

Renewable Energy Journal

TARGETING 12% IN EUROPE 2010 N° 11 - NOVEMBER 2001

European progress

Update with
Günther Hanreich, DG TREN

Report

Chieti, Italy: a united front
for the environment

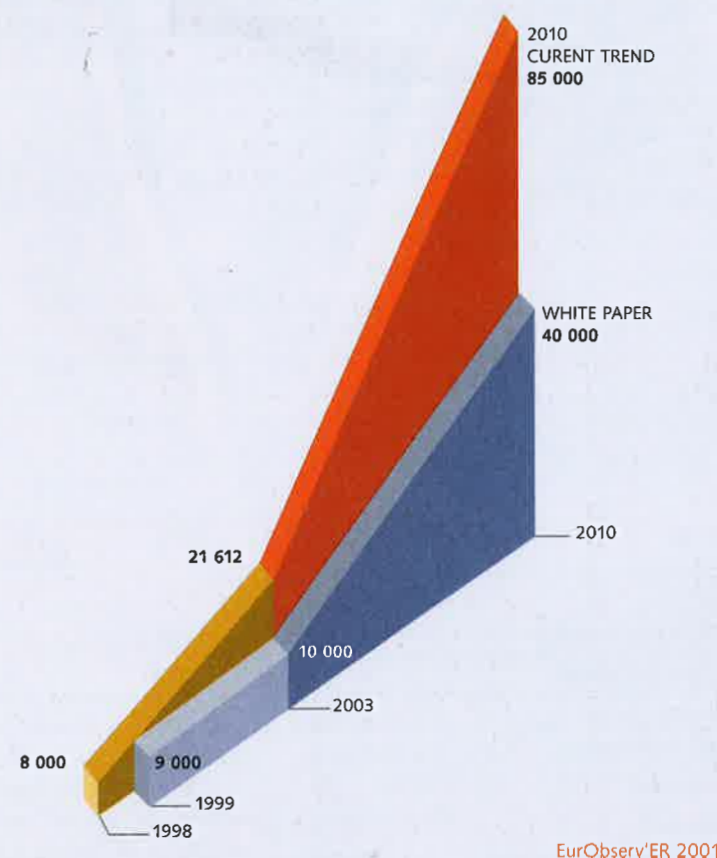
WIND POWER
THE RACE TO
THE NORTH SEA



| Firm | Nationality | MW sold in 1999 | Market share in 1999 |
|--------------------|---------------|-----------------|----------------------|
| NEG Micon | Danish | 761 | 19.4% |
| Vestas | Danish | 652 | 16.6% |
| Gamesa | Spanish | 494 | 12.6% |
| Enercon | German | 488 | 12.5% |
| Enron (Zond/Tacke) | American | 360 | 9.2% |
| Bonus | Danish | 338 | 8.6% |
| Nordex | Danish/German | 306 | 7.8% |
| Made | Spanish | 218 | 5.6% |
| Ecotecnia | Spanish | 59 | 1.5% |
| Dewind | German | 58 | 1.5% |

EurObserv'ER 2001

2 - Top 10 manufacturers in 1999



3 - Comparison of the current trend with the goals in the White Paper



EurObserv'ER is a consortium made of four European organisations devoted to the promotion of renewable energies within the European Union. These four organisations are:

- Observ'ER, the Observatory of Renewable Energies (Paris);
- Eurec Agency, the European association of renewable energy research centers (Brussels);
- Eufores, European forum for renewable energy sources (Brussels);
- O.Ö. Energiesparverband (Linz, Autriche).

The EurObserv'ER barometer consists in regular publication in the European press of indicators reflecting the current dynamism of renewable energy sectors (solar, wind, hydraulic, geothermal and biomass) worldwide and within the European Union.

The EurObserv'ER barometer may be downloaded in PDF format at the following addresses: www.observ-er.org - www.agores.org - www.eurec.be

> 3 650 MW supplementary installed capacity, raising the world total to 17 241 MW. The European Union remains the locomotive with respect to wind power, with an additional 3 219 MW installed during the year 2000, reaching a total capacity of 12 611 MW (i.e. 72% of worldwide installed capacity). Asia is developing its sector more slowly, but is showing a nearly 20% increase). On the other hand, results from the United States are disappointing, with only an additional 76 MW. The explanation for this is simple: the tax credits granted to favour wind power development in the United States paused momentarily from January to June 2000.

A FAST GROWING INDUSTRY

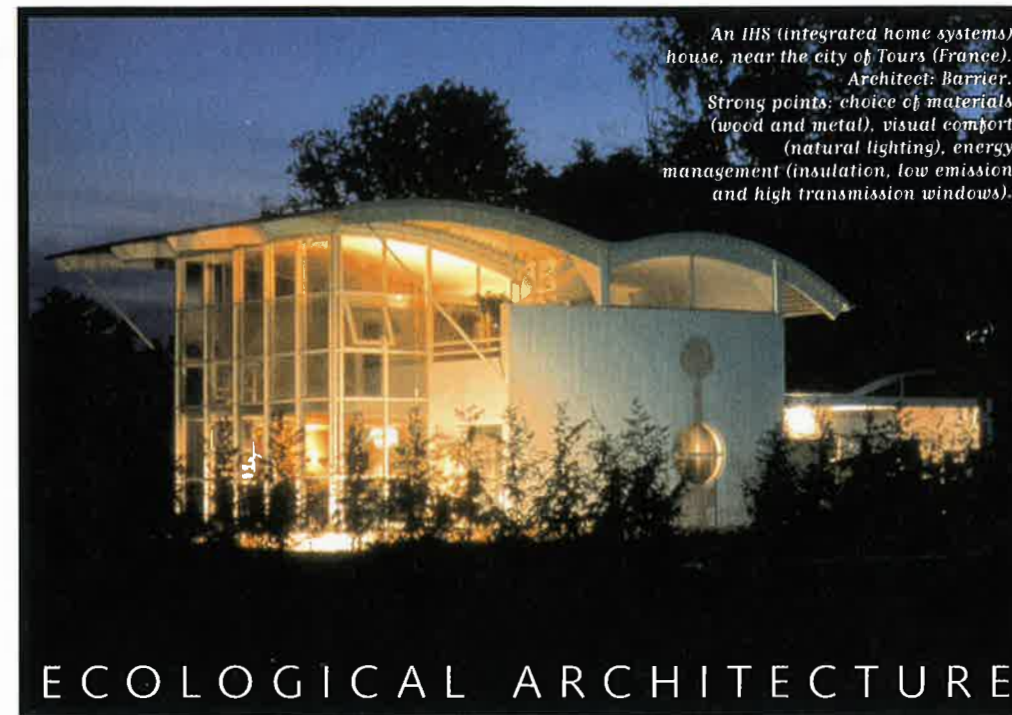
As far as the industrialists are concerned, the results are logically the same as those of the market. The amounts of power sold were well higher than those of 1998, and the Spanish actors are taking on increasing importance. The Danish continue to be leaders, even if their domination is not as blatant as in the past. On the other hand, they've kept their top position as leading exporter.

22 000 JOBS IN EUROPE

Economically speaking, in 1999, it is estimated that turnover generated by all of the industrial sector pertaining to wind generator construction was in the neighbourhood of 2.7 billion euros. Employment represents an important part of this sector. The EWEA (European Wind Energy Association) estimates that there are currently more than 22 000 persons working in this sector throughout Europe.

UPWARDLY REVISED AMBITIONS

The European Union is going to have to revise its ambitions upwards. The European Commission target of 10 000 MW installed capacity in 2003 was already passed in 2000 with an installed wind power capacity of 12 611 MW. For 2010, the Danish consulting firm, BTM Consult, is forecasting a total capacity situated in the neighbourhood of 85 000 MW versus the target of 40 000 MW as foreseen in the European Commission White Paper.



An IHS (integrated home systems) house, near the city of Tours (France).
Architect: Barrier.
Strong points: choice of materials (wood and metal), visual comfort (natural lighting), energy management (insulation, low emission and high transmission windows).

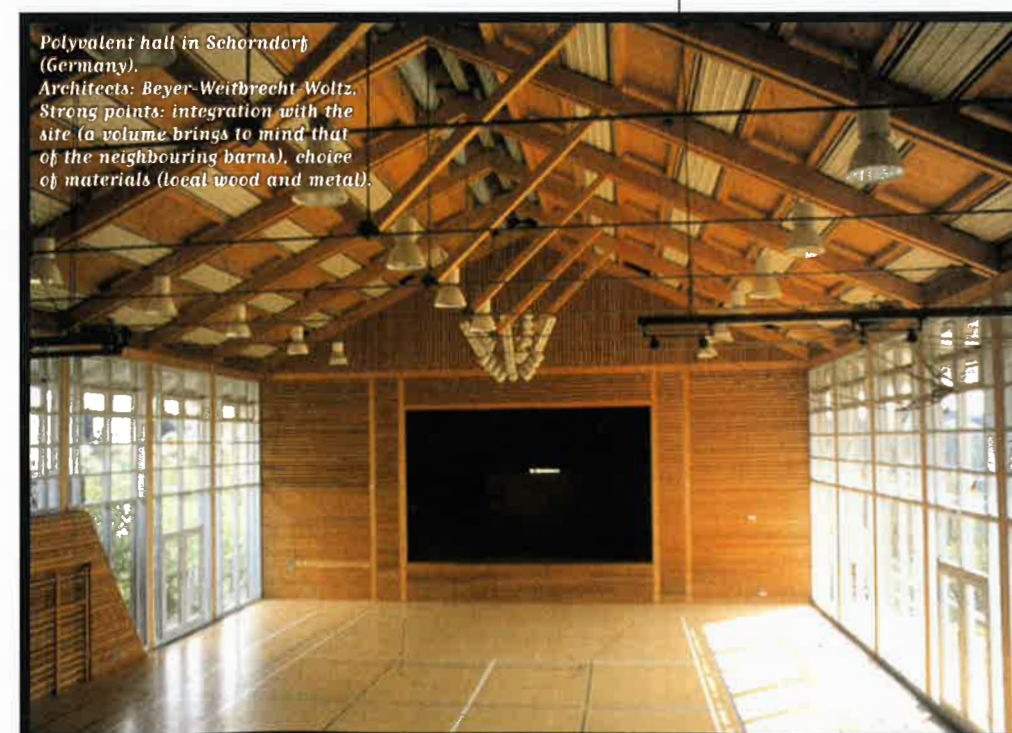
FRENCH ARCHITECT AND JOURNALIST, LIVING IN GERMANY, DOMINIQUE GAUZIN-MÜLLER WORKS WITH SEVERAL EUROPEAN JOURNALS AND PUBLISHERS. A WOODEN ARCHITECTURE AND ECOLOGY ENTHUSIAST, SHE IS THE AUTHOR OF SEVERAL BOOKS ON THESE QUESTIONS. SHE DISCUSSES THE CURRENT STATE OF DEVELOPMENT OF ECOLOGICAL ARCHITECTURE IN EUROPE.



"It is time to put ideas into practice"

RE: Is ecological architecture an approach now accepted within the profession?

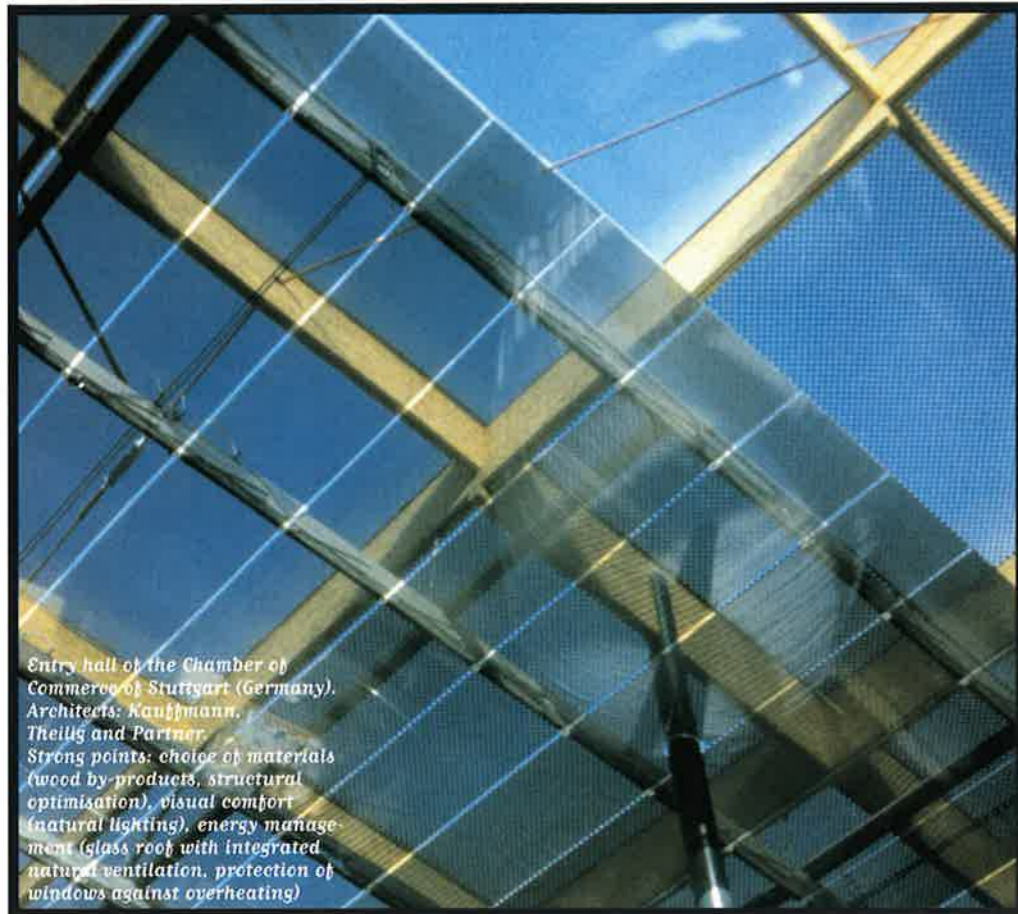
Dominique Gauzin-Müller: In several European countries the need to approach architecture in an environmentally friendly manner has been obvious for a long time. The procedure is empirical in Germany and Austria. In Great Britain, the Netherlands, Switzerland and Finland it is based on an assessment method leading to the award of a label. They use the expression "green building". In France, we are to some extent between the two trends. Ecological architecture is struggling to make its mark and the application of the principles of sustainable development results in an approach that is still relatively theoretical, referred to as "Haute qualité environnementale" (high environmental quality). This "HQE" is not a label, but rather a set of recommendations concerning the integration of buildings into their environment, the choice of materials and construction processes and the comfort of the users, etc.



Polyvalent hall in Schorndorf (Germany).
Architects: Beyer-Weißbrecht Woltz.
Strong points: integration with the site (a volume brings to mind that of the neighbouring barns), choice of materials (local wood and metal).

Is it a major trend for the future, or a movement fated to remain a pioneer?

The application of the principles of sustainable development to architecture, and also to urban planning, is an inevitable change. To ensure the future of coming generations in the industrialized countries and in the developing world, >



Entry hall of the Chamber of Commerce of Stuttgart (Germany). Architects: Kauffmann, Theilig and Partner. Strong points: choice of materials (wood by-products, structural optimisation), visual comfort (natural lighting), energy management (glass roof with integrated natural ventilation, protection of windows against overheating)

> it is essential to conserve natural resources, limit the volume of waste and reduce emissions of greenhouse gases, in particular CO₂. These three objectives concern the construction sector directly. The environmental approach is nothing new. It is based on time-honoured construction traditions. These principles, neglected during the rise of the industrial society, were rediscovered after the first oil crisis, in the early 1970s. A few pioneers at that time built "bioclimatic" buildings using solar power, particularly individual dwellings. Today, in certain countries, ecology is already a growth vector which attracts political and industrial decision-makers. Germany, for example, is investing massively in wind power, solar heating, solar panels and technologies related to green roofs and rainwater recovery. All these sectors offer prospects of economic growth and job creation.

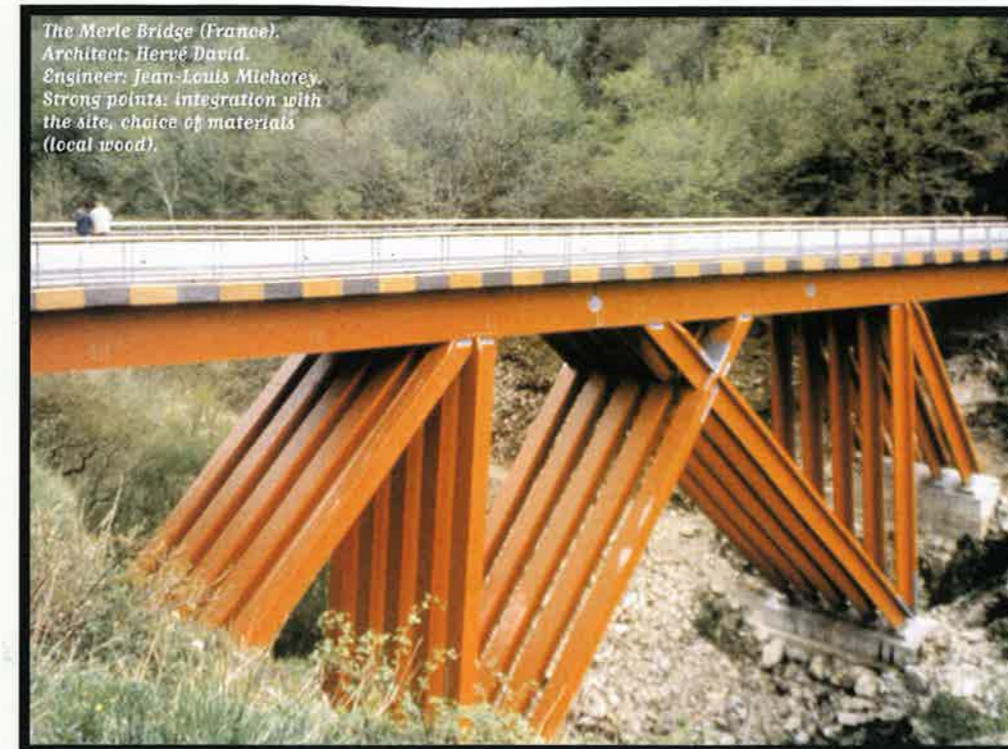
Is there a contradiction between cost optimization and environmentally-friendly construction?

Absolutely not, especially if the calculation is made over the long term, including running costs as well as the capital budget. Experience shows that ecological buildings, which require 3 to 5% additional capital costs, show a return on the extra investment over ten to twenty years through a significantly lower operating budget (utilities and maintenance). These additional costs are explained by the use of renewable materials, the improved heat insulation and draughtproofing, the low-emissivity, high-transmission double glazing, the energy- and water-saving appliances, etc. These investments can be partially offset by careful choice of location, orientation and glazed surfaces, by compact design reducing heat loss and by

« Today, ecology is a growth vector which attracts political and industrial decision-makers »

A EUROPEAN PANORAMA

« *This is a book that will make a mark* », is the judgement of a French architect who has extensive knowledge of Haute qualité environnementale (high environmental quality). *L'architecture écologique*, by Dominique Gauzin-Müller, is a valuable general survey of European practices in the field. It reviews the stakes and the prospects of the approach, the question of urban planning, of architecture, examines 23 examples in nine European countries and gives a detailed description of the French "Haute qualité environnementale" concept. This work, which will be of interest to owners, urban planners, architects, design offices, etc., also generates a minor event in the world of technical publishing, since it has a print run of 10 000 copies, first in French, then in German (*Nachhaltigkeit in Architektur und Städtebau. Entwurf, Konstruktion, Beispiele*) and English (*Sustainable Architecture and Urbanism. Design, Construction, Examples*). Available in French from the beginning of November. Approximately 400 illustrations. The English and German (Birkhäuser Verlag, Basel, www.birkhauser.ch) versions will be published in 2002.



The Merle Bridge (France). Architect: Hervé David. Engineer: Jean-Louis Michotey. Strong points: integration with the site, choice of materials (local wood).



L'architecture écologique, 29 exemples concrets
Editions du Moniteur, Paris,
tél. : + 33 1 40 13 33 72,
www.editionsdumoniteur.com
2001, 280 p., 59 euros.

rainwater recovery. Optimization of the quantities of materials used and prefabrication to reduce construction time, nuisance and waste can also help. In Stuttgart, all educational and sports buildings constructed over the last ten years have insulation increased by 25% compared with the regulations, which are already more restrictive than in countries like France. The savings generated on heating costs are estimated at 30% per year. Extensive use is made of wood in the structure, cladding and interior fittings of most of these facilities. It is a sound, renewable, recyclable but also economical material, needing little upkeep when it is employed correctly. Such arguments run counter to much received wisdom, but they are based on long experience.

The ecological approach seems to restrict the creativity of architecture by the constraints it imposes. Is this inevitable?

The environmental approach calls many practices into question, in all the professions involved in construction, from the political decision-maker to the contractors via the architects, the specialist engineers and the inspection agencies. During the present pioneering phase, it demands a non-negligible investment of time and money by all these parties. But beyond these constraints, this

generous approach also has a formidable creative potential, for example through the pooling of competencies early in projects. It is also enriched by user participation, indispensable for rapid changes in behaviour and for establishing ecological reflexes painlessly. Many projects over the last ten years in Europe have proven that environmentally-friendly buildings can be realised in all types of programme without abandoning contemporary architecture. The European Commission is now working on a directive that will impose >



The Géoscope in Lanaud (France). Architects: Nouvel and Boucher. Strong points: choice of materials (local wood).