Introduction of the IRENA technology roadmap project

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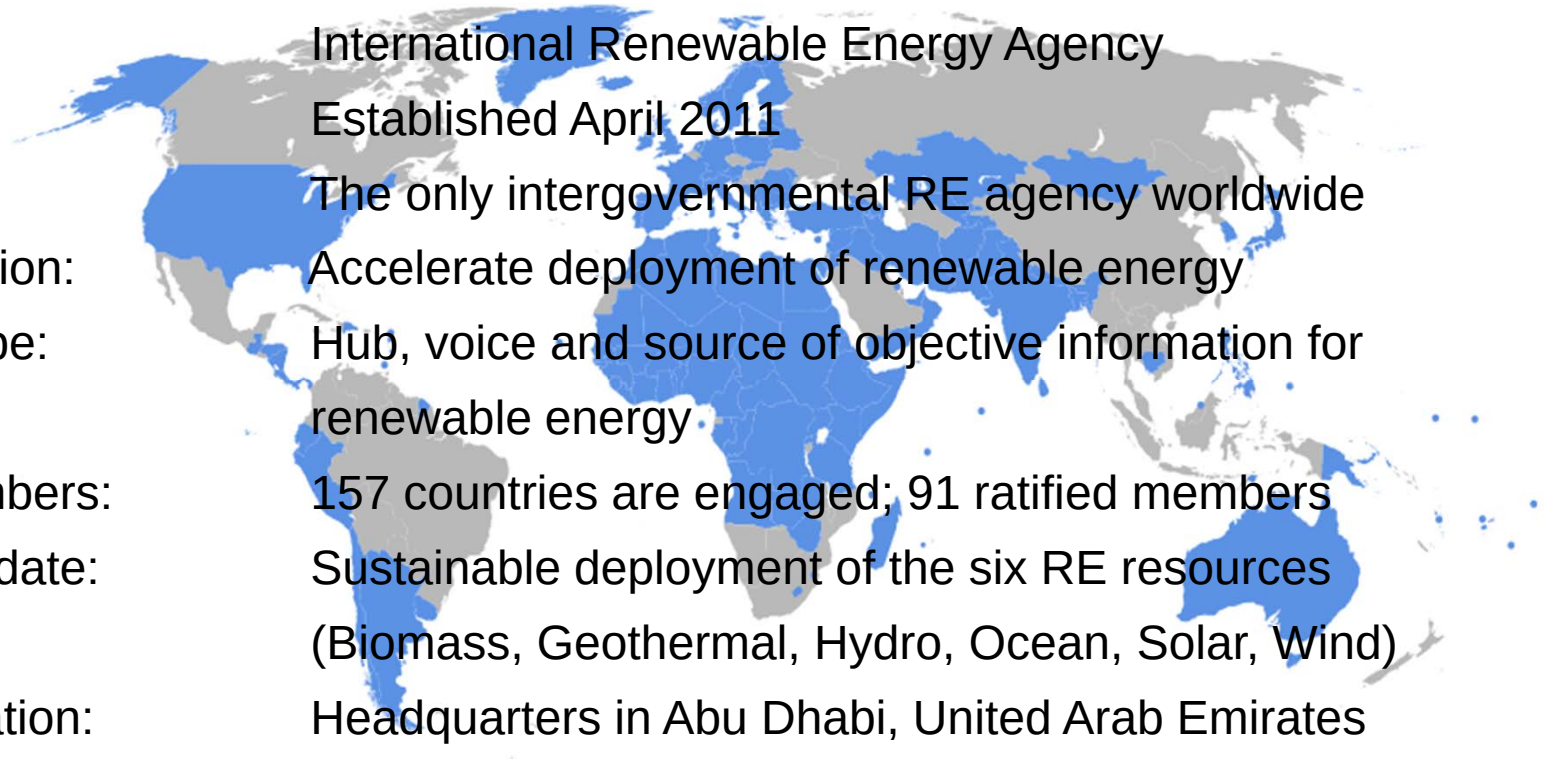
About IRENA



International Renewable Energy Agency

Established April 2011

The only intergovernmental RE agency worldwide

Mission: Accelerate deployment of renewable energy

Scope: Hub, voice and source of objective information for renewable energy

Members: 157 countries are engaged; 91 ratified members

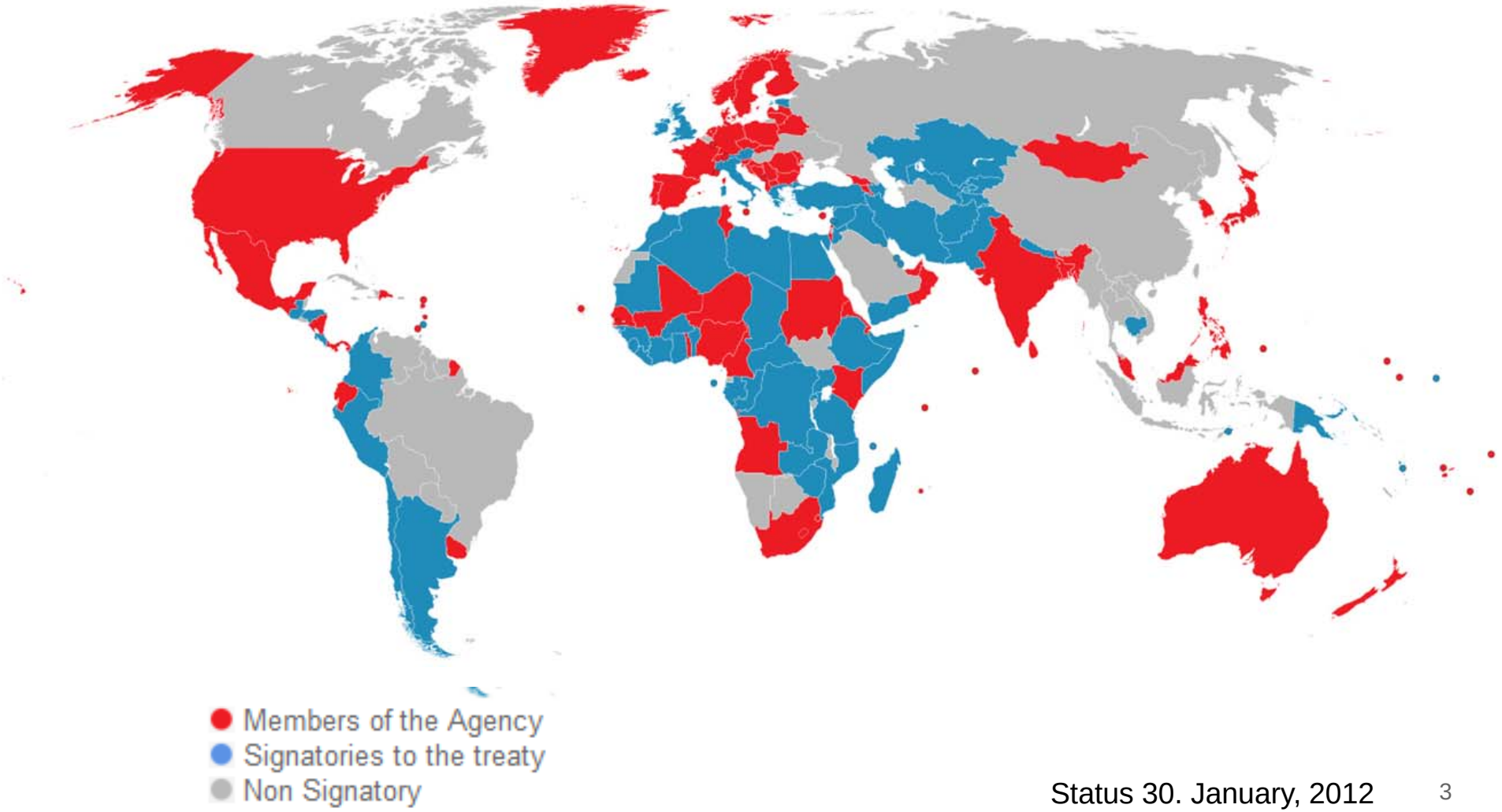
Mandate: Sustainable deployment of the six RE resources (Biomass, Geothermal, Hydro, Ocean, Solar, Wind)

Location: Headquarters in Abu Dhabi, United Arab Emirates

Innovation and Technology Centre IITC, Bonn, Germany

Director-General: Adnan Amin

IRENA Membership



Status 30. January, 2012

Overview IITC activities

- Mission: Framework for technology policy support to governments for accelerated renewable energy development and deployment
- Component 1: Energy planning for RE technology and innovation strategies
  - 6 activities (incl. scenarios and strategies, roadmaps, intellectual property)
  - Incl. support for SE4ALL process
- Component 2: Cost competitiveness and markets
  - 5 activities (incl. cost status, business models, standards, niche markets)

- 13 staff

IRENA Roadmap

- Many existing roadmaps
  - IEA technology roadmaps
  - Various US, Japan roadmaps
  - EU platforms
  - Roadmaps by industry associations
- Goal is to complement existing work and avoid duplications
  - IRENA has a sectoral approach (instead of technology approach)
  - Global reach
  - Focus on interaction between renewable energy sources and technologies
  - Emphasis on end-use sectors, starting with industry and cities
  - End use sectors account for half of global energy use

Renewables in Industry

- Manufacturing consumes 1/3 of final energy consumption
- Accounts for large percentage (up to 46%) of GDP in selected countries
- Industrial energy use is expected to grow with 33% to 2035, while use of renewables remains around 8-9%

- In certain applications and locations renewable energy is the economic solutions today
- Significant CO2 reduction will require also reductions in industry
  - Energy efficiency is important but not sufficient
  - CCS development is disappointing
  - Renewables have not yet received a lot of attention
- Electrification in combination with renewable power opens up new opportunities

Renewables in Industry (contd.)

- Key preparatory documents
  - Energy technology transitions for industry (IEA, 2009)
  - Renewable energy in industrial applications (UNIDO, 2010)
  - Future of Industrial Biorefineries (WEO, 2010)
  - Technology factsheet bioethylene and biomethanol (IRENA, 2012)
  - The potential for renewable energy in industrial applications (Taibi et al., 2012)
  - Assessment of the technical and economic potentials of biomass use for the production of process heat and organic materials, and scenarios until 2050 (Saygin et al, in preparation)
- Key options
  - Biomass feedstock
  - Biomass energy
  - Solar process heat (low AND high temperatures)
  - Solar cooling/freezing

Outcomes

- Identify prospects, technological barriers, financing, and development and policy needs for the deployment of renewables in the manufacturing
- Identify opportunities and barriers for deployment of renewables across different industry sectors
- Create synergies among efforts in different regions
- Develop set of action items to take advantage of opportunities and address challenges

- Increased attention for renewables in industry in the private and public sector
- Stimulate dialogue among different stakeholders impacting renewables in industry
- Helps to build networks across different regions and countries
- Contribute to increased energy security, a reduction of greenhouse gas concentrations, and stimulate economic growth and deployment opportunities.

Thank you !

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