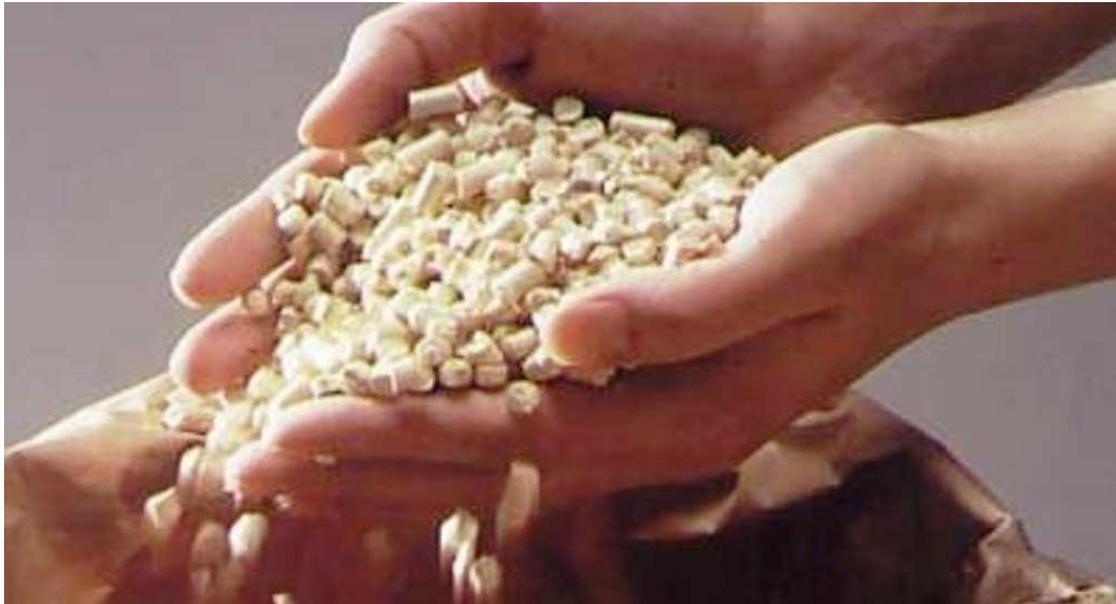


# Regional Case Study of Pazardzhik Province, Bulgaria



ESPON Seminar "Territorial Cohesion Post 2020: Integrated Territorial Development for Better Policies"  
Sofia, Bulgaria, 30<sup>th</sup> of May 2018

# General description of the Region

- Located in the South-central part of Bulgaria



- Total area of the region: 4,458 km<sup>2</sup>.
- About 56% of the total area is covered by forests; 36% - agricultural lands
- Population: 263,630 people
- In terms of population: Pazardzhik municipality is the largest one with 110,320 citizens

# General description of the Region

- 12 municipalities – until 2015 they were 11, but as of the 1<sup>st</sup> of Jan 2015 – a new municipality was established

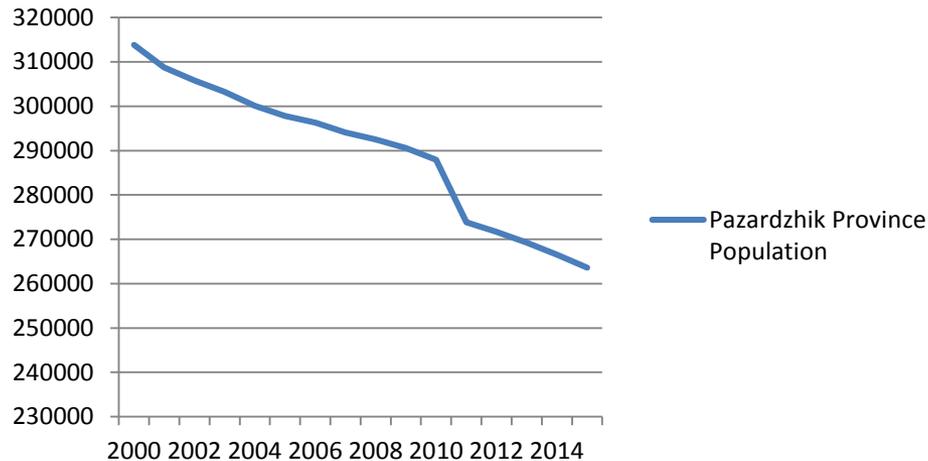


	Total	Male	Female
Pazardzhik Province	263630	129319	134311
Batak	5616	2791	2825
Belovo	8187	3997	4190
Bratzigovo	9037	4462	4575
Velingrad	34511	16630	17881
Lesichovo	5456	2698	2758
Pazardzhik	110302	54027	56275
Panagyurishte	23455	11566	11889
Peshtera	18338	8954	9384
Rakitovo	14706	7283	7423
Septemvri	24511	12231	12280
Strelcha	4691	2260	2431
Sarnitsa	4820	2420	2400

# General description of the Region



## Population: negative trends



There is a steady trend of reducing the population of the region in past 15 years. It has dropped down by 16% in last 15 years, with an average for the country – 12.2%. The main reason for that negative trend is the migration of young and medium aged people to West Europe, the U.S. and Sofia (capital and the largest city in Bulgaria).

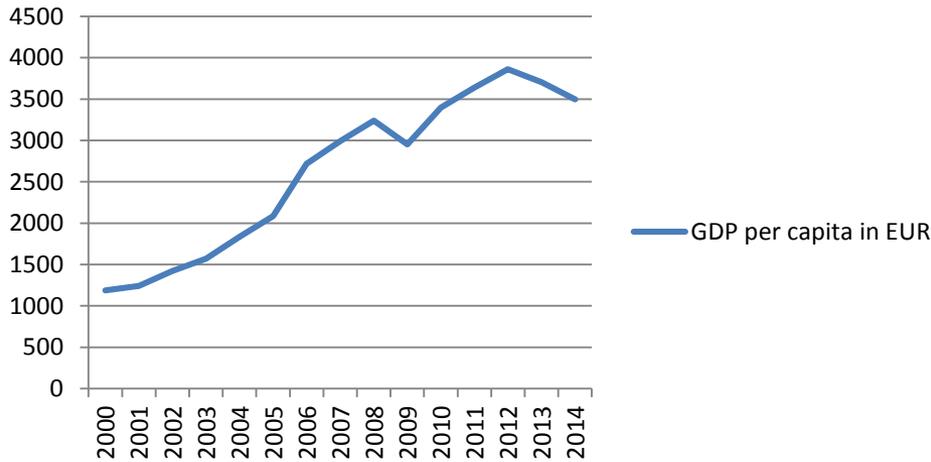
# General description of the Region



## Regional economic development:

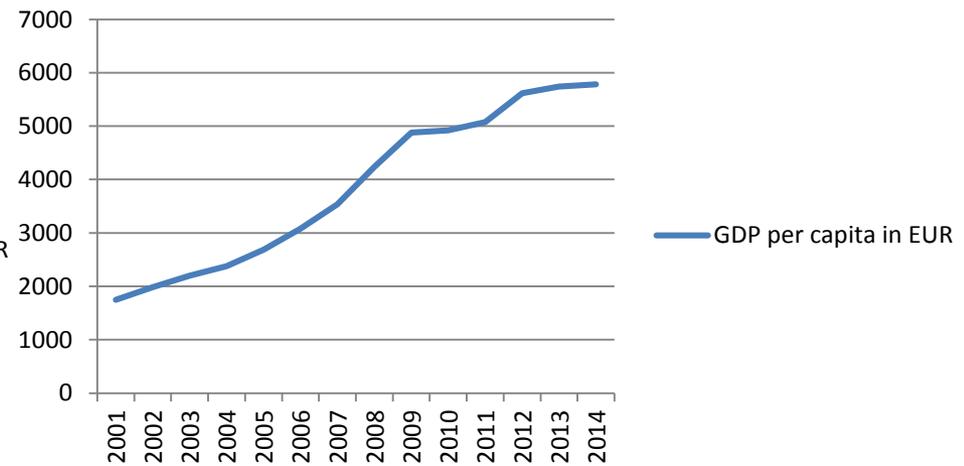
### GDP per capita average for the region

#### GDP per capita in EUR



### GDP per capita average for Bulgaria

#### GDP per capita in EUR



# General description of the Region



## Regional economic development

Lead branches in industry are:

- Food and beverages: a large number of companies producing bread, bakery and other foods;
- Wood, paper, cardboard and their products. This is due to the large number of logging companies located primarily in the Rhodope Mountains part of the region and also to the presence of large industrial mills producing paper, cardboards, and their products.
- Biotechnology sector - a leading European producer of feed additives, premixes, active substances, and drugs for treatment, prevention and improving animal and plant productivity.



Co-financed by the European Regional Development Fund

# Governance structure and energy strategy in the region



## National Legislation

As according to the latest versions of both Bulgarian Acts, the *Energy Efficiency Act* and the *Energy From Renewable Sources Act*, all regional and local authorities must develop and follow energy programmes in compliance with the above mentioned acts. The Energy Plans and Programmes for their execution are being developed in compliance with the National Strategy under article 7 in the *Energy Efficiency Act*, as well as in compliance with article 10 in the *Energy From Renewable Sources Act*, and in compliance with the National Action Plan for Energy Efficiency, incorporating the specific details of the Regional Development Strategy and Local Development Plans.



Co-financed by the European Regional Development Fund

# Governance structure and energy strategy in the region



## National Legislation

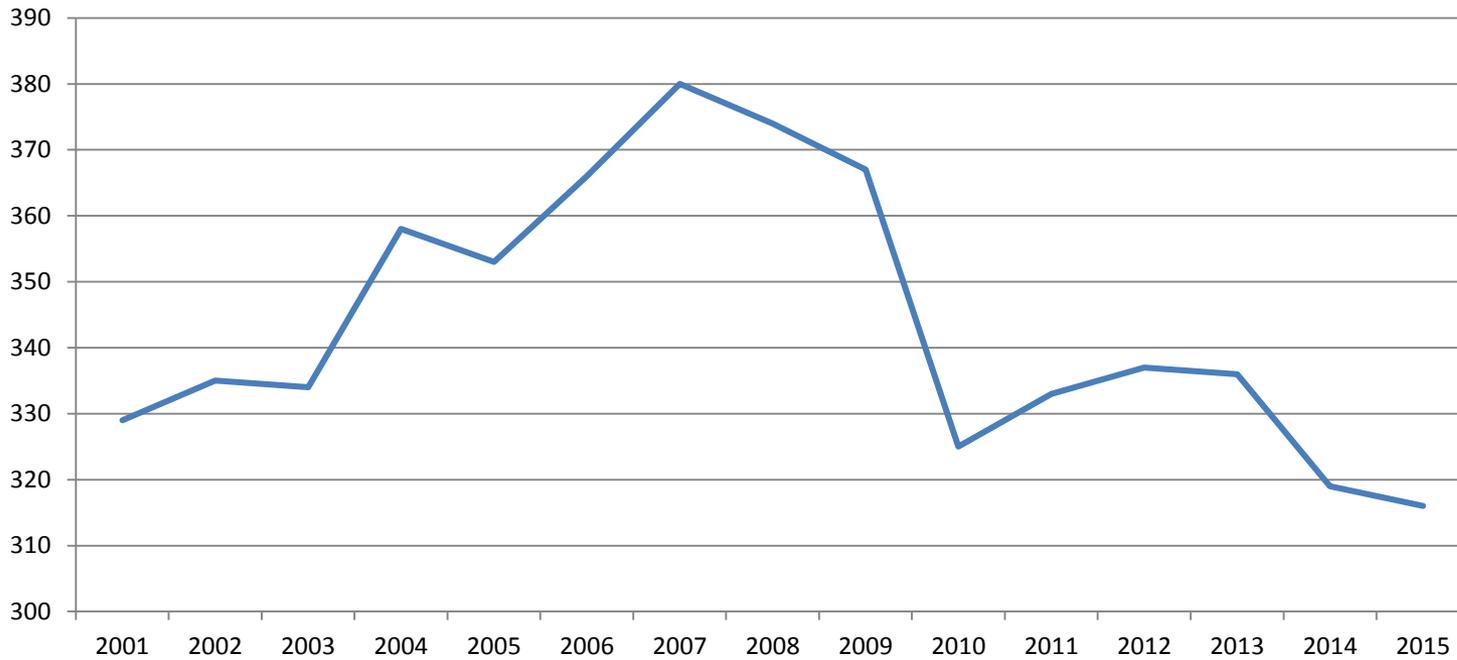
Main highlights which should be tackled within these energy policies are:

- To promote sustainable renewable energy sources, biofuels, and energy efficiency at local and regional level;
- To reduce the negative perception among citizens towards innovative renewable energy solutions;
- Increasing of investments in local sustainable energy installations among inhabitants in rural areas, entrepreneurs and local authorities;
- Reduce environmental pollution and CO2 emissions from industry;
- To meet the 2020 renewable energy obligations.

# Key energy figures

Total energy consumption, last 15 years:

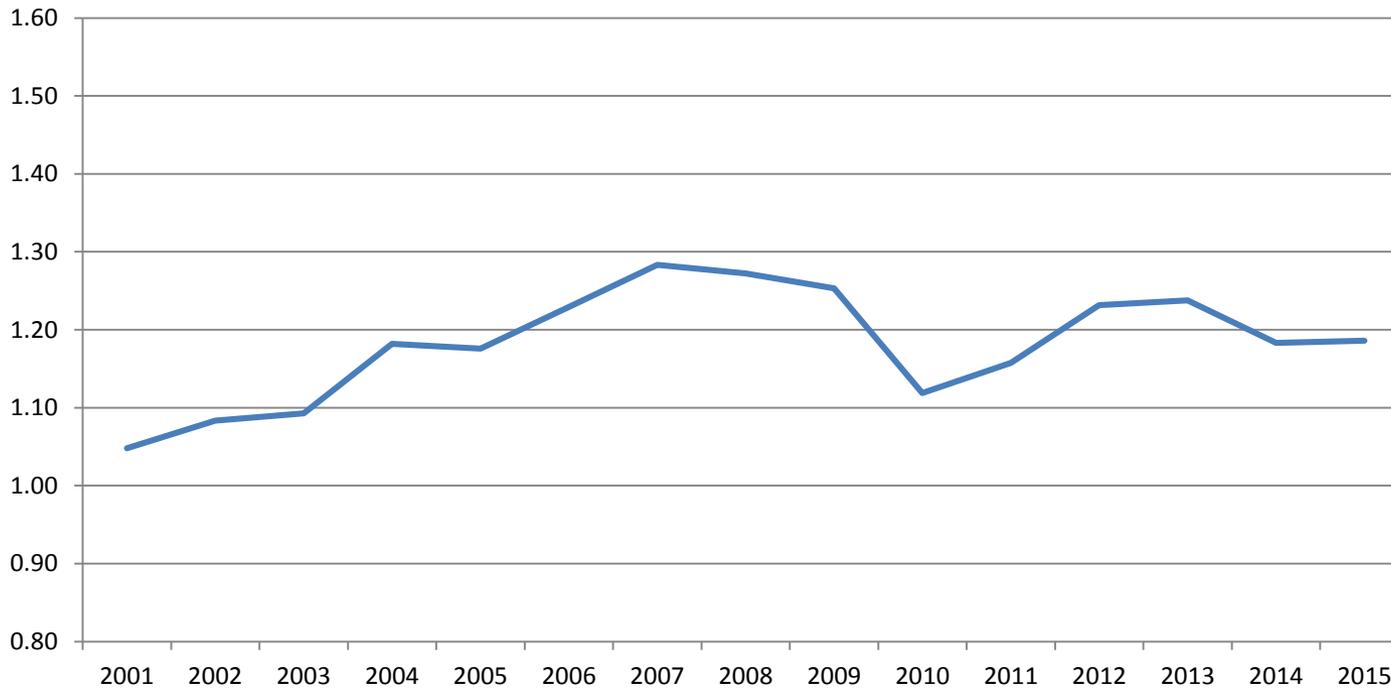
Total energy consumption, ktoe



# Key energy figures

Total energy consumption, last 15 years:

Energy consumption per capita, toe



# Key energy figures

## Energy consumption, main trends:

The total final energy consumption in 2014 was 316 ktoe, and the distribution between sectors is: industry – 35%, households – 30%, transport – 14%, services – 15%, and agriculture – 6%.

Within the period 2000 – 2014 energy consumption does not change significantly, with peak consumption in years 2006, and 2007. The consumption in sector Industry is decreasing and on the contrary, consumption in sectors Transport and Services is increasing slightly.

More or less, it could be concluded that the effect of the Global crisis on energy consumption in the region of Pazardzhik (and in Bulgaria) is similar to the effect in other European regions, but with a delay of one-year period because the Crisis affected the Bulgarian economy with a year later in comparison to other EU regions.

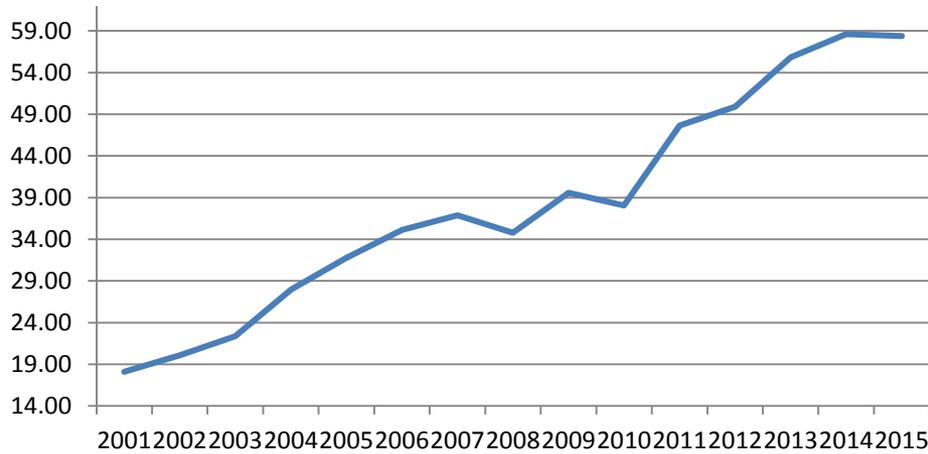
Energy consumption per capita still remains quite far below the average EU value. The EU-28 average in 2014 is 3.2 toe per capita (*source: Eurostat*)

# Key energy figures

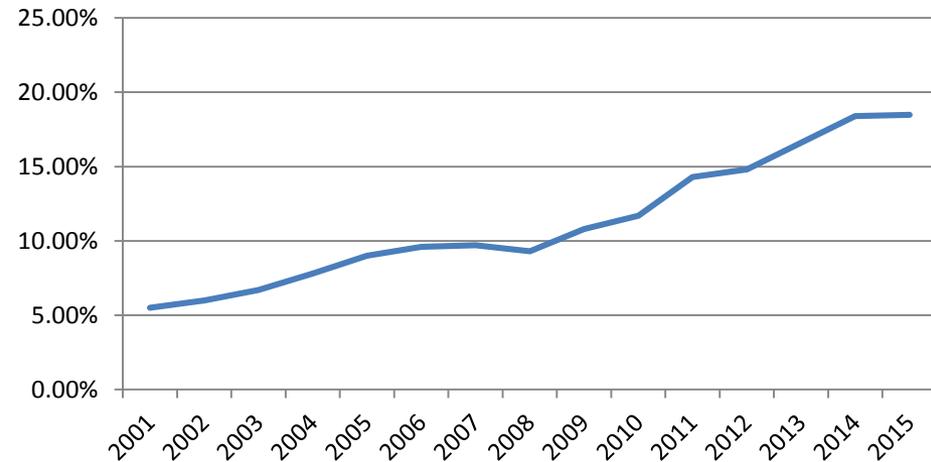
## RES trends in recent years:

The share of renewable energy sources in final energy consumption is constantly increasing in recent years.

**RES energy, ktoe**



**RES energy in final energy consumption, %**



# Key energy figures

## RES trends in recent years

Distribution between different RE sources (*as according to estimations of REAP*):

- Energy from hydro power plants: 49%
- Energy from biomass and wastes: 34%
- Solar energy: 9%
- Geothermal energy: 8%

At the beginning of 2007, when Bulgaria entered the European Union, RES sector was at a very initial phase of development – this applies for the country and also for Pazardzhik Province. The share of RES in the final energy consumption was much below 10%, and in Pazardzhik Province it was mainly consisting of energy produced by the local hydro power plants. No production of energy from PVs, no production of wooden fuel (pellets and wood chips).

# Key energy figures

## RES trends in recent years

Soon after the accession, Bulgaria adopted its first legal framework to regulate the RES market and the law provided generous subsidies in the form of preferential prices (feed-in tariffs), long-term contracts (20-25 years) with priority and guaranteed purchase of renewable energy. The Sector experienced a fast development, especially for solar energy (and, to a less degree, for new hydroelectric power plants), and biomass technologies. The preferential policy led to the installation of several PV parks on the territory of Pazardzhik region, and at the same time several large pellet producers emerged mainly in the forested-mountainous area of the Province, putting the region among the top regions in terms of pellet output produced at an annual base, yielding about 1/3 of the entire state pellet production.

# Key energy figures

## Decisive aspects

The preferential policy, adopted during Bulgaria's accession in the EU, led to a relatively quick achievement of the objectives set at EU level for the country, and from 2012 subsidies (feed-in tariffs) to energy produced from renewable energy sources, especially for electricity produced from RES were gradually cut, and diminished. However, at regional level this negative national policy did not affect much the positive trend in RES energy production due to the significant RE potentials in Pazardzhik Province – hydro, solar, biomass, and geothermal potentials. In last 5 years, geothermal energy and biomass sources are influencing positively the RES sector in the region by increasing the installed capacities in buildings and in industry.

# Key energy figures

## Decisive aspects

Taking into account the high energy saving potential of the building stock in Pazardzhik Province, as well as the high potential of local renewable energy sources, a sustainable energy policy would bring positive effect on the regional development by influencing/promoting/fostering the so called **integrated energy projects** . The integrated energy approach is already well-known in some European regions, but yet poorly promoted in some Bulgarian regions, including Pazardzhik Province.

The integrated approach combines measures to reduce energy consumption (for example, insulation of outer building's envelope, installation of energy building management systems, etc.) with measures to utilize the local potential of renewable sources (like for example photovoltaics, biomass, geothermal waters, etc.).

In this way, it will be achieved the synergy effect, i.e. implementation of EE measures will affect positively the introduction of RES and vice-versa.

# Key energy figures

## Decisive aspects

The local sector (municipal administrations) must undertake the Leading role by implementing demonstration project for public buildings and public facilities and pave the way for the other two main target groups – the local industry and the residential sector. Once these two sectors realize the positive advantages of such integrated approach, they will certainly follow the local authorities in implementing these and transferring this experience and approach in their industrial premises / industrial systems and in their residential buildings.

# Key energy figures

## Examples of possible demonstration projects:

1. *Combine geothermal energy with other source of (renewable) local energy in order to produce heat and power.*

The Province of Pazardzhik is famous with its geothermal potential, especially in Velingrad municipality which has many springs and boreholes with water temperatures varying from 30°C to 90°C. On the other hand, the region has a very large potential of wood biomass – about 55% of the total area in Pazardzhik Province is covered by forests. The region wanted to study new and innovative solutions in the area of energy production from renewable sources like geothermal waters and biomass. The project GeoSEE, conducted from 2013 to 2015, provided a good opportunity for that.

It performed a deep technical study on the feasibility of a hybrid system technology for utilizing low-temperature geothermal waters and wood biomass in order to produce electricity and heat energy. This technical analysis proved the technology as feasible and profitable, and could serve as starting point of a large RES project on the territory of Velingrad Municipality.

# Key energy figures

## Examples of possible demonstration projects:

1. *Substitution of boiler oil fuel in public buildings by wood biomass fuel (pellet, wood chips).*

Few years ago, REAP performed a study on forest wastes energy potentials. Only in the areas of Panagyurishte municipality, more than 12,000 tons of wood wastes were identified. The forest biomass has been determined as the biggest potential of RES for that municipality. At the same time, 9 public buildings in this area were using boiler oil fuel to heat up their premises.

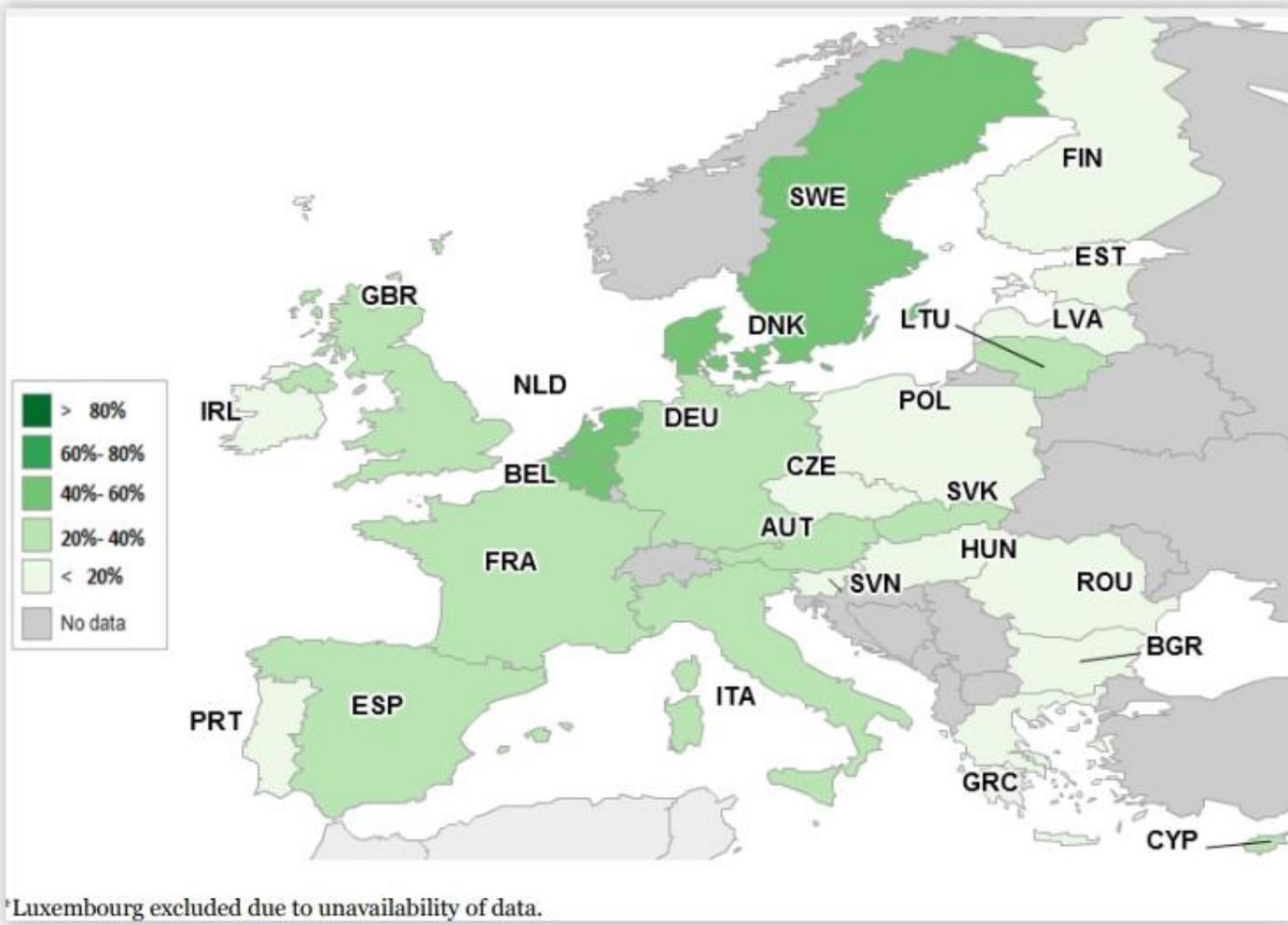
REAP initiated a project to analyse and propose concrete steps to substitute the existing fuel (having very bad environmental profile) and the existing old inefficient boiler systems by wooden fuel and new modern and fully automated heating systems utilizing wooden fuel.

Positive effects: environmental, financial!

Social effect: creation of new jobs / new business established at local level;  
replication: from the Local administration to households / industry.

# Key energy figures

Examples of Interreg project in the area of GPP – **GPP-STREAM**:



Source: a survey made by the Centre for European Policy Studies (CEPS) in 2012, "THE UPTAKE OF GREEN PUBLIC PROCUREMENT IN THE EU27 "

# Key energy figures

## Examples of an Interreg project in the area of GPP:

**GPP-STRAM** – project funded within the Interreg Europe Programme with overall objective to support the project partners/regions to transfer the lessons learnt to all implementation phases of the policy instruments addressed and to create a community of stakeholders that can mainstream/integrate GPP practices.

Regions involved from the following member states: Italy, Spain, France, Romania and Bulgaria

Some major actions within the project:

1. Establish a stakeholder group which will include key actors from different sectors: public authorities, researchers, NGOs, SMEs representatives, civil organizations.
2. Discuss and elaborate an Action Plan - identify, collect and share best practices and tools to support the adoption of GPP
3. Implementation of the Action Plan with the purpose to:
  - Improve GPP integration into the ERDF policy instruments which participate in the project
  - Improve capacity of administrations and the deployment of GPP implementation
  - Stimulate the adoption of green demand for goods and services along all phases of policy instruments' implementation, including those that are affected but not directly managed by the authorities that developed the instruments.

# Thank you for your attention!

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