

Overview of SHP activities in Europe



APER Seminar,
10.11.05 Milano

Christine Lins
ESHA Secretary General

ESHA



- Non-profit Organisation, founded 1989
- Headquarters in Renewable Energy House in Brussels
- Members in mostly all EU countries and worldwide
 - National SHP associations
 - SHP industry (manufacturers, etc.)
 - Scientific community
 - Individual members
- ESHA is founding member of EREC- the European Renewable Energy Council



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 (publications, workshops, conferences)

ESHA activities: lobby



- Lobbying for SHP interests towards the European Institutions:
 - Policy position papers on SHP situation in Europe,
 - WFD vs RES-e, Proposals for a European R&D strategy for SHP
 - On RES-e Directive in cooperation with EREC
 - On RES priorities for FP7 in cooperation with EUREC Agency
- At National level through ESHA members





ESHA activities: projects

European funded Projects

- **TNSHP**-Thematic Network on Small Hydropower
- **SPLASH**- Spatial Planning and Local Agreements for Small Hydro
- **SYNERGY** project with China
- **SHYCA**- Promotion of Small Hydro Power Retrofitting and Implementation in the Caucasus and Carpathian Region



ESHA projects: TNSHP



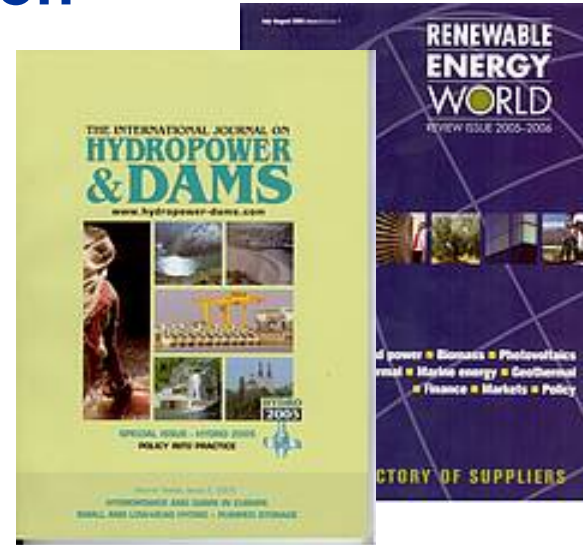
- Funded by the EC DG TREN- FP5
- Coordinated by ESHA with 10 partners: ÖK, MHyLab, SCPTH, ADEME, IT Power, LHA, Studio Frosio, EPFL, ISET & SERO
- TNSHP output:
 - Brochure on SHP for developing countries
 - Brochure on Environmental Integration of SHP plants (EN, GE, IT)
 - Guide on how to develop a SHP plant (EN, GE, FR, SE)
 - Report on SHP situation in New European Member States
 - R&D strategy for SHP
 - Checklist for SHP project developers (EN, GE, IT, FR)

ESHA activities: promotion



- Information dissemination on SHP issues

- Newsletter
- Articles in international magazines
- SHP seminars
- Website www.esha.be
- Publications on SHP



- Hydroenergia Conferences

- Hydroenergia 2006:
 - Crieff, Scotland 7-9 June 06
 - Call for Papers is open!



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European Policy Framework for RES

Small hydropower is under the European policy for RES

Why Renewables?

- Security of supply
- Protection of environment - Kyoto Commitments
- Energy mix for the future
- Innovative business sector

EU Policies & Targets



- **RES White Paper (1997)**
 - To double the share of renewable energy from 6% to 12% of gross energy consumption in Europe (EU-15) by 2010
 - Projections for each renewable energy technology were made.
 - **For SHP it means: 14 GW in 2010 of installed capacity. +4.500 MW regarding 9.500 MW installed in 1995**
- **RES Electricity Directive (2001)**
 - To establish a framework to increase the share of renewables electricity from 14% to 22% of gross electricity consumption by 2010



EU Policies and Targets

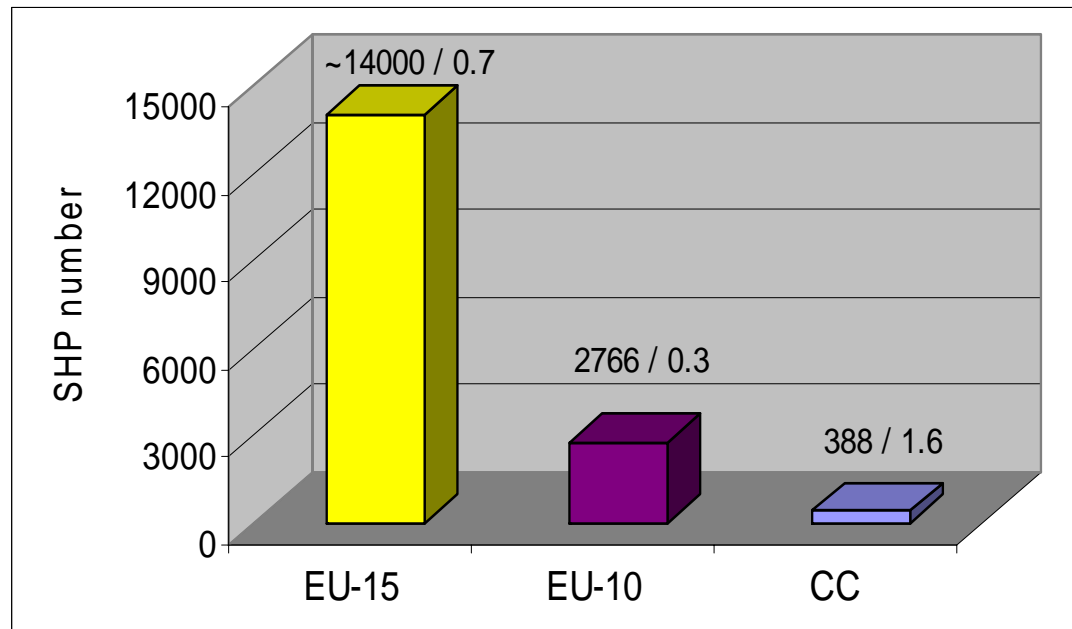
Principles of the RES-e Directive:

Supporting electricity from RES through:

- **Quantified national targets** for consumption of electricity from renewable sources of energy
- **National support schemes** plus, if necessary a harmonised support system across Europe
- **Simplification of national administrative procedures** for authorisation
- **Guaranteed access** to transmission and distribution of electricity from renewable energy sources



Market development- SHP plants in operation

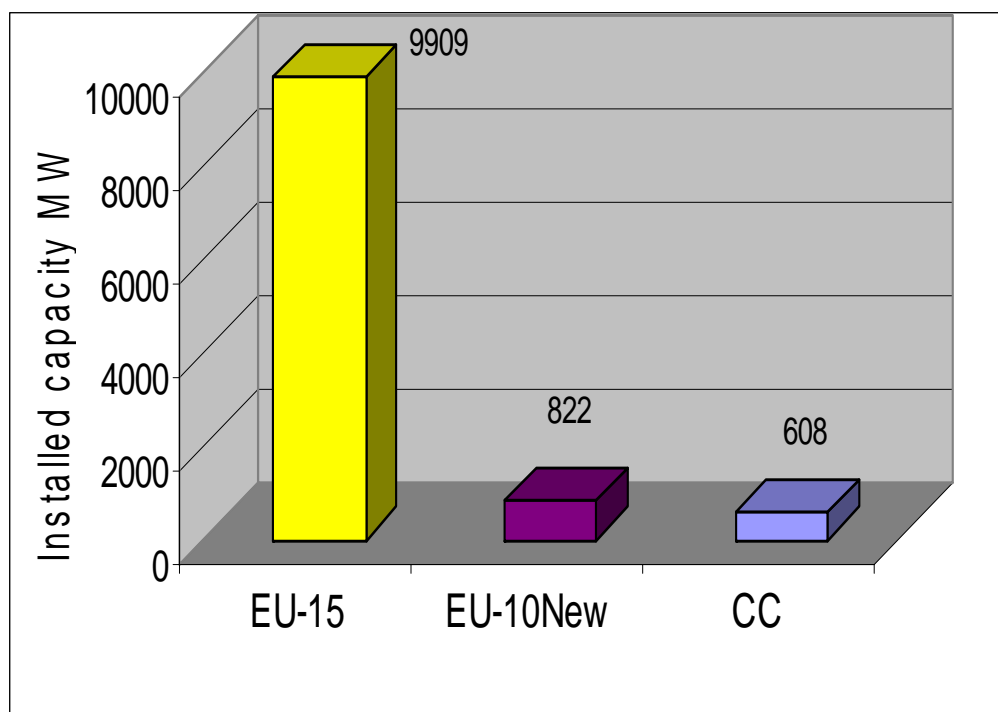


The average plant size is:
700 KW EU-15
300MW EU-10
1.6 MW in EU-CC.

ESHA, 2004



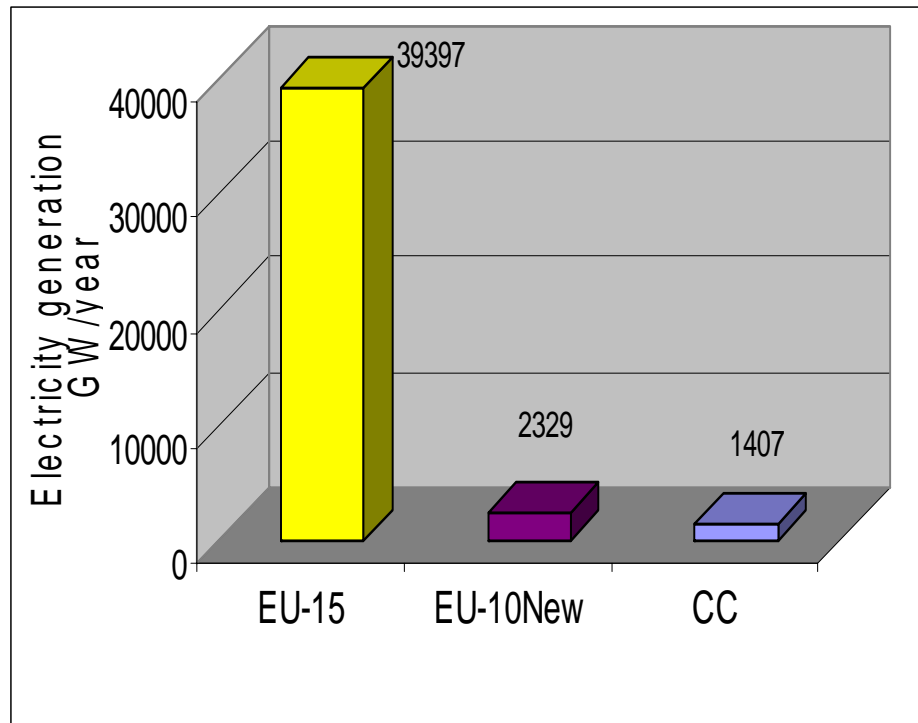
Market development- SHP installed capacity



The total installed capacity of SHP plants in New Member States and CC is at least 10 times smaller than in the former EU-15.



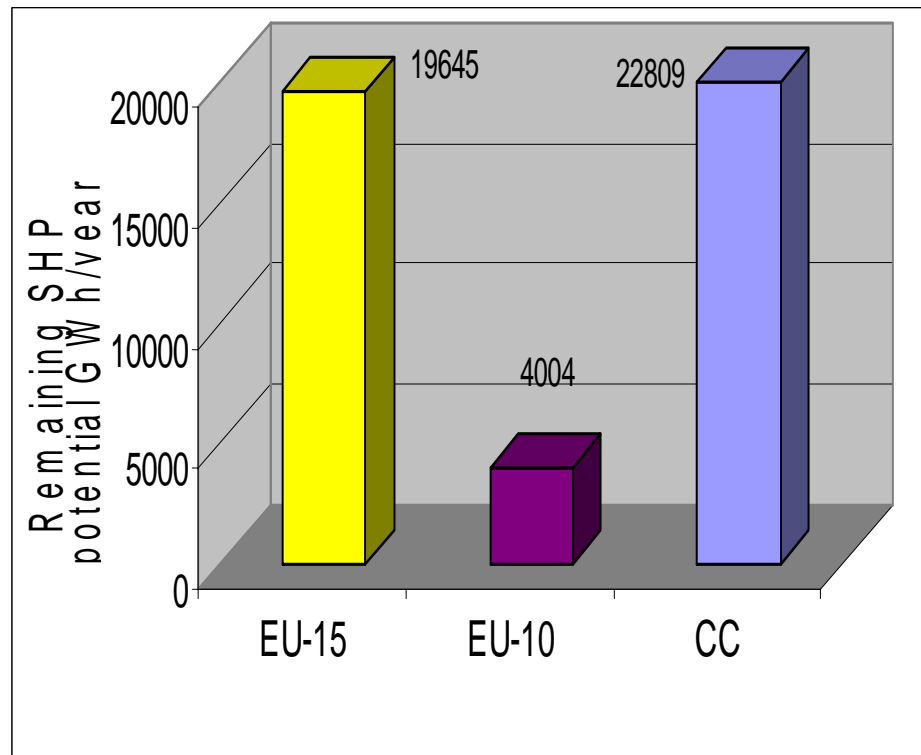
Market development- Electricity generation



Electricity generation by SHP plants in the former EU-15 is considerably higher by comparison to the EU-10 and the CC; production is nearly 15 times bigger than in the EU-10 and 30 times than in the CC



Market development- Potential

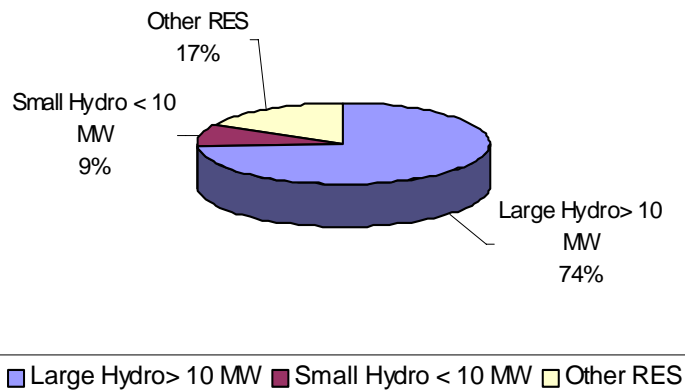


- The remaining economically feasible potential amounts to some 20 TWh/year in EU-15.
- 26 TWh/year in the New Members States and CC.
- The majority of this potential (roughly 80% or 19 300 GWh/year) is located in Turkey.
- Poland and Romania rank second, having indicated potential 6 to 10 times lower than that of Turkey

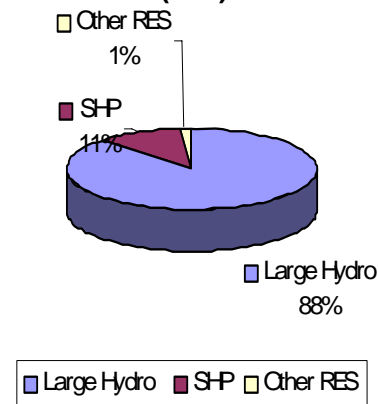
Market development- SHP in the renewable energy mix



RES electricity Generation Share in EU-15, 2002



Electricity from Renewable Energy Sources share in EU-10 (2002)



- SHP only represented 9% of the RES electricity generation in the EU-15 in 2002.
- In almost all New MS and CC hydropower is the dominant source of energy in RES-E production

Market development- SHP

economic and costs

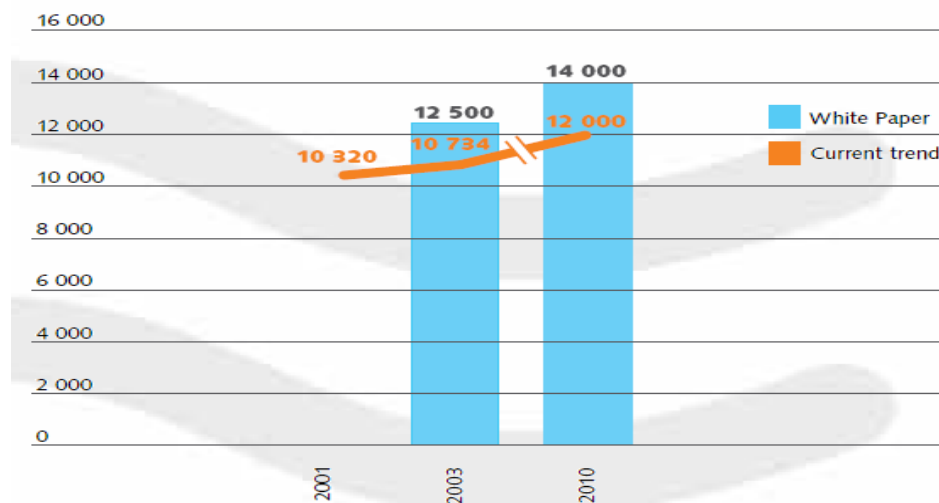


Country	Average SHP production costs €cents/kWh	Range Investment Costs €/kW	Average O&M costs (€cents/kWh)
Spain	3.5 - 7	1500	0.9
Austria	3.6 – 14.5	2500	0.4
Sweden	4 – 5	1800-2200	1.4
Czech Republic	2-3	660-2000	-
Lithuania	2.5-3	2200-2500	-
Poland	3	500-1200	-

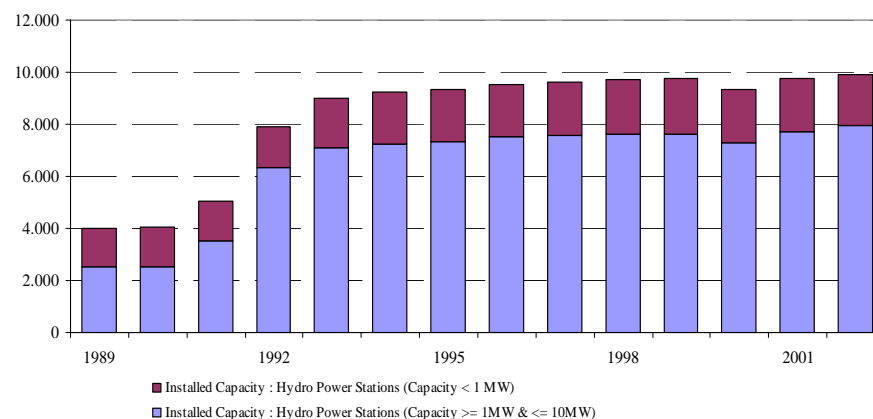
- Power production costs for SHP-generated electricity will not fluctuate much in the future for being a mature technology. Further development will therefore focus on installation costs.
- Two potential areas of improvement exist, the first concerning cost reductions for heads smaller than 15 meters, the second for developments supplying less than 250 kW.
- Large proportion of the potential in Europe involves low-head plants,



Market development- projections for the future



Src: EurObserv'ER 2004



Following the annual growth rates of 2%/year in the last 10 years, the European SHP installed capacity would be around 12 000 in 2010. This figure is clearly far short of the European Commission White Paper target of 14000 MW.



Market development - Barriers

- Since the RES-E Directive is in force a further development of SHP has taken place.
- Due to the implementation of support schemes, which establish more favourable tariffs for the electricity produced by SHP
- However the real barriers the SHP has to cope with are:
 - Administrative
 - Environmental
- **RES- e Directive is under revision ESHA and EREC are lobbying for removal administrative barriers, give grid access priority to renewables among other issues.**



First Conclusions

- Still SHP potential in Europe
- SHP have tangible economic, ecological and social benefits.
- Policy framework crucial for SHP development (**SHP market development depends on a coherent, predictable, supportive political & legal framework**)
- Still some barriers to be overcome to reach the target

Necessary Conditions & Solutions



In European policy:

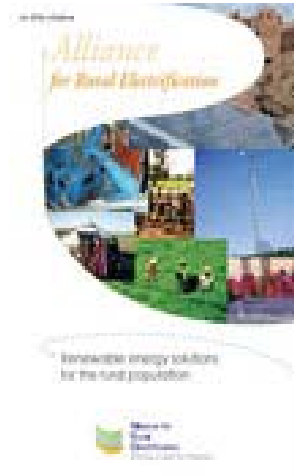
- Establishment of legally binding targets
- Raise Awareness
- Reduce administrative barriers
- Change of conventional subsidies policy
- Increase R&D for renewables and grid integration

Necessary Conditions & Solutions



And for outside Europe

- Combine energy and development policy
- Shift towards RES in international financial institutions
- International collaboration a must
- Promote Favorable Policy Framework for RES development in Developing Countries
- CDM an opportunity combined with policy development



More info on ESHA

ESHA - European Small Hydropower Association

Renewable Energy House

26, rue du Trône

B-1000 Brussels, Belgium

T: +32 2 546 1945

F: +32 2 546 1947

E: esha@arcadis.be

I: www.esha.be