

Forum: European Union Council

Issue: Increasing Access to and Implementation of Renewable Energies:
Transitioning out of Fossil Fuels

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Introduction

Energy is crucial to everyone's daily life. Charging our electronic devices, using hot water, and driving cars all consumes energy. Energy use not only takes place in our lives but also functions in the practices of resources, such as mining and refining.

Electrical energy is the primary type of energy we consume, and it often comes from fossil fuels, which is a non-renewable resource that creates great environmental damage. That is why looking for renewable energies and transitioning out of fossil fuels seems urgent.

Definition of Key Terms

Fossil Fuel

A fuel often formed by the decomposition of dead organisms. It contains a high percentage of carbon and includes petroleum, coal and natural gas. The burning of fossil fuels produces much electricity while creating environmental damage at the same time.

Renewable Energies

Energies found in nature and can be collected again without decreasing its values. Wind and solar power are examples of renewable energy. The world has been more relying on renewable energies since global warming started.

Sustainable Development Goals

A collection of 17 global goals set by the United Nations General Assembly in 2015. Goal 7- affordable and clean energy-targets at access to affordable and reliable energy while increasing the share of renewable energy in the global energy mix in 2030.

Background Information

General Overview

Fossil Fuel is a non-renewable resource which causes severe pollutions to the environment. Developing technologies of using renewable energies that can replace fossil fuel seems essential to sustainable development. Renewable energies are also Goal 7 of the United Nations Sustainable Development Goals.

According to the United Nations Development Program, more people are having access to electricity and the demand for electricity will continue to rise due to the increase in population. However, the global economy is reliant on fossil fuels. The reliance significantly increases the greenhouse gas emissions, creating severe pollution to our climate system.



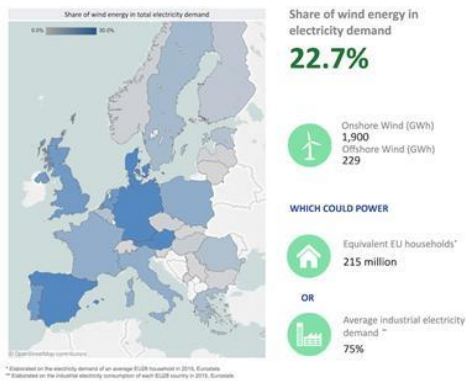
Fossil Fuels

The combustion of fossil fuels creates environmental damage to water, land, and air. Vast stretches of land were used for mining fossil fuels, transporting resources and disposing of wastes. Mining destroys entire swaths of forests and mountains to expose coal or oil. The land cannot return to what it was. This practice creates great damage to the wildlife habitat, which is critical to their breeding and migration, making their livings suffer. Disposal of the dirty, wasted materials creates pollution to the soil.

Meanwhile, the use of fossil fuels creates water pollutions as well. Acids runoff to the streams and lakes when mining coals; pollutants leak to drinking water when transporting oil. Processing of fossil fuels creates wastewater which is put with other contaminants; these can also contaminate waterways when it leaks. Such pollution can sometimes damage human health enormously. Besides, emission of CO₂, methane and some toxic gas during burning creates air pollution.

Wind Power

Wind power is widely used in Europe. It is the use of air flow through wind turbines to provide the mechanical power to turn electric generators. It is renewable and clean energy. The use of wind power has been continuously increasing since the Renewable Energy Directive in 2009. According to Wind Europe, the total electricity produced by wind power in 2017 was enough to supply 11.6% of total electricity consumption in Europe. The European Wind Energy Association (EWEA) aims at producing 14-17% of the EU's total electricity in 2020 and increasing it to 26-35% in 2030. Also, the use of wind power has a social acceptance of 80% in the European general public.

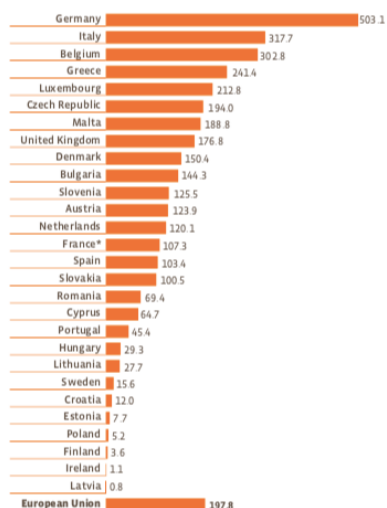


Solar Power

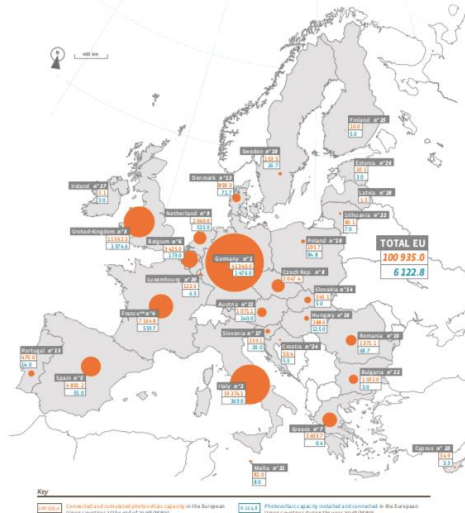
Solar power is the conversion of energy from sunlight into electricity through direct use of photovoltaic panels. Use of Solar power can reduce CO₂ emissions; however, it still has some environmental cost in production, installation, and transportation of photovoltaic products. Also, the price of these products is quite high. According to Eurostat, around 6% of the primary energy production of renewable energy in Europe is produced by solar power in 2016. According to Euro Observer, European photovoltaic market had a capacity of only 6.1 GW in 2016; this figure is lower than the previous year's figure of 7.9 GW. Solar Power Europe aims to increase the solar market in Europe by 40 GW in 2022.

Graph. n° 1

Photovoltaic capacity per inhabitant (Wp/inhab) for each EU country in 2016

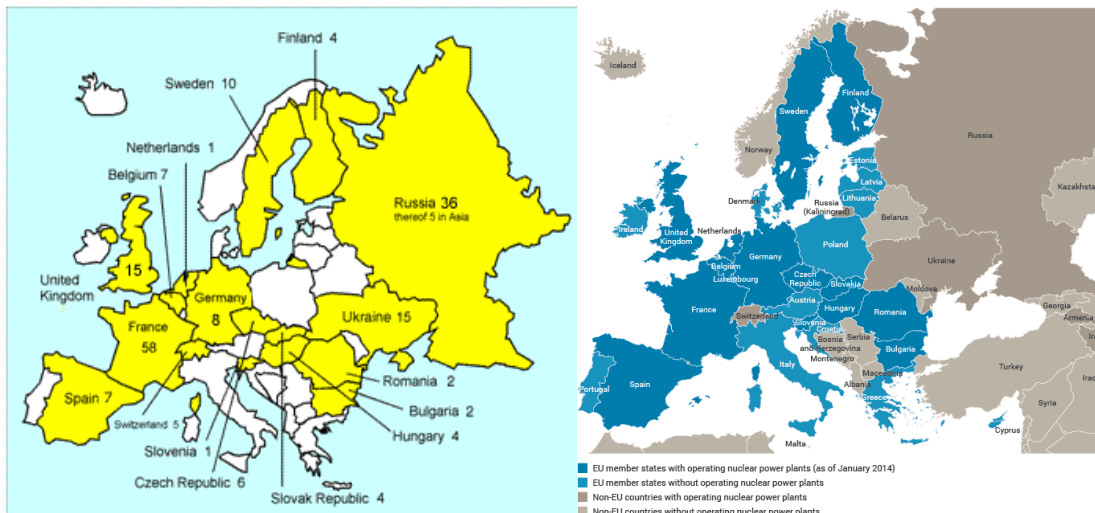


Photovoltaic capacity connected in the European Union in 2016 (MWp)



Nuclear Energy

Nuclear Energy uses nuclear reactions (a majority of nuclear fission) to generate heat. Steam Turbines are most frequently used in nuclear power plants to produce electricity. Nuclear is a renewable and efficient energy source that reduces carbon emissions. However, once exploded, nuclear power is hazardous, creating enormous harm to human health, resulting in disasters such as the Chernobyl accident in Ukraine. Use of nuclear power is quite controversial, with proponents such as World Nuclear Association (WNA) and Environmentalists for Nuclear Energy (EFN) suggesting that nuclear energy is safe and sustainable and opponents such as Greenpeace arguing that nuclear proposes many threats to the environment and humans.



Major Countries and Organizations Involved

United Nations Climate Change Conferences

Yearly held conferences in the framework of the United Nations Framework Convention on Climate Change. The conferences aim at dealing with climate change, establishing obligations for developed countries to reduce greenhouse gas emissions. It has also been used to negotiate the Kyoto Protocol, Paris Agreement, etc.

International Energy Agency

The agency established in 1974 under the framework of OECD. It initially dedicated to solving disruptions in oil supply and oil market. It now acts as an energy policy advisor to its member states. It focuses on the “3Es” energy policy of energy security, economic development, and environmental protection. It also promotes renewable energy sources.

World Economic Forum

The world economic forum has an initiative of “Shaping the Future of Energy”. It believes in a transition to a sustainable energy system to solve global energy-related challenges. It aims at accelerating the development of effective policies and cooperation between company and governments to help the energy system transition. EU is one of the members of this initiative.

Timeline of Events

Date	Description of event
1995	First United Nations Climate Change Conference
Dec. 11 th , 1997	Kyoto Agreement Signed
Apr. 26 th , 1986	Chernobyl Nuclear Accident in Ukraine
Nov. 17 th , 2007	Report about Climate Change by IPCC, claiming that climate change is very likely caused by human emission of greenhouse gases
Mar. 11 th , 2011	Fukushima Nuclear Accident in Japan
Feb. 2015	Launch of Energy Union Strategy by European Commission
Sept. 2015	Launch of Sustainable Development Goals by the UN
Dec. 2015	Paris Agreement Drafted
Dec. 2018	Renewable Energy Directive II published

UN Involvement

The United Nations has involved in this issue by establishing the global Sustainable Development Goals and the United Nations Climate Change Conference. These enabled the European Union to negotiate with the other countries about energy use and reducing greenhouse gas emissions.

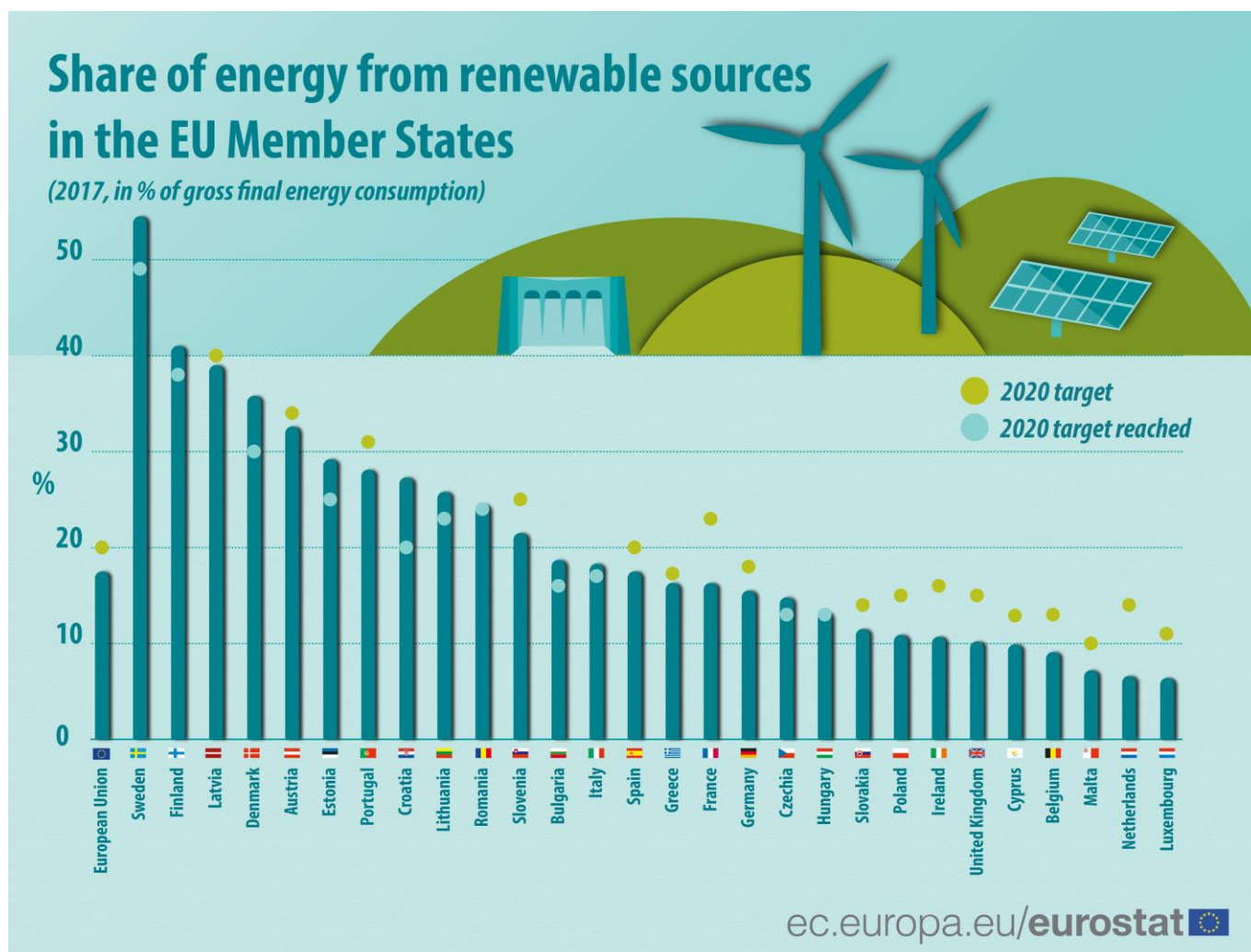
Relevant UN Treaties and Events

- Kyoto Protocol
- Paris Agreement
- Directive on the Promotion of the Use of Energy from Renewable Resources **(2018/2001/EC)**

- Transforming our world: the 2030 Agenda for Sustainable Development (**A/RES/70/1**)
- EU Energy Efficiency Directive (**2012/27/EU**)
- International Market in electricity Directive (**2009/72/EC**)

Previous Attempts to solve the Issue

The European Union has introduced many energy policies for years; however, establishing a comprehensive energy policy seems difficult. Many energy policies in the EU are remaining at the national level due to difficulties in voluntary cooperation between countries. EU has the most ambitious target of renewable energies in 2020 in the world as shown in “Europe 2020”. In 2015, the EU launched its energy union strategy with priorities in energy security, energy market integrity, decarbonization, etc. EU currently has a Strategic Energy Technologies Plan (SET-Plan). It includes initiatives that focus on the development of the most widely-used energy technologies in multiple energy sources. There are also directives regarding renewable energies such as Energy Efficiency Directive, International Market in electricity Directive (promoting electricity market liberalization and security of supply), etc.

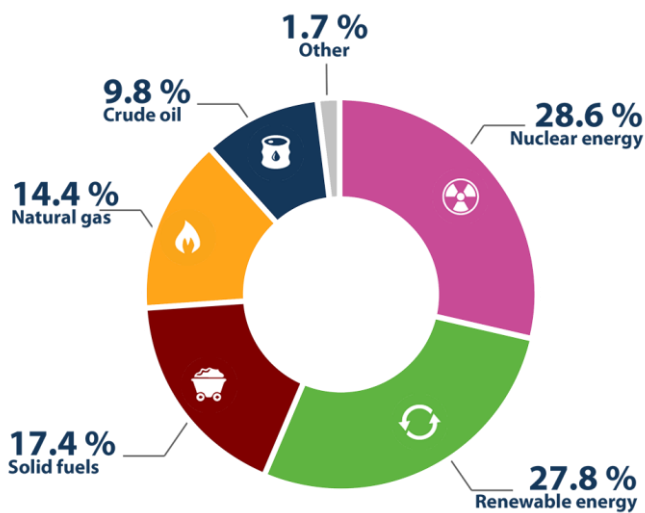


Possible Solutions

There are many ways to transition out of fossil fuels. For an effective energy policy at European level, comprehensive solutions would be considered more appropriate as the development of the usage of renewable energies is linked with factors in many different areas.

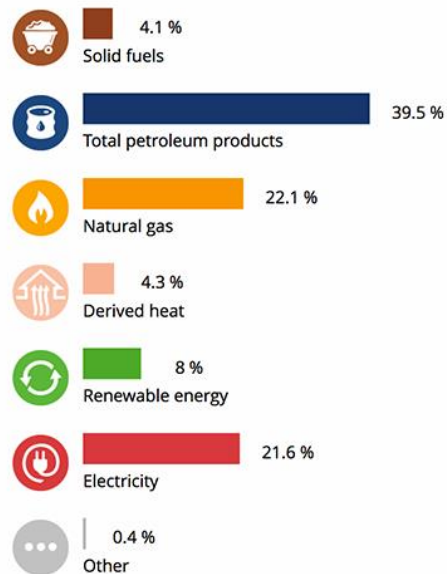
Investments in research on sustainable energy technologies to improve efficiency in electricity production is a possible solution. Reducing the import of fossil fuels and increasing the import of nuclear can also be possible. However, factors such as the economic situation of the EU and the current European energy market must be considered. Policies on the electricity market and energy-efficient consumer goods can be established at the same time as energy production policies are introduced. Not only access to renewable energy is essential, but how private firms and consumers are using energies is also crucial.

Share of EU energy production by source, 2016



Source: Eurostat

Consumption mix for EU (28 countries)



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