FACT SHEET: 1
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IRENA
International Renewable Energy Agency

About energy

- Between 1990 and 2008, world energy consumption increased by 40%, which is slower than GDP but faster than population.[1]
- At the moment, more than 80 per cent of global energy comes from fossil fuels (oil, natural gas and coal).[1]
- Currently, 1.4 billion people (more than one in five people) have no access to electricity. Most of them live in Sub-Saharan Africa, India and developing Asian countries.[2]
- Each person consumed on average 77 gigajoules, or 1.83 tonne of oil equivalent, in 2008. The disparities are very large, as the biggest consumer can use up to 138 times more energy than the smallest consumer.[1]

DID YOU KNOW ?

Wind

- Wind energy has been used for millennia to power sailing boats and windmills.
- China built roughly one wind turbine an hour in 2009.[4]
- One of the largest wind turbines in the world, located in Hawaii, stands 20 stories tall and has blades the length of a football pitch![5]
- Total wind capacity in 2010, at around 200 GW, has been multiplied by more than 11 since 2000. Offshore wind capacity represents 1% of the total.[6,7]
- Denmark generated 19% of its electricity from wind in 2008, the highest share in the world.[1]

About renewable energy

- Renewable energy is derived from natural processes that are replenished constantly, such as sunlight, wind, tides, river flows, plant growth and geothermal heat.
- Renewable energy met almost all the needs of the world until the middle of the 19th century and the global increase in fossil fuels use associated with the Industrial Revolution.
- Investment in clean energy has gone from $186 billion to $243 billion between 2009 and 2010, a 30% increase.[3]

Solar

- Albert Einstein won the Nobel Prize in Physics in 1921 for his experiments with solar power and photovoltaics.
- A world record was set in 2010 when the world's first manned solar-powered aircraft did a one and a half hour test flight, using no fuel at all.[8]
- If it could be properly harnessed, solar energy could meet between 3 and 100 times the world energy needs.[5]
- Between 2008 and 2010, the average price of a silicon photovoltaic module was divided by more than 2 and the installed capacity more than doubled.[9]
- The Middle East and North Africa have some of the highest solar resources in the world, and many projects to build concentrated solar power plants there have been announced.

IRENA Headquarters
C 67 Office Building ● Khalidiyah (32nd) Street ● Opposite Al Khalidiyah Ladies & Children's Park ● PO Box 236 ● Abu Dhabi (UAE)
● www.irena.org

DID YOU KNOW ?

Geothermal

- Geothermal energy can be found in the form of volcanoes, hot springs, geysers and hot rocks.
- When temperatures are high enough geothermal energy can be used to generate electricity and local heating, including high temperature heat for industrial processes.
- Iceland's power supply went from 75% imported coal to more than 80% local geothermal and hydro in 30 years.[1]

Biomass

- Biomass energy is the sun's energy stored in organic materials such as plants, wood and grains. It can be used in solid, gaseous and liquid form.
- Solid biomass met 93% of the energy needs of the Democratic Republic of Congo in 2008.[1]
- Modern biomass energy, for example in the form of wood pellets, represented 38% of total biomass use in 2008.[9]
- Gaseous biomass, or biogas, is mostly methane captured from landfills. Producing heat and power from biogas is economically viable in many countries.
- Liquid biomass is either bioethanol produced from grain fermentation or biodiesel produced from vegetable oil. Mandates for blending biofuels into vehicle fuels have been enacted in at least 41 states/provinces and 24 countries at the national level.[7]
- In Brazil, 21% of the fuel used for road transport are liquid biofuels[1], and some car models can run on 100% bioethanol.

Water

- Water power has been used for grinding grain for more than 2000 years.
- Hydropower already delivers 16% of the world's electricity.[1]
- The Rance tidal power station in France is the largest tidal power station in the world. It produces more than 90% of total tidal electricity.[1]
- Technologies are being developed to harness ocean thermal energy and to produce electricity using the waves and underwater currents.

Sources

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