NEEAP2 Energy Saving Measures & Tables

Under Article 14(2) of Directive 2006/32/EC

IRELAND

Department of Communications, Energy and Natural Resources
An Roinn Cumarsáide, Fuinnimh agus Acmhainni Nádúrtha

Measures in the Public and Business sectors

Public sector

No.	Title of the energy saving measure	End-use targeted	Duration	Energy savings (GWh, PEE)			CO_2 savings (kt CO_2)		
				2010 (achieved)	2016 (expected)	2020 (expected)	2010 (achieved)	2016 (expected)	2020 (expected)
P.1.	Public Sector Programme	Public sector - all end-uses	2011 - ongoing	75	645	1,255	17	149	281
P.2.	Green Public Procurement via Accelerated Capital Allowances (ACA)	Public and business sectors - all end uses	2008-2014	25	155	285	5	33	59
P.3.	SEEEP and EERF	Public and Commercial sectors	2009 and 2010 (completed)	90	90	90	21	20	20
P.4.	Public Sector Building Demonstration Programme	Public sector - building energy use	Completed 2009	140	140	140	33	32	31
P.5.	CHP	Public sector heat/electricity demand	2008-2011	120	160	185	29	38	45
P.6.	ReHeat	Public sector heat demand	2008-2011	110	125	125	26	30	30
P.7.	Better Energy Workplaces	Public sector buildings and services	2011 - ongoing	0	500	1000	0	114	223

Business sector

No.	Title of the energy saving measure	End-use targeted	Duration	Energy savings (GWh, PEE)			CO_2 savings (kt CO_2)		
				2010 (achieved)	2016 (expected)	2020 (expected)	2010 (achieved)	2016 (expected)	2020 (expected)
B.1.	SEAI Large Industry Programmes	Final energy in large industry - all end uses	2000 - ongoing	1,595	2,235	2,730	398	539	642
B.2.	SEAI SME Programme	Commercial sector (SMEs)	2008 - ongoing	150	400	505	36	91	113
B.3.	ACA (private sector)	Business sectors - all end uses	2008-2014	55	370	690	13	80	140
B.4.	SEEEP and EERF (private sector)	Commercial sectors	2009 and 2010 (completed)	175	175	175	42	41	40
B.5.	CHP	Business sectors - heat/elec demand	2008-2011	280	370	430	68	90	104
B.6.	ReHeat	Business sector - heat demand	2008-2011	250	290	290	61	70	70
B.7.	Better Energy Workplaces (Commercial sector)	Commercial sectors - all end uses	2011 - ongoing	0	500	1,000	0	114	223

P.1.

Title of the Energy saving measure		Public Sector Programme
Description	Category	2.7
	Timeframe	2011 – Ongoing
	Aim/brief description	The programme aims to increase energy efficiency by providing a range of funded services including advice, mentoring and training to participating Public Sector bodies.
	Target end use	All energy end uses in the Public Sector
	Target group	Public Sector
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Public Sector organisations who demonstrate commitment to energy efficiency can avail of energy management training and support for exemplary design and energy management practices. Types of supports range from 90 days at individual sites to advanced supports for whole organisations who commit to a 3% annual energy saving. Advanced supports include: • Dedicated energy advisor • Strategic energy planning • Prioritisation of energy efficiency opportunities • Coordination of energy efficiency activities • Detailed & in-depth assessments • Advanced & targeted training • Working group facilitation • Energy Efficient Design • Monitoring of progress and savings.
	Budget and financial resource	The Public Sector Programme is funded by the DCENR through the SEAI.
	Implementing body	SEAI / DCENR
	Monitoring authority	SEAI / DCENR
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI), is the body responsible for implementing the Public Sector Programme and calculates savings based on on-going programme monitoring.
	Savings achieved in 2010	75 GWh
	Expected energy savings in 2016	645 GWh
	Expected impact on energy savings in 2020	1,255 GWh
	Assumptions	Future savings for this programme equivalent to the gap to the public sector target (3,240 GWh) for 2020 after other public sector actions taken in to account. Savings achieved will be assessed on the basis of measurement and verification plans (M&V) to be established for public sector projects.
	Overlaps, multiplication effect, synergy	The saving estimate for this programme represents the residual of the public sector 33% target after savings from current and completed measures in the public sector are taken into account.

P.2. & B.3.

Title of the Energy saving measure		Accelerated Capital Allowance (ACA) – Public (Green Public Procurement) and commercial sector
Description	Category	2.7, 4.3
	Timeframe	2008 – 2014 (Budget 2011 extended ACA for further 3 years only)
	Aim/brief description	The measures promotes the use of (qualifying) energy efficient products and technologies by providing a tax incentive
	Target end use	Selected energy end uses in industry and SMEs
	Target group	Industry and SMEs
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The ACA, introduced by the Government in the Finance Act 2008, offers a tax incentive for companies to purchase highly energy efficient equipment. The ACA allows purchasers of eligible energy efficient equipment to write off the full cost of their purchase against their profit for that year instead of having to write it off as normal over a period of eight years. By encouraging companies to purchase energy efficient equipment, the ACA aims to improve the overall energy efficiency of Irish companies and assist Ireland in meeting EU targets for the reduction of carbon emissions. The ACA currently covers 10 different equipment categories and 49 associated technologies, and only energy efficient equipment that meets the relevant eligibility criteria is listed on the ACA Specified List (*'Triple E Products Register'*). This list has been adopted by many public sector organisations as a best practice list for public procurement.
	Budget and financial resource	The ACA scheme results in reduced tax revenues in the year of purchase but is revenue neutral, on a non-discounted basis, over eight years.
	Implementing body	The Office of the Revenue Commissioners, Department of Finance
	Monitoring authority	Department of Finance / SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI), the body responsible for creating and maintaining the ACA specified list of eligible products for which the incentive can be claimed, carried out a mid-term review of the scheme in October 2010. The primary aims of the review were to determine: 1. Awareness of the ACA among End Users; 2. The influence that the ACA had on End Users' purchasing decision 3. The level of energy savings attributable to the ACA
	Savings achieved in 2010	Public sector: 25 GWh, Commercial sector: 55 GWh
	Expected energy savings in 2016	Public sector: 155 GWh, Commercial sector: 370 GWh
	Expected impact on energy savings in 2020	Public sector: 285 GWh, Commercial sector: 690 GWh
	Assumptions	Survey data used to determine penetration/sale rates of energy efficient technologies on the *Triple E Products Register.* Number of approved technologies on the list increasing over time as new categories introduced. Awareness of scheme increasing over time through promotion within the public and private sectors.
	Overlaps, multiplication effect, synergy	By way of the ACA incentive and market benchmarking the scheme has managed to bring considerable confidence to the energy efficient product market as a whole. This indicated a potential multiplier effect through promoting a general improvement in the energy efficiency of end use products.

P.3. & B.2.

Title of the Energy saving measure		Supports for Exemplar Energy Efficiency Projects (SEEEP) and Energy Efficiency Retrofit Fund (EERF) – Public and Business sectors.
Description	Category	2.7, 3.1
	Timeframe	SEEEP – 2009 EERF – 2010 Both completed. Major changes foreseen, improvements: An objective of the Energy Efficiency Retrofit Fund (EERF) was to inform other longer term initiatives for activating retrofit investment. Future supports for business and public sector energy efficiency retrofits will occur via Better Energy Workplaces.
	Aim/brief description	The Supports for Exemplar Energy Efficiency Projects (SEEEP) programme aimed to achieve significant energy efficiency gains through increasing the capability of the supply chain and stimulating direct employment focusing on energy efficiency projects. The Energy Efficiency Retrofit Fund (EERF) provided for funding towards the implementation of a limited number of qualifying energy efficiency projects.
	Target end use	Selected energy end uses in the Public and Private Sectors
	Target group	Public and commercial sectors
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Projects installed across a range of technologies, including lighting and controls, building fabric upgrades, heating systems and controls, ventilation controls, Variable Speed Drives and others.
	Budget and financial resource	The EERF programme closed in August 2010 and was funded and managed by SEAI. Funding under the SEEEP programme provided for c.35% for private projects and c.50% for public sector projects. Support under the EERF programme provided for typically 35% funding for private projects and 50% up to 80 % funding for public projects.
	Implementing body	SEAI / DCENR
	Monitoring authority	SEAI / DCENR
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI), the body responsible for implementing the programme collected and vetted project detail and savings estimations at project outset. Savings are calculated based on primary energy savings from electricity and heat.
	Savings achieved in 2010	Public sector: 90 GWh, Commercial sector: 175 GWh
	Expected energy savings in 2016	Public sector: 90 GWh, Commercial sector: 175 GWh
	Expected impact on energy savings in 2020	Public sector: 90 GWh, Commercial sector: 175 GWh
	Assumptions	Savings based on individual projected reductions in energy consumption for the range of projects funded. Calculated on the basis of, for example, number of lights to be replaced, demand reduction through building fabric improvements etc.
	Overlaps, multiplication effect, synergy	Projects funded to date provide demonstration and development of techniques for energy savings in commercial and public buildings.

P.4.

Title of the Energy saving measure		Public Sector Building Demonstration Programme
Description	Category	2.7
	Timeframe	Completed 2009.
	Aim/brief description	The Public Sector Building Demonstration Programme offered financial support to public and commercial sector organisations to stimulate the innovative application of sustainable energy design strategies, technologies and services in new and retrofit projects, acting as both an exemplar for good practice and as a demand leader for the services and technologies involved
	Target end use	Public sector buildings
	Target group	Public sector
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Funding under Public Sector Building Demonstration Programme was provided for new and retrofit public sector buildings via three main elements. • Design Support • Model Solutions Investment Support • Energy Management Bureau Services – support made available for outsourced energy management to monitor and report on energy control and management.
	Budget and financial resource	The programme was funded by DCENR through the SEAI.
	Implementing body	SEAI / DCENR
	Monitoring authority	SEAI / DCENR
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI) was the body responsible for implementing the Public Sector Building Demonstration Programme.
	Savings achieved in 2010	140 GWh
	Expected energy savings in 2016	140 GWh
	Expected impact on energy savings in 2020	140 GWh
	Assumptions	Savings based on individual projected reductions in energy consumption for the range of projects funded. Calculated on the basis of, for example, number of lights to be replaced, demand reduction through building fabric improvements etc.
	Overlaps, multiplication effect, synergy	A consequent multiplication effect is the development of the capacity for energy efficient retrofit of public sector buildings.

P.5. & B.5.

Title of the Energy saving measure		CHP Deployment - Public and Business sectors
Description	Category	3.1
	Timeframe	2006 – 2011 Major changes foreseen, improvements: The CHP Deployment programme ran from 2006 to 2011. It will be replaced by market based mechanisms.
	Aim/brief description	The CHP Deployment programme provided grants for selected renewable and alternative heat sources and was designed to prime the market and to establish a supply chain.
	Target end use	Electricity and Heat Demand
	Target group	Public and Private Sector
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The CHP Deployment programme provided grant aid towards the installation of small scale CHP, up to 1 MWe at sites with a suitable heat load. Applicants were required to submit a feasibility study demonstrating the suitability of the site.
	Budget and financial resource	The CHP deployment programme closed in May 2010. €4.8m was disseminated across the public and private sectors, representing around 25% of total installed costs for upgrades.
	Implementing body	SEAI
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI), the body responsible for administering the grant scheme, collects and collates data on the funded installations. The energy saving is calculated based on the installed capacity of each technology, the aggregate efficiency and the aggregate efficiency of the displaced fossil fuel heat source. In the case of solar thermal the energy savings are calculated based on the installed capacity, the projected energy yield and the efficiency of the displaced gas or oil boiler.
	Savings achieved in 2010	Public sector: 120 GWh, Commercial sector: 280 GWh
	Expected energy savings in 2016	Public sector: 160 GWh, Commercial sector: 370 GWh
	Expected impact on energy savings in 2020	Public sector: 185 GWh, Commercial sector: 430 GWh
	Assumptions	Key assumptions include: • Aggregate efficiency of displaced heat source • Aggregate efficiency or yield from CHP technology
	Overlaps, multiplication effect, synergy	The CHP programme acted as a demonstration and market priming programme which increased the capacity of the supply chain. As such there will be a multiplier effect through facilitating the wider deployment of these technologies.

P.6. & B.6.

Title of the Energy saving measure		Renewable Heat (ReHeat) Deployment Programme – Public and Business sectors.
Description	Category	3.1
	Timeframe	2007 – 2011 Major changes foreseen, improvements: The ReHeat programme ran from 2008 to 2011. It will be replaced by market based mechanisms.
	Aim/brief description	The ReHeat programme provided grants for selected renewable and alternative heat sources and was designed to prime the market and to establish a supply chain.
	Target end use	Heat demand in the private and public sectors
	Target group	Public and business sectors
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The ReHeat programme provided grant aid towards the installation of renewable and alternative heating technologies in the tertiary sector. The eligible technologies were: • Biomass boilers • Solar thermal • Heat pumps A full list of installations supported, including capacities, is available at http://www.seai.ie/grants/renewable_heat_deployment_programme/
	Budget and financial resource	This programme closed in December 2010. . Over €8m h in funding was provided, representing around 25% of the costs of installed technologies.
	Implementing body	SEAI
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Sustainable Energy Authority of Ireland (SEAI), the body responsible for administering the grant scheme, collects and collates data on the funded installations. The energy saving is calculated based on the installed capacity of each technology, the aggregate efficiency and the aggregate efficiency of the displaced fossil fuel heat source. In the case of solar thermal the energy savings are calculated based on the installed capacity, the projected energy yield and the efficiency of the displaced gas or oil boiler.
	Savings achieved in 2010	Public sector: 110 GWh, Commercial sector: 250 GWh
	Expected energy savings in 2016	Public sector: 125 GWh, Commercial sector: 290 GWh
	Expected impact on energy savings in 2020	Public sector: 125 GWh, Commercial sector: 290 GWh
	Assumptions	Key assumptions include: • Aggregate efficiency of displaced heat source • Aggregate efficiency or yield from ReHeat technology
	Overlaps, multiplication effect, synergy	The ReHeat programme acted as a demonstration and market priming programme which increased the capacity of the supply chain. As such there will be a multiplier effect through facilitating the wider deployment of these technologies.

B.1.

Title of the Energy saving measure		Large Industry Programmes
Description	Category	4.1
	Timeframe	2000 - Ongoing
	Aim/brief description	The Large Industry Energy Network (LIEN) is a voluntary network, facilitated by SEAI, of companies working to maintain strong energy management and environmental protection practices.
	Target end use	Selected energy end uses in industry and SMEs
	Target group	industry and SMEs
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Regular workshops, seminars and site visits enable LIEN members to learn from energy experts and other specialists, and share knowledge and experiences with other energy managers. Companies joining the LIEN commit to: • Developing an energy-management programme • Setting/reviewing energy targets • Undertaking an annual energy audit • Producing an annual statement-of-energy account
	Budget and financial resource	The programme is funded by SEAI .
	Implementing body	SEAI
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Each of the 135 member companies submits an annual statement of energy accounts to SEAI. These accounts are then collated, analysed and the energy savings are reported on in the LIEN annual report each year.
	Savings achieved in 2010	1,595 GWh
	Expected energy savings in 2016	2,235 GWh
	Expected impact on energy savings in 2020	2,730 GWh
	Assumptions	Energy intensity and output together with details of energy efficiency improvement measures (reported by participant companies) used to establish savings rate achieved with participant companies to date. Decomposition analysis undertaken of projections for total primary energy requirement of Irish industry and the proportion covered by participant companies. Paasche index developed to project future programmatic savings.
	Overlaps, multiplication effect, synergy	There are no overlaps with other measures. The promotion and dissemination of best practice energy management in large industry (one component of the programme) has the potential to have a multiplier effect across industry and SMEs.

B.2.

Title of the Energy saving measure		SME Programme
Description	Category	4.2
	Timeframe	2008 - Ongoing
	Aim/brief description	The programme aims to increase energy efficiency in SMEs through providing advice, mentoring and training to participating SMEs
	Target end use	Energy end use in SMEs
	Target group	SMEs
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	SMEs that participate in the programme receive targeted supports to improve energy efficiency including: • Advice and mentoring from a specialist including a site assessment for companies with a significant energy spend • Training in energy management for groups of SMEs • Online energy management tools Participating companies are required to commit to engaging with an energy advisor, to providing information on energy use, implementing saving opportunities and reporting on savings.
	Budget and financial resource	The programme is funded and managed by SEAI.
	Implementing body	SEAI
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Participating companies report on energy savings via their SEAI appointed energy advisor. These reports are collated and analysed to monitor savings.
	Savings achieved in 2010	150 GWh
	Expected energy savings in 2016	400 GWh
	Expected impact on energy savings in 2020	505 GWh
	Assumptions	Savings per company estimated by SEAI appointed energy advisors based on historic billing analysis, identification of energy savings opportunities (energy assessment) and savings realised after a three month period. Estimated extrapolated for annual savings based on improvements committed to in the first year following programme interaction.
	Overlaps, multiplication effect, synergy	There are no overlaps with other measures. The promotion and dissemination of best practice energy management in SMEs has the potential to have a multiplier effect across industry and SMEs.

P.7. & B.7.

Title of the Energy saving measure		Better Energy Workplaces – Public and Business sectors
Description	Category	Combination of advice, subsidies and obligation scheme
	Timeframe	2011 - Ongoing
	Aim/brief description	Stimulating energy-saving actions in the business and public sectors.
	Target end use	All end-uses
	Target group	Business and public sectors
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Support is available for sustainable energy upgrades to buildings, services, facilities and processes, involving investment actions comprising individual or packaged measures, aimed at achieving ongoing and lasting energy savings. Projects entailing upgrades to thermal, electrical or transport energy performance are all considered eligible. In addition the wider programme helps businesses and the public sector to improve their energy efficiency and competitiveness through networking, training and advisory programmes and integration of energy management into workplaces.
	Budget and financial resource	€11.5m in 2011 and thereafter dependant on annual government budget allocations plus programme support, advice and service costs.
	Implementing body	SEAI oversees consultants and contactor companies in the market delivering the energy efficiency savings
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	All projects receiving grant aid must on completion of the works and following one year of operation in the case of buildings, or of 3 months operation in the case of facilities or processes, provide monitored results to SEAI for verification and dissemination purposes. In addition both the networks and advisory programmes monitor and measure energy savings accruing from activities carried out.
	Savings achieved in 2010	0 GWh
	Expected energy savings in 2016	1,000 GWh
	Expected impact on energy savings in 2020	2,000 GWh
	Assumptions	Expected energy savings based on stated Government commitment to achieve a total of 8,000 GWh from retrofit of domestic and non-domestic buildings and services. Better Energy Workplaces in the business and public sector represents 25% of the total effort. Measurement and verification of savings will be developed on a project by project basis from 2011 onwards.
	Overlaps, multiplication effect, synergy	Adjustments will be made to eliminate potential double counting with the public sector programme (P.1.)

Measures in the buildings sector

No.	Title of the energy saving measure	End-use targeted	Duration	Energy savings (GWh, PEE)			CO_2 savings (kt CO_2)		
				2010 (achieved)	2016 (expected)	2020 (expected)	2010 (achieved)	2016 (expected)	2020 (expected)
BL.1.	2002 Building Regulations - Dwellings	New domestic buildings	31st January 2003 to 1st July 2008	1,280	1,280	1,280	312	312	312
BL.2.	2008 Building Regulations - Dwellings	New domestic buildings	1st July 2008 to July 2011	85	1,210	2,110	21	295	514
BL.3.	2011 Building Regulations - Dwellings	New domestic buildings	July 2011 to 2016	-	380	835	0	93	203
BL.4.	Building Regulations - Nearly Zero Energy Dwellings	New domestic buildings	2016 to 2020	-	15	225	0	3	55
BL 5a.	2005 Building Regulations - Buildings other than dwellings	New commercial buildings	2005 onwards	185	300	300	45	72	71
BL.5.	2012 Building Regulations - Buildings other than dwellings	New commercial buildings	2013 onwards	-	390	865	0	93	205
BL.6.	Energy efficient boiler regulation	Domestic buildings	1st July 2008 onwards	200	800	1,200	49	195	293
BL.7.	Domestic Lighting (Eco-Design Directive)	Domestic lighting	2009 onwards	200	1,200	1,200	47	259	242
BL.8.	Greener Homes Scheme (GHS)	Heating and hot water in residential sector	March 2006 – 2011 (complete)	120	120	120	28	28	28
BL.9.	Warmer Homes Scheme (WHS)	Heating and hot water in vulnerable homes	2000 – 2011 (complete)	120	120	120	33	33	33
BL.10.	Home Energy Savings (HES) scheme	Existing domestic sector	2008 – 2011 (complete)	365	365	365	90	90	90
BL.11.	Smart Meter roll-out	All domestic dwellings	2016 - 2020	-	375	625	0	80	126
BL.12.	Better Energy Homes (residential retrofit)	Existing dwellings	2011 - ongoing	-	3,000	6,000	0	740	1,476

BL.1.

Title of the Energy saving measure		2002 Building Regulations - Dwellings
Description	Category	1.1
	Timeframe	Start: 1st January 2003 End: 1st July 2008 Major changes foreseen, improvements: The 2002 domestic Building regulations was the first in a series of incrementally improved efficiency standards which is now moving towards low to zero carbon housing.
	Aim/brief description	The measure imposes minimum efficiency standards for new dwellings
	Target end use	Domestic energy use
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2002 Building Regulations imposed minimum standards in: • Insulation levels in building fabric • Ventilation and air infiltration • Thermal bridging reduction • Heating and hot water system controls • Insulation of hot water storage vessels, pipes and ducts
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or resource requirements costs.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the housing stock, specific energy consumption and new build activity. Ex post savings have been monitored by populating the model with statistical activity data on new housing completions (Department of the Environment, CSO) The model uses the aggregate efficiency of new dwellings built to 2002 Building regulation standards as the reference specific energy consumption and pre 2002 buildings have a higher SEC (122%).
	Savings achieved in 2010	1,280 GWh
	Expected energy savings in 2016	1,280 GWh
	Expected impact on energy savings in 2020	1,280 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption (SEC) of the reference (pre 2002) housing stock • SEC of new dwellings (kWh/m^2/yr) • Dwelling type and floor area of new dwellings • Number of new dwellings per annum (2009; 20,000, 2010; 12,500, 2011 – 2015; 30,450, 2016 – 2020; 38,200) (Source, ESRI).
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through incrementally improving building standards that target energy efficiency in new housing. To avoid this, the energy savings from each measure (i.e. new building regulations) are calculated incrementally in the model so that the savings attributable each regulation are calculated on the basis of the reduction in aggregate specific energy consumption with respect to the previous regulation.

BL.2.

Title of the Energy saving measure		2008 Building Regulations -Dwellings
Description	Category	1.1
	Timeframe	Start: 1st July 2008 End: 30st November 2011 Major changes foreseen, improvements: The 2008 domestic Building Regulations one of a series of incrementally improved efficiency standards which is now moving towards low to zero carbon housing.
	Aim/brief description	The measure imposes minimum efficiency standards for new dwellings This measure is also eligible for EPBD reporting.
	Target end use	Domestic energy use
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2008 Building Regulations imposed minimum standards in: • Insulation levels in building fabric • Ventilation and air infiltration • Thermal bridging reduction • Heating and hot water system controls • Insulation of hot water storage vessels, pipes and ducts • Overall Energy Performance Co-efficient (EPC) and Carbon Performance Co-efficient (CPC). The maximum EPC is set as a 40% improvement on an equivalent dwelling built to 2002 Regulations.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the housing stock, specific energy consumption and new build activity. Future savings are based projections new build rates based on projections of key economic indicators (population, demographic profiles, GDP). Ex post savings are being monitored by populating the model with statistical activity data on new housing completions (Department of the Environment, CSO) The model uses the aggregate efficiency of new dwellings built to 2002 Building Regulation standards as the reference specific energy consumption. The 2008 Building regulations require a 40% improvement in these as calculated by the Dwelling Energy Assessment Procedure.
	Savings achieved in 2010	85 GWh
	Expected energy savings in 2016	1,210 GWh
	Expected impact on energy savings in 2020	2,110 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption (SEC) of the reference (2002-2008) housing stock • SEC of new dwellings (kWh/m^2/yr) • Dwelling type and floor area of new dwellings • Number of new dwellings per annum (2009; 20,000, 2010; 12,500, 2011 – 2015; 30,450, 2016 – 2020; 38,200) (Source, ESRI).

	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through incrementally improving building standards that target energy efficiency in new housing. The energy savings from each measure (i.e. new building regulations) are calculated incrementally in the model so that the savings attributable to each regulation are calculated on the basis of the reduction in aggregate specific energy consumption with respect to the previous regulation.

Title of the Energy saving measure		2011 Building Regulations -Dwellings
Description	Category	1.1
	Timeframe	Start: 1st December 2011 End: 2013 Major changes foreseen, improvements: The planned 2011 domestic Building Regulations one of a series of incrementally improved efficiency standards which is moving towards low to zero carbon housing.
	Aim/brief description	The measure imposes minimum efficiency standards for new dwellings
	Target end use	Domestic energy use
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2011 Building Regulations are planned to improve minimum standards set in previous regulations: • Insulation levels in building fabric • Ventilation and air infiltration • Thermal bridging reduction • Heating and hot water system controls • Insulation of hot water storage vessels, pipes and ducts In addition a minimum overall performance will be set on the Specific Energy Consumption, defined in the regulations as the Energy Performance Co-efficient (EPC) and Carbon Performance Coefficient (CPC). The maximum EPC will be set as a 60% improvement on equivalent dwelling built to 2002 Regulations.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the housing stock, specific energy consumption and new build activity. Future savings are based projections new build rates based on projections of key economic indicators (population, demographic profiles, GDP). Ex post savings will be monitored by populating the model with statistical activity data on new housing completions (Department of the Environment, CSO) The model uses the aggregate efficiency of new dwellings built to 2002 Building Regulation standards as the reference specific energy consumption. The proposed 2011 Building regulations will require a 60% improvement in these as calculated by the Dwelling Energy Assessment Procedure. This measure is also eligible for EPBD reporting.
	Savings achieved in 2010	N/A
	Expected energy savings in 2016	380 GWh
	Expected impact on energy savings in 2020	835 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption (SEC) of the reference (2002-2008) housing stock • SEC of new dwellings (kWh/m^2/yr) built to 2010 Building Regulations • Building type and floor area of new dwellings • Number of new dwellings per annum (2009; 20,000, 2010; 12,500, 2011 – 2015; 30,450, 2016 – 2020; 38,200) (Source, ESRI).
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through incrementally improving building standards that target energy efficiency in new housing. The energy savings from each measure (i.e. new building regulations) are calculated incrementally in the model so that the savings attributable to each regulation are calculated on the basis of the reduction in aggregate specific energy consumption with respect to the previous regulation.

BL.4.

Title of the Energy saving measure		Building Regulations - Nearly Zero Energy Dwellings
Description	Category	1.1
	Timeframe	Start: 2016 (assumed) End: N/A Major changes foreseen, improvements: The planned 'Nearly Zero Energy Dwellings - Domestic Building Regulations' revision will occur in accordance with the re-cast EPBD in or around 2016. It is the last of a planned series of incrementally improved efficiency standards and will reflect near zero carbon and energy housing before 2020.
	Aim/brief description	The planned measure will impose minimum efficiency standards for new dwellings
	Target end use	Domestic energy use
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The Nearly Zero Energy Dwellings - Domestic Building Regulations are planned to improve minimum standards set in previous regulations: • Insulation levels in building fabric • Ventilation and air infiltration • Thermal bridging reduction • Heating and hot water system controls • Insulation of hot water storage vessels, pipes and ducts In addition a minimum overall performance will be set on the Energy Performance Co-efficient (EPC) and Carbon Performance Coefficient (CPC). The maximum EPC will be set as a 70% improvement on and equivalent dwelling built to 2002 Regulations.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the housing stock, specific energy consumption and new build activity. Future savings are based projections new build rates based on projections of key economic indicators (population, demographic profiles, GDP). Ex post savings will be monitored by populating the model with statistical activity data on new housing completions (Department of the Environment, CSO) It should be noted that the model uses the aggregate efficiency of new dwellings built to 2002 Building Regulation standards as the reference specific energy consumption. This revision will require a 70% improvement in these as calculated by the Dwelling Energy Assessment Procedure. This measure is also eligible for EPBD reporting.
	Savings achieved in 2010	N/A
	Expected energy savings in 2016	15 GWh
	Expected impact on energy savings in 2020	225 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption (SEC) of the reference (2002-2008) housing stock • SEC of new dwellings (kWh/m^2/yr) built to 2013 Building Regulations • Nature and floor area of new dwellings • Number of new dwellings per annum (2009; 20,000, 2010; 12,500, 2011 – 2015; 30,450, 2016 – 2020; 38,200) (Source, ESRI).
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through incrementally improving building standards that target energy efficiency in new housing. The energy savings from each measure (i.e. new building regulations) are calculated incrementally in the model so that the savings attributable to each regulation are calculated on the basis of the reduction in aggregate specific energy consumption with respect to the previous regulation.

BL 5a.

Title of the Energy saving measure		2005 Building Regulations - Buildings other than dwellings
Description	Category	1.1
	Timeframe	Start: 2005 End: N/A Major changes foreseen, improvements: N/A
	Aim/brief description	The planned measure imposed minimum efficiency standards for new commercial buildings built after 2005
	Target end use	Energy use in the tertiary sector
	Target group	Tertiary sector buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2005 Building Regulations revision for Buildings other than dwellings are planned to improve minimum standards set in previous regulations: • Insulation levels in building fabric • Ventilation and air infiltration • Avoidance of excessive solar gain • Thermal bridging reduction • Heating plant efficiency and control • Air-conditioning plant efficiency • Insulation of hot water storage vessels, pipes and ducts
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are predicted and evaluated based on a top down model of energy use in the tertiary sector based on projections of key economic indicators. This measure is also eligible for EPBD reporting.
	Savings achieved in 2010	185 GWh
	Expected energy savings in 2016	300 GWh
	Expected impact on energy savings in 2020	300 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption of post 2005 regulation buildings compared to existing regulations • Proportion of tertiary energy use impacted by regulations.
	Overlaps, multiplication effect, synergy	There are no overlaps with this measure.

BL.5.

Title of the Energy saving measure		2012 Building Regulations - Buildings other than dwellings
Description	Category	1.1
	Timeframe	Start: 2012 End: N/A Major changes foreseen, improvements: N/A
	Aim/brief description	The planned measure will impose minimum efficiency standards for new commercial buildings
	Target end use	Energy use in the tertiary sector
	Target group	Tertiary sector buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2012 Building Regulations revision for Buildings other than dwellings are planned to improve minimum standards set in previous regulations (2005): • Insulation levels in building fabric • Ventilation and air infiltration • Avoidance of excessive solar gain • Thermal bridging reduction • Heating plant efficiency and control • Air-conditioning plant efficiency • Insulation of hot water storage vessels, pipes and ducts In addition a minimum overall performance will be set on the Energy Performance Co-efficient (EPC) and Carbon Performance Coefficient (CPC). The maximum EPC will be set as a 30% improvement on and equivalent building built to 2005 Regulations.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are predicted and evaluated based on a top down model of energy use in the tertiary sector based on projections of key economic indicators. Increases in projected energy use are then ascribed to new buildings and the savings predicted based on a 30% reduction in the specific energy consumption. This measure is also eligible for EPBD reporting.
	Savings achieved in 2010	N/A
	Expected energy savings in 2016	390 GWh
	Expected impact on energy savings in 2020	865 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption of post 2012 regulation buildings compared to existing regulations • Proportion of tertiary energy use impacted by regulations.
	Overlaps, multiplication effect, synergy	There are no overlaps with this measure.

BL.6.

Title of the Energy saving measure		Energy Efficient Boiler Regulation
Description	Category	1.1
	Timeframe	Start: 1st July 2008 End: N/A Major changes foreseen, improvements: As new boilers and heat producing appliances emerge and as EU regulations on energy efficiency for domestic heating appliances develop (for example through the Energy Related Products Directive) the efficiency standard will be reviewed.
	Aim/brief description	The measure set a minimum seasonal efficiency of 86% for boilers installed in existing or new dwellings from 2008 and 90% from 2011.
	Target end use	Energy use in the domestic sector
	Target group	Domestic buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The 2008 Building Regulations imposed a minimum boiler efficiency of 86% for all boilers installed in new or existing buildings.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Environment
	Monitoring authority	Department of Environment
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are predicted bottom up model of energy use domestic boilers and an assumed replacement rate (based on a 25 year lifetime) of existing boilers. This measure is also eligible for EPBD reporting.
	Savings achieved in 2010	200 GWh
	Expected energy savings in 2016	800 GWh
	Expected impact on energy savings in 2020	1,200 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Replacement rate of boilers in existing (pre 2008) dwellings • Aggregate efficiency of boilers in existing (pre 2008) dwellings • Assumed efficiency of replacement boilers
	Overlaps, multiplication effect, synergy	Boiler efficiency affects the specific energy consumption (Energy Performance Coefficient) calculated for new dwellings under the 2008 building regulations. The impact of the minimum efficiency requirement for boilers in existing (pre 2008) housing stock is evaluated separately. There is a potential for overlap with the Home Energy saving scheme and with the retrofit programme. The boiler replacement rate outside of these measures has been reduced to account for and allow for this.

BL.7.

Title of the Energy saving measure		Domestic Lighting (Eco-Design Directive)
Description	Category	1.2
	Timeframe	Start: 1st July 2008 End: N/A Major changes foreseen, improvements: N/A
	Aim/brief description	The measure is a phasing out of incandescent lights through the Energy related Products Directive (2009/125/EC) and Commission Regulation (EC) No 244/2009.
	Target end use	Energy use in domestic lighting
	Target group	Domestic buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Commission Regulation (EC) No 244/2009 of 18 March 2009 implements Directive 2005/32/EC (superseded by Directive 2009/125/EC)with regard to eco-design requirements for non-directional household lamps. The regulation provides for the phased introduction of minimum efficiency standards for lamps and effectively phases out incandescent lamps.
	Budget and financial resource	The measure is a regulated minimum standard and has no direct budgetary or financial resource requirement.
	Implementing body	Department of Enterprise Trade and Innovation
	Monitoring authority	Department of Enterprise Trade and Innovation
Energy savings	Method for monitoring/measuring the resulting savings	A bottom up model of the housing stock, lighting requirements by room and by lamp rating was developed. The aggregate savings are 45 kWh/yr per lamp replaced based on aggregate savings of 55W and 830 operating hours per annum.
	Savings achieved in 2010	200 GWh
	Expected energy savings in 2016	1,200 GWh
	Expected impact on energy savings in 2020	1,200 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Existing deployment rate of energy efficient lighting (CFLs) in dwellings • Number of fixtures per (average) dwelling • Run-time per fitting • Number of dwellings moving to full use of CFLs or energy efficient alternative before 2016.
	Overlaps, multiplication effect, synergy	Lighting affects the specific energy consumption (Energy Performance Coefficient) calculated for new dwellings under the 2008 and subsequent building regulations. The impact of the improved efficiency of lighting in existing (pre 2008) housing stock is evaluated separately.

BL.8.

Title of the Energy saving measure		Greener Homes Scheme (GHS)
Description	Category	3.1
	Timeframe	Start: 2006 End: N/A Major changes foreseen, improvements: The Greener Homes scheme has been subsumed into the residential retrofit programme, launched as 'Better Energy Homes' in May 2011.
	Aim/brief description	The measure provides grant aid for the installation of energy efficient and renewable domestic heating appliances.
	Target end use	Energy use for domestic heating and hot water
	Target group	Domestic buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Grant assistance is provided towards the purchase of certain energy efficient and renewable energy heating appliances for the domestic sector. These are: • Heat pumps (ground source, air source and water source) • Biomass boilers (wood pellet boilers, wood pellet stoves, wood pellet stoves with integral boiler and gasification boilers) • Solar thermal systems A list of qualifying products that meet the requirements of relevant EN standards and defined performance characteristics was developed. Similarly a list of registered installers who had received appropriate training and demonstrated competency was developed.
	Budget and financial resource	Over €70 million in grants paid to end-2010. Leveraging over €160 million from the private sector.
	Implementing body	Sustainable Energy Authority of Ireland
	Monitoring authority	Sustainable Energy Authority of Ireland
Energy savings	Method for monitoring/measuring the resulting savings	As the grant scheme is administered by SEAI, full statistics on the appliances installed under the scheme are recorded and are used to calculate the energy and CO_2 savings achieved. The savings are calculated as the difference in primary energy use and CO2 emissions for the GHS technology and those for a standard boiler and open fire.
	Savings achieved in 2010	120 GWh
	Expected energy savings in 2016	120 GWh
	Expected impact on energy savings in 2020	120 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Useful heat demand and breakdown • Efficiency of displaced technologies (fossil fuelled boilers and open fires) • Efficiency of new technologies
	Overlaps, multiplication effect, synergy	The GHS is limited to existing dwellings and there is no potential overlap with measures to promote efficiency in new buildings. The GHS was instrumental in developing the supply and installer base for these technologies and enabling the Building Regulations to be revised and has a consequent multiplier effect. There is some potential for overlap with measures to promote energy efficient refurbishment of existing homes but the incidence of households availing of both energy efficient refurbishment and alternative space heating technologies is small and considered negligible.

BL.9.

Title of the Energy saving measure		Warmer Homes Scheme (WHS)
Description	Category	3.1
	Timeframe	Start: 2000 End: N/A Major changes foreseen, improvements: The Warmer Homes scheme will be incorporated in to the residential retrofit scheme, launched as 'Better Energy Homes' in May 2011.
	Aim/brief description	The measure targets vulnerable and fuel poor homes and provides funding for the installation of domestic energy efficiency upgrades via regional not-for-profit organisations and private contractors.
	Target end use	Energy use for domestic heating and hot water
	Target group	Domestic buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Energy efficiency improvement measures include: • attic insulation, • draught proofing, • lagging jackets, • energy efficient lighting, • cavity wall insulation, and • energy advice.
	Budget and financial resource	The measure is funded by SEAI via regional not for profit organisations and private contractors. Funding of €56 million was provided between 2000 and 2010.
	Implementing body	Sustainable Energy Authority of Ireland via regional not for profit organisations.
	Monitoring authority	Sustainable Energy Authority of Ireland
Energy savings	Method for monitoring/measuring the resulting savings	As the scheme is administered by SEAI, statistics on the measures implemented and number of homes covered are collected and analysed. The savings are calculated as the aggregate Unitary Final Energy Saving per household
	Savings achieved in 2010	120 GWh
	Expected energy savings in 2016	120 GWh
	Expected impact on energy savings in 2020	120 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Unitary final energy savings per dwelling based on estimated demand reduction from a typical measure package (from list of measures above) installed in a representative low income household • High level of comfort uptake/rebound effect associated with low income households (estimated at 70%)
	Overlaps, multiplication effect, synergy	The WHS is limited to low income households and there is not any potential overlap with measures to promote efficiency in new buildings. The WHS contributed to developing the capacity for energy efficient retrofit of existing dwellings and has a consequent multiplier effect.

BL.10.

Title of the Energy saving measure		Home Energy Saving (HES) scheme
Description	Category	3.1
	Timeframe	Start: 2008 End: 2011 The Home Energy Savings scheme was incorporated in to the residential retrofit scheme, launched as 'Better Energy Homes' in May 2011, together with the Greener Homes Scheme.
	Aim/brief description	The measure provides funding for the installation of approved building fabric and energy efficient heating system upgrades in existing dwellings.
	Target end use	Energy use for domestic heating and hot water
	Target group	Domestic buildings
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The HES programme provided for grant-aid of up to 40% of the typical cost of energy efficiency upgrade measures, varying depending on the measure concerned. Grant funding for energy efficiency improvement measures included: • Cavity Wall Insulation • Internal Dry-Lining • External Wall Insulation • Heating Controls Upgrade • Heating controls upgrade plus high efficiency boiler (>90%) • Heating controls upgrade plus high efficiency boiler (>90%) • Roof/Attic Insulation
	Budget and financial resource	Over €60 million in grants paid to end-2010. Leveraging over €140 million from the private sector.
	Implementing body	Sustainable Energy Authority of Ireland.
	Monitoring authority	Sustainable Energy Authority of Ireland
Energy savings	Method for monitoring/measuring the resulting savings	As the grant scheme is administered by SEAI, full statistics on the measures installed under the scheme are recorded and are used to calculate the energy and CO_2 savings achieved. Estimated savings are based on efficiency improvements resulting from the installation of approved building fabric and heating system upgrades in existing dwellings.
	Savings achieved in 2010	365 GWh
	Expected energy savings in 2016	365 GWh
	Expected impact on energy savings in 2020	365 GWh
	Assumptions	Unitary final energy savings per dwelling based on modelled demand reduction from installed measures (actual) since programme inception. Savings per-measure and per-dwelling type calculated using Ireland's Dwelling Energy Assessment Procedure (DEAP) software tool (as used to produce Building Energy Rating certification). Number of households upgraded and measures installed captured during programme delivery.
	Overlaps, multiplication effect, synergy	There is a potential for overlap with the Retrofit programme.

BL.11.

Title of the Energy saving measure		Smart meter roll-out
Description	Category	2.8
	Timeframe	Start:2007 End: Ongoing Major changes foreseen, improvements: The Commission for Energy Regulation (CER) will publish a consultation on the proposed high level design and implementation approach for a national smart metering rollout. Expected August 2011.
	Aim/brief description	The Smart Metering Programme will facilitate improved energy efficiency by empowering consumers with more detailed, accurate and timely information regarding their energy consumption and costs, thus helping consumers reduce any unnecessary energy usage and shift any discretionary usage away from peak consumption times.
	Target end use	Domestic and SME electricity and gas end uses
	Target group	Domestic and SME
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Smart meters offer a range of benefits for both the electricity and gas consumer and the installation of smart metering will allow electricity and gas suppliers to create innovative pricing arrangements that can be offered to customers to support the efficient use of electricity and gas, such as time-of use tariffs.
	Budget and financial resource	The Smart Metering Project is funded by the DCENR.
	Implementing body	DCENR/CER
	Monitoring authority	CER
Energy savings	Method for monitoring/measuring the resulting savings	Estimated savings are based on 3% (PEE) of baseline projections for total final consumption of household electricity to 2020.
	Savings achieved in 2010	0 GWh
	Expected energy savings in 2016	375 GWh
	Expected impact on energy savings in 2020	625 GWh
	Assumptions	Forecasted residential electricity demand as per SEAI 2010 forecast to 2020 (NEEAP/NREAP scenario). Savings due to smart meters combined with time-of-use tariffs, in-home-displays and informative billing estimated at 3% (Source: Smart Metering Customer Behaviour Trails (CBT) Findings Report (CER11/080a) (May, 2011). Main Report and Appendices available at www.cer.ie. http://www.cer.ie/
	Overlaps, multiplication effect, synergy	There are no overlaps associated with this measure.

BL.12.

Title of the Energy saving measure		Better Energy Homes (residential retrofit)
Description	Category	Combination of advice, subsidies and obligation scheme
	Timeframe	2011 - Ongoing
	Aim/brief description	Stimulating energy-efficiency actions to reduce energy usage by homeowners and the general public
	Target end use	All end-uses
	Target group	Residential sector
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	SEAI grant-aids householders who want to make their homes more energy-efficient by providing incentives towards the implementation of energy efficiency measures including attic and wall insulation and heating controls with efficient boilers. In addition we provide funding towards improving the energy efficiency of homes experiencing fuel poverty.
	Budget and financial resource	€80m in 2011 and thereafter dependant on annual government budget allocations.
	Implementing body	SEAI oversees consultants and contactor companies in the market delivering the energy efficiency savings.
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	An official Building Energy Rating (BER) is completed on each home which receives and energy upgrade detailing all energy efficiency measures carried out on the house.
	Savings achieved in 2010	Refer to Home Energy Saving, Warmer Homes and Greener Homes schemes for savings achieved in 2010 under this category.
	Expected energy savings in 2016	3,000 GWh
	Expected impact on energy savings in 2020	6,000 GWh
	Assumptions	Expected energy savings based on stated Government commitment to achieve a total of 8,000 GWh from retrofit of domestic and non-domestic buildings and services. Better Energy Homes represents 75% of the total effort. Measurement and verification of savings will be developed as part of the supplier obligation scheme to be delivered from 2011 onwards.
	Overlaps, multiplication effect, synergy	Adjustments made for any potential double counting with Energy Efficient Boiler Regulation.

Measures in the transport sector

No.	Title of the energy saving measure	End-use targeted	Duration	Energy savings (GWh, PEE)			CO_2 savings (kT CO_2)		
				2010 (achieved)	2016 (expected)	2020 (expected)	2010 (achieved)	2016 (expected)	2020 (expected)
T.1.	Electric vehicle deployment	Private car	1st January - ongoing	0	265	690	0	68	175
T.2.	Vehicle registration tax (VRT) and annual motor tax (AMT) rebalancing	Private car	1st July 2008- ongoing	185	825	655	47	211	168
T.3.	Improved fuel economy of private car fleet (EU Regulation)	Private car	2008 - ongoing	190	1,575	3,015	48	402	769
T.4.	More efficient road traffic movements	Private car	2008 - ongoing	0	375	715	0	96	182
T.5.	Public transport efficiency	Public Transport	2008 - ongoing	90	160	43	65	65	65
T.6.	Aviation efficiency	Aviation	2008 - ongoing	255	255	250	0	68	175

T.1.

Title of the Energy saving measure		Electric vehicle deployment
Description	Category	3.1, 2.1, 2.6
	Timeframe	Start: 1st January 2011 End: 31st December 2012 Major changes foreseen, improvements: N/A
	Aim/brief description	A 10% replacement of the private passenger car fleet with electric vehicles is targeted for 2020.
	Target end use	Private cars
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Specific measures towards this target include: • information campaigns, • installation of the charging infrastructure and • €2,000 - €5,000 grant for new purchases of electric cars to stimulate activity. A list of qualifying electric vehicles and dealers will be published prior to the launch of the grant scheme.
	Budget and financial resource	€1.5 million 2012. Future budget TBC.
	Implementing body	SEAI/DCENR
	Monitoring authority	SEAI/DCENR
Energy savings	Method for monitoring/measuring the resulting savings	New electric vehicles purchase under the grant scheme will be recorded by SEAI as part of the grant administration process. Total electric vehicle registrations are recorded by the CSO as part of the new vehicle registration statistics set. An electric vehicle uptake rate to 2020 has been modelled and the savings are predicted and monitored on the basis of the accelerated uptake stimulated by the measure. The impact of the increased uptake of electric vehicles is predicted based on projected uptake rates and monitored on the basis of actual uptake rates.
	Savings achieved in 2010	N/A
	Expected energy savings in 2016	265 GWh
	Expected impact on energy savings in 2020	690 GWh
	Assumptions	Key assumptions include: • Uptake rate for electric vehicles and reference 'no action' uptake • Specific energy consumption of electric vehicles • Primary energy factor for electricity
	Overlaps, multiplication effect, synergy	The replacement of an increasing proportion of the private car fleet with electric vehicles is accounted for in the bottom up private car fleet and energy consumption model and the impact of other measures targeted at the sector reduced accordingly.

T.2.

Title of the Energy saving measure		Vehicle registration tax (VRT) and annual motor tax (AMT) rebalancing
Description	Category	3.2
	Timeframe	Start: 1st July 2008 End: No end date Major changes foreseen, improvements: As the fuel efficiency of new cars improves, the efficiency bands on which the measure is based may be reviewed.
	Aim/brief description	The measure was a fundamental shift in the Vehicle Registration Tax and Annual Motor Tax regime whereby vehicles have been taxed on the basis of their CO2 emission levels since 1st July 2008.
	Target end use	Private cars
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Seven bands, ranging from A-G, of specific CO_2 emissions were defined and all new cars are categorised within these bands. VRT and AMT are then applied according to the cars specific CO_2 emission categorisation.
	Budget and financial resource	The measure is a reweighting of VRT and AMT to favour more energy efficient cars. As such it was designed to be largely revenue neutral.
	Implementing body	Department of Finance
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the private vehicle stock, efficiency (specific energy consumption) and activity. Future savings are based projections of vehicle stock composition and activity based on projections of key economic indicators (GDP, disposable income). Ex post savings are monitored by populating the model with statistical activity data collected by state agencies: • New car registrations (Central Statistics Office) • Disaggregated passenger car vehicle stock (Department of Transport, SEAI EPSUU) • Specific Energy Consumption of new cars (SEAI EPSUU) • Distance travelled by private cars (SEAI EPSUU based on National Car Test odometer data)
	Savings achieved in 2010	185 GWh
	Expected energy savings in 2016	825 GWh
	Expected impact on energy savings in 2020	655 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption of the reference (2008) private car stock • Composition of car stock and SEC of new cars • Vehicle activity data
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through the various measures that target private car use. The trajectory for improvement in new car efficiency under this measure is taken to be an early and accelerated improvement in efficiency compared to the improvement trajectory on the basis of EU regulation (measure 1.2 transport) There is potential for double counting of savings attributed to the various measures that target private car use, however, the energy savings from each measure are applied sequentially, thereby accounting for the impact of each measure prior to saving of the next measure. The energy savings from each measure are calculated sequentially in the model so that the sum of savings attributable to all measures is the total energy saving target for the sector.

T.3.

Title of the Energy saving measure		Improved fuel economy of private car fleet (EU Regulation)
Description	Category	1.2
	Timeframe	Start: 1st January 2012 End: Ongoing Major changes foreseen, improvements: The path to 2020 is defined and signalled
	Aim/brief description	The EU, through Regulation 443/2009 has mandated an improvement in average new car efficiency to 130 g CO_2/km by 2015 with a target of 95 g CO_2/km for 2020
	Target end use	Private cars
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	N/A
	Budget and financial resource	N/A
	Implementing body	European Commission
	Monitoring authority	European Commission
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the private vehicle stock, efficiency (specific energy consumption) and activity. Future savings are based projections of vehicle stock composition and activity based on projections of key economic indicators (GDP, disposable income). Ex post savings are monitored by populating the model with statistical activity data collected by state agencies: • New car registrations (Central Statistics Office) • Disaggregated passenger car vehicle stock (Department of Transport, SEAI EPSUU) • Specific Energy Consumption of new cars (SEAI EPSUU) • Distance travelled by private cars (SEAI EPSUU based on National Car Test odometer data)
	Savings achieved in 2010	190 GWh
	Expected energy savings in 2016	1,575 GWh
	Expected impact on energy savings in 2020	3,015 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption (SEC) of the reference (2008) private car stock • Composition of car stock and SEC of new cars • Vehicle activity data
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through the various measures that target private car use. The energy savings from each measure are calculated sequentially in the model so that the sum of savings attributable to all measures is the total energy saving target for the sector. Both this measure and the National tax incentive (transport measure 1.1) affect the specific emissions and energy consumption of the private car fleet. The savings ascribed to each are on the basis of a trajectory of improved efficiency due to the EU regulation and an accelerated trajectory for the National tax incentive. The sum of the savings for each measure is the total saving due to improved efficiency in the national private car fleet. This measure has the effect of ensuring a trajectory of improved car fleet efficiency in line with EU policy. The effect of measure 1.1 is to accelerate this effect in the short term. The savings outlined here are based on an assessment of the savings that would result from EU policy without the additional measure of taxation rebalancing (measure 1.3).

T.4.

Title of the Energy saving measure		More efficient road traffic movements
Description	Category	2.1, 2.5
	Timeframe	Start: 2010 End: Ongoing. Major changes foreseen, improvements: Since NEEAP1 progress made in terms of speed enforcement which will result in improved energy efficiency, mainly of private car fleet.
	Aim/brief description	The promotion of eco-driving techniques has been demonstrated to achieve significant on-road energy savings and to be successful in reducing the gap between observed on-road energy use and emissions and standard test cycle emissions. It is planned to launch an awareness campaign and driver skills development programme to promote energy efficient driving behaviour.
	Target end use	All road vehicles
	Target group	General population
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	N/A
	Budget and financial resource	N/A
	Implementing body	Department of Transport Department of Environment
	Monitoring authority	SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the private vehicle stock, efficiency (specific energy consumption) and activity. Specific emissions and energy use are defined in the model as fleet test cycle efficiency and an 'on-road factor' to account for driver behaviour and the difference between test cycle specific emissions and energy use and actual specific emissions and energy use. Future savings are based projections of vehicle stock composition and activity based on projections of key economic indicators (GDP, disposable income). A trajectory for improvement of actual 'on-road' specific energy use is defined to model, predict and report on savings due to improved driver behaviour and eco-driving initiatives. Ex post savings are monitored by populating the model with statistical activity data collected by state agencies: • New car registrations (Central Statistics Office) • Disaggregated passenger car vehicle stock (Department of Transport, SEAI EPSSU) • Specific Energy Consumption of new cars (SEAI EPSSU) • Distance travelled by private cars (SEAI EPSSU based on National Car Test odometer data) • Actual reported energy use in the private car fleet
	Savings achieved in 2010	N/A
	Expected energy savings in 2016	375 GWh
	Expected impact on energy savings in 2020	715 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Specific Energy Consumption of the reference (2008) private car stock • Composition of car stock and SEC of new cars • Vehicle activity data • 'on-road' specific energy use factor
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through the various measures that target private car use. The energy savings from each measure are calculated sequentially in the model so that the sum of savings attributable to all measures is the total energy saving target for the sector.

T.5

Title of the Energy saving measure		Public transport efficiency
Description	Category	2.1, 2.7
	Timeframe	Start: 2009 End: Ongoing Major changes foreseen, improvements: N/A
	Aim/brief description	The aim of the measure is to promote efficiency in the public transport system including: • Eco-driving in buses • Efficiency in suburban electric rail • Efficiency in national rail network
	Target end use	Public Transport
	Target group	Public Transport
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	The semi-state CIE group of public transport companies generate around 230 million passenger journeys by bus each year, and over 40 million passenger journeys by rail. Since 2009 a range of programmes aimed at improving energy efficiency have taken place. • Eco-driving within Dublin Bus and Bus Eireann • Diesel trains in the Irish Rail fleet have cut their fuel use by up to 6% through more efficient schedules and automatic train engine shutdowns, • Electric trains in the Dublin area are saving over 20% as a result of a switch to lower voltage supply and regenerative breaking technologies.
	Budget and financial resource	N/A
	Implementing body	Irish Rail, Bus Eireann, Dublin Bus
	Monitoring authority	Irish Rail, Bus Eireann, Dublin Bus, SEAI
Energy savings	Method for monitoring/measuring the resulting savings	Periodic surveys and ongoing monitoring.
	Savings achieved in 2010	90 GWh
	Expected energy savings in 2016	160 GWh
	Expected impact on energy savings in 2020	160 GWh
	Assumptions	Energy savings are evaluated based on reported data from operators.
	Overlaps, multiplication effect, synergy	There is no potential for overlaps with other measures.

T.6.

Title of the Energy saving measure		Aviation Efficiency
Description	Category	N/A
	Timeframe	Start: 2008 End: Ongoing Major changes foreseen, improvements: N/A
	Aim/brief description	The aim is to increase operational efficiency in aviation through international co-operation in air space control. The Irish and UK National Supervisory Authorities (NSAs) created the UK-Ireland Functional Airspace Block in
	Target end use	Aviation
	Target group	Aviation - NSAs
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	N/A
	Budget and financial resource	N/A
	Implementing body	Irish Aviation Authority and UK National Air Traffic Services
	Monitoring authority	Irish Aviation Authority and UK National Air Traffic Services
Energy savings	Method for monitoring/measuring the resulting savings	As per the annual report on the UK-Ireland FAB issued by the Irish Aviation Authority and UK National Air Traffic Services.
	Savings achieved in 2010	-
	Expected energy savings in 2016	255 GWh
	Expected impact on energy savings in 2020	255 GWh
	Assumptions	Energy savings are evaluated based on reported data from Irish Aviation Authority and UK National Air Traffic Services.
	Overlaps, multiplication effect, synergy	There is no potential for overlaps with other measures.

Supply side measures

No.	Title of the energy saving measure	End-use targeted	Duration	Energy savings (GWh, PEE)			CO_2 savings (kT CO_2)		
				2010 (achieved)	2016 (expected)	2020 (expected)	2010 (achieved)	2016 (expected)	2020 (expected)
S.1.	Increased efficiency in power generation	Power generation	1st January 2008; ongoing	1,690	1,680	4,055	422	293	524
S.2.	Reduced transmission and distribution loses	Electricity Supply	1st January 2008; ongoing	275	325	360	66	71	73

S.1.

Title of the Energy saving measure		Energy Efficiency in Power Generation
Description	Category	
	Timeframe	Start: 1st January 2008 End: - Ongoing Major changes foreseen, improvements: None
	Aim/brief description	Investment in new, efficient power generation plant and RES
	Target end use	Power generation
	Target group	Electricity generators.
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Measures to improve efficiency include: • Promoting and prioritising energy efficiency in investment decisions for new generation plant • Promoting competition in the All-Island Single Electricity Market • Providing incentives to encourage large energy users to reduce peak energy use
	Budget and financial resource	Any financial or budgetary requirements are included within the Single Electricity Market.
	Implementing body	Department of Communications, Energy and Natural Resources (DCENR), the Commission for Energy Regulation (CER)
	Monitoring authority	DCENR / CER
Energy savings	Method for monitoring/measuring the resulting savings	Primary energy use in electricity generation is forecast annually based on a model of future electricity demand and power station dispatch. Energy savings are calculated based on improvements in efficiency of the generation stock since 2008 (base year). Ex-post savings have been monitored by populating the model with statistical activity data collected by SEAI (EPSSU) for the annual energy balance.
	Savings achieved in 2010	1,690 GWh
	Expected energy savings in 2016	1,675 GWh
	Expected impact on energy savings in 2020	4,055 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • New capacity in fossil fuel and renewable electricity generation • Level of electricity imports and exports
	Overlaps, multiplication effect, synergy	There is no potential for overlaps. There may be synergies with electricity demand side management measures promoting load shifting and load reduction.

S.2.

Title of the Energy saving measure		Energy Efficiency in Electricity Transmission and Distribution
Description	Category	
	Timeframe	Start: 1st January 2008 End: - Ongoing. Major changes foreseen, improvements: None
	Aim/brief description	Upgrades to the transmission and distribution networks to improve efficiency
	Target end use	Transmission and distribution
	Target group	Transmission System Operator (TSO) and Distribution System Operator (DSO).
	Regional application	N/A
Information on Implementation	List and description of energy saving actions substantiating the measure	Measures to improve efficiency include: • Placing targets for reduced losses on the TSO
	Budget and financial resource	Any financial or budgetary requirements are included within the Single Electricity Market and the regulated revenues of the TSO and DSO.
	Implementing body	Department of Communications, Energy and Natural Resources, The Commission for Energy Regulation
	Monitoring authority	Department of Communications, Energy and Natural Resources, The Commission for Energy regulation
Energy savings	Method for monitoring/measuring the resulting savings	Losses reduction targets set by the CER. Forecasted electricity demand to 2020 used to calculate energy savings based on percentage reduction of losses.
	Savings achieved in 2010	275 GWh
	Expected energy savings in 2016	325 GWh
	Expected impact on energy savings in 2020	360 GWh
	Assumptions	Key assumptions/statistics informing the monitored and projected savings are: • Forecasted electricity demand
	Overlaps, multiplication effect, synergy	There is no potential for overlaps. There may be synergies with electricity demand side management measures promoting load shifting and load reduction.