



Mr. José Manuel Durão Barroso
European Commission Presidency
B-1049 Brussels

Lisbon, 20 March 2008

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CC to: Commissioner for the Environment **Stavros Dimas**, Minister of the Environment **Francisco Nunes Correia**, Minister of the Economy **Manuel Pinho**, President of INAG **Orlando Borges**, Director of Energy and Geology **Miguel Barreto**

Subject: Hydropower plants in Portugal and European environmental legislation

Dear President Barroso,

We are writing to you as the highest representative of the European Commission to express our deepest concern about the plans of the Portuguese government to build 12 new hydropower plants in Portugal. We ask you to do your utmost to ensure that Community legislation for the protection of water and biodiversity is properly applied in this Member State.

We strongly support the EU's plans to increase its capacity for renewable energies to 20% by 2020 and commend your leadership in taking these plans forward. However due care must be taken to ensure these developments do not lead to an exacerbation of existing pressures on key environmental resources such as biodiversity and water. Only a rigorous and effective enforcement of the European legislation designed to protect these resources, such as the Water Framework Directive, will ensure sustainable development of our renewable energy

capacities. The current controversy over biofuels is one example of how poorly conceived climate mitigation measures can lead to more environmental problems, rather than fewer.

Specifically with regard to all ten projects laid down in the Portuguese National Programme of Dams with High Hydropower Potential (PDHHP) as well as two additional projects, we have serious concerns about the negative (devastating????) impacts they will have on Portugal's biodiversity and water management. And we would like to emphasize a few key points.

Dam construction can have devastating impacts on river ecosystem functions, including water flows, water quality and biodiversity, yet the Portuguese government has not provided a complete assessment of the negative impacts and the benefits that could be obtained with the zero alternative in the impact assessment for the planned 10 dams. The plan lacks any qualitative or quantitative (economic) assessment or consideration of potential alternative energy solutions for the energy to be generated by the proposed dams. More specifically it disregards governmental commitment, within the framework of the EU, to a 20% increase in energy efficiency by 2020 and rapid diversification into cheaper solar and other renewable energy technologies. Most worryingly, it has not considered the impacts of climate change on water flows. According to the latest predictions of the IPCC, water availability in Southern Europe will decrease by 40%, meaning that hydropower potential will decrease by up to 50%, by 2070.

In terms of GHG emissions, the 10 dams would result in a decrease of only 1% of CO₂ emissions against the Portuguese 1990 baseline set in the Kyoto Protocol. The power generated from the 10 new dams would correspond to a mere 3.3% of the total energy consumed in Portugal, a very modest figure compared to its potentially devastating ecological impacts. In addition, Portugal has the potential for a 20-40% reduction in energy consumption through demand management without negative impacts of any kind¹. This wholly negative picture would be worsened by the additional adverse impact on investment into development of other renewable technologies due to the `diversion` of funds to the dams projects. Finally the potential climate impacts would be worsened still by the government's plans to build two more dams, the Ribeiradio and Baixo Sabor, not included in the PDHHP, the last with a complaint against the Portuguese Government for infringement of European environmental legislation.

As regards one of the other arguments used to justify dam construction, a safe and sustainable supply of water, it is commonly accepted that water is more effectively and safely stored in ground water aquifers rather than in open reservoirs, especially in increasingly arid countries like Portugal, with high evaporation rates and direct pollution.

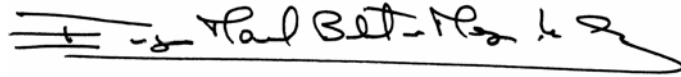
Given these facts, and knowing that environmental groups from across Europe report similar proposed developments, including some of the last free flowing stretches of rivers such as the Mur in Austria and the Elbe in Germany, we call on you as Commission President to do all in your power to assure that dam development in Europe, including the twelve new dams in Portugal, will not proceed without a full and complete cost-benefit assessment, detailed biodiversity impact assessment and socio-economic comparison with alternative energy strategies. Such an assessment, including carefully considered alternatives, is required not only under the WFD, but also under the Strategic Environment Assessment (SEA) Directive. We stress that without such an assessment, to include in particular of the costs and benefits of alternative energy and water management strategies, the Portuguese Plan is in direct and multiple violation of the Water Framework Directive. We are therefore simply asking you to

¹ Manual de Boas Práticas de Eficiência Energética, WBCSD Portugal
(<http://www.bcsdportugal.org/content/index.php?action=detailFo&rec=82>)

fulfil your role as Guardian of the Treaty and ensure Community law is properly implemented by the Member States.

For future correspondence on the matter, LPN and the EEB shall act as correspondents.

Yours sincerely,



Eugenio Sequeira, President of LPN – Liga para a Protecção da Natureza



John Hontelez, Secretary General of the European Environmental Bureau

Aldeia - Acção, Liberdade, Desenvolvimento, Educação, Investigação, Ambiente

Almargem – Associação de Defesa do Património Cultural e Ambiental do Algarve

COAGRET Portugal – Coordenadora de Afectados pelas Grandes Barragens e Transvases-
Secção Portuguesa

EURONATURA – Centro para o Direito Ambiental e Desenvolvimento Sustentado

FAPAS – Fundo para a Protecção dos Animais Selvagens

FNCA – Fundação Nova Cultura da Água

GEOTA – Grupo de Estudos de Ordenamento do Território e Ambiente

Grupo Flamingo – Associação de Defesa do Ambiente

Quercus – Associação Nacional de Conservação da Natureza

SPEA – Sociedade Portuguesa para o Estudo das Aves

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Annex

The hydropower plan in Portugal – up to 10 new dams by 2020

In October 2007, the Portuguese government, through the Water Institute, presented the National Programme of Dams with High Hydropower Potential (PDHHP²). It is a strategic plan that selects the location of 7-10 new dams from an initial set of 25 possibilities, considering several criteria, including social, economic and environmental issues. The main purpose of this plan is to increase the hydropower in Portugal to 7000 MW, by adding 2000 MW before 2020, in order to:

- reduce the energy dependency of the country in relation to external sources (energy security)
- reduce the emissions of Green House Gases (GHG) in order to comply with the Kyoto Protocol
- comply with the European target of achieving 20% energy from renewable sources by 2020

Ten locations out of twenty five previously selected as having high hydropower potential were chosen through a process of strategic environmental assessment, six of them located in the Douro river basin, two in the Tejo river basin and one in the Vouga and Mondego river basins.

PDHHP violates the obligations and provisions of Water Framework Directive (WFD).

The PDHHP includes a very light and biased interpretation of the objectives and derogations of the WFD, which are used mostly to justify the objectives of the PDHHP itself.

General objectives of the WFD

The major purpose of the WFD, defined in Article 1, is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. Within this purpose, there are five different objectives to be accomplished, namely (1) preventing further deterioration and protecting and enhancing the status of aquatic ecosystems and, with regard to their water needs, (2) promoting sustainable water use based on a long-term protection of available water resources, (3) applying specific measures for the progressive reduction of priority substances and the cessation or phasing-out of priority hazardous substances, (4) progressively reducing pollution of groundwater and preventing its further pollution, and (5) contributing to mitigation of the effects of floods and droughts.

The PDHHP used this last objective as a justification (specifically a sufficient supply of good quality water) for all hydromorphological, quantitative and qualitative changes expected with hydropower infra-structures. Moreover, the accomplishment of this objective (mitigation of the effects of floods and droughts) has a specific framework within which it should be applied, namely through (1) the provision of a sufficient supply of good quality surface water and groundwater as needed for sustainable, balanced and equitable water use, (2) a significant reduction in pollution of groundwater, (3) the protection of territorial and marine waters, and (4) achieving the objectives of relevant international agreements. All these conditions assume balanced management between surface and groundwater sources to assure the availability of good water quality with strategic storage. These WFD objectives would not be achieved with

²http://www.inag.pt/index.php?option=com_content&view=article&id=59:%20Programa%20Nacional%20de%20Barragens%20com%20Elevado%20Potencial%20Hidroeléctrico

the dam projects, a fact that is even acknowledged in the PDHHP itself, by stating that all water bodies are at risk or in doubt.

Moreover, water storage in ground water aquifers is a more efficient way to guarantee water quality and quantity than surface reservoirs, taking into account the current and especially future climatic characteristics of a southern country such as Portugal. There is no evidence that Portugal needs additional surface water reservoirs and some of the existing ones are the largest artificial water bodies in Europe, already acting as a barrier to achieving the objectives of the WFD.

Environmental objectives of the WFD

The implementation of the WFD requires active involvement from all Member States, who must apply measures to achieve two major environmental objectives for surface waters (Article 4), namely (1) to prevent deterioration of the status of all bodies of surface water and (2) to protect, enhance and restore all water bodies, with the aim of achieving good surface water status at the latest in 2015.

The PDHHP uses the preliminary results of risk assessment under article 5 as criteria for selecting the location of future dams, stating that impacts resulting from the construction of a dam in a water body 'at risk' or 'in doubt of achieving the WFD environmental objectives' are less important than in water bodies 'not at risk'. This is an unacceptable inversion of the logic of the precautionary principle and the objective of environmental improvement into a logic of 'once its damaged, further damage is less relevant'. It contravenes the very foundations of European Environmental Policy.

The PDHHP also states that not achieving good water status is not an infringement of the WFD, based on the derogations allowed for 'new modifications'. This is an erroneous interpretation of derogations, as defined in the WFD, since the requirements for applying for these derogations (articles 4.5 and 4.7) were not fulfilled, as explained below.

1) Member States may aim to achieve less stringent environmental objectives for specific bodies of water when they are so affected by human activity, or their natural condition is such that the achievement of these objectives would be infeasible or disproportionately expensive, and all the following conditions are met:

a) the environmental and socioeconomic needs served by such human activity cannot be achieved by other means, which are a significantly better environmental option not entailing disproportionate costs;

In the PDHHP no alternative scenarios have been outlined and assessed for socioeconomic and environmental costs and benefits (e.g. other sources of energy, other locations besides the 25 selected ones). The construction of new dams to increase renewable energy supply is a highly questionable strategy for Portugal. The increase of hydropower with these 10 new dams would correspond to only 3.3% of the total amount of energy consumed in Portugal (based on the consumption of 2006), a very small amount when compared to all the environmental, social and economic damage generated by large dams.

Other alternatives exist, as outlined in recent studies, which estimate that Portugal has the capacity to save up to 20-40% on current energy consumption through demand-side measures³ and the newly proposed Energy Efficiency Plan⁴ sets an energy reduction goal of 10% by 2020. Measures to reduce energy consumption are less costly than any of the renewable energy options currently available. It is estimated that the construction of these dams will require an investment in the order of 1 trillion (1 *10¹²) euros. Thus energy demand side measures that can cause less damage while providing the same, or even more, benefits

³ Manual de Boas Práticas de Eficiência Energética, WBCSD Portugal

⁴ <http://www.min-economia.pt/document/PNAEE.pdf>

including acting as a driver for investment in new energy and water saving technologies, must be the priority and should be considered part of an adequate cost-benefit analysis.

It should be highlighted that the PDHHP disregards altogether the contributions of microgeneration and emerging technologies that will improve solar energy use, some of which are being developed in Portugal⁵. It does not take into consideration new combined gas cycle thermoelectric power plants coming online, which correspond to an additional 3200 MW of electrical power, nor does it include or analyse other possible and existing energy solutions, such as the growth of other renewable energy sources.

In terms of GHG emissions, the 10 dams will result in a decrease of only 1% in relation to the Portuguese baseline of 1990 as per the Kyoto Protocol. Moreover, recent studies show that dams are also responsible for net emissions of GHGs, 70% of which is incurred during the construction period, besides the fact that the flooded areas can no longer be used to their full carbon sink potential.

The Portuguese National Plan for Climate Change, adopted in 2006, defines other measures, which are not being applied, that would be more cost-effective for GHG reduction than the construction of these 10 new dams, such as measures addressing the transport sector. As an illustration of the marginal impact on GHG reductions the 10 dams would incur, the increase in the cost of fuel in Portugal in the last year (2006-2007) alone already led to a reduction of GHG emissions similar to what we could expect from these dams.

Recent predictions made by the IPCC (2007) show that the availability of water in southern Europe will decrease up to 40% by 2070. Thus hydropower potential is expected to be compromised with a reduction of 20 to 50% over this time period. On the contrary, the potential for solar and photovoltaic energy is likely to be greater, but these future scenarios were not considered.

b) Member States ensure that the highest ecological and chemical status possible is achieved, given impacts that could not reasonably have been avoided due to the nature of the human activity or pollution,

A majority of the water bodies affected are considered to be at risk of not achieving the environmental objectives by 2015, most of them because of eutrophication problems. No specific measures to improve water quality status are outlined in the PDHHP, another completely unacceptable inversion of the principle of precaution and prevention that underlies all EU environmental legislation.

c) No further deterioration occurs in the status of the affected body of water;

It is assumed in the PDHHP itself that further deterioration of water quality would occur with the construction of the 10 new dams.

d) The establishment of less stringent environmental objectives, and the reasons for it, are specifically mentioned in the river basin management.

River Basin Management Plans (RBMP) are the major instruments for implementation of the WFD objectives and the WFD sets specific requirements for its development, namely (1) an analysis of river basin characteristics, (2) a review of the impact of human activity on the status of surface waters and groundwater, and (3) an economic analysis of water use. This analysis was not fully completed on the existing RBMP and did not consider the PDHHP, therefore this requirement has not been fulfilled. The new RBMP is still under development and the outputs currently available (i.e. the timetable and work programme for the production of the plan, the reports on the characterization of river basin districts, etc.) did not consider the PDHHP.

⁵ For example - Project *EZ Ribbon* for cheap solar energy accumulation, developed in Faculdade de Ciências da Universidade de Lisboa

2) Member States will not be in breach of this Directive when failure to achieve good ecological status or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body, or failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities, and all the following conditions are met:

a) All practicable steps are taken to mitigate the adverse impact on the status of the body of water;

The PDHHP does not propose any measures to mitigate the adverse impacts of the new dams on the affected water bodies.

b) The reasons for those modifications or alterations are specifically set out and explained in the river basin management plan;

See 1. d)

c) The reasons for those modifications or alterations are of overriding public interest and/or the benefits to the environment and to society of achieving the environmental objectives are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development, and

The WFD does not provide a definition of sustainable human development activities, but the PDHHP assumes that all human activities leading to the production of energy based on renewable sources are sustainable *per se*. This assumption is incorrect because it is not accurate. The concept of sustainable development was defined after the principles of the Declaration of the United Nations Conference on the Human Environment⁶, in the aim of the Brundtland Report⁷, as *development that meets the needs of the present without compromising the ability of future generations to meet their own needs*. In order to show that the implementation of the PDHHP upholds the concept of sustainable development, it is necessary, not only to show that economic benefits outweigh environmental impacts, but also that it accounts for all other requirements of sustainable development, namely if a) it convenes an equitable use relative to others that might be obtained in the locations of the future dams, b) the interests of future generations were taken into account and c) it fulfils the need for integrating development (understood as technological progress) and environment. We believe that none of these requirements are fulfilled by the PDHHP and as they were not even addressed in the analysis, it cannot be considered a sustainable (human) development activity.

d) The beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

See 1. a)

In order to apply these derogations, Member states shall:

3) Ensure that the application does not permanently exclude or compromise the achievement of the objectives of this Directive in other bodies of water within the same river basin district and is consistent with the implementation of other Community environmental legislation (article 4.8), and;

⁶ Stockholm, 1972

⁷ Our Common Future, Report of the World Commission on Environment and Development, World Commission on Environment and Development, 1987. Published as Annex to General Assembly document A/42/427, Development and International Co-operation: Environment August 2, 1987. Retrieved, 2007.11.14

The PDHHP does not address this requirement since cumulative impacts of the new dams are not considered, neither their direct nor cumulative impacts on transitional and coastal water bodies.

4) Ensure that the application of the new provisions guarantees at least the same level of protection as the existing Community legislation (article 4.9).

The implementation of the PDHHP will incur a direct violation of the European Strategy for Biodiversity and the European Strategy for Sustainable Development, as well as the Directives on Habitats and Birds. The impact assessment was not carried out at a sufficiently precise scale⁸ to allow a reliable evaluation of impacts of the PDHHP on threatened species; some important faunal groups were not included in the assessment (e.g. reptiles, aquatic mammals, chiropters) and for some others impacts were underestimated (e.g. migratory fish).

Lastly, it must be emphasised that there is no legal or political instrument which states that the objectives of national energy policies must prevail over the objectives of water policy or nature conservation and biodiversity policies. Therefore, although the WFD does not directly prevent the construction of new hydropower infrastructures, it constrains it within a certain legal framework, which has been clearly violated in multiple respects by the PDHHP.

In conclusion, we would like to stress that we firmly believe that Portugal can meet its commitments under the Kyoto protocol and the upcoming Renewables Directive without excessive environmental impacts, in a cost effective manner, with significant benefits for environmental industries and that we are fully committed to supporting the sustainable development and exploitation of renewable energy sources, the most important one being energy savings. However we believe this can only be achieved when existing environmental rules such as the WFD are properly enforced and the European Commission communicates this clearly to the Member States.

⁸ The assessment was done on a geographical scale of 1:100 000