

## Annex 2 – Data Sources

WADE has tried to find the most accurate and recent data available for running the WADE Economic Model for the UK. We have discussed our inputs with Matthew Leach, Energy Researcher at Imperial College London to ensure accurate data and reasonable assumptions.

All figures used in the model application from the different sources are for 2003.

### Existing Capacity

#### CG

Coal ST, Oil ST, Mixed ST, Gas T & Oil Engine, Gas CCGT, Nuclear, Bioenergy, HEP, Tidal, Interconnector	DUKES 2005, 5 Electricity, 5.7 Plant Capacity
Wind onshore, Wind Offshore	British Wind Energy Association website

#### DE

Gas CHP, Gas micro-CHP, Coal CHP, Renewable CHP, Hydro (local), Solar (local)	DUKES 2005, 5 Electricity, 5.7 Plant Capacity
Wind (local)	British Wind Energy Association website

### Generation and Load Factors

#### CG

Coal ST	DUKES 2005, 5 Electricity, 5.1 Commodity Balances; IEA, Electricity Information 2004
Oil ST, Gas CCGT, Nuclear, Bioenergy, HEP, Tidal	DUKES 2005, 5 Electricity, 5.1 Commodity Balances
Mixed ST, Gas T & Oil Engine	DUKES 2005, 5 Electricity, 5.1 Commodity Balances; WADE, various
Wind onshore, Wind offshore	DUKES 2005, 5 Electricity, 5.1 Commodity Balances; British Wind Energy Association website
Interconnector	DUKES 2005, 5 Electricity, 5.1 Commodity Balances; IEA, Projected Costs of Generating Electricity – 2005 update

#### DE

Gas CHP, Gas micro-CHP, Coal CHP, Renewable CHP, Hydro (local), Solar (local)	DUKES 2005, 5 Electricity, 5.1 Commodity Balances
Wind (local)	DUKES 2005, 5 Electricity, 5.1 Commodity Balances; British Wind Energy Association website

### Future Load Factors

#### CG

Coal ST, Gas CCGT, Nuclear, Wind onshore, Wind offshore	IEA, Projected Costs of Generating Electricity – 2005 update
Oil ST, Mixed ST, Gas T & Oil Engine, Bioenergy, HEP, Tidal, Interconnector	Estimates (WADE)

#### DE

Hydro (small)	IEA, Projected Costs of Generating Electricity – 2005 update
Gas CHP, Gas micro-CHP, Coal CHP, Renewable CHP	Estimates (WADE)
Wind (local), Solar (local)	WADE Economic Model Application to the Republic of Ireland

## Retirement Rates

All technologies	Chosen to match the installed capacity projection from DTI: DTI, Energy Paper 68 – Energy Projections for the UK, Annex D
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## Capital Costs

### CG

Coal ST, Gas CCGT, Tidal, Wind offshore	WADE, various
Nuclear	Uranium Information Centre, The Economics of Nuclear Power, Briefing Paper 8
Oil ST, Mixed ST, Gas T & Oil Engine, Bioenergy, Wind onshore, Interconnector	WADE Economic Model Application to the Republic of Ireland

### DE

Gas micro-CHP, Solar (local)	WADE, various
Gas CHP, Coal CHP, Renewable CHP, Hydro (local), Wind (local)	WADE Economic Model Application to the Republic of Ireland

## Transmission & Distribution

All technologies	WADE Economic Model Application to the Republic of Ireland
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## Operation & Maintenance Costs

### CG

Coal ST, Oil ST, Gas CCGT, Gas T & Oil Engines, Bioenergy, HEP, Wind onshore, Interconnector	WADE Economic Model Application to the Republic of Ireland
Mixed ST, Tidal, Wind offshore	WADE, various
Nuclear	WADE Economic Model Application to the European Union

### DE

Gas micro-CHP	Jon Slowe, DELTA Energy & Environment
Gas CHP, Coal CHP, Renewable CHP, Hydro (local), Wind (local), Solar (local)	WADE Economic Model Application to the Republic of Ireland

## Fuel Costs

### CG

Coal ST, Oil ST, Gas CCGT	DTI, Quarterly Energy Prices December 2005, Table 3.2.1; Simon Minett, COGEN Europe
Nuclear	Uranium Information Centre, The Economics of Nuclear Power, Briefing Paper 8
Mixed ST, Gas T & Oil Engines	WADE, various; Simon Minett, COGEN Europe
Bioenergy	WADE Economic Model Application to the Republic of Ireland

### DE

Gas CHP, Gas micro-CHP	DTI, Quarterly Energy Prices, Table 3.1.4; WADE, various; Simon Minnett, COGEN Europe
Coal CHP, Renewable CHP	WADE Economic Model Application to the European Union; Simon Minnett, COGEN Europe

## System Growth Properties

Demand growth (average and peak)	DTI, Energy Paper 68 – Energy Projections for the UK, Annex D
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T&D losses (average and peak)	WADE Economic Model Application to the USA
Coincident peak	WADE Economic Model Application to the USA
CG safety margin, DE random outage	Estimate (WADE)
T&D safety margin, DE safety margin	WADE Economic Model Application to the Republic of Ireland

### Heat Rates

Nuclear	WADE Economic Model Application to the People's Republic of China
Coal ST, Oil ST, Mixed ST, Gas T & Oil Engine, Gas CCGT, Bioenergy, HEP, Tidal, Wind onshore, Wind offshore, Interconnector	WADE Economic Model Application to the Republic of Ireland; Matthew Leach, Imperial College London

### CO<sub>2</sub> Emission Factors

All fuels	DEFRA, The Government's Strategy for Combined Heat and Power to 2010 - Public Consultation Draft, Annex 1
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### NO<sub>x</sub>, SO<sub>2</sub> and PM10 Emission Factors

All technologies	WADE Economic Model Application to the USA
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