

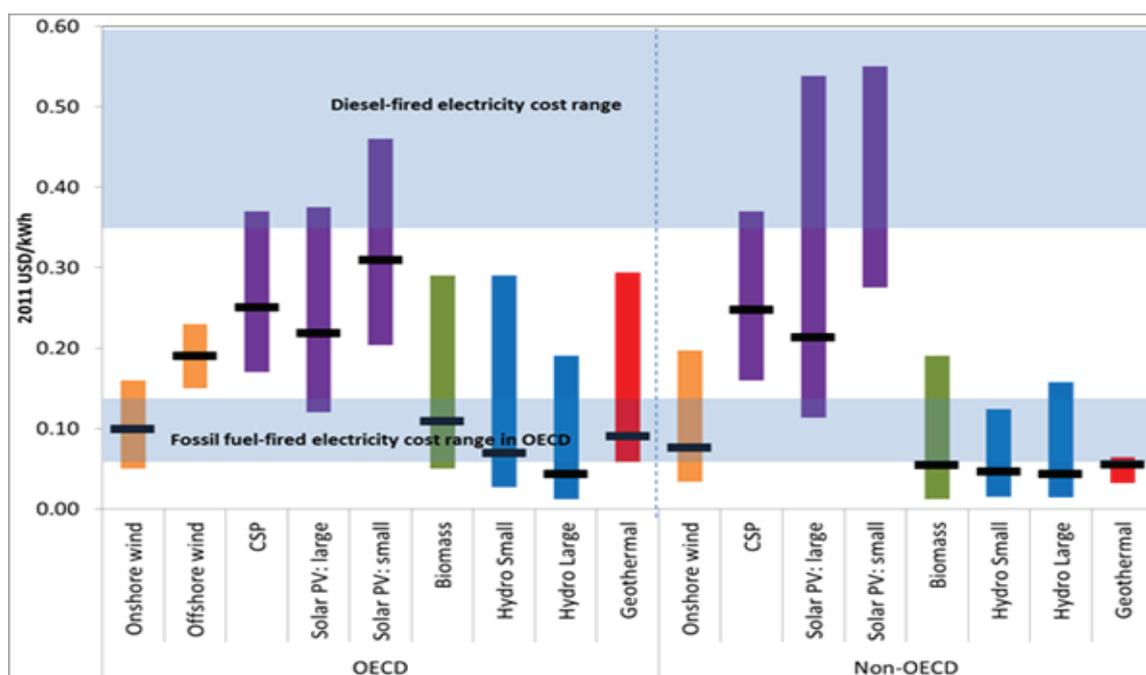
IRENA POLICY BRIEF

RENEWABLES BECOMING MORE COMPETITIVE WORLDWIDE

- **Dramatic recent and projected falls in the costs of renewable energy are making it competitive with fossil fuels in countries across the world, and the least cost option in a growing number of markets.** For example, solar energy has already become cheaper than diesel generation, with clear benefits for communities which live in areas far away from the electricity grid.
- The public debate around renewable energy, however, continues to suffer from an outdated perception that renewable energy is not competitive, forming a significant and unnecessary barrier to its deployment.
- IRENA's ***Renewable Power Generation Costs in 2012: An Overview*** is the most current, comprehensive analysis of the costs and performance of renewable power generation today, which analyses 8,000 medium- to large-scale renewable power generation projects.
- **Key findings include:**
 - **Renewables account for almost half of new electricity capacity installed and costs are continuing to fall. The rapid deployment of renewables, working in combination with high learning rates, has produced a virtuous circle that is leading to significant cost declines and helping to fuel a renewable revolution.** In 2011, additions included 41 GW of new wind power capacity, 30 GW of solar photovoltaic (PV), 25 GW of hydropower, 6 GW of biomass, 0.5 GW of concentrated solar power (CSP) and 0.1 GW of geothermal power.
 - **The levelised cost of electricity (LCOE) is declining for wind, solar PV, CSP and some biomass technologies, while hydropower and geothermal electricity produced at good sites are still the cheapest way to generate electricity.** Renewable technologies are now the most economic solution for new capacity in an increasing number of countries and regions. Where oil-fired generation is the predominant power generation source (e.g. on islands, off-grid and in some countries) a lower-cost renewable solution almost always exists. Renewables are also increasingly the most economic solution for new grid-connected capacity where good resources are available. As the cost of renewable power drops, the scope of economically viable applications will increase even further.
 - **The rapid growth in the deployment of solar and wind is driving a convergence in electricity generation costs.** When excellent local resources are available, mature technologies, such as biomass, geothermal and hydropower, can all produce electricity at very competitive costs, although in limited quantities. As the deployment

of wind and solar has increased, we are seeing a reduction in the costs of wind and solar technologies and a convergence in the LCOE of renewable technologies at low levels. This will continue in the short- to medium-term given the current manufacturing overcapacity for wind and solar PV.

- **Further equipment cost reductions can be expected to 2020, which will lower the weighted average LCOE of renewables.** The rate of decline to 2020 for solar PV is likely to be slower than in recent years, but wind and CSP may see an acceleration. Hydropower, geothermal and most biomass combustion technologies are mature and their cost reduction potentials are not large.
- **Rapid cost reductions in renewable power generation technologies means that up-to-date data are required to evaluate support policies for renewables, while a dynamic analysis of the costs of renewables is needed to decide on the level of support.** There is insufficient publicly available data to allow policy makers to make robust decisions about the role of renewable power generation. IRENA's cost analysis programme and this report are designed to help reduce this barrier to the accelerated deployment of renewables. Although the IRENA Renewable Cost Database contains close to 8,000 projects, this is a small proportion of the total number of projects installed or in development. Much more work therefore needs to be done to collect real project data in order to analyse emerging trends and the challenges facing renewables.



Source: IRENA