

# TABLE OF CONTENTS

<b>1</b>	<b>EXECUTIVE SUMMARY &amp; KEY RECOMMENDATIONS</b> .....	7
	Executive summary.....	7
	Key recommendations .....	10
<b>2</b>	<b>GENERAL ENERGY POLICY</b> .....	11
	Country Overview .....	11
	Energy Supply and Demand .....	12
	Energy Policy.....	15
	Market Reform .....	18
	Energy Institutions .....	21
	Energy Pricing and Taxation .....	26
	Public Awareness.....	29
	Critique and Recommendations .....	30
<b>3</b>	<b>ENERGY AND THE ENVIRONMENT</b> .....	37
	Climate Change.....	37
	Air Pollution.....	47
	Critique and Recommendations .....	50
<b>4</b>	<b>ENERGY EFFICIENCY</b> .....	53
	Overview .....	53
	Policies and Measures .....	58
	Critique and Recommendations .....	64
<b>5</b>	<b>RENEWABLES AND NON-CONVENTIONAL FUELS</b> .....	67
	Overview .....	67
	Sources of Supply and Demand .....	67
	Government Policy .....	71
	Planning Rules, Network Connections and System Integration.....	76
	Critique and Recommendations .....	78
<b>6</b>	<b>ELECTRICITY</b> .....	83
	Overview .....	83
	Industry Structure .....	85
	Market Reform .....	88
	Prices .....	94
	Critique and Recommendations .....	96
<b>7</b>	<b>FOSSIL FUELS</b> .....	99
	Oil .....	99
	Distribution and Marketing Policies .....	99
	Natural Gas .....	101
	Industry Structure .....	101
	Infrastructure .....	102
	Security of Supply .....	106
	Market Reform.....	107

Price Regulation .....	111
Exploration and Production.....	113
Emergency Preparedness.....	115
Coal and Peat.....	116
Coal.....	116
Peat.....	116
Critique and Recommendations .....	118
Oil .....	118
Natural Gas.....	118
Exploration and Production .....	120
Peat and Coal .....	120
<b>8</b> ENERGY TECHNOLOGY AND RESEARCH & DEVELOPMENT ..	123
Overview .....	123
Funding .....	128
Major Programmes .....	130
Critique and Recommendations .....	135
<b>A</b> ANNEX: ORGANISATION OF THE REVIEW .....	139
Review Criteria .....	139
Review Team .....	139
Organisations Visited .....	140
<b>B</b> ANNEX: ENERGY BALANCES AND KEY STATISTICAL DATA . . .	141
<b>C</b> ANNEX: INTERNATIONAL ENERGY AGENCY "SHARED GOALS" ..	145
<b>D</b> ANNEX: GLOSSARY AND LIST OF ABBREVIATIONS .....	147

## Tables and Figures

### TABLES

1. Oil and Gas Dependence in the Irish Economy, 1990 to 2020 ....	14
2. Energy Taxes in Ireland, 2006.....	25
3. Ireland's CO <sub>2</sub> Emissions Projection for 2012 by Trading/Non-Trading Sector.....	41
4. Contribution from Measures Identified in the National Climate Change Strategy .....	46
5. Air Pollution in Ireland by Pollutant Target, 2001 to 2004 and 2010 .....	48
6. Air Pollution in Ireland by Sector and Pollutant, 2001 and 2004.....	49
7. Growth Rates and Shares of Fuels in Total Final Consumption, 1990 to 2005.....	54
8. Growth Rates and Shares of TFC by Sector, 1990 to 2005 .....	54
9. Summary of Demand-Side Measures in Ireland.....	63
10. Electricity Generating Capacity by Fuel, 2005.....	84
11. Power Plant Availability Factors, 2001 to 2005 .....	86
12. End Customer Class and Load by Connection Type.....	88

13. Interconnector Trade (April 2005-March 2006) .....	88
14. Comparison of SEM (from 2007) and Transitional Market (1999-2007) Design .....	89
15. Market Opening Phases, 2000 to 2005 .....	93
16. Electricity Retail Market Shares, 2000 to 2005 .....	93
17. Relative Tariff Changes by Tariff Class, 2001 to 2006 .....	95
18. Oil in the Irish Economy, 1990 and 2005 .....	99
19. Gas in the Irish Economy, 1990 and 2005 .....	102
20. Present and Future Peak Gas Demand and Supply .....	102
21. Gas Market Opening Phases.....	108
22. Gas Retail Market Share, 2000 to 2005 .....	108
23. Gas Average End-User Prices .....	108
24. The Irish Gas Market - Customers and Sales, 2005.....	110
25. Average Annual National Oil Stocks .....	116
26. Ireland's Energy RD&D Capacity by Institution.....	131

## FIGURES

1. Map of Ireland.....	6
2. Total Primary Energy Supply, 1973 to 2020.....	14
3. Energy Production by Source, 1973 to 2020 .....	15
4. Fuel Prices, 2005 .....	28
5. CO <sub>2</sub> Emissions by Fuel, 1973 to 2004 .....	38
6. CO <sub>2</sub> Emissions by Sector, 1973 to 2004 .....	39
7. Energy-related CO <sub>2</sub> Emissions per GDP in Ireland and in Other Selected IEA Countries, 1973 to 2010 .....	39
8. Energy Intensity in Ireland and in Other Selected IEA Countries Measured by TPES, 1973 to 2010 .....	55
9. Total Final Consumption by Sector and by Source, 1973 to 2020...	56
10. Unit Consumption of Energy per Dwelling.....	59
11. Renewable Energy as a Percentage of Total Primary Energy Supply, 1973 to 2005.....	68
12. Renewable Energy as a Percentage of Total Primary Energy Supply in IEA Countries, 2005 .....	69
13. Wind Power Output in the Irish System: Selected Days April 2006....	78
14. Final Consumption of Electricity by Sector, 1973 to 2020 .....	83
15. Electricity Generation by Source, 1973 to 2020.....	84
16. Industrial Electricity Prices in Ireland and Other IEA Countries, 2005 ..	94
17. OECD Unleaded Gasoline Prices and Taxes, Third Quarter 2006 ..	100
18. Projected Gas Consumption vs. Gas Supply, 2005 to 2013 .....	103
19. Map of the Irish Gas System .....	105
20. Gas Prices in IEA Countries, 2005 .....	112
21. Government Energy R&D Budget, 1974 to 2005 .....	129
22. EU and State Support for Energy R&D by Sector, 2004.....	130
23. The Ocean Energy Strategy Concept, 2005.....	134