

ECONOMICAL IMPACT OF RENEWABLE ENERGY

Besides our overall worldwide well being, renewable energy sources have vast economical potential and applications.

Compared with fossil fuel technologies, which are typically mechanized and capital intensive, the renewable energy industry is more labor-intensive. This means that, on average, more jobs are created for each unit of electricity generated from renewable sources than from fossil fuels.

Renewable energy already supports thousands of jobs. For example, the wind energy industry covers variety of capacities, including manufacturing, project development, construction and turbine installation, operations and maintenance, transportation and logistics, and financial, legal, and consulting services. Solar industry offers jobs in solar installation, manufacturing, and sales



Figure 1: Number of jobs in specific renewable energy field

<https://cleantechnica.com/2013/11/07/renewable-energy-charts-renewable-energy-facts/>

Increasing renewable energy has the potential to create more jobs. Union of Concerned Scientists conducted an analysis of the economic benefits of a 25 percent renewable energy standard by 2025; it found that such a policy would create more than three times as many jobs as producing an equivalent amount of electricity from fossil fuels.

In addition to creating new jobs, increasing our use of renewable energy offers other important economic development benefits. Local governments collect property and income taxes and other payments from renewable energy project owners. These revenues can help support vital public services, especially in rural communities where projects are often located. Similarly, farmers and rural landowners can generate new sources of supplemental income by producing feedstocks for biomass power facilities.

Renewable energy projects keep money circulating within the local economy, and in most states renewable electricity production would reduce the need to spend money on importing coal and natural gas from other places.

Renewable energy is providing affordable electricity across the European Union and the rest of the world right now, and can help stabilize energy prices in the future.

The costs of renewable energy technologies have declined steadily, and are projected to drop even more. For example, the average price of a solar panel has dropped almost 60 percent since 2011. The cost of generating electricity from wind dropped more than 20 percent between 2010 and 2012 and more than 80 percent since 1980. The cost of renewable energy will decline even further as markets mature and companies increasingly take advantage of economies of scale.

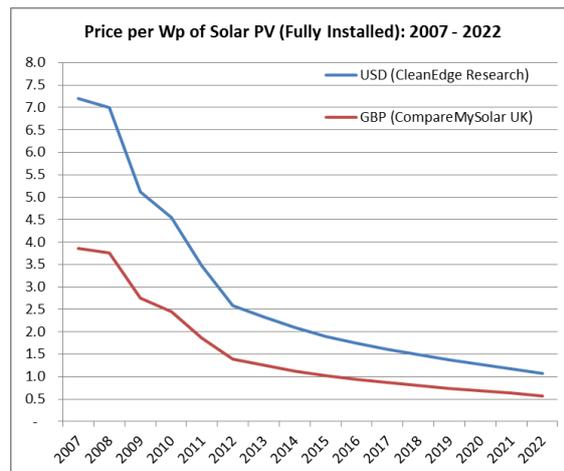
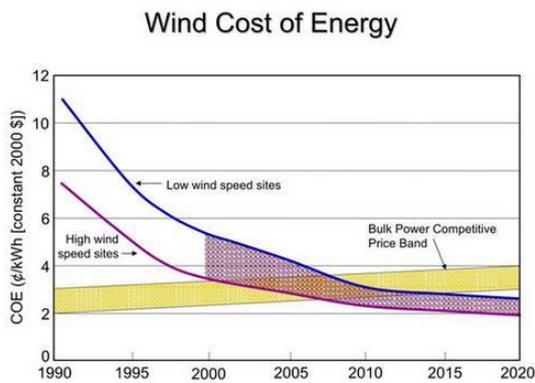


Figure 2: wind energy decrease

<http://chloeandmaddienergy.blogspot.si/p/step-2.html>

Figure 3: solar energy decrease

<https://samsetproject.files.wordpress.com/2015/07/fall-in-solar-prices-chart-1.png>

While renewable facilities require upfront investments to build, once built they operate at very low cost and, for most technologies, the fuel is free. As a result, renewable energy prices are relatively stable over time.

In contrast, fossil fuel prices can vary dramatically and are prone to substantial price swings especially during energy crisis.

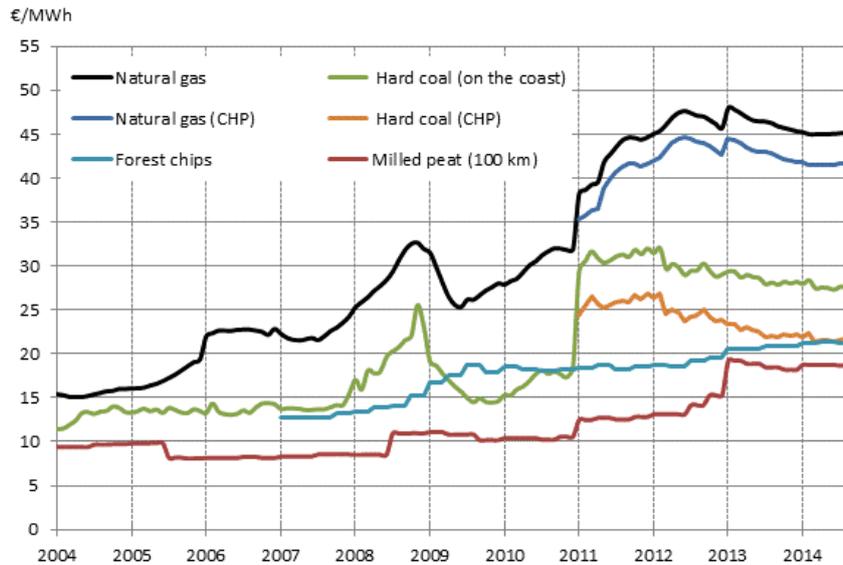


Figure 4: fossil fuel prices

http://www.stat.fi/til/ehi/2014/03/ehi_2014_03_2014-12-17_tie_001_en.html

Using more renewable energy can lower the prices of and demand for fossil fuels by increasing competition and diversifying our energy supplies. An increased reliance on renewable energy can help protect consumers when fossil fuel prices spike.

Wind and solar are less prone to large-scale failure because they are distributed and modular. Distributed systems are spread out over a large geographical area, so a severe weather event in one location will not cut off power to an entire region. Modular systems are composed of numerous individual wind turbines or solar arrays. Even if some of the equipment in the system is damaged, the rest can typically continue to operate.

The risk of disruptive events will also increase in the future as droughts, heat waves, more intense storms, and increasingly severe wildfires become more frequent due to global warming. Renewable energy sources are more resilient than coal, natural gas, and nuclear power plants in the face of these sorts of extreme weather events.