



Ireland's Report under Article 3 of the EU Directive on Energy Efficiency (2012/27/EU) on Energy Efficiency Targets

Setting the target

Ireland's second National Energy Efficiency Action Plan reaffirms the commitment to deliver 20% energy savings in 2020, along with a public sector energy saving target of 33%. This equates to energy savings of **31,925GWh**; the calculation of which was based upon the methodology outlined in Annex 1 of the Energy Services Directive (ESD) i.e. the average of the most recent 5-year period of unadjusted final energy consumption, expressed as 'primary energy equivalent'. At the time the relevant data was 2001–2005.

For further information on the policy actions and savings projections, please refer to the National Energy Efficiency Action Plan (NEEAP) and Ireland's National Reform Programme return. Information on savings achieved under specific measures to date can be found at Annex II below.

Calculation Methodology

The national target was calculated as 20% of the average of unadjusted final energy consumption for the period 2001–2005, expressed as 'primary energy equivalent'. The emissions trading sector is included in the national target, as opposed to the targets set out in the ESD.

The absolute level of primary energy consumption in 2020 is estimated to be 162,122GWh (13,940 ktoe). The absolute level of final energy consumption in 2020 is estimated at 135,931GWh (11,688 ktoe).

The conversion to primary energy equivalent takes into account the conversion losses in electricity generation and makes units of different energy streams more comparable. The final energy consumption is converted to primary energy equivalent by multiplying the electricity component by a factor (assumed to be 2.5) to reflect the average electricity generation efficiency during the reference period (assumed to be 40%) and adding it to the remainder of the final energy consumption.

Forecast Methodology

Macro-economic assumptions, including those below, are combined with fuel price and other relevant assumption in the model. Fuel and carbon price assumption are taken from the Commission's guidance document entitled 'Recommendations for reporting on projections in 2013', as provided to the national contact for the EU 2050 Reference Scenario.

	Average Annual % Growth	
	2011–2015	2016–2020
GDP	2.3%	3.1%
GNP	1.5%	3.4%
Personal Consumption	-1.1%	1.2%

	2010	2011	2015	2020
Housing completions, thousands	15	10	20	33
Population, thousands	4,428	4,430	4,491	4,606

Progress to Date

ESD 9% by 2016 target

The indicative ESD target is calculated in accordance with the methodology outlined in Annex 1 of Directive 2006/32/EC as 13,117 GWh.¹ Statutory Instrument 542 of 2009², which transposed the ESD, sets an interim (2010) indicative target of 5,000 GWh. Estimated savings achieved to the end of 2010 amount to 4,815 GWh representing a significant achievement, but fall just short of this target. These savings have been achieved across a broad range of energy users within the public, commercial, household, transport and agriculture sectors. Large emitters of greenhouse gases covered by the EU Emissions Trading Scheme (ETS)³, and aviation and marine bunker fuels are excluded. Projected savings to 2016 from measures detailed in this plan are expected to exceed the 2016 ESD target (17,130 GWh).

National 20% target

Energy efficiency gains achieved to the end of 2010 account for over 26% (8,310GWh) of the 2020 target. This level of savings represents a reduction in energy spend of approximately €470 million per annum. Estimated reductions in CO2 emissions of 2 million tonnes have also been achieved. Should all measures detailed in this plan reach their full potential by 2020 it is estimated that energy savings totalling over 34,060 GWh per annum will have been achieved, leading to a reduction in annual emissions of over 7.7 Mt CO2. This represents a potential reduction in energy spend across all sectors of approximately €2.4 billion (€2011) as a result of the savings.

The table at Annex II gives an outline of the progress achieved to date against both targets, including some completed actions (to the end of 2010), some ongoing, and some committed future actions, such as future building regulations⁴.

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¹ Target is expressed in primary energy equivalent (PEE) terms. The conversion from final energy consumption to primary energy equivalent is based on a standardised factor 2.5 for electricity (Annex II, Energy Services Directive). It accounts for the conversion losses in electricity generation and makes units of different energy streams more comparable.

² S.I. 542 of 2009, European Communities (Energy End-use Efficiency and Energy Services) Regulations 2009.

³ As defined in Directive 2003/87/EC.

⁴ This above table does not represent a comprehensive list of all actions being undertaken to improve energy efficiency. Many cross-sectoral and underpinning measures for which an energy savings estimate has not been made are detailed elsewhere in this plan. The table includes those actions that are more readily quantifiable, either by estimation or some combination of measurement and extrapolation.

Annex I – Annex XIV Requirements

Directive 2012/27/EU ANNEX XIV General Framework for Reporting			
	2009	2010	2011
Primary energy consumption (ktoe)	14,780	14,824	13,869
Total final energy consumption (ktoe)	12,012	11,961	11,154
Final energy consumption by sector			
Industry	2,181	2288	2,257
Transport total	4,893	4624	4,448
Transport breakdown			
Road freight	791	720	657
Passenger	3,009	2,948	2,805
Other (includes fuel tourism, navigation, unspecified)	1,093	956	986
Households	3,082	3275	2,836
Services	1,542	1477	1,333
Agriculture / Fisheries	313	298	280
Gross value added by sector € million (*preliminary) - Gross value added at constant factor cost by sector of origin and gross national income at constant market prices (chain linked annually and referenced to year 2010)			
Industry (including building)	35,852	36,525	37168*
Services			
Distribution, transport, software and communication	32,219	33,733	35041*
Public administration and defence	8,291	7,831	7551*
Other services (including rent)	61,026	59,808	59252*
Average Annual household disposable income (€)	45,959	43,151	41,819
Gross domestic product (GDP) (current market price million/ €)	161,275	156,487	158,993*

Electricity generation from thermal power generation	1,896	1,960	1,730
Electricity generation from combined heat and power	157	168	169
Heat generation from thermal power generation	0	0	0
Heat generation from combined heat and power plants, including waste heat	0	0	0
Fuel input for thermal power generation	4,107	4,310	3,759
Passenger kilometres (million pkm) - Including car, train and bus	58000*	57800*	56400*
Tonne kilometres (million tkm)	12150*	11000*	10050*
Combined transport kilometres (pkm + tkm)			
Population (2011 census year)	4,459,300*	4,470,700*	4,581,269
* estimated/preliminary value only			

Annex II – Article 24 (1) Requirement

Targets, progress and ambition

	Energy Services Directive 2016 9% target (non-EST only)	National 2020 20% target (whole economy)	Public sector 2020 33% target
Target (GWh)	13,117	31,925	3,240
Progress to 2010 (savings achieved)	37%	26%	20%
Estimated 2016 savings	131%	66%	60%
Estimated 2020 savings	n/a	107%	100%

Energy savings achieved and expected by Measure

	Energy savings (GWh PEE)				CO ₂ savings (kt)		
	2010	2016	2020		2010	2016	2020
Public Sector							
Public Sector Programme	75	645	1,255		17	149	281
Green Public Procurement (via ACA)	25	155	285		5	33	59
SEEEP and EERF (public sector)	90	90	90		21	20	20
Public Sector Building Demonstration Programme	140	140	140		33	32	31
CHP (public sector)	120	160	185		29	38	45
ReHeat (public sector)	110	125	125		26	30	30
Public transport efficiency	90	160	160		23	40	40
Better Energy (public sector)	0	500	1000		0	114	223
Business							
SEAI Large Industry Programmes	1,595	2,235	2,730		398	539	642
SEAI SME Programme	150	400	505		36	91	113
ACA (private sector)	55	370	690		13	80	140
SEEEP and EERF (private sector)	175	175	175		42	41	40
CHP (private sector)	280	370	430		68	90	104
ReHeat (private sector)	250	290	290		61	70	70
Better Energy (Commercial sector)	0	500	1,000		0	114	223
Buildings							
2002 Building Regulations -Dwellings	1,280	1,280	1,280		312	312	312
2008 Building Regulations -Dwellings	85	1,210	2,110		21	295	514
2011 Building Regulations -Dwellings	0	380	835		0	93	203
Building Regulations - Nearly Zero Energy Dwellings	0	15	225		0	3	55
2005 Building Regulations - Buildings other than dwellings	185	300	300		45	72	71
2012 Building Regulations - Buildings other than dwellings	0	390	865		0	93	205

Energy efficient boiler regulation	200	800	1,200		49	195	293
Domestic Lighting (Eco-Design Directive)	200	1,200	1,200		47	259	242
Greener Homes Scheme (GHS)	120	120	120		28	28	28
Warmer Homes Scheme (WHS)	125	130	130		33	33	33
Home Energy Saving (HES) scheme	365	365	365		90	90	90
Smart Meter roll-out	0	375	625		0	80	126
Better Energy Homes (residential retrofit)	0	3,000	6,000		0	740	1,476
Mobility-Transport							
Electric vehicle deployment	0	265	690		0	68	175
Vehicle registration tax (VRT) and annual motor tax (AMT) rebalancing	185	825	655		47	211	168
Improved fuel economy of private car fleet (EU Regulation)	190	1,575	3,015		48	402	769
More efficient road traffic movements	0	375	715		0	96	182
Aviation efficiency	255	255	255		65	65	65
Energy Supply							
Electricity generation efficiency improvements	1,690	1,675	4,055		422	293	524
Transmission and distribution savings	275	325	360		66	71	73
Totals	8,310	21,175	34,060		2,046	4,980	7,665