



SPT2013

Technology in the Age of Information

Technical blots on
the landscape:
Renewable energy
production versus
nature and
culture

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Renewable energies

- “Clean”, “Green”, “Endogenous”, “Inexhaustible”
- Low risk (unlike nuclear) and low impact (unlike hydroelectric dams)
- But not “controversy-free”
- Controversies often pertain over competing values

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

Methodology

- Analysis of statistical data (official databases, public opinion surveys)
- Document analysis: legislation, policy programmes and plans, parliamentary debates, Environmental Impact Assessment procedures
- Media analysis: news articles, posts in blogs
- Interviews: environmentalists, scientists, decision-makers, business companies
- Local case studies

Framework

- Energy generating devices as “machines in the garden” (Marx 1964): technology in a rural setting
- “Green on green” controversy (Warren et al 2005): conflicting environmental values
- Global benefits Vs. local impacts (Hall et al 2013)
- “for all the abstract purity of debates about the ‘technical potential’ for wind, what is at stake is not simply the social acceptability of a pre-given technology but also judgements about the acceptability of wind generation technologies in particular places” (Cowel 2010: 223)

Renewable energy in Portugal



236
windfarms



21
photovoltaic
solar plants



Positive valuations of RE

- Climate change
- National self-sufficiency (energy)
- Economic development
- Employment

RE and climate change

*“Climate change is undoubtedly the most important **environmental problem** of our age and one of the most **challenging** issues for contemporary economies and societies (...) It’s about the national agenda for climate change that I want to talk to you today. The government has decided to revise its targets and to propose to the country **a new ambition** in this issue (...)we want to do it in two fundamental areas: first, more ambition in renewable energy” (Prime Minister, Parliamentary debate, 2007)*

RE and climate change

*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 (Interview ENGO6)*

RE and energy self-sufficiency

*“we consider that renewable energies should be used more to **decrease the dependency** in Portugal in electric energy and the government should increase the incentives to renewable energy” (MP, parliamentary debate, 2006)*

*331 local residents “show support to the implementation of the project [windfarm], for considering it as an asset that will contribute to a more sustainable development of the region and to **national energy sustainability**”*

(Public Consultation Report 2255)

RE and economic development

*“the investment in renewable energies is crucial for environmental reasons, for more safety in supply, for a more healthy economy (...) but also because it's an opportunity for the **national economy**, by developing technology and industrial clusters”* (MP, parliamentary debate, 2007)

three local associations stated that they “welcome the implementation of the project [windfarm], viewed as a great asset for this demographically and **economically depressed region** [...], [through] encouraging population growth and settlement” (Public Consultation Report 772)

RE and economic development

“some projects linked to the photovoltaic plant, namely the solar panel assembly factory, created over a hundred new jobs in a region with high levels of unemployment... it is an important contribution to economic and social development. Additionally, the Parish of Amareleja, where the plant is located, has one substantial source of income” (Interview City Councilman – Municipality of Moura)

Negative valuations of RE

- Costs for consumers
- Impacts over nature (fauna, flora, ecosystems)
- Landscape impacts
- Heritage impacts
- Economic impacts

RE costs

*“we celebrate what is seen, we ignore the negative effects of what is not seen. Wind energy exists because the Portuguese government subsidised it with guaranteed prices. The bigger the weight of wind in energy production, the more the **consumer will have to pay**. This cost is an hidden debt that will be paid in the next few years. (...) We are the second country in the world in terms of wind energy. This means we also rank well in terms of ‘energy prices made more expensive by wind energy’” (blog post, Blasfémias, 2012)*

RE and nature

*“there is a huge impact at the time of the construction [of windfarms] because of heavy machinery (...) they build new roads and the roads stay there (...) there are a lot **more people** in previously calm areas, for instance in areas of the Natura 2000 network (...) these areas are filled with aerogenerators and roads (...) then there the issue of **mortality** caused by areogenerators (...) it seems to be more severe than what was assessed”*

(Interview ENGO4)

RE and Landscape



RE and Landscape

A local business owner "...considers that the project [windfarm] should be located out of the [Serra da Estrela] Natural Park and the Mondego valley, since it will significantly affect the landscape and tourism, contributing to the desertification of this region. It refers that the **impact on the landscape is huge**, leading to the **adulteration of nature** and affecting the **visual and sound quality**, the harsh character, the diversity of shapes, colours and texture, and the **pattern of calm** that, until now, were the main assets of this region, attracting tourist flows from large cities and abroad."

(Public Consultation Report 2034)

RE and heritage



RE and heritage

*"I'm against the windfarm because there was no preservation of the heritage of Sortelha, because it interferes with the natural beauty of the village. We **can't have concrete** or modern elements on show because it's an **historical monument** and they go on put 80-meter antennas with concrete bases. It's a hell of a contradiction"* (Interview with a local resident, Sortelha)

*"the direct and indirect impact of **heritage** elements, namely the Rocha Forte ruins (national monument), the bull pen and caves with traces of human occupation, as well as the visual impact over the **cultural landscape**, namely the Pragança ruins and the Sanctuary of Nossa Senhora das Neves in particular"* (EIA decision 2449, 2012)

RE and local economy

A local entrepreneur criticises the impact assessment of a windfarm due to “[...] *the compatibility of the project with the instruments of land management, the magnitude of the impact on the landscape, [...] and the fact of not taking into consideration aspects related to **Rural and Nature Tourism**, currently the main points of local investment, in the analysis of socio-economic impact*”

(Public Consultation Report 2034).

RE and local economy

“Actually, there are 10 or 12 people from Amareleja working in the plant, but considering the impact of the project, (...) it was at the time the largest photovoltaic plant in the world, 10 or 12 job positions isn't that much. People from Amareleja expected to benefit more (...). The benefits go to the company who owns the plant (...), it is a Spanish multinational company. The benefits go to a multinational company, not to a national company” (Interview – President of the Parish of Amareleja)

Final remarks

- ◉ Renewable energies raise some controversy in Portugal (and elsewhere)
- ◉ This controversy is polarised by conflicting interests and values
- ◉ Different social agents uphold different values: environmentalists vs. politicians, local residents vs. politicians
- ◉ Similar social agents can uphold different values: politicians vs. politicians, local residents vs. local residents