



Co-financed by ERDF through
the INTERREG IVC programme

MORE4NRG Project

Valencia Region Strategy for RES/EE State of Art Seminar

Valencia, 07th May 2009

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SUMMARY



Co-financed by ERDF through
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- Valencia Region introduction.
- Valencia Energy Structure.
- Energy Strategic principles in Valencia Community
- Clean Energy and Energy Efficiency Promotion.
- Valencia Region Energy Strategy for RES/EE.
 - Main pilot projects and best practices.
- Success Factors Valencia.

VALENCIA REGION



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- ✓ Valencia Region is placed in the East of Spain.
- ✓ It has 4.6 % of the Spanish surface with a total area of 23 255 km²
- ✓ Its population of 5 029 601 inhabitants (2008) means a 10.90 % of the Spanish total.



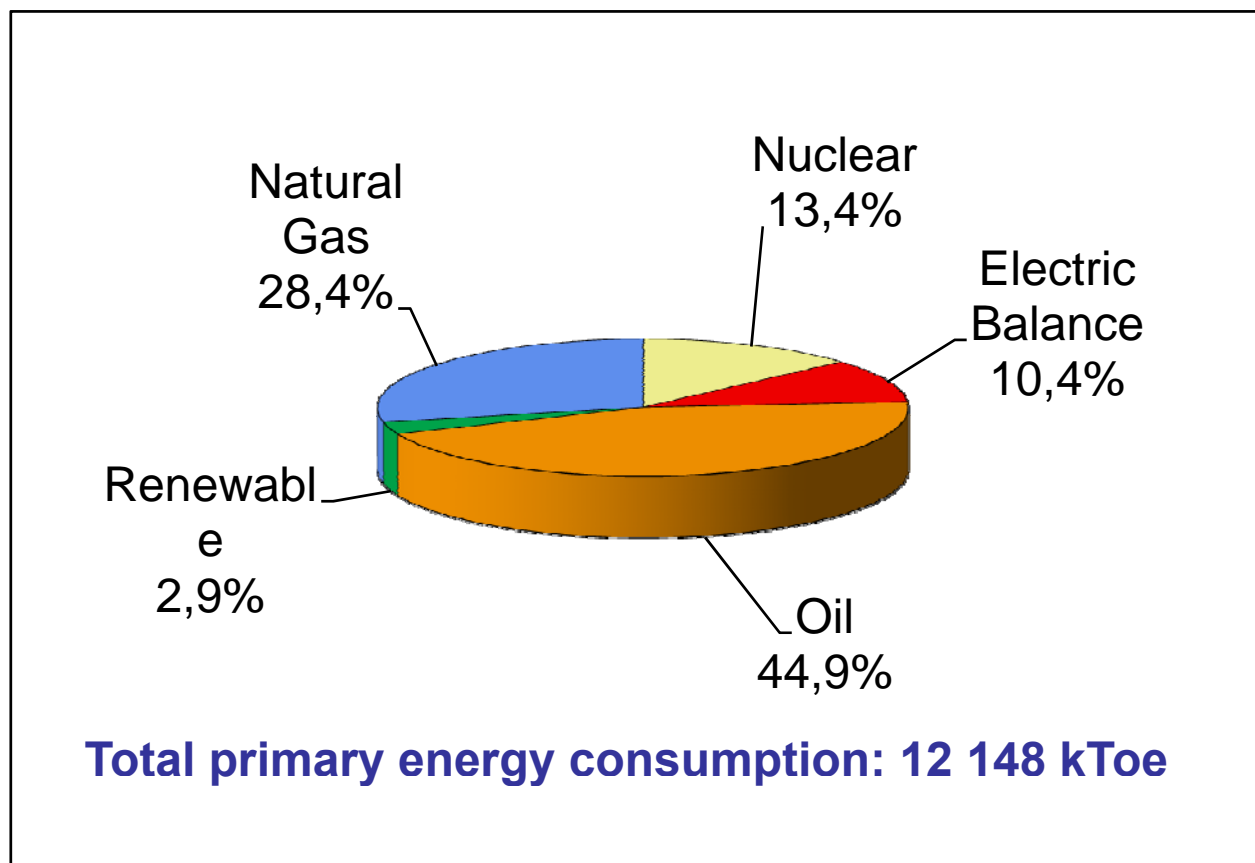
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VALENCIA REGION ENERGY SOURCE STRUCTURE (2007)



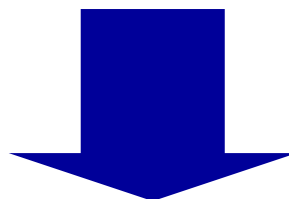
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VALENCIA REGION ENERGY FINAL USE STRUCTURE



Total consumption (2007) = 9.959 ktoe



34,7%



39.4%



11,6%



9,2%



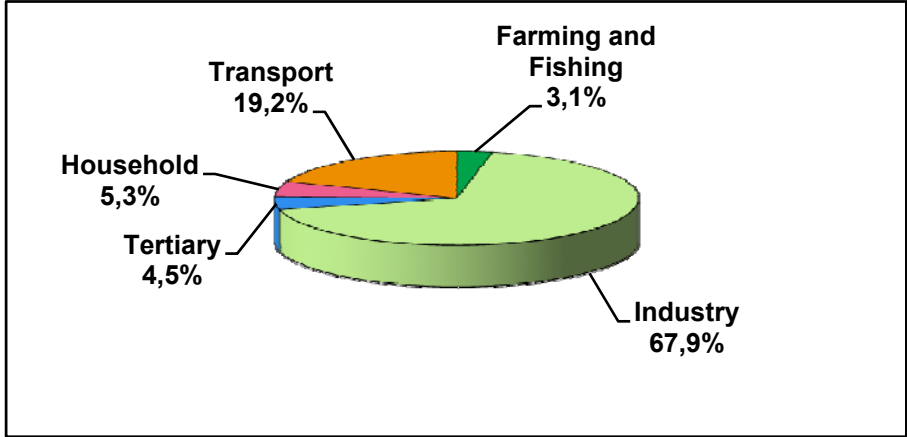
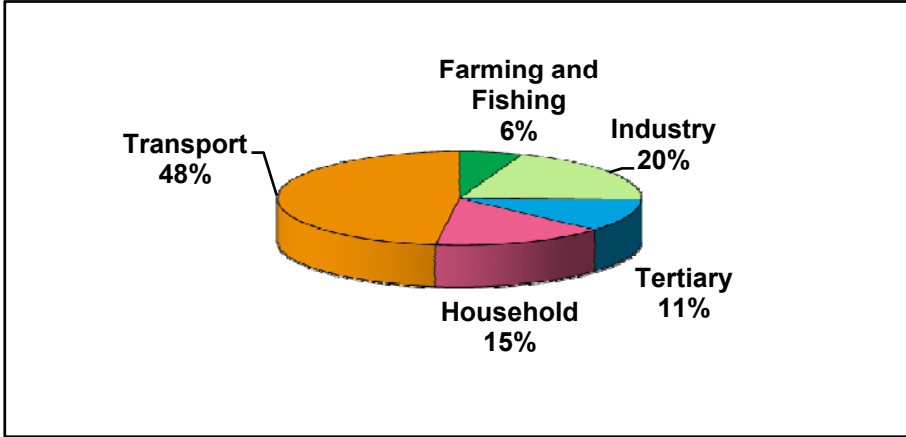
5,2%



VALENCIA REGION ENERGY FINAL USE BY PROVINCE



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ALICANTE

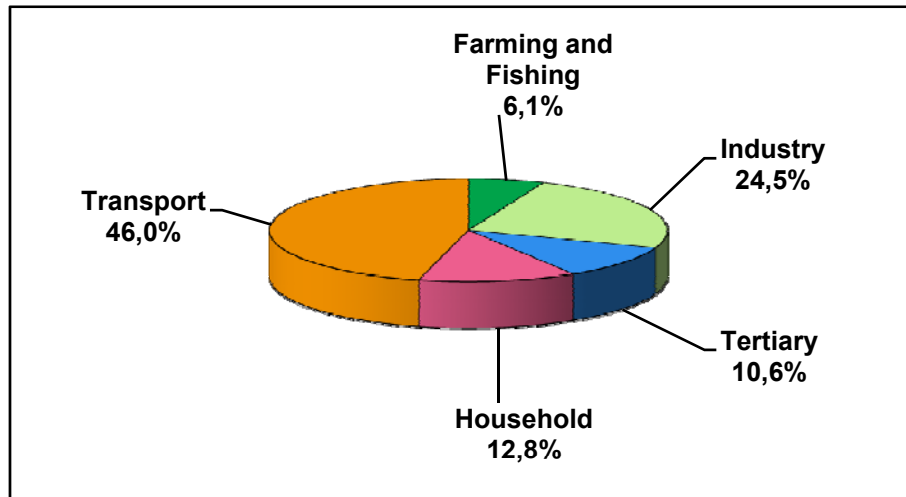
2.912 ktoe

CASTELLÓN

2.642 ktoe

COMUNIDAD VALENCIANA

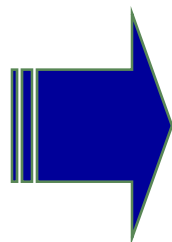
9.959 ktoe



VALENCIA

4.404 ktoe

ENERGY STRATEGIC PRINCIPLES IN THE VALENCIA COMMUNITY



ENERGY SELF-SUFFICIENCY

TO ASSURE ENERGY SUPPLY.

TO IMPROVE THE CITIZENS' ACCESS TO THE NETWORKS NATURAL GAS OR ELECTRICITY.

TO IMPROVE THE ELECTRICITY SUPPLY QUALITY

TO COMMIT TO RENEWABLE ENERGY SOURCES.

TO PROMOTE ENERGY SAVING AND ENERGY IMPROVEMENTS.



CLEAN ENERGY AND ENERGY EFFICIENCY PROMOTION SUPPORT



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RES PROMOTION.:

- RES Electricity.
- Thermal use:
 - In Buildings.
 - In Industry.
- Biofuels.

Energy source diversification:

From oil to Natural Gas:

- Electricity Generation:
 - Combined Cycle Power Plants.
 - N.G. based Cogeneration
- Final use substitution.

Energy Saving and Energy Efficiency:

- CV Energy Saving Plan.
- National E4 action Plan.



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RES EVOLUTION IN VALENCIA REGION



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FUTURE PERSPECTIVES

Electricity Generation

Thermal Use of RES

BIOFUELS

- Valencia Region Wind Energy Plan
- Huge Photovoltaic Farms implementation
- Higher BIOMASS use from farming and waste source

- New Buildings Technical Code (EPBD based).
- Higher use of Agriculture BIOMASS.

- EU 2003/30/EC directive application. Promotion of the use of **BIOFUELS** and other renewable alternatives to fossil fuels in transport applications.
- Building of **BIOFUELS** processing plants.

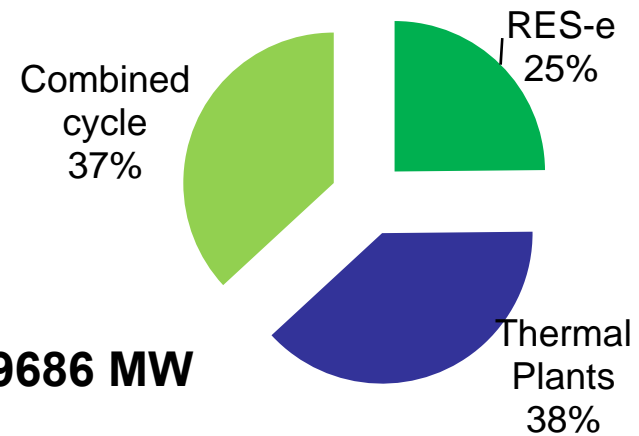
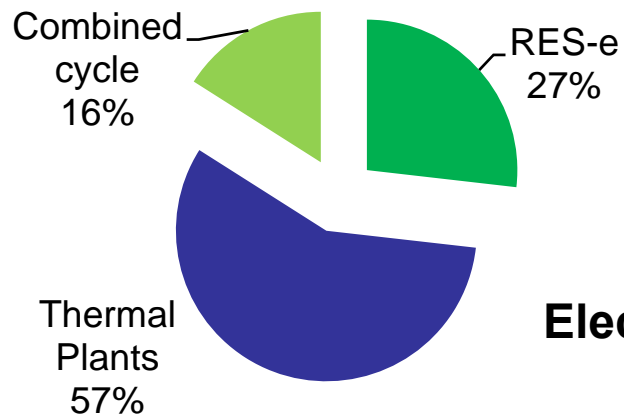
RES-e ROLE EVOLUTION IN VALENCIA REGION 2011 HORIZON.



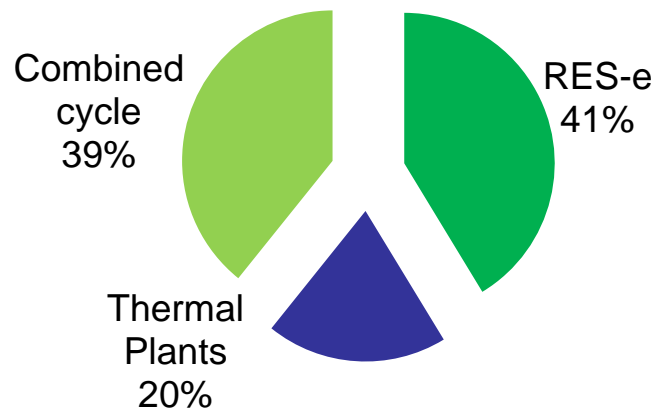
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Electricity 2007: 7595 MW

Electricity 2005: 5005 MW



Electricity 2011: 9686 MW



VALENCIA REGION STRATEGY FOR RES/EE AND BEST PRACTICES



Main areas of success in The Valencia Region strategy for RES/EE:

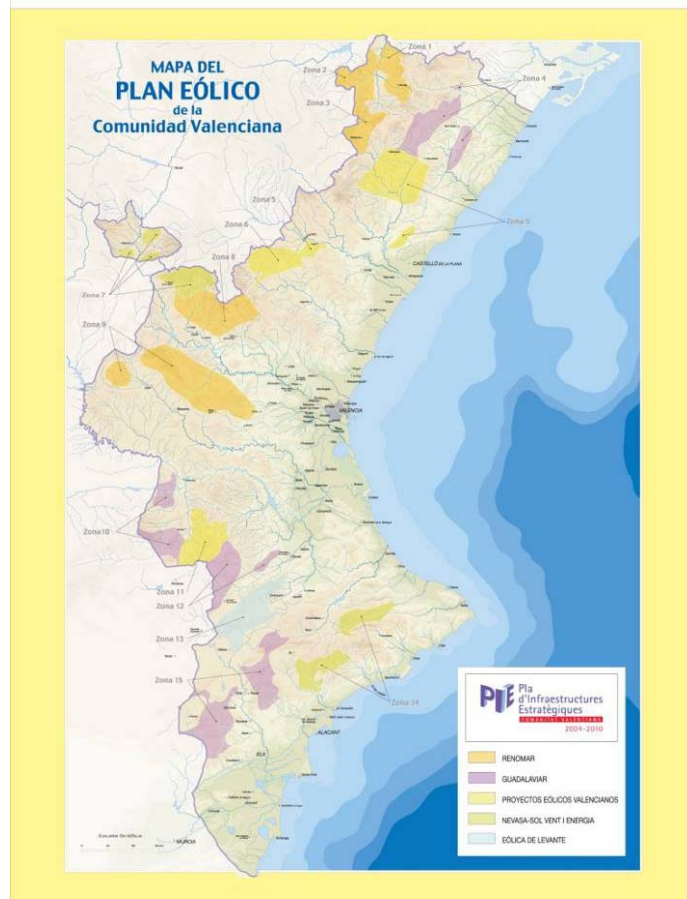
- ✓ Development of Valencia Wind Energy Plan.
- ✓ Biofuels/Biomass Promotion.
- ✓ Clean Energy Savings and Energy Efficiency Plan.
- ✓ Solar Photovoltaic Energy.
- ✓ Solar Thermal Energy
- ✓ Sustainable Mobility
- ✓ Company R&D support: Creation of R&D centres.

VALENCIA WIND ENERGY PLAN



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 GENERALITAT VALENCIANA
CONSELLERIA D'INFRAESTRUCTURES I TRANSPORT



- ✓ 15 Wind energy areas
- ✓ 65 Wind farms
- ✓ 2 300 MW Total power installed
- ✓ Energy production 5 500 GWh / year
- ✓ CO2 avoided emission: 2.1 Million ton
- ✓ 2 000 M € investment

VALENCIA WIND ENERGY PLAN



Social – economics results.

- ✓ Industrial and technological investment. RES cluster.
- ✓ Additional benefits for the local community involved:
 - ✓ 0,955 €/kW inst/year.
 - ✓ Modified up to 2,5 €/ kW inst/year
- ✓ Employment: 20.000 jobs during construction phase currently and 3.500-4.000 jobs direct and indirect during operation phase.

BIOFUELS/BIOMASS PROMOTION

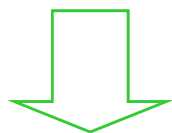


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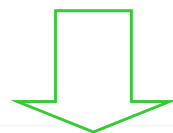
Gasoline and diesel fuels replacement with bio-ethanol and bio-diesel

Supporting actions in order to promote bio-fuels use.
Objective: To foster bio-fuels supply infrastructure development 5,83% in 2010.

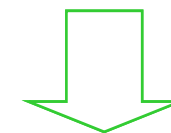
Specific grants and funding for:



• Biofuel fuelling stations network creation



• Building of bio-ethanol and bio-diesel production plants:
• Private initiative
• Energy plans



• Biofuels Research projects

BIOFUELS/BIOMASS PROMOTION



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BREAKTHROUGH R&D PROJECTS IN BIO-FUELS

The biggest bio-ethanol experimental production plant in the world. Base products:

- Urban waste organic fraction. PERSEO PROJECT
- Citrus (orange, tangerine) residues. ATENEA PROJECT

Experimental project: Algae based Biodiesel production and potential use as carbon capture sink.

A few specific electricity and heat from biomass projects, based in waste products (rice husk, almond shell, pallets...)

Barriers:

- Does not exist biomass market to ensure quality and quantity.
- Production is difficult to be controlled.
- Big crop lands are not available in Valencia Region.

VALENCIA ENERGY SAVINGS AND ENERGY EFFICIENCY PLAN



PLAN OBJECTIVES

- ✓ Final energy use reduction
- ✓ Total primary energy consumption reduction
- ✓ Valencian companies competitiveness improvement
- ✓ External energy sources dependance reduction
- ✓ Environmental impact reduction

VALENCIA ENERGY SAVINGS AND ENERGY EFFICIENCY PLAN



Valencia region energy savings and energy efficiency plan:
Basic objective: Reduction of 1.1 % in primary energy intensity yearly

-0.41%

Electricity Generation:

- Combined cycle power plants.
- RES plan
- Wind energy plan
- Cogeneration plants
- ...

-0.69%

Energy efficiency:

- Industry
- Private houses
- Tertiary (services)
- Transport
- Agriculture, Fishing and farming

VALENCIA ENERGY SAVINGS AND ENERGY EFFICIENCY PLAN



Energy use guidelines



Energy audits



Training courses



Promotional Program:
“AHORRA CON ENERGIA”
 (“Save with energy “in the
Valencia Community)

SOLAR PHOTOVOLTAIC ENERGY



Overview.

- ✓ Five PV modules producers. (Atersa, Siliken, Iatso, Eurener, Solaico).
- ✓ Capacity production 300 MW/year.
- ✓ 400 small companies (installers, consulting and engineering)
- ✓ 4.500 jobs at the end of 2008.
- ✓ Two investment lines:
 - ✓ Land (Beneixama 20 MW)
 - ✓ Roofs (Castalla 5 MW)

Key Factors.

- ✓ High availability of industrial roofs and high proportion of roofs installations (aprox. 50%).
- ✓ Good electrical network.
- ✓ High level of solar radiation.
- ✓ Energy activities culture (started in the 80's with CHP), entrepreneurship, Medium size companies) .
- ✓ Regional support to decrease administrative boundaries in roof installation.

SOLAR THERMAL ENERGY



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- ✓ 5th Spanish region in installed surface.
- ✓ 100.000 m2 of installed solar panels.
- ✓ Focus in detached houses and hotels.
- ✓ 3.500 jobs.
- ✓ Some innovatives private research and development projects. (high temperature modules without concentrators).



Future Perspectives

- ✓ Solar cooling (absorption)
- ✓ Heat for Industrial processes.
- ✓ ESTCO (Energy Services Thermal Companies)



SUSTAINABLE MOBILITY



✓ Strategic lines:

- ✓ Urban Mobility.
- ✓ Technology transport fleet.
- ✓ Education. (efficiency driving).

✓ Actions.

- ✓ Public bicycle.
- ✓ (20.000 bicycles in local communities)
- ✓ Car pooling. (hybrid vehicles)
- ✓ Shuttle service.
- ✓ Support to mobility projects but no manage them.



CREATION OF R&D CENTRES



✓ BETI (Birth of Electrical Technology Institute) is a good practice of creation of R&D Centres and received the first prize of “ I European Awards of University-Industry Cooperation with Regional Impact RUISNET”

✓What is BETI?

Consist on mixed private-university with the aim of supporting the small and medium enterprise of our Autonomous Community.

✓Why was BETI considered a good practice?

- ITE makes accessible, develops and transfer the universities knowledge to the companies.

- The energy industry as association rules the governing of ITE, supported by the University (UPV) and the main actors for regional impact:

- ✓ SME regional agency (IMPIVA)
- ✓ Regional energy agency (**AVEN**)

CREATION OF R&D CENTRES



✓ University Industry Cooperation:

- R&D center (Technological Institute), a private research association linked to the University, contracted researchers and strong support of collaborating professors.

✓ Regional Impact:

-ITE has become the central pillar of a dynamic and growing Valencia energy industrial cluster.

-The support to new technology based companies, providing expertise and infrastructure, allowing them to survive.

-Direct employment create by ITE directly reach the number of around 90 employees, the number of positions created in the companies is difficult to measure, but important for sure.

CREATION OF R&D CENTRES



✓ Innovative Character:

-Mixed private-university structure, best technology knowledge present not only in one university, but in departments from 4 universities.

- Its closeness to Companies, that takes us to the Technology Park, getting out of the campus to stay where we are needed.

✓ Sustainability:

-Commitment of the university participation, and ITE's connection and closeness to the energy cluster, current warranty of the sustainability of this model.

-Service and knowledge provider that it's fully focused in the energy sector needs and future.

-Cooperative spirit of the energy companies, i.e.: AVAENSEN

SUCCESS FACTORS VALENCIA



- ✓ **Administrative simplification. Local authorities choose where the promoters can do projects and simplified administrative documents.**
- ✓ **Involve promoters to compensate a local authorities (Energy plans, Industrial plans...)**
- ✓ **Working hand to hand with electrical companies (TSO).**
- ✓ **Know what resource it is possible to develop.**
- ✓ **To support a promoters using publics funds.**
- ✓ **Communication and Coordination among regions. (RENOVE)**
- ✓ **Support the use of R&D Centres knowledge and resources by the companies.**



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Thank you for your attention

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MORE4NRG project partners



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Province of Flevoland



Prahova County Council



County Council of Norrbotten



County Council of Västernorrland



Maramures County Council



GEORAMA-ΓΕΩΠΑΜΑ



Region Abruzzo



Euro Perspectives Foundation
Gabrovo Region



Agencia Valenciana de la Energía



Province of Noord-Brabant



Lazio Region



Assembly of European Regions

