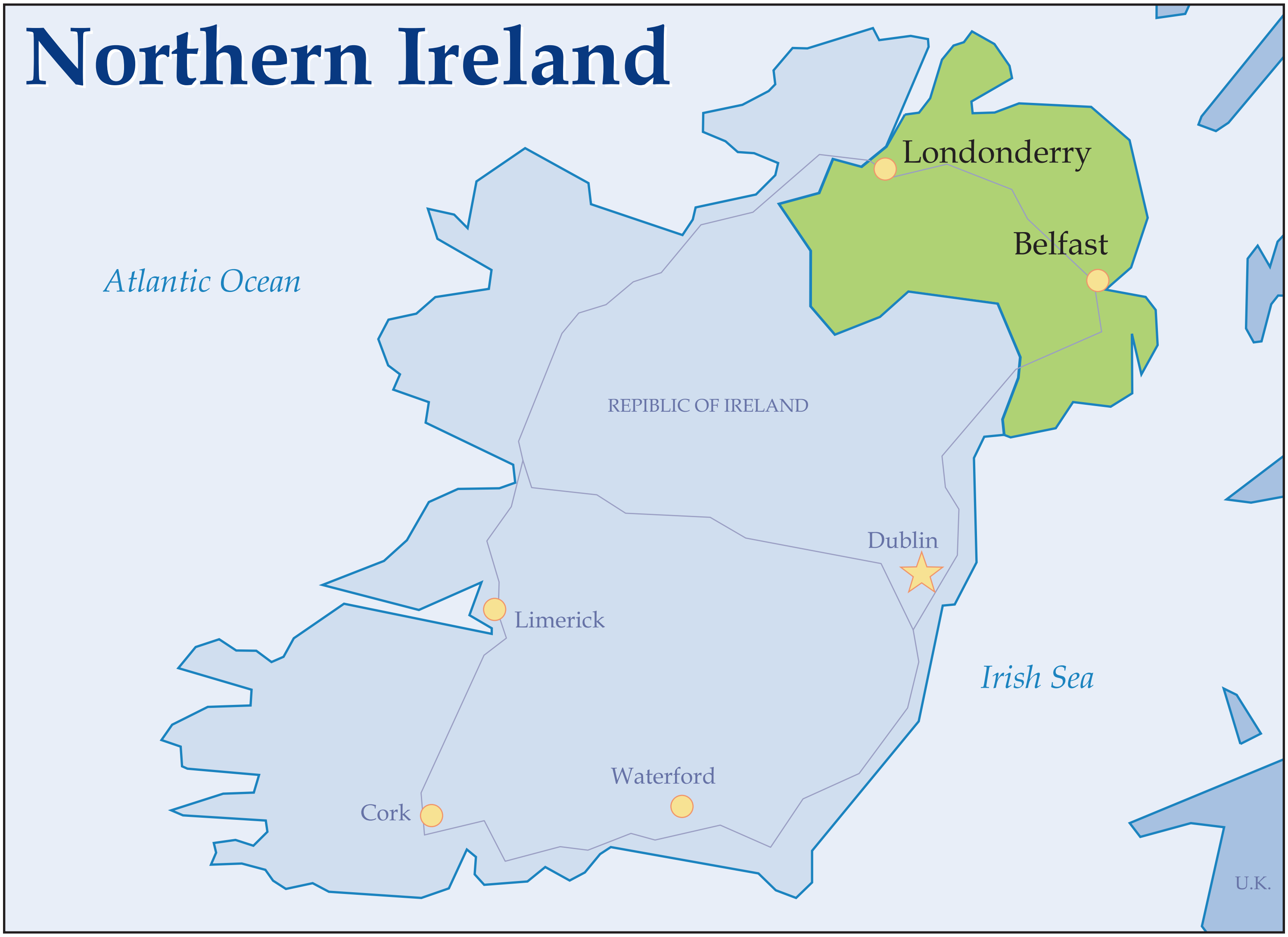
Northern Ireland



USEFUL LINKS

Northern Ireland

The Office for the Regulation of Electricity & Gas (OFREG)
Regulator
http://www.ofreg.nics.gov.uk/

Premier Power
Main Generator
http://www.premier-power.co.uk/

S.O.N.I.Ltd
Transmission Operator
http://www.soni.ltd.uk/

Northern Ireland Electricity
Transmission System Owner
http://www.nie.co.uk/

Europe/Regional

Energy Information Agency
http://www.eia.doe.gov

International Energy Agency
http://www.iea.org/

UCTE
http://www.ucte.org/

EU
http://europa.eu.int/

European Commission
http://europa.eu.int/comm/index_en.htm

Eurostat
http://europa.eu.int/comm/eurostat/

Erra
http://www.erranet.org

World Nuclear Association
http://www.world-nuclear.org/

MACRO ECONOMIC INDICATORS (UK)

Population (2002)	59,229,000
GDP per capita, $, (2002)	26,445
GDP Growth (2002)	1.8%

ELECTRICITY SECTOR STATISTICS

Available Capacity (2003)	1,700 MW
Peak Demand (2003)	1,600 MW
Consumption (2002)	7,700 GWh
Load Growth (2004-2010)	2% p.a.
Planned Additions (2004-2010)	400 MW
Generation (2002)	7,700 GWh
Imports (2003)	n/a
Exports (2003)	n/a

Source: *SONI, Electricity Association, World Bank*

NORTHERN IRELAND DIRECTORY

REGULATOR

Office for the Regulation of Electricity and Gas (Ofreg)

GENERATION

Airtricity
Coolkeeragh
Premier Power

Foreign Investors:
AES
Electricity Supply Board (ESB)
Fortum

WHOLESALE MARKET

There is currently no wholesale market in place

TRANSMISSION

Northern Ireland Electricity (NIE) [owner]
System Operator Northern Ireland (SONI) [operator]

DISTRIBUTION

Northern Ireland Electricity (NIE)

SUPPLY

The following actors are registered as second-tier suppliers with Ofreg:

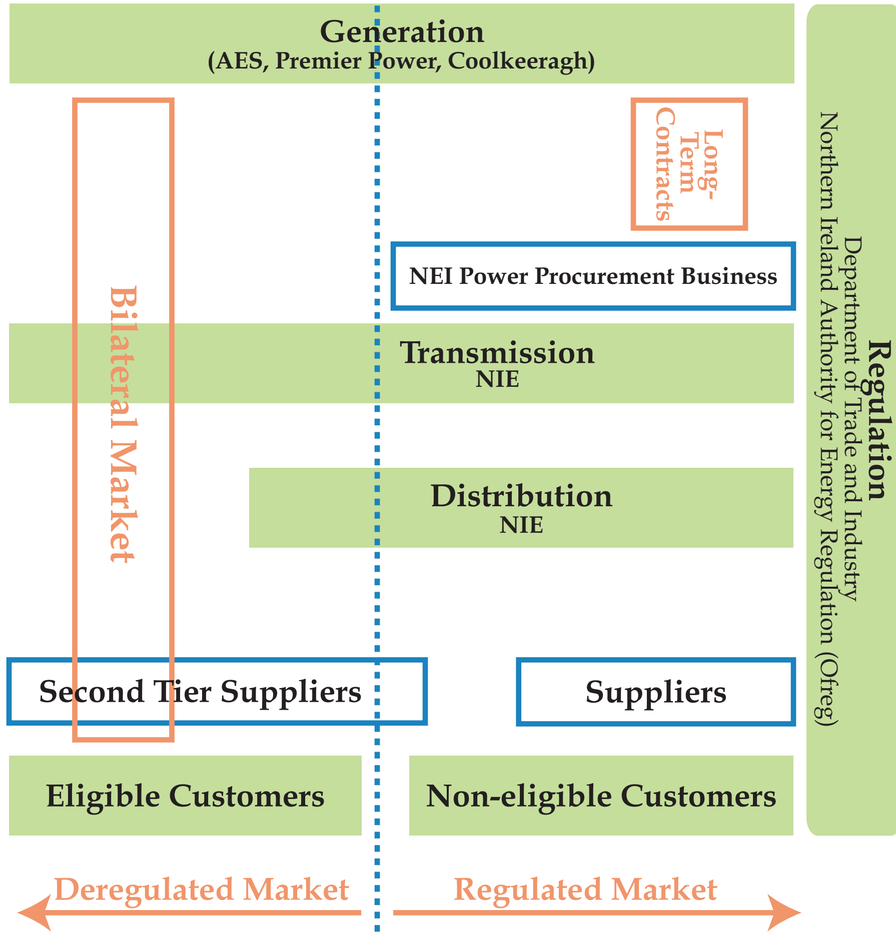
Airtricity Energy Supply Ltd
Bord Gais Eireann
ESB Independent Energy
Nigen (Now AES Kilroot)
Npower Ltd
Powergen
Premier Power
Scottish & Southern Electricity Ltd
Scottish Power Energy Retail Ltd
Viridian Energy Supply Ltd

NORTHERN IRELAND SNAPSHOT

- The Electricity Act of 1989 and the Utilities Act of 2000 govern the UK power sector, however the N. Ireland regulator - the N. Ireland Authority for Energy Regulation (Ofreg) – is independent from Ofgem, the regulator for the rest of the UK
- Energy Act 2003 provides for:

  The single UK market for England & Wales, Scotland and N. Ireland

  Greater support for renewables
- Customers, with a demand >1 MW or >0.79 GWh, representing about 35% of the market, are eligible to choose supplier
- From 2005, all non-residential users will have a choice of supplier. Full market opening expected in 2007
- The market structure is a combination of a competitive bilateral market and a regulated market, where Single Buyer - Northern Ireland Electricity (NIE) - buys power under long-term PPAs from generators and resells it to suppliers
- BETTA, the single UK power market framework, is expected to be introduced in 2005. BETTA is based on bilateral contracts with market-based charges for balancing power, but in the case of Northern Ireland only applies to trading across the Moyle Interconnector

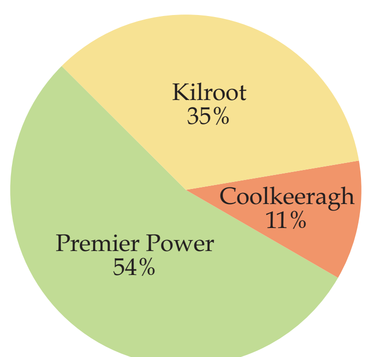


GENERATION

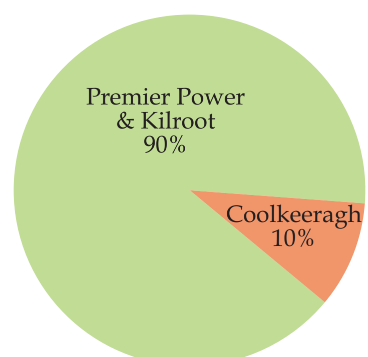
- In 1992, the generation business of Northern Ireland Electricity Service, the former integrated monopoly, was separated into 4 entities – Ballylumford, Kilroot, Belfast West (closed in 2002), and Coolkeeragh and sold to private investors
- Ballylumford (1,000 MW) is the largest generator now owned by Premier Power, a subsidiary of British Gas; Dual-fuel (coal and oil) fired Kilroot (520 MW) is owned by AES; Coolkeeragh has been jointly owned by the management and ESB since 1998
- Ballylumford and Kilroot provide 90% of the output in N.Ireland
- The plants of N. Ireland are inefficient, which results in prices in N. Ireland being much higher than in England & Wales
- N. Ireland aims to consume 6.3% of its power from renewables by 2012. End users may choose more expensive "green" electricity
- A new 400 MW facility will become operational in 2005 at Coolkeeragh

KEY PLAYERS

Capacity

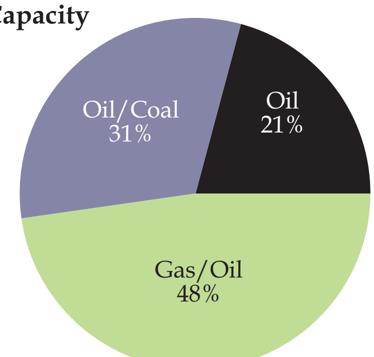


Generation

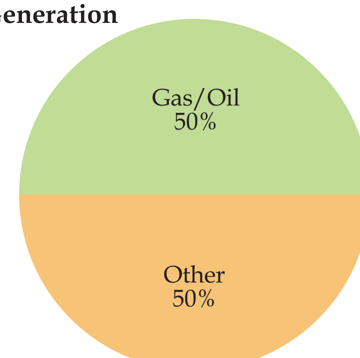


ENERGY SOURCES

Capacity

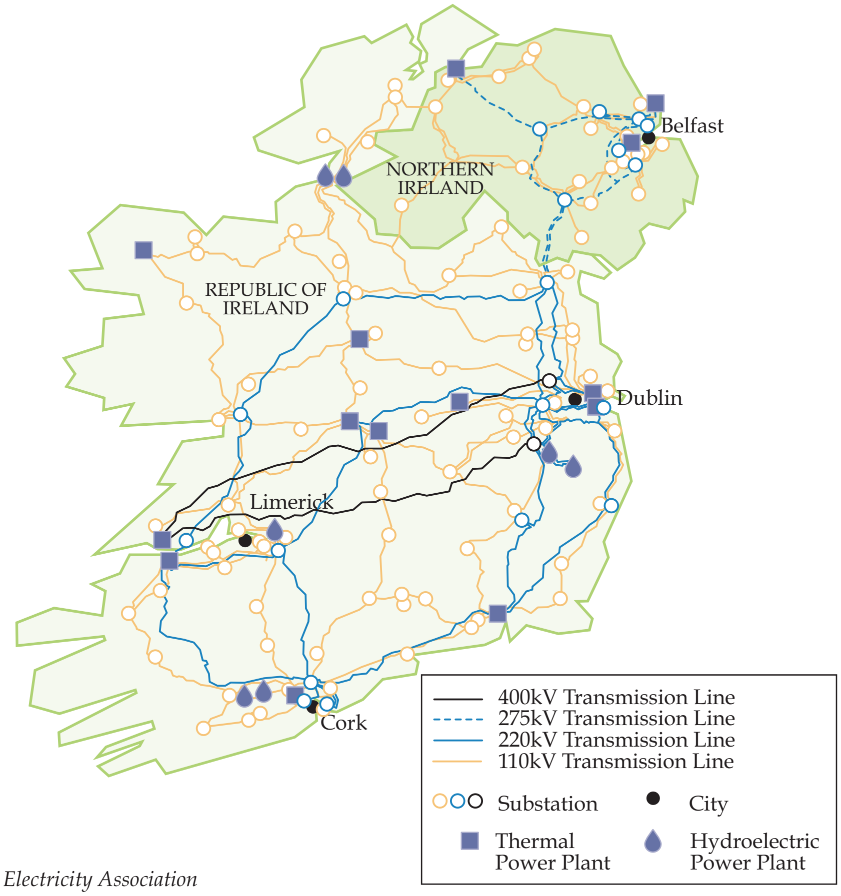


Generation



***Source:** SONI Ltd, Electricity Association*

NORTHERN IRELAND TRANSMISSION MAP



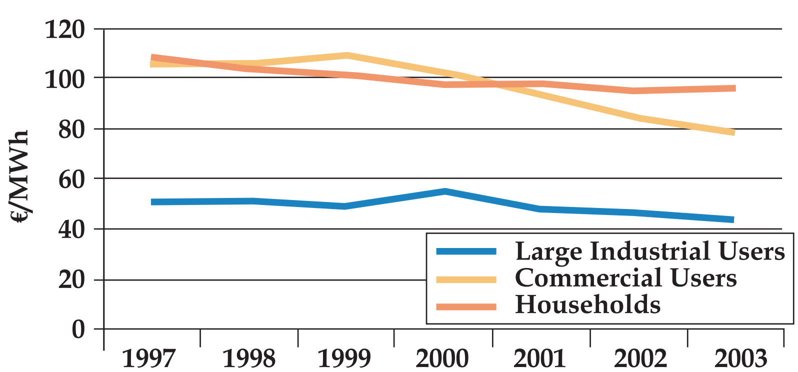
Source: *Electricity Association*

TRANSMISSION & MARKET OPERATION

- Northern Ireland Electricity (NIE) is the transmission system owner; NIE is a subsidiary of Viridian Group
- RPI-X tariff regime, X-factor – 5%
- The system is interconnected with that of Scotland via the Moyle Interconnector and Ireland via the North-South Interconnector

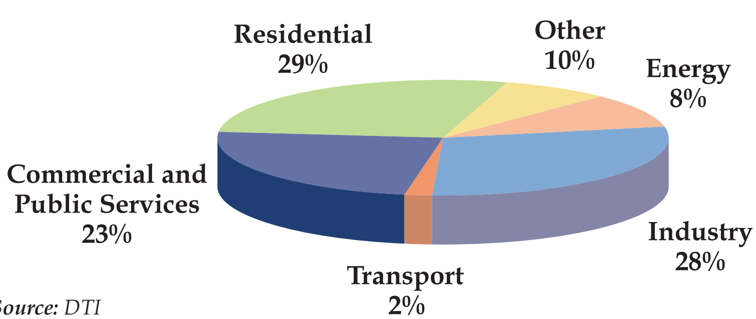
- System Operator Northern Ireland (SONI) is the system operator, a subsidiary of NIE
- NIE acts as the Single Buyer procuring power for regulated sector
- The competitive sector is based on bilateral contracts between generators and second tier suppliers (STS), who serve eligible customers
- Uncontracted capacity trades under simplified NETA structure, with day ahead contracts. An All-Ireland Pool has been proposed, but faces opposition due to small potential market size and view that any pool should be voluntary

UK PRICES BY CUSTOMER GROUP, 1997-2003



Source: *Eurostat*

UK DEMAND, CONSUMER TYPE, 2002



Source: *DTI*

DISTRIBUTION & SUPPLY

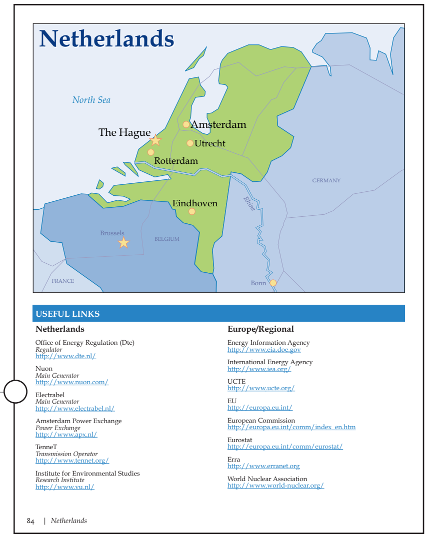
- The distribution network is controlled by NIE, a subsidiary of Viridian Group
- The electricity system of N. Ireland serves 700,000 customers
- RPI-X tariff regime administered by Ofreg
- Distribution and supply activities are separated
- NIE Supply Business serves the regulated market
- Second tier suppliers (STS) mainly supply eligible customers. However, a small portion of regulated market is also served by STS
- Energia, a subsidiary of Viridian Group, is the largest supplier of business customers
- Although 35% of the market is open, very little switching actually has taken place
- Historically, electricity prices in N. Ireland were higher than those in Scotland and England & Wales (by more than 30% in 2002) due largely to the generous long-term PPAs signed with the Single Buyer

HOW TO READ THE BRIEFINGS The market briefing is intended to provide both a thorough overview of each country's electricity sector, while also allowing the reader to quickly identify the information needed. The market briefings are standardized as much as possible with this purpose in mind. That said, availability of accurate and consistent data for all aspects of the electricity sector is not uniform and thus there may be slight differences among the countries. These two pages are intended to highlight what information is included in the market briefing and to provide any details on or guidance to the information that we have aggregated.

MAP Close-up map of the country, with details such as large cities, rivers, lakes, and neighboring countries

- ☆ *stars refer to capital cities*
- ○ *large dots to other large cities*
- ‖ *blue labeled lines refer to rivers*
- | *thin black unlabeled lines refer to major highways*

USEFUL WEBSITE LINKS We list the websites that we found most useful in our research efforts, thus we list the websites that generally contain the most consistent and reliable data and have substantial information in English.



USEFUL LINKS

Netherlands

Office of Energy Regulation (Dte)
Regulator
http://www.dte.nl/

Nuon
Main Generator
http://www.nuon.com/

Electrabel
Main Generator
http://www.electrabel.nl/

Amsterdam Power Exchange
Power Exchange
http://www.apx.nl/

TenneT
Transmission Operator
http://www.tennet.org/

Institute for Environmental Studies
Research Institute
http://www.vu.nl/

Europe/Regional

Energy Information Agency
http://www.eia.doe.gov

International Energy Agency
http://www.iea.org/

UCTE
http://www.ucte.org/

EU
http://europa.eu.int/

European Commission
http://europa.eu.int/comm/index_en.htm

Eurostat
http://europa.eu.int/comm/eurostat/

Erra
http://www.erranet.org

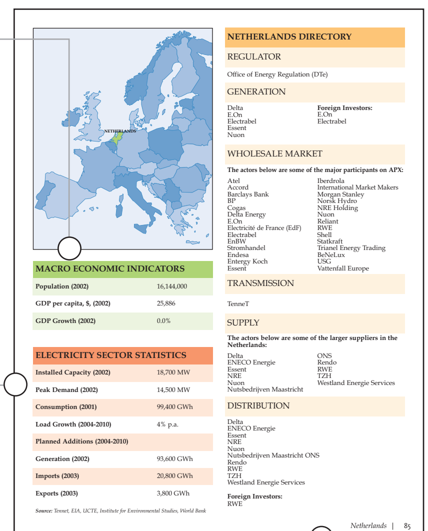
World Nuclear Association
http://www.world-nuclear.org/

84 | *Netherlands*

MACROECONOMIC INDICATORS This information is provided to place the country in a macro economic context. A comparative table of all countries' macroeconomic data is also provided at the end of the document in the statistical appendix.

ELECTRICITY SECTOR STATISTICS These statistics are meant to give a quick picture of the current state of the country's electricity sector, and its likely evolution.

- *The data on some electricity statistics varies from source to source. We consulted the most common sources for the region (EIA, UCTE, national regulators, and utilities) and chose the figures we perceived to be most accurate.*
- *We could not always obtain all information for the same year, so the year of each item of information is provided.*
- *Expected capacity additions estimates were usually obtained from national regulators or transmission grid operators.*



MACRO ECONOMIC INDICATORS

Population (2002)	16,144,000
GDP per capita, $, (2002)	25,886
GDP Growth (2002)	0.0%

ELECTRICITY SECTOR STATISTICS

Installed Capacity (2002)	18,700 MW
Peak Demand (2002)	14,500 MW
Consumption (2001)	99,400 GWh
Load Growth (2004-2010)	4% p.a.
Planned Additions (2004-2010)	
Generation (2002)	93,600 GWh
Imports (2003)	20,800 GWh
Exports (2003)	3,800 GWh

Source: *Tennet, EIA, UCTE, Institute for Environmental Studies, World Bank*

NETHERLANDS DIRECTORY

REGULATOR

Office of Energy Regulation (DTe)

GENERATION

Delta
E.On
Electrabel
Essent
Nuon

Foreign Investors:
E.On
Electrabel

WHOLESALE MARKET

The actors below are some of the major participants on APX:

Atel
Accord
Barclays Bank
BP
Cogas
Delta Energy
E.On
Electricité de France (EdF)
Electrabel
EnBW
Stromhandel
Endesa
Entergy Koch
Essent
Iberdrola
International Market Makers
Morgan Stanley
Norsk Hydro
NRE Holding
Nuon
Reliant
RWE
Shell
Statkraft
Trianel Energy Trading
BeNeLux
USG
Vattenfall Europe

TRANSMISSION

TenneT

SUPPLY

The actors below are some of the larger suppliers in the Netherlands:

Delta
ENECO Energie
Essent
NRE
Nuon
Nutsbedrijven Maastricht
ONS
Rendo
RWE
TZH
Westland Energie Services

DISTRIBUTION

Delta
ENECO Energie
Essent
NRE
Nuon
Nutsbedrijven Maastricht ONS
Rendo
RWE
TZH
Westland Energie Services

Foreign Investors:
RWE

Netherlands | 85

THE DIRECTORY is intended to provide a reference for the reader to which actors are active in the various market segments: generation, wholesale trading, transmission, distribution and retail supply.

- *We list the foreign actors that are active in generation and supply. Note however that these actors have made significant investments, and the list may not include all minority or smaller investments in the country made by foreign investors.*
- *Under the wholesale market and retail supply category, we specify how the list has been determined (i.e., whether it is from a list of registered participants, or simply includes principal actors in that segment).*
- *In the distribution sector of certain countries, there are literally hundreds of small municipal actors. We have chosen not to list these actors by name, but rather to refer to their existence in broad terms.*

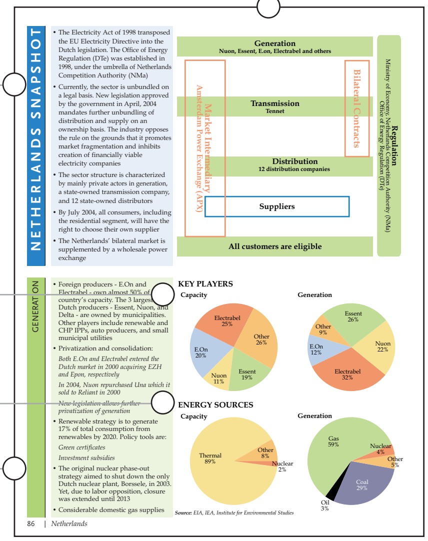
THE MARKET STRUCTURE DIAGRAM provides a schematic description of the market structure across the main industry segments, and lists main actors where possible.

THE SNAPSHOT text provides a summary of the regulatory context, the status of market opening, and the level of private sector participation.

THE PIE CHARTS provide a graphical representation of electricity capacity and generation:

- *The data are based on information obtained from national sources (regulators, grid operators, utilities, industry associations, etc.)*
- *The top 2 pie charts break down generation and capacity by asset owner*
- *The bottom 2 pie charts break down generation and capacity by fuel source. The colors for the fuels are consistent for all of the market briefings.*

THE GENERATION text provides additional information on the generation segment, such as level of state-ownership, indigenous fuel sources, amount of capacity that needs to be upgraded or replaced in the short to medium term, and environmental regulations.

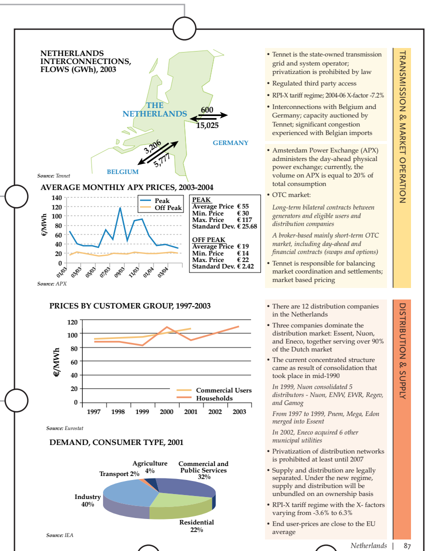


TRANSMISSION & MARKET OPERATION

The top graphic usually depicts the country's transmission system. When this data was unavailable, we provided information about import and export interconnection capacity to the country's neighbors.

When a market is in place, we provide historical wholesale price data for the last 1 to 2 years. Some countries with nascent markets only provide daily or monthly data, and in this case, we provide the data that is available. We also provide basic wholesale price statistics, such as average price, minimum price, maximum price, as well as the standard deviation. Most prices are in Euros, however, some of the Eastern European exchanges show prices in dollars. Rather than make the assumption about which exchange rate to use, in this case, we have left the data in dollars.

TRANSMISSION & MARKET OPERATIONS TEXT BOX The top text box describes the transmission sector and the bottom text box describes the current status of market operations.



DISTRIBUTION & SUPPLY

RETAIL PRICES This graphic provides retail prices, usually broken down for households, commercial, and industrial customers over the last 5 years.

DEMAND PIE CHART This graphic illustrates the breakdown of consumer demand.

DISTRIBUTION & SUPPLY TEXT BOX Describes the status of the distribution sector and the level of retail competition

- *Type of tariff regime*
- *Status of network (in Eastern Europe)*
- *Price differentials for distribution tariffs between regions*
- *Switching rates*
- *Number of independent retailers*

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Regulatory Economics Our skills in comparative efficiency evaluation, estimating elasticities and willingness to pay, cost causation identification, tariff modeling, and innovative rate design enable us to advise on a wide range of regulatory issues.

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Privatization and Unbundling London Economics advises on the configuration of firms to be privatized, and on how integrated utilities can restructure themselves into distinct business units.

Mergers and Acquisitions London Economics provides full service due diligence support and independent financial modeling to support bid preparation and transaction closings.

REPRESENTATIVE EUROPEAN ENGAGEMENTS

Austria assessment of the value of green certificates, evolution of future power sector regulation, and the long term value of existing hydro assets

Belgium assessed likely evolution of private sector activity in freshwater and wastewater sector for potential investor

France worked with incumbent generator on issues associated with establishing trading and risk management operations

Germany developed detailed cost forecasts for water tariffs to develop a subsidy mechanism to enable private sector investment

Hungary quantification of macroeconomic benefits from renovation of existing generation capacity

Italy training for regulators in dispatch modeling and wholesale electricity market dynamics

Scotland review of investment opportunities in the IPP sector

Netherlands due diligence support, valuation, revenue forecasting under PBR, and contract structuring associated with multiple cross-border leasing transactions of electricity and gas distribution networks

Romania advised on the acquisition of a distribution company and on the evolution of the regulatory regime

Spain examined the prospects for third-party access on regulated natural gas pipelines

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