

IRELAND

The energy sector

The Irish economy depends heavily on trade and has expanded strongly over the last decade. Gross Domestic Product (GDP) grew by 28% in the period 1990-1995 (rate of growth in economic activity more than three times that of Europe). Growth peaked in 1995, when the rapid expansion of the computer and semiconductor industries worldwide helped boost GDP by more than 10%. The rate of growth remains high.

Energy balances in Ireland (Source: Energy Policies of IEA Countries, 2001)

	1999	%		1999	%
Population (millions)	3.75		Total final consumption	10.59	
Energy consumption/capita	2.83		Coal	0.45	4.2
Total energy production (Mtoe)	2.51		Peat	0.13	1.2
Coal	-	-	Oil	6.81	64.3
Peat	1.15	45.8	Gas	1.44	13.6
Oil	-	-	Biomass & Wastes	0.13	1.2
Gas	1.10	43.8	Geothermal	-	-
Biomass & Wastes	0.17	6.8	Solar/Wind/Other	-	-
Hydro	0.07	2.8	Electricity	1.62	15.3
Geothermal	-	-	Heat	-	-
Solar/Wind/Other	0.02	0.6	Total industry consumption	2.70	
Net energy imports (Mtoe)	11.74		Coal	0.07	2.6
Coal	1.56	13.3	Peat	-	-
Peat	-	-	Oil	1.10	40.7
Oil	8.26	70.4	Gas	0.81	30.0
Gas	1.89	16.1	Biomass & Wastes	0.09	3.3
Electricity	0.02	0.2	Solar/Wind/Other	-	-
Total supply - TPES (Mtoe)	13.98		Electricity	0.63	23.3
Coal	1.60	11.4	Heat	-	-
Peat	0.89	6.4	Transport consumption	3.77	
Oil	8.22	58.8	Total other sectors consumption	4.13	
Gas	3.00	21.5	Coal	0.38	9.2
Biomass & Wastes	0.17	1.2	Peat	0.13	3.1
Hydro	0.07	0.5	Oil	1.95	47.2
Geothermal	-	-	Gas	0.63	15.3
Solar/Wind/Other	0.02	0.1	Biomass & Wastes	0.04	0.9
Electricity Trade	0.02	0.1	Solar/Wind/Other	-	-
Electricity generation	1.87		Electricity	0.99	24.0
Electricity generation (TWh)	21.81		Heat	-	-

Employment growth has been rapid and inflation has been reduced below 2% per year. Key influences on the pace of economic activity have been foreign investment, growth in the labour force and the educational standards of the population, and a high

degree of social consensus which has moderated private sector wage increases in return for tax reductions and reduced the level of industrial disputation.

Ireland has large reserves of peat, which is harvested for power generation and non-energy uses, and privately for domestic use. The five main peat-fired power stations, located adjacent to the peat bogs to reduce transport costs, produced 11% of Ireland's electricity in 1997-98. During the early days of peat use, the power plants were used only to meet peak demand, but with the oil crises of the 1970s and the increased cost of other fuels, they were increasingly used for base load. The use of milled peat for power generation has been relatively static in recent years. Given the age of the generating plants using peat, the contribution of peat power generation from existing plants is expected to fall significantly in coming years. To ensure a continuing role for peat in Ireland's electricity generation mix, the Government supported Bord na Móna's proposal for the new 120 MW peat-fired power station at Clonbulloge, County Offaly. This plant, built by a subsidiary of the Finnish energy group, Fortum/IVO is based on fluidised bed combustion technology.

The only indigenous gas production, from the Kinsale and Ballycotton fields, has gone into decline and is expected to reach economic termination after the year 2005. There are no gas exports. Net imports of energy are therefore expected to rise rapidly after 2000 unless new gas supplies are made available in the near future.

Natural gas increased its share of the Irish energy market from 15% in 1987 to 23% in 1998 (including natural gas used for fertilizer feedstock). Overall, gas demand has grown at about 8% per year since 1992. Growth in the domestic and in the small commercial/industrial sectors has been about 10% per year since 1992 while for the same period in the power generation sector the growth has also been high at about 13% per year. This trend is expected to continue. Growth in large industrial uses and for fertilizer manufacture (ammonia) has been much slower, at less than 2% per year. The electricity sector in Ireland is dominated by the Electricity Supply Board (ESB), Ireland's largest energy company and employer, owning almost all of the power stations. At the end of 1997, ESB power generation plant capacity was 4121 MW, and small-scale generation plant capacity was 176 MW. The ESB purchases surplus power from the independent plants at prices reflecting avoided costs. Electricity consumption in Ireland has increased by 50% since 1990 and new capacity will be required soon. The ESB estimates that new capacity will become necessary in late 2001/early 2002, and more than 800 MW will be required by 2005.

Historically, Ireland has been concerned about growth in oil use in electricity generation. More recently, growth in gas use and the depletion of Ireland's only gas field at Kinsale have given rise to concerns about the degree of dependence on imported gas. The single interconnector with the United Kingdom operates at close to full capacity and only one discovery (Corrib) has reasonable prospects for development. The new peat-fired power station is seen as one means of responding to import dependency by using domestically produced peat. The Government does not consider nuclear power is an option. The share of oil has declined significantly because of its displacement principally by coal. In 1986, oil accounted for 48% of fuels used in electricity production, and in 1997 it accounted for 18%. The use of gas as a primary energy source has also steadily increased over the same period from 16% in 1986 to 33% in 1998.

Policy for renewables and CHP

Measures to improve energy efficiency include: Promotion of combined heat and power (CHP) by the Electricity Supply Board and Bord Gáis Éireann. Supply-side measures include:

Improvement in overall generation plant efficiency; replacement of some existing plants with new gas-fired combined-cycle plants; transmission and distribution system renewal. Natural gas accounts for about 29% of electricity generation. Support programmes for renewable energy, including the Alternative Energy Requirement (AER) programme and the EU Altener programme; establishment in 1995 of the Renewable Energy Information Office as part of the Irish Energy Centre; Guidelines on Wind Farm Development in 1996 to assist planning authorities and project developers.

The Waste Strategy, October 1998, will put in place measures to reduce emissions of methane by diverting biodegradable waste from landfill and the recovery of landfill gas. The target is an 80% reduction from this source over fifteen years.

A National Sustainable Development Strategy was published in May 1997, setting out a national sustainable energy policy.

The objectives of this policy are to:

Ensure security of energy supply in order to support economic and social development while protecting the environment.

Maximise efficiency of generation and emphasise the use of renewable resources.

Promote energy conservation by users.

Minimise emissions of greenhouse gases and other pollutants, both by clean generation and by sustainable consumption levels in all sectors.

Maintain local air quality and limit and reduce the Irish contribution to regional and global environmental problems.

A list of the various measures existing for the promotion of CHP and renewables is given below:

- **Area Aid Payments**

Contact organization: Department of Agriculture, Food and Rural Development

Short description: Could provide support for the production of energy crops. For further details contact the Area Aid Unit (Arable Crops Section), Department of Agriculture, Food and Rural Development

- **COFORD Forest Research and Development Programme 2000-2006**

Contact organization: National Council for Forest Research and Development (COFORD)

Short description: Funds forestry research and development, including research projects on wood for energy.

- **EPA Environmental RTDI Programme 2000-2006**

Contact organization: Environmental Protection Agency

Short description: Supports environmental research. Has funded study on centralised anaerobic digestion.

- **Forest Service Pilot Project on Short Rotation Coppice**

Contact organization: Forest Service

Short description: The Forest Service has funded a 100 hectare pilot project on short rotation coppice, through one principal contractor.

- **LEADER+**

Contact organization: Department of Agriculture, Food and Rural Development

Short description: Supports rural development, including possibly renewable energy projects.

- **Combined Heat and Power and District Heating Research, Development**

Contact organization: Sustainable Energy Ireland

Short description: See <http://www.irish-energy.ie/> under the "Consultation" section for the consultation document on the proposed programme.

- **Irish Energy Centre Renewable Energy Research, Development & Demonstration**

Contact organization: Sustainable Energy Ireland

Short description: See <http://www.irish-energy.ie/> under the "Consultation" section for the consultation document on the proposed programme.

- **Pilot Projects for the Disposal of Farm Wastes (Anaerobic Digestion)**

Contact organization: Department of Agriculture, Food and Rural Development

Short description: Capital grants for construction of anaerobic digestion plants.

- **INTERREG**

Contact organization: Interreg

Short description: The Energy Challenge programme was funded under INTERREG (crossborder projects between the Republic of Ireland and Wales). Resource, feasibility and market studies were supported.

- **Business Expansion Scheme**

Contact organization: Department of Finance

Short description: A mechanism for raising project finance. Can apply to renewable energy projects. Section 16 of the Finance Bill 2002 extends the Business Expansion Scheme for a further two years.

See <http://www.gov.ie/finance/publications/legi/fb02pass.pdf>

CHP and biomass-CHP

There were fifty-three combined heat and power (CHP) plants in Ireland at the end of 1997, with a total installed capacity of 86.65MW. The Department's fourth Alternative Energy Requirement competition (designed to encourage investment in renewable energy sources) was launched to support the competitive development of CHP in Ireland. Proposers bid their binding price for the electricity subject to a price cap of 3 pence per unit sold. The Department appointed the United Kingdom agency, ETSU20, to run the competition on its behalf. The competition should result in an additional 26 MW of new CHP capacity. The winning bids ranged between 2.25 pence and 3 pence per unit of electricity. Winning projects are planned to be located on sites with significant heat loads.

Irish Refining plc (IRC) operates the Whitegate refinery, Ireland's only oil refinery, in Cork Harbour. The refinery can process some 68000 barrels per day. A 7 MW combined heat and power plant and a road loading facility have been added recently.