
THE CLIMATE GROUP meeting
October 19th, 2009
**Energía primaria:**
CEPT: 6.189.442
Producción: 1.792.885
Importación: 4.319.568
Variación stocks: -76.989

**Transformación:**
Entradas: 2.544.712
Salidas: 1.265.955
Balance expl/imp EE: 597.478

**Consumo final:**
Total: 3.912.514

**Productos petrolíferos**
1.983.274

**Energías renovables**
1.983.274

**Carbón**
937.685

**Gas natural**
1.995.941

**Electricidad**
610.370

**Calor**
748.287

**ARAGÓN**
856.600

**Unidad: tep**
1.400

**Balance exp/imp EE:**
+1.323.696

**Entradas:**
2.544.712

**Salidas:**
1.265.955

**Balance expl/imp EE:**
597.478

**Total:**
3.912.514
Aragón is a region that has traditionally profited from its abundant renewable and regional resources: water and coal, and even in the recent past natural gas. Lately other renewable energy sources have added to the excellent potential, with wind energy already well established, the recent surge in photovoltaic solar energy and forecasts for biomass energy.

These energy resources and the geographical location are just two of many factors that make Aragón an unavoidable reference for renewable energy and the generation of electricity. It is making a significant contribution to Spain’s and the European Union’s desire to meet energy and environmental objectives.
II. CURRENT ENERGY SITUATION (1/3)

Electrical Capacity (MW):

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>NOW</th>
<th>Aragón</th>
<th>Zaragoza</th>
<th>Huesca</th>
<th>Teruel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroelectric</td>
<td>1.578,55</td>
<td>1.576,79</td>
<td>401,97</td>
<td>1.145,57</td>
<td>29,25</td>
<td></td>
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<tr>
<td>Coal</td>
<td>1.290,00</td>
<td>1.290,00</td>
<td>80,00</td>
<td></td>
<td>1.210,00</td>
<td></td>
</tr>
<tr>
<td>Co-generation</td>
<td>499,67</td>
<td>535,66</td>
<td>333,26</td>
<td>140,54</td>
<td>61,86</td>
<td></td>
</tr>
<tr>
<td>Wind</td>
<td>1.168,40</td>
<td>1.713,29</td>
<td>1.279,40</td>
<td>266,18</td>
<td>167,71</td>
<td></td>
</tr>
<tr>
<td>Solar photovoltaic</td>
<td>0,91</td>
<td>10,73</td>
<td>7,44</td>
<td>2,09</td>
<td>1,17</td>
<td></td>
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<tr>
<td>Combined cycle</td>
<td>1.791,12</td>
<td>1.000,50</td>
<td></td>
<td></td>
<td></td>
<td>790,62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4.537,52</td>
<td>6.917,58</td>
<td>3.103</td>
<td>1.554</td>
<td>2.261</td>
<td></td>
</tr>
</tbody>
</table>

• Combined cycle began working recently
II. CURRENT ENERGY SITUATION (2/3)

Export of Electrical Energy.

Aragón generates:
24,000 GWh /average year
(including combined cycles)
II. CURRENT ENERGY SITUATION (2/3)

Export of Electrical Energy

Aragón exports: 60%

The Basque Country has a deficit
Catalonia has a deficit
Madrid has a deficit
Valencia has a deficit
D3

transformación

DGA; 20/09/2007
### II. CURRENT ENERGY SITUATION (3/3)

**Some energy ratios**

<table>
<thead>
<tr>
<th>Aragón</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Now</td>
</tr>
<tr>
<td>13.7</td>
<td>13.5</td>
</tr>
<tr>
<td>38.7</td>
<td>35.9</td>
</tr>
<tr>
<td>30.8</td>
<td>29.8</td>
</tr>
<tr>
<td>44.9</td>
<td>60</td>
</tr>
<tr>
<td>77.5</td>
<td>65</td>
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<tr>
<td>115</td>
<td>170</td>
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</table>

III.1. Strategies and General Objectives
III.2. Environment
III.3. Investment and Employment
Strategies and General Objectives

• ARAGÓN'S ENERGY PLAN 2005-2012:
  ➢ Efficient Energy Use
  ➢ Renewable Energy
  ➢ Electrical and Gas Infrastructures

(Action Plans in the short term, and medium term strategies that can be reviewed and updated according to results achieved and changes occurring to external factors and sectors)

• In Spain:
  ➢ Strategy for Energy Efficiency and Saving in Spain (E4) 2004-2012
    (Current Action Plan 2008-2012)
  ➢ Plan for Fostering Renewable Energies in Spain 1999-2010
  ➢ Planning in Electrical and Gas Sectors 2002-2011 (Review 2005-2011)
    (Next, Sector Planning 2007-2016)
General Objectives

- Production of renewable energy in 2004: 800,000 toe.
- Production of renewable energy compared with consumption of primary energy in 2004: 14%.
- Production of electrical energy from renewables compared with total production of electrical energy in 2004: 40%.
- Production of electrical energy from renewables compared with total consumption of electrical energy in 2004: 78%.

Year 2012

1,900,000 toe
△2005-2012=140%

19%

41%

109%
Strategic Environmental Assessment in accordance with directive 2001/42/EC, of the European Parliament and Council on the environmental assessment of particular plans and programs.

Emissions:
- Avoided during the planning period: 45,733 kt CO₂ (26 % of the total for the period).
- Linked to the export of electrical energy during the planning period: 48,725 kt CO₂ (28%).

Definition of environmental corridors
Parameterization of environmental permissiveness in the region
✓ **Investment.**
  - Total investment: 7,800 million euros.
  - In renewable energy: 4,250 million euros.

✓ **Employment Creation.**
  - 1,100 jobs in construction phase.
  - 1,500 direct and long-term jobs during exploitation phase.

**Investment planned by strategies for 2005-2012 period**
Energy and territory development are closely linked.

Energy policies of the EU and Spain must be drawn up assuming a mutually reciprocal perspective with regional policies:

- From a general point of view, the objectives of the single market, supply and supply security, must also respond to the social and economic development of regions and the integrity of territories.
- From a regional point of view, Aragón is not unaffected by the development of international and national infrastructures, but there is a clear need to work towards consensus and coordination between all those involved (including the local administration).
Conclusion,

ENERGY in the Autonomous Region of Aragón, from the regional political point of view constitutes a major:

VECTORS FOR SOCIAL AND ECONOMIC DEVELOPMENT AND TERRITORIAL INTEGRITY

The Autonomous Regions are well aware of the characteristics of energy demand and play a major role in relevant governmental jurisdiction. For example, in the development of special regulations and in recent modifications to Norms for Sectors.
THANK YOU FOR YOUR INTEREST

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