



# R&Dialogue

## National Discussion Paper

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## Portugal

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This document was created in the framework of the European project R&Dialogue. It is the result of the work conducted by and with the Portuguese National Council. It contains all the issues discussed, conflicting perspectives and open issues that still remain and there is need for further and wider discussion.



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## Framework

A dialogue between research and civil society, including industry, NGOs and public authorities is essential to move towards a sustainable low-carbon energy society. This dialogue is needed for shared and sustainable solutions, which could significantly accelerate the transition. In R&Dialogue we believe that economic growth and a low-carbon society can go hand in hand.

The project focuses on the energy challenges at European, national and regional level in 10 participating countries. It addresses social, technological, ecological and economic aspects and mutual learning. R&Dialogue aims to develop both national action plans and a European vision.

The current document was assembled as a *basis for further discussions* about achieving a more active and useful dialogue between researchers and the civil society, in the context of progressing to a very low carbon *Portuguese* energy system. These discussions will be lead by the National Council and will take place during a countrywide National Dialogue, when the Project will aim to reach an even broader range of stakeholders. The results of this nationwide effort will consist on a Vision and an Action Plan.

The Vision for the dialogue shall include:

- a rough shape of a sustainable, very low carbon Portuguese energy system at a medium to long term horizon – not trying to guess societal, economic and technological fine details that are impossible to anticipate, but just as a general picture useful for supporting the dialogue;
- reflections on the importance of the dialogue between researchers and civil society – including barriers, opportunities, expectations of the stakeholders, and possible outcomes;
- an anticipation of the shape that this dialogue could ultimately take and of possible paths for reaching it – including identification and role of the various stakeholders, public policies and social changes required, type and frequency of interactions.

The Action Plan shall include :

- a set of specific measures and communication tools that the involved organizations decide to implement, for establishing a more active, satisfying and useful dialogue of researchers with the civil society;
- a proposal of provisions to support a steady continuation of the dialogue after the end of this Project.

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## The path so far

A dialogue between research and civil society, including industry, NGOs and public authorities seems essential to move towards sustainable low-carbon energy production. It helps to understand viewpoints and interests for the actual implementation of low-carbon energy technologies, reduction of energy consumption and higher energy efficiency. A dialogue is needed to develop shared and sustainable solutions, which could accelerate the transition to this sustainable future.

These are the essential concepts prompting the R&Dialogue Project, supported by the EU 7<sup>th</sup> Framework Programme. It is executed by a consortium of 15 partners in the field of energy (scientists, NGOs, industry, consultants and policy advisors) in 10 European countries. R&Dialogue addresses social, technological and economic aspects the transition process, but with a focus on the social aspects and on mutual learning from the different experiences of the various countries.

Portugal is represented in R&Dialogue by LNEG and EnergyIN. Two types of activities at the national level were performed so far.

An initial series of 18 interviews was made with experts in energy and various related fields, about the concept of a low-carbon society and the benefits that a dialogue between researchers and civil society can bring. These are being analyzed, while a new series of interviews is under way.

The second activity consisted on the launch of a national dialogue process, with a first National Event, a meeting of stakeholders that took place at March 7, 2014. Kick-off presentations for three themes loosely identified as "Academy", "Industry", and "Society Issues" were made. Then separate discussions were held by three groups. At a final general assembly, the conclusions of the group discussions were summarized and debated. The views of the participants, the issues raised and recommendations made at this Event form a large part of the next two sections.

Considering both the national activities undertaken, it can be said in summary that for the particular case of Portugal there was no doubt that a low-carbon energy future is both desirable and even likely inevitable. The country is already well advanced in a transition to a low carbon future, yet followed a process that has received neither much opposition, nor a clear public support. Now, as higher and higher levels of use of renewable energies are reached, environmental and economic problems are starting to develop. A dialogue about paths and solutions to persevere on the road to a really low carbon future was and is currently largely missing in the Portuguese society, and should be stimulated.

## The shape of a sustainable, low carbon Portuguese energy system

In Portugal there is a wide consensus, transversal to all sectors of the society, on the view that, because the country has no significant fossil fuel reserves but in contrast is quite rich in renewable energy resources (RES), there is not much alternative to harness RES and improve energy efficiency as much as possible. If not because this is in itself a desirable and major component of a sustainable future, at least because it relieves the very high economic burden of energy imports (fossil or other).

Less clear to the public but not to the informed stakeholders close to the areas of energy and environment (such as public bodies, regulators, energy production firms and associations, utilities, NGOs, and even politicians handling the energy-climate issues), is that this should be done also in order to improve security of supply, provide a cleaner local environment, and is crucial to mitigation of greenhouse gas emissions.

Since the 1990's, many energy scenarios and prospective studies were conducted by these stakeholders, including with the Government as a sponsor, all pointing out to a future with a very large amount of RES and high energy efficiency. Plans and Roadmaps abound: the difference is in the technological details – e.g. the role of carbon capture and storage, the amount of wave power, offshore wind power, second generation biomass, or concentrated solar thermal power, the future importance of smart grids, the capacity of international connections, etc. – but not on the general vision.

This vision has been challenged only occasionally, mainly by those that would like to see the introduction in the country of nuclear power. On the contrary, with RES costs continually dropping, the RES path to a low carbon society has been increasingly supported by experts, industrials, politicians, and the general public. In fact every incentive mechanisms to RES launched by the governments – such as feed-in tariffs, solar thermal subsidies, fiscal bonuses, etc. – have been adopted eagerly by individuals, private and public companies. So much in fact, that caps to RES installation have had to be introduced so that financing and technical conditions (e.g. at the electricity network) could keep the pace.

However, as high penetration levels of RES are achieved (currently more than 30% in gross energy production, 70% in gross electricity production), and yet more ambitious 2030 targets began to emerge, there are signals that things can go astray from this pacific path.

Cost issues of RES technologies area a primal area of discussion in the society: from the RES influence on the price of energy (this meaning mainly electricity) to the amount of public support that they should receive. Although prompted mainly by the current severe economic crisis, these are sensible concerns for a sustainable energy system. In addition, for the more specialized public such as energy industries, network operators, researchers, and public bodies, there are concerns about the requirements and effects that an even larger RES penetration will have on the economic sustainability of the conventional power plants, the need for building huge energy storage facilities, the grid stability and the power quality.

Finally, concerns that NGOs have been voicing for years about environmental impacts of massive RES use, seem to be reaching the general public. These include effects such as impacts of large dams on biosphere and sediment transport to the coastal zones, noise from wind turbines, and visual aggression to rural and urban landscapes. In many situations, it can be argued that *massive* use of RES will hurt not only the general welfare of the society but also economically important activities such as tourism.

Therefore a harmonious future low carbon energy system for Portugal cannot be simply “more of the same”. Technical as well as behavioral and regulatory solutions already exist, and it must not be

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forgotten that research and energy industries are innovating continually. A healthy dialogue in the society will be required to continually weight needs, impacts, costs, benefits, and select the more adequate solutions along the way.

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## The existing dialogue

The current situation of the public dialogue has both encouraging and problematic aspects. Youngsters receive a lot of information at school on energy, not just from textbooks but also from some initiatives that involve researchers, but it is basically one-way. The public in general receives information on low carbon energy from the media, but it comes mainly diluted in a “green package” that includes other issues such as recycling, climate change, or biological farming. Specific debate about energy at the media only arises when for some conjunctural reason, cost issues come to focus.

There is a formal obligation for public consultation regarding national, regional and municipal Programs and Plans as well as regarding Environmental Impact Studies of specific Projects. Specific RES and grid network projects have received considerable NGO and other public opposition when biological or patrimonial values were at stake. The examples relate mainly to large hydroelectric dams: the cases of the flooding of the Foz Côa Paleolithic gravures and in a more mitigated way, of the Alqueva dam, can be recalled.

In contrast, when Project promoters dialogued directly with land owners and municipalities, providing rents, fees or other benefits to the communities, there was local public support, even with known environmental impacts. This was the case of many wind parks.

However, in the case of Programs and Plans, there was little attention and participation from the society: the responses come almost always from the same small set of energy and/or environment related professional associations and NGOs. Anyhow, it must be recognized that there is in the society a broad consensus that RES should be harnessed as much as possible.

As a result of all these circumstances, there were so far no country-wide discussions on low carbon technologies and RES. A more profound dialogue is missing on issues such as co-benefits as well as practical difficulties such as transportation dependence on fossil fuels, import/export of energy, real costs, technological challenges, societal constraints, and adverse environmental impacts. Such strategic discussions have remained in the realm of experts from energy industries and the Academy; public bodies do participate often but in a rather cautious and mostly passive way, albeit this can be understandable.

Nevertheless, political decisions about energy seem to have been influenced at least indirectly by this restricted dialogue, as well as by the diffuse support of the society to RES.

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## Shaping the dialogue

At the first National Event of R&Dialogue Portugal, these problems of the dialogue were reflected upon, mainly in the group discussions. A factor that was seen as currently crucial in these matters by all groups is the focus on economic questions as a response to the undergoing strong economic and financial crisis. It is only when energy cost issues are raised at the mass media that the energy problems receive significant public attention.

One discussion group, with a majority of academic participants, focused more on the role and attitudes of stakeholders. Four main groups were identified, with competing, even contradictory interests, in the Energy panorama in Portugal. Roughly speaking, these would be the consumers, that above of all want cheap energy; energy industry, that wants to have profits maximized; politicians, concerned especially with the (political) power; and researchers, which view themselves as working “for the benefit of mankind”. It was noted that this rather favorable and even romantic self-image may not be a bonus for a dialogue, as the objectives of the researchers end out being much less clear than those of the other groups.

In addition, it was emphasized that communication efforts by energy researchers (in general, not necessarily of those present at the Event) are troubled by a number of other factors:

- the habit of communicating with rigor and numerical data hinders their ability to informal communication with the media and the general public;
- they are by large unaware of social issues in a dialogue process;
- they feel that the mass media des-inform more than inform, and have their own agenda, therefore their contacts with mass media would be risky and may result in misinterpretation;
- they feel that they cannot / should not have their R&D choices limited by the (uniformed or misinformed) opinions of the public (although this may depend on the maturity stage of their target technologies).

A strong recommendation was that the energy R&D community should try to learn from the social scientists about dialogue processes.

Another group, with a majority of stakeholders from the energy industry, focused more on barriers to the dialogue.

Besides general economic, administrative and cultural / behavioral barriers to adoption of yet more new energy technologies, it was underlined that politicians are too slow when reacting to R&D advances and that they perturb too much and too often the regulatory and fiscal environment. Also they do not support consistently the R&D in Energy, e.g. via a regular annual State investment budget for energy (formerly known as PIDDAC) and /or multiannual national plans for R&D with secure financing. Instead, they have raised the bureaucracy of the R&D supporting schemes, in particular R&D Projects with Industry partners. So in a word, overburden of bureaucracy and dwindling support from the public bodies are harming the dialogue between the specialized stakeholders.

This group also pointed out that the blame for a weak dialogue cannot be put only on the governmental stakeholders, of course. Direct channels for communication Research/Industry are still weak. Researchers, so good at using technologies of information and communication at their own work, do not use much those abilities to communicate in the digital world with the civil society. The concepts of low carbon society, green growth, etc., are unclear and unstable, posing difficulties to the understanding and therefore adhesion of the general public. Finally, according to this group, the behavior and consumption patterns of the common citizen are too rigid. To change this, would require a large effort of information by the specialized stakeholders.

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A third group with a mix of stakeholder types reflected more on the behavioral and organizational aspects that are characteristic of the Portuguese society and culture, with the hope this could point ways for designing a better dialogue.

Why is there such lack of public interest for the debate on Energy? Today it is quite easy to access information (mass media, internet, smart phones...) this certainly including information on Energy. However, it seems that this information is unclear, full of un-truths (including that which originates at the Governments). Also, the scientific community, although highly viewed as reliable by the public and the politicians, has not been able to provide them with clear and consistent information - take for instance the issues of sustainability of biofuels and of wave energy technological maturity and costs. These factors may explain a part of the problems.

It could also be the case that Portuguese society is more passive than in other countries, say for cultural reasons. However, sociological studies show that this is really a myth. In recent history there were strong NIMBY (Not In My BackYard) reactions, e.g. against waste co-incineration; fight against of hydroelectric dam flooding of patrimony was already mentioned.

In contrast with the group mentioned before, this group doubted that more information on Energy to the public would bring *per se* good results for the dialogue. It was pointed out that as surveys show, although youngsters are already well sensitized for energy efficiency, on their actual behavior they conserve less energy than their fathers and grandfathers. Therefore it must not be overlooked that information about energy problems and technological solutions must be accompanied by efforts to obtain the correspondent responses from the consumers/citizens.

Extending this argument, public acceptance of technologies does not lead in itself to implementation of these technologies in a society. Information may be available but there are many constraints for action at the individual or family scale. Examples are land planning, transportation options available, costs of investments in better technologies. For companies also many barriers exist. In particular, fiscal instability and regulatory instability (already mentioned by the first group) and not lack of subsidies, seem to be the major problems. In conclusion, a dialogue of researchers and the society in general is not enough, specific dialogues with politicians, mayors, public bodies, NGOs, professional associations, etc. are also very important.

All this considered, a number of conditions and approaches were proposed for achieving a successful dialogue:

- A continuous and persistent effort should be made by organizations of scientists, technologists, and public bodies of the Energy area. The results of the dialogue are expected to come slowly; just a burst of activity will not change things.
- Communication on low carbon technologies should be done in the framework of the larger issues of Environment and Sustainability. Intrinsic value must be assigned to low carbon technologies, highlighting the importance of their contribution to sustainability and even economic development, at local as well as at planetary scales.
- Debate with skeptics about renewable energies should not be avoided, even at the risk of contaminating the discussion with themes like climate change real existence and the main responsibility for this being fossil fuel burning.
- Efforts of educating young generations at school must continue and be intensified, with initiatives like the existing Energy Olympiads and the "Science" Program.
- Researchers already know very well how to use Information and Communication Technologies in their profession; they must now use that knowledge to reach the public, *via* websites, blogs, social networks.
- In particular, Internet *fora* should be implemented to enhance the dialogue between Research and Industry stakeholders.



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- It is necessary to communicate more the value of Portuguese R&D in the field of Energy.
- It is necessary to enlarge the range of themes publicly discussed, currently too focused on electricity generation issues. For instance, energy issues at the Industry and Transportation sectors are almost completely lacking in the dialogue. Harnessing RES, especially solar and biomass is and has always been well viewed by the public, so it is a good place to start.
- Sociological studies show that Portuguese view with suspicion the communication that reaches them from politicians, mass media, and companies. In contrast, they trust much more in the messages originated at scientists and (environmental) NGOs. This advantage must be explored.

As mentioned before, some felt that the researcher's communication should focus in changing behaviors, but although all agreed that this subject is important, it was not a general view that it should be among the more important for the dialogue.

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## Sketching an action plan

These aspects are to be part of a vision of the shape of a successful dialogue in the society around the roads to a low carbon energy system. However, R&Dialogue has the ambition of not only on building a vision for the dialogue but also proposing actual mechanisms and tools that contribute towards this vision.

Some practical issues are left here for discussion.

How could energy researchers provide clear and consistent information on Energy to the public, both on short term issues like costs, and medium and long term issues like sustainability? How could they work with social scientists to benefit from their expertise on such matters?

Should public entities like ADENE (Portuguese Energy Agency) and/or other stakeholders, including NGOs and researchers, promote country-wide general discussions? Or in view of limited resources available, these would be better applied on enhancing communication between specialized audiences?

What specific measures and communication tools should be implemented in the short term, for a more active, satisfying and useful dialogue?

It is no doubt interesting to learn about the situations and dialogue examples in other EU countries, but could any solutions be adapted to the Portuguese case?

Could any provisions be already made to support a steady continuation of the dialogue after the end of R&Dialogue?