



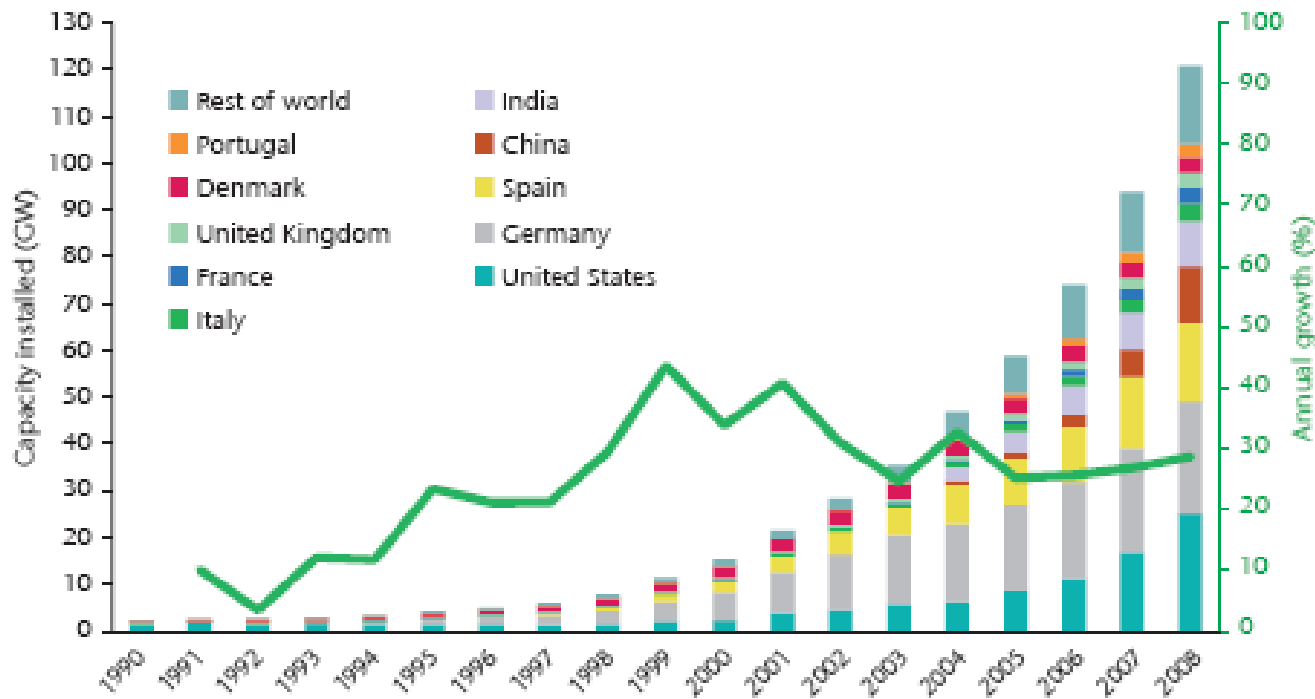
# Technology Roadmaps

**Identify potential, (cost) development, and (RD&D) milestones**



# Examples from Wind Roadmap

Figure 2: Global cumulative capacity growth of wind power, showing top ten countries 1990 – 2008 (GW)



Source: IEA (2008a).



2. Develop publicly accessible database of onshore and offshore wind resources and conditions, with the greatest possible coverage taking into account commercial sensitivities.

Complete by 2015.

Industry and research institutions.

3. Develop more accurate, longer-horizon forecast models, for use in power system operation.

Ongoing. Complete by 2015.

Industry, research institutions and system operators.

## Technology

4. Develop stronger, lighter materials to enable larger rotors, lighter nacelles, and to reduce dependence on steel for towers; develop super-conductor technology for lighter, more electrically efficient generators; deepen understanding of behaviour of very large, more flexible rotors.

Ongoing. Continue over 2010-2050 period.

Industry and research institutions.

5. Build shared database of offshore operating experiences, taking into account commercial sensitivity issues; target increase of availability of offshore turbines to current best-in-class of 95%.

Complete by 2015.

Wind power plant developers, owners and operators, industry associations.

6. Develop competitive, alternative foundation-types for use in water depths up to 40 m.

Ongoing. Complete by 2015.

Industry and research institutions.



# Boundary conditions for Buildings Roadmap:

- TES for building HVAC systems
- Building mass part of 2nd Buildings Roadmap
- Existing building stock important
- **Thermal** storage only
- Local DH&C systems only



# What is missing?

- TES technologies vs. temperature and capacity range (kW and kWh)
- TES technologies vs. cost range
- TES potential for the building sector (including hot water tanks and ice storage)
- RD&D targets, cost, and milestones

**Data required on short term!**