



TOWARDS 100% RENEWABLE ELECTRICITY GENERATION

CASE STUDY/INSIGHT

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Globally, electricity production has been dominated by fossil fuels since the Industrial Revolution. Due to the concerns of depletion of fossil fuels and climate change, the world started shifting towards renewable sources of energy. The renewable sources of energy include wind, solar, hydropower, biofuels and geothermal energy. Wind and solar energy are most prominent and fast growing technology. Over the past decade, renewable energy consumption has grown at an average annual rate of 13.7%.

Global commitment on climate change mitigation under the Paris Agreement in 2015 is expected to act as catalyst for renewable energy. In 2015, the UN General Assembly adopted the Sustainable Development Goals (SDG) on Sustainable Energy for All initiative. Also, The Intergovernmental Panel on Climate Change (IPCC), highlights the need for a rapid energy transformation based on a significant increase of renewables.

The number of countries with renewable energy targets and policies has increased in the past decade. More than 170 countries have renewable energy targets and around 150 countries have policies that support renewable energy. The drop in prices of renewables has also made these technologies more affordable. For example, 30 years ago, the cost of solar PV power plant was above 2,000 USD/kW. But now the cost has come down to around 800 USD/kW. The global renewable power capacity was 2,588 GW as of 2019. Despite the Covid-19 crisis, the auctioned renewable capacity was 15% higher during January-October 2020 than for the same period during 2019.

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China holds the highest share of renewable power capacity at the end of 2019, followed by United States, Brazil, India and Germany. Iceland ranks at the top in renewable power capacity per capita (not including hydropower), followed by Denmark, Sweden, Germany and Australia. Over the past decade, European Union saw a strong growth in renewable electricity generation from 19% in 2009 to 35% in 2019. Countries such as Denmark, Germany and United Kingdom showed a drastic increase in renewable electricity generation. Denmark had increase from 39% to 77%, Germany 16% to 42% and UK from 8% to 38%.

As of 2018, 53 countries have pledged to fix a target of some sort of 100% renewable energy. Eight countries – Austria, Cape Verde, Costa Rica, Fiji, Iceland, Solomon Islands, Sweden and Tuvalu have adopted their 100% renewable electricity target policy. Iceland has achieved almost 100% renewable electricity. Denmark is the only country with a target of 100% renewables in the overall energy mix.

Source: IRENA, IEA, Forbes, etc.

