatory process (involvement of stakeholders and citizens);
- The Covenant of Mayors Initiative.

The peer review will examine:

a) How this existing framework can be used as a policy basis for partnerships with community energy groups;

b) How citizens and stakeholders can be actively involved;

c) How to foster private and public partnership;

d) How can we raise awareness among local people concerning community energy and how can we convince people to cooperate in community energy projects;

e) Will identify potential business models for such partnerships, and will recommend practical steps, which can be taken to enable these partnerships to be established.

1.2 Please state any specific questions that, as the Host Region, you wish to ask the Peer Review Team.

1. How the existing policies and support programmes for energy efficiency, renewable energy and climate change can be upgraded and used as a basis for establishment of community energy groups and projects?

2. How to stimulate the active participation of all relevant parties like municipalities and business to establish and manage community energy groups?

3.How to enhance community cooperatives in the field of energy?

3. What business models are most suited for such partnerships?

1.3 Please state any specific outcomes you expect to achieve from this Peer Review (development of a particular field / project, etc.).

1. Working ideas on how to engage municipalities, businesses and civil society in regional EE and RES policy development and implementation;

2. Recommendations on mesures and actions to support development of projects on community level allowing them to become self sufficient and sustainable in energy;

3. Recommendations on financing of community energy initiatives, untill and after 2020.

2. REGIONAL FIGURES

2.1. General economic indicators

Abruzzo is a region of central Italy. Its western border lies 80 km (50 mi) east of Rome.

Geographically, Abruzzo, stretches from the heart of the Apennines to the Adriatic Sea, and includes mainly mountainous and wild land. The mountainous inland is occupied by a vast plateau including Gran Sasso, at 2,912 metres (9,554 ft) the highest peak of the Apennines, and Mount Majella 2,793 metres (9,163 ft). The Adriatic coastline is characterized by long sandy beaches to the north and pebbly beaches to the south.

Abruzzo is known as "**the greenest region in Europe**" as one third of its territory, the largest in Europe, is set aside as national parks and protected nature reserves: there are three national parks, one regional park, and 38 protected nature reserves. These ensure the survival of 75% of Europe's living species including rare species, such as the small wading dotterel, golden eagle, the Abruzzo chamois, Apennine wolf, and Marsican brown bear. Abruzzo is also home to Calderone, Europe's southernmost glacier. The Abruzzo region has **two types of climate**: Mediterranean climate with hot dry summers and mild winters in coastal areas and sublittoral climate where temperatures progressively decrease with increasing altitude and precipitation with altitude in rainy hills. Like almost all Italian territory, Abruzzo Region is mainly characterized by historical towns. Abruzzo Region includes four province: L'Aquila, Chieti, Pescara and Teramo with 305 municipalities in total. The area and population for each province are listed in Table 1.

PROVINCE	AREA (km^2)	POPULATION (January 1th, 2016)
Chieti	2.588	390.962
L'Aquila	5.034	303.239
Pescara	1.189	321.973
Teramo	1.951	310.339
Total	10.762	**1.326.513**

Table 1. Area and population in the four province in Abruzzo.

The **GDP** per capita in 2016 amount to € 22.835,3. Despite the decrease, especially over the period 2011-2014, it is worth to highlight that in 2015 the GDP per capita was the highest in the South of Italy and that in 2016 it was higher than the average data of the South of Italy (€ 17.146,00) approaching the national average (€25.890,50).

	2000	2015	2016	Average % rates per year of variation 2000-16	Average % rates per year of variation 2015-16
GDP	€ 30.643,3	€ 30.250,4	€ 30.192,8	-1,5	-0,2
GDP per capita	€ 24.295,0	€ 22.804,5	€ 22.835,3	-6,0	0,1
Employement rate (15-64 years) %	56,3	54,5	55,7		
n. of employees (thousands)	489,9	521,6	524,2		
Unemployement rate (total) %	10,2	12,6	12,1		
n. of jobseekers (thousands)	53,8	69,1	66,9		

Source "SVIMEZ Report, 2017"

Table 2. Economical and occupational indicators for the Abruzzo Region.

Moreover, the GDP has decreased (-0,2%) in all regions affected by the terrible earthquake in August and October 2016. The trend of the regional GDP between 2000 and 2016 is reported in Table 2.
The employment data show that the performances in the Abruzzo Region are higher than those of the South Italy. The number of employees is +0,5% in 2016 (from 521.600 to 524.200 units) meanwhile the number of jobseekers decreases (-3,2% from 2015 to 2016). The employment rate grows (+1,2%) from 2015 to 2016 meanwhile the unemployment rate decreases (-0,5%).

The principal sectors of the **regional economy** are industry and tertiary, despite the role maintained by agriculture. The last one, in fact, boasts 27.383 active units (2016). The wheat is one of the most widespread products, with potatoes and beet. Moreover, important products are olive (with significant production of high quality oil) and grapes employed to produce wine such as the DOP wines Montepulciano, Controguerra and Trebbiano of Abruzzo. The region has one of the highest productivity rate in Southern Italy and its economic structure is largely based on SMEs. In 2015, Abruzzo was the one of the most industrialised region in Southern Italy (29.3% of value added from industry). Abruzzo in fact reaches industrialisation rates above the national average (66 enterprises per 10,000 residents vs. a national average of 64). The industrial activities include: electrochemical plants, cement and asphalt industries, sugar mill, milling, oil, brick and wood industries, foundries, wire drawing mills, paper mill, garment industry, glass industry, mechanical and electromechanical industry,

automotive, motorcycle, food industry, manufacturing activities (14.953 local units), etc. The reachest area of industrial activities are the valley of Pescara and southern Vastese (province of Chieti). A decisive contribution to the regional economy comes from the tourist activities (12.815 local units for activity of accommodation and catering services) present principally in the many coastal centers, but also in the internal areas, which are characterized by an important environmental heritage (National Park of Gran Sasso and Monti della Laga, National Park of the Maiella Mountain, National Park of Abruzzo, Lazio and Molise and many areas protected by the Region). The development of an advanced tertiary sector benefits from the presence of the University of Chieti-Pescara, University of Teramo and University of L'Aquila. to these it is added the Gran Sasso National Laboratory for the research in the field of the particle physics.

The **transport infrastructures** include: 1) the Abruzzo International Airport; 2) four main ports located in Ortona, Vasto, Giulianova and Pescara that, over the years, became one the most important tourist ports of Italy and Adriatic Sea; 3) a railways network that show disparity between the Abruzzo coast and the inland areas; 4) three highways serving the Region (A24 Rome – L'Aquila – Teramo, A25 Torano – Avezzano – Pescara and A14 Bologna – Taranto).

In 2015, the 64.3% of the families declare to have access to **Internet** (versus the 66.2% of the National average). The 93.3% of the companies, with more than ten employees, of the industry and services sectors have a broadband connection (versus the 94.4 % of the National average).

2.2 Estimated no. of businesses involved in community energy

Many companies of the Region of Abruzzo are being involved in the energy community mainly through **the "Pescara Charter",** a pact between Abruzzo Regional Council and enterprises which has been launched in November 2016 (please, see a more detailed description of the initiative in section 3.4). To be eligible to become a Charter partner, the applicant company must meet several conditions, with the environment as the priority.

The Pescara Charter offers applicant companies a "region-enterprise partnership process" that provides specific advantages for enterprise committed to pursuing the aims of sustainable industry. In acknowledgement of this commitment, Abruzzo Regional Council has established advantages in terms of simplified procedures, reduction of administrative, national and local, taxes, economic concessions and supporting legislation.

Up to date, 141 companies, belonging to different sectors (building, engineering, chemical-pharmaceutical, agri-food, wine production, etc...) have already joined the initiative.

Moreover, the Region has started a cooperation with the **ESCOs** of the territory within the NEW FINANCE project funded within the INTERREG MED Programme. The projects focuses on the new finance for energy efficiency measures in public buildings and its objective is to foster private and public partnerhship and initiatives. At least 6 ESCOs are activbely involved within the project and are cooperating with the region and local municipalities to highlight regional best practices and initiatives in the field as well as to implement new initiatives,

3. AMBITIONS, GOALS AND POLICY

3.1 What are the national ambitions on community energy sources (RES) and energy efficiency (EE)

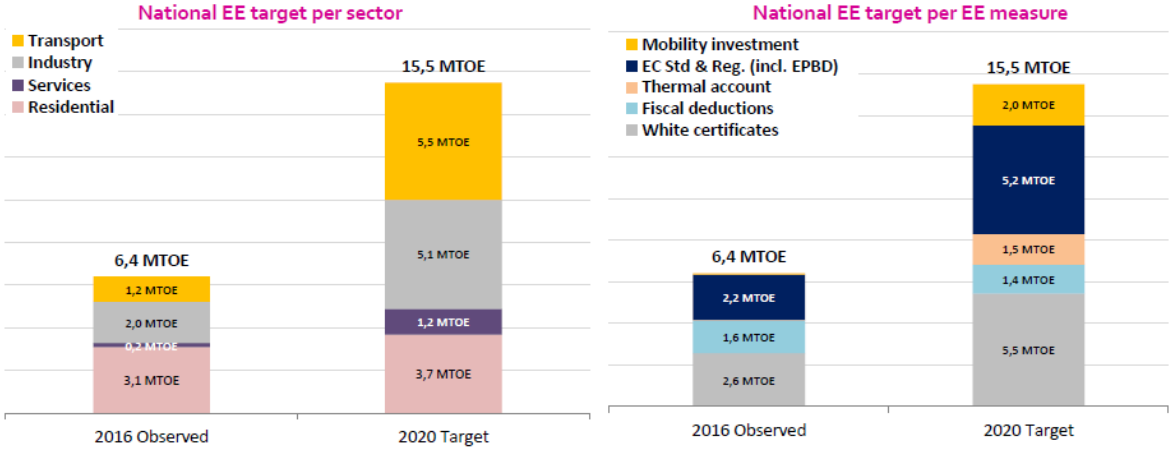
Currently the European and National legislation frameworks include **two different energy efficiency targets** (Data from GSE, state-owned company, which manages renewable energy incentives, Gestore dei Servizi Energetici):

	Energy Efficiency Target 2020			Energy Efficiency Target 2020			
	Description	Mandatory	%	%	Mtoe	Period	Measures
Total EE target	Primary energy savings with respect to PRIMES 2007 reference scenario of primary energy consumption.	No	-20%	-24 % (with respect to reference PRIMES 2007)	-15,5 Mtoe/y (saving in 2020 final consumption) (*)	2011-2020	• White Certificates • Thermal Account • Fiscal deduction • EPBD • EC Standard & Regulation • Other Measures in Transport
EE obligation schemes target (Art.7 EED)	Final energy savings through energy efficiency obligation schemes	Yes	1,5%/y new savings in 2014-2020 of 1,5 % of the annual energy sales with some facilitations (art 7 par. 2 & 3 EED)	Up to 1,5% /y (of Final Consumption excluding transport)	-25,4 Mtoe (2014-2020 FC cumulated savings, corresponding to 6,75 Mtep/y in 2020)	2014-2020	• White Certificates (60%) • Thermal Account • Fiscal deduction

(*) 20 Mtoe in terms of Primary energy consumption

In 2016 Italy reached 41% of the national energy efficiency target expected for 2020:

- The energy savings assessed in 2016 (interventions 2011-2016) are concentrated in residential and industrial sectors while services and transport sectors are still far from the sectorial target;
- White certificates and Fiscal deductions are the most significant energy efficiency measures in terms of energy saving generated to achieve the target.



In 2016 Italy was in line (83%) with the energy saving trend defined in EEAP in order to reach the 2020 energy efficiency obligation scheme target:

- White certificates covered more than 60% of the energy savings assessed and is very closed to the planned saving trend;
- Fiscal deduction provided more energy savings compared to expectations. Fiscal deductions partially compensate the Thermal Account energy savings gap.

The year 2017 had a particular importance for the national energy efficiency policies, since the Italian Ministry of Economic Development (MiSE), with the support of ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development), has elaborated two programming documents, namely the **National Energy Efficiency Action Plan (NEEAP)** and also the **National**

Energy Strategy (NES). Italy's NES 2017 lays down the actions to be achieved by 2030, in accordance with the long-term scenario drawn up in the EU Energy Roadmap 2050, which provides for a reduction of emissions by at least 80% from their 1990 levels.
Here are some of the core targets of the National Energy Strategy 2017:

- reducing final energy consumption by a total of 10 Mtoe by 2030;
- reaching a 28% share of renewables in total energy consumption by 2030, and a 55% share of renewables in electricity consumption by 2030;
- strengthening supply security;
- narrowing the energy price gap;
- furthering sustainable public mobility and eco-friendly fuels;
- and phasing out the use of coal in electricity generation by 2025.

Details of the strategy are provided here below.

Italy's National Energy Strategy (NES)

On November 10th 2017 the new Italy's National Energy Strategy (NES) has been adopted with a ministerial decree of the Ministry of Economic Development and The Ministry of the Environment and Protection of Land and Sea. The National Energy Strategy is the ten-year plan that the Italian Government drew up to anticipate and manage the change of the national energy system: a document looking beyond 2030, and laying the groundwork for building an advanced and innovative energy model.
The document results from a participative process that involved the Italian Parliament, the Regions, and over 250 stakeholders (associations, companies, public entities, Citizens) and representatives of academia. The objective of the Strategy is to make the national energy system more competitive, more sustainable, and more secure. **The NES 2017 defines, indeed, the new target to be achieved by 2030**, coherent with the scenarios defined at EU level.
The objectives and ambitioius of the Strategy are reported in the table here below.

Competitiveness		
TARGET	**TO DATE**	**ACTIONS**
Enhancing competitiveness requires actions to narrow cost and price differentials to the benefit of all consumers, to complete liberalisation processes, and to rely on instruments that protect the competitiveness of energy-intensive industrial sectors, while preventing risks of delocalisation and safeguarding employment. Decrease primary consumption of oil products by 13.5 Mtoe by 2030 as against its 2015 levels.	The gap between the Italian natural-gas cost and the North-European one amounted to about € 2/MWh in 2016. The gap between Italian electricity cost and average in Europe amounted to roughly € 35/MWh in 2015 for an average household, and to about 25% on average for companies.	ELECTRICITY AND GAS MARKETS - completing the harmonization of European rules governing the single electricity market, and the reform of the ancillary services market, to boost the energy transition and reduce the costs of ancillary services - accelerating the full participation of distributed generation and consumers in energy and ancillary services markets; increasing the capabilities of communication and management coordination between or among system operators - streamlining procedures for supporting self-generation of electricity from RES or high-efficiency co-generation, and the new energy communities - adopting a new tariff scheme for system charges, as well as reduction of system charges (established to grant RES incentives) paid by energy intensive companies, so as to recover important competitiveness margins, and relaunch growth and employment - aligning the price of Italian natural gas with

		the one of the more liquid and more competitive north-European hubs, and removing the current distortions in the Italian market arising from natural-gas transit pipelines from northern Europe - introducing some operators as market maker in the natural-gas exchange to contribute to the liquidity of the system - revising system charges for companies with a high consumption of natural gas or using it as a raw material - fully liberalizing the retail electricity and gas markets - strengthening measures to fight energy poverty and reforming the current scheme of discounts on energy bills for low-income or large households and for the disabled (so-called "social bonus") OIL MARKET AND LOGISTIC - promoting the conversion of other refineries into biorefineries, given the demand for advanced biofuels - intensifying the fight against illegality in the distribution of oil products - developing market platforms for supplying logistic services and oil products - progressively revising existing tax incentives for fuels, which are environmentally detrimental
Sustainable growth		
TARGET	**TO DATE**	**ACTIONS**
1. RES: 17.5% in 2015 to 28% in 2030 (total consumption of energy); from 33.5% in 2015 to 55% in 2030 (consumption of electricity); from 19.2% in 2015 to 30% in 2030 (consumption in heating and cooling); from 6.4% in 2015 to 21% in 2030 (transport).	Italy has already achieved its RES targets by 2020, with an RES penetration of 17.5% in total energy consumption in 2015 vs. a 17% target to be reached by 2020.	RES deployment in Italy can decrease not only emissions, but also energy dependence and, in the future, the gap between Italian electricity prices and European average ones. Reconciling energy targets with landscape conservation is a critical issue for the country. This issue concerns, above all, RES with the highest residual potential still to be tapped, i.e. wind and solar photovoltaic. As landscape conservation is a mandatory requirement, the Strategy promotes the revamping and repowering of wind, hydro and geothermal power plants, assigns priority to brownfield sites, and allocates a greater number of resources for RES and energy efficiency enhancements. 1) **RES in Electricity**: a) long-term contracts for large-scale power generation; promotion of self-consumption for small-scale power generation; b) streamlining the permitting process for repowering wind and hydro plants; c) maintaining existing power

		generation from bioenergy sources, without distortions to the agricultural sector chain; d) increasing hydro power generation with innovative projects in existing large-scale plants. 2) **RES in heating and cooling**: a) heat pumps are bound to play a key role in achieving the target; b) biomass facilities will have to mitigate their emissions and guarantee high environmental quality; c) the potential of district heating in urban and non-urban areas will be harnessed in efficient ways. 3) **RES in transport**: a) to promote the transition towards fuels having low lifecycle GHG emissions and low land use (advanced biofuels); b) the global market of electric cars is expected to experience a strong expansion in the long run.
2. EE: to achieve 30% of energy savings by 2030 with respect to their trend in 2030, and give impetus to the Italian energy efficiency industry (e.g. construction of energy-efficient buildings and installation of energy-efficient facilities). 3. DECARBONISATION: acceleration of the decommissioning of coal-fired thermal power plants by 2025.		- **Residential Sector: a)** revising, strengthening and confirming the tax deduction scheme for energy-efficiency investments (so-called "Ecobonus"); b) putting the energy-efficiency fund into operation, and setting aside a reserve for energy-efficiency loan guarantees; c) furthering the evolution of minimum performance standards. - **Transport Sector**: a) Strengthening sustainable local mobility to reduce urban traffic, and supporting the modal switch to smart mobility, cycle and pedestrian mobility, local public transport; b) improving the energy and environmental efficiency of the national stock of cars. - **Service Sector**: a) adopting measures to promote energy renovation of buildings, in particular of public buildings; b) adopting new minimum performance standards for public buildings. - **Industrial Sector**: a) strengthening and streamlining the white certificates scheme; b) promoting the energy efficiency of SMEs.
		Implementation of the plan for managing the growing share of RES in electricity in a timely manner, to supplement it with additional specific actions on infrastructures, plants and facilities, and to agree on a plan for revamping current sites and converting them into innovative power-generation

		hubs.
Energy Security		
TARGET	**TO DATE**	**ACTIONS**
The Strategy has set the target of providing the power system with innovative instruments and infrastructures, in order to: guarantee its adequacy and capability of meeting security standards; guarantee its flexibility, thanks also to technological breakthroughs, in a context of growing penetration of RES; promote its resilience to extreme weather events and contingencies; and shorten the timescales of and streamline the permitting process and the implementation of projects. The Strategy deems it vital to: diversify supply sources, by optimising the use of the existing infrastructures, and develop new connection infrastructures; improve the flexibility of supply sources, by strengthening gas pipelines and the peak-demand security margin; and coordinate national contingency plans, including mutual support between EU countries.		POWER SYSTEM - launching the capacity market in 2018 to guarantee system adequacy, maintaining the still necessary gas-fired capacity (with priority to flexible capacity), and integrating new resources into the market (cross-border renewable-energy power-generating units, storage systems, active demand side) - further strengthening interconnections with neighbouring countries - increasing the capacity of storage systems NATURAL GAS SYSYEM - promoting the construction of new gas import pipelines by private parties, in accordance with market principles, in order to diversify supply sources and routes - holding auctions (instead of using tariffs) for LNG regasification services. in order to make the use of Italian gas terminals more attractive - converting local networks of distribution of LPG8 and propane-air mixtures in Sardinia to natural gas from regasified LNG; developing them by connecting them incrementally to small-scale LNG storage terminals; and using LNG to implement the first pilot project of Sulphur Emission Controlled Area (SECA) for maritime traffic in Sardinia.

Finally, the progressive transition towards low-emission models requires substantial efforts in supporting technological evolution, as well as research and development of new technologies. The Strategy aims to strengthen public support and create conditions to attract private investments, with the goal of contributing to developing technological concepts that can sustain the energy transition at reasonable costs, and offer business and employment opportunities. In order to reach these objectives, the action provided by the Strategy is to double investments in clean-energy research and development: from € 222 million in 2013 to € 444 million in 2021.

Other tools to be highlighed are:

The Italian National Strategy on Adaptation to Climate Change (SNAC)

It is funded by MATTM – the Italian Ministry of the Environment and Protection of Land and Sea and finalized in 2014.
The document is the outcome of a collaboration between scientists, stakeholders, decision makers. It provides a National vision to address climate change adaptation, actions and guidelines to build adaptive capacity, and concrete proposals about cost-effective adaptation measures and priorities.
The objectives are:

- Identification of specific sectors for sectoral and inter-sectoral analysis;
- Evaluation of the status of scientific knowledge on climate change impacts, availability of data and information at different scales and sectors in the country;
- Identification of sectoral vulnerabilities to those impacts and evaluation of related risks;
- Support in identifying and analysing current adaptation measures carried out at different scales (national, regional and local) and in various sectors;
- Estimation of costs and benefits of possible adaptation measures/actions for various sectors for short (2020-2030) and medium term (2040-2050);
- Support in identifying main national stakeholders and managing dialogue between institution;
- Support in elaborating guidelines for sectoral adaptation action at different scales.

The scheduled activities are:

- Task 1: Analysis and synthesis of knowledge base on climate change impacts, vulnerability and adaptation per sectors at the national level
- Task 2: Proposal for national governance for adaptation
- Task 3: Identification and involvement of stakeholders, support to IMELS for dialogue between national institutions
- Task 4: Definition of elements for developing a national adaptation strategy

The expected result is the development of the **National Adaptation Strategy to Climate Change in Italy**. The final version of the document is in preparation. Indeed, the public consultation on the Plan is currently ongoing.

The implementation of directive 2014/94/EU on the deployment of alternative fuels infrastructure (DAFI Directive).

The DAFI Directive has been adopted in Italy by the Legislative Decree no. 257 of 2016. It highlights the deployment of alternative fuels infrastructure in Italy in order to minimise dependence on oil and to mitigate the environmental impact of transport. The focus is on the need to the building-up of alternative fuels infrastructure, including recharging points for electric vehicles and refuelling points for natural gas (LNG and CNG) and hydrogen.

3.2 What national policy instruments are in place to achieve these ambitions?

(Please state the most relevant)

- Public funding (national subsidies)
- Private funding (fully private, public companies, private law, public- private partnerships)
- Direct (direct investments in a project)
- Indirect (support to a third party to invest in a project, laws or regulations that ease investments, tax measures)

The main policy instruments in place to achieve these ambitions are:

- **Incentives for RES and for energy efficiency**, above all **fiscal deduction**, **thermal account** and **white certificates** (for details, please refer to section 6.1);

- **Building sector**: the Italian Ministry of Economic Development promotes energy efficiency in buildings through regulatory measures (energy certificates) and benefits (incentives and deductions). It is worth to highlight:
  - **Certificate of Energy Perfomance – EPA** (In Italian, APE). The energy performance certificate is an official document with a validity of 10 years. It is issued by independent agencies and defines the technical standards and energetic performance categories for heating systems, hot water production and air-conditioning of properties. EPA contains all energetic features of a property and is divided into different categories. These are reaching from A+ (property with very low energy consumption) to G (property with very high energy consumption). The certificate does have to provide information from the land register regarding the property, the date of issue as well as the signature and a declaration of independence of the responsible technician. It also has to give information on the energy efficiency class of the property and the energy efficiency index of the building shell. In order to do so an authorized technician has to analyse and evaluate the following figures and installations: thermo-hygrometric features (stability and resistance under certain thermal and humidity conditions); energy consumption; warm water production; heating and cooling of rooms; heating system; installations or systems to use renewable energies.
    For the following type of properties the energy performance certificate is not necessary: Listed buildings and buildings of historical or artistic value: their original character might get lost due to structural changes. These buildings may only be restored or renovated subject to certain conditions; buildings which do not have a heating or cooling system or other installations connected to these; isolated buildings with a floor space of less than 50 s-m.
  - **National guidelines** for the energy performance of the buidlings establishing the minimum requirements (National Decree dated 26/6/2015). They identify the Guidelines and tools for the State and the Regions for the preparation of APE; establish an information system for the management of a national cadastre of energy performance certificates and thermal plants, the so-called Information System on Energy Performance Certificates (SIAPE); introduces the constraint for Regions and Provinces to establish control plans and procedures to analyze at least the annual 2% of APE of their territory.
  - **Application of calculation methods for energy performance and definition of minimum building requirements** (Interministerial Decree of 26 June 2015)
  - **Plan to increase almost zero-energy buildings** (Interministerial Decree 19 June 2017) http://www.sviluppoeconomico.gov.it/images/stories/normativa/all_decreto_interministeriale_19_giugno_2017_panzeb.pdf;
  - **Training courses for building energy certifiers.** Certifiers must be authorized by the Italian Ministry of Economic Development. The list of authorized parties is available at http://www.sviluppoeconomico.gov.it/index.php/it/energia/efficienza-energetica/edifici/certificatori-energetici/elenco-soggetti-autorizzati;
  - **Thermal plants.** Models are available for the system booklet for winter and summer air conditioning of buildings and for the energy efficiency ratio. The guide for the operation, control and maintenance of heating systems is also available.

- **Public Administration: The Energy Regeneration Programme of the Central Public Administration Buildings (PREPAC).** Article 5 of Legislative Decree. 102/2014 provides that, annually, starting from 2014 and until 2020, administrations prepare the program for the improvement of the energy performance of the buildings of the central public administration (so-called PREPAC), whose implementation methods have been defined with DI September 16, 2016. The program is prepared on the basis of the project proposals submitted, by July 15 of each year, by the central PA involved and concern actions to be carried out on buildings owned and occupied by them. With the decree dated 5 December 2016, the 2014 and 2015 annual programs were approved, which include 68 projects for a total amount of approximately 73 million euro.

- **Energy Audits.** In Italy the Energy Efficiency Directive (EED) has been ratified with the Legislative Decree n.102 of 04/07/2014 (Legislative Decree 102/2014), which obliges large companies and energy consuming companies to perform an energy audit by 5 December 2015, and at least every four years. Certified companies with ISO 50001, EN ISO 14001 and EMAS are exempt to this obligation if the system include an energy audit in accordance with annex II of the Legislative Decree. The Decree also states that energy consuming companies, not only have to undergo the energy audit, but they also have to implement the identified efficiency measures under reasonable time, or in alternative, adopt a management system in compliance with ISO 50001 standards. From July 20, 2016, energy audits can only be carried out by entities or qualified experts certified by accredited bodies (ESCOs under UNI CEI 11352, EGE under UNI CEI 11339, Energy auditor under UNI 16247 – 5). ENEA, the Italian National Agency for New Technologies, Energy, and Sustainable Economic Development, manages a database of enterprises obliged to undergo energy audits, carry out controls to ensure compliance with the audit requirements through an annual random selection of the enterprises subject to the obligation (at least 3%). The control activities also include in "situ" inspections. As from June 2016, ENEA writes an annual summary report of the audit activities and results. According to ENEA data, on 31st December 2016, 15.154 audits have been performed corresponding to 8.130 enterprises. Thanks to this result, Italy is positioned at the top of the list of more virtuous EU member states in implementing article 8 of EED and its obligation to energy-intensive and large industries. In the rest of EU, indeed, at the end of the first obligation period on December 2015, 13.000 audits were elaborated, 7.000 of which represented by audit declarations. Concerning the sectoral breakdown of Italian audits, almost 45% of them was performed on site in the manufacturing branch and more than 10% in trade, where energy consumption of Mass Retail Channel has a relevant share (see Table 12 – ENEA 2017 report).

Table 12 – Energy audits undergone according to article 8 Legislative Decree 102/2014

NACE classification	Number of enterprises	Audited sites	ISO 50001 enterprises	Large enterprises	Large energy-intensive enterprises	Non-large energy-intensive enterprises
A – Agriculture, forestry and fishing	60	99	2	55	1	0
B – Mining and quarrying	37	53	2	22	2	10
C - Manufacturing	4,827	6,793	97	2,490	722	1,528
D - Electricity, gas, steam and air conditioning supply	226	507	8	191	3	6
E - Water supply, sewerage, waste management and remediation activities	302	890	12	245	17	14
F - Construction	159	346	9	144	2	1
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	835	2,286	4	728	24	11
H - Transportation and storage	392	942	7	320	27	9
I - Accommodation and food service activities	93	258	2	81	4	0
J - Information and communication	150	596	4	130	4	3
K - Financial and insurance activities	238	684	6	220	2	0
L – Real estate activities	57	95	1	46	2	1
M - Professional, scientific and technical activities	229	472	4	197	3	3
N - Administrative and support service activities	222	471	2	196	5	3
Q - Human health and social work activities	208	451	2	184	12	4
R - Arts, entertainment and recreation	43	118	0	33	4	1
Other	52	93	1	37	2	3
Total	8,130	15,154	163	5,319	836	1,597

Source: ENEA

The Decree of 12 May 2015, as foreseen in Article 8 (9) of the Legislative Decree 102/2014, allocated EUR 15 millions a year until 2020, to co-finance regional programmes aiming at delivering energy audits for the SMEs, or for the adoption by the SMEs of an energy management system in compliance with ISO 50001 standards. Beneficiaries of the incentive have to realise the identified energy efficiency measures or obtain the ISO 50001 certification. Regions in turn made available additional 15 million euros, and total public financing covers

50% of energy audit realisation costs. It is estimated that at least 15,000 SMEs per year could be involved in this initiative and that an equal number of energy efficiency projects would be enhanced by energy audits. In implementation of the aforementioned legislation, two calls were launched (12 May 2015 and 4 August 2016) and subsequently approved the programs presented by the regions, namely 14 programs for the first year, and 11 for the second, for a amount of resources made available respectively amounting to approximately 9.8 million and 8 million. The initiative will be renewed annually with analogous resources until 2020.

Certification and accreditation of ESCOs and experts in energy management, in particular:

- **Energy manager (EM)**
  The Italian Ministry for the Economic Development has defined the methods for appointing "Energy managers", those responsible for the conservation and rational use of energy. The Italian Federation for the Rational use of Energy (FIRE), which manages the collection and management of the appointments of the energy manager in the context of the agreement with the Ministry, has realized a paltfrom for managing the appointments (https://nemo.fire-italia.org/).
  The law 10/1991, art. 19, obliges companies of the industrial sector with annual consumption higher than 10,000 toe and those of other sectors over 1,000 toe at the annual appointment of the technician responsible for storage and rational use of energy (EM).
  According to the law, functions of the EM are:
  - identify actions, initiatives, procedures and anything else needed to promote the rational use of energy;
  - ensure the preparation of energy balance;
  - prepare the energy verification data of the interventions made with the contribution of the State.

  The EM a person who is usually internal to the organization, preferably of managerial level to be able to carry out an effective action. Its action can be strengthened by the presence of an energy management system ISO 50001.
  The figure of the "volunteer" energy manager has acquired a more important role further to the the M. D. of December 28, 2012, which allowed to direct access to the white certificates scheme also organizations not subject to the obligation to appoint energy managers.
- **Certification and accreditation of "Companies providing energy services" (ESCO),** in compliance with UNI CEI 11352: 2014 drawn up pursuant to article 12, paragraph 1, of Legislative Decree 4 July 2014, n. 102.

- **CO_2 emissions reduction.** The Ministry participates in the management of the ETS Committee (European system for the exchange of quotas emission of greenhouse gases).

- **Plans and yearly reports on energy efficiency and cogeneration.** Between them, it is worth to highlight the **NES 2017** described in section 3.1.

Other measures are:

- **Public and Private Partnership and, above all, Energy Performance Contract.** Energy Performance Contracts (EPC) are an effective tool for achieving the energy saving target set by existing laws since they favour the adoption of energy efficiency interventions of the whole building and ensure their implementation and management over time. In fact, the contract objective is the improvement of building efficiency: energy efficiency interventions should imply guaranteed energy (and economic) savings, verified and monitored during the entire duration of the contract. Moreover, the realized investments should be repaid in function of the energy efficiency improvement obtained. Consistently with the regulation in force, ENEA elaborated a contractual format with “guarantee of results” aimed at favouring energy

efficiency interventions for the whole building and ensuring their realisation and management in time. Considered the peculiarity and complexity of this contractual model in its different legal, technical and economic aspects, and the high number and diversity of possible scenarios, ENEA also developed explanatory guidelines. The intention is providing public administrations with a tool that allows to use the EPC for reaching energy efficiency objectives whilst favouring the involvement both of private operators as ESCO and banks and, more in general, to make the results to be achieved transparent and definite respecting the procedures for subcontracting and meeting the new requirements on energy efficiency of buildings. These guidelines should be regarded as a "work in progress", considering the evolving regulation: for example, in May 2017 an amending decree to the new Tender Code entered into force and all the necessary strategic acts have not been emanated by ANAC yet. The complete development and larger employment of EPCs for buildings could help in solving the split incentives dilemma, currently widely debated in EU countries. EPC, thanks to the in the ESCO involvement, favours the realisation of energy efficiency interventions in buildings, converting a barrier in an advantage for the three involved actors, the so-called *triple win* approach.

- **Energy Efficiency Information and Training Program**. The Ministry of Economic Development assigned a specific role to information and training as fundamental driver to create, reinforce and develop the attention towards energy saving and energy efficiency. Article 13 of Legislative Decree 102/2014, indeed, envisaged a specific Three-Year Training and Information Program (PIF), the elaboration of which was realised by ENEA involving different actors as Regions, consumer associations, and associations of ESCOs and energy services companies. The first year of activity was characterised by information and training activities focused on public at large, by means of national campaign "Italia in classe A" ("Italy in A class"). 50 million contacts have been reached through the first phase of the Three-Year Training and Information Program (art. 13, Legislative Decree no. 102/2014).

ITALIA IN CLASSE A
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- **Implementation and planning at regional level of energy efficiency measures.** For the programming period 2014-2020, given 26 billion euros of total funding, Regional Operational Programme of European Regional and Development Fund (ROP-ERDF) earmarked around 2.5 billion euros to measures for energy saving and energy efficiency, sustainable urban development, decarbonisation and intelligent transport systems. Up to April 2017, 900 million euros have been earmarked, on 69 calls for bids, mainly devoted industrial sector, with 38 calls and around 416 million euros earmarked, and in the public sector (interventions on public buildings and public lighting), with 23 calls and around 316 million euros of available financial resources.

- **Activities of inspection and monitoring of plants, participation to international programs, intiatives and agreements in the field on international cooperation** are also performed.

3.3 What are regional, local ambitions on RES and EE?

- - Short term (<5 years)

Regional RES goals are fixed by National Law. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009, sets a mandatory 17% target for Italy for share of energy from renewable sources in gross final consumption of energy to be achieved in 2020. According to it, the **Burden Sharing Decree (MD 15/03/012)** by the Italian Government defined and quantified the intermediate and final goals that each Region and the Autonomous Province must achieve in order to meet the national targets by 2020 of overall renewable energy quotas in terms of final gross energy consumption in the electricity, heating and transport sectors amounting to,3% (that is, the 17% target

less the imported quota). The Decree defines what is the Final Energy Consumption of a Region or Autonomous Province and what is the Renewable Energy Consumption and fixes in a Table the Regional Objective Trajectory, from the initial situation to 2020. In 2015, in the Abruzzo Region, the share of total energy consumption covered by renewable sources was 25,3%, that is higher than the MD forecast for the same year (13,6%) and the target to reach 2020 (19,1%). As showed in the figure here below, the Region of Abruzzo has reached and exceed the targets set by the "Burden Sharing" Decree in terms of the share of total energy consumption covered by renewable sources.

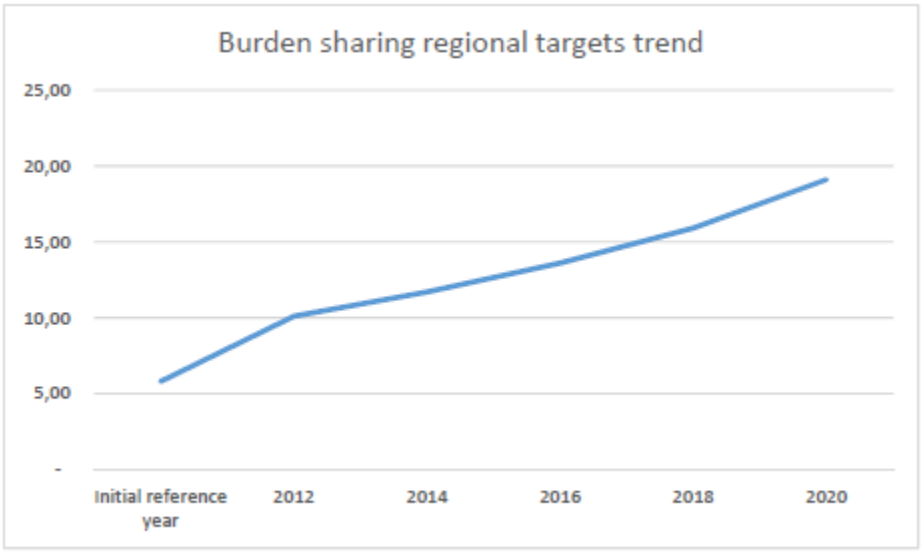

Figure 1: Burden sharing regional targets trend

	Initial year	Regional objective per year (%)				
		2012	2014	2016	2018	2020
Italy	5,3	8,2	9,3	10,6	12,2	14,3
Abruzzo	5,8	10,1	11,7	13,6	15,9	19,1

Objectives to 2023 are also set within the ERDF ROP 2014-2020, in particular:
- with reference to priority IV.4c “reduction of energy consumption in buildings, public building, and integration of RES”, the aim is to reach the energy efficiency of the buildings with a reduction of energy consumptions of the Public Administration from 3GWh in 2011 to 2,7GWh in 2023 (about 10%);
- with reference to priority IV.4b, “promotion of Energy efficiency and use of renewable in companies”, the expected result to be achieved is a widespread energetic efficiency of the enterprises in terms of: estimated annual reduction of greenhouse gases: 1,720 Tons equivalent CO2; additional capacity for the production of electricity from renewable sources: 3 MW; decrease in the annual consumption of primary energy produced from fossil fuels: 265 TOE / year.

- Long term (> 5 years)

In 2015 the Region of Abruzzo has endorsed the **Covenant of Mayors for Climate and Energy initiative**, and thus the new challenging targets proposed for **2030 by the new climate and energy package of the European Union**. It joined the Covenant of Mayors in 2010 as a coordinator. It is currently working with its municipalities (305) and provinces (4) – all of them joined CoM in 2010 - to update the **Sustainable Energy Action Plans (SEAPs) into Sustainable Energy and Climate Action Plans (SECAPs).**

It has also signed the **Under2 MOU (Memorandum of Understanding),** a climate agreement that brings together subnational governments willing to make a number of key commitments, including either reducing greenhouse gas emissions equivalent to 80 to 95 percent below 1990 levels or to less than 2 annual metric tons per capita by 2050. "Under2" refers to the MOU's goal of limiting global warming to below 2 degrees Celsius, which Intergovernmental Panel on Climate Change (IPCC) scientists say is needed to avert catastrophic climate change impacts, as well as to the goal of limiting greenhouse gas emissions to below 2 annual metric tons per capita by 2050. The Region has thus committed to the target of reducing greenhouse gas emissions 80 to 95 percent below 1990 levels, or to less than 2 metric tons per capita, by 2050.

3.4 What regional local policy instruments are in place to achieve these ambitions?

These ambitious are achieved through a set of policies cutting across four tiers of government, policies and initiatives: the European Union, national, regional and local governments.

European Union – through its policies and structural funds. Moreover, the EU promotes a range of initiatives supporting RE deployment that directly involve local and regional governments. Between them, the voluntary initiatives such as the Covenant of Mayors (CoM) whose assumption is that local governentscan affect citizens' behavior through local regulation, and reconcile public and private interests by integrating sustainable energy issues into overall local development goals. The CoM is based on a voluntary commitment by signatoriesto meet and exceed the EU's climate and energy reduction objectives. The network doesn't provide any actual financial resources, but it "obliges" municipalities to design an action plan for RE and energy efficiency. This makes it easier for them to get financing when bidding for EU funds supporting renewables. Abruzzo is very active in this network being a coordinator of the initiative and as all its municipalities and provinces have joined it thus committing themselves to reach EU climate and energy objectves. Besides local initiatives, the EU also promotes international / interregional cooperation in the field of RE. Abruzzo is currenty involved in several EU projects in this field both as partner and as a coordinator. Exchange of best practice and transnational cooperation are aslo crucial for the Abruzzo Region.

The National Government – national policy instruments, directives and initiatives directly affects the regional energy and climate policy (e.g. objectives of the Burden Sharing).

The Regional Government - Abruzzo's regional government shares responsibility with the national government for energy policies. At the Regional level, several different policies support renewable deployment, energy efficiency and energy savings. Abruzzo, for instance, is responsible for managing funds such as ERDF which are allocated through programming documents defined at regional level. The main feature of Abruzzo's RE policy is its granularity its main aim being to support a large number of small local initiatives promoted by municipalities. Intermediate governments, such as provinces, provide municipalities with technical support and funding to help them to deal with the complexity related to RE. EU structural funds 2007-2013 have been used to enhance the role of local governments within the RE policy, meanwhile EU structural fund 2014-2020 are orientated twowards the tackling of climate change with special attention to the energy efficiency of the buiding sector, companies and sustanaible mobility.

Local governments - In the Region of Abruzzo, local governments – provinces and municipalities – have a prominent role due to their participation to the Covenant of Mayors Initiative. Abruzzo's bottom-up approach means lo al governments deploy small-scall installations with the support of the local community; citizen have a say in the siting and the sizing of the facilities.
Thus, municipalities, as local self-governance units, can initiate direct investments in EE and RES projects from their budgets. They can also establish public-private partnerships. They are the major beneficiary of most of the financial incentive programmes for energy efficiency and RES on national and regional level, such as ERDF ROP.

In the light of what stated here above, **the main policy instruments and frameworks** are:

Abruzzo Regional Operational Programme ERDF ROP 2014-2020.
Axis focused on climate change and energy are:

- Axis IV. "Promotion of a low-carbon emissions economy»
- Axis V. "Reduction of hydrogeological risk"
- Axis VI. "Protection and exploitation of natural and cultural resources"
- Axis VII. "Sustainable urban development"

In particular, Axis IV foresees energy efficiency and energy saving interventions in both public (public buildings, in particular schools) and private sector (energy efficiency of enterprises), more specifically:

- Interventions for **energy efficiency of public buildings (schools)**, demonstrative projects and support measures: **€ 7.000.000**. The **call for proposals** has been published with deadline May 2017. The evaluation phase of the project proposals has been concluded.
- **Reduction of energy consumption and emissions in enterprises and integration of renewable sources**, demonstrative projects and support measures : **€ 8.000.000. The call for proposals** has been published with deadline 26/02/2018.

Regional Plans in the field of energy, environment and climate change.
Several plans in the field of energy, environment and management of the territory have been realized and implemented at Regional level, namely:

- Regional Plan of Adaptation to Climate Change – PACC (ongoing)
- Regional Plan of Energy
- Water Protection
- Water management
- Hydrogeological Asset
- Flood Protection
- Flood risk management
- Air Quality
- Waste management
- Quarrying and mining activities

All of them are in line with the national strategies (e.g. the National Energy Plan which introduces for the first time the concept of "energy community, and the National Plan of Adaptation to Climate Change) as well as the EU initiatives in the field.

The climate adaptation strategy of Abruzzo Region and the **Regional Plan of Adaptation to Climate Change (PACC)** have been launched through Decree of the Regional Executive no. 308 of 29 April 2015. The objectives of the strategy are:

- **To realise a regional climate change adaptation plan** that involves the main local actors through an active process and which represents a **monitoring tool of the whole regional territory;**
- **To develop an innovative information system** on climate change and its effects at local scale. The information system will support the participatory planning process, the selection of the best strategies and actions as well as the monitoring of the plan;
- **To define pilot actions** that involve both public and private sectors;

- **To raise citizens and stakeholders awareness** about the risks and vulnerabilities connected to climate change;
- Integrate Regione Abruzzo in the **network of European Regions** involved in climate change adaptation policies.

Main phases are:
RoadMap for Climate Change Adaptation. Status: Already developed as a basis to the strategic plan – monitored and eventually updated in accordance to National and EU initiatives and policies;

- **Regional Climate Profile**. Status:completed;
- **Participatory Process** with the objective to develop and implement a bottom-up and replicable process in order to transfer technical-scientific information to stakeholders,collect and discuss best practices and initiatives already in place and identify and implement adaptation measures. Status: the participiatory process for the climate profile and the drawing of guidelines for the plan of adaptation have been concluded.
- **Communication & Awareness Campaign.** Status: ongoing.
- **Tools of Governance**, mainly regional plans.
- **Guidelines for the realization of the regional plan of adaptation to climate change**. Status:ongoing;
- **Regional plan** of adaptation to climate change.Status: to be realized.
- **Monitoring**. It refers both to the monitoring of climate change impact (risk and vulnerability) on the basis of the Regional Climate Profile and monitoring of implementation level of actions provided by the Adaptation Plan.

Sustainble urban strategies.
Between the regional plans and strategies, it is also important to highlight the **sustainable urban strategies**. Axis VII of ERDF-ROP 2014-2020, amounting to € 23.000.000, is aimed to the realization of 4 projects of sustainable urban development in the 4 regional provinces (Pescara, L'Aquila, Teramo and Chieti) according to a Sustainable urban strategy.
Moreover, the regional transport society, TUA spa, is implementing several projects and initiatives in the field of sustainable mobility and focused of innovative fuels and technologies (e.g. hydromethane and hydrogen, electric and biomethane).

SEAPs and SECAPs.
Moreove, all **SEAPs (Sustainable Energy Action Plans)** submitted under the 2020 Covenant of Mayors, that is 309 plans,are currently under monitoring. The Region is now working wit it municipalities to evaluate he oportunity to update them into **SECAPs (Sustainable Energy and Climate Action Plans to be submitted under the 2030 Covenant)** also in line with the Regional Plan of Adaptation to Climate Change. Integration and coordination of all the above mentioned plans is also fostered.

The **main initiatives and activities** are:

The public and private initiatives and the Pescara Charter.
The Abruzzo Region is promoting since time the public and private initiatives and partnerships in its policy instruments, plans and programmes also thorugh the participation to dedicated European projects. Between them, it is worth to highlight the NEW FINANCE project, "New finance for energy efficiency measures in public buildings", funded within the Interreg MED 2014-2020 and currently ongoing. NEW FINANCE will help accelerate new investment in energy efficiency and renewable energy sources in public buildings by increasing the confidence of key decision makers from public and finance sector to find and apply working strategies for the mobilization of private funding and better use of ESI funds. . In order to reach this goal, the project will focus on effective replication of proven implementation models and smart networking activities equally involving stakeholders from public and private sector whilst capitalizing on a number of previous and ongoing similar initiatives.
In this frame, the Abruzzo Region is working with local municipalities, ESCOs, financial institutions and banks, to identify already implemented and successful private and public projects as well as to jointly

work at new project proposals. 3 initiatives have been highlighted as good practices within the NEW FINANCE project: one on the Energy service agreements - EPC, ESC - implemented in a school of the municipality of Pescara; one on the public-private partnership on energy efficiency of clear claps in a real estate of the municipality of Montesilvano; one on the public-private partnership on the swimming pool of Atessa). Details about each of them are available in the NEW FINANCE platform: http://newfinanceplatform.com.

Pescara Charter.

In November 2016, the Abruzzo Regional Council published the "Pescara Charter", a pact between Abruzzo Regional Council and enterprise in order to follow the way of a sustainable industry. The Charter is the result of five moths of stimulating debate underpinned by themed round tables with enterprise, and partnerships with universities and research institutes. The Pescara Charter for sustainable industry is inspired by the European Union's strategic orientation and its policies (such as the Europe 2020 strategy). Abruzzo Regional Council identifies as "sustainable industry" any manufacturing enterprise pursuing one or more of the following areas of sustainability:

- **environmental**, representing the capability to preserve over time the three functions of the environment: supply of resources, receiver of waste, direct source of utility;
- **economic**, representing the capability of an economic system to generate enduring growth of economic indicators, in particular earnings and employment;
- **social,** representing the capability to guarantee conditions of human welfare (safety, health, education) distributed equally by class and gender, and to promote social inclusion.

In order to be part of the Pescara Charter and benefit from advantages, enterprises have to commit to respect some of the 61 sustainability conditions that have been identified. The conditions are not compulsory and different levels of engagement – basic, intermediate, advanced – are available, depending on the number and type confirmed. The higher the level, the greater the opportunities and returns. In particular, Pescara Charter offers applicant companies a "region-enterprise partnership process" that provides specific advantages for enterprise committed to pursuing the abovementioned aims of sustainable industry. Synthetically, the Abruzzo Regional Council identified advantages in terms of: simplified procedures, reduction of administrative, national and local taxes, economic concessions and supporting legislation. More detailed information about conditions and advantages proposed in the Pescara Charter can be found in the Tables at pages 14-20 of the Pescara Charter's brochure available at the following link: http://www.abruzzolavoro.eu/wp-content/uploads/2016/07/A5_CartadiPescara_EN.pdf.

The participatory process (involvement of stakeholders and citizens).

The Abruzzo Region is implementing since years initiatives aimed at involving citizens and regional stakeholders in its policies, programmes and activities.The objective is: to hear about citizens and stakeholders proposals, comments, solutions, challenges, etc... so to take cre of them in the implementation of regional policies and initiatives; to identify actions and initiatives already in place in the regional territory highlighting bad and good practices; to transfer technical-scientific information to stakeholders and raising awareness betwen all citizens; identify and implement new measures.
The participatory process is a crucial step towards the realization of the regional plan of adaptation to climate chane. Several meetings have been organized during past months in different cities of the region. We are currently realizing the guidelines for the participatory process.

MoU between the Abruzzo Region and ENEA.

A **Memorandum of Understanding** has been signed by **the Abruzzo Region**, energy and environment department, and **ENEA** (Italian National Agency for New Technologies, Energy and Sustainable Economic Development) for the implementation of initiatives aime dat promoting energy efficiency and energy savings in end-use and to encourage the development of plants for the production of energy from renewable sources on the regional territory. ENEA will provide the necessary support to the Regional Administration and local industry for the development of programs and projects focused on innovative energy and environmental technologies, able to offer 'sustainable'

solutions for the development of the Abruzzo Region's economy. It is currently under discussion the opportunity to implement pilot initiatives for companies of the Abruzzo region aimed at Energy efficiency and saving to be included in the Regional Energy Plan.

3.5 Is there an 'energy master plan' for the region?

As detailed in previous sections, several plans in the field of energy, environment and management of the territory. Between them, The Regional energy Plan and the the regional Plan of Adaptation to Climate Change are definitively the reference documents.

The Regional Energy Plan is the fundamental dynamic tool at the disposal of the Region of Abruzzo for the management of energy policy in the area. The fundamental objectives of the Plan are:

- design and implementation of energy and environmental policies;
- economic management of primary energy sources available in the area;
- development of alternatives to the consumption of hydrocarbons;
- limiting the impact on the environment and harm to public health, resulting from the use of fossil fuels;
- participation in activities aimed at sustainable development.

The Regional Plan of Adaptation to Climate Change (PACC) is a tool for the management of the whole territory and for fostering its resilience.

Moreover, s already mentioned in previous sections, all SEAPs submitted by the municipalities of the Region (305) and Provinces (4) are currently under monitoring to evaluate the opportunity to update them into SECAPs in line with PACC.

3.6 Is there an inventory of all the RES / EE projects: realised, initiatives, chances?

At a National level, the "Open Data" portal by GSE is available at https://www.gse.it/dati-e-scenari/open-data. On the portal are available, categorized by topic and in open format, all data concerning the incentive mechanisms managed by the company itself - with indication of beneficiaries and amounts received - that can be consulted, shared and reused by public and private operators.

At regional level, the following inventory are available:

- list of authorized renewable energy plants according to the Lgs. D. 387/03. Such an inventory is available at http://www.regione.abruzzo.it/system/files/energia/autorizzazione-unica/REGISTROautorizzazioni_uniche.pdf
- archive of Integrated Environmental Authorization (in Italian, AIA) containing all procedures which have been submitted and released so far: http://www.regione.abruzzo.it/content/archivio-aia
- Energy certification of buildings: https://www.certificazione-energetica-edifici.enea.it/abruzzo/

Moreover, a website has been realized by ANCI containing the monitoring and results achieved by all SEAPs submitted by municipalities and provinces within the Covenant of Mayors initiative. http://www.pattodeisindaciabruzzo.it/

Last but not least, all projects and initiatives organized and joined by the Abruzzo region are normally published in the regional official website www.regione.abruzzo.it.

3.7 What is the main sector of energy sustainability policy?

Focusing on for example mobility, housing, industry, etc.

Regional energy sustainable policy is focused on two main sectors: industry and public buildings, especially schools. Sustainable mobility, promotion of new technologies, awareness campaign and participatory process (involvement of stakeholders and citizens) are also crucial.
Concerning RES, the region is promoting innovative technologies. Biomethane, hydroelectric and wind are the most important ones in the Region. Activities of hydrogen and hydromethane are also ongoing,

4, ORGANISATION

4.1 What organisations play an important role in the energy field in your region? (From the point of view of the government)

The National Government

In Italy national government has exclusive jurisdiction over protection of the environment, the ecosystem and cultural heritage and shares responsibility for energy policy with regional governments. The national government must implement EU Directives aimed at improving environmental performance and increasing RE consumption. It also co-funds the EU's Cohesion Policy and coordinates the first pillar of the CAPS. National RE policy cuts across the Ministry of Economic Development and the Ministry of the Environment.

The Ministry of Economic Development

It is responsible of the nationl energy policy, namely: national budget and energy strategy, transport networks, energy infrastructure, security of supply, single electricity market, promotion of renewable energy and energy efficiency, reduction of greenhouse gas emissions, dismantling of nuclear facilities abandoned, national gas market, market and oil and mineral plants, hydrocarbon extraction, storage of natural gas and methane in southern Italy.

The Ministry of the Environment and Protection of Land and Sea

It has functions in the areas of the environment, ecosystem, protection of marine and atmospheric heritage, as well as environmental impact assessment (EIA), strategic environmental assessment (SEA) and integrated environmental authorization (IPPC). It has expertise in the field of soil protection from desertification as well as hydrogeological heritage. Coordinates and supervises the functions of the so-called Environmental Code, ie the Legislative Decree of 3 April 2006, n. 152, laying down environmental regulations, which incorporated the previous regulations.

The permanent State-Regions-Autonomous Provinces Conference

It is an Italian collegial body aimed at institutional collaboration between the State and local autonomies. The Presidency of the Permanent Conference for Relations between the State, the Regions and the Provinces is entrusted to the President of the Council of Ministers; Vice-President is the Minister of Regional Affairs. The Conference is composed not only by the President of the Council and the Minister for Regional Affairs, by the presidents of all Italian regions and the autonomous provinces, possibly by the ministers interested in the items on the agenda and representatives of State administrations and public bodies.
The Conference performs the following functions:

- advice on general lines of the regulatory activity (both of the Government and of the Parliament) which directly affects the Regions, including on economic, financial and budgetary planning objectives;
- advice on general criteria relating to the exercise of the state function of guidance and coordination between the State and other bodies, on general guidelines for the preparation and implementation of Community acts concerning regional competences;
- advice on other topics for which the President of the Council deems the opinion of the Conference appropriate;
- the power to appoint managers of bodies and bodies that perform activities or provide services that are instrumental to the exercise of the competing functions of the Government, regions and autonomous provinces;
- power to deliberate within the matters indicated by law.

ENEA – the Italian National Agency for New Technologies, Energy and Sustainable Economic Development

It is the second major Italian research organization, with around 2700 staff employees distributed in its 9 research centers all over the national territory. The Agency's activities are mainly focused on Energy Efficiency, Renewable Energy Sources**,** Nuclear Energy**,** Climate and the Environment**,** Safety and Health**,** New Technologies**,** Electric System Research**.**

Concerning **Energy efficency**, ENEA is particularly concerned with R&D on those technologies aimed at increasing the efficiency of energy production and use. The Agency provides Public Administration with its support and advice to define methodologies for quantifying energy savings, to be used at the central and local levels as a mean to implement the various regulations and disseminate the culture of energy efficiency. At present, ENEA provides:

- support to Public Administration and information and training, in its role of National Agency for Energy Efficiency;
- development of advanced technologies for energy and industry;
- studies and research for electric power saving in the service, civil, public lighting, air-conditioning, transport sectors, under a Programme Agreement with the Italian Ministry of Economic Development.

ENEA activities in the field of **renewable energy sources** are mainly centred upon research, innovation, and technology transfer. The Agency also provides advanced services contributing to both decreasing CO_2 emissions and the national energy dependence on fossil sources, and increasing Italy's economic competitiveness. In these activities several different Technical Units in different ENEA Research Centres are involved, serving complementary roles to one another: Technical Unit for Renewable Energy Sources (UTRINN – Casaccia), Technical Unit for Portici Technologies (UTTP), and Technical Unit for Trisaia Technologies (UTTT).

ENEA research is specifically focused on the following technologies: Concentrated Solar Thermal Energy, Photovoltaics, Biomass and Biofuels, Solar Thermal Energy at low and medium temperatures, Hydrogen, Fuel Cells and Energy Storage Systems.

In more mature fields such as **wind energy** ENEA gives its innovative contribution on issues like materials, and participates in national and international collaboration activities allowing the Agency to play the role of technological observatory on technology and market development.

ENEA also provides support to: local administrations responsible for the implementation of energy plans; industrial consortia, professional associations and pools of enterprises in evaluating the environmental sustainability of territorial plans, projects and programmes to produce energy from renewable sources. Such support is aimed at ensuring that the actions proposed on the territory are fully compliant with the environmental protection laws, and is accomplished by both identifying the sites most suitable to host facilities and assessing the environmental impact under ordinary, extraordinary and emergency conditions for their whole life cycle (construction, operation, dismission).

FIRE – the Italian Federation for the Rational Use of Energy

It is an independent non-profit organization, whose purpose is to promote sustainability and the efficient use of energy. FIRE was founded in 1987 by ENEA (the Italian national agency for new

technologies, energy and sustainable economic development) and two energy manager associations. The association operates by supporting companies and people involved in the energy sector – both as supply and demand – through its institutional activities and its services. FIRE also promotes – in collaboration with the relevant institutions – a positive development of the legislative and regulatory framework in order to foster an efficient use of energy. FIRE has around 450 members, which cover all the energy sector (e.g. energy efficiency technologies producers, power producers, distributors, ESCOs, large and medium enterprises, universities and research centers,energy managers and energy professionals). Around half of the members are organizations, the other are persons. This type of membership ensures that FIRE has a holistic approach to energy efficiency and energy productivity. Since 1992 FIRE manages the Italian energy manager network on behalf of the Ministry of Economic Development.

GSE (National Manager of Electrical Services)

GSE is the company appointed to promote sustainable development in Italy. GSE guides and coordinates AU (Italian acronym for Single Buyer), GME (Italian acronym for Manager of Energy Markets), RSE (Italian acronym for Electric System Research), all public-interest companies operating in the energy sector.
GSE has been identified by the State to pursue and achieve environmental sustainability through the two pillars of **renewable sources** and **energy efficiency**.
GSE manages more than 10 incentive mechanisms aimed at promoting the development of energy efficiency and renewable sources and allocates about 15 billion Euros in incentives every year. Moreover, GSE purchases the electricity fed into the grid produced by renewable energy plants to then resell it in the electricity market and it certifies the renewable origin of the electricity produced. Another GSE activity concerns the inspection of the plants to assure a fair distribution of public resources. Finally, GSE spreads the culture of sustainability through communication activities and realizes studies, statistics and meetings addressed to all the protagonists of the energy transition.

RSE (Italian acronym for Electric System Research)
It develops applied research in the electricity/energy sector and provides the Italian system with the expertise and know-how it has acquired from its extensive experience and the long tradition of research in Italy. It is an entirely publicly owned joint stock company, part of the GSE Group, and is supervised by the Italian Ministry for Economic Development. The company carries out research projects that aim at developing new initiatives to provide concrete solutions to the needs expressed by stakeholders, the market and the general public. RSE's research focuses on all aspects of the production system, central and local public administration, associations, groups of small and medium-sized enterprises, and consumer associations. RSE's strategic goal is to promote and encourage the growth of tomorrow's professionals, by supporting the training and education of young researchers according to their skills.

Operating companies of electricity and gas transportation service: Terna and Snam.
The Terna Group is the first grid operator for electricity transmission in Europe. Through Terna Rete Italia, the Group safely manages the National Transmission Grid with over 72,000 km of HV lines.
As an integrated operator, Snam provides natural gas transportation, dispatching and storage services as well as LNG regasification services, and plays a leading role in the natural gas infrastructure system. Snam operates in Italy through three operating companies that are fully owned by Corporate Snam S.p.A.: Snam Rete Gas, GNL Italia and Stogit, respectively.

The Regional Government
In Italy, Regions are autonomous entities with powers defined in the Constitution. Every region has a statute that serves as a regional constitution, determining the form of government and the fundamental principles of the organization and the functioning of the region, as prescribed by the *Constitution of Italy* (Article 123). *The regions have exclusive legislative power with respect to any matters not*

expressly reserved to state law (Article 117). The Regions have legislative powers in all subject matters that are not expressly covered by State legislation, such as energy.
The role of the Abruzzo Region in the fieldof energy efficiency and RES is to support the implementation of national policies also inline with the EU and international initiatives. Moreover, it takes care of:
Development of strategies and methods for energy policy.
Development of plans and programs for the promotion of renewables and energy saving.
Development of regional laws, rules, tools and programs for the assessment of air quality, air emissions, electromagnetic pollution, noise pollution.
Development of strategies and plans on climate change issues.
Realization, updating and implementation of the Regional Energy Plan and the Regional Plan for Air Quality.
Definition and elaboration of rules, tools and programs for the industrial risk and the promotion of technologies aimed at the industrial security and reduction of air pollution.
Quality control activities on the planning and realization actions .
Technical and administrative preparatory work for the release of the Integrated Environmental Authorization (IEA) in compliance with Legislative Decree no. 59/2005 implementing the IPPC (Integrated Pollution Prevention and Control) EU directives.
Monitoring, audit and check of pollutant emissions in compliance with IEA and the objectives set in the regional plan of air quality and the authorizations released.
Environmental education.
Coordination and implementation of regional, national and international programs and projects focused on the energy, environment and climate change issues.
Coordination of national and international associations and bodies of the field (e.g. Hyer, FEDARENE, RENAEL).
Managing of ERDF Funds in the field of energy.

Regional Energy Agencies and National Network of energy agencies, such as RENAEL (National Network of Energy Agencies).

Local governments
According to the Italian Constitution, municipalities, provinces and metropolitan cities carry out administrative functions of their own and shall have revenue and expenditure autonomy as well as independent financial resources.
Thus, municipalities, as local self-governance units, can initiate direct investments in EE and RES projects from their budgets. They can also establish public-private partnerships. They are the major beneficiary of most of the financial incentive programmes for energy efficiency and RES on national and regional level, such as ERDF ROP.

4.2 Is there structured cooperation between the above organisations?

The above mentioned organisations strongly cooperates as each of them has a specific task and expertise. They have also jointly worked at the NES 2017 (document made by research and national governments and circulated for consultation between the regions).

It is worth to highlight that the Energy and Environment Department of the Abruzzo Region coordinates all activities of cooperation between the region itself, the Ministries, the municipalities, regional companies, universities, SMEs and research centers to reach the foreseen energy and environment goals.

4.3 What is the involvement of your region in the development and implementation of investments in sustainable energy strategies?

The Energy Department of the Abruzzo Region is directly responsible for the development and financing of regional energy policies and provides tools and support to companies and municipalities of the region in line with national Government 's guidelines and the EU energy and climate policies.

4.5 What are your views on the strengths and weaknesses of such policies?

The strenghts of regional sustainable energy policy are:

- the development of a consistent regional planning framework for energy efficiency initiatives and expansion of renewable energy technologies, sufficiently considering autonomy of local self-government;
- the development of a a better basis for the municipal EE and RES plans and programmes, and strengthening of the regional collaboration among municipalities for their implementation;
- the promotion of the regional potential for EE and RES investments to private investors and thus improvement of the business environment in the region for such investments. Indeed the development of an industrial sector of renewable sources is fully compatible with the regional economy, characterized by a widespread presence in the area of small and medium enterprises;
- the fostering of the integration of private and public initiatives;
- better support to the widespread of innovation technologies and investments in R&D in the regional territory;
- raising awareness between citizens and involving all stakeholders, including universities and research centers;
- strengthen the possibilities for fund raising for regional and municipal programmes and projects;
- increase all benefits attained by sustainable energy – economic, environmental and social – for the region, its businesses and population;
- provide framework for implementation of community owned and led energy projects.

The weaknesses of a regional sustainable energy policy are:

- the limited financial resources and the more frequent use of National and EU funding;
- costs and prices of new technologies still too high;
- difficulty in reconciling protected areas (the Abruzzo Region is rich with) with the establishment of new plants.

4.6 Is there specific knowledge on energy issues available in your region?

For example, a University faculty.

Energy is a subject that has great interest in Abruzzo Region in different aspects, sectors and framework: Universities, Energy Agencies and Professionals Associations.

In Abruzzo Region there are **three Universities:** University "G. d'Annunzio" of Chieti-Pescara, University of Teramo and University of L'Aquila.

At the University "G. d'Annunzio" of Chieti-Pescara different Departments have Research lines in the sector of Energy: 1) Department of Economy (industrial ecology, technical-economical analysis about energetic systems, etc…); 2) Department of Architecture (environmental design, sustainable design of buildings, energy efficiency of buildings, sustainable urban design, etc…); 3) Department of Engineering and Geology (energy assessment of the wind and solar resources, thermal analysis of buildings, etc…).

At the University of Teramo the Department of Biosciences and Agro-Food and Environmental Technologies has a research unit dedicated to energy and environment (promotion of the use of agricultural biomass as alternative sources for the production of energy, hydrogen and/or synthesis gas).

Finally, the Department of Engineering of the University of L'Aquila deal with Energy in different aspects: energy and environmental territorial planning, optimization of environmental aspects and energy needs in industrial areas, unconventional propulsion systems in on the road transportation sector, low grade thermal energy recovery into mechanical energy, concentrated solar power, quality of power supply in electrical energy systems, strategic management of electricity demand, modeling and design of electrical machines, high efficiency induction motors, optimization techniques for the electrical machines design, study of innovative technologies in the field of land transportation systems, employment of non conventional fuels, etc…

ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development, has a network of territorial offices providing information and consultancy services for local public administrations and enterprises. In the Abruzzo Region there is one of the ENEA **territorial offices,** in the city of Pescara, that strictly collaborates with the Region and municipalities in the context of the energy issues.The Abruzzo Region has signed an agreement with ENEA for the creation and management of the regional "building energy certificates" database, including the heating/cooling systems installed. The new registry started on 01/09/2013 and it contains all the information related to energy about new buildings and existing property transfer.

ARAEN - Regional Energy Agency - represents a permanent and instrumental authority of the Abruzzo Region. The activities are primarily related to improving the management of energy demand by promoting energy efficiency, to promote better utilization and better management of local and renewable resources, optimize production costs, to support research aimed at the best possible exploitation of energy supply, management of regional functions in the field of energy. Furthermore, its actions are also aimed at improving the environment and air pollution control.

Two provincial energy agencies, ALESA (Province of Chieti) and **AGENA** (Province of Teramo) have supported municipalities of the region, in coordination with ARAEN and the region itself, in the joining of the Covenant of Mayors initiative, preparation and submission of SEAPs, as well as their monitoring.

Regional Centers for the Environmental Education (CEAs)
The Region of Abruzzo performs its activities of environmental education and awareness raising through its own network of 43 CEAs considered as "regional interest" and established with a special law. no.122 / 99. CEAs carry out educational courses, training, teaching and dissemination activities. They work with schools, private individuals and local authorities, thus becoming a point of reference for the entire community. Their activity is monitored by the Regional System bodies for continuous quality action.

Finally, **the Professional Associations of Engineers and of Architects** are directly involved in the Energy issues with their ordinary work activity and collaboration with local municipalities and Region.

4.7 What are the skills shortages and training opportunities in your region?

The knowledge and skills of both regional and municipal administrations on EE and RES issues are not enough. There are no experts in the regional and in the local administrations, specifically assigned for realizing and managing EE and RES policies and programmes. The Covenant of Mayors initiative has contributed to the improvement of knoweldge in the field.
Moreover, it must be highlighted also that the return time of investments is higher than the legislative one.
Businesses are better informed, but also still need skills to incorporate EE and RES into their business practices. The Pescara Charter initiative, the funding of Energy audit projects as well as the calls within Axis IV of ERDF ROP 2014-2020 are helping businesses.

Municipalities also need training as regards as innovative financial tools and opportunities, with special attention to private public initiatives, EPC contract, and involvement of ESCOs.

The awareness of the general public has increased during the years especially thanks to the Covenant of Mayors Initiaitve and the participation to European and international initiatives and projects.

Concerning training, several institutions provide training courses of different matters and width, in the fields of energy efficiency, renewable energies, urban mobility or sustainable construction.
Between them, professional associations (e.g. Engineers associations), universities, the Chamber of Commerce, ENEA, CEAs (environmental education, climate change, energy issues).

Last but not least, in Abruzzo, training sessions on how to run public-private sector partnership businesses are given by ESCOs and academics from the University of Pescara to Mayors and public employees in the framework of an Interreg MED project, NEW FINANCE. A dedicated "training material" has been developed within the project itself and this training sessions will be also a unique opportunity to foster the encounter and cooperation between financial institutions, ESCOs and local authorities.

4.8 What is the quality of physical infrastructure in your region?

The Abruzzo Region is a pioneer in the field of energy physical infrastructures. Just as an example, in 1992 the municipality of Tocco da Casauria (Pescara) was the first municipality in Italy to build a wind farm on its territory, using 2 Riva Calzoni wind turbines of 200 kW each.

They are currently ongoing activities of revamping of existing and old plants along with the realization of new highly innovative plants.

5. REALISATION OF PROJECTS

5.1 Are there any plans to implement RES/ EE projects in the region?

Please explain.

As detailed in previous sections, there are several plans and initiatives to implement RES/EE project in the region. Also the Region is really active as a partner or lead partner in the implementation of EU projects in the field.

5.2 In which phase are these projects currently at?

i.e. Idea, exploration, feasibility, business case.

Mostly of the regional plans have been finalized.

PACC is ongoing. In particular, the regional climateprofile and participatory process have been finalized and the guidelines for the realization of the regional plan of adaptation to climate change are under preparation.

The regional energy plan is continuously monitored andupdate according to the national and EU initiatives.

All SEAPs have been submitted by municipalities and provinces and they are currently under monitoring. It is under evaluation the opportunity to update them into SECAPs.

Many EU projects in the field of energy and climate are going, between them, the NEW FINANCE project (funded under the Interreg MED Programme), Linkpas (funded under the ESPON programme), HySchools(funde under the Erasmus + programme).

In the frame of the NEW FINANCE project,we are working with our municipalities, universities, ESCOs and financial institutions to implement pulic-private pilot projects.

6. FINANCING

6.1 What national financial instruments are available?

Please describe: Conditions; Reliability; Accessibility (procedures, are they well-known, etc.); How they are used

The main national incentives for **Energy Efficiency** in Italy are reported in the table below (data from GSE, the state-owned company managing renewable energy incentives, Gestore dei Servizi Energetici). All of them are very well promoted, known and used and in fact they are reconfirmed on yearly basis.

	White Certificates	Fiscal deduction	Thermal Account
Energy savings target obligation	Obligation quota	Voluntary	Voluntary
Remuneration mechanism	Saving payment (Saving Certificate with variable market price)	Tax relief (65% of investment for specific EE intervention, 50% for generic building refurbishment)	Capital subsidies (around 50% of investment)
Incentive lifetime	3-10 years (*)	10 years	1-5 years
Sector involved in EE intervention	Utilities **Industry** Residential Services Transport	**Residential** Services	Residential Services/SME **Public administration**
Energy savings monitoring	Measured	Estimated	Estimated
Funding source	Gas & Electricity Bill	National Budget (tax income reduction)	Gas Bill
Total public cost (2016)	1,4 bn (**)	2,2 bn (***)	0,04 bn (****)
Target savings share 2016 (Art.7 EED)	68%	32%	0%
Policy effectiveness KPI [€/TOE, €/CO_2]	191€/TOE (**) 56 €/CO_2	1091 €/TOE (***) 448 €/CO_2	525 €/TOE (EE) - 191 €/TOE (RES-H) 209€/tCO_2 (EE) - 62€/tCO_2 (RES-H)
Duration of scheme	2005-.. (2020 last year with defined obligation quota)	1998-..	2014-... (achievement of cost: 900 M€/y)

(*) Until 2017, incentive lifetime is for the most part of interventions 5 years
(**) Considering economics of the last obligation year (2016) June 2016 – May 2017
(***) Considering only 65% deduction, because 50% deduction includes also costs not related to energy efficiency interventions
(****) The public cost considering only Thermal account incentives paid in 2016

White Certificates.
Energy Efficiency Certificates (TEE, also called white certificates) were established by the Decrees adopted by the Ministry of Productive Activities in consultation with the Ministry of Environment and Land Protection on 20 July 2004 (Ministerial Decree of 20 Jul. 2004 on electricity, Ministerial Decree of 20 Jul. 2004 on gas), as subsequently amended and supplemented by the Ministerial Decrees of 21 Dec. 2007, of 28 Dec. 2012 and of 11 Jan. 2017, the latter specifying national quantitative targets of energy efficiency improvement for the 2017-2020 four-year period.In 2016, 5.5 million White Certificates issued by GSE, with an increase of 10% relative to 2015, corresponding to 1.9 Mtoe/year of primary energy saving (in 2015 energy saving was 1.7);

Fiscal deduction for energy upgrade of existing building stock.
The 2018 budget law has redesigned the fiscal deduction for energy upgrade of existing building stock (Ecobonus). No more a deduction of 65% for all interventions (as up to 2017), but differentiated rates with the aim to further improve the energy performance of building, namely:

- The 65% deduction of energy efficiency measures for buildings has been extended until 31 December 2018;
- The 65% deduction is also foreseen for the purchase and installation of micro-cogenerators in place of existing plants;
- The bonus for the purchase and installation of windows including window frames, solar shading and replacement of winter air-conditioning systems with systems equipped with

biomass boilers and condensing boilers with efficiency equal to class A of products drops to 50% envisaged by the Delegated Regulation (VE) No. 811/2013;

- 65% of the interventions to replace winter air-conditioning systems with systems equipped with condensation boilers with efficiency equal to class A and further installation of advanced thermoregulation systems;
- 65% deduction also for the replacement of winter air conditioning systems with systems equipped with hybrid appliances, consisting of an integrated heat pump with condensation boiler, assembled in the company and expressly designed by the manufacturer to work together, or for expenses incurred in the purchase and installation of condensing hot air generators;
- Anti-seismic + energy efficiency: bonus up to 85%- The interventions on the common parts of the condominium buildings located in the seismic zones 1, 2 and 3, aimed not only at the reduction of seismic risk, but also the energy requalification, will get an 80% deduction if they lead to a lower risk class , and 85% in the event of switching to two lower risk classes.
- 50% renovation bonus, extension to 31 December 2018 The deduction of 50% is extended until 31 December 2018, with a maximum limit of 96 thousand euros per real estate unit, for the renovation of houses and common parts of condominium buildings.

In 2016, more than 360,000 requests for 65% fiscal deduction for energy upgrade of existing building stock, corresponding to more than 3.3 billion euros of activated investments and to slightly more than 95 ktoe/year of energy saving.

The Thermal Account Mechanism.
The Thermal Account (TA) is a set of measures to support small energy efficiency measures for private and public administration. It is managed by GSE, the state-owned company managing renewable energy incentives, Gestore dei Servizi Energetici.
The Thermal Account, launched in july 2013 by the M.D. 28 december 2012, has been updated with M.D. 16 february 2016. Thus, the thermal account 2.0 entered into force in May 31 2016.
Apart from introducing simplified access mechanisms and higher reimbursement limits, which reach 65% of the total expense incurred, the Thermal Account 2.0 provides that private entities should receive reimbursement of up to €5,000 in one single installment within two months from the request submission. Moreover, the new modes of incentive booking introduced by the TA 2.0 allow the PA to carry out more significant and efficient energy upgrading interventions.
The Thermal Account is an important instrument to offer a contribution to the improvement of the air quality, on the one hand reducing the energy demand of buildings and on the other hand, favoring the diffusion of technologies and devices marked by a higher efficiency.
Between May 31, 2016 and October 1, 2017 GSE received 35,400 applications to access the Thermal Account, of a total of 157 million euros worth of incentives requested. Of this amount, €79 M refer to the applications submitted by private entities and €78 M by the Public Administration. These are some figures published in the recent update of GSE on the incentive mechanism regulated by MD of February 16, 2016.
In further detail, from launching of the Thermal Account until October 1, 2017 around 51,700 applications were admitted to benefit from the mechanism that committed about €185 M worth of incentives, including €162 M granted directly. Overall, the Operator explains, €130 M regard measures undertaken by the private entities and €54 M by the PA.

Other measures for energy efficiency are:

The National Energy Efficiency Fund (NEEF). It is the first Italian equity fund entirely devoted to investment projects in the energy efficiency sector. The fund, envisaged by Legislative Decree 102/2014, foresees the financing of energy efficiency measures implemented by companies and the Public Administration on buildings, district heating plants and production processes. NEEF, which will be managed by Invitalia, the National Agency for inward investment and economic development, owned by the Italian Ministry of Economy. is a revolving fund which offers guarantees and loans at reduced rates, promoting the involvement of financial institutions and private investors, on the basis of adequate risk sharing. For the launch of the operational phase, 150 million euros already made

available by the Ministry of Economic Development, which will also allocate a further annual income of about 35 million euros in the 2018-2020 period. The Fund will also be fed with the resources made available by the Ministry of the Environment. This additional tool is one of the measures for energy efficiency that the country has adopted in order to achieve the energy saving targets highlighted in the National Energy Strategy. Following the entry into force of the 2018 Stability Law, the Fund will be extended with a specific section dedicated to eco-loans, to support and strengthen also the effectiveness of the ecobonus.

Mortgages, loans and project financing by banks.
Examples are reported in section 6.4.

Other tools are the **Fund for home purchase and/or renovation (Plafond casa)** and the **Green Public Procurement.**

Currently, the **incentive for renewable energy sources** in Italy is mainly based on the following mechanisms:

Means of support	Short description	web
Feed-in scheme	This mechanism used to allocate incentives to private subjects, companies and public administrations that would install a photovoltaic solar plant connected to the electricity grid, proportioned to the electricity produced. As of 6 July 2013 the reductions provided for by the Feed-in scheme are no longer accessible.	https://www.gse.it/en/what-we-do/renewable-energy http://www.res-legal.eu/search-by-country/italy/tools-list/c/italy/s/res-e/t/promotion/sum/152/lpid/151/
GRIN (Management of the Incentive Recognition)	The Green Certificate mechanism, provided for by Ministerial Decree of 6 July 2012, has been substituted by a new form of incentive as of year 2016. The subjects that have already been recognised a Green Certificate (holders of plants with RES-E qualification) will maintain the benefit for the remaining concessional period, but in a different form. In fact, according to the new mechanism, GSE pays a tariff in Euros on the net production of electricity additional to the revenues deriving from the increase in value of electricity (which can take place through the Simplified Purchase &Resale Arrangements or through the operator's recourse to the Free Market). In order to pass on to the new incentive mechanism, the holders of RES-E plants, that have already been recognized a Green Certificate, must sign an Agreement with GSE entitling them to benefit from the incentive tariff for the remaining period. The Agreement must be entered into through a new IT application: GRIN - Gestione Riconoscimento INcentivo (Management of the Incentive Recognition).	https://www.gse.it/en/what-we-do/renewable-energy
All-inclusive	This mechanism represents an alternative	https://www.gse.it/en/what-we-

feed-in tarif	to the green certificates. It consists in tariffs for the electricity fed into the grid whose value includes both the incentive component and the increase in value component of the electricity fed into the grid.	do/renewable-energy http://www.res-legal.eu/search-by-country/italy/tools-list/c/italy/s/res-e/t/promotion/sum/152/lpid/151/
Feed-in premium for renewable energy sources other than photovoltaic (Ministerial Decree June 23th 2016)	These are incentives for electricity generation from RES-E plants, other than photovoltaic solar ones, with a capacity of at least 1 kW. More specifically, Renewable Energy Policy Targets are: Multiple RE Sources, Power, Solar Thermal, Wind, Geothermal, Bioenergy.	https://www.gse.it/en/what-we-do/renewable-energy https://www.iea.org/policiesandmeasures/pams/italy/name-158260-en.php
Simplified purchase and resell arrangements	This tool allows GSE to purchase and resell the electricity to be fed into the grid paying producers a minimum guaranteed price for every kWh purchased. Producers with small-sized plants and a nominal electrical capacity up to 1 MW, benefit from GSE's guaranteed minimum prices for the first 2 million kWh per year fed into the grid, without prejudicing the possibility to receive more if the hourly zonal prices prove to be more advantageous.	https://www.gse.it/en/what-we-do/renewable-energy
NET-METERING	Through this mechanism, those who generate electricity from renewable sources feeding it into the grid and at the same time purchase electricity from the grid for personal consumption, benefit from the compensation of the economic value of what produced and fed into the grid with the economic value of what purchased and consumed in a period differing from that of production.	https://www.gse.it/en/what-we-do/renewable-energy http://www.res-legal.eu/search-by-country/italy/tools-list/c/italy/s/res-e/t/promotion/sum/152/lpid/151/

6.2 Are there tax measures that favour investments in community/renewables?

No real tax measures exist that favour investments in community renewables. The only tax measures are those reported in section 6.1 (e.g. **Fund for home purchase and/or renovation** and the **Green Public Procurement).**

6.3 What regional, local financial instruments are available?

Please describe:

- Conditions
- Reliability
- Accessibility (procedures, are they well-known, etc.)

- How they are used

There are no local financial instruments available. The financial instruments for stimulating energy efficiency and RES utilization are established on national level.

6.4 Are there any private investors? (Banks, private equity, pension funds, etc.)

Please describe:

- Criteria for these investors to participate / invest
- Risk profile, requested rate of return, investment volume
- In what phase of the project do the investors step in (idea, exploration, feasibility, business case)

Italian commercial banks participate in some of the financial schemes supporting energy efficiency and renewable energy projects. For example:

- BPER Bank - offers financing products targeted primarily to companies. BPER Bank is about to introduce a financial product, named BPER LIFE4ENERGY and tailored to companies, aimed at the energy renovation of buildings. Such a product will be offered further to an agreement recently signed with EIB;
- Mediocredito Italiano (MCI) offers dedicated loans for energy efficiency projects (including energy renovation of public buildings mainly through Third Party Financing). It offers products for project financing (mainly for renewable energy projects) and have a specialised internal office. MCI is currently working mainly on risk sharing financial products in the climate change sectors;
- UBI Banca – funding for photovoltaic and renewable are foreseen;
- BEI – European Investment Bank. It iffers several tools and incentives in the field of both energy efficiency and renewables.

6.5 Are the European Funds well-known and used?

The funding possibilities provided by the Structural Funds and respective Operational Programes are well promoted in the country and beneficiaries are generally informed about them. The Managing Authorities of the OPs as well as number of consultancy companies organize regular information campaigns. This makes the success in the utilization of the EU Funds managed through the Ops in Italy in general and the Region of Abruzzo in particular.

The Specalised Funds and programs which are managed directly at EU level are also well known in Italy and the Region of Abruzzo. Both pubic and private institutions and companies work a lot with them.

7. OTHER FACTORS

7.1 Describe the non-financial factors influencing the realisation of community energy projects.

(Legislation permits, etc.)

The main non-financial factors influencing the realisation of community energy projects are the entry barriers of economic and regulatory nature and a poor social appeal due to the lack of knowledge of such an opportunity. Moreover, the development of the energy community opens up some strategic and regulatory issues, such as the redistribution of system charges, as well as a precise reflection on the role of energy operators as possible "aggregators" of demand. Other weaknesses in our energy market to be addressed by the community energy are:

- Poor involvement of the private sector (even if this is increasing);
- Economic, financial and emergency issues (e.g. earthquake, hydrogeological risk, floodings) have redirected investment in our region;
- Due to the extraordinary number of overlapping crises we are facing, and due to the fact that the industrial base of the region is mostly made up by SMEs, companies commit themselves "to survive" instead of investing in energy efficiency as a way to strengthen competitiveness and provide growth and jobs.

8. ANY OTHER COMMENTS

Please provide any other additional information

The Region of Abruzzo, its four provinces and 305 municipalities have developed a cooperation model through the "Covenant of Mayors initiative". This approach was made possible thanks to the commitment of all levels of territorial government.
This is at the core of the so-called "Abruzzo Model", to which were allocated €35 million from the 2007-2014 ERDF OP funds. The main feature of Abruzzo's energy policy is thus the bottom-up approach and the multi-level governance dimension, that is local governments deploy small-scale installations with the support of the local community and citizens have a say in the siting and the sizing of the facilities. Intermediate governments, provide municipalities with technical support and funding to help them to deal with the complexity related to RE.

If we go through teh deifnition of "energy community" or "energy citizens", we can say that energy citizens are individuals or families that produce energy or manage their own energy demand flexibly, individually or collectively. This definition is also valid for public bodies such as cities and municipal buildings, schools, hospitals or buildings owned by the government, as well as small and medium-sized businesses and shopping centers.
In Abruzzo, as already mentioned in previous sections, community energy projects are mainly those implemented by municipalities. Companies are also start working at this thanks to initiaitives such as the Pescara Charter. So far, there are no examples of citizens cooperatives or, at least, this is not known.

In the 2017 report of Legambiente, a non-profit association in the field of the environmental culture, a large attention was dedicated to energy cooperatives. In Italy there are different example of community energy (or cooperative energy). The first example it is the "Electric Society of Sainte Magdalen" established in Funes (Alto Adige region) starting from 1921 when three farmers and an artisan decided to found it in order to produce hydroelectric energy for them and their partners. After few years, another historical energy cooperative born: E-Wark Prad (1926, Prato allo Stelvio). This cooperative manages 17 plants with renewable sources that can cover all municipal energy needs. Hydroelectric power dominates the mix of renewables in other historical cooperatives, such as the Gignod Electric Cooperative in Valle d'Aosta region, the Alto Bût Electric Cooperative Society in Friuli and the Electric Company in Morbegno in Valtellina. In 1995 the FTI cooperative was born in Dobbiaco-San Candido with about 900 partners and over 1300 users who supply energy through a biomass plant. Recently, some community energy in which the citizen is a consumer-producer member developed such as **WeForGreen, Energia Positiva and ènostra. WeForGreen was born in 2010** with the aim of sharing renewable plants to the members: at the moment they develop three photovoltaic parks and a mini-hydroelectric plant. Energia Positiva was born in 2015 in Piemonte region: in this community energy the member can, through an IT platform, purchase the shares of the available plants and build a "virtual plant" with which to produce clean energy. The cooperative ènostra, born in 2014 in Milan, provides to families, companies and organizations of the third sector renewable, sustainable and ethical energy. To date, the cooperative is able to serve 969 users (922 members) thanks to six photovoltaic systems.
In Abruzzo there are private citizens that developed renewable energy system to satisfy their consumption. An example is the Environmental Education Center in Penne (Pescara) that satisfies 90% of its thermal and 35% electric requirements using both photovoltaic and biomass systems.

Another example is that only in 2012 Enel has connected to the regional electricity grid 4234 new plants for the production of electricity from sources with zero carbon dioxide emissions (99% of the activations are photovoltaic systems).

Ensuring the possibility for different kinds of communities - groups of citizens, cooperatives, clusters of SMEs, condominiums etc. to build their small energy projects are an important basis of the transition to decentralized energy and a real alternative to achieve energy independence and energy security, while ensuring social justice, maintaining a healthy environment and ensuring a safe climate future.
The simplification of authorization procedures and delegating procedures to local authorities, municipalities and provinces could thus be a possible solution for their realisation.

To conclude, **the CHALLENGES for the community energy sector in our region** are:

- To deliver sound private-public partnerships and agreements;
- To identify the priorities of the EE sector and redirect investment in energy efficiency with particular attention to the private sector;
- To create a culture of energy efficiency (training, education, dissemination, promotion and awareness campaign).