

PORTUGAL

ENERGY POLICY OVERVIEW

During the last two years, the Portuguese government has initiated liberalisation of the electricity market, continued the privatisation of energy companies, worked towards the creation of an Iberian electricity market, and introduced new policies and programmes to reduce energy intensity and to mitigate environmental problems. A National Plan for Climate Change is currently under development. The government is also trying to reduce the dependency on imported energies.

In 2000, a new Economic Operational Plan (OPE) was launched under the European Community Support Framework for the development of economic activities. The OPE contains two sub-programmes for the energy sector with a €1.6 billion budget for the period 2000–6:

- The “Measure to Support Modernisation and Development of Electricity and Gas Infrastructures for Public Use” (budget €0.7 billion).
- The “Measure to Support the Harnessing of Energy Potential⁷ and Rationalisation of Consumption” (budget €0.9 billion).

The Energy Conservation Centre, created in 1984, was transformed into the Agency for Energy (ADENE) by Decree-Law 223 of 2000. The main tasks of ADENE will be to prepare studies on energy efficiency and renewables, to propose standards for electrical applications and to disseminate information on these topics.

ENERGY SUPPLY AND DEMAND

In 2000, total primary energy supply (TPES) was 24.6 Mtoe in 2000, representing rapid growth of 43% over the 1990 figure. In spite of the strong growth, TPES per capita in 2000 was still 2.46 toe, far below the average of the OECD Europe, 3.39 toe. Since the introduction of natural gas in 1997, its share in TPES has been increasing and reached 8.3% in 2000. Gas has partly replaced oil in electricity generation and the share of oil in TPES decreased from 68.2% in 1990 to 63.2% in 2000. Because of its limited domestic energy resources, Portugal imported 87% of the energy it consumed in 2000.

7. The objective is to promote the use of renewables and co-generation.

The government expects TPES to grow much more slowly in this decade, by only 6.3% by 2010. The share of gas in TPES is expected to reach 20% whereas the share of oil is expected to decrease further to about 51%.

Final energy consumption increased by 45% between 1990 and 2000. Growth was strongest in the transport sector (75%), followed by the residential, services and other sectors (47%) and industry (27%). Final consumption of fossil fuels increased by 49% and that of electricity by 63%.

ENERGY AND THE ENVIRONMENT

Under the Kyoto Protocol and the EU “burden-sharing” agreement, Portugal agreed to limit the net increase in GHG emissions to 27% above 1990 volumes by 2008-12. In spite of this target, energy-related CO₂ emissions in 2000 were 50% higher than those in 1990.

The government is preparing a National Plan for Climate Change (PNAC). A working version of the plan was published in March 2002 and the government expects it to be finalised during 2002. The working version quantifies the emissions reductions required to achieve the Kyoto target under the most probable socio-economic development and aims at opening public discussion on the measures and their implementation. It also defines some immediate measures and their potential for reducing emissions and their cost. One of the conclusions made in the working version is that Portugal will rely heavily on domestic measures to meet the emissions reduction target. The plan is currently under public consultation and it has been criticised for not providing a detailed analysis on the emissions reduction potential, and the cost, of many prospective measures. The government plans to introduce sectoral emissions reduction targets, new measures and monitoring programmes in the final version of the plan.

To reduce GHG emissions, Portugal has been relying on energy efficiency regulations in the industry and in the household sectors, voluntary agreements with some industrial sectors, development of public transport and tax credits on photovoltaic equipment. A new measure introduced in 2001 was the E4 Programme (see Energy Efficiency, below) which promotes energy efficiency, renewables and co-generation. Other measures introduced in 2001 are tax relief for new cars which replace vehicles over ten years old, and for cars using LPG or natural gas. The restructuring of transport fuel taxation is also being discussed.

ENERGY EFFICIENCY

The government’s policy is to promote energy efficiency through sector-specific legislative instruments and fiscal incentives. The Energy Efficiency and Endogenous Energies Programme (the E4 Programme) was launched in October 2001 as part of

the energy activities in the OPE. It provides financing for energy efficiency, co-generation and wind power projects. In addition to this programme, the government has established several co-operation programmes with the private sector aiming at efficient energy use. Furthermore, the government gives financial support to local municipal authorities for optimisation of water supply installations, sewage systems and street lighting; and for using energy potential from waste and residues.

In the industrial sector, the government continues monitoring of the results of the “Management Regulations for Energy Consumption” (RGCE) which was introduced in 1982. The regulation applies to industrial installations whose energy consumption exceeds 1 000 toe per year and to industrial equipment with a power rating (or nominal energy consumption) of more than 0.3 toe per hour. In the transport sector, the “Regulation for the Management of Energy Consumption in Transport” (RGCT) was introduced in 1991. It applies to the public and private transport companies whose energy consumption exceeds 500 toe per year. The RGCT requires these companies to carry out energy auditing and to publish a plan for the rationalisation of their energy use every three years. The Directorate-General for Energy monitors the audit results and the plans when the companies apply for financial support.

The use of natural gas in vehicles began in the public transport systems of Braga and Porto in 2000 and in Lisbon in 2001. The extra cost involved in purchasing buses that use natural gas is partially financed through the OPE Programme.

The E4 Programme contains a sub-programme for the building sector, the “National Energy Efficiency in Buildings Programme”. One of the activities within this programme is to review the “Regulation on the Characteristics of the Thermal Behaviour of Buildings” (RCCTE) of 1990 and the “Regulation on the Energy Systems for Air Conditioning of Buildings” (RSECE) of 1998. Other activities include the promotion of energy efficiency measures in public buildings and the promotion of the use of renewable energies in buildings. Portugal also considers introducing building energy certification.

OIL

Total oil supply increased from 11.7 Mtoe in 1990 to 15.6 Mtoe in 2000. Whereas final consumption of oil increased rapidly, particularly in the transport sector, oil use declined in power generation. Price ceilings are still maintained for gasoline and diesel.

The Portuguese oil sector was dominated by Petrogal, which owned the two refineries in the country and accounted for about half of the distribution market. In 1999, the State created a new holding company, GALP Petróleos and Gás de Portugal SGPS SA, which combined all the operations of Petrogal (oil), Gás de Portugal (gas distribution) and its subsidiary Transgas (gas import, transmission and sales); the name of the new company has been GALP Energia since 2000. The main owners of GALP Energia are the State (with 34.8%), ENI, the Italian oil and gas group (33.3%),

Electricidade de Portugal (14.3%), Caixa Geral de Depósitos SA, a Portuguese public bank (13.5%) and the Spanish utility Iberdrola SA (4%). In addition to normal shares, the government still holds a “golden share” with the power of veto; it has planned a public offering of 20% of GALP Energia for 2003.

As Portugal has been having difficulties complying with the 90-day stockholding obligation over the past years, the Portuguese Administration hopes to improve the stock situation by institutional and legal reforms. The EU directive on oil stocks and the IEA stockholding rules were transposed to the Portuguese legislation in January 2001 (Decree-Law 10/2001) and revised in December 2001 (Decree-Law 339-D/2001), which provided for the establishment of a stockholding agency Entidade Gestora de Reservas Estratégicas de Produtos Petrolíferos (EGREP) responsible for at least one-third of the total obligation of reserves of petroleum products. It is planned that the EGREP should be fully established by the end of 2002.

NATURAL GAS

Natural gas use in Portugal began in 1997 and has increased rapidly. In 2000, some 59% of gas was used for power generation in two power plants; the rest was consumed mainly by industry. In 2000, all supplies came via Spain by pipeline from Algeria. Portugal signed a twenty-year contract for LNG imports from Nigeria in 1999. These imports have begun this year through the Spanish terminal at Huelva from where they are piped into Portugal. A domestic LNG terminal will be commissioned in Sines in 2003.

The high-pressure transmission network has already been completed. Because the gas market is developing, the networks do not yet fully cover the country. At present, the government intends to introduce natural gas in the inner part of the country. GALP Transgas is building an underground storage facility at Carriço, near Pombal, close to the coast. Regulations were developed to ensure safe operation of all gas facilities.

The dominant player in the gas market is GALP Energia through its subsidiaries, GALP Transgas (supply, transmission and sales to large consumers) and GALP Gas (sub-holding of most of the regional distribution companies).

The EU gas directive allows Portugal to delay the introduction of competition in the gas market until 2007 because it is still emerging. The directive was transposed into the Portuguese legislation by Decree-Law 14/2001 in January 2001 according to which liberalisation should start at the end of the derogation.

ELECTRICITY

In 2000, electricity consumption was 38.4 TWh, compared to 23.5 TWh in 1990. This corresponds to an average growth rate of 5% per year. Coal stations accounted

for 33.9% of total gross electricity generation in 2000, followed by hydro (26.1%), oil (19.4%), gas (16.5%) and combustible renewables and waste (3.6%). Since its introduction in 1997, the share of natural gas has expanded sharply, replacing oil in power generation. The share of oil dropped from 27.5% while the share of gas increased substantially from 5.2% and coal slightly increased from 31% between 1998 and 2000.

Electricidade de Portugal (EDP) generated 62% of electricity in 2000 and controls all electricity distribution. With the conclusion of the fourth phase of the privatisation of EDP, at the end of October 2000, the government stake was reduced to 32.6% but the government still holds a “golden share” with a power of veto. The National Electricity Grid (REN), the transmission system operator, was legally separated from EDP in November 2000 and the government now owns 70% of its shares.

There are two electricity systems in Portugal, the Public Electricity System (PES) and the Independent Electricity System (IES); generators and consumers are either in one or the other. The PES is characterised by capacity planning and purchasing power agreements between generators and REN. The IES consists of the Non-Binding System (NBS), characterised by free contracts between generators and eligible consumers, and the Special Regime which includes co-generators and generators using renewable sources of energy. The PES is organised on the basis of long-term contracts linking producers and the transmission system operator (TSO) and an obligation to supply to captive consumers. Legal unbundling is required between the generation, transmission and distribution activities in both systems.

The net maximum electricity generating capacity was 9.8 GW in the PES and 1.1 GW in the IES at the end of 2000. Sales to the grid in the Special Regime are forecast to increase from 3.1 TWh in 2002 to 11.1 TWh by 2010, and in the PES/NBS from 37.3 TWh to 42.9 TWh over the same period. Generation from natural gas in the PES/NBS and from wind power and co-generation in the IES is forecast to increase significantly, whereas not much change is expected in the use of other fuels.

In 1999, the consumers with annual consumption above 30 GWh within the IES became eligible to choose their suppliers and the distribution companies become eligible for 8% of their supplies, corresponding to 27% market opening. The threshold for large consumers was reduced to 20 GWh in 2000 and to 9 GWh/year in 2001, bringing the market opening to 33%. In 2002, 45% of the market was opened as all medium- and high-voltage consumers became eligible. There has been no change for the eligibility of the distribution companies after 1999. The large consumers who want to leave PES and change their supplier have to give a one-year notice.

Regulation of the electricity sector is split between the Ministry of Economic Affairs and an independent regulatory agency, the Entidade Reguladora dos Servicos Energeticos (ERSE). The ministry is responsible for the formulation of the regulatory framework and licensing based on recommendations from ERSE. ERSE is responsible for issuing codes for tariffs, commercial relations, network and interconnection access, dispatch, and for defining consumer eligibility thresholds

within the limits established in the legislation. ERSE is also responsible for setting the regulated prices of electricity and network services.

The government is trying to improve the efficiency and quality of service in the whole electricity system. The government separated REN from EDP to increase its independence and to improve the access of independent producers, including those in the Special Regime (co-generation and renewables), to the national networks. Decree-Law 312/2001 was issued in December 2001 to define the conditions for managing the reception of electricity from independent producers into the transmission network and the Public Electricity System.

The total volume of electricity trade has increased from 7.7TWh in 1998 to 8.5TWh in 2000 but imports and exports almost offset each other. The volume of trade is expected to increase by the establishment of the Iberian Electricity Market (IBELM): on 14 November 2001, the governments of Portugal and Spain signed a protocol to create the Market by 1 January 2003 at the latest. According to the protocol, IBELM should “guarantee all agents established in both countries access to the Iberian Market Operator and to the interconnections with third countries under free and equal trading conditions”. The Iberian Market Operator will be a new entity with owners from both countries.

Electricity prices decreased in the late 1990s for both industrial and small consumers. For household consumers, the average price in Portugal in 2000 was US\$ 1 390 per toe compared to an average of US\$ 1 225 per toe in the OECD. Portugal does not collect price data for larger industries, which should be taken into account when comparing the average electricity price for small industrial consumers, US\$ 779.1 per toe, to the OECD average price for all industries of US\$ 545.7 per toe.

RENEWABLES

Portugal's domestic energy production stems only from renewable sources. In 2000, the contribution of all renewables, including hydropower, to the total primary energy supply was 12.7%. Electricity production from renewables was 13 TWh, representing 30.3% of total gross generation in 2000. Although hydropower remains the most important renewable source for electricity generation, the generation capacity of wind power is also increasing. In 2000-1, twelve wind farms began operation, increasing total generating capacity by 54 MW to 109 MW. Nine wind farms with a total capacity of 77.5 MW are currently under construction and are expected to come into operation in 2002.

In September 2001, the EU adopted a new directive (2001/77/EC) to promote electricity production from renewables. Following the directive, Portugal adopted an indicative target to generate 39% of its electricity from renewables, including large-scale hydro, by 2010. In addition to minimum feed-in tariffs with power

purchase obligations, renewable energies are promoted through interest-free loans for large-scale projects, direct investment subsidies for small projects, reduced VAT on equipment and R&D.

Because of such promotion schemes, private companies have showed considerable interest in developing more wind power under the Special Regime after access to the network was simplified by Decree-Law 312/2001 and after new feed-in tariffs were established as part of the E4 Programme. In January 2002 alone, the potential generators applied for a license for 7 000 MW of wind power capacity and 600 MW of other renewable and co-generation capacity. The energy administration is concerned about the security of supply if a large amount of electricity comes from such an energy source as easily interrupted as wind, and about the technical difficulties in connecting a lot of wind power to the transmission network.

RESEARCH AND DEVELOPMENT

In 2001, the public budget for R&D in energy was €1.08 million, of which 64% was used for R&D on renewable energy, 24% on fossil fuels and 12% on energy transmission grids. EU funding accounts for about two-thirds of the national energy R&D budget. The principal research institution is the National Institute for Engineering and Industrial Technology (INETI), which uses 80% of the energy R&D budget.