

Energy Policy

With a 44% share of energy consumption, oil continues to dominate Europe's fuel mix, as shown below in Figure 4. Moreover, more than 70% of the EU's oil is imported from Russia, the Persian Gulf region, and North Africa.¹ The vast majority of European oil consumption goes to the transportation sector. Natural gas is the fastest growing component of the fuel mix, spurred on by its desirable environmental properties and by the growth of the natural gas resource base over the past decade. Gas competes most directly with coal, which has lost substantial market share in recent years. While nuclear energy continues to play a major part in European energy, the industry's long-term future appears increasingly uncertain. Efforts to phase out nuclear power completely in Germany, for example, are ongoing, and enjoy the support of major political parties and segments of the public. In other EU countries such as France, however, nuclear power provides more than half of the electricity consumed. In the longer term, European energy integration and deregulation may pose an even more serious challenge than popular opposition has thus far to the future viability of the European nuclear power industry. Cheaper, less capital-intensive, and possibly less risky fuel sources like natural gas could undermine future investments in nuclear plants. Renewable energy plays a small but growing role in the European energy mix. As more countries impose carbon taxes and renewable portfolio standards, renewable energy is expected to gain a larger market share in upcoming years (see Figure 5).

Figure 4. EU Total Energy Consumption, 1996 (61 Quads)

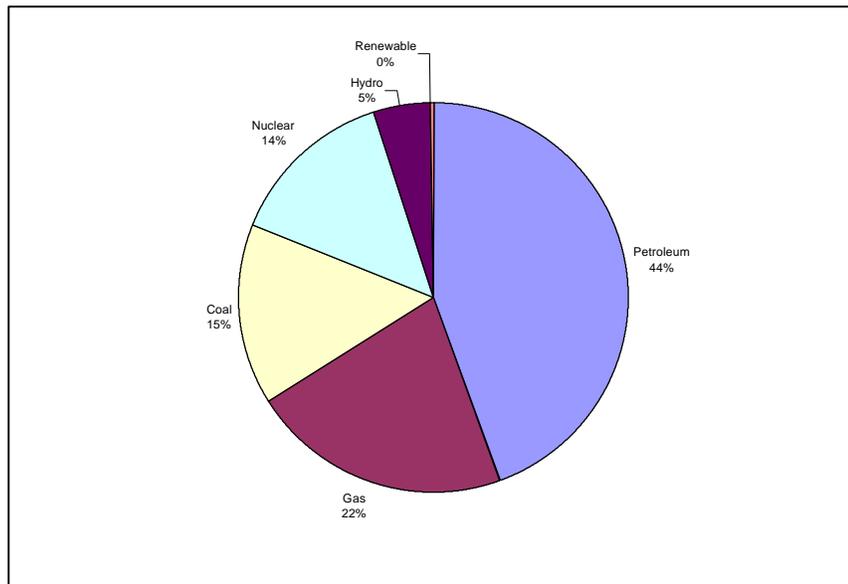


Table 1. European Union: Energy Overview 1996

| | |
|--|--|
| Energy Import Dependence: 52% | Energy-Related Carbon Emissions: 878 million metric tons |
| Energy Consumption per Capita: 164 million BTU | Carbon Emissions per \$1000 GDP: 0.12 metric tons |
| Energy Consumption per \$1 GDP: 8100 BTU | Carbon Emissions per Capita: 2.3 metric tons |
| “Kyoto Commitment”: 8% reduction in greenhouse gas emissions from 1990 levels by 2008-2012 | |

In December 1995, the European Commission issued the white paper, “An Energy Policy for the European Union.”ⁱⁱⁱ In issuing the paper, the Commission established an official basis on which to build a common, community-wide energy policy. Even though two of the three treaties that form the legal foundation of the European Union (the European Coal and Steel Community Treaty of 1951 and the European Atomic Energy Community Treaty of 1957) are based on cooperation in the energy sector, the European Commission has not, until recently, moved to create a common EU energy policy.

In the Commission’s view, a common energy policy will further economic integration within the EU and contribute to the realization of a single European market. According to the white paper, energy policy must form part of the general aims of the EU’s economic policy, which focuses on market integration and deregulation, aiming to minimize its policy interventions. An EU energy policy would aim to enhance European economic competitiveness and supply security, and contribute to the achievement of the EU’s broader policy goals relating to job creation and environmental protection.ⁱⁱⁱ

The language of the European Council Decision formally adopting the Fifth Framework Programme indicates even more clearly than previous official documents the growing importance of closer linkages between EU energy, trade, and R&D policies. Annex II of the Decision states, for example, that

“[t]he need for energy equipment suppliers and operators to be competitive in the global market is vital for employment. Enormous potential will exist for global exploitation from several areas of the program, strengthening economic competitiveness and creating new jobs, such as in the water industry, renewable energy technologies, rational use of energy and reuse of resources, as well as technologies to improve energy efficiency and the water and/or energy industries.”^{iv}

EU energy policy aims at once to address growing environmental concerns associated with the energy sector, such as global climate change, and to transform this growing concern for sustainability into opportunities for global economic and technological leadership. This overarching goal is supported by activities in three main energy policy areas (utility deregulation, energy security, and protection of the environment and

climate). These three areas, each of which is described below, represent the most significant pillars of EU energy policy.

Utility Deregulation: One of the most important energy and economic policy goals of the European Commission is the creation of a single, integrated European energy market. Currently, each of the EU's fifteen member states is at a different point on the path to the liberalization of its energy industries, and each state has a unique set of energy institutions and regulatory structures. The Commission aims to further each of its three main energy policy concerns—competitiveness, supply security, and environmental protection—through the creation of trans-European energy networks. A key action facilitating the development of these networks will be the Community-wide reduction of existing regulatory barriers and the introduction of competition in the energy industries, especially gas and electricity.^v Other important developments include:

- Adoption in 1996 of a Directive for the Internal Market for Electricity. The Directive marks the first major legislative step toward the creation of an open and competitive European electricity market. Under this law, all Member States were required to open at least 25.37% of their electricity markets to competition as of February 1999.^{vi} This represents the overall share of electricity supply used by consumers larger than 40GWh. The opening of the European electricity market to competition is scheduled to move forward until 2003, at which point more than 80% will have been liberalized.^{vii} According to the European Commission, several countries are now ahead of schedule in liberalizing their electricity industries, such that by February 2000, more than 60% of European consumers will be able to select their power supplier. Complete liberalization of the generation sector became effective as of February 1999.^{viii}
- The Council of Ministers' adoption, in February 1998, of the European Union Common Position on rules for the internal market in natural gas. This action is a precursor to the adoption of future legislation regarding the liberalization of the European gas industry by the European Parliament.^{ix}

Fully liberalizing and integrating the EU's energy markets will be an exceptionally difficult task because of the major differences in attitudes and existing institutions among Member States. For example, the United Kingdom has been a leader with regard to energy market liberalization. Deregulation and privatization of the electricity industry began in 1989 and was completed in 1998, allowing all consumers now to choose their electricity providers. In France, on the other hand, the government has largely resisted pressures for deregulation. Some 95% of the country's electricity generation, transmission and distribution system remains in the control of a single state-owned firm, Electricite de France (EDF). Thus, the process of European energy integration is complicated by the challenges associated with reconciling the esoteric structures, traditions, and histories embodied in each Member State's energy system.^x

The liberalization of Europe's energy markets is in keeping with the broader global trend of liberalization and deregulation of major industries (e.g., airlines, telecommunications) that began in the 1980s. There are, however, specific economic and legal reasons that liberalization of the energy industries is now a priority policy issue in the European

Union. For example, the Commission recognizes that many of the EU's industries are forced to compete in an increasingly integrated global marketplace, where lower-cost producers have distinct economic advantages.^{xi} Considering that European industries on average pay between 30% and 50% more for energy than those of the Americas or in parts of Asia, the introduction of competition to Europe's energy industries is intended to help European firms to compete globally by reducing their energy input costs.^{xii}

Energy Security: Ensuring energy supply security is a second key objective of EU energy policy. The EU is currently approaching 70% dependence on external sources of energy, and this trend appears likely to continue for the foreseeable future.^{xiii} While the EU member states have participated in cooperative crisis management institutions, such as the International Energy Agency, since the 1970s, the Commission believes that these arrangements must be updated in the light of major changes in the political landscape that have occurred over the past decade. For example, the development of the common market and the expansion of the EU provide Europe with greater potential flexibility in responding to external supply interruptions. At the same time, the growth in global demand for oil and Europe's "inevitable and spectacular worsening of dependence on outside supplies" lends greater urgency to the need for Member States to coordinate their energy security efforts and to work together to reduce their collective energy vulnerabilities.^{xiv}

Thus, the objectives of EU policy with regard to energy security are to ensure sufficient Community coordination during crises, to reduce the costs associated with such security measures, and to develop an effective EU-wide fuel stock management system. Two stages may be necessary to realize this goal: first, a revision of member states' compulsory oil stock obligations to improve readiness for future oil shocks, and second, the coordination of stock management measures ensuring their compatibility with the internal market. The further integration of Europe's energy markets, which will facilitate the freer movement of energy resources within the EU, is also regarded as an important element of EU energy security policy.^{xv}

The EU is also seeking to enhance its energy security through a variety of policy actions aimed at diversifying both Europe's internal fuel mix and its external sources of energy supply. The Commission considers all major fuel types (fossil, nuclear, renewable) and energy efficiency important elements of long-term energy security and is encouraging Member States to maintain a broad portfolio of energy supply options and to ensure that there is a broad internal energy resource base. For example:

- To capitalize on indigenous renewable energy resources, in 1991 the Commission set a target of 4000 MW of installed wind power capacity by the year 2000. Yet, as a result of improvements in wind technologies and new opportunities for renewable energy resulting from energy deregulation, the Commission's original target has already been surpassed. Installed wind capacity in the European Union already stands at 6,000 MW and is expected to reach 8,000 MW by the turn of the century.^{xvi}
- The development of trans-European energy networks integrating the electricity and gas systems of all fifteen EU countries and several countries in Central and Eastern

Europe and the Mediterranean basin aims to diversify supply options beyond the EU's own borders. Cooperative gas pipeline projects between EU countries and Russia, Algeria, and other countries are being financed through a variety of EU instruments, including European Investment Bank loans and EU-sponsored programs such as PHARE and TACIS, which provide funding for feasibility studies and technical cooperation with third countries.^{xvii}

- The EU is also fostering technical and policy cooperation with key supplier countries such as those of the Persian Gulf region as a means of maintaining good overall international relations and energy supply security.^{xviii}

Protection of the Environment & Climate: The third major objective of EU energy policy is environmental protection. The Commission believes that the goals of greater economic competitiveness and environmental protection are not necessarily in conflict, and that policies that move industry to invest in new, cleaner, and less energy-intensive technologies (principally in the energy efficiency and renewable areas) will prove an advantage rather than a penalty to European firms in the long term. For example:

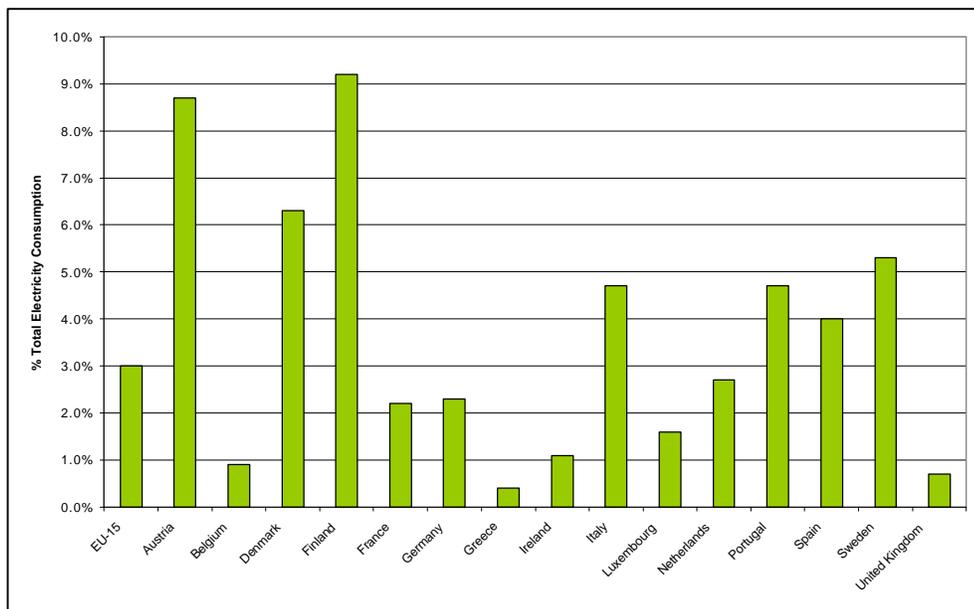
- The European Council Decision of January 25, 1999 adopting the Fifth Framework Programme specifically calls attention to the global economic opportunities associated with the development and deployment of new energy efficiency and renewable energy technologies. Moreover, the Programme includes funding to encourage innovation in energy technology and to assist European firms in moving them into the international market.^{xix}
- The European Union is a party to the Framework Convention on Climate Change and a signatory of the Kyoto Protocol. Among the industrialized countries, the EU has consistently played a leadership role in urging the adoption of actions based on the precautionary principal to address climate change. It was the EU's commitment at the Rio Earth summit in 1992 to stabilize its carbon dioxide emissions at the 1990 level by 2000 that persuaded other countries to follow suit. In fact, the EU may be the only industrialized region to live up to its carbon reduction commitment, aided in this to a large extent by the closing of inefficient coal-fired power plants in eastern Germany and intensive fuel switching (from coal to natural gas) in the UK's electricity sector. Similarly, in 1997, the EU took the lead at the Kyoto climate conference in proposing aggressive targets and timetables for industrialized countries' emissions reductions. In committing to an 8% emissions reduction from 1990 levels within the period 2008-2012, the EU adopted the most ambitious target in the industrialized world.^{xx}
- Following the December 1997 Kyoto climate change conference, the European Council issued a Community Strategy on Climate Change, specifying Member States' individual greenhouse gas reduction responsibilities in realizing the Kyoto commitment. Some Member States have committed themselves to steep emissions reductions (e.g., -28% for Luxembourg; -21% for Germany and Denmark), while, in the interest of economic development, Europe's less-developed economies have negotiated larger greenhouse gas emissions allowances under the EU agreement (e.g., +27% for Portugal; +25% for Greece). The ambitious greenhouse gas reductions targets aim to spur the adoption of energy efficiency technologies and best practices,

and to increase renewable energy sources' share in European energy supply, which currently stands at approximately 6%.^{xxi}

- In 1996, the Commission proposed a Community-level carbon tax that would provide an EU-wide incentive for higher levels of energy efficiency, particularly in the industrial sector, and for the substitution of low- and non-carbon energy sources. The proposal has not yet been adopted.^{xxii}

At the 1998 Buenos Aires climate conference, the EU's policy position with regard to the industrialized countries' actions to mitigate climate change has placed it at odds with other industrialized countries, particularly the United States. For example, the EU and the US positions have clashed in discussions of provisions of the Kyoto Protocol dealing with the use of international emissions trading and technical assistance for developing countries through an institution called the Clean Development Mechanism. While the United States favors the use of these institutional arrangements as primary means of achieving the Kyoto commitments, the EU maintains that the use of such arrangements must be supplemental to industrialized countries' domestic actions. In the EU's view, the industrialized countries have an obligation to reverse their emissions trends in real terms at home, and should not rely primarily on what they consider "paper credits"—emissions credits purchased from other countries whose emissions fall below their allowable limits.^{xxiii}

Figure 5. Green Electricity in the EU: Electricity Generated from Renewable Resources, (Excluding Hydroelectric Installation >10 MW), 1998^{xxiv}



To reduce European greenhouse gas emissions, the Commission has proposed actions in key economic sectors. In the energy sector, for example, the EU aims to double the contribution of renewables (to 12%) and cogeneration (to 18%) by the year 2010. To

promote increased use of renewable energy, the Commission intends to adopt a proposal for a draft Council and Parliament Directive on common rules for supporting electricity generated from renewable sources. Among the provisions of the proposal will be a requirement that all Member States generate a minimum percentage of electricity from “green” sources. As Figure 5 shows, the amount of renewable energy produced and consumed in the EU varies sharply among Member States, ranging from 0.4% in Greece to 9.2% in Finland.^{xxv} The broader use of renewables aims not only to reduce greenhouse gas emissions, but also to slow the growing dependence of imported fuels and to stimulate employment in new, high-tech companies.^{xxvi} In the transportation sector, the Commission has brokered a voluntary agreement with European car manufacturers to reduce passenger car emissions by some 90 million tonnes—an estimated 15% of the Kyoto target—over the next decade.^{xxvii} Individual companies in other industries, such as Germany’s electronics giant AEG, have announced plans to reduce the average energy consumption of their home appliances by at least 25% between 1995 and 1999. Such initiatives are not uncommon and are strictly voluntary.^{xxviii}

ⁱ British Petroleum, “BP Statistical review of World Energy 1998.”

ⁱⁱ European Commission, “An Energy Policy for the European Union,” COM(95)682.

ⁱⁱⁱ COM(95)682, p.2.

^{iv} OJ L 64/63, 12.3.1999.

^v European Commission, Directorate General for Energy (DGXVII), “Trans-European Energy Networks: Policy and Actions of the European Community,” (Luxembourg: Office for Official Publications of the European Communities, 1997), pp. 4-7.

^{vi} Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 Concerning Common Rules for the Internal Market in Electricity.

^{vii} Directive 96/92/EC; see also <http://europa.eu.int/en/comm/dg17/elec/faq.htm>

^{viii} European Commission, “Opening Up to Choice: The Single Electricity Market,” (January 1999), pp. 4-9.

^{ix} 13347/1/97 REV 1, “Common Position Adopted by the Council on 12 February 1998.”

^x Klom, A.M., “Electricity Deregulation in the European Union,” *Energy In Europe* No. 27, p. 6. <http://europa.eu.int/en/comm/dg17/27klom.htm>.

^{xi} European Commission, “An Overall View of Energy Policy and Actions,” COM (97), Draft of 21 April 1997.

^{xii} See: Gunther Rexrodt, “Energy Policy in the European Union,” *Energy in Europe* No. 24, http://europa.eu.int/en/comm/dg17/24rex_en.htm; Council Regulation (EC)701/97, 14 April 1997.

^{xiii} “An Overall View of Energy Policy and Actions,” *Energy in Europe* No. 28 (July 1997), p. 39.

^{xiv} Statement of Energy Commissioner Christos Papoutsis (Directorate General XVII), quoted in “An Overall View of Energy Policy and Actions,” *Energy in Europe* No. 28 (July 1997), p. 39.

^{xv} COM(95)682.

^{xvi} “Wind Energy Makes Fast Gains in Europe,” Reuters News Service, 19 November 1998.

^{xvii} COM(95)682, pp. 22-27; European Commission, Directorate General for Energy, *Trans-European Energy Networks*, September 1997, pp. 8-13.

^{xviii} European Commission, “Communication from the Commission: An Overall View of Energy Policy and Actions,” COM(97) Draft of 21 April 1997.

^{xix} OJ L 64/63, 12.3.1999.

^{xx} “Buenos Aires Climate Change Conference: Where the EU Stands,”

<http://europa.eu.int/comm/dg11/climat/bacc.pdf>

^{xxi} European Commission, “Energy for the Future: Renewable Sources of Energy,” Green Paper for a Community Strategy COM (96)576, pp. 7-9.

^{xxii} Gunther Rexrodt, “Energy Policy in the European Union,” *Energy in Europe* No. 24, http://europa.eu.int/en/comm/dg17/24rex_en.htm

-
- ^{xxiii} “Buenos Aires Climate Change Conference: Where the EU Stands,” <http://europa.eu.int/comm/dg11/climat/bacc.pdf>; European Commission, Directorate General XI, “The Fight Against Climate Change Continues. Next Stop: Buenos Aires,” IP/98/946 <http://europa.eu.int/comm/dg11/press/98946.htm>
- ^{xxiv} European Commission, “Opening Up to Choice: The Single Electricity Market,” (Luxembourg: Office for Official Publications of the European Communities), p. 10.
- ^{xxv} European Commission, “Opening Up to Choice: The Single Electricity Market,” (Luxembourg: Office for Official Publications of the European Communities), p. 18.
- ^{xxvi} European Commission, “Energy for the Future: Renewable Sources of Energy” Green Paper for a Community Strategy COM (96)576 19 November 1996, pp. 9-10.
- ^{xxvii} The European Automobile Manufacturers Association, “CO₂ Emissions from Cars: The EU Implementing the Kyoto Protocol,” <http://europa.eu.int/comm/dg11/climat/acea.pdf>; “Buenos Aires Climate Change Conference: Where the EU Stands,” <http://europa.eu.int/comm/dg11/climat/bacc.pdf>
- ^{xxviii} Lutz Mez, “German Activities for International Energy Efficiency Programs and Policies,” Presentation to U.S., Japan, Germany Energy Expert Meeting, University of Maryland at College Park, February 23, 1999.