



# Renewable energy controversies: entanglements between policy, environment, economics and public opinion

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# The project

- Title: **Socio-technical consensus and controversies regarding renewable energies**
- Institutions: ICS-UL, Univ. Aveiro, CRIA
- Funding: FCT Foundation for Science and Technology (PTDC/CS-ECS/118877/2010)
- Duration: March 2012-August 2014
- Main tasks: analysis of the political, social and scientific framework of renewable energy production in Portugal; media and public opinion analysis; case studies of wind farms and solar power plants

# Renewable energies

- **Consensus:** “clean”, “green”, “natural”, endogenous, inexhaustible, low risk (unlike nuclear), low impact (unlike hydroelectric dams)
- **Controversy:** siting of energy generating facilities (windfarms)



“dilemma”, “social gap”, “attitude-behaviour gap”



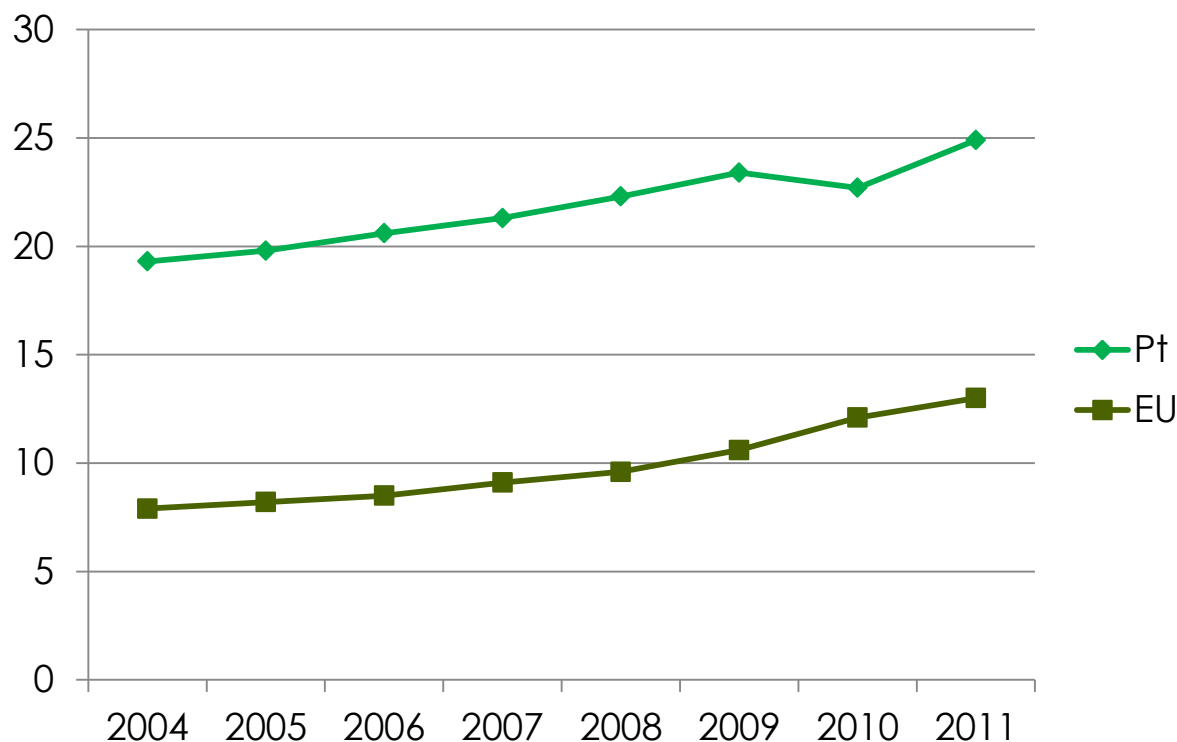
but just at the local level?

# Methodology

- Content analysis of parliamentary debates (60 debates, between 1980 and 2013);
- Content analysis of political blogs (196 posts in 14 blogs, between 2005 and 2013);
- Interviews with the leaders of seven nation-wide environmental NGOs;
- Eurobarometer public opinion surveys (between 1986 and 2012);
- Web searches concerning renewable energies (through Google Trends)

# Renewable energies in Portugal

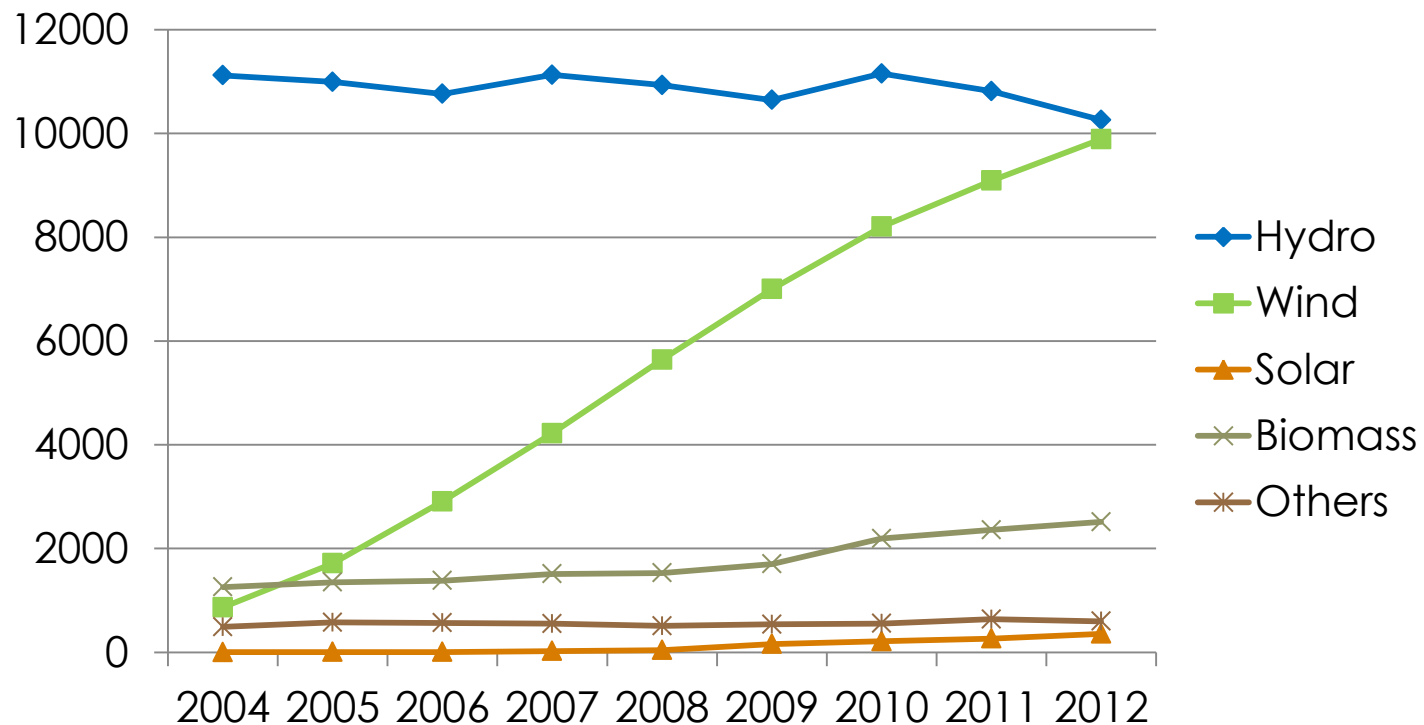
Share of renewable energy in gross final energy consumption (%)



Source: Eurostat, 2013

# Renewable energies in Portugal

## Electric energy produced from renewable sources (GWh)

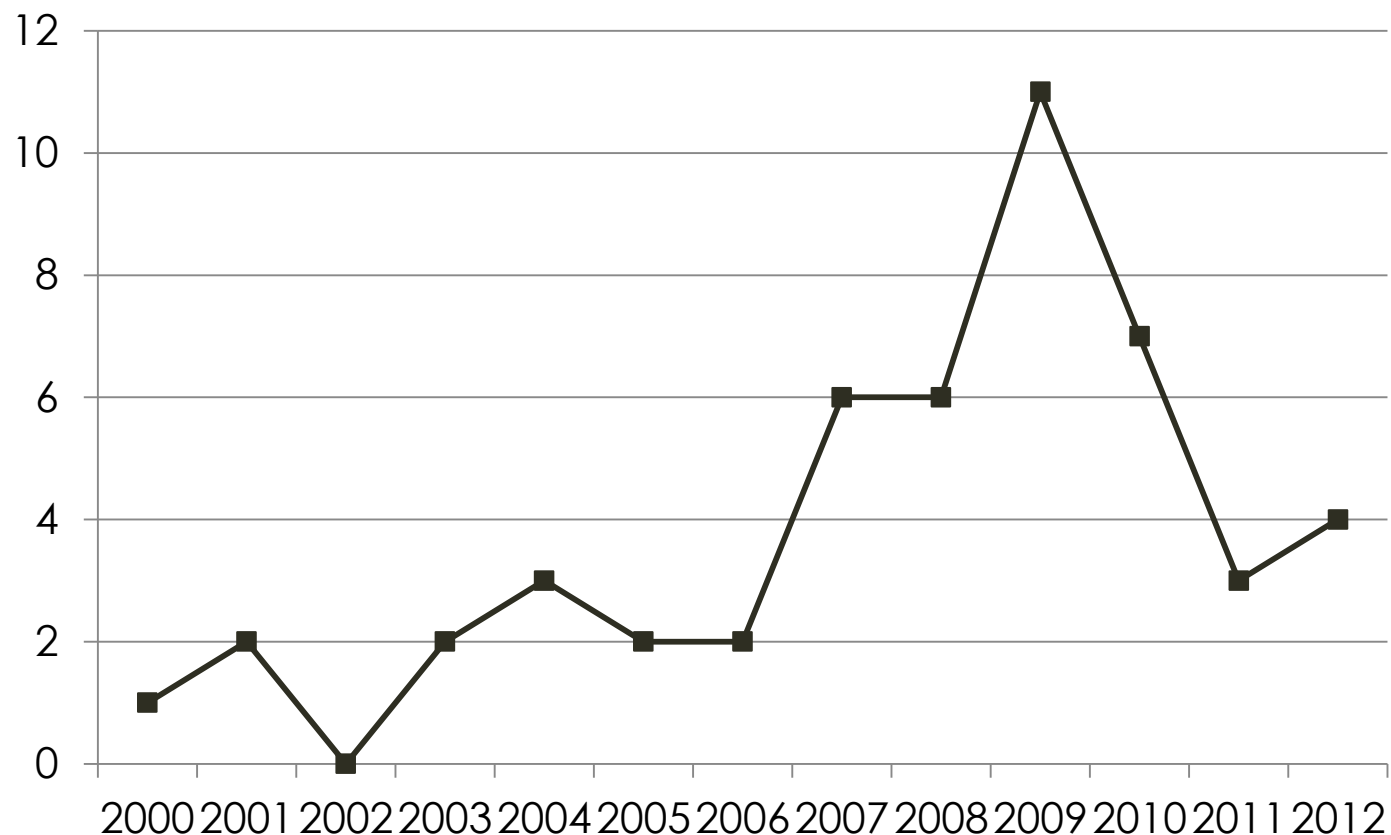


Source: Eurostat, 2013

# Political debate on renewables

- Renewable energy as both a policy and a political issue
- Different discourses? Government/ opposition, left-wing/right-wing parties
- Conventional political debate (parliament) vs. unconventional (political blogs)

# Parliamentary debates on RE



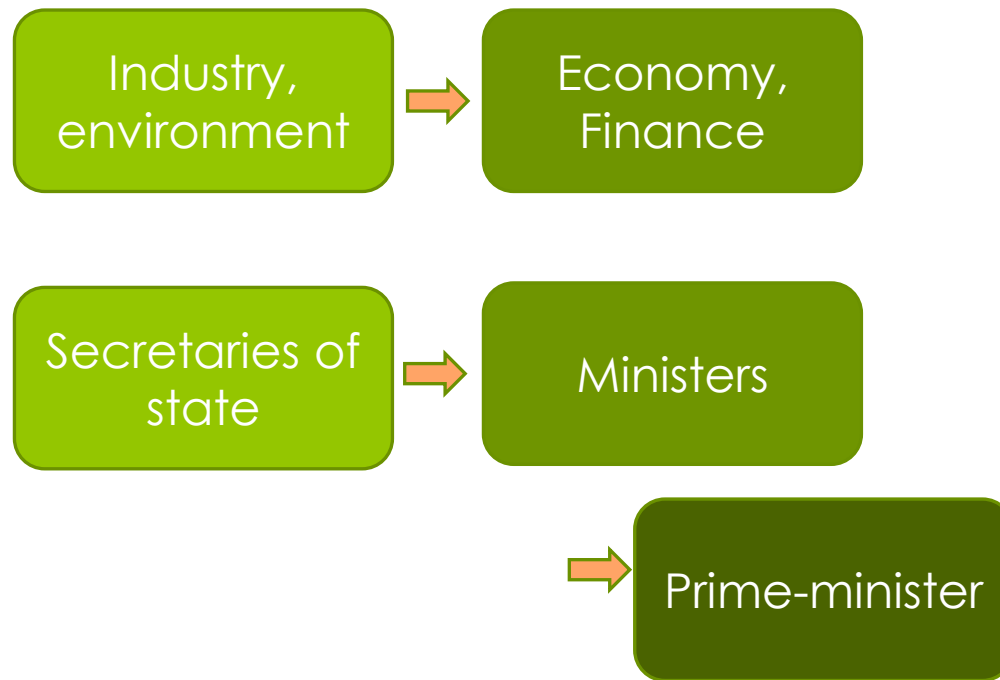
Source: <http://debates.parlamento.pt/>



# Parliamentary debates on RE

Participation of members of government

1980 \_\_\_\_\_ 2012

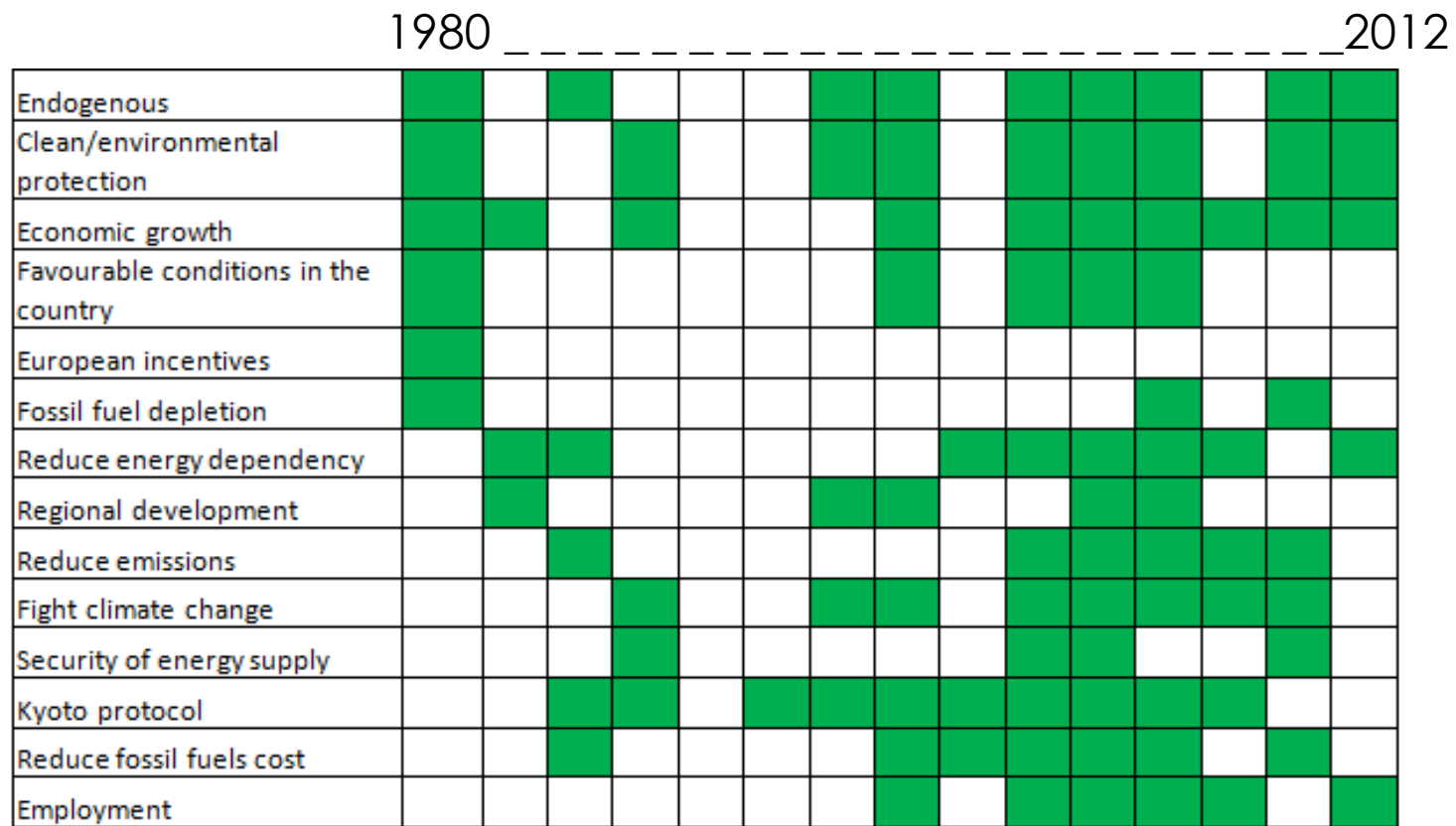


# Parliamentary debates on RE

- Types of renewable energy most frequently mentioned: wind, solar, biomass
- Other types of energy (comparison): nuclear, hydroelectric dams
- Other energy issues: energy efficiency, transports, electric mobility
- Wide array of issues pertaining renewables

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## Arguments in favour of RE



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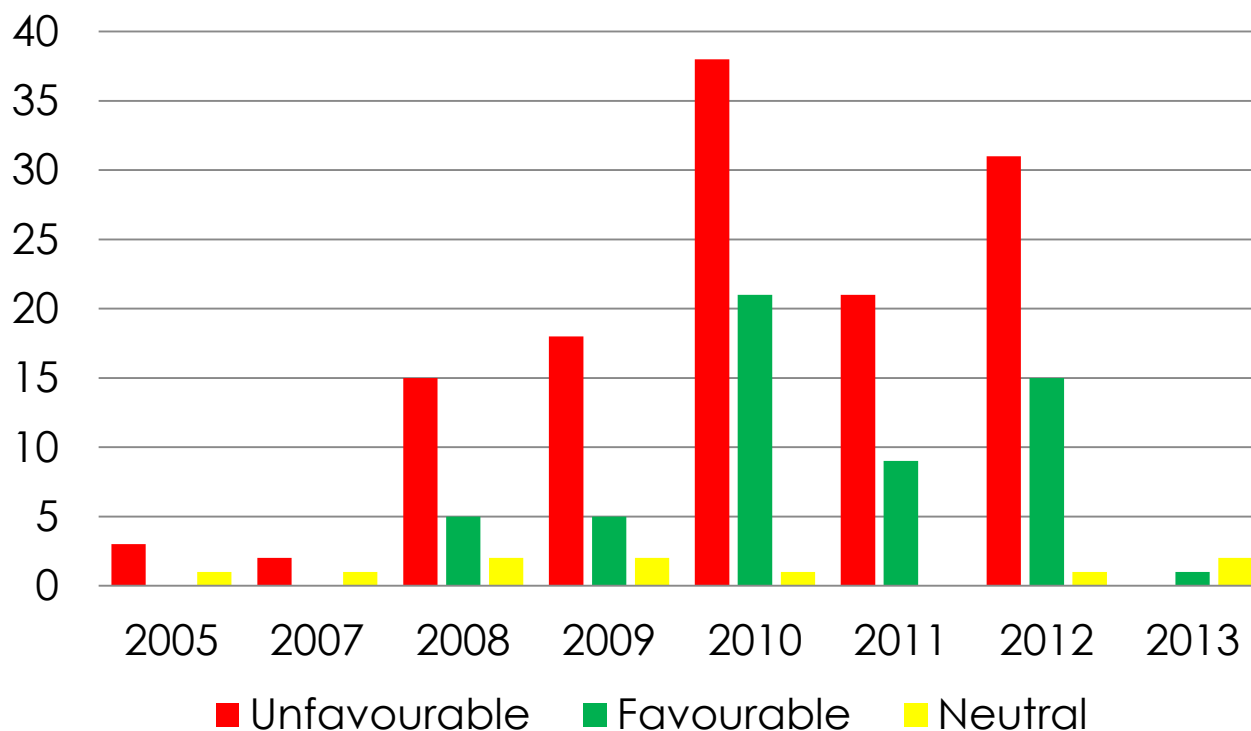
## Arguments against RE

1980 \_\_\_\_\_ 2012

[illegible]

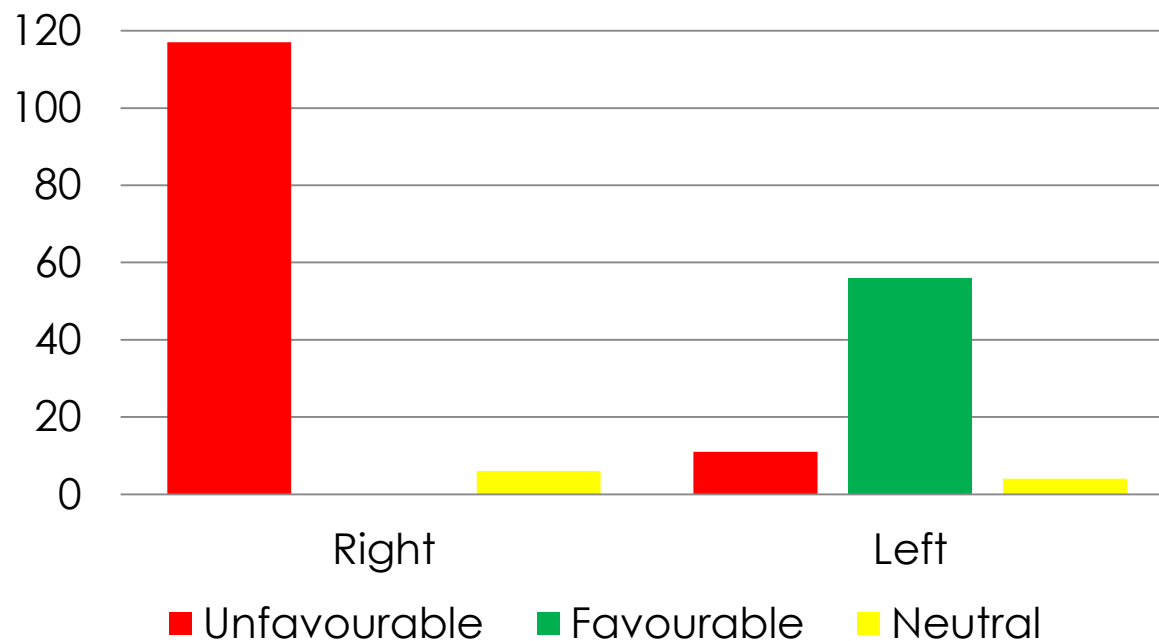
# Unconventional political debate - blogs

**Posts concerning renewable energies in political blogs, by year**



# Unconventional political debate - blogs

**Posts concerning renewable energies in political blogs, by left-right positioning**



# Environmental debate

- “Green on green controversy” (Warren et al 2005):  
ENGOS support the development of clean energy  
but at the same time show concerns over the  
negative environmental effects of windfarms and  
often oppose them at the local level
- Discourse of Portuguese ENGO: local opposition  
to some windfarms + critical attitude towards  
policies

# Environmental debate

*We obviously acknowledge the serious problems our planet is facing, connected to the greenhouse effect and to the depletion of the ozone layer, and **climate change** on a global level and we recognise that fossil fuels are the main responsible for climate change. [...]*

*And so we are favourable in general to the **replacement of carbon based energy** by energy from renewable, non-polluting sources. So we are in favour of a policy, a strategy for implementing renewable energies (Interview ENGO6).*



# Environmental debate

We are obviously in favour of renewables. But there are two principles we advocate: the **cost/benefit principle** and the **precautionary principle**. Both in wind and solar power, we have very **negative impacts**, especially in wind energy, due to the turbines and the choice of the location. (...) And when we don't know the potential negative effects, we shouldn't build. [...] The second principle is how far should we invest when there are **better forms of generating energy** or other better solutions (Interview ENGO2).

# Environmental debate

*In Portugal, everything is done in reverse. First they should have done **an overall study** and then, after this study, analysing its impacts, its advantages, then use the solar and wind energy. And why? Because now they build a windfarm, they approve a windfarm, and then another, and another and so on [...] and then we end up with a mega windfarm. (...) The government should have planned all this. (Interview ENGO3).*

# Environmental debate

*Individual photovoltaic power, in individual homes, is a sustainable form of energy that is underdeveloped in our country. [...] Our country didn't invest in it and it should have. There should be more **solar panels on the roofs of houses, apartment blocks, public buildings.***

*And there aren't. And that only poses a problem in some urban areas, in historical city centres or areas of architectural value. But only in those situations, not in many others and it's unbelievable how this country hasn't invested on that (Interview ENGO6).*

# Environmental debate

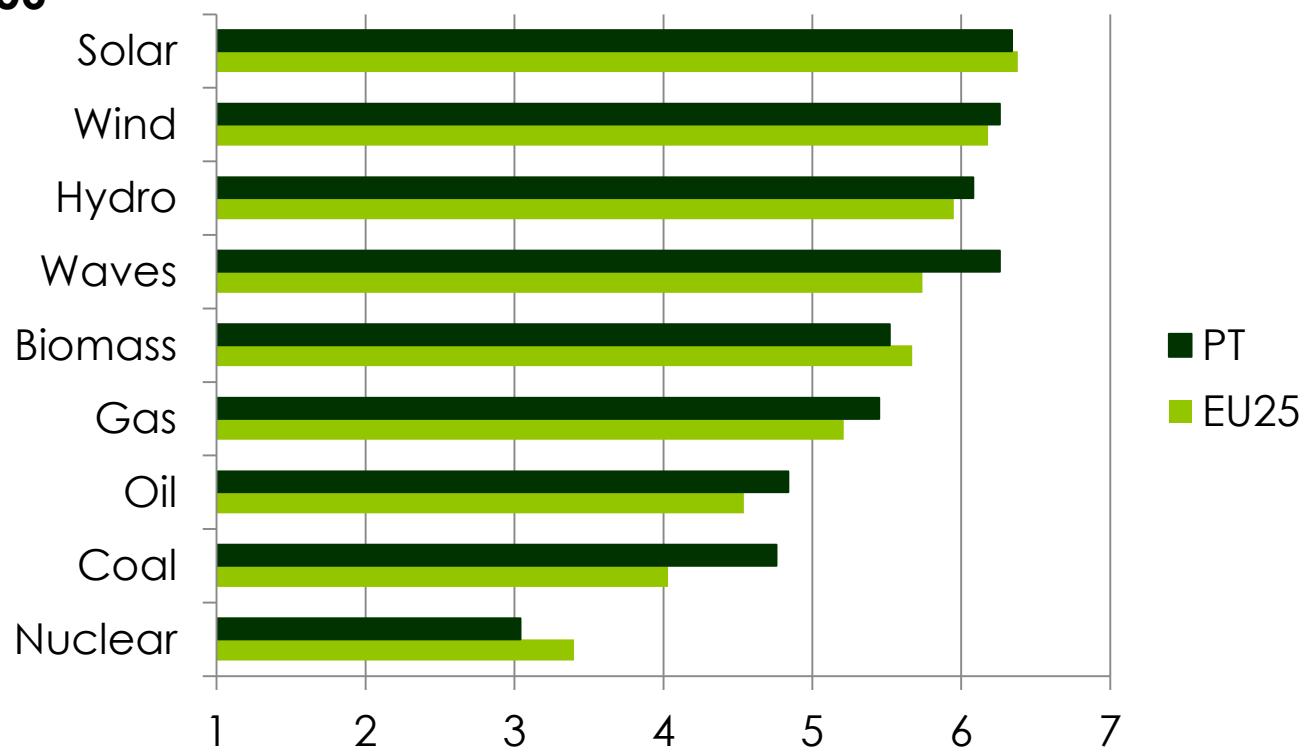
*We have a huge potential [for energy efficiency]. In our distribution network, in our industry, in our houses, with changes in our electrical appliances. We have N possibilities which would be much more cost effective, we could invest much less to have just the same return. [...] **energy efficiency should be the main focus.** It's cheaper, is much less energy intensive, it's always cheaper to reduce one energy unit than to produce another (Interview ENGO2).*

# Environmental debate

*Any kind of renewable energy (...) needs some **subsidisation**, in the early stages, in order to gain economies of scale. But firstly we must be aware that this subsidisation also exists for fossil fuels. Sometimes we think “these renewable energies, they only work with subsidies”. All right, but we have natural gas combined cycle power plants and who paid for the distribution network? EU funds, mostly. And thermal power stations? Who paid for the loading dock for coal in Sines, that supplies the Sines and Pego stations? EU funds mostly also. (Interview ENGO6)*

# Public opinion

## Attitudes towards sources of energy, EU average and Portugal, 2006

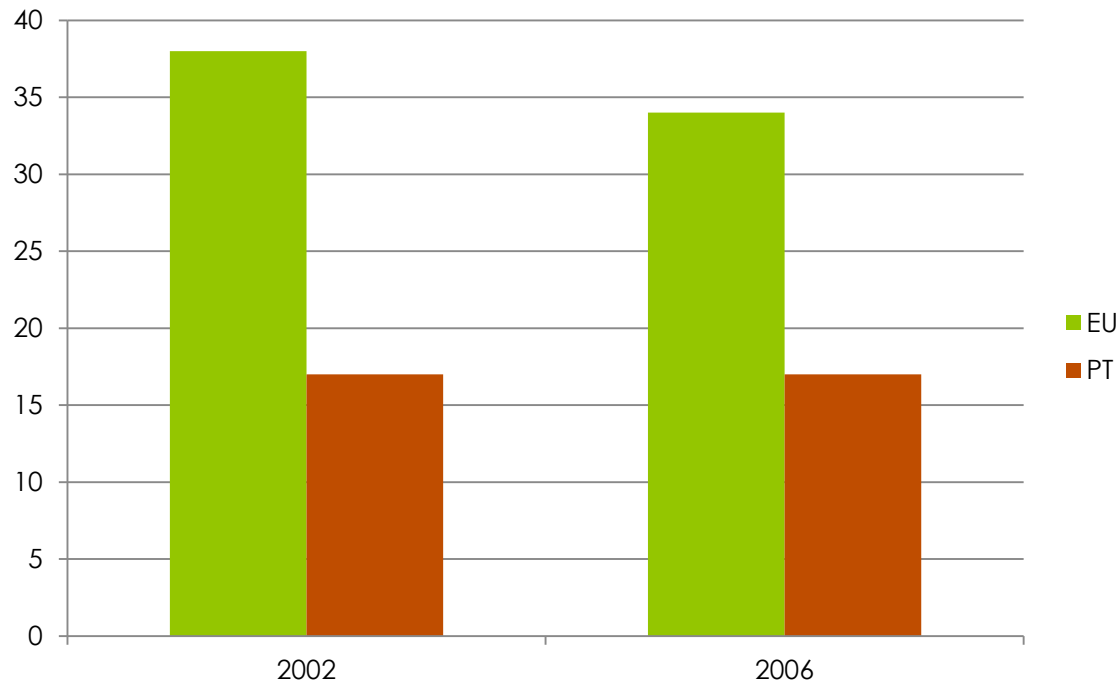


\* Mean between 1 (totally against) and 7 (totally in favour)

Source: Eurobarometer 65.3, 2006

# Public opinion

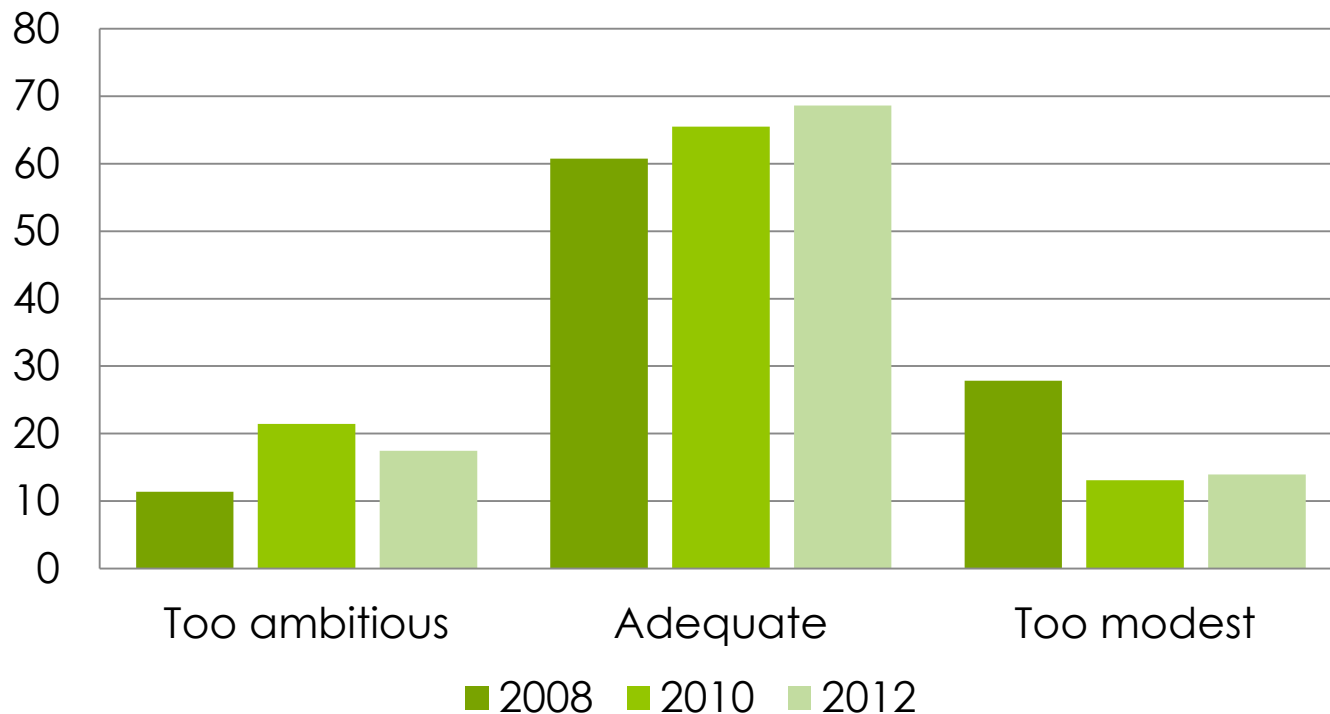
## Willingness to pay more for energy from renewable sources (%)



Source: Eurobarometer 57.0 (2002) and 65.3 (2006)

# Public opinion

## Opinion on the 20% target for renewable energy in 2020 (%)

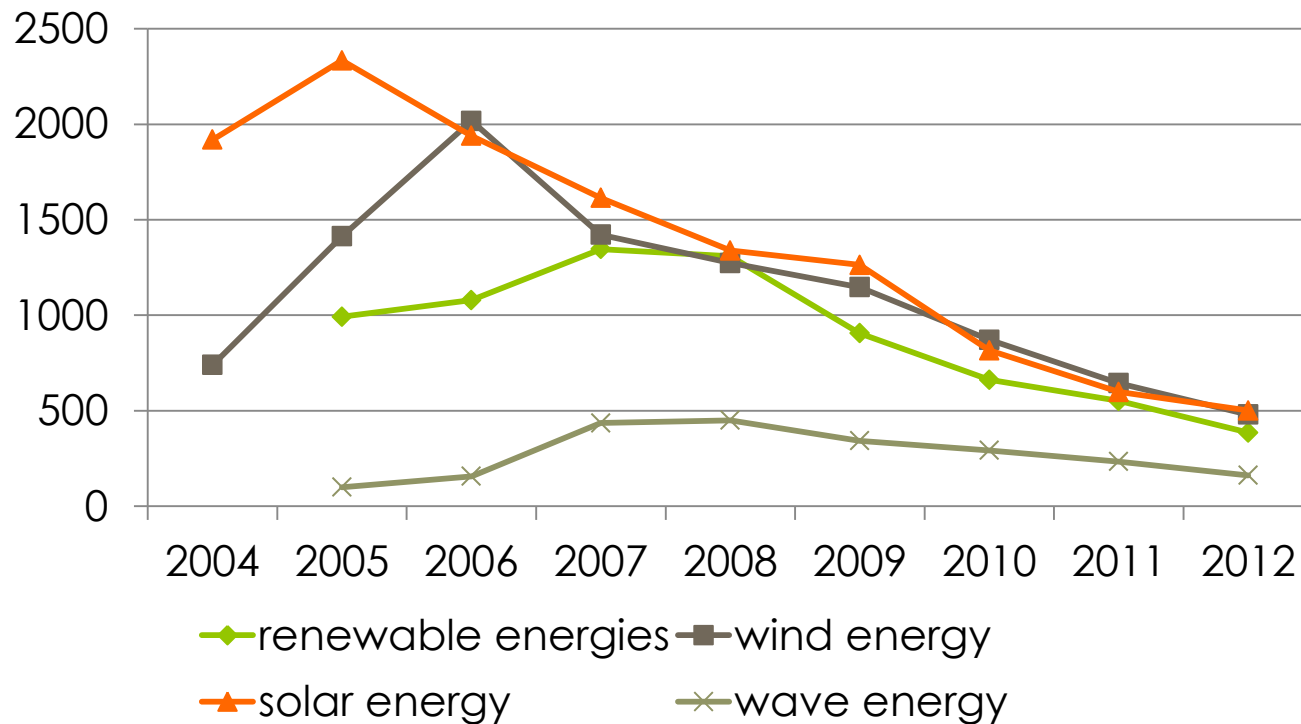


Source: Eurobarometer 69.2 (2008), 73.4 (2010) and 77 (2012)



# Public opinion

## Web searches in Portugal concerning renewable energies



Source: Google trends

# Final remarks

- ◉ Controversies about renewable energies do exist
- ◉ Political debate: centred in economic factors, more clear in unconventional debate
- ◉ Environmental debate: impacts, alternatives and planning
- ◉ Impact over public opinion is unclear