



SECRETARIAT THE °CLIMATE GROUP

REGIONE  
ABRUZZO



THE °CLIMATE GROUP



# Abruzzo Region

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# Abruzzo region overview and projects



Abruzzo Region is known as **the greenest region in Europe**

**1/3** of its territory is set aside as national parks and protected nature reserves:

Region surface : 10,794 Km2

**3** National parks **1** Regional park **38** Protected areas

**4 provinces: L'Aquila, Chieti, Pescara, Teramo with 305 municipalities and 1.500.000 inhabitants**

Regional Community  
European Projects and  
partnership network



Lead Partner



Partner



Partner



Partner



Partner

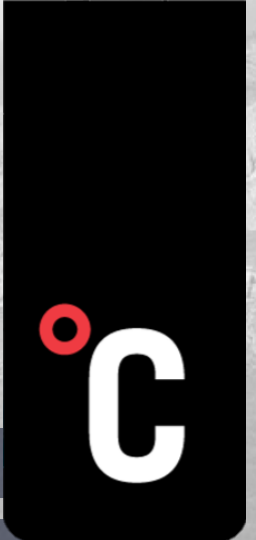


Main stakeholder



LINKPAS  
Main stakeholder

# Abruzzo region commitments in the Under2 MOU

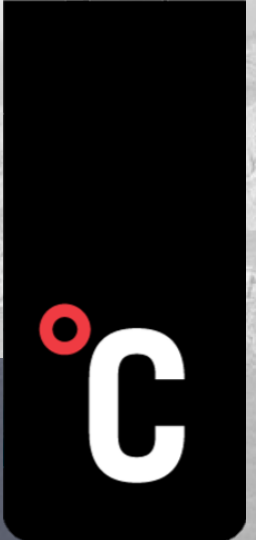


## Region's commitment to the Under2 MOU goal:

- limiting global warming below 2°C

- Reducing greenhouse gas emissions to 80-95% below 1990 levels OR 2t annual metric tons of emissions per capita by 2050

- **action:** Energy efficiency    Traffic and transportation    Natural resources protection and waste reduction    science and technology    Communication and public involvement    **Materials that are dangerous for the climate**    Monitoring, balance, transparency operations



# Abruzzo region Energy data

Energy is fundamental for everyday life, that's why it's very important to face the big challenges that climate changes represent.

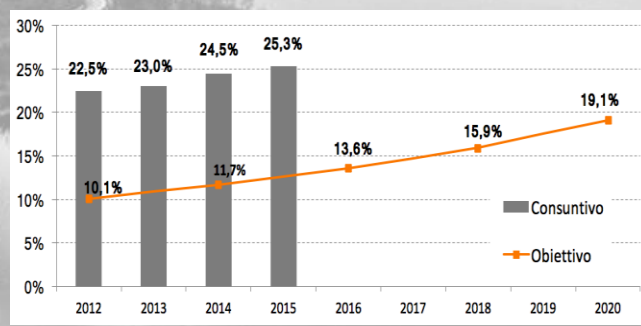
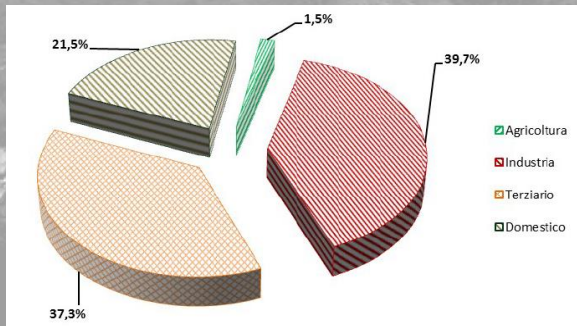
GWh	Termo-elettrica	Rinnovabili							Totale produzione	Saldo con altre regioni	Import export con l'estero	Totale
		Idrica	Eolica	Solare	Geotermica	Biomasse	Bioliquidi	Biogas				
Abruzzo	1.444,9	2.168,0	329,4	875,5	0,0	6,4	64,1	78,4	4.966,7	+1.615,0	0,0	6.581,7
ITALIA	172.657,7	45.537,2	14.843,8	22.942,2	6.185,0	6.290,1	4.893,6	8.212,0	281.561,6	-	46.377,9	327.939,6

(-) Energia ceduta. Superi della produzione rispetto alla richiesta  
(+) Energia importata. Deficit della produzione rispetto alla richiesta

The Kyoto Protocol indicates as the 2009 initial development objective a 5,8% increase; in 2018 Abruzzo reached 15,9% (source: GSE – Italian Energy Monitoring Company) and aims to achieve 19,1% in 2020

Abruzzo Region greatly surpassed the targets assigned

Overall electric energy consumption in Abruzzo represents almost 21% of national consumptions.



## TARGETS OF THE BURDEN SHARING TOTAL PRODUCTION

Traiettorie obiettivi Regione Abruzzo, dalla situazione iniziale al 2020					
Obiettivo regionale per l'anno (%)					
Anno iniziale di riferimento (somma consumi: Fer-E 2009; Fer-C 2005)	2012	2014	2016	2018	2020
5,8	10,1	11,7	13,6	15,9	19,1



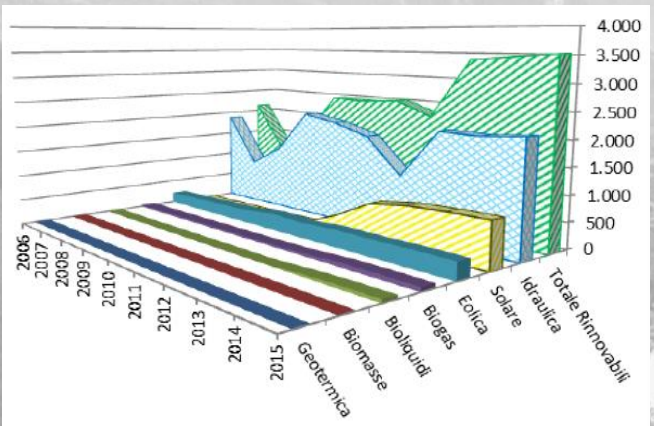
## Abruzzo region Energy cost

The 511/2018 resolution allowed the planning of interventions focused on mitigating hydrogeological risks worth €20 million provided by ERDF (European Regional Development Fund).

This increased amount helped the municipalities by recovering the costs for all works included in the Abruzzo Operational Program by the Ministry of the Environment, and works that the current Government will guarantee through the full activation of the *Safe Italy* program, its cost is €3 billion

The Masterplan expressed the need for a total amount of €215 million because of the increased resiliency of Abruzzo territory and, according to new regional plan, these are the shares: € 30 million provided by FSC (Cohesion and Development) funds + € 45 million provided by the ERDF + € 19,7 million provided by PO MATTM funds + € 120,3 million by other national sources

# Abruzzo region Energy production from renewable sources



In Abruzzo we witnessed how strongly the use of renewable sources has increased: in 2015 it reached 71,0% of electric energy production (which was 4966,7 GWh) with 3521.8 GWh, thanks to the reduction of thermoelectrical energy.

Almost 50% of Abruzzo Region renewable energy production comes from photovoltaic installations.

Compared to 2006 renewable sources use has increased by 65,7%

anni	GWh	Rinnovabili (GWh)								GWh
	Termoelettrica	Idraulica	Eolica	Solare	Geotermica	Biomasse	Bioliquidi	Biogas	Totale Rinnovabili	Totale produzione
2006	2.988,8	1.877,5	210,2	0,9	0,0	0,0	0,0	37,0	2.125,6	5.114,4
2007	3.079,8	890,5	236,5	1,3	0,0	0,0	0,0	33,5	1.161,8	4.241,6
2008	4.059,6	1.299,0	243,8	5,1	0,0	0,0	0,0	34,9	1.582,8	5.642,4
2009	5.348,9	2.156,6	260,4	13,5	0,0	4,0	0,0	35,0	2.469,5	7.818,4
2010	3.781,3	2.037,6	329,3	40,1	0,0	4,0	0,0	36,0	2.447,0	6.228,3
2011	3.257,3	1.839,9	297,4	329,0	0,0	4,4	0,0	37,3	2.508,0	5.765,3
2012	2.516,8	1.155,9	334,0	707,5	0,0	10,7	0,6	47,9	2.256,6	4.773,4
2013	1.301,7	2.101,4	326,3	822,4	0,0	11,9	41,0	81,5	3.384,5	4.686,2
2014	1.121,3	2.094,9	335,8	861,4	0,0	11,1	62,2	87,7	3.453,1	4.574,7
2015	1.444,9	2.168,0	329,4	875,5	0,0	6,4	64,1	78,4	3.521,8	4.966,7

For bigger installations Abruzzo Region released by July 2018 221 Single Authorizations, differentiating their energy source in the following way:

EOLICO (MW)	FOTOVOLTAICO (MW)	IDROELETTRICO (MW)	BIOMASSA (MW)	BIOGAS DI DISCARICA (MW)	BIOMETANO (mc/anno)
185,4	287,36	13,83	87,823	6,571	4.000.000



Abruzzo region: best practice of Energy Policy €10 million for efficiency of building schools with **ERDF ROP 2014-2020** and MOU - GSE

## INTEGRATION OF ALL PLANS ALSO IN LINE WITH NATIONAL AND EU POLICIES AND INITIATIVES

**Adaptation to Climate Change (PACC)  
Energy**

**Air Quality**

**Quarrying and mining activities**

**Water Protection**

**Water management**

**Hydrogeological Asset**

**Flood Protection**

**Flood risk management**

**Waste management**

**305 SEAPs by (Sustainable  
Energy Action Plans submitted  
under the 2020 Covenant) by  
all municipalities of the  
Abruzzo Region**

**4 SEAPs by all Provinces of the  
Abruzzo Region**

the Burden Sharing Decree (MD 15/03/012) 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%).

# Abruzzo region: best practice of Energy Policy €10 million for efficiency of building schools with ERDF ROP 2014-2020 and MOU - GSE

**Implementation of Public Private Partnership (PPP) as a tool of application of policies and actions to local adaptation to climate change**

- ☐ Pescara Charter
- ☐ TUA      Hydro-methan      public transport
- ☐ ESCO
- ☐ CNA
- ☐ ENEA
- ☐ CDCA      Climate change – regional plan
- ☐ Financing      ERDF ROP 2014-2020
- ☐ Governance

## 2014 – 2020 ERDF ROP ABRUZZO

- 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"

FOCUS:

### AXIS IV. "PROMOTION OF A LOW-CARBON EMISSIONS ECONOMY"

- Interventions for energy efficiency of public buildings, demonstrative projects and support measures: **€ 7.000.000**
- Reduction of energy consumption and emissions in enterprises and integration of renewable sources, demonstrative projects and support measures : **€ 8.000.000**

Abruzzo region: best practice of Energy Policy €10 million for efficiency of building schools with ERDF ROP 2014-2020 and MOU - GSE

2014 – 2020

ERDF ROP  
ABRUZZO  
AXIS IV

PROMOTION  
OF A LOW-  
CARBON  
EMISSIONS  
ECONOMY

110 municipalities involved

53/110 (approximately 50%)  
municipalities of internal  
areas involved

Total amount requested to  
be financed:  
€ 10.468.170,82

Amount made available  
from municipalities for co-  
funding: € 523.370,98

34,59% average of the reduction of  
CO2 emissions

34,22% average of the Reduction of  
the Energy Requirements estimated  
from the interventions

30/110 around 25% of energy  
efficiency interventions in the context  
of seismic improvement:

80/110 no. of interventions with  
innovative technologies (remote  
control, data logger, energy saving)



# Abruzzo Region action: (REP) The Regional Energy Plan

## THE REGIONAL ENERGY PLAN (REP)

REP 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 regione has approved 4 guidelines:

**fv - biomass - hydroelectric - wind power**

Thank to this and Energiochi (ten years of school awareness campaign), in 2016 we have reached the burden sharing objectives and we are between the three first regions in Italy for the energy production



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



## Abruzzo region: Public transportation

Regional Government Act no. 684 (07/09/18): efficient urban mobility and proper actions for enhancing environmental actions from local transportation systems

**Memorandum of Understanding focused on promoting and developing all necessary initiatives related to the Under2 – Zero Emission Vehicle Project and, more specifically:**

Arrange meetings to **share experiences, local best-practices**, highlight specific territorial actions to be taken in order to push the local awareness and **use of ZE Vehicles**;

Deployment and activation of **innovative programs and policies** and Technical support;

Communication actions related to relevant global events (GCAS, COP24) in order to **promote awareness towards the operations taking place in the zero-emission vehicles field by Under2 Coalition members**;

Activation of further similar networks such as EV100 and ZEV Alliance;

**Promoting coordination, planning and communications**, in addition to seminars, project activities, advertisement and preparation of informative content for citizens.

# PACC Climate Changes Adaptation Plan

## TERRITORY OVERVIEW

### 1 EXTREME CLIMATIC EVENTS

Heavy rains concentrated over time have been characterizing Abruzzo's climate scenario

### 2 DISRUPTIONS AND LANDSLIDES

The large number of rains, together with a general hydrogeological disruption situation, make landslides an emergency which cannot be ignored.

### 3 COAST ALERT

From the coast erosion to the sea acidification, from the recurrent eutrophication phenomena to the water quality, there are many threats that involve the coast

### 4 SAVING THE APENNINES

The snow melting phenomenon, together with the generalized increase of the freezing level, is one of the alert factors for every mountain area.

## STRESS AND SHOCK FACTORS



HEAT WAVES



FLOOD



DROUGHT



SEA LEVEL  
INCREASE



SNOW MELTING



SEA  
ACIDIFICATION



OBSOLETE  
FACILITIES



FOREST FIRES



COAST  
EROSION

## MEANS OF ACTIONS

### 1 PROCESSING CLIMATE DATA

Collecting data in order to create a climate profile which is needed in order to produce the PACC.

### 2 IDENTIFY STRESS FACTORS

For each climate zone (coast, mountain, urban, etc.) there are specific stress factors which must be identified in order to produce precise measures.

### 3 MAPPING RESILIENCY

Territory analysis makes possible identifying, besides the critical elements, resilience factors and best-practices which can be useful for a better management of the resources.

### 4 PUBLIC INVOLVEMENT

The participation process is a key component of the project: involving stakeholders helps finding critical aspects and best practices.



# PACC Climate Changes Adaptation Plan: climate profile

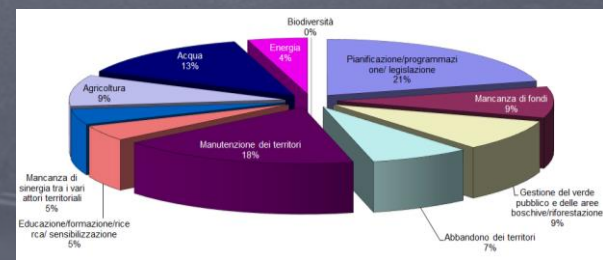
## VULNERABILITIES



the main purpose of adaptation will be to make high-risk and highly vulnerable areas an absolute priority of strategies, plan and adaptation actions. The combination of vulnerability and risk assessment will allow the identification of the main risks that need to be implemented in order to formulate more effective intervention policies to better face the challenges posed by climate change.

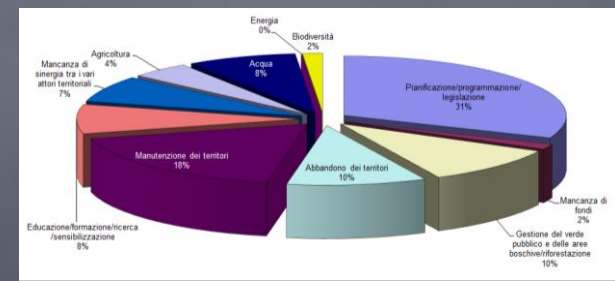
## INTERVENTION ANALYSIS

### 1 CRITICAL ELEMENT



Interventions which may or may not cause enviromental issues

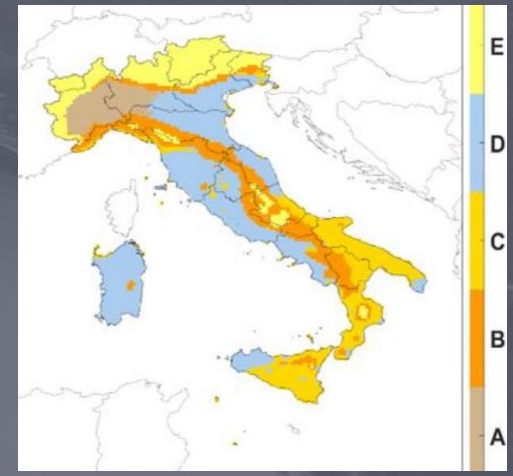
### 2 PROPOSALS



Interventions which provide adaptation and mitigation solutions, in addition to future best-practices



## CLIMATIC ANOMALIES

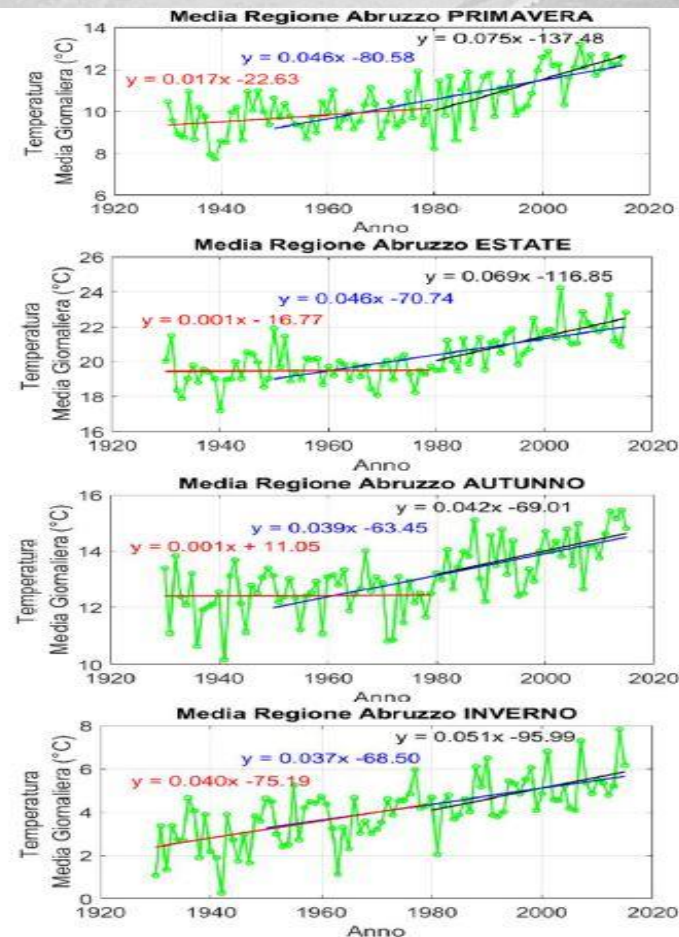


MAP OF THE AREAS IN ITALY WHICH REPRESENT CLIMATIC ANOMALIES

# PACC Climate Changes Adaptation Plan: climate profile

## OBJECTIVES

- 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;
- To integrate Regione Abruzzo in the network of EU Regions involved in climate change adaptation policies.





# PACC Climate Changes Adaptation Plan: climate profile

## MAIN PHASES

- 1) **RoadMap for Climate Change Adaptation**\_ *Status: completed* as a basis to the strategic plan – monitored and eventually updated in accordance to National and EU initiatives and policies;
- 2) **Regional Climate Profile**\_ *Status: completed*
- 3) **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: concluded, Guidelines have been realized.*
- 4) **Communication & Awareness Campaign** *Status: ongoing*
- 5) **Tools of Governance**, mainly regional plan and **Guidelines for the realization of the regional plan of adaptation to climate change** *Status: completed;*
- 6) **Regional plan of adaptation to climate change**, *Status: to be realized.*
- 7) **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.

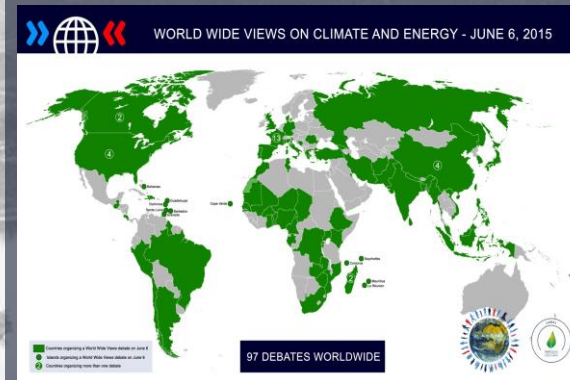
# PACC Climate Changes Adaptation Plan: climate profile

PACC – COMMUNICATION & AWARENESS CAMPAIGN

**ORGANIZATION OF CONFERENCES, WORKSHOPS, SPECIAL EVENTS FOR THE GENERAL PUBLIC;**

**EDUCATION AND TRAINING ACTIVITIES IN THE FIELD OF CLIMATE CHANGE INVOLVING THE NETWORK OF REGIONAL CENTERS FOR THE ENVIRONMENTAL EDUCATION (CEAS) AND THE MUNICIPALITIES OF THE REGION HAV BEEN JUST LAUNCHED. EVALUATION OF PROJECTS IN ONGOING**

## World Wide Views on Climate & Energy, Chieti, 6 June 2015



### ElectricVehicleSystem

Shade shelters for electric cars and bikes



Renewable energy



Innovation and infrastructure



Sustainable cities and communities

▪100 projects for climate  
April, 22th - July, 6th 2016

- International competition on climate change;
- Regione Abruzzo is the only coordinator for Italy;
- 587 projects have been submitted from all over the world including 19 from citizens, municipalities and schools of Abruzzo Region.

The **ONLY** winner project from Italy is the one of the Municipality of Collarmele, from Abruzzo Region.

Information and results of the contest are available at:

<http://www.regione.abruzzo.it/portale/index.asp?modello=eventoSing&servizio=le&stileDiv=sequence&template=default&tom=1157&msv=evento>





# PACC Climate Changes Adaptation Plan: climate profile

## NETWORKING AND COORDINATION ACTIVITIES

- **OCSE** ( Organization for Economic Co-operation and development);
- **FEDARENE** (European Federation of Regional Energy and Environment Agencies)
- **HYER** (Hydrogen Fuel Cells and Electro-mobility in European Regions);
- **AER** (Assembly of European Regions)
- **RENAEL** (National Network of local energy agencies)
- **H2IT** (Italian Hydrogen Association)
- Signing of «**Subnational Global Climate Leadership MoU**» (Under 2 MoU)



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# Thank you for your attention

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