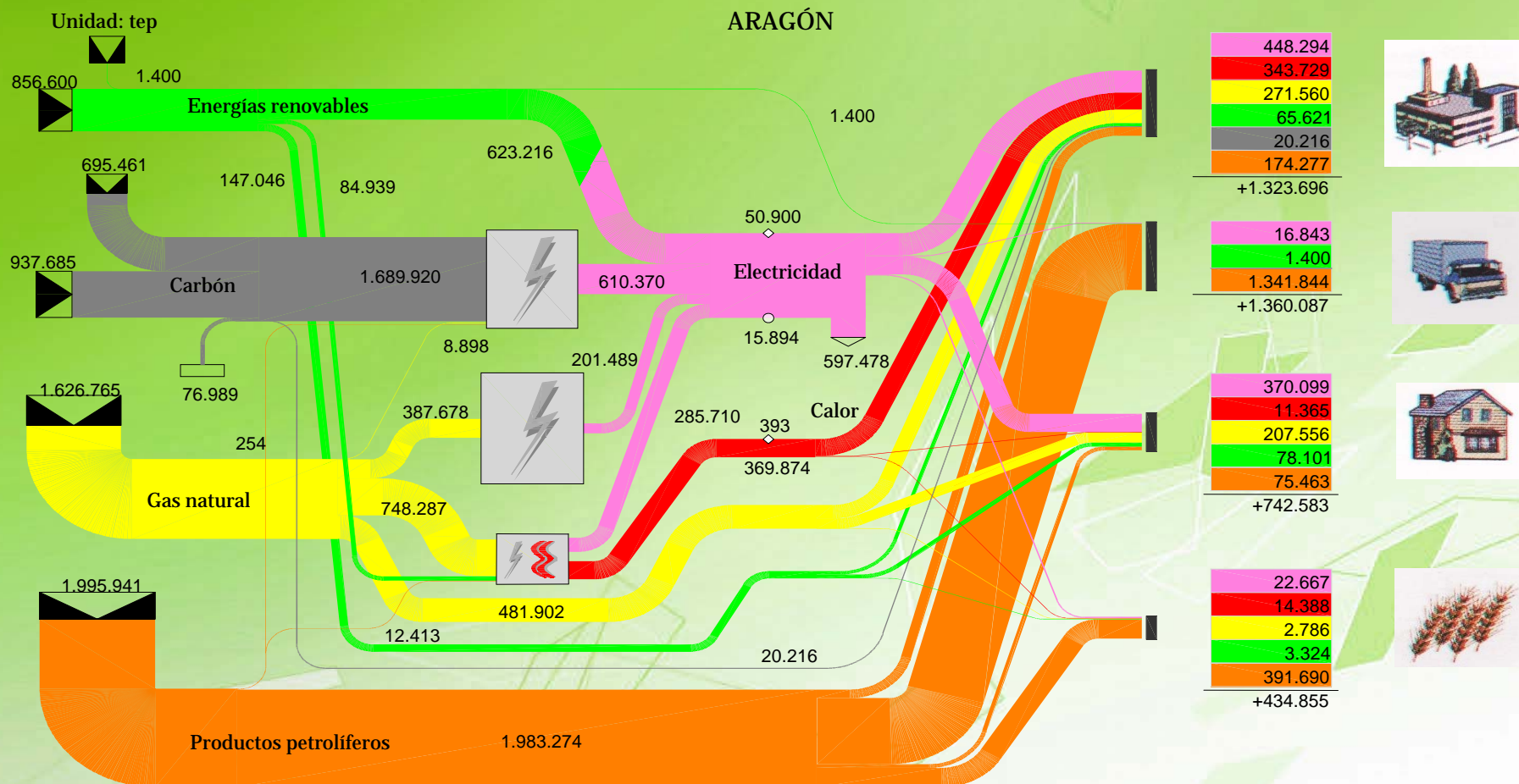


“Energy in the Autonomous Region of Aragón: The Energy Plan 2005-2012”

THE CLIMATE GROUP meeting
October 19th, 2009

units in equivalent oil tons Energy Balance (2007)



Energía primaria:

CEP: 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 exp/imp EE: 597.478

Consumo final:

Total: 3.912.514

I. ENERGY: A STRATEGIC SECTOR IN ARAGÓN

- ✓ 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):

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

- Year 2004: base year for the Energy Plan.
- 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)

The Basque Country has a deficit

Export of Electrical Energy



D3

Diapositiva 6

D3

transformación

DGA; 20/09/2007

II. CURRENT ENERGY SITUATION (3/3)

Some energy ratios

	<u>ARAGÓN</u>		<u>Spain</u>
	<u>2004</u>	<u>Now</u>	<u>Now</u>
• Production of renewable energy compared with total consumption of primary energy:	13.7	13.5	6
• Production of electrical energy from renewable sources compared with total production of electrical energy:	38.7	35.9	16
• Degree of self-sufficiency in supply:	30.8	29.8	23
• Export of electrical energy compared with total production of electrical energy:	44.9	60	1
• Production of electrical energy from renewable sources compared with electricity consumption:	77.5	65	18
• Production of electrical energy from wind energy compared with domestic electricity consumption:	115	170	13

I. ENERGY: A STRATEGIC SECTOR IN ARAGÓN
II. CURRENT ENERGY SITUATION
III. ARAGÓN'S ENERGY PLAN 2005-2012

III. ARAGÓN'S ENERGY PLAN 2005-2012.

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
(Current Renewable Energy Plan 2005-2012)
- 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
Δ 2005-2012=140%

19%

41%

109%

Environment

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.

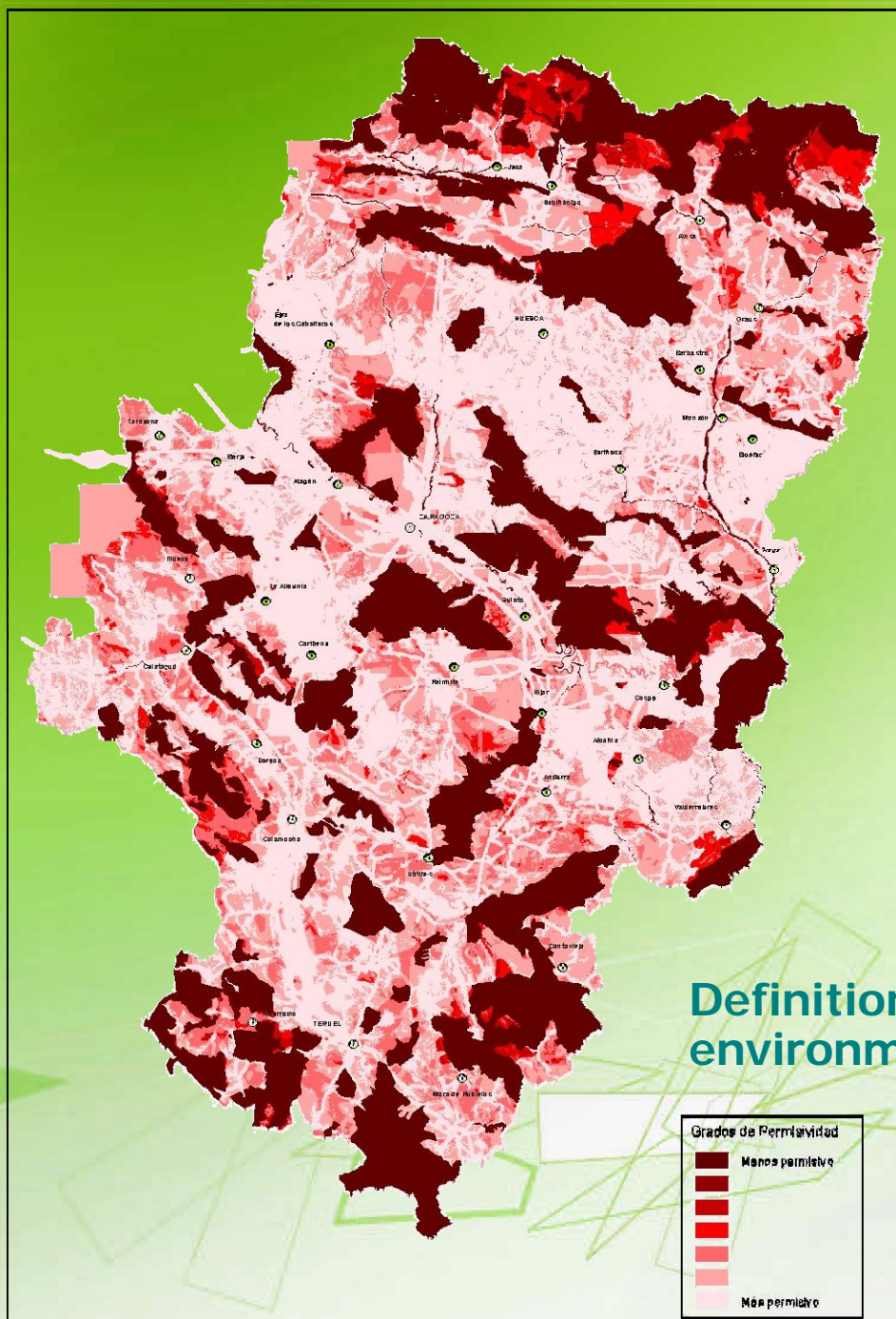
Emissions:

- 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



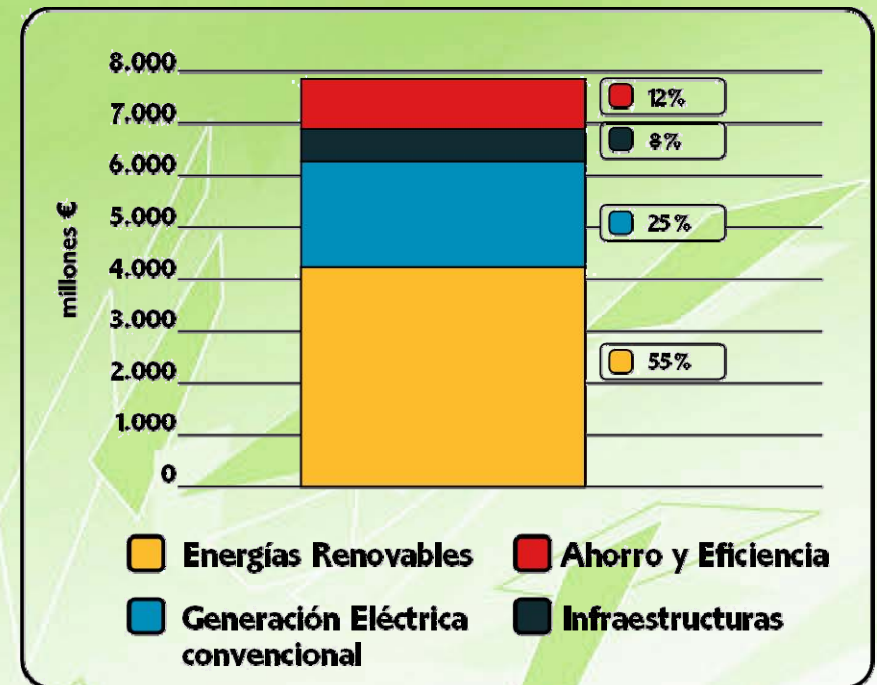
Investment and Employment

✓ 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

CONCLUSIONS (1/2)

- ✓ **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).

CONCLUSIONS (2/2)

Conclusion,

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

**VECTOR 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

Department of Industry, Commerce and Tourism
General Direction of Energy and Mines

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