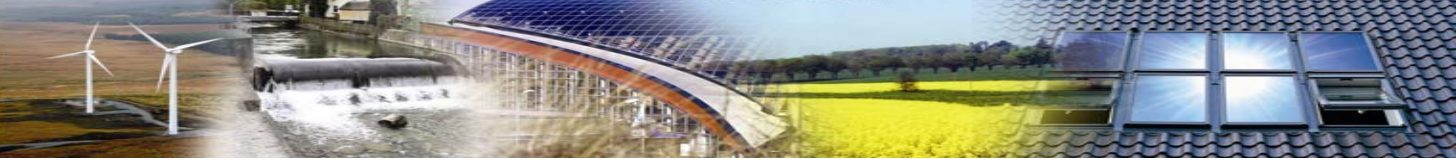


# European policy framework & market development for renewable energy

**Christine Lins**

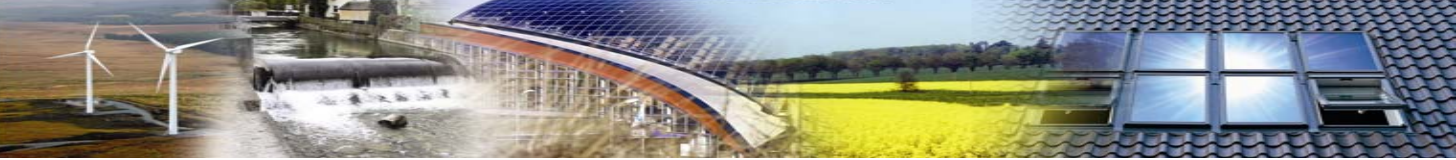
**European Small Hydropower Association  
European Renewable Energy Council**

5<sup>th</sup> Thematic Network Workshop on Small Hydropower  
Lausanne, 30<sup>th</sup> June 2005



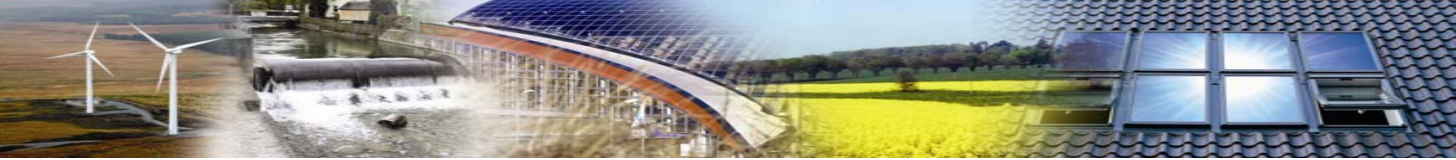
## ESHA - European Small Hydropower Association

- 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
- Founding member of EREC, the European Renewable Energy Council



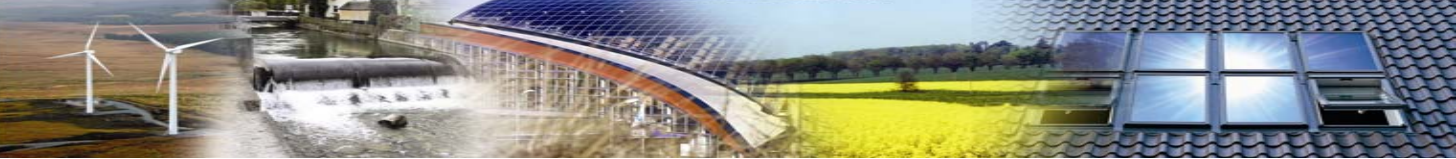
# ESHA's objectives

- 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, e.g.
  - Thematic Network for SHP
  - HIDROENERGIA conferences
    - Hidroenergia 2006: Scotland, 7-9 June 2006



# The driving forces for a renewable energy policy

- **Security of supply** - independence from energy imports
- **Protection of environment** - including the necessity to reduce greenhouse gas emissions
- **Regional and local development**
- **Industrial development**
- **Employment**



# RES policy framework relevant for SHP

## 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

↳ **For small hydropower it means: 14 GW in 2010 of installed capacity. +4.500 MW regarding 9.500 MW installed in 1995**

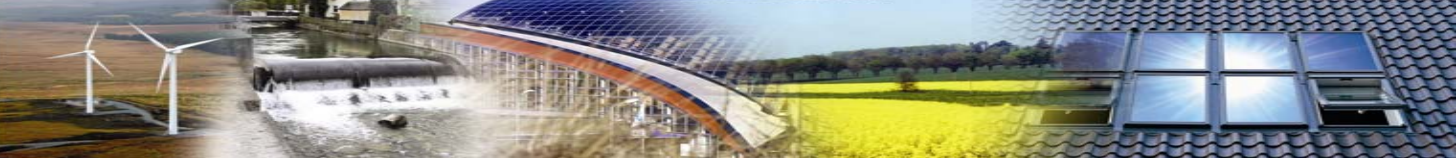
## Green Paper on Security of Energy Supply (2000)

### 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

### Water Framework Directive

↳ Ensure good ecological quality of riversystems



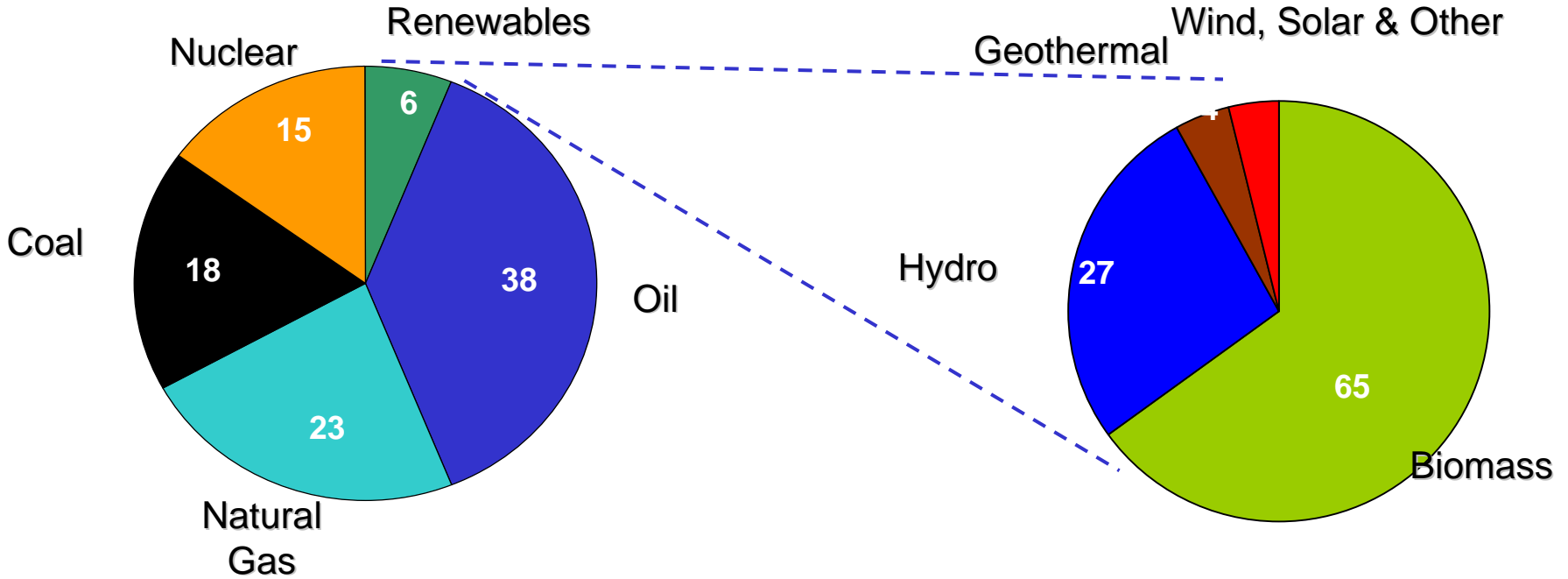
# EU-25 primary energy consumption

**EU-25 primary energy consumption, 2002**

Percent, 100%= 1676.9 Mtoe\*

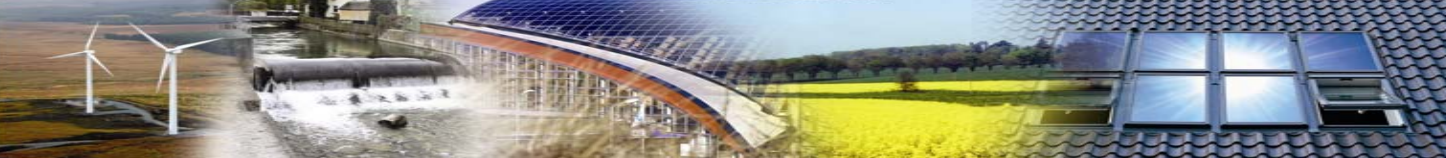
**Breakdown by renewable resource, 2002**

Percent, 100%= 94.9 Mtoe\*



\* Mtoe = Metric tons of oil equivalent

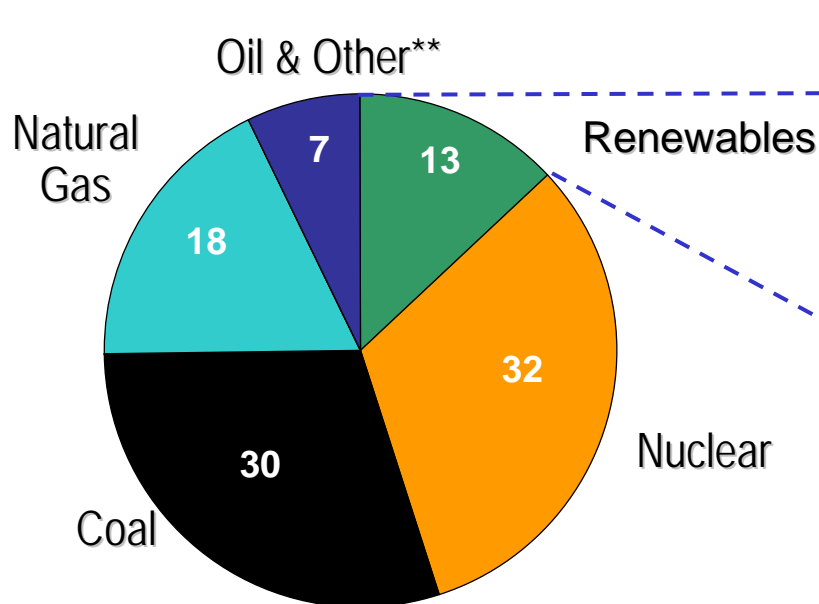
Source: Directorate-General Energy and Transport, *Statistical Pocket Book 2004*, available at: [http://europa.eu.int/comm/dgs/energy\\_transport/figures/pocketbook/2004\\_en.htm](http://europa.eu.int/comm/dgs/energy_transport/figures/pocketbook/2004_en.htm)



# EU-25 electricity generation

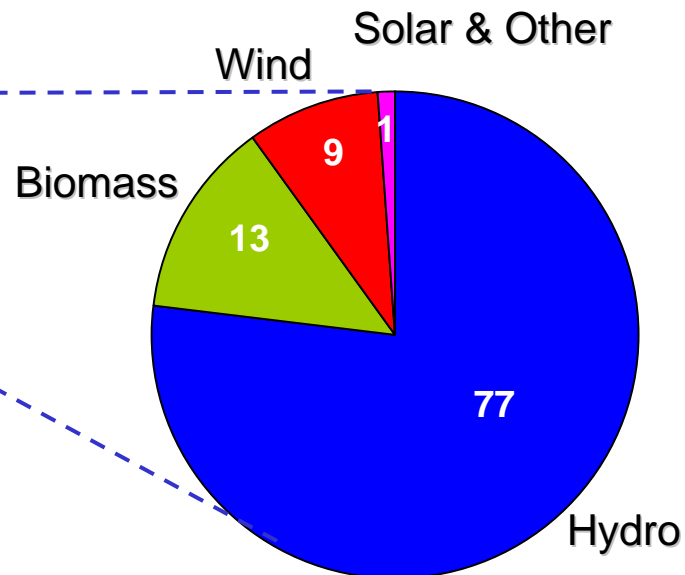
## EU-25 electricity generation, 2002

Percent, 100%= 3,018,000 GWh



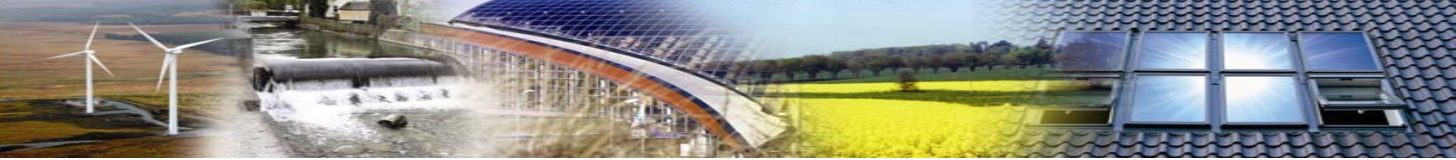
## Breakdown by renewable resource, 2002

Percent, 100%= 386,681 GWh

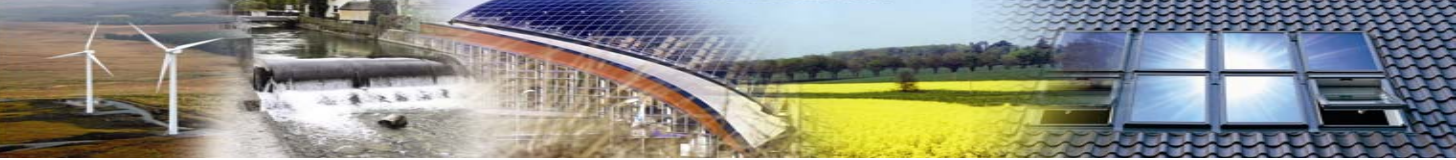


\*\* Includes MSW

Source: Directorate-General Energy and Transport, *Statistical pocket book 2004*, available at: [http://europa.eu.int/comm/dgs/energy\\_transport/figures/pocketbook/2004\\_en.htm](http://europa.eu.int/comm/dgs/energy_transport/figures/pocketbook/2004_en.htm)



# The Market of Renewables (1990 - 2004)

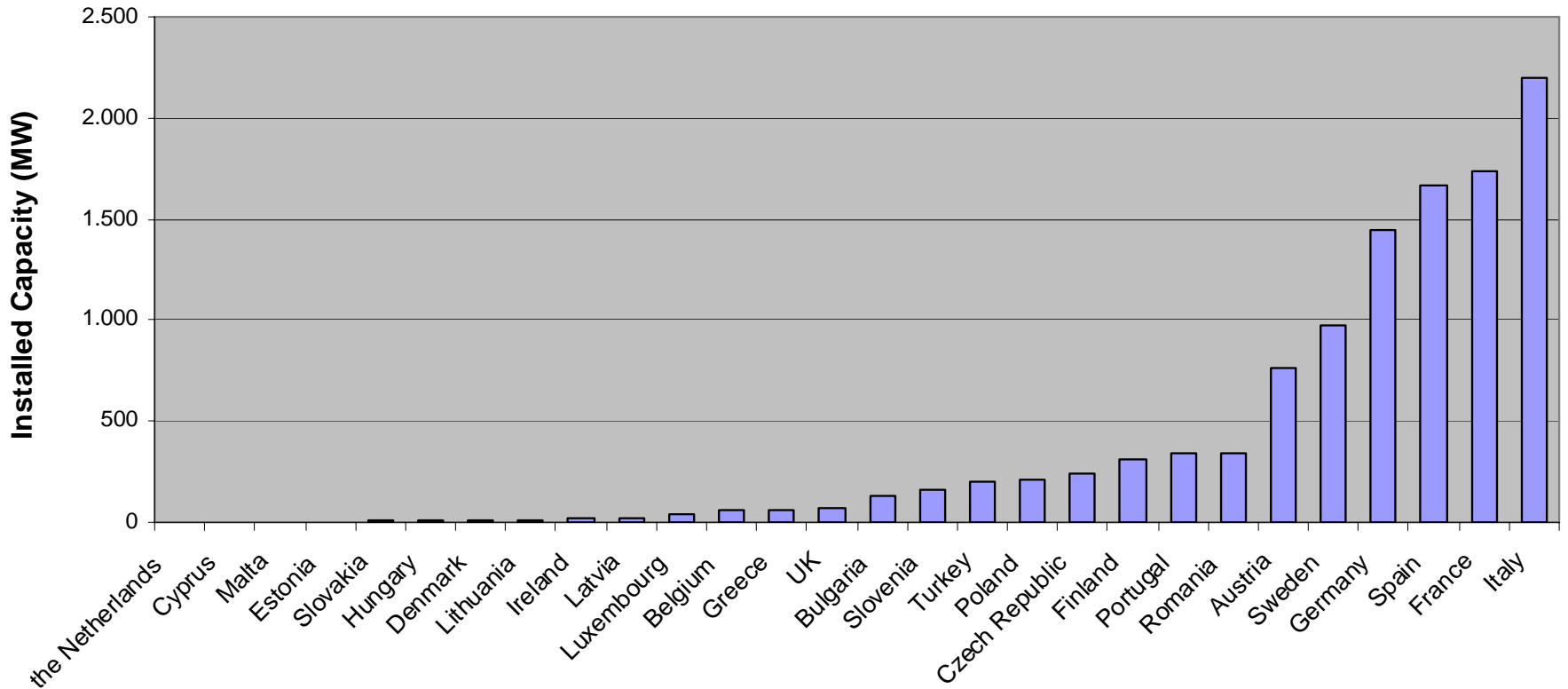


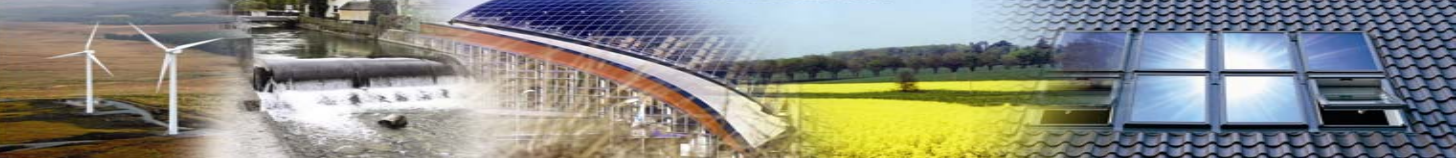
# Renewable Energy benefits

- ✓ Europe is global leader in RES development
- ✓ 200.000 jobs in Europe already now
- ✓ Annual turnover of 15 billion € already now
- ✓ Innovative Business Sector
- ✓ Economic growth and regional development

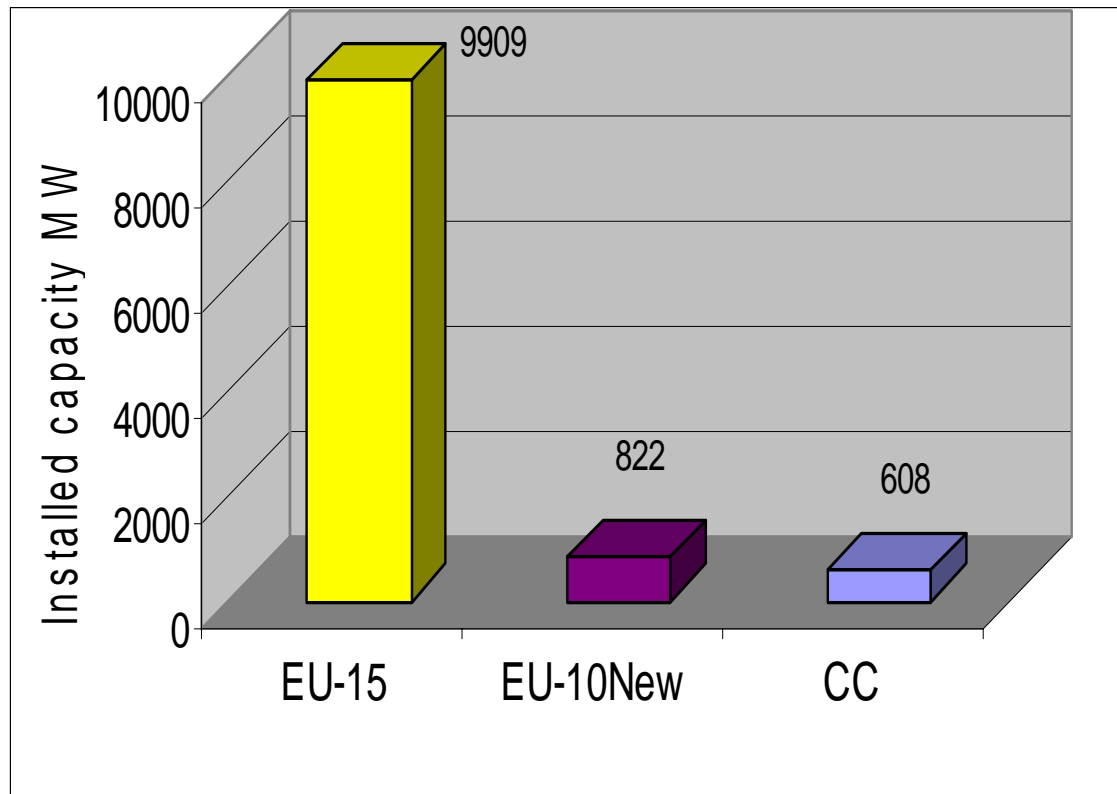


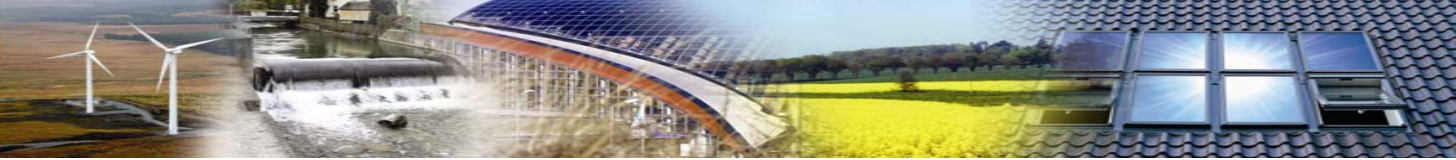
# SHP installed capacity (MW)



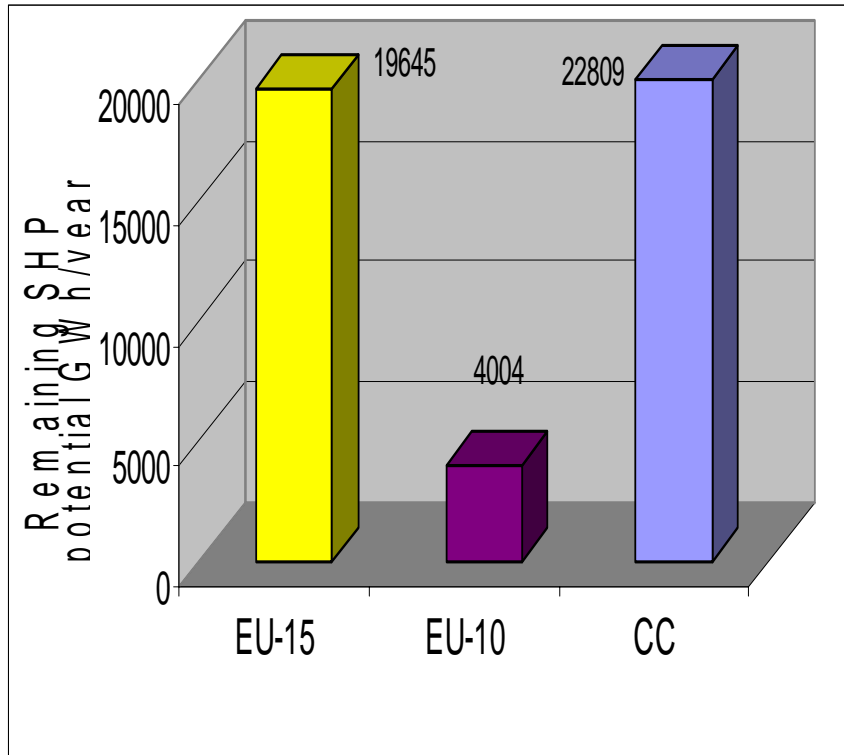


# Cumulative SHP installed capacity (MW)

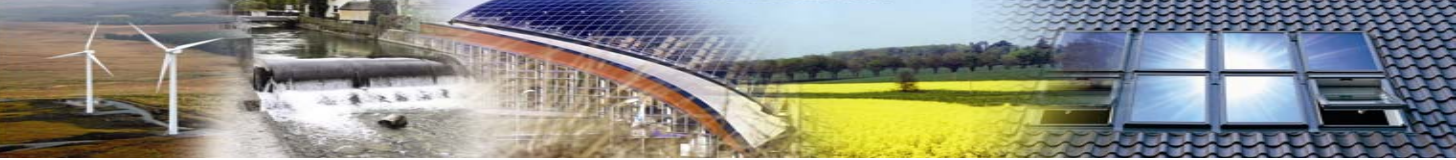




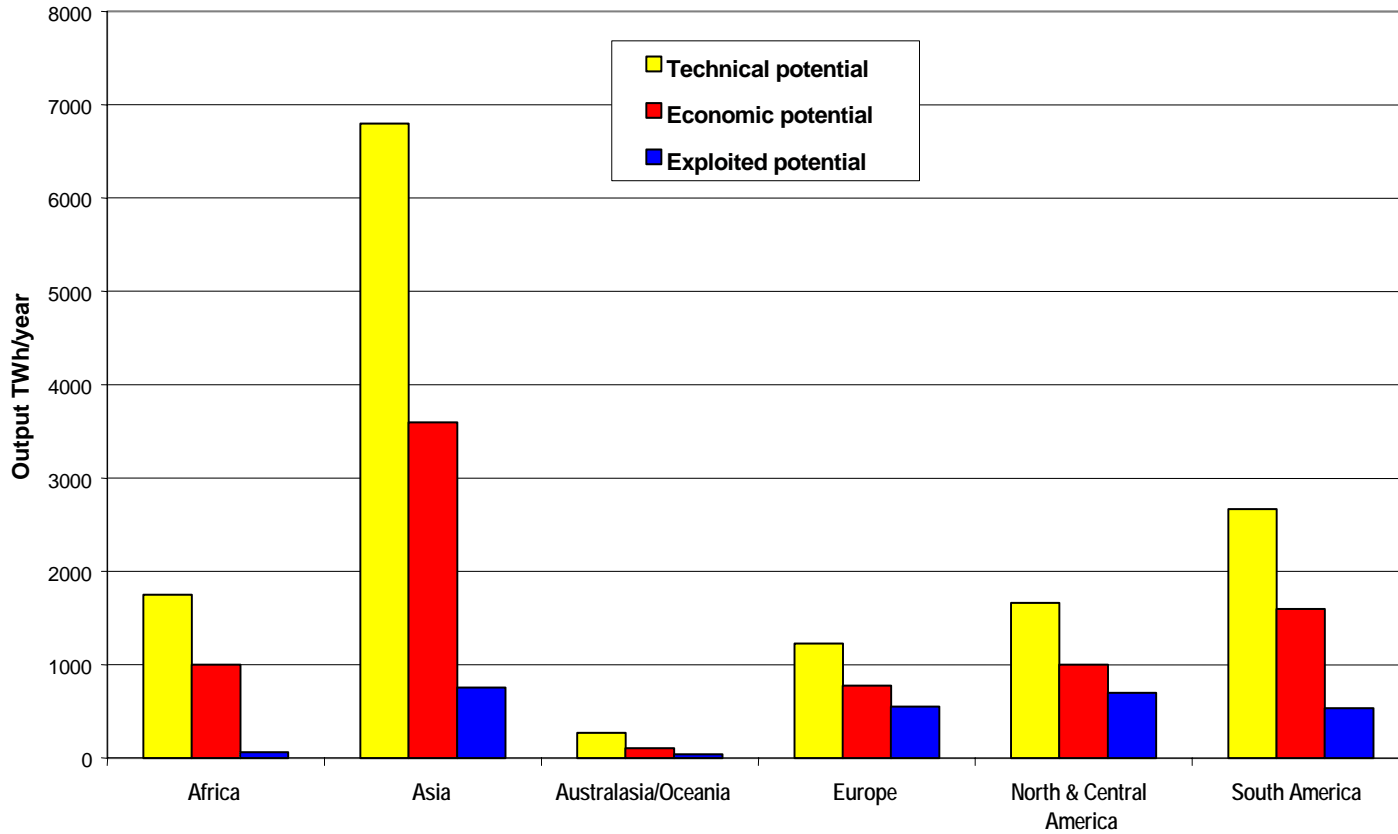
# Market development- Potential



- 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 mainly being located in Turkey (80 %).

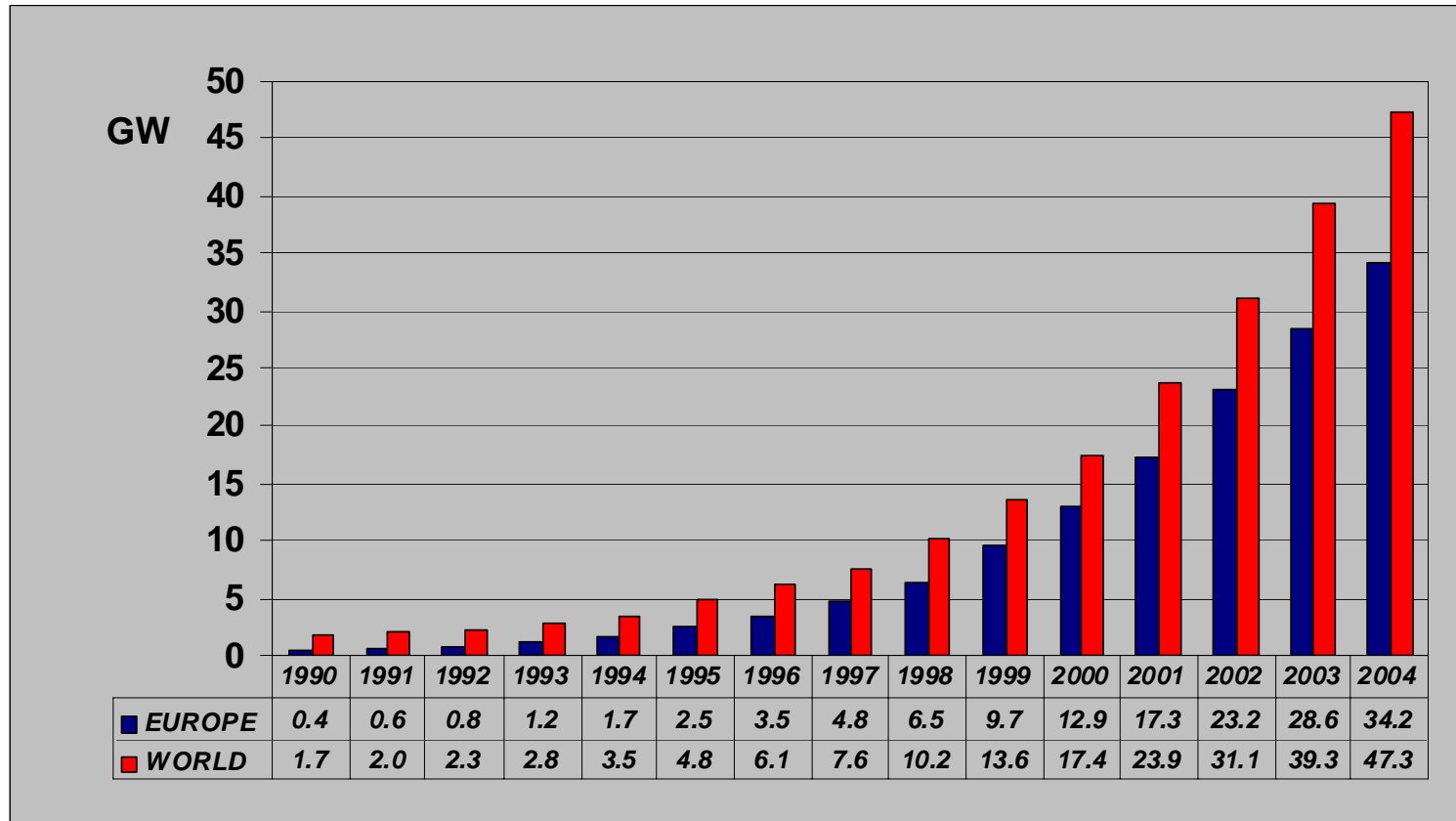


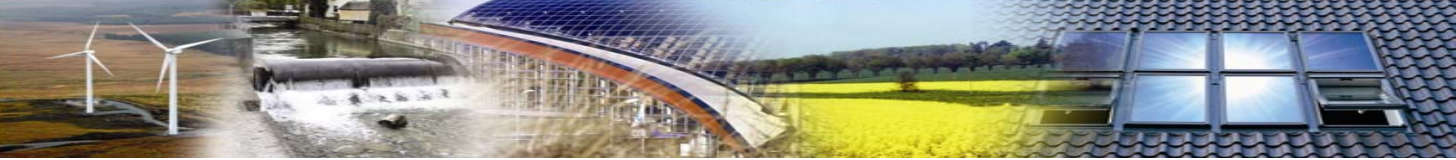
# Total Hydropower Potential by Continent



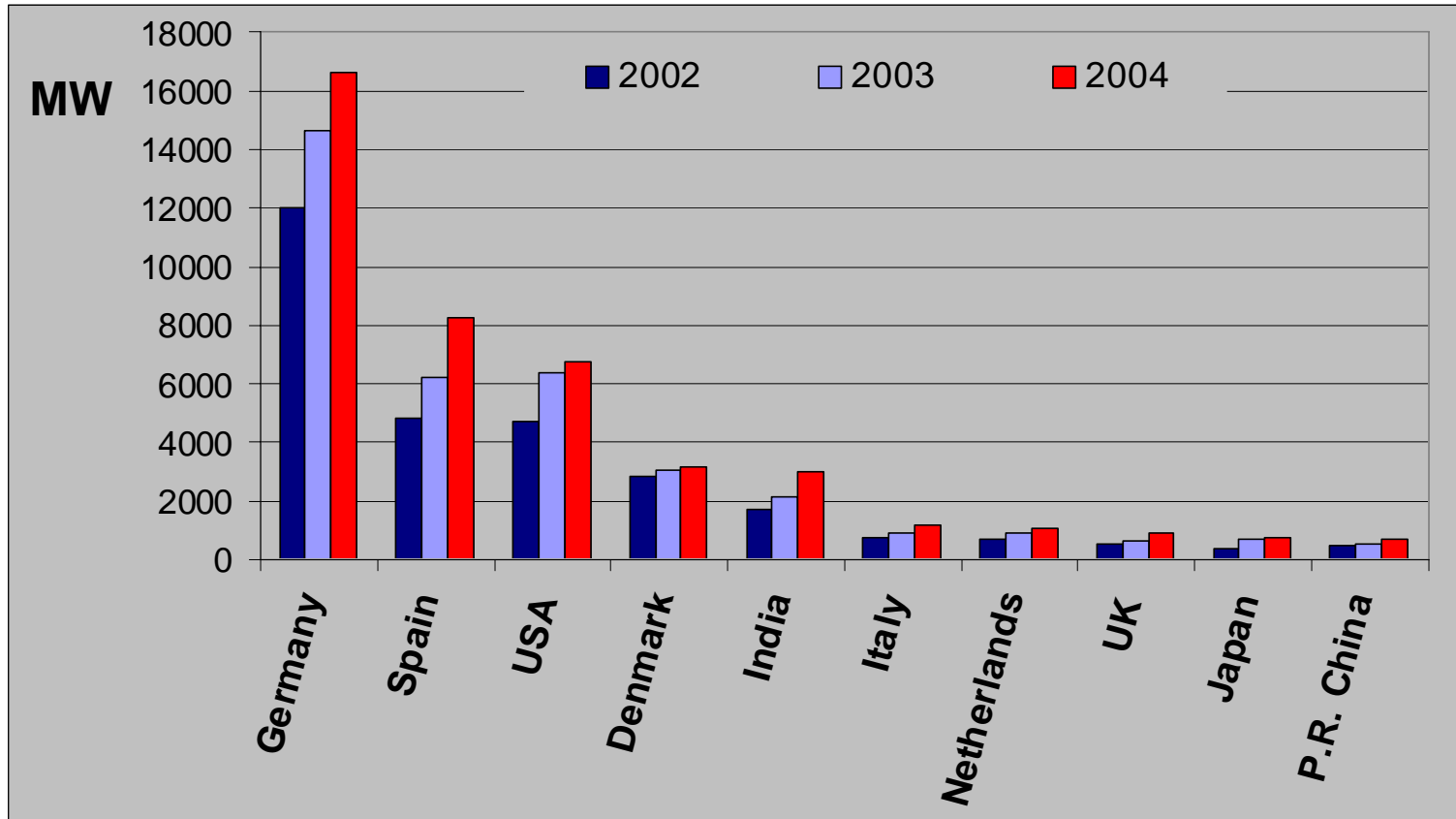


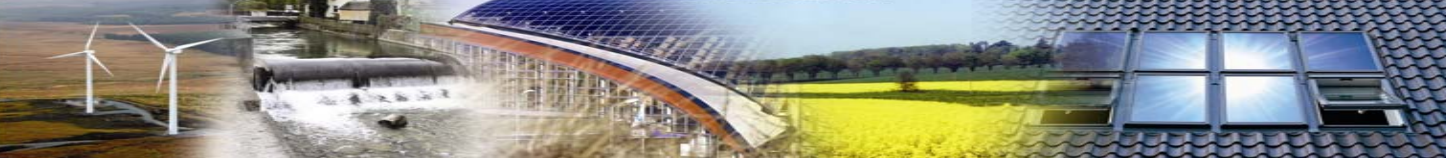
# Cumulative Wind Energy Installed Capacity (MW)



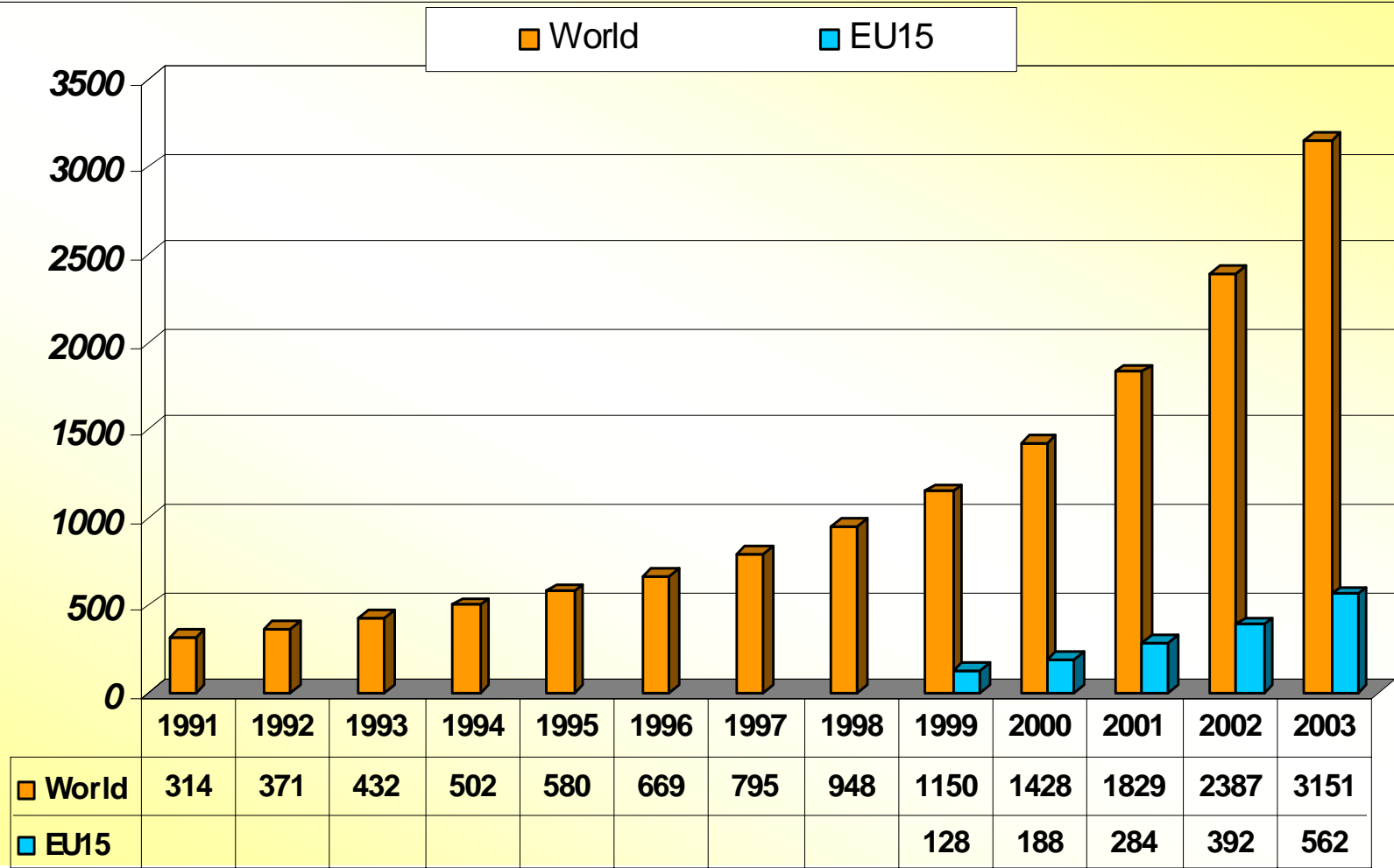


# Top-10 Markets in the World (wind)



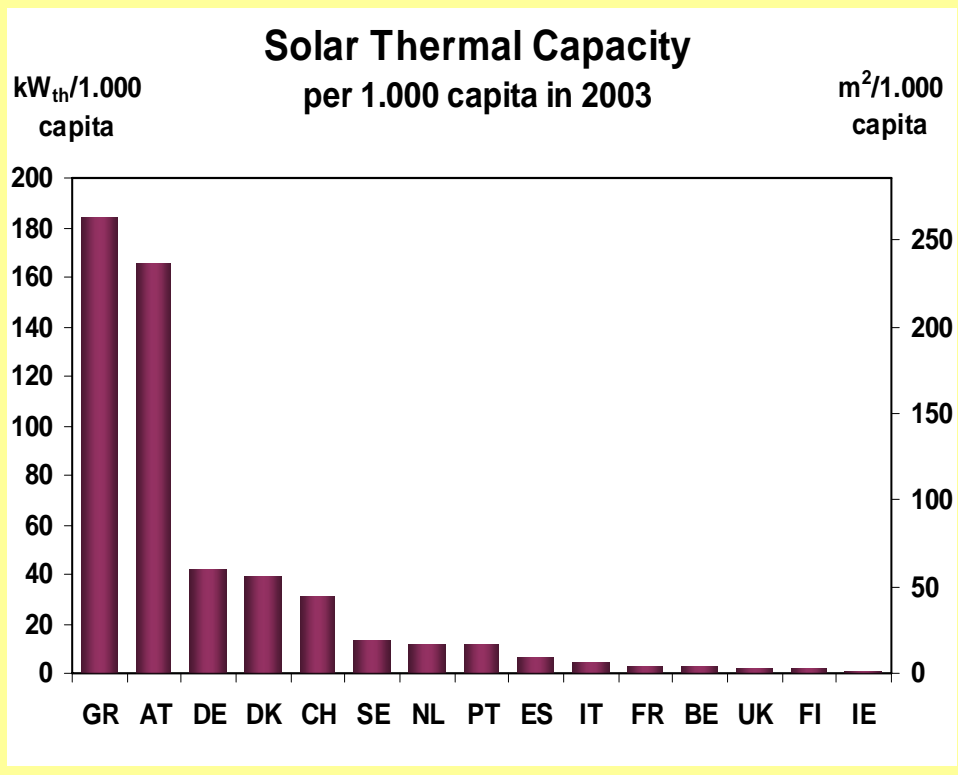
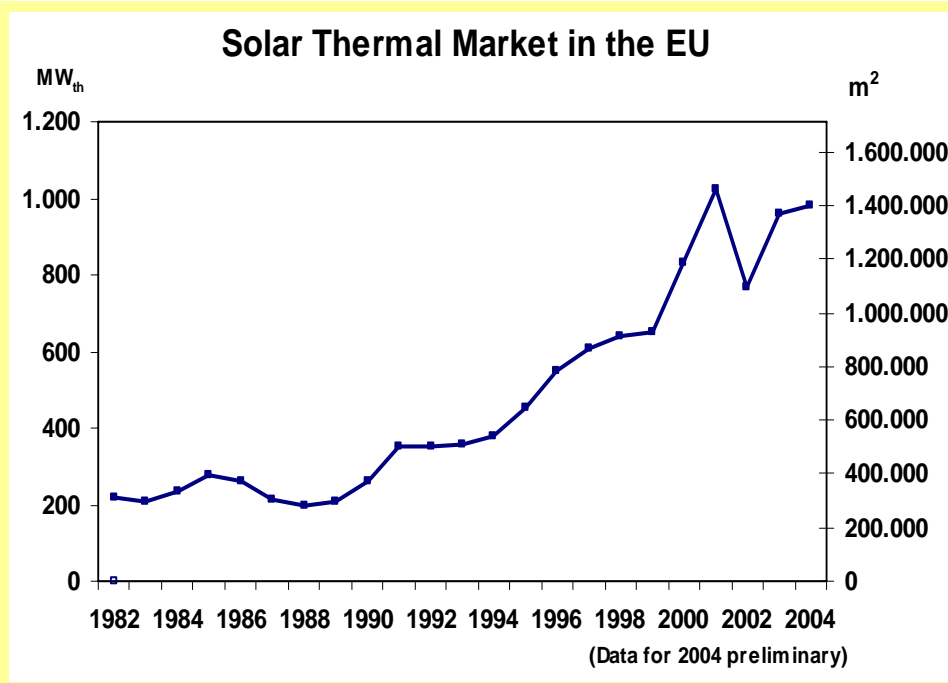


# Cumulative Photovoltaic Installed Capacity (MWp)

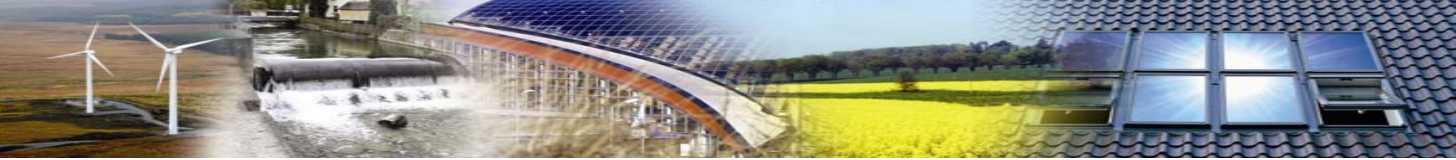




# Solar thermal installations

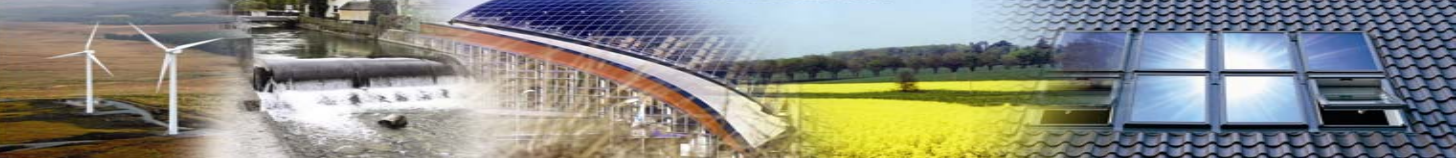


Source: ESTIF (2004)



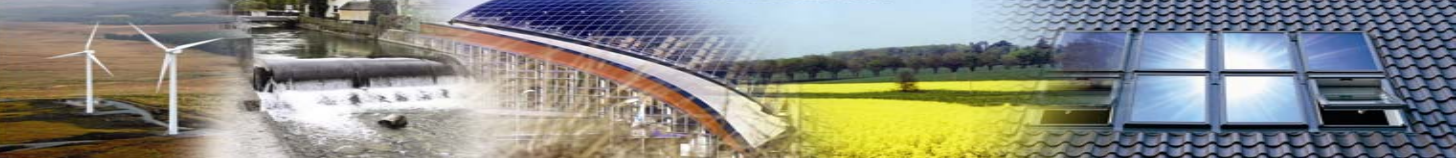
# Future challenges for SHP

- Administrative barriers (difficulty to get licenses for new SHP development)
- Stable & predictable support framework
- Grid access
- Compliance with Water Framework Directive - need for increased efforts in the field of environmental integration



## Conclusions

- SHP plays a vital role in today's RES mix.
- SHP has tangible economic, ecological and social benefits.
- Stable policy framework crucial for any renewable energy/SHP development.



# Further information

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