

Renewable Energy Sources market development 可再生能源市场开发

Christine Lins

Secretary General

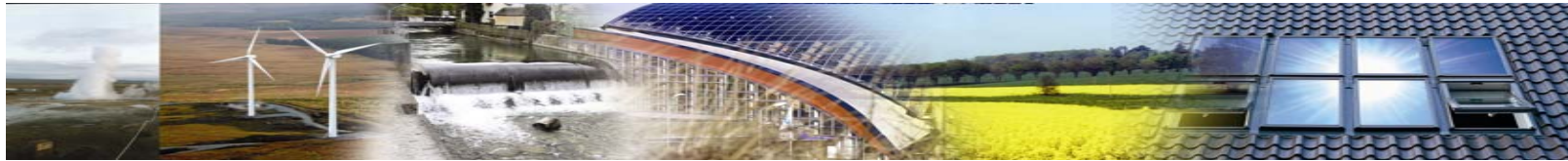
European Renewable Energy Council

欧洲可再生能源委员会 秘书长



SYNERGY Training workshop
Hangzhou, 19-23 April 2003



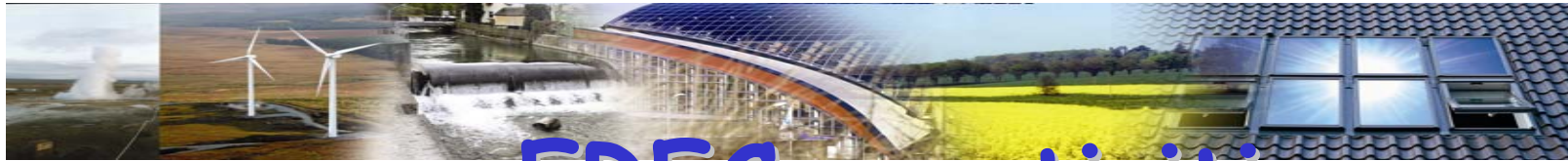


EREC - European Renewable Energy Council

Umbrella organisation representing all RES sectors:

下属可再生能源部门

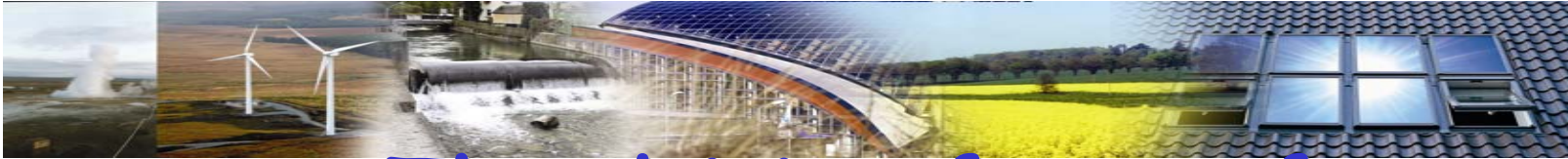
- ✓ **AEBIOM** European Biomass Association 欧洲生物能协会
- ✓ **EGEC** European Geothermal Energy Council 欧洲地热能协会
- ✓ **EPIA** European Photovoltaic Industry Association
欧洲光电工业协会
- ✓ **ESHA** European Small Hydropower Association 欧洲小水电协会
- ✓ **ESTIF** European Solar Thermal Industry Federation
欧洲太阳热能工业联盟
- ✓ **EUBIA** European Biomass Industry Association
欧洲生物能源工业协会
- ✓ **EWEA** European Wind Energy Association 欧洲风能协会
- ✓ **EUREC Agency** European Renewable Energy Research Centres
Agency 欧洲可再生能源研究中心 办事处



EREC - activities

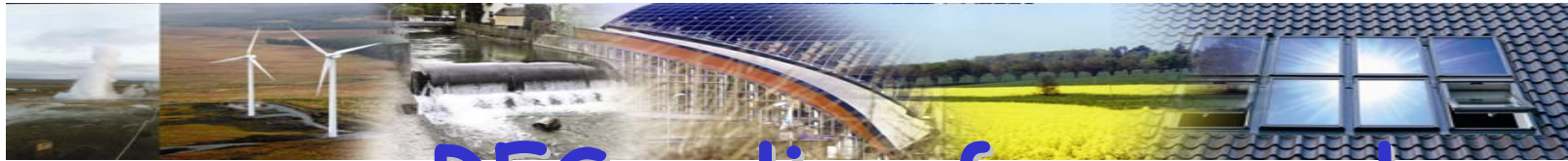
EREC 从事活动

- To act as a forum for exchange of information and discussion on issues related to RES
为可再生能源（**RES**）相关的信息交流和探讨提供平台
- To provide information and consultancy on renewable energies for the political decision makers on local, regional, national and international level
为地方、地区、国家和国际政治决策者在可再生能源方面提供信息和咨询
- Information dissemination on RES issues (organisation of conferences, workshops, publications, etc.)
RES信息传播（组织会议、研讨会、发行出版物等）
- To promote European RES equipment, products and services on world markets
- 促进欧洲**RES**设备、产品和服务的市场建设



The driving forces for a renewable energy policy 可再生能源政策推动力

- **Security of supply - independence from energy imports**
供应保障---摆脱能源进口
- **Protection of environment - including the necessity to reduce greenhouse gas emissions**
环境保护---包括减少暖室气体排放
- **Regional and local development**
地方及区域发展
- **Industrial development**
工业发展
- **Employment**
就业



RES policy framework

RES 政策构架

RES White Paper (1997) 1997年RES白皮书

↳ **To double the share of renewable energy from 6% to 12% of gross energy consumption in Europe (EU-15) by 2010**

↳ **到2010年欧洲可再生能源消费占总能源消费从6%上升到12%**

Green Paper on Security of Energy Supply (2000) 2002 保证能源供应绿皮书

RES Electricity Directive (2001) 2001RES电力指导

↳ **To establish a framework to increase the share of renewables electricity from 14% to 22% of gross electricity consumption by 2010**

↳ **确立一个框架，到2010年使可再生电力占总能源消费从14%上升到22%**

Directive on the energy performance of buildings (2002) 民用能源效能指导

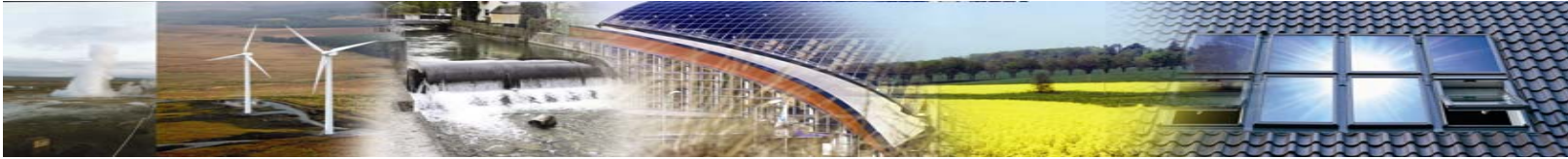
↳ **To realise a savings potential of around 22% by 2010 for energy used in heating, air-conditioning, hot water and lighting**

↳ **到2010年在供暖、空调、热水和电灯方面节省能源22%**

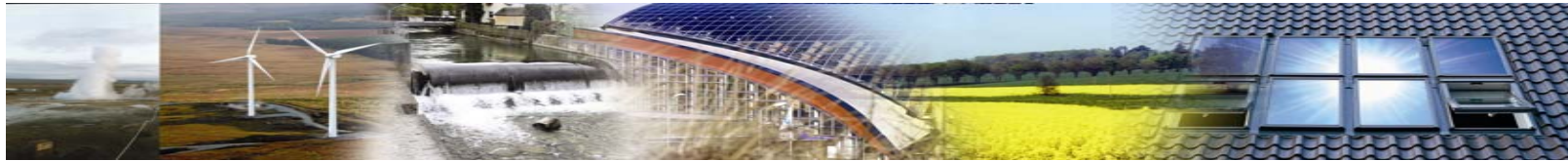
Directive on liquid biofuels (2003) 2003年液体生物能源指导

↳ **To achieve a share of 5.75 % of biofuels for transport in the total amount of fuels in Europe by 2010**

↳ **到2010年，使液体生物能源占欧洲总交通能源的5.75%**



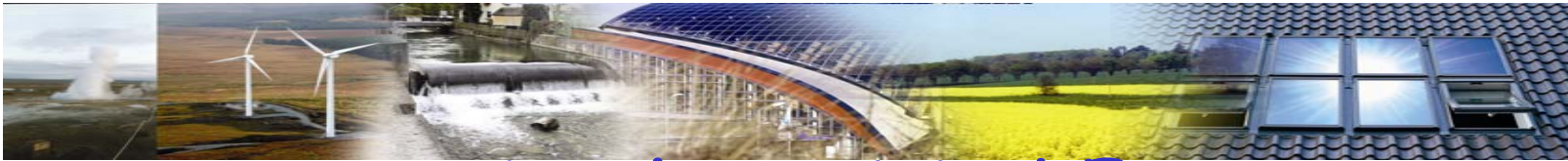
The Market of Renewables (1990 - 2004) 可再生能源市场



Renewable Energy benefits

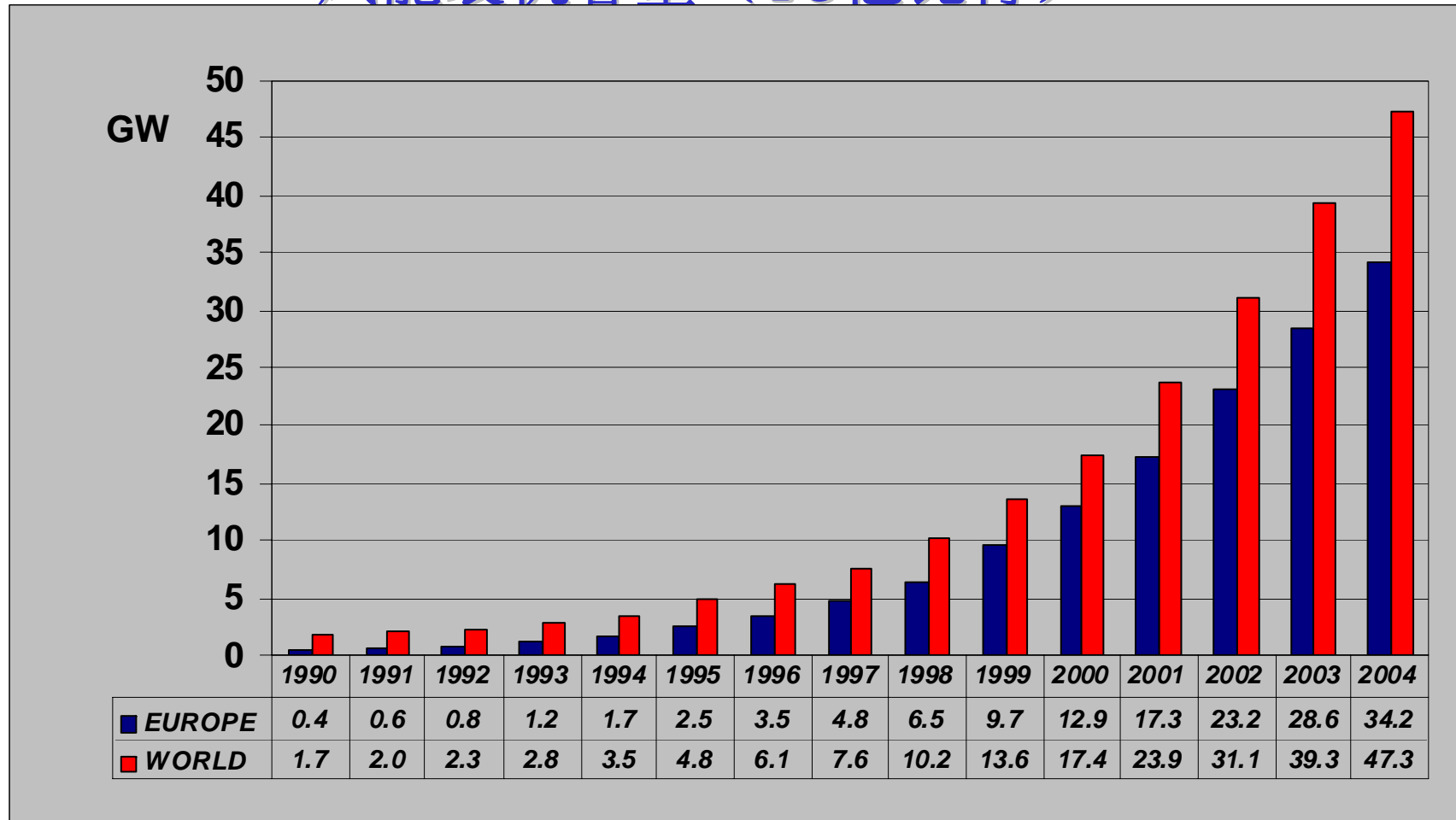
可再生能源效益

- ✓ **Europe is global leader in RES development**
欧洲在世界可再生能源开发方面处于领先地位
- ✓ **200.000 jobs in Europe already now**
目前提供了20万个工作岗位
- ✓ **Annual turnover of 15 billion € already now**
每年150亿欧元营业额
- ✓ **Innovative Business Sector**
是一个创新的商业部门
- ✓ **Economic growth and regional development**
促进了经济增长和区域发展

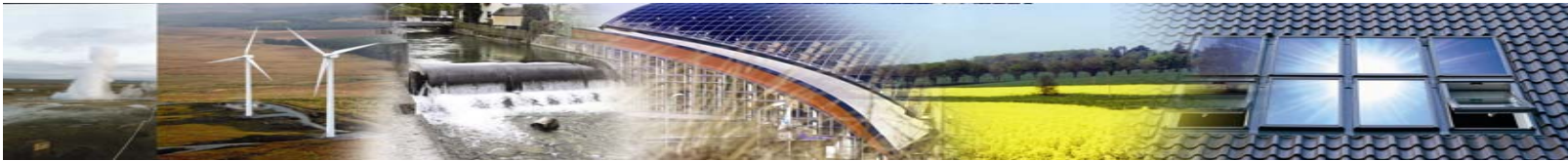


Cumulative Wind Energy Installed Capacity (GW)

风能装机容量 (10亿瓦特)

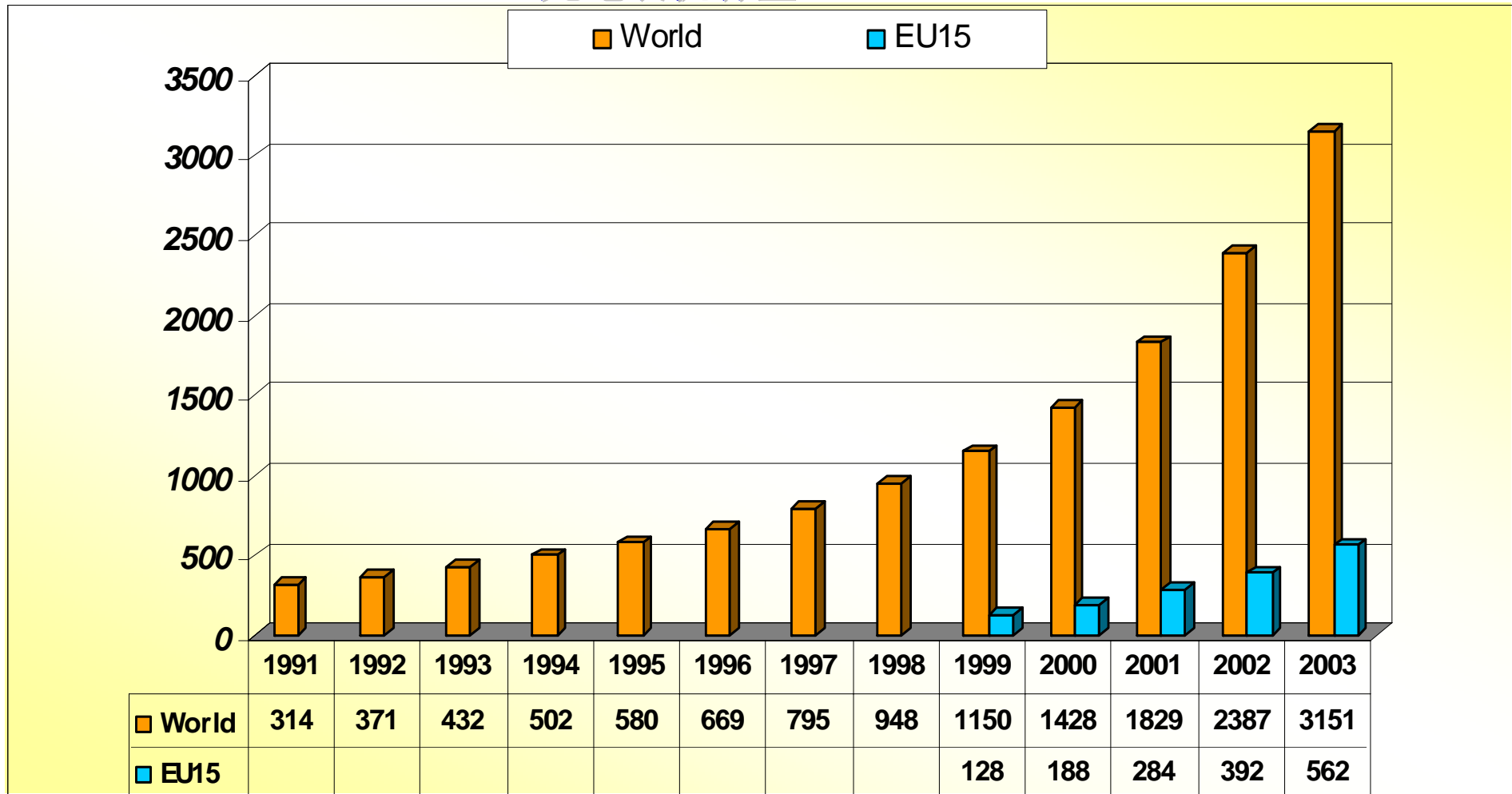


Source: EWEA

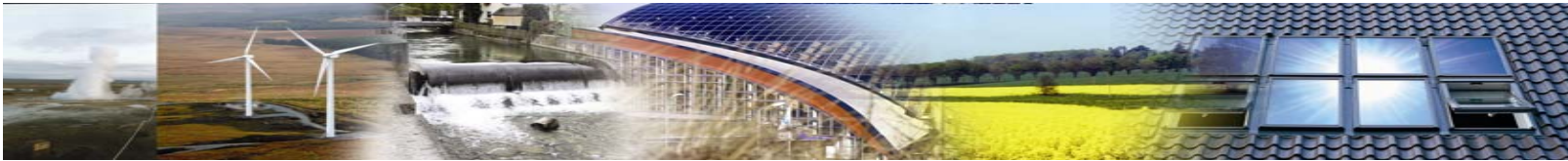


Cumulative Photovoltaic Installed Capacity (MWp)

光电装机容量 (MWp)

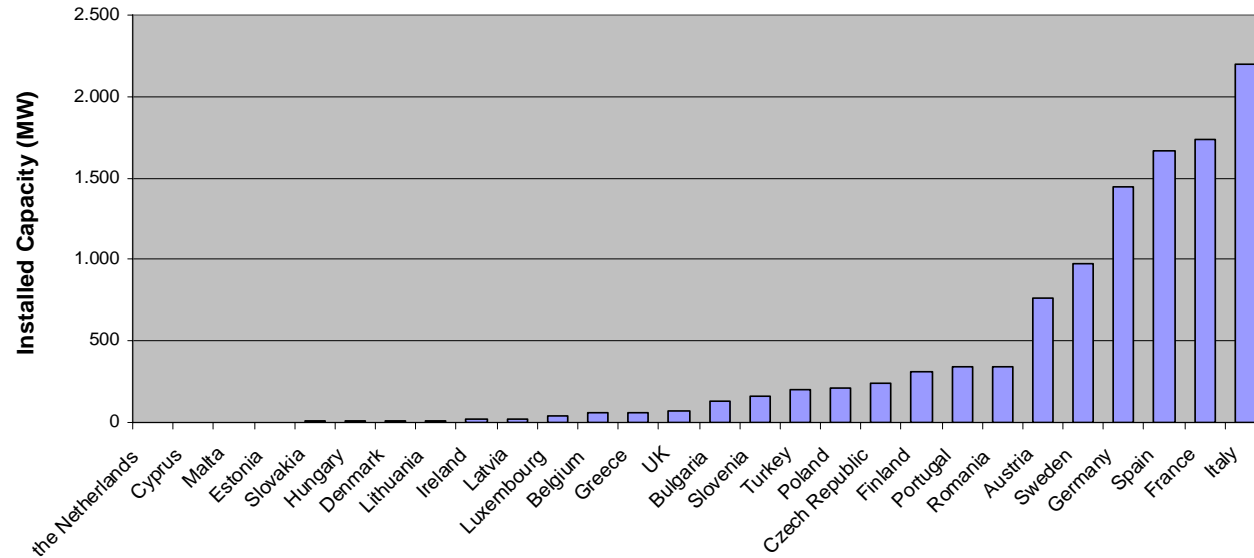


Source: Eurec Agency, EPIA, Observ'ER (2004)

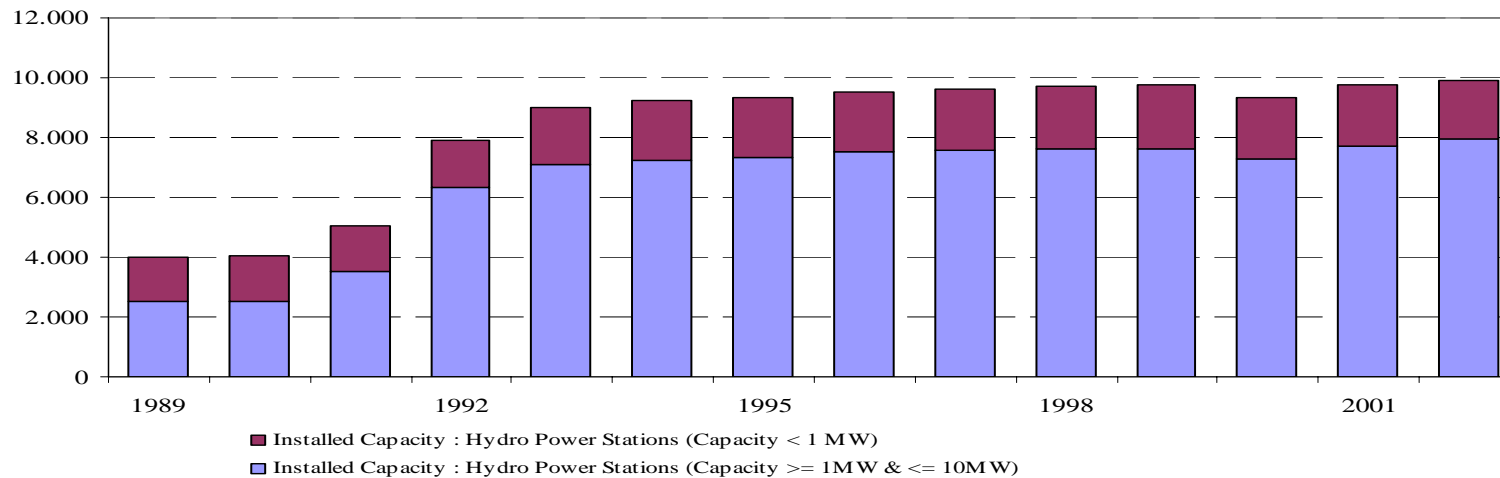


Small Hydropower (SHP) installed capacity (MW)

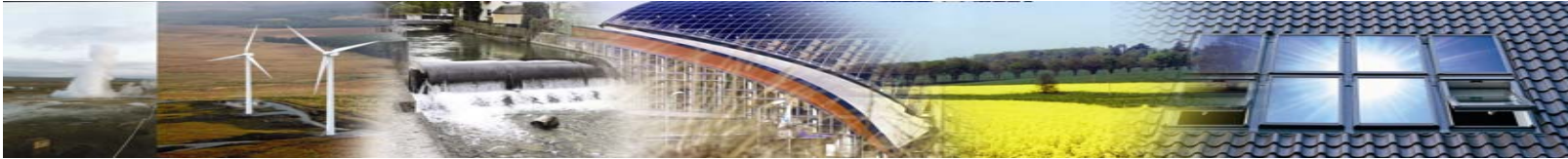
EU Member States SHP installed capacity (MW)



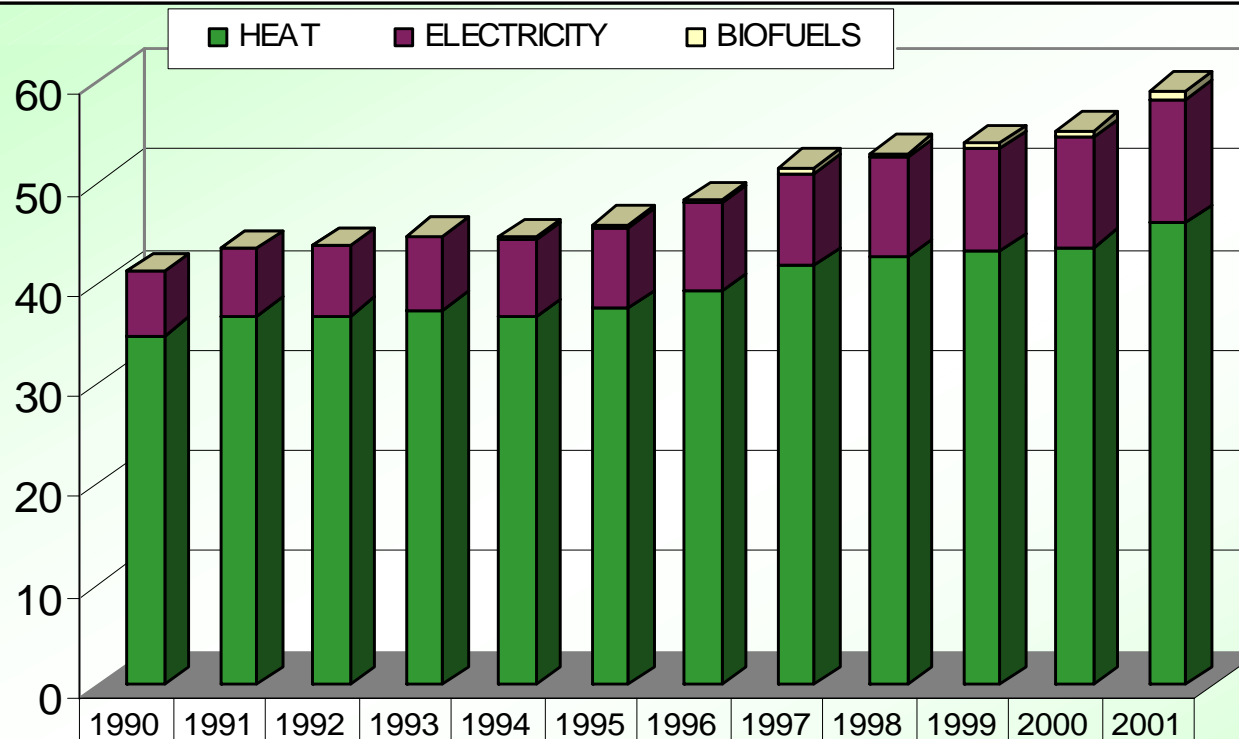
Cumulative SHP installed capacity in EU-15 (MW)



Source: ESHA (2004)

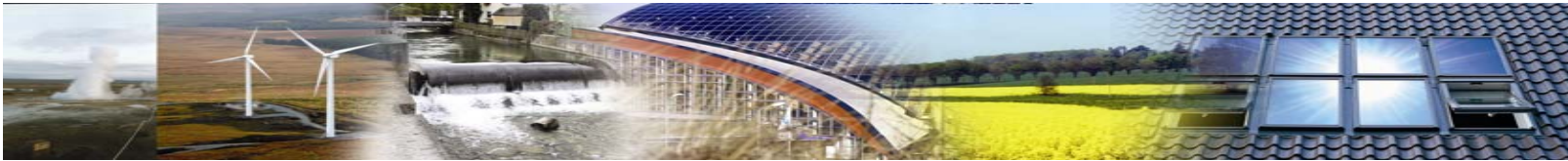


Cumulative Biomass Utilisation in (Mtoe) 生物能源 (百万吨)



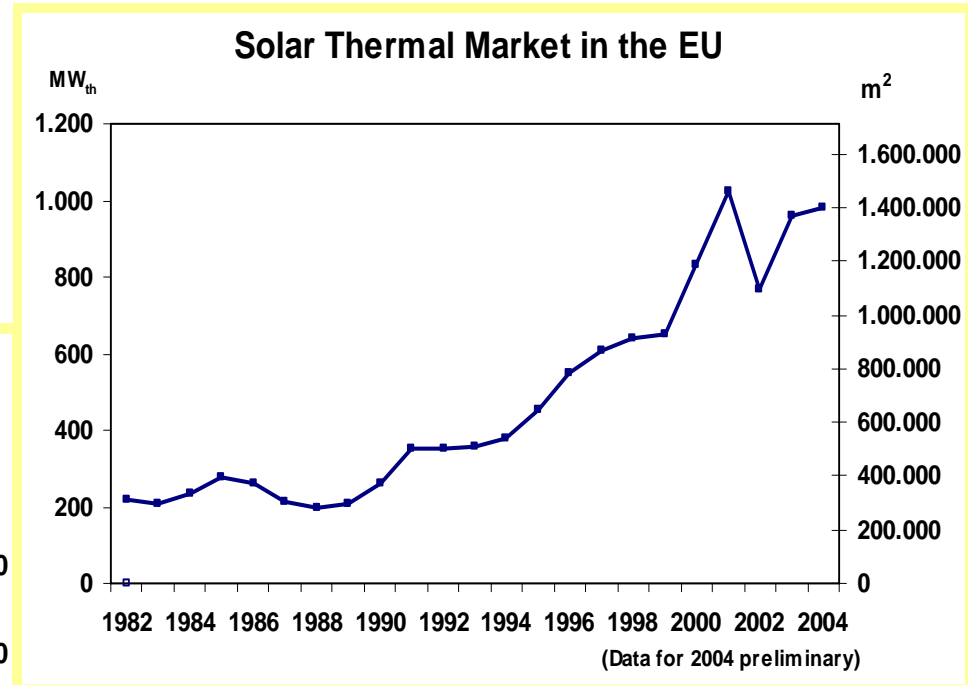
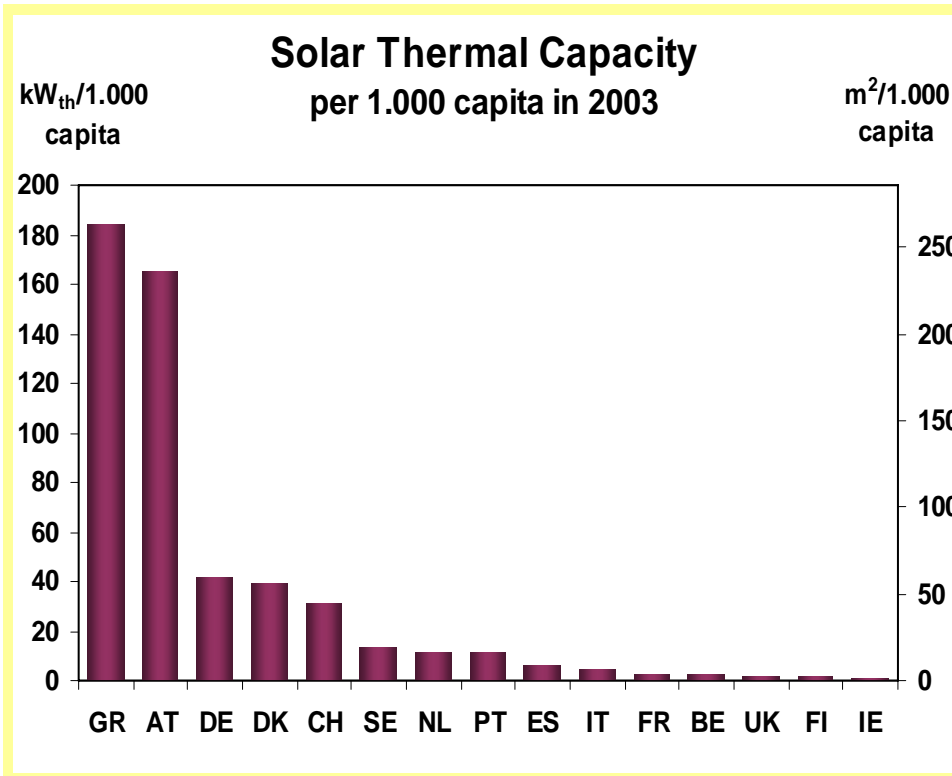
■ BIOFUELS	8E-04	0,011	0,015	0,039	0,242	0,268	0,348	0,469	0,445	0,497	0,663	0,84
■ ELECTRICITY	6,4	6,6	6,9	7,3	7,7	8,2	8,7	9,3	9,9	10,3	10,8	12,3
■ HEAT	34,7	36,7	36,6	37,3	36,6	37,3	39,1	41,6	42,5	43,0	43,5	45,9

1990-2001: Eurostat

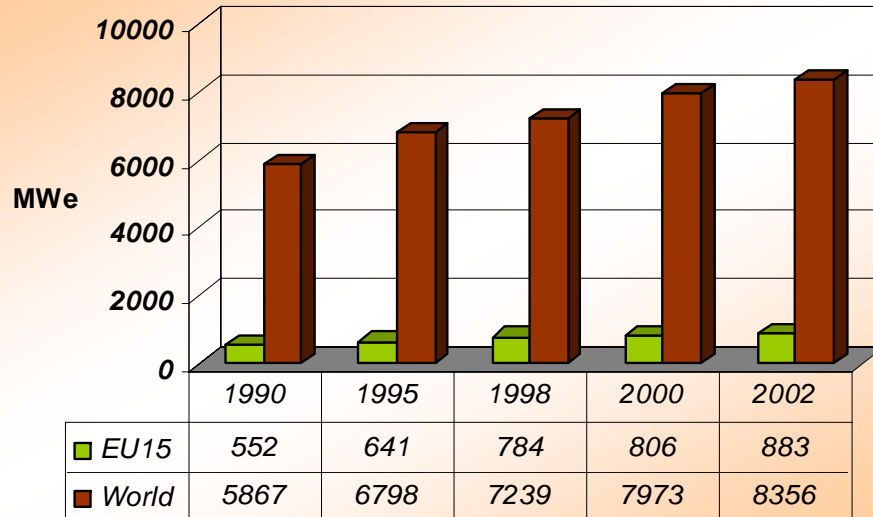
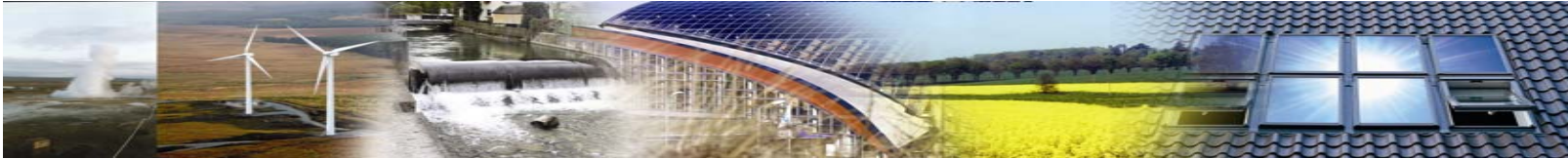


Solar thermal installations

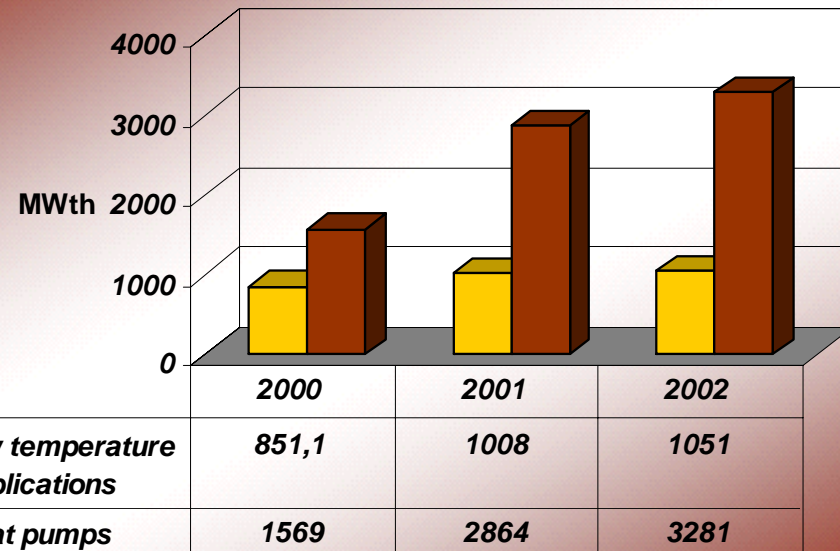
太阳能热能装机容量



Source: ESTIF (2004)



Geothermal energy



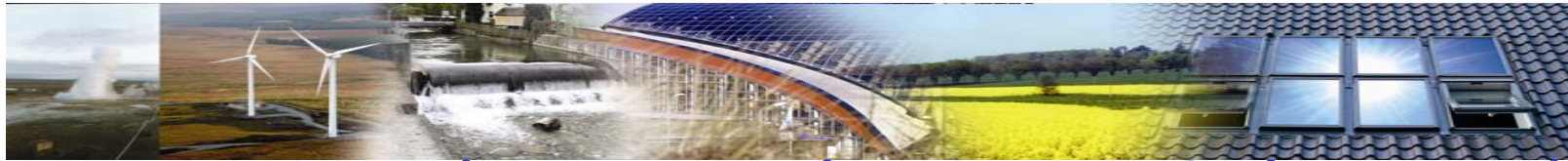


Evaluation of Development Rates of RES in Europe up to the present

欧洲RES开发速度评估

- **Hydro, Geothermal & PV: 水能、地热能&光电**
 - Development rates as expected 发展速度与预期一致
 - Should reach the targets 应该能达到目标
- **Biomass & Solar Collectors: 生物能&太阳能**
 - Development rates below White Paper targets 发展速度低与白皮书目标
 - Stronger political support needed 需要政策大力支持
 - Reaching the targets seems problematic without mobilisation of the EU Agriculture infrastructures (resource supply) and without large industries involvement (conversion & utilization) 如果欧盟农业基础设施没有动产业化，没有其他行业广泛参与，目标将难以实现
- **Wind Energy: 风能**
 - Development rates largely above targets 发展速度远远大于目标
 - Should exceed target 会超过制定的发展目标

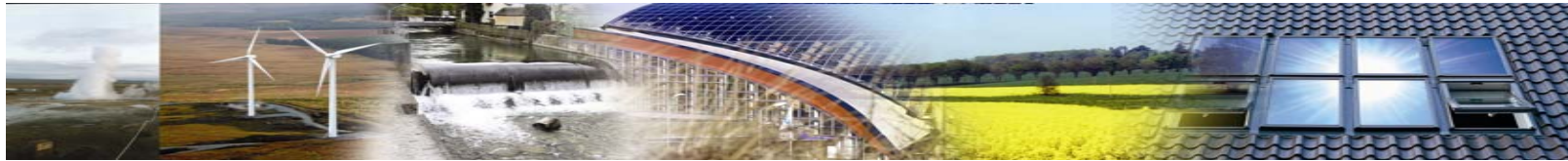
Key role of political RES framework



Market Development-Policy Link

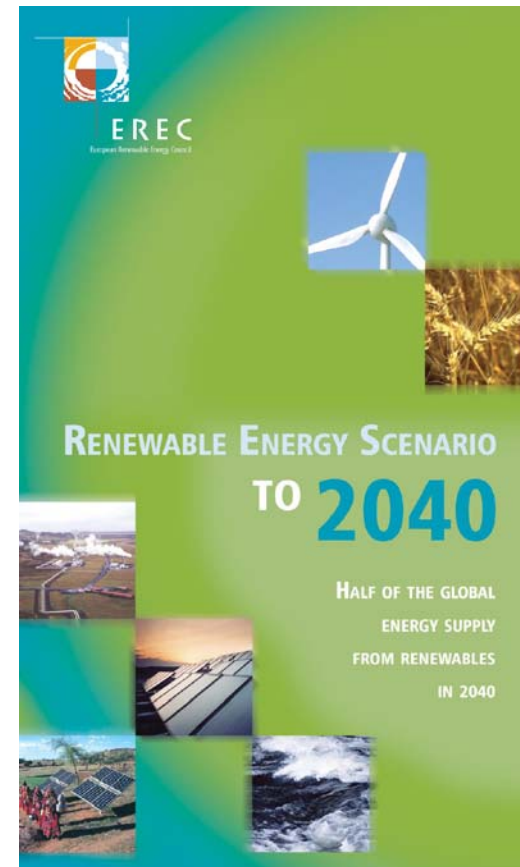
市场开发—政策

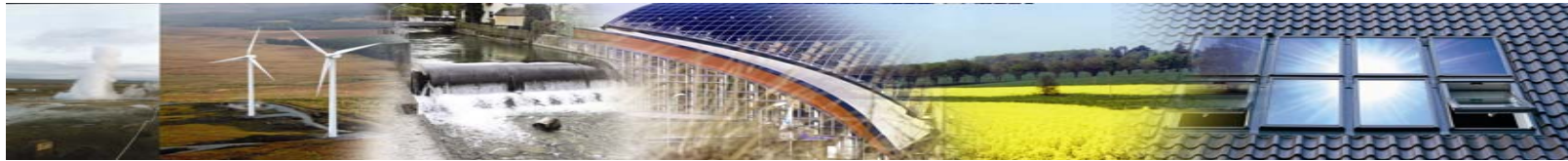
- **RE has the technological potential to play a major role in the future energy mix as mainstream energy source.**
可再生能源技术潜力巨大，将来可能成为能源主流来源
- **RE is integral part of the energy supply in many countries today.**
目前很多国家的可再生能源已成为能源供应主要方面
- **RE has tangible economic, ecological and social benefit.**
可再生能源有切实的经济、生态和社会效益。
- **BUT: RE market development depends on a coherent, predictable, supportive political & legal framework.**
但是：RE发展依赖于先见的，连贯一致的政策和法律支持
- **International collaboration is a MUST!**
必须开展国际合作



EREC Renewable Energy Scenario to 2040

到2040年EREC的 可再生能源情况



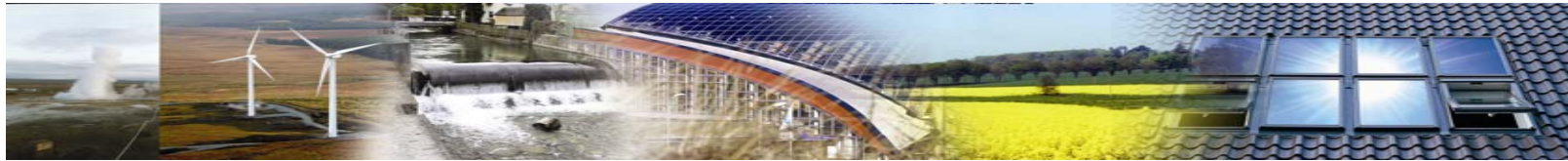


The Advanced International Policies Scenario (AIP Scenario)

高级国际发展政策情况 (AIP)

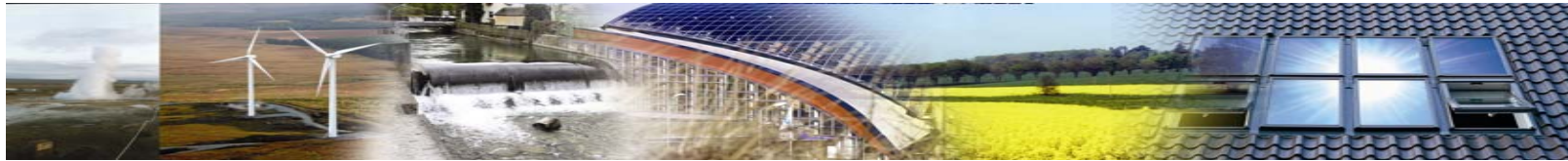
Half of the global energy supply by renewables in 2040

2040年将占世界总能源的一半



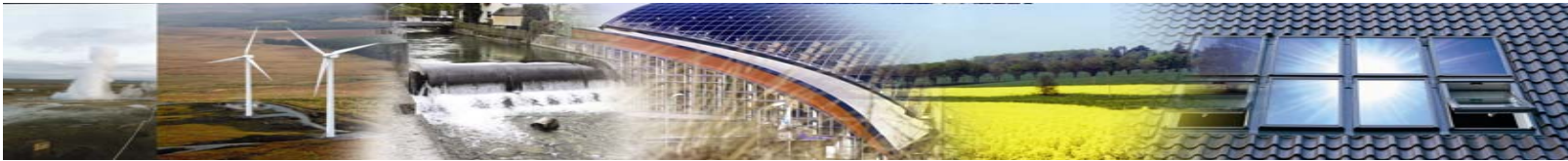
AIP Scenario assumptions AIP情况

- ambitious growth rates 很快的发展速度
- additional support measures 其他支持措施
- regions already active in the promotion of renewables will increase their efforts 更进一步促进区域可再生能源发展
- Higher prices for conventional energy supply 传统能源价格更高
- growing support for electrification of the poor regions by renewables 通过可再生能源促进贫困地区电气化发展
- Implementation of the Kyoto protocol and additional measures 京都议定书和其他措施的执行
- International cooperation 国际合作
- total energy consumption are based on a scenario from the IIASA 总能源消费将基于IIASA的情况

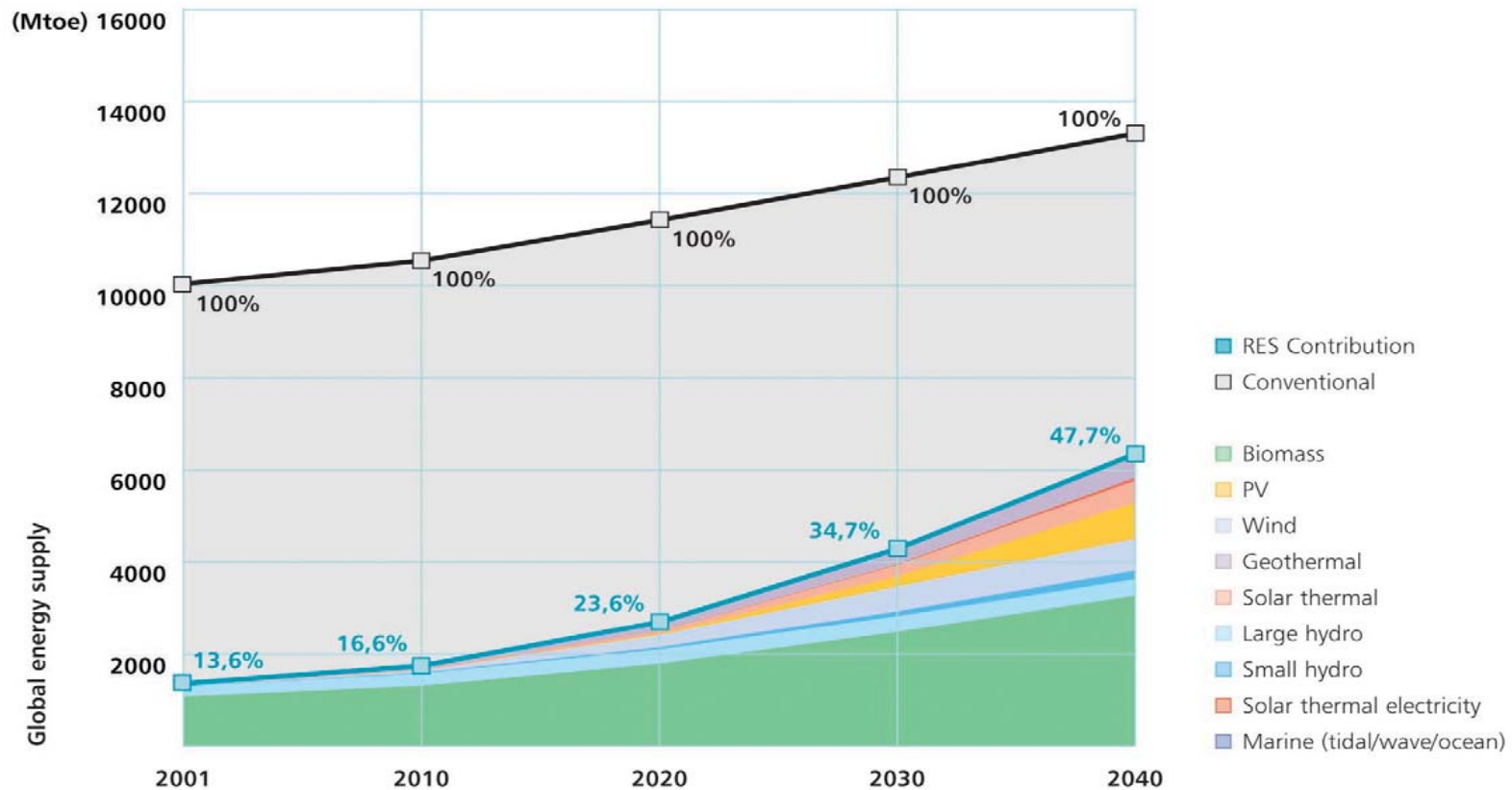


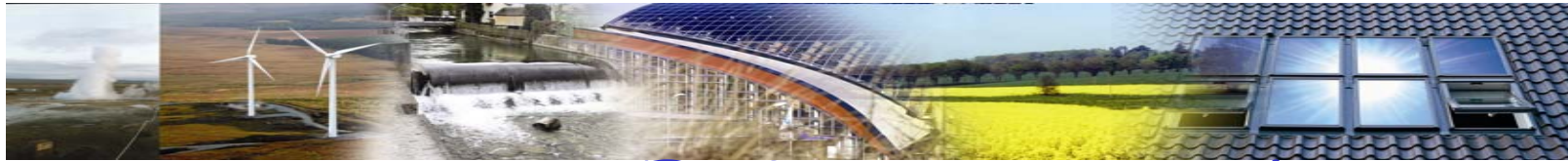
Growth rates of different technologies in AIP Scenario AIP情况下不同技术的增长速度

	1996-2001	2001-2010	2010-2020	2020-2030	2030-2040
Biomass	2%	2.2%	3.1%	3.3%	2.8%
Large hydro	2%	2%	1%	1%	0%
Small hydro	6%	8%	10%	8%	6%
Wind	33%	28%	20%	7%	2%
PV	25%	28%	30%	25%	13%
Solar thermal	10%	16%	16%	14%	7%
Solar thermal electricity	2%	16%	22%	18%	15%
Geothermal	6%	8%	8%	6%	4%
Marine (tidal/wave/ocean)	-	8%	15%	22%	21%



The contribution of Renewable Energy Sources to the world energy supply in 2040 - Projections in Mtoe - Advanced International Policy Scenario





SYNERGY project China

中国可再生能源项目

Project title: Building-up the structures for commercialising RE in China 建立中国可再生能源商业化结构

Planned activities: Policy advice 政策建议
计划活动: Capacity building (training)能力建设 (培训)
Identification of RES projects RES项目鉴定
Identification of financing possibilities (e.g. CDM) 资金鉴定可能性 (如CDM项目)

Partners:

合作方



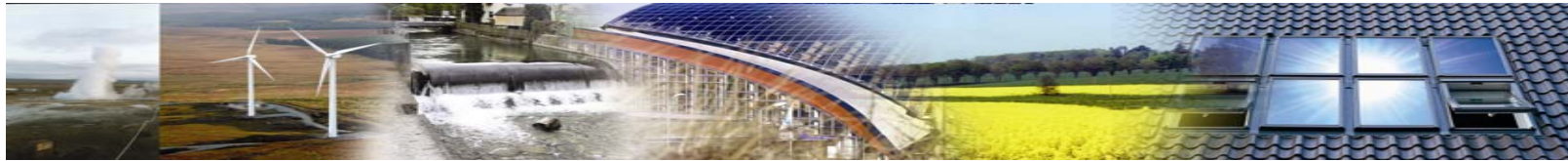
EREC - European Renewable Energy Council
ESHA - European Small Hydropower Association
INSHP - Int. Network for SHP - Hangzhou
CREIA - Chinese Renewable Energy Industry Association



Work packages

工作内容

1. Policy advice in RE issues to Chinese government and administration 向中国政府提供RE相关政策建议
2. Identification of RES projects in China which are interesting for private local ownership structures - training (18 - 23 April 2005, Hangzhou)
中国RES项目鉴定（杭州 2005，4月18-23培训）
3. Organisation of a financing roundtable in Brussels with the objective to attract financing (19-20 May 2005, Brussels)
组织布鲁塞尔融资圆桌会议（2005，5月19-28）
4. Developing feasibility studies, business and financing plan for 20 renewable energy projects in China
开展中国20个可再生能源项目的可行性研究、商贸和融资计划



For more information

更多信息请点击

www.erec-renewables.org

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