

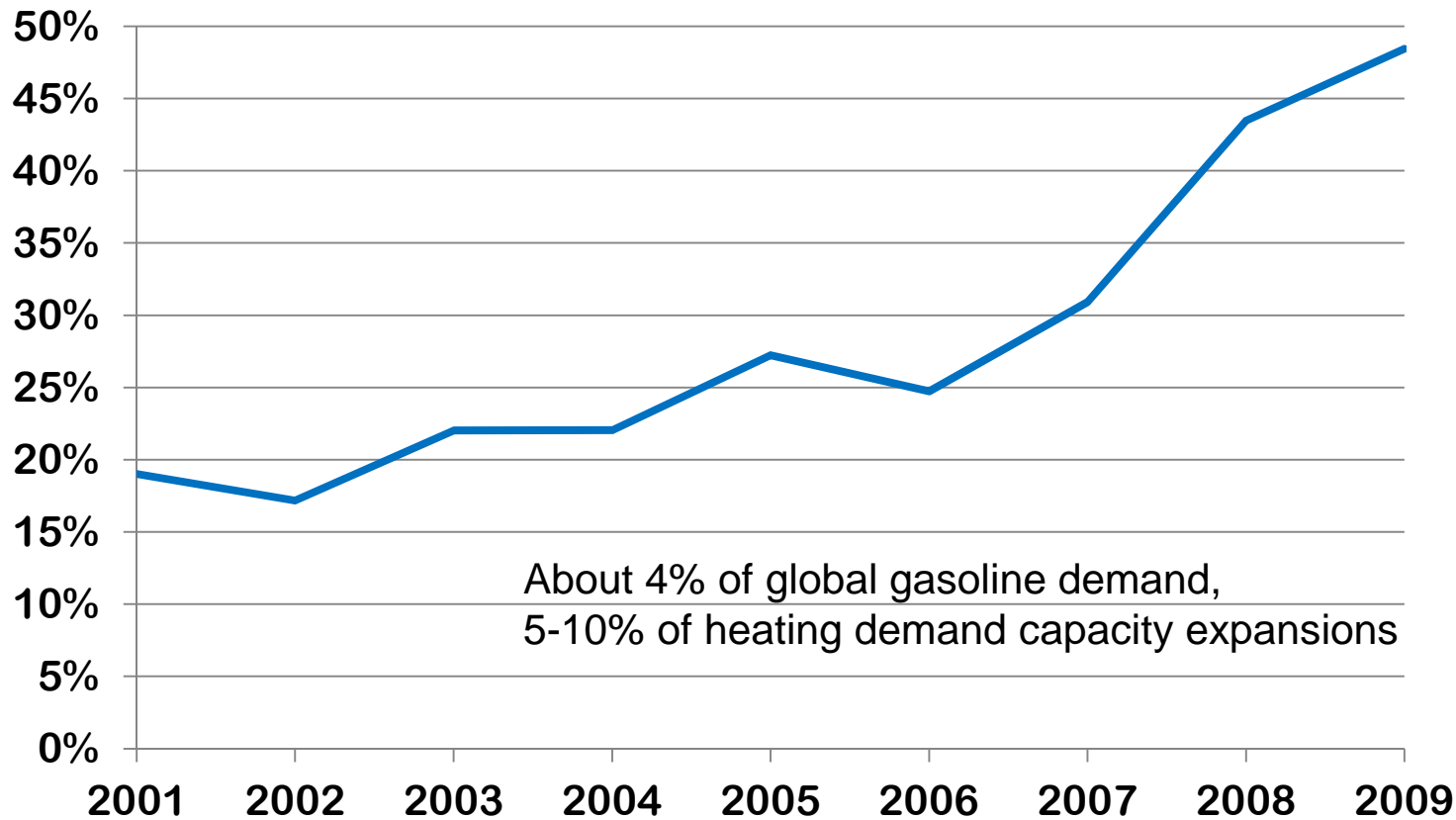
Global Frameworks to Support Renewable Energy Policy

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Brasilia, 14 September 2011

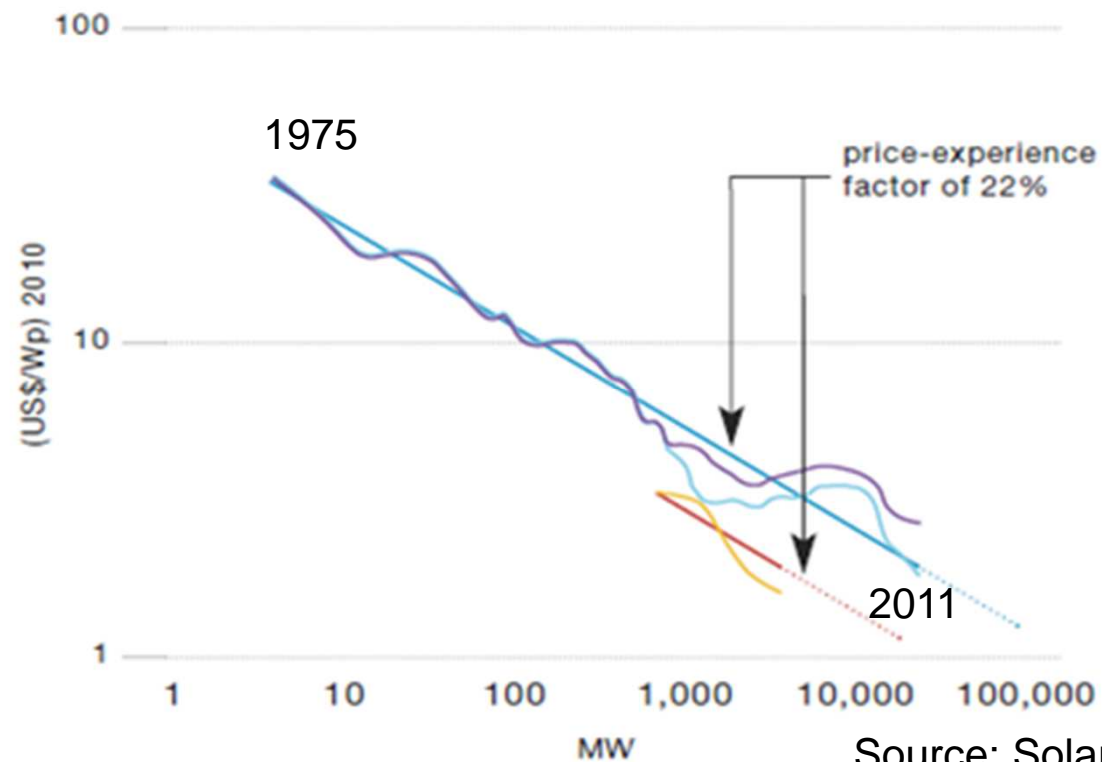
Renewables account for half of power generation capacity additions worldwide

Very rapid growth driven by policy and innovation



Source: IRENA analysis

Rapid and predictable cost reductions for PV modules



Source: Solarbuzz, 2011

Similar rapid cost reductions for other renewables

Renewables deployment must accelerate to overcome pressing problems

- Global energy access
- Supply security – import dependency
- Reduced risk exposure (fluctuating fossil fuel prices)
- Trade balance effects of fossil fuel imports
- Climate change mitigation – 2010 largest jump CO₂ emissions on record, demand growth exceeds efficiency gains, limited progress CCS, Fukushima accident

- In many markets the least costly solution today
- Can create new economic activity

About IRENA



Foundation: 26 January 2009 in Bonn.
International Agency since April 2011
The only international RE agency worldwide

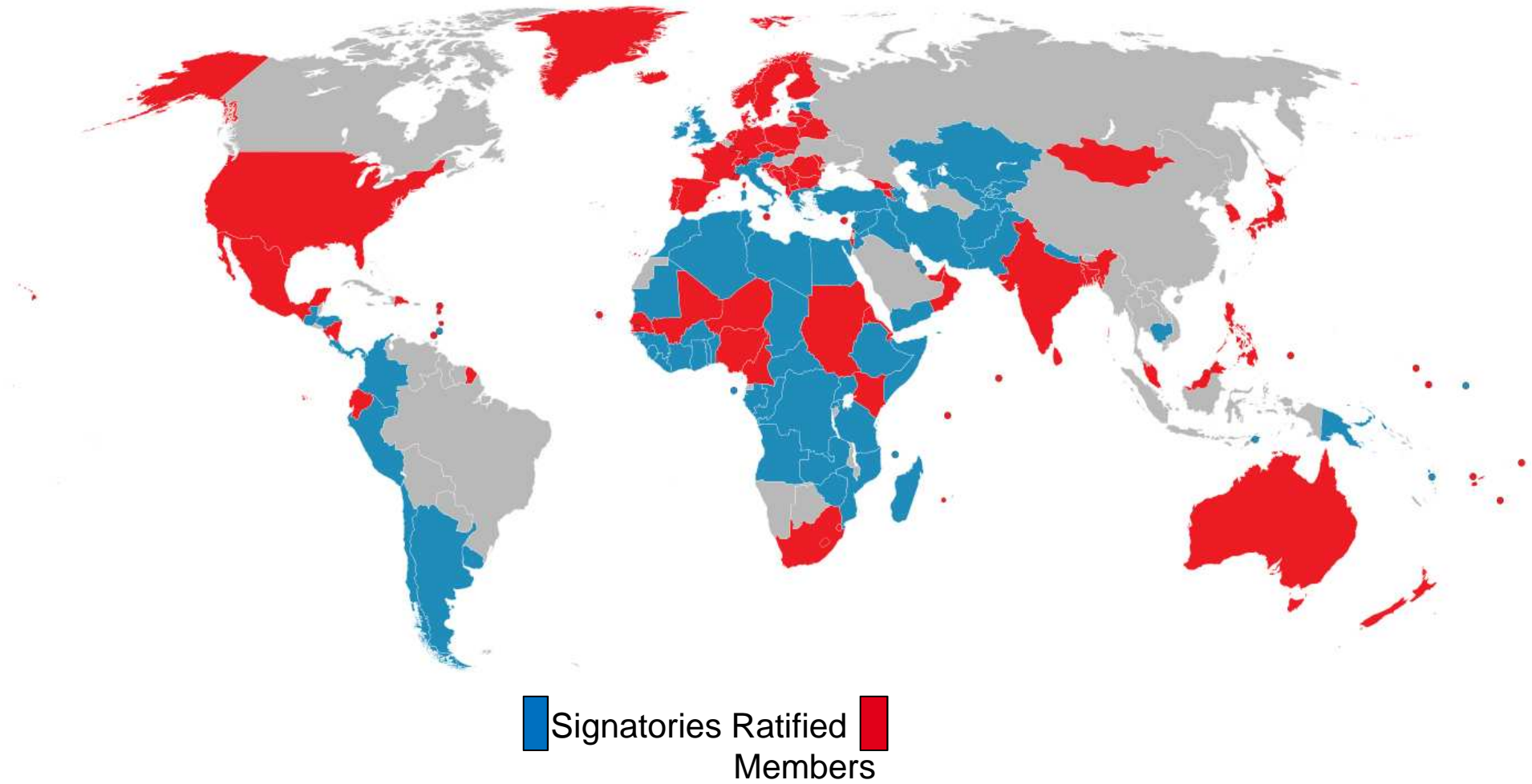
Members: 150 countries are engaged; 84 ratified members

Mandate: Sustainable deployment of the six RE resources
(Biomass, Geothermal, Hydro (large and SHP), Ocean, Solar, Wind)

Location: Headquarters in Abu Dhabi, United Arab Emirates
Innovation and Technology Centre IITC in Bonn

Staff: Director-General Adnan Amin, about 50 staff.

IRENA membership (1 July 2011)



Irena Structure

- Assembly – meeting of all members, once a year
- Council – rotating membership, twice a year
- Three directorates
 - IRENA Innovation and Technology Centre (IITC)
 - Technology policy toolbox, markets and competitiveness
 - Knowledge management and technology cooperation (KMTC)
 - Statistics, potentials, indicators, renewables readiness
 - Policy advisory services and capacity building (PASCB)
 - Financing and macro-economic effects, training, information systems

The Role of IRENA Guided by its Membership

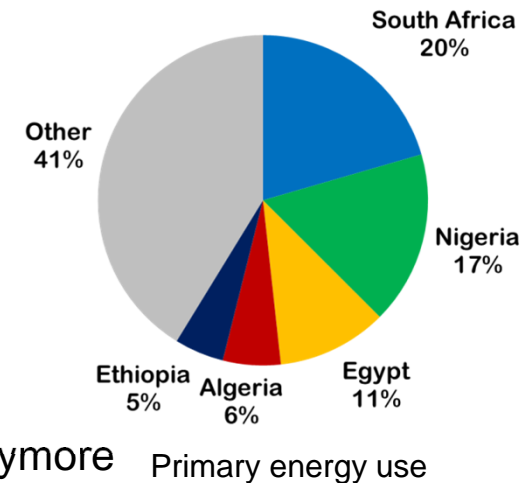
- Assists developed and developing countries
- Accelerates provision of objective information (data and policies)
- Helps design strategies to overcome barriers to RE deployment
- Considers all forms of renewable energy for all sectors
- Leverages work of other organisations and the private sector
 - Dialogue function
- No prescriptive policy function
- Is not an R&D centre
- Is not a financing institution

IITC Work Programme 2011

- Technology policy toolbox
 - Scenarios and strategies
 - 2011 focus on Africa and Island Power Systems
 - Patents and technology transfer – cooperation with WIPO
 - Technology fact sheets and roadmaps
 - 2011 renewables for industry roadmap
 - Electricity storage, desalination, heating and cooling, biomaterials,...
 - Innovation policy frameworks for renewables
 - Technology policy advice (incl. new technology centres)
- Competitiveness and markets
 - Cost of renewables
 - 2011 focus power generation
 - Standards and testing procedures

Scenarios and Strategies for Africa

- Complements renewables readiness dialogue
- Ministerial meeting 7/8 July, Abu Dhabi
 - Energy needed for economic growth
 - Fossil fuel and electricity subsidies are not affordable anymore
 - Strong interest in job creation/local content through renewables
 - Huge and diverse RE potential
 - Modular renewables are easier to introduce than massive fossil/nuclear plant
 - **Very significant large hydro potential remains (least cost option) - diverse issues – learn from Brazil?**
 - Diversity of technologies and applications adds policy robustness
 - Biomass use needs modernisation
 - **Study on South-South Technology transfer for bioenergy technology from Brazil**



Renewables Competitiveness

- Three cost indicators:
 - Equipment cost (FOB/CIF)
 - Project cost
 - Levelised cost of electricity (LCOE)
- Real-world data, not estimates
 - Account for regional differences and project specifics
 - Technology based analysis based on literature (PV, CSP nearly ready, wind, hydro, biomass in preparation)
 - Collection of field data (interviews & questionnaire)
- Regular updates planned
- Data for Brazil would be very welcome and would allow international comparison
- Data can help to judge viability of submitted bids or set FIT

Biofuels

- IRENA member countries request advice on biofuel developments
- The world's transport fuel consumption is projected to increase by over 60% in 2030
 - Several gasoline alternatives, limited number of diesel alternatives
- First generation technologies are well-known and second generation is increasing
- Biofuels are not “good” or “bad” and require knowledge-based policy-making
 - Sustainable first generation fuels are part of the solution
 - Important guiding work on sustainability criteria in GBEP
- Bioenergy supply will be resource constrained
 - What is the optimal market? National or global markets?
 - Agriculture, water, food and energy need to be planned jointly
- **Cooperation opportunity for bioenergy potential analysis and technology transfer to Africa**

Thank you !

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