



Report on the Implementation of Article 7(9) of the Energy Efficiency Directive in Ireland

Alternative Approach to the Energy Savings Obligation

5 December 2013
Department of Communications,
Energy & Natural Resources



Overview

This report details how Ireland will comply with Article 7 of the Energy Efficiency Directive (2012/27/EU). Ireland has calculated the adjusted annual target as 899GWh TFC¹, which will be met through a series of alternative measures - including the placing of an obligation on energy suppliers. The details of the alternative measures are provided in tabular format at Annex 1, with additional material provided on the proposed operation of the obligation scheme.

Current Policy Context

The substance of Article 7 mirrors that of the existing Irish energy saving targets for energy suppliers' programme, which is operating on a three-year cycle (2011 – 2013). The programme currently runs on a voluntary basis, with 19 energy suppliers, spread across electricity, gas, solid fuels and oil importers signed up to voluntary energy saving agreements. Underpinning these agreements is the Energy Miscellaneous Provisions Act 2012, which provides for the Minister for Energy to impose energy saving targets on energy suppliers.

Operation of the existing programme is delegated by Statutory Order of the Minister to the national energy agency, the Sustainable Energy Authority of Ireland (SEAI). The SEAI maintain a list of approved residential measures and associated deemed energy savings. The list currently comprises of 32 measures with more added and verified by the SEAI upon request (from energy suppliers or third parties). All new measures, and action undertaken by energy suppliers, are subject to appropriate monitoring, verification and audit. For non-residential projects, SEAI use a scaled savings model and provide technology assessment tools to aid in savings estimates.

Energy suppliers are required to submit an annual plan in advance of each operational year, setting out their programme of activity that will deliver their energy saving target. The adjusted three-year energy saving target to be delivered by the energy suppliers is 875GWh. The existing targets are allocated on the following basis²:

- Oil 33%
- Gas 15%
- Electricity 48%
- Solid Fuels 4%

After two years, 81% of anticipated energy savings are projected to be achieved by energy suppliers. The Ministry engages with the energy suppliers via a quarterly governance forum, at which issues of operation and strategic direction are discussed. Regular reports on progress are provided to SEAI by the energy suppliers.

¹ For ease of reference all figures are reported as Total Final Consumption rather than Primary Energy Equivalent. The final draft of this report will annex all tables in PEE for clarity.

² Sectoral targets are calculated on the basis on energy sold across all sectors with some discounting taking place for transport fuels and renewables.



Ireland is proposing to use the alternative approach envisaged under Article 7(9) to deliver the 1.5% energy savings target, in order to comply with the provisions of Article 7. This will include migration from the current voluntary energy saving programme to an obligation scheme to deliver a substantive portion of the target.

Target

The technical Annex to this report provides greater detail on the methodology underpinning the calculation of the overall and annual targets. Table 1 below shows how Ireland has calculated the annual savings required to meet the requirements of Article 7. Row 1 shows the Total Final Consumption by volume of all retail energy sales averaged over the most recent three year period for which data is available (2010 - 2012). Transport Total Final Consumption is shown in Row 2 and deducted from eligible sales in in Row 3. Row 4 shows the total unadjusted savings required per annum, which is reduced in Row 5 by application of reduction factors allowable under Article 7(2) (see Table 2 below for more detail). The resulting (average) annual target is shown in Row 6, with the cumulative energy savings required over the period 2014 - 2020 presented in Row 7.

		2010	2011	2012 ³	Total
1	Total Final Consumption (GWh)	139,223	129,721	125,150	
2	Transport TFC (GWh)	53,777	51,730	48,788	
3	Adjusted TFC (TFC-Transport TFC) (GWh)	85,446	77,991	76,363	79,933 ⁴
4	Per annum target (1.5%) (GWh PEE) ⁵				1,469
5	Application of reduction factors (GWh PEE)				367
6	Net (average) annual savings to be achieved GWh (PEE)				1,102
7	Total cumulative energy savings (2014 – 2020) GWh (PEE)				30,844

Table 1: Calculating Ireland's Energy Saving Target

Application of Reduction Factors

Table 2 below demonstrates the impact on the target of reductions allowable under Article 7 paragraph 2 (a) and (b). Applying the graduated target (Paragraph 2a) results in a reduction in cumulative energy savings of 21%. Combining this with the exclusion of energy used in industrial activities (as per Paragraph 2b) leads to a combined reduction of 32%- greater than the maximum

³ Provisional

⁴ Average of 2010 - 2012

⁵ Target converted to Primary Energy Equivalent for consistence with savings estimates presented below.

Based on electricity savings representing 15% of total savings and a primary energy conversion factor of 2.5.



reduction allowed under Paragraph 3 (25%) (i). As a result the (cumulative) reduction is capped at 10,281Wh (PEE).

		Annual (GWh) TFC	Cumulative savings (GWh) TFC	Cumulative savings reduction (%)
1.	Energy savings (as per Table 1, Row 4)	1,469	41,126	-
2.	Applying 2(a)		32,558	21%
3.	Applying 2(a) and (b)		27,906	32%
5.	Maximum allowable reduction		10,281	25%
6.	Target	1,102	30,844	25%

Table 2: Application of Reduction Factors

Thus, Ireland has calculated that the average annual final target for the purposes of Article 7 compliance equates to 1,102GWh PEE. The 7 year cumulative target amounts to 30,844 GWh (PEE).

Approach to Compliance

Article 7 of the Directive obliges each Member State (MS) to create a scheme to deliver savings of 1.5% of annual energy sales to final consumers, which may be done in one of two ways. Option A requires MS to set up an energy efficiency obligation scheme which can apply to energy distributors and/or retail energy sales companies operating in each territory at a rate of 1.5% of the annual energy sales to final customers. Option B (Article 7.9) allows MS to count savings from alternative measures towards the target.

As the target set out in Row 6 of Table 1 (1,102GWh) is close to three times the size of the energy saving target set for energy suppliers in 2013, combined with a challenging economic climate, Ireland is of the opinion that the scale of ambition would impose too great a challenge and cost burden on the energy supply industry. As a result, Ireland intends to adopt Option B and meet the 1.5% target using alternative measures. However, the main delivery mechanism will be via the introduction of an obligation scheme on energy suppliers. Ireland intends to impose a target in the region of 550GWh p/a PEE, which will be complemented with other measures in order to meet (or exceed) the 1,102 GWh annual target and ensure the cumulative target is met on the basis of the straightforward method to demonstrate compliance with Annex V, part 2. The full list of alternative measures is detailed in Tables 3a (annual) and 3b (cumulative) below.

	Annual energy savings (GWh PEE)						
	2014	2015	2016	2017	2018	2019	2020
Alternative Measures							
SME programme	41	41	41	27	27	27	27
Large Industry Energy Network	107	107	107	123	123	123	123



2008 Building Regulations	87	87	87	183	183	183	183
2011 Building Regulations	51	51	51	91	91	91	91
2014 Building Regulations	0	TBC	TBC	TBC	TBC	TBC	TBC
2015 Building Regulations	0	0	0	43	43	43	43
EE boiler regulation for replacement boilers	100	100	100	100	100	100	100
Smart Meters	0	0	0	63	63	63	63
Accelerated Capital Allowances (ACA)	74	74	74	113	113	113	113
VRT/Motor tax	30	30	30	30	30	30	30
Home Renovation Tax Incentive	TBC	TBC	TBC	TBC	TBC	TBC	TBC
CO2 tax	TBC	TBC	TBC	TBC	TBC	TBC	TBC
Supplier obligation target	550	550	550	550	550	550	550
Total per annum savings	1040	1040	1040	1323	1323	1323	1323
Annual multiplier (straightforward method)	7	6	5	4	3	2	1

Table 3a: Savings towards target (annual savings expected)

Taking into account the lifetimes of savings 2014 - 2020 (GWh PEE)							
	2014	2015	2016	2017	2018	2019	2020
Alternative Measures							
SME programme	290	248	207	107	80	53	27
Large Industry Energy Network	747	640	533	493	370	247	123
2008 Building Regulations	609	522	435	732	549	366	183
2011 Building Regulations	359	308	256	366	274	183	91
2014 Building Regulations	0	TBC	TBC	TBC	TBC	TBC	TBC
2015 Building Regulations	0	0	0	172	129	86	43
EE boiler regulation for replacement boilers	700	600	500	400	300	200	100
Smart Meters	0	0	0	251	188	126	63
Accelerated Capital Allowances (ACA)	519	445	371	453	339	226	113
VRT/Motor tax	210	180	150	120	90	60	30
Home Renovation Tax Incentive	TBC	TBC	TBC	TBC	TBC	TBC	TBC
CO2 tax	TBC	TBC	TBC	TBC	TBC	TBC	TBC



Supplier obligation target	3850	3300	2750	2200	1650	1100	550
Total per annum savings	7283	6242	5202	5292	3969	2646	1323
Total cumulative savings (GWh PEE)	31,958						

Table 3b: Savings towards target (cumulative) – Straightforward method

As demonstrated above, the combination of alternative measures and the supplier obligation target leads to an estimated cumulative energy savings of 31,958 GWh, exceeding the target of 30,844 GWh (PEE).

Annex 1 provides further detail of each of the measures listed in Table 4, apart from the obligation on energy suppliers which is addressed below. Ireland has retained, where possible, the format adopted for the submission of National Energy Efficiency Action Plans (NEEAP). It is worth noting that a number of measures have no savings attributed to them at this point as the methodological framework has yet to be robustly developed either nationally or internationally. As these areas develop, Ireland will review the savings attributable against these measures and report any changes in future NEEAP.

Energy Supplier Obligation Scheme

As indicated above, Ireland has decided to migrate from a voluntary programme of energy savings by energy suppliers to an obligation scheme. This decision has been made with regard to clarity, simplicity, transparency and market development. We hope the provisions outlined below will stimulate an active and cost-effective market for energy savings. Responsibility for scheme delivery will be delegated to the SEAI, although the Ministry will remain actively involved in strategic decisions and will continue to chair a quarterly governance group meeting with the energy suppliers.

Obligated Parties

Ireland intends to obligate all energy suppliers that sell more than a certain minimum threshold of energy in 2012 [this threshold is indicatively set at 600GWh]. We estimate that this will result in a slightly smaller number of obligated energy suppliers (16) than operate under the current regime. The Ministry may also enter into voluntary agreements with energy suppliers that fall below this threshold.

Target sectors

The obligation will fall on all energy suppliers, regardless of sector. This will result in energy suppliers in the electricity, gas, oil and solid fuel sectors becoming obligated parties. This will have implications for the publication of annual reports, a point that was stressed during the negotiation of the Directive.



Expected Savings and Periods of Operation

As detailed in Table 2 above, the anticipated savings from the obligation programme are 550GWh per annum. Ireland intends to operate three periods through to 2020. The first spans 2014 - 2016, the second 2017-2019 and the third 2020. Ireland believes that developments at an EU level are likely to overtake the 2020 target and is indicatively planning for a further three-year obligation period past 2020. The three year cycle has worked well to date in that it allows energy suppliers, and providers of energy saving credits, to adequately plan their activities.

Duration of the obligation period

The obligation period will span the full seven year time period, but from a programmatic perspective will operate in three year cycles. Ireland will actively keep under review the minimum entry threshold after which the obligation applies.

Eligible measures

Annex 2 sets out the residential measures that are currently deemed eligible under the existing voluntary programme. Non-residential projects are evaluated on a project-by-project basis.

Calculation methodology

The Energy Credits that relate to individual domestic energy efficient retrofit measures/technologies are calculated based on the simulated improvements within an average dwelling. The average/median dwelling was selected by assessing the population of Energy Performance Certificates (Building Energy Ratings (BER)) within the SEAI database.

As the most energy efficient dwellings are the least likely to complete major retrofit works, we have assumed that the great majority of dwellings undergoing a retrofit will currently have a before BER grade of C2 or worse. Domestic BER ratings of C2 and above were removed from the population calculation as these would minimise the average dwellings benefits gained by installing energy efficient retrofit measures. A BER grade above C2 also relates to dwellings built after 2006 which are not eligible for an energy efficiency grant under the Better Energy Homes scheme.

BERs with a rating of G were also removed from the population as a large sample of these are well in excess of 450 kWh/m²/yr which distorted the sample of BERs population negatively.

The population of BERs within the SEAI database (after the removal of BERs rated A to C1 and G) had a median BER grade of D2 at the time the sample was taken.

The domestic energy efficient retrofit measures/technologies are inputted into the BER programme (simulated median house and apartment BERs) and the Primary Energy savings (kWh/m²/year) are calculated. The Primary Energy savings are multiplied by 110m² and 70m² which are the average areas for houses and apartment respectively which gives an Energy Credit (kWh/year) as detailed in Table 5 above.

Energy efficient retrofit measures/technologies that cannot be inputted into the BER calculation programme are assessed separately. Details of specific tests conducted which demonstrate the



specific energy savings achieved, where possible, reference relevant international tests undertaken in accredited laboratories. Where no such test results are available then details of trials or pilots undertaken can be submitted but will normally relate to Ireland (or at least similar conditions), must comprise a robust sample size and reasonable duration in order to ascertain veracity of claimed performance.

Energy Credits that relate to non-residential projects are calculated on a project-by-project basis. In such instances the SEAI use a scaled savings model. A number of technology assessment tools to aid in savings estimates are provided on the SEAI website (See: http://www.seai.ie/Your_Business/Resources/Technology_Assessment_Tools/).

Additionality

Ireland notes the provisions of Annex V and will ensure that the energy suppliers do not claim credits for measures that would have happened regardless of their involvement. Ireland believes that the approach being adopted to demonstrate materiality will also address the issue of additionality.

Materiality

Under the existing voluntary programme, energy suppliers are required to demonstrate sustainability, additionality and causality of energy savings. These three tests were put in place on foot of the Energy Services Directive (2006/32/EC) and have, on occasion, proven somewhat challenging to translate into rules governing the allocation of energy savings. A key feature of our existing system is that energy suppliers must have in place an agreement with a third party prior to any energy savings being realised. This demonstrates causality, the manifestation of which may be services in kind or monetary contributions - both of which are features of our existing programme.

The Directive imposes a new requirement in that energy suppliers have to demonstrate materiality to the achievement of the energy savings. Ireland believes that this requirement will pose similar challenges - particularly in the context of developing a fully functioning market for energy savings. In response, Ireland has worked with energy suppliers over the past six months to develop a means of documenting the role of energy suppliers in stimulating energy savings

The Ministry is also in discussions with a number of parties who are interested in creating a trading platform for energy savings, which if successful, would, in our opinion, represent a strong indicator of materiality. Ireland may revert separately to this submission seeking a meeting to clarify the rules around how such a platform could be developed.

Lifetimes of measures

Continuing with the practice employed under the present scheme, the lifetime length of savings is taken into account when calculating deemed savings for technologies/measures and is also accounted for in any scaled savings calculations.

Approach taken to address climatic variations

This is not relevant for Ireland.



Quality standards

Ireland is fully supportive of the Directive provisions in respect of ensuring that the energy savings realised by energy suppliers are in accordance with best practice and undertaken to specification. Over the past two years Ireland has worked with Industry and the National Standards Agency to develop a code of practice for retrofit⁶. Having reviewed similar documents from other jurisdictions we believe that this document represents best practice for energy efficiency retrofits. Publication of the code of practice is imminent and will also be associated with future building regulations.

The code will be the standard against which retrofit activities in the residential sector will be assessed. Currently, energy contractors active on a grant-assisted programme are required to register with the SEAI and sign a code of practice, in addition to maintaining appropriate insurance and being tax compliant and, where relevant, have appropriate qualifications.

The National Standards Authority of Ireland (NSAI) is responsible for managing Agrément certification for, *inter alia*, external insulation, windows, drylining, central heating systems and solar heating. Where Agrément certification is available, contractors are required to be certified prior to undertaking any grant-assisted works. It is intended to continue this requirement.

Inevitably, a substantial amount of activity is expected in the non-residential sector as it may represent a least cost approach to realising energy savings amongst energy suppliers. The SEAI has developed a number of methodologies for assessing the level of energy savings from projects⁷ in commercial buildings and industry.

Subject to legislative approval, Ireland is proposing to introduce a buyout price and a penalty price to provide market certainty and create opportunities for the emergence of trading of energy credits. The introduction of a *buyout price* is consistent with Article 20 (6) and will be set equal to what it would cost the SEAI to realise an equivalent amount of energy savings from the market.

Monitoring and verification protocols

A fundamental principal of how Ireland intends to operate the obligation scheme is that responsibility for compliance with the Directive provisions rests with the energy supplier responsible for realising the necessary energy savings credits, backed up by appropriate independent verification and audit by the SEAI. In the first instance, energy suppliers will be required to develop and implement a quality control process that will ensure that any energy savings claimed against their target are reliable, verifiable and undertaken to an appropriate standard.

⁶ When published this document will be designated Standard Recommendation 54. A copy of this document is available upon request.

⁷ See: http://www.seai.ie/Your_Business/Technology/



Ireland intends to require energy suppliers to have an appropriately qualified energy auditor sign off on all energy savings reported against an energy suppliers' target. In the event that the audit protocols (see below) highlight problems with the quality of energy savings being claimed by an energy supplier, we will reserve the right to prevent the auditor from signing off on any future energy savings. As any energy savings that are rejected following an SEAI audit will be discounted from an energy suppliers' target, which potentially could lead to the imposition of a financial penalty, it is in the energy suppliers' own interest to ensure that submitted energy savings are compliant for the purposes of the Directive.

Audit protocols

The SEAI currently manages the implementation of the Energy Performance of Buildings Directive (EPBD) in respect of the national Energy Performance Certificate (EPC) inventory. It also manages a suite of energy efficiency programmes responsible for the retrofit of over 255,000 households, equivalent to a sixth of the permanently occupied dwellings in the state. In doing so, the SEAI has developed a robust methodology for ensuring quality of assessors, contractors and services. It is intended to apply the learnings from these programmes to the governance of quality under the obligation scheme.

While the specifics of each energy suppliers' quality assurance programme will vary depending upon the sector they are involved in and the nature of their intended activities, a fundamental principle will be to ensure that a statistically significant sample of energy savings will be subject to audit by the energy suppliers' auditor in advance of submission to the SEAI. Once energy savings are submitted to the SEAI by the energy supplier, SEAI will audit these claimed energy savings. A failure rate of sufficient size on each batch of projects submitted to the SEAI will result in a further audit that may lead to the batch failing and all savings associated with batch will be rejected until such time as the energy supplier can demonstrate that the issues identified in the SEAI audit have rectified to our satisfaction.

Compliance with the second subparagraph of Article 7(1)

Ireland intends to set a seven year target for the obligation scheme, such that energy suppliers have visibility over the extent of energy saving required from them over the period to 2020. At an operational level, Ireland intends to continue run on a three-year programmatic cycle, with the SEAI adjusting individual energy supplier targets annually in accordance with movements in market share.



Annex 1: List of alternative energy savings measures for the purposes of compliance with Article 7(9)

Alternative Measure		SME Programme
Description	Timeframe	2014 - 2020
	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 sectors	SMEs
	List and description of energy saving actions substantiating the measure	<p>SMEs that participate in the programme receive targeted supports to improve energy efficiency including:</p> <ul style="list-style-type: none"> • 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 <p>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.</p>
Information on Implementation	Implementing body	SEAI
	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.
	Expected impact on energy savings in 2020 ⁸	1020GWh
	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.
Energy savings	Calculation methodology	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. Estimates extrapolated for annual savings based on improvements committed to in the first year following programme interaction.
	Lifetimes of measures	An average lifetime of 12 years is assumed for the combination of technologies installed and measures taken, including behavioural change leading to energy savings
	Climatic variations	N/A
	Quality standards	Internal quality management system is deployed with delivery controls to ensure client satisfaction and impact maximisation
	Monitoring and verification protocols	A number of follow up surveys, questionnaires and commissioned research studies have been undertaken by third parties. Detailed database of all company interactions maintained by SEAI.
	Audit protocols	3 month post intervention questionnaire completed by all clients to garner overall impact – this is conducted by third party experts in energy management.

⁸ Savings calculated as per Table 3b (2014 -2020)



Alternative Measure		Large Industry Energy Network
Description	Timeframe	2014 - 2020
	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 sectors	Industry and SMEs
	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: <ul style="list-style-type: none"> • Developing an energy-management programme • Setting/reviewing energy targets • Undertaking an annual energy audit • Producing an annual statement-of-energy account
Information on Implementation	Implementing body	SEAI
	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.
	Expected impact on energy savings in 2020	3,153GWh
	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.
Energy savings	Calculation methodology	A top down approach is applied to the portion of Industry energy consumed by the LIEN members. 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.
	Lifetimes of measures	N/A given the disparate nature of projects and technologies implemented.
	Climatic variations	N/A
	Quality standards	Many LIEN members are implementing the Energy Management Standard EN 16001.
	Monitoring and verification protocols	In accordance with Energy Management Standard EN 16001
	Audit protocols	Annual tracking using the above methods.



Alternative Measure		2008 Part L of Building Regulations Conservation of Fuel and Energy-Dwellings
Description	Timeframe	Start: 1 st July 2008 End: 30 st November 2011
	Aim/brief description	The 2008 domestic Building Regulations one of a series of incrementally improved efficiency standards which is now moving towards low to zero carbon housing. The measure imposes minimum efficiency standards for new dwellings. This measure is also eligible for EPBD reporting.
	Target end use	Domestic energy use
	Target sectors	General population
	List and description of energy saving actions substantiating the measure	<p>The 2008 Building Regulations imposed minimum standards in:</p> <ul style="list-style-type: none"> • Whole building 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 2005 Regulations. • Minimum requirements for renewables. • 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. • Installation and replacement of oil and gas boilers with a minimum efficiency of 86% (This is equivalent to condensing boilers). • Provision of information to the homeowner with regards to the energy efficient operation and maintenance of fixed building services.
Information on Implementation	Implementing body	DECLG
	Method for monitoring/measuring the resulting savings	<p>Energy savings are evaluated and predicted based on a bottom up model of the housing stock, specific energy consumption and new build activity.</p> <p>Future savings are based projections new build rates based on projections of key economic indicators (population, demographic profiles, GDP).</p> <p>Ex post savings are being monitored by populating the model with statistical activity data on new housing completions (Department of the Environment, CSO)</p> <p>The model uses the aggregate efficiency of new dwellings built to 2005 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 (DEAP).</p>
	Expected impact on energy savings in 2020	3396 GWh
	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.
Energy savings	Calculation methodology	As above.ie National EPC calculation methodology DEAP
	Lifetimes of measures	As per EC recommended lifetimes.
	Climatic variations	N/A
	Quality standards	Regulation (quality enforced via building control regulations).
	Monitoring and verification protocols	An Energy Performance Calculation (EPC) to demonstrate compliance with this performance standard is currently required for all new dwellings. Building Control Amendment Regulations 2013 will require verification of Building Regulations on completion of construction from March 2014.
	Audit protocols	Audit protocols for EPC calculation are as per Recast EPBD Annex II



Alternative Measure		2011 Part L of Building Regulations Conservation of Fuel and Energy Dwellings
Description	Timeframe	Start: 1 st December 2011 End: 2013
	Aim/brief description	The planned 2011 domestic Building Regulations one of a series of incrementally improved efficiency standards which is moving towards low to zero carbon housing. The measure imposes minimum efficiency standards for new dwellings.
	Target end use	Domestic energy use
	Target sectors	General population
	List and description of energy saving actions substantiating the measure	The 2011 Building Regulations are planned to improve minimum standards set in previous regulations: <ul style="list-style-type: none"> • A minimum overall performance has been 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 2005 Regulations. • Minimum requirements for renewables • 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 • Installation and replacement of oil and gas boilers with a minimum efficiency of 90% (This is better than the minimum performance level required for condensing boilers). • Provision of information to the homeowner with regards to the energy efficient operation and maintenance of fixed building services
Information on Implementation	Implementing body	DECLG
	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 2005 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.
	Expected impact on energy savings in 2020	1837GWh
	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.
Energy savings	Calculation methodology	As above.ie National EPC calculation methodology DEAP
	Lifetimes of measures	As per EC recommended lifetimes.
	Climatic variations	N/A
	Quality standards	Regulation (quality enforced via building control regulations).
	Monitoring and verification protocols	An Energy Performance Calculation (EPC) to demonstrate compliance with this performance standard is currently required for all new dwellings. Building Control Amendment Regulations 2013 will require verification of Building Regulations on completion of construction from March 2014.
	Audit protocols	Audit protocols for EPC calculation are as per Recast EPBD Annex II



Alternative Measure		2014 Part L of Building Regulations Conservation of Fuel and Energy-Buildings other than Dwellings
Description	Timeframe	Start: Q1 2015 End: 2020
	Aim/brief description	The 2014 non-residential Building Regulations will be one of a series of incrementally improved efficiency standards which is now moving towards low to zero carbon buildings. The measure imposes minimum efficiency standards for new non- residential buildings. This measure is also eligible for EPBD reporting.
	Target end use	Non-residential energy use
	Target sectors	General population
	List and description of energy saving actions substantiating the measure	The 2014 Building Regulations are proposed to introduce minimum standards in: <ul style="list-style-type: none"> • Whole building 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 2008 Regulations. • Minimum requirements for renewables • 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 • Provision of information to the building owner with regards to the energy efficient operation and maintenance of fixed building services
Information on Implementation	Implementing body	DECLG
	Method for monitoring/measuring the resulting savings	Energy savings are evaluated and predicted based on a bottom up model of the non-residential building 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 buildings built to 2008 Building Regulation standards as the reference specific energy consumption.
	Expected impact on energy savings in 2020	To be clarified.
	Overlaps, multiplication effect, synergy	There is potential for double counting of savings attained through incrementally improving building standards that target energy efficiency in new non-residential buildings. 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.



Roinn Cumarsáide, Fuinnimh agus Acmhainní Nádurtha
Department of Communications, Energy & Natural Resources

Energy savings	Calculation methodology	As above.ie National EPC calculation methodology NEAP
	Lifetimes of measures	As per EC recommended lifetimes.
	Climatic variations	N/A
	Quality standards	Regulation (quality enforced via building control regulations).
	Monitoring and verification protocols	An Energy Performance Calculation (EPC) to demonstrate compliance with this performance standard is currently required for all new dwellings. Building Control Amendment Regulations 2013 will require verification of Building Regulations on completion of construction from March 2014.
	Audit protocols	Audit protocols for EPC calculation are as per Recast EPBD Annex II.



Alternative Measure		2015 Building Regulations Part L Framework Dwellings
Description	Timeframe	Start: 2015 (assumed) End: N/A
	Aim/brief description	A framework for the planned 'Nearly Zero Energy Dwellings - Domestic Building Regulations' revision will occur in accordance with the re-cast EPBD in or around 2015. It is envisaged that this framework will be implemented in the period prior to 2020. It is the last of a planned series of incrementally improved efficiency standards and will reflect near zero energy and carbon housing before 2020. The planned measure will impose minimum efficiency standards for new dwellings.
	Target end use	Domestic energy use
	Target sectors	General population
	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. It is anticipated that the following minimum performance standards will apply: <ul style="list-style-type: none"> • A minimum overall performance has been 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 is proposed to be set as a 70% improvement on equivalent dwelling built to 2002 Regulations. • Minimum requirements for renewables • 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 • Installation and replacement of oil and gas boilers with a minimum efficiency of 90% (This is better than the minimum performance level required for condensing boilers). • Provision of information to the homeowner with regards to the energy efficient operation and maintenance of fixed building services
Information on Implementation	Implementing body	DECLG
	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 2005 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.
	Expected impact on	430 GWh



	energy savings in 2020	
	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.
Energy savings	Calculation methodology	As above.ie National EPC calculation methodology DEAP
	Lifetimes of measures	As per EC recommended lifetimes.
	Climatic variations	N/A
	Quality standards	Regulation (quality enforced via building control regulations).
	Monitoring and verification protocols	An Energy Performance Calculation (EPC) to demonstrate compliance with this performance standard is currently required for all new dwellings. Building Control Amendment Regulations 2013 will require verification of Building Regulations on completion of construction from March 2014.
	Audit protocols	Audit protocols for EPC calculation are as per Recast EPBD Annex II.



Alternative Measure		Energy Efficient Boiler Regulation for Replacement Boilers
Description	Timeframe	Start: 1 st July 2008 End: Ongoing
	Aim/brief description	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. 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 sectors	Domestic buildings
	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.
Information on Implementation	Implementing body	SEAI
	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.
	Expected impact on energy savings in 2020	2,800 GWh
	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.
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	As per EC recommended lifetimes for boilers.
	Climatic variations	N/A
	Quality standards	Regulation (quality enforced via building control regulations).
	Monitoring and verification protocols	Since June 2009, the national energy regulatory body (Commission for Energy Regulation) has made it a legal requirement that only a competent registered installer can perform works on any domestic gas appliance.
	Audit protocols	Not required.



Alternative Measure		Smart Meters
Description	Timeframe	Start: 2007 End: Ongoing
	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 sectors	Domestic and SME
	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.
Information on Implementation	Implementing body	DCENR/CER
	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.
	Expected impact on energy savings in 2020	628 GWh
	Overlaps, multiplication effect, synergy	There are no overlaps associated with this measure.
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	N/A
	Climatic variations	N/A
	Quality standards	N/A
	Monitoring and verification protocols	N/A
	Audit protocols	Not required.



Alternative Measure		Accelerated Capital Allowances (ACA)
Description	Timeframe	2008 – 2014 (Budget 2011 extended ACA for further 3 years only)
	Aim/brief description	The measure 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 sectors	Industry and SMEs
	List and description of energy saving actions substantiating the measure	<p>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.</p> <p>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 (<i>'Triple E Products Register'</i>). This list has been adopted by many public sector organisations as a best practice list for public procurement.</p>
Information on Implementation	Implementing body	Revenue Commissioners, Department of Finance
	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.
	Expected impact on energy savings in 2020	2,466 GWh
	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.
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	Dependent upon the product category.
	Climatic variations	N/A
	Quality standards	All products assessed by the SEAI prior to approval.
	Monitoring and verification protocols	All products assessed by the SEAI prior to approval.
	Audit protocols	Not required.



Alternative Measure		VRT/Motor tax
Description	Timeframe	Start: 1 st July 2008 End: No end date
	Aim/brief description	As the fuel efficiency of new cars improves, the efficiency bands on which the measure is based may be reviewed. 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 CO ₂ emission levels since 1 st July 2008.
	Target end use	Private cars
	Target sectors	General population
	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.
Information on Implementation	Implementing body	SEAI
	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: <ul style="list-style-type: none"> • 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)
	Expected impact on energy savings in 2020	840 GWh
	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.
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	Inherent in retirement rate assumptions for pre- 2008 vehicles. New vehicles expected to last beyond 2020.
	Climatic variations	N/A
	Quality standards	Based on vehicle CO ₂ rated values.
	Monitoring and verification protocols	Number of new car sales monitored.
	Audit protocols	Not required.



Alternative Measure		Home Renovation Tax Incentive
Description	Timeframe	Start: 25 October 2013 End: 31 December 2015
	Aim/brief description	The incentive provides for tax relief for Homeowners by way of a tax credit at 13.5% of qualifying expenditure on repair, renovation or improvement work carried out on a principal private residence.
	Target end use	Energy use for domestic sector
	Target sectors	Domestic buildings
	List and description of energy saving actions substantiating the measure	Qualifying expenditure is expenditure subject to the 13.5% VAT rate. The work must cost a minimum of €5,000 (exclusive of VAT) which will attract a credit of €675. Where the cost of the work exceeds €30,000 (exclusive of VAT), a maximum credit of €4,050 will apply. The credit is payable over the two years following the year in which the work is carried out.
Information on Implementation	Implementing body	Revenue Commissioners
	Method for monitoring/measuring the resulting savings	(Under development)
	Expected impact on energy savings in 2020	(Under development)
	Overlaps, multiplication effect, synergy	
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	Dependent upon the nature of the efficiency measure being installed.
	Climatic variations	N/A
	Quality standards	N/A
	Monitoring and verification protocols	To be finalised.
	Audit protocols	To be finalised, but all returns are subject to audit by the Revenue Commissioners.



Alternative Measure		CO ₂ tax
Description	Timeframe	December 2009 – On-going.
	Aim/brief description	To use fiscal measures to protect and enhance the environment.
	Target end use	The carbon tax applies to end-uses using kerosene, marked gas oil, liquid petroleum gas, fuel oil, and natural gas and solid fuels.
	Target sectors	Non-EU ETS sectors.
	List and description of energy saving actions substantiating the measure	Increases in fuel costs due to the tax lead to reduction in demand. Tax set initially at €15 per tonne (2010 and 2011), increased to €20 in 2012. Tax was extended to solid fuels in 2013 (€10 per tonne – due to increase to €20 per tonne in May 2014).
Information on Implementation	Implementing body	Revenue Commissioners.
	Method for monitoring/measuring the resulting savings	Based on income elasticities and price elasticities for various fuels to which the carbon tax applies. Baseline scenario with no tax compared to a with tax scenario.
	Expected impact on energy savings in 2020	(Under development).
	Overlaps, multiplication effect, synergy	To be clarified.
Energy savings	Calculation methodology	As above.
	Lifetimes of measures	N/A
	Climatic variations	N/A
	Quality standards	N/A
	Monitoring and verification protocols	To be finalised.
	Audit protocols	Not relevant.



Annex 2: Eligible Residential Energy Saving Measures

Measure ¹	Minimum Specification - All measures installed must meet the minimum specification listed below	Energy Credits kWh/yr	
		Apartment	House
Roof Insulation	Insulation as per TGD L 2008 <ul style="list-style-type: none"> On the ceiling to U-Value 0.16 W/m²K On the rafter to 0.2 W/m²K On flat roofs to 0.22 W/m²K 	800	1,300
External Wall Insulation	To U-Value 0.27 W/m ² K as per TGD L 2008	3,750	5,900
Internal Dry Lining Wall Insulation	To U-Value 0.27 W/m ² K as per TGD L 2008	3,200	5,000
Cavity Wall Insulation	To U-Value 0.50 W/m ² K	2,050	3,250
Floor Insulation	To U-Value 0.36 W/m ² K	700	1,100
Full Window Replacement (incl doors with > 60% glazing)	To U-Value 1.4 W/m ² K	1,050	1,650
Window glazing envelope replacement (includes doors with > 60% glazing)	Minimum glazing envelopes U-Value 2.1 W/m ² K	490	770
External Door Replacement	To U-Value 1.4 W/m ² K	350	550
Window glazing Low e film (includes doors with > 60% glazing)	Post installation U-Values according to EN 410 and EN 673: <ul style="list-style-type: none"> Minimum double glazing envelope U-Value 2.4 W/m²K Minimum single glazing envelope U-Value 3.5 W/m²K Glazing film shall be professionally installed by manufacture trained/registered installers.	75	120
High Efficiency Gas or Oil fired Boiler with Fully integrated Heating Controls Upgrade	90%+ Boiler gross seasonal efficiency as per HARP database, full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot water cylinder insulating jacket	4,900	7,700
High Efficiency Gas or Oil fired Boiler with	90%+ Boiler gross seasonal efficiency as per HARP database, full zone control on space	5,130	8,070



Fully integrated Heating Controls Upgrade with remote access	and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot water cylinder insulating jacket. Programmer to have capacity to adjust heating schedule remotely via Web or SMS		
Fully integrated Heating Controls Upgrade	Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008	2,350	3,700
Fully integrated Heating Controls Upgrade with remote access	Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008. Programmer to have capacity to adjust heating schedule remotely via Web or SMS	2,580	4,070
High Efficiency Gas or Oil fired Boiler with Entry Level Heating Controls Upgrade	90%+ Boiler gross seasonal efficiency as per HARP database, 24hr/7day programmer and room thermostat	3,050	4,790
High Efficiency Gas or Oil fired Boiler with remote access Entry Level Heating Controls Upgrade	90%+ Boiler gross seasonal efficiency as per HARP database, 24hr/7day programmer and room thermostat Programmer to have capacity to adjust heating schedule remotely via Web or SMS	3,150	4,950
Biomass boiler with thermal store and Fully integrated Heating Controls Upgrade	Min gross efficiency of 77% as per HARP. Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot water cylinder insulating jacket	5,690	8,950
Biomass boiler with thermal store and Fully integrated Heating Controls Upgrade with remote access	Min gross efficiency of 77% as per HARP. Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot water cylinder insulating jacket Programmer to have capacity to adjust heating schedule remotely via Web or SMS	5,920	9,320
Biomass boiler without thermal store and Fully integrated Heating Controls Upgrade	Min gross efficiency of 82% as per HARP. Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot water cylinder insulating jacket	5,150	8,100
Biomass boiler without thermal store and Fully integrated Heating Controls Upgrade with	Min gross efficiency of 82% as per HARP. Full zone control on space and water heating, with at least 2 zones for space heating as recommended in TGD L 2008 and 80mm hot	5,380	8,470



remote access	water cylinder insulating jacket Programmer to have capacity to adjust heating schedule remotely via Web or SMS		
Entry Level Heating Controls Upgrade only	24 hour 7 day programmer & room thermostat	1,000	1,600
Entry Level Heating Controls Upgrade only with remote access	24 hour 7 day programmer & room thermostat Programmer to have capacity to adjust heating schedule remotely via Web or SMS	1,100	1,760
Solid Fuel Room Heater (without back boilers)	65%+ gross seasonal efficiency as per HARP	1,050	1,650
Biomass Fuelled Room Heater (without back boilers)	65%+ gross seasonal efficiency as per HARP	1,310	2,060
Solar Water Heating Installation	Sized and installed in accordance with SR 50-2	1,050	1,650
Mechanically-assisted powered cleanse and flush (powerflushing) of system	Boiler Service to Manufactures instructions / SEAI checklist Mechanically-assisted powered cleanse and flush (powerflushing) of system to BS 7593	260	400
Mechanically-assisted powered cleanse and flush (powerflushing) of system and Installation of magnetic filtration system to existing heating system	Boiler Service to Manufactures instructions / SEAI checklist Mechanically-assisted powered cleanse and flush (powerflushing) to BS 7593 before installation Magnetic filtration Installation of magnetic filtration to existing heating system to SR 50-1 Code of Practice for building services –Part 1: Domestic plumbing and heating	400	630
Chimney draught limiter	Permanent mechanically fixed Chimney draught limiter Product to conform to BS 1251 and BS 3376	185	290
Oil Boiler Service²	To Manufactures instructions / SEAI checklist	60	60
LPG Boiler service	To Manufactures instructions / SEAI checklist	30	30
Natural Gas Boiler service	To Manufactures instructions / SEAI checklist	20	20
CFL	Per set of tungsten lights replaced (5 no. CFLs per set)	80	80
LED	Per set of tungsten lights replaced (5 no. LEDs per set)	85	85
After BER	BER to be completed after efficiency measures have been implemented	None	None



Notes:

¹ CFL and LED lights are classed as secondary measures and must be installed along with a primary package of measures. Secondary measures can only account towards a maximum of 10% of credits towards targets.

² Credits only available for increase in numbers of boilers serviced over the baseline benchmark.

If 3 *Primary Measures* are installed together in one property an extra 10% *credit* will be added to the energy credits allocated. Any bonus credits are discounted from official reporting of energy savings.

If 4 or more *Primary Measures* are installed together in one property an extra 15% *credit* will be added to the energy credits allocated. Any bonus credits are discounted from official reporting of energy savings.