

AlpEnergy

Virtual Power Systems as an Instrument to Promote Transnational Cooperation and Sustainable Energy Supply in the Alpine Space

2nd Transnational Partner Meeting 27.5.2009 Presentation of new Project Partner

Autonomous Region of Aosta Valley

Department of Production Activities
Departement of industry, handicraft and energy
Energy Direction
Service for implementation of the energy plan

Région Autonome
Vallée d'Aoste



Regione Autonoma
Valle d'Aosta

Assessorat des Activités
Productives
Assessorato Attività
Produttive

Autonomous Region of Aosta Valley

The Territory

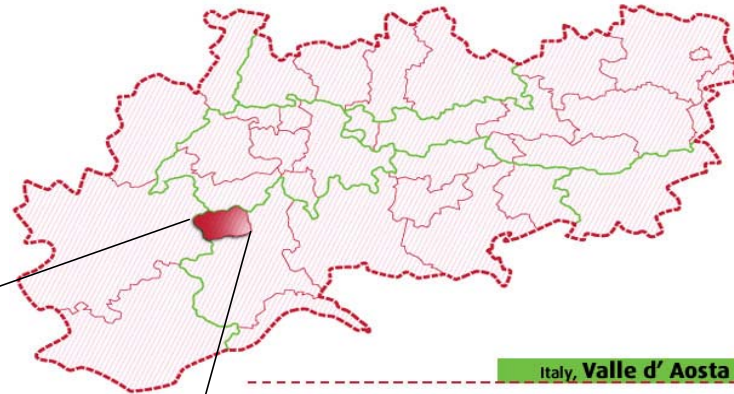
The Aosta Valley is an Alpine valley sited in north-western Italy that includes the Italian slopes of:

Mont Blanc (4810 m s.l.m.)

Monte Rosa (4634 m s.l.m.)

Matterhorn (4478 m s.l.m.)

Grand Paradis (4061 m s.l.m.)



It is bordered by France to the west, Switzerland to the north and the region of Piedmont to the south and east.

Area: 3.263 km²

Population: 126.923 inhabitants

Municipalities: 74

Density: 39 /km²

The regional capital is Aosta with 35.000 inhabitants

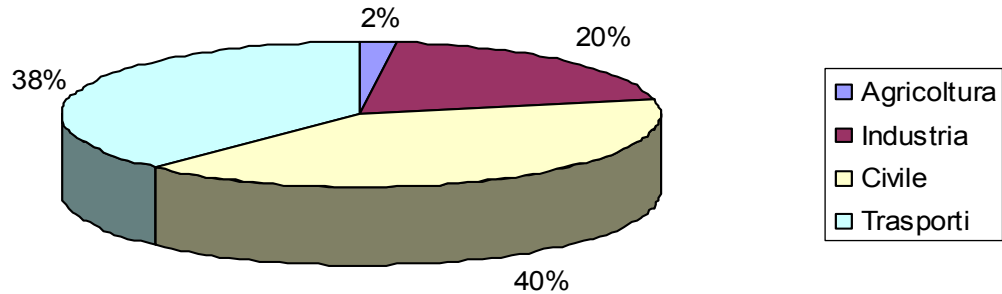
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The Aosta Valley energetic system

(Source: Regional Energetic Assessment 2001-2006)

Total energy consumptions: 5.300 GWh

Energy consumptions per sector year 2006



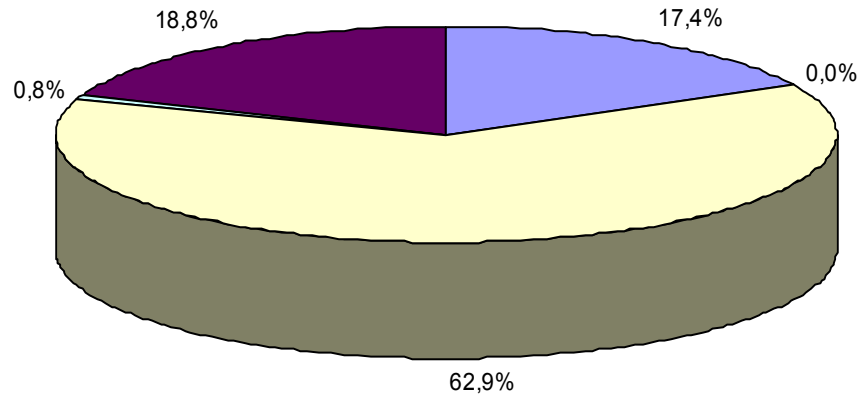
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The Aosta Valley energetic system

(Source: Regional Energetic Assessment 2001-2006)

Total energy consumptions: 5.300 GWh

Consumptions per energetic vector year 2006



■ Gassosi ■ Solidi ■ Prodotti Petroliferi ■ Rinnovabili ■ Energia elettrica

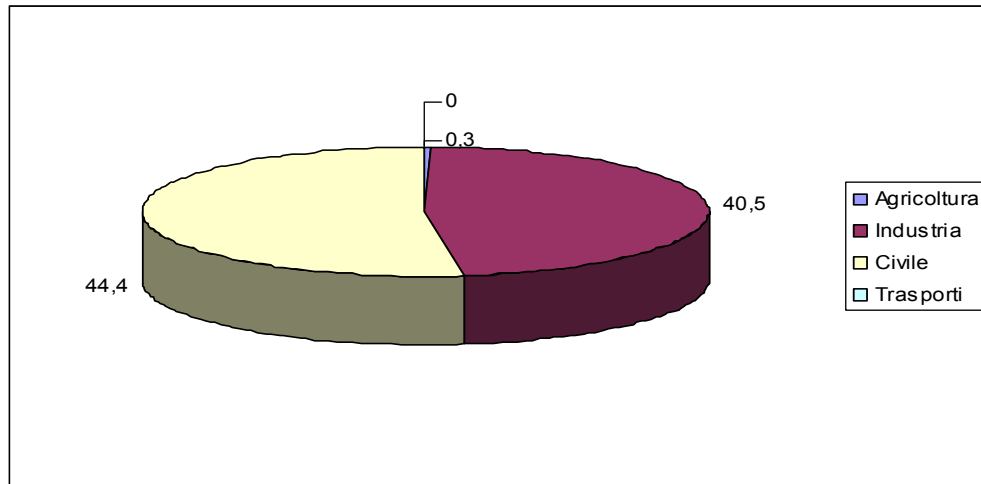
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The Aosta Valley energetic system

(Source: Regional Energetic Assessment 2001-2006)

Electricity system: consumption and production

- Total electricity consumptions: **994 GWh**



- Total electricity production: **3.000 GWh**

- Hydroelectric: 99,5% —————> Big plants rised theirs maximun exploitation
Residual exploitation in micro hydroelectric (acqueduct)
- “CHP” and photovolatic: 0,5 % —————> Great possibility of development

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The involved department:

“Service for implementation of the energy plan”

- Update the regional “energetic assessment” and in cascade the regional “energetic plan”
- Traduce the aims of the energy plan in Energy policy measures (regional laws,...) in order to:
 - Increase energy efficiency
 - Develop RES
- The main measures:
 - Benefit (RES, energy efficiency,...)
 - Theresolds (minimum % of RES in building,...)
- Informations and training program (targets: population,SME, professional)
- Partecipation to European Project (Alpine Space, Alcotra, Central Europe,...)

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The Aosta Valley project proposal

- Study the applicability of VPS concept to his territory, in particular concerning scattered villages.
- Analyse the technical and economical attractiveness of VPS where the national grid is available and where it's not yet (2 pilot villages).
- Monitoring electrical consumptions and to forecast, on the other side, the potential of production with RES.

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The Aosta Valley project proposal

- Create and test a simple and easily practicable model to manage power supply and the demand side in scattered habitat scenarios with and without connection to the national grid.
- Unveil potentials for a 100 % power supply from renewable energies in small villages.
- By various means of public relations Aosta will share their experience with other scattered habitats in Italy and the Alpine Space.

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The Aosta Valley project proposal

The villages selected for the feasibility study

Clavalité Village

- **Small village with almost 50 buildings (holiday houses and seasonal cowshed) not yet connected to the electrical grid altitude 1600 m s.l.m.**
- **Actual electricity production system:
Stand-alone photovoltaic
Diesel oil engine**
- **The objectives:**
 - **Develop photovoltaic, mini-micro hydroelectric, storage system like pumped water to become a 100% RES**
 - **Manage the system with recur to the VPS AlpEnergy prototype**



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The Aosta Valley project proposal

The villages selected for the feasibility study

Saint-Denis

- **400 inhabitants**
- **Connected to the electrical grid**
- **Scattered villages 500-1500 m s.l.m**
- **Actual electricity production system: few number of photovoltaic generators**
- **The objectives:**
 - **Develop RES power supply: photovoltaic, mini-micro hydroelectric, wind power, biomass CHP (ORC) to become a 100% RES**
 - **Increase energy efficiency (public lighting)**
 - **Manage the system with recourse to the VPS AlpEnergy prototype**



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THANKS FOR THE ATTENTION

