

Seminar Organised by INFORSE & EUFORES & EREF



Brussels, November 9-10, 2004
Presentation by Steve Cryer, ESHA

What is ESHA?

- Non-profit Organisation, founded 1989
- Headquarters in Renewable Energy House in Brussels
- Founding Member of EREC
- Members in all EU countries and worldwide
 - National SHP associations
 - SHP industry (manufacturers, etc.)
 - Scientific community
 - Individual members

ESHA Objectives

- Promotion of SHP with an installed capacity up to 10 MW
- Lobbying for SHP on European level (European Parliament, European Commission, etc)
- Information dissemination and awareness raising for SHP issues

ESHA's activities

- Lobbying for SHP interests
- Information dissemination on SHP issues
 - Newsletter
 - Hidroenergia conferences
 - Website www.eshab.be
- Studies on SHP issues (e.g. Blue Age etc.)
- European projects such as
 - TNSHP
 - SPLASH

Water Framework Directive (WFD) and its effect on the Hydropower Industry

Steve Cryer
ESHA Board Member
Chairman BHA

Seminar on New and Upcoming EU Policies for Sustainable Energy and Climate Protection
Organised by INFORSE - EUFORES - EREF
November 9-10, 2004, ICA, Brussels

W F D aims

- enhance the quality of European Rivers, their Tributaries and Estuaries
- ensure adequate availability of Water for Mankind's needs and the Environment
- But, ...not to prevent the development of or destroy existing hydropower

WFD and HYDROPOWER

- The Operation and Development of Hydropower and the aims of the WFD are not mutually exclusive
- Hydropower is a non-consumptive use of water
- Hydropower only makes use of the Potential Energy of Water it returns all water to the aquatic environment

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Regulatory Issues with Implementation of the WFD

- **Designation of Water Bodies**
 - preventing the development of new schemes on rivers not designated Heavily Modified Water Bodies (HMWB)
- **Derogations and the Cost Implications to Existing Operations**
 - in pursuit of Good Ecological Potential (GEP)



The Purist Approach to Implementation of the WFD

- **Adopting this rigid approach could lead to reductions of :-**
 - up to 65% of small run of river hydro
 - 25% of larger schemes
 - 15% of reservoir storage plants
- **Loss of 1GWh means additional emissions of 800tonnes CO₂**



Water Framework Directive v RES Directive ??

- Designating HMWB and GES in rivers is set to be completed by 2013/2015
- However, it would take 50 years to fully develop the hydropower potential in Europe
- Does this mean that the WFD will work against the aims RES DIR ? which seeks to encourage renewable development to combat climate change



Hydropower Facts

- **Highest efficiency for energy conversion > 85%**
- **Highest energy payback ratio**
- **Non consumptive use of water**
- **Proven Technology can be delivered to the energy market today**
- **Renewable and Sustainable**
- **Plant life in excess of 50years**



Hydropower Facts

Hydropower:

supplies 20 per cent of the world's electricity generating capacity

provides

- over 50% of national electricity in 68 countries
- over 90% in 22 countries
- over 99% in 13 countries

- Essentially all electricity supply in 12 countries



Hydropower Facts

- **Hydropower comes in many shapes and sizes**
- **From a few kilowatts for household and small community schemes**
- **To large dams and turbines to supply large and diverse communities**
- **It can be adapted to suit the availability of the resource – High Head to Low Head**



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Environmental Effects

- Disruptions to the river environment, by Hydropower are well known
- Modern design incorporates mitigation to alleviate or reduce these effects
- It would be difficult to get permissions to develop hydropower without an Environmental Assessment that deals with these issues



Environmental Effects

- R & D work has been and is still being carried out into environmental effects and amelioration which has led to :-
- Different fish pass designs
- Screening techniques
- Operating procedures
- And even fish friendly turbines



UK Approach

- The BHA recognised the issues as the WFD was about to be implemented in the UK
- It initiated the setting up of a joint working group between the hydro industry and the environment protection agencies
- The aims of the working group are to establish best practise techniques and guides to ensure that environment protection and hydropower development can move forward together, recognising the Global Issues as well as the local impacts.



Europe?

With the forthcoming introduction of the RES Directive, perhaps a Common Implementation Strategy may be appropriate to ensure that we meet the needs of both Directives??



Thank you

