

**National Renewable Energy Action Plan  
(NREAP)**

**IRELAND**

**Third Progress Report**

**Submitted under Article 22 of Directive 2009/28/EC**

**December 2015**



## Template for Member State progress reports under Directive 2009/28/EC.

### 1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2014 and 2013) (Article 22 (1) a of Directive 2009/28/EC)).

**Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources<sup>1</sup>**

	2013	2014
RES-H&C <sup>2</sup> (%)	5.5%	6.6%
RES-E <sup>3</sup> (%)	20.8%	22.7%
RES-T <sup>4</sup> (%)	4.9%	5.2%
Overall RES share <sup>5</sup> (%)	7.6%	8.6%
<i>Of which from cooperation mechanism<sup>6</sup> (%)</i>	n/a	n/a
<i>Surplus for cooperation mechanism<sup>7</sup> (%)</i>	n/a	n/a

**Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)<sup>8</sup>**

	2013	2014
(A) Gross final consumption of RES for heating and cooling	243	280
(B) Gross final consumption of electricity from RES	501	550
(C) Gross final consumption of energy from RES in transport	103	117
(D) Gross total RES consumption <sup>9</sup>	847	947
(E) Transfer of RES <u>to</u> other Member States	n/a	n/a
(F) Transfer of RES <u>from</u> other Member States and 3rd countries	n/a	n/a
(G) RES consumption adjusted for target (D)-(E)+(F)	847	947

<sup>1</sup> Facilitates comparison with Table 3 and Table 4a of the NREAPs.

<sup>2</sup> Share of renewable energy in heating and cooling: gross final consumption of energy from renewable sources for heating and cooling (as defined in Articles 5(1)b) and 5(4) of Directive 2009/28/EC divided by gross final consumption of energy for heating and cooling. The same methodology as in Table 3 of NREAPs applies.

<sup>3</sup> Share of renewable energy in electricity: gross final consumption of electricity from renewable sources for electricity (as defined in Articles 5(1)a) and 5(3) of Directive 2009/28/EC divided by total gross final consumption of electricity. The same methodology as in Table 3 of NREAPs applies.

<sup>4</sup> Share of renewable energy in transport: final energy from renewable sources consumed in transport (cf. Article 5(1)c) and 5(5) of Directive 2009/28/EC divided by the consumption in transport of 1) petrol; 2) diesel; 3) biofuels used in road and rail transport and 4) electricity in land transport (as reflected in row 3 of Table 1). The same methodology as in Table 3 of NREAPs applies.

<sup>5</sup> Share of renewable energy in gross final energy consumption. The same methodology as in Table 3 of NREAPs applies.

<sup>6</sup> In percentage point of overall RES share.

<sup>7</sup> In percentage point of overall RES share.

<sup>8</sup> Facilitates comparison with Table 4a of the NREAPs

<sup>9</sup> According to Art.5(1) of Directive 2009/28/EC gas, electricity and hydrogen from renewable energy sources shall only be considered once. No double counting is allowed.

**Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity<sup>10</sup>**

	2013		2014	
	MW	GWh	MW	GWh
Hydro <sup>11</sup> :	529	1,082	529	1,007
non pumped	237	738	237	728
<1MW	20	61	20	61
1MW–10 MW	21	66	21	65
>10MW	196	611	196	602
pumped (*note pumped hydro is not counted as RES-E in the RES-E calculation methodology)	292	344	292	279
mixed <sup>12</sup>				
Geothermal				
Solar:	1.02	0.70	1.38	0.95
photovoltaic	1.02	0.70	1.38	0.95
concentrated solar power				
Tide, wave, ocean				
Wind:	1,941	4,607	2,211	5,133
onshore	1,916		2,186	
offshore	25		25	
Biomass <sup>13</sup> :	67	480	69	536
solid biomass	21	293	22	330
biogas	46	186	47	206
bioliquids				
<b>TOTAL</b>	2,538	6,169	2,811	6,676
of which in CHP	11.90	43	11.89	50

<sup>10</sup> Facilitates comparison with Table 10a of the NREAPs.

<sup>11</sup> Normalised in accordance with Directive 2009/28/EC and Eurostat methodology.

<sup>12</sup> In accordance with new Eurostat methodology.

<sup>13</sup> Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) of Directive 2009/28/EC last subparagraph.

**Table 1c: Total actual contribution (final energy consumption<sup>14</sup>) from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)<sup>15</sup>**

	2013	2014
Geothermal (excluding low temperature geothermal heat in heat pump applications)	n/a	n/a
Solar	11.3	12.2
Biomass <sup>16</sup> :		
<i>solid biomass</i>	192	222
<i>biogas</i>	7.1	8.1
<i>bioliquids</i>	-	-
Renewable energy from heat pumps:	33	38
- of which aerothermal		
- of which geothermal	33	38
- of which hydrothermal		
<b>TOTAL</b>	243	280
<i>Of which DH<sup>17</sup></i>		
<i>Of which biomass in households<sup>18</sup></i>	28	28

**Table 1d: Total actual contribution from each renewable energy technology in [Member State] to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)<sup>19, 20</sup>**

	2013	2014
Bioethanol/ bio-ETBE	29	27
<i>Of which Biofuels<sup>21</sup> Article 21.2</i>	-	-
<i>Of which imported<sup>22</sup></i>	29	24
Biodiesel	74	90
<i>Of which Biofuels<sup>23</sup> Article 21.2</i>	73	77
<i>Of which imported<sup>24</sup></i>	50	67
Hydrogen from renewables	-	-
Renewable electricity	0.62	0.65
<i>Of which road transport</i>		
<i>Of which non-road transport</i>	0.62	0.65
Others (as biogas, vegetable oils, etc.) – please specify		
<i>Of which Biofuels<sup>25</sup> Article 21.2</i>		
<b>TOTAL</b>	103	117

<sup>14</sup> Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.

<sup>15</sup> Facilitates comparison with Table 11 of the NREAPs.

<sup>16</sup> Take into account only those complying with applicable sustainability criteria, cf. Article 5(1) last subparagraph of Directive 2009/28/EC.

<sup>17</sup> District heating and / or cooling from total renewable heating and cooling consumption (RES- DH).

<sup>18</sup> From the total renewable heating and cooling consumption.

<sup>19</sup> For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

<sup>20</sup> Facilitates comparison with Table 12 of the NREAPs.

<sup>21</sup> Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

<sup>22</sup> From the whole amount of bioethanol / bio-ETBE.

<sup>23</sup> Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

<sup>24</sup> From the whole amount of biodiesel.

<sup>25</sup> Biofuels that are included in Article 21(2) of Directive 2009/28/EC.

**2. Measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan. (Article 22(1)a) of Directive 2009/28/EC))**

**Table 2: Overview of all policies and measures**

**New schemes, policies and measures introduced in 2013, 2014 and schemes, policies and measures that existed pre 2013 and continue**

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and or activity***	Existing or planned****	Start and end dates of the measure
1. REFIT 2	Financial	4000MW of new onshore wind, hydro and landfill gas sufficient to cover our 2020 RES-E target.	Generators and suppliers of electricity from renewable sources	Existing	The scheme was formally opened in Quarter 1, 2012.
2. REFIT 3	Financial	310MW of biomass technologies (anaerobic digestion, high efficiency CHP and biomass combustion and co-firing)	Generators and suppliers of electricity from renewable sources	Existing.	Scheme opened in February 2012.
3. GIS resources	Technical/Soft	Updated wind atlas available on the Sustainable Energy Authority of Ireland (SEAI) web site.	General Public,  County Councils, Wind Energy Project Developers,  Academic Researchers, Consultants and Government bodies.	Planned	Available since Q2, 2015.
4. LARES (Local Authority Renewable Energy Strategies)	Technical/Soft	This methodology facilitates a consistency of approach in the preparation of LARES, and to assist local authorities in developing robust, co-ordinated and sustainable strategies in accordance with national and European obligations.	Planning authorities and the Planning Appeals Board.( An Bord Pleanála	Existing	2013-2020
5. Marine energy Development Fund, aimed at supporting industry led development and deployment of ocean energy devices and systems.	Financial	Prototype wave energy converters and component technologies.	Wave energy developers	Existing	Opened in 2008

6. SFI programmes	SFI research programmes (suitable for recruitment, early/mid-career researchers, outstanding individuals, large scale centres, enterprise and industry, infrastructure, international and networking & external engagement).	Research in the area of Energy builds research capacity, scientific expertise, and collaborative relationships between academia, international collaborators and industry.	Researchers in Irish Higher Education Institutions, collaborating industry partners, collaborating international academic partners.	Planned & existing	Ongoing
7. National Research Prioritisation process.  Two energy themes prioritised for support: Marine Renewable Energy (wave, tidal, offshore wind) and Smart Grids and Smart Cities	Financial	<p>To create an early stage industry and research cluster, allowing the sustainable commercialisation of our natural resources including the possibility of exporting electricity from these sources.</p> <p>Using a layer of technologies (including software, sensor hardware and control and interface systems) and design solutions to more effectively and efficiently manage complex infrastructure systems.</p> <p>A coordinated multiannual development and deployment of financial supports for priority topics, applied to delivery of research projects, infrastructure, skills development and commercialisation, leveraging inter alia the EU Horizon 2020 programme</p>	Funding agencies, academic and industry researchers in marine renewable energy and in smart grid technologies, plus local authorities, utilities, enterprise agencies and policy makers	Existing, following publication of action plans in 2013.	Commenced in 2013
8. National Smart Metering Programme (NSMP)	Technical/Soft	Phase 2: Design, Requirements Definition and Procurement is ongoing. In October 2014 a set of decision papers were published, scoping out the approach to the NSMP. They related to Core Design, Time of Use tariffs, the provision of Energy Usage Information and Pay-As-You-Go. Detailed planning commenced.	Electricity & Gas Consumers, policy makers	Existing	CER (regulator) has published a decision regarding the national rollout of electricity and gas smart meters (CER/12/008). The smart metering project is now in Phase 2 (Design, Requirements Definition and Procurement). Further updates can be viewed on the Smart Metering section of the CER's website ( <a href="http://www.cer.ie">www.cer.ie</a> ).

		A CBA was also published at the time. This presented a marginally negative net result.			
9. Guidelines for Planning Authorities on Wind Energy Development (DECLG) being reviewed. in relation to noise, setback distance and shadow flicker	Soft	Facilitate a consistency of approach by planning authorities, both in identifying areas suitable for wind energy development and having regard to potential impacts, inter alia on nature and diversity	Planning authorities and the Planning Appeals Board. ( An Bord Pleanála)	Existing. Guidelines have existed since 2006 and are currently under review.	2013-14  Draft for consultation issued end of 2013
10. Draft Geothermal legislation	Legislative / Regulatory	Geothermal Energy Development Bill 2010 published	Industry, policy makers	Existing	Bill published 2010. The bill must now make its way through the legislative process prior to enactment.
11. DS3 process (See point 28 below). Updated actions since 2011	Technical				
12. Social acceptance activities  Engaging with IEA Wind Task 28 on Social Acceptance	Soft	Disseminated best practice on international social acceptance activities.	Wind energy practitioners and developers, utilities, communities and policy makers in Ireland	Existing	Ongoing
13. Social acceptance activities  Commission policy oriented and public good research under National Energy R&D Programme	Soft	Provide reliable evidence and information on options and approaches to facilitate enhanced societal acceptance of renewable energy	Wind energy practitioners and developers, industry federations, academics and policy makers in Ireland	Existing	Ongoing since 2011
14. Ensuring a secure Reliable and Efficient Power System in a Changing Environment	Technical	This report augments the results of the Facilitation of Renewables report with additional analysis quantifying the level of change required over a range of key operational and plant portfolio metrics. It also considers the implications of the current levels of performance as of 2011.	TSO	Existing	June 2011

15. Intra-day Trading (IDT) in the Single Electricity Market	Regulatory/ Financial	Intra-Day Trading (IDT) was introduced in SEM in 2012. The new system promotes more competition in the market by allowing electricity trading closer to real time and enabling the use of increasing amounts of variable renewable generation. The project was launched in July 2012 on time and within budget	SEMO, Regulators, Policy makers, Industry	Existing	2012 and remains in place
16. Bioenergy scheme for the production of non-food crops	Financial	Grant support for the planting of perennial biomass crops (willow and miscanthus) – contributes to biomass needs of renewable energy sector	Agriculture sector	Existing	Since 2007 (ongoing)
17. Relief for investment in renewable energy generation – Section 486B, Tax Consolidation Act (TCA) 1997	Financial (Tax relief)	The relief for investment applies to corporate equity investments in solar, wind, hydro or biomass technology generation projects. The relief is given in the form of a deduction from a company's profits for its direct investment in new ordinary shares in a qualifying renewable energy company.	Companies paying corporation tax, Generators of solar, wind, hydro and biomass generation	Existing .	Introduced: 1999 and extended in 2012 to 31/12/14
18. Renewable Energy RD &D Programme	Financial  Financial support is available in three categories:  Category 1: Shared-cost Demonstration Category 2: Shared-cost R&D Category 3: Commissioned Public Good Activities	Programme focused on stimulating the deployment of renewable energy technologies that are close to market, and on assessing the development of technologies that have prospects for the future and on overcoming barriers to renewable energy deployment and informing national and local policies.	Developing solutions relevant to developers of renewable energy technologies, local authorities, spatial planners and government authorities.	Existing	July 2002 onwards
19. BES (Business Expansion Scheme)	Financial	A tax relief incentive scheme that provides tax relief for investment in certain corporate trades. There is no tax advantage for the company in receipt of the BES, but securing this funding may enhance their ability to attract other external funding.	Renewable Energy Developments meeting the qualifying conditions	Existing	Replaced by EII scheme (No. 46)



20. The continuing roll-out of EirGrid's grid development programme	Infrastructural	Grid 25 provides the framework to improve grid which will help to facilitate the integration of increasing amounts of renewable generation EirGrid is engaging with communities around the country on the roll out of the programme.	Generators of RES- Energy security and conventional generation	Existing and planned (Grid 25 is in the implementation and rollout phase.)	Grid 25 was launched in 2008 and was revised in 2015.
21. Part L of the Second Schedule of the Building Regulations 1997-2008. This has been updated in 2011.	Regulatory	Part L Conservation of Fuel and Energy in Dwellings 2011 came into effect in November 2011. This requires that a typical new dwelling will have a primary energy performance of 59kWh/m2/yr when calculated in accordance with Annex I of the EPBD (recast). This is a significant milestone in the roadmap towards NZEB and also includes requirements for significant levels of renewables onsite or nearby	Domestic (dwellings)	Existing.  The Department of the Environment, Community and Local Government is developing a strategic framework or 'roadmap' to achieve a carbon neutral standard for dwellings. Increased use of onsite renewables will be a key element of the framework.  Building Regulations Part L (Conservation of Fuel and Energy) for buildings other than dwellings is being reviewed in 2014.	2008. This has been amended by Statutory Instrument No. 259 of 2011.
22. SI 666 of 2006 Part 2 Alternative Energy Systems  Replaced by SI 243 of 2012  Part 2 Alternative Energy Systems	Regulatory	Ensure before work commences that consideration is given to the technical, environmental and economic feasibility of installing alternative energy systems: this measure should help increase renewables in large buildings	Owners / Designers of Large new buildings (over 1000m2)	Existing	2006 onwards. The 2006 arrangements were replaced in 2012 - Statutory Instrument No. 243 of 2012.
23. Statutory Instrument (SI) 83 of 2007 and SI 235 of 2008	Regulatory	Conditional planning exemptions for renewable technologies that meet specified criteria – expected to encourage uptake of energy from renewable technologies	Domestic, business and agricultural sectors	Existing	2007 and 2008 onwards

24. Local energy agencies	Soft	The network of local energy agencies collective goal is to support the development and implementation of energy policy. Information, advice and skills provided through the local agencies can enhance knowledge on options for increased renewable energy at local level	General public, industry, business	Existing	Ongoing
25. Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010, SI33/2012 and S.I. No. 562/2012	Regulatory	Facilitated the introduction of the Biofuel Obligation Scheme to promote increased production and use of Biofuels on Irish transport fuels market  The obligation rate was increased to 6% with effect from 1 January 2013 by S.I. No. 562/2012	Biofuel Producers	Existing	Started 1/7/2010 – on-going. Means of demonstrating compliance with the Sustainability Criteria which were introduced in 2012 by SI33/2012
26. S.I. 158 of 2011 and 2010 Biofuel Obligation Act, S.I. No. 482 of 2014 and SI 483 of 2014	Regulatory/ Legislative	Legal Provisions that transpose Renewable Energy Directive 2009/28/EC in Ireland	Industry, policy makers	Existing	2010 and 2011 – remains in place
27. Electric Vehicles	Financial/ infrastructural	Increased use of electric vehicles in Ireland. As of the end of 2014, there were, 901 public charge-points installed. This includes 69 DC fast chargers, most of which have been installed on the main interurban routes. Ireland is a partner in the following EU Commission funded FP7 projects,: <ul style="list-style-type: none"> <li>• Green eMotion</li> <li>• MOBI Europe,</li> <li>• FINSENY,</li> <li>• FINESCE</li> </ul>	General Public	Existing	EV grant scheme commenced in 2011. Vehicle registration Scheme extended to 31/12/16.

28. Electric Vehicles	Regulatory	Planning exemption for electric vehicle charging stations introduced in 2013	Installers of charging points and users of electric vehicles	New	Ongoing
29. Small, Renewable, Low carbon generation connecting to the grid outside the 'Gate' process	Soft / infrastructural	A policy that facilitates small scale renewables by providing for grid connections outside the gate process for certain small, renewable, low carbon generators	Small, renewable and low carbon generators such as small bio-energy, wave, tidal generators	Existing	Introduced in July 2009. Continues to remain open to certain small generators as a means to connect to the grid.
30. Revised simplified application procedures for authorisations to construct and licences to generate	Regulatory	CER/10/098 (energy regulator's decision) introduced a simplified procedure for generators with installed capacity up to 40MW to make obtaining authorisation to construct and licence to generate easier.	Those constructing generating stations with installed capacity not exceeding 40MW and generating electricity	Existing	New procedure came into effect in June 2010 and remains in place.
31. Principles of Dispatch and the Design of the Market Schedule in the Trading & Settlement Code	Regulatory	The Single Electricity Market (SEM) Committee undertook a 2 year consultation (2009-2011) prior to reaching a decision. The policy has important implications for the treatment and dispatch of renewable generation in the SEM.	All participants in the SEM (mandatory pool for those generators over 10MW)	New	SEM Committee Decision published in 2011 (SEM 11-062)
32. Treatment of Price Taking Generation in Tie Breaks in Dispatch in the Single Electricity Market (SEM) & Associated Issues	Regulatory	The SEM committee is currently consulting with a view to reaching a decision on this. This policy will have important implications for the treatment and dispatch of renewable generation in the SEM.	All participants in the SEM (mandatory pool for those generators over 10MW)	New	SEM Committee Consultation SEM 11-063 published in August 2011. Decision  SEM Committee decision published March 2013 (SEM-13-010)
33. Consent process for offshore renewable energy projects	Regulatory	The Minister for Environment intends to streamline and modernise the consent process for certain developments in the offshore environment, including offshore renewable energy projects such as wave, offshore wind and tidal technologies on a phased basis.	Generators of RES-E operating in the offshore environment	Planned	Drafting of the Maritime Area and Foreshore (Amendment) Bill was approved by Government in July 2013 pursuant to the General Scheme submitted. Drafting of the Bill is being progressed by DECLG as a priority business task.

34. Planning & Development (Amendment) Act 2010	Legislative / Regulatory	The Act provides for changes to the planning system, some of which have implications for the renewable energy sector (e.g. projects over a certain size will now automatically be treated as strategic infrastructure under the Strategic Infrastructure Act. The time period relating to initial planning consent is now longer.)	Developers who have to go through the planning process	Now in place	The legislation was enacted in 2010. Renewable generators may now extend the duration of a planning permission for up to 10 years which is generally more satisfactory and projects over a certain size now automatically seek consent under the Strategic Infrastructure Act.
35. Accelerated Capital Allowances (ACA) for Energy Efficient Equipment (SI 393 of 2009)	Financial (Tax Relief)	Specifies certain technical standards to be met by renewable energy products to be eligible for the ACA tax relief. Technologies covered include wind turbines >5kw, solar PV, CHP, biomass boilers, electric vehicles.	Companies paying corporation tax	Existing	Existing from 2009 onwards. It has been extended until the end of 2017
36. Ocean Energy	Financial / Soft	The Ocean Energy Prototype Development Fund (grants for industry) aimed at stimulating Ocean Energy (OE) devices and systems.	Offshore renewable energy sector	Existing	Prototype Development Fund in operation since 2009.
37. Tree Felling Policy for Wind Farm Development	Soft	The Department of Agriculture, Food & the Marine in 2009 introduced a tree felling policy for wind farm development. Industry and DAFF are in discussion on the policy.	Wind Farm Developers / Forestry sector	Existing	2009 onwards
38. The Gate process is a fundamental part of reaching the renewable target. 'Gate' is a term used to refer to the processing of batches of connection	Soft	Approximately 4,000 MW of renewable generation capacity received connection offers in the Gate 3 process. The uptake of Gate 3 offers is particularly high with 82% of offers accepted, 7% under consideration and only 11% have been declined	Generators of RES-E	Existing.	All Gate 3 grid connection offers have now issued to those included in the Gate 3 direction..  At time of writing circa 3,263MW of Gate 3 renewable connection offers have been accepted.

<p>applications received prior to a Gate closure date. The Gate 3 process issued offers to 4,000 MW of renewable generation. When added to Gates 1 and 2 (330 MW and 1400 MW), there is sufficient renewable generation to meet the targets.</p>		<p>The rollout and implementation of Gate 3 by the regulator, TSO and DSO will ensure that Ireland can reach its 40% RES-E target.</p>			
<p>39. DS3: Delivering a Secure, Sustainable Power System</p>	<p>Technical</p>	<p>The overall aim of the DS3 Programme is to put in place the required changes to system policies, tools and performance to allow the electricity system operate safely with a high penetration of renewable generation.</p>	<p>TSO, regulator, policy makers, industry</p>	<p>Existing and on-going</p>	<p>2011 and remains in place.</p>
<p>40. System Services ---A regulatory decision on System Services was taken in December 2014.</p>	<p>Technical and Regulatory</p>	<p>System Services is a key work stream within the DS3 Programme.</p> <p>The System Services work stream set out to improve the technical capability of the generation fleet and the system more generally (the provision of system services is not restricted to generation).</p> <p>This will be achieved by defining the capability required by the TSO and appropriately incentivising the delivery of that capability. System services must also be seen in the wider context of the electricity industry which is undergoing significant change.</p>	<p>TSO, regulator, industry</p>	<p>-On-going</p>	<p>2014</p>

41. East West Interconnector	Financial / Infrastructural	The East West Interconnector (EWIC) went into full commercial operation on 1 <sup>st</sup> May 2013. This project represents a significant investment that has considerable benefits for Ireland by helping the country reach its renewable electricity targets, by improving security of supply, and by increasing competition in the market.	Transmission System Operator, Generators of RES-E	Existing	Construction phase 2009-2012  Operating on a commercial basis since 2013  Further information is available at:  <a href="http://www.eirgrid.com/eastwest/">http://www.eirgrid.com/eastwest/</a>
42. Offshore Grid Research	Technical	EirGrid published a study into the design and architecture of a future Offshore Energy Grid. The focus of offshore generation is mainly wind and tidal. The Irish Government has also been involved in the ISLES study examining issues around offshore grid between Ireland, Northern Ireland and Scotland.	Transmission System Operator. Governments. Generators of RES-E	Existing	2010-2011. The results of the ISLES feasibility study were published in November 2011.  <a href="http://www.islesproject.eu/">http://www.islesproject.eu/</a>
43. Offshore Renewable Energy Development Plan published in February 2014	Financial / Soft	Identifies the sustainable economic opportunity for Ireland in the period to 2030 of realising the potential of our indigenous offshore wind, wave and tidal energy resources	Offshore renewable energy sector	Existing	Implementation commenced in 2014
44. Draft Bioenergy Plan published October 2014	Soft	The draft Plan was published subject to the completion of SEA and AA. It sets out the broader context for the development of Ireland's bioenergy sector, and the current status with regard to the range of policy areas that must be coordinated in order to create the conditions necessary to support the development of this sector.	Energy from Biomass	New	Commenced in 2014. Finalised Plan expected 2016

45. Relief for investment in renewable energy generation – Section 486B, Tax Consolidation Act (TCA) 1997	Financial (Tax relief)	The relief for investment applies to corporate equity investments in solar, wind, hydro or biomass technology generation projects. The relief is given in the form of a deduction from a company's profits for its direct investment in new ordinary shares in a qualifying renewable energy company.	Companies paying corporation tax, Generators of solar, wind, hydro and biomass generation	Existing. Commencement order required.	Introduced: 1999  In 2012 the scheme was extended to 31/12/14
46. Employee Investment Incentive (EII) Scheme	Financial (Tax relief)	Employee Investment Incentive (EII) gives individuals relief from income tax for investment in renewable energy generation. The EII scheme has the added benefit of being linked with the provision of additional employment. The legislative basis for the EII (incorporating the Seed Capital Scheme (SCS)) is Part 16 of the Taxes Consolidation Act 1997, as amended.	Individuals and companies.	Existing	Introduced in Budget 2011.  Replaced the Business Expansion Scheme (BES) and still in place
47. SI 201 of 2012 Value-Added Tax (Refund of Tax)	Regulatory/Financial	Incentives farmers to purchase renewable energy/energy efficient equipment	Farmers	Existing	Effective from 1st January 2012

\* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

\*\*Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?

\*\*\*Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc? or what is the targeted activity / sector: biofuel production, energetic use of animal manure, etc)?

**Schemes and measures that existed in 2011 to 2012 but have now closed**

Name and reference of the measure	Type of measure*	Expected result**	Targeted group and or activity***	Existing or planned****	Start and end dates of the measure
1. Alternative Energy Requirement (AER) Programmes I-VI	Financial	Increase in RES-E following six separate calls for tender. 532MW of renewable generation was built under AER. 322MW still in the scheme in 2011/2012.  219MW still in the scheme in 2013/2014.	Generators of electricity from renewable sources	Closed for new applicants in 2007. Those remaining in the scheme (332MW in AER is still in the scheme in the PSO period 2011/2012 )  219MW in AER is still in the scheme in the PSO period 2013/2014 )	There were 6 separate calls for tender beginning in the mid 1990s. The last call for tender was in 2003. Closed for new applications. Projects continue to be supported by the PSO levy.
2. Renewable Energy Feed-in Tariff scheme (REFIT 1)	Financial	Support an increase in RES-E via a feed-in tariff mechanism. In 2011/2012, there was 1242MW of renewable generation in receipt of REFIT.  For the PSO period 2013/2014, there is 1365MW of renewable generation in receipt of REFIT 1.	Generators and suppliers of electricity from renewable sources	Closed for new applicants on 31/12/09. 1242MW in REFIT was included in the 2011/2012 PSO decision.  1365MW in REFIT 1 was included in the 2013/2014 PSO decision	2007-2009 (New developments accepted before the closing date that have been granted an extension of time continue to build out.) Closed for new applications. Projects continue to be supported by the PSO.
3. Small and Micro Scale Generation Pilot Programme (Grants).	Financial	Microgeneration pilot run by SEAI to inform on the technical, market and regulatory issues associated with the installation, network connection and operation of small and micro scale generation technologies.	Micro renewable generators	Closed for new applications – monitoring of installations in the pilot is underway.	Scheme launched in February 2009 and is now closed
4. Charles Parsons Energy Research Awards	Financial / Soft	The objective of the awards (overseen by Science Foundation Ireland) is to stimulate and develop energy research in Ireland by providing funding for research groups to undertake energy research particularly in priority areas. A specific aim is to increase significantly overall research capacity and in particular attract more engineers into energy research.	Energy researchers, universities, industry, policy makers	Closed for new applications.	Closed for new applications in October 2006.  <a href="http://www.sfi.ie/investments-achievements/investments/charles-parsons-energy-research-awards/">http://www.sfi.ie/investments-achievements/investments/charles-parsons-energy-research-awards/</a>



**2.a Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy. (Article 22(1)e) of Directive 2009/28/EC)).**

CER (the energy regulator) in recent years has introduced several decisions that improve procedures. These include the following:

- Facilitation of transmission and distribution contestability;
- Development of and implementation of Least Cost Chargeable/ Least Cost Technically Acceptable charging;
- Transmission & Distribution standard charging policy;
- Facilitation of small low carbon non Group processing approach developments; (i.e. ability for certain small low carbon renewable generators to obtain a grid connection outside the gate process)
- Reduction of 8% in connection application fees in 2010;
- Distribution charter and fixed timeline for delivery of connection assets;
- Incentivisation of TSO and DSO to deliver connections;
- Development of the less onerous bonding requirements (CER/09/138);
- Facilitation of Gate 3 Liaison Group, a forum which provides industry with the opportunity for direct interaction with the system operators and the CER on connection matters.
- CER/10/098 was a decision introducing a simplified procedure for generators with installed capacity up to 40MW to make obtaining authorisation to construct and licence to generate easier.

A number of Single Electricity Market Committee (SEMC) decisions were taken in 2013 and 2014 that are intended to provide a greater level of clarity to renewable generators on market operations as they affect renewable energy. In December 2013 the SEM Committee published its decision on the Technical Definitions for System Services (SEM-13-098). In December 2014, the SEM Committee sets out a High Level Design for the procurement of system services, as well as its current thinking and guidance on many areas of the detailed design and implementation. The aim of the system services decision is to put in place the correct structure, level and type of service in order to ensure that the system can operate securely with higher levels of intermittent wind penetration (up to 75% instantaneous penetration).

The 2014 Offshore Renewable Energy Development Plan (OREDP) sets out Government policy in relation to the sustainable development of Ireland's abundant offshore renewable energy resource.

The Strategic Environmental Assessment carried out for the OREDP found that 4,500 MW of offshore wind and 1,500 MW of wave and tidal generation could be sustainably developed in Irish waters, and the Plan identifies policy actions and enablers that are key to the development of this sector. These include, among others, increased Exchequer Funding for ocean research, development and demonstration, the introduction of an initial Market Support Tariff for ocean energy, ensuring the development of appropriate infrastructure, exploring options for international collaboration and work in relation to environmental monitoring. Implementation has commenced and is ongoing across relevant Government Departments and Agencies through work streams on Environment, Infrastructure and Job Creation.

A further key enabler with regard to the development of Ireland's offshore renewable energy resource is the introduction of a new planning and consent architecture for development in the marine. Work is continuing on the drafting of new primary legislation, the Maritime Area and Foreshore (Amendment) Bill, to streamline the development consent process, to include the onshore and offshore elements of strategic infrastructure developments, with a modern and coherent consent framework for offshore renewable energy developments.

The 2010 Planning & Development (Amendment) Act introduced reforms to planning legislation. Under the Act, developers including renewable project developers are now able to secure an extension of the duration of their planning permission grants for up to ten years, which is of considerable benefit in reducing administrative burden, given the time that it can take for projects to be brought to fruition.

The ongoing DS3 programme being undertaken by EirGrid<sup>26</sup> is designed to manage the achievement of our renewable electricity target from a grid perspective over the coming years.

**2.b Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements. (Article 22(1)f) of Directive 2009/28/EC).**

Several studies have been carried out over the past number of years to investigate the levels of renewable generation that can be securely accommodated on the power system of Ireland and Northern Ireland. These studies have considered the requirements in terms of infrastructure and also the operational implications of managing a power system with large amounts of variable generation sources.

**All Island Grid Study (Published in January 2008)**

The All-Island Grid Study, published in 2008, assessed the technical feasibility and the relative costs and benefits associated with various scenarios for increased shares of electricity sourced from renewable energy in the all island power system. The scenarios were informed by the resource available, technological readiness of the various generation technologies (including wind) and cost required per generated unit. This study informed the decision to move towards achieving 40% renewable electricity generation in Ireland by 2020.

**Facilitation of Renewables Study (Published in June 2010)**

The *Facilitation of Renewables Study* was a suite of pioneering studies that Eirgrid is involved in that aimed to identify the dynamic issues associated with operating a power system with high levels of renewable generation, and how to best solve these issues. The outcome of this research study is informing future operational policies, grid code and standards and discussions on remuneration regimes for all generation. The study shows that high levels of wind will be possible but pose various challenges

**Ensuring a Secure, Reliable and Efficient Power System in a Changing Environment (Published in June 2011)**

Recognising the importance of the Facilitation of Renewables (FoR) studies, the SEM Committee in November 2010 requested the TSOs to provide evidence and objective operational metrics to highlight potential issues with the on going transformation of the power systems and to provide advice on the priority actions required to successfully manage and implement the necessary changes. The 2011 report below builds on the FoR studies by examining the hour-to-hour behaviour of the power system in 2010 and comparing this with the predicted behaviour in 2020.

As a follow on from these studies, and to ensure that the necessary steps are put in place to deliver on our 2020 target, EirGrid and SONI have established a programme of work entitled “Delivering a Secure Sustainable Electricity System (DS3)”. Further information on the programme is available online<sup>27</sup>.

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<sup>26</sup> <http://www.eirgrid.com/operations/ds3/ds3programmeoffice/>

<sup>27</sup> <http://www.eirgrid.com/operations/ds3/ds3programmeoffice/>

EirGrid formally commenced the DS3 Project in September 2011, following a review by the Regulatory Authorities of the TSOs' Report on Ensuring a Secure, Reliable and Efficient Power System in July 2011. This followed a request by the SEM Committee for the TSOs to put in place a programme of work to solve the challenges which would occur with operating the electricity system in a secure manner as levels of wind penetration increase. This work is still on-going and significant progress has been made in 2013-2014.

The Transmission System Operator's Grid25 programme which was launched in 2008 will provide transmission capacity for large amounts of renewable generation in the years ahead, enabling the physical connection and transmission and distribution of electricity from renewable sources. Since the Grid25 strategy was developed, significant progress has been made in optimising the grid investment plans, in identifying new technical solutions, in building new transmission circuits and in up-rating existing circuits. The grid development plans have been revised in 2011 and again in 2015.

There has been significant development of the transmission system in the past number of years See table below:

<b>Circuit Type / YEAR</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Total</b>
<b>110kV New Line (km)</b>	73	20	69	162
<b>220kV New Line (km)</b>	55	0	0	55
<b>110kV Line Uprate (km)</b>	136	197	123	456
<b>220kV Line Uprate (km)</b>	79	132	31	242

#### Stage Payments for grid connections

The energy regulator's (CER) direction on first stage payments for grid connections (CER/11/083) treats all developers seeking a connection in a fair and equal manner regardless of size, scale or ownership structure. The CER's 2009 decision (CER/09/138) which implemented the current First Stage Payments Scheme significantly reduced the level of financial commitment required from renewable generators at offer acceptance.

#### Bonding requirements for grid connections

CER/09/138 outlined a revised approach to the bonding requirements and connection charging requirements for renewable developers, removing the requirement for large bonds to be paid upfront by developers at offer acceptance. This decision was also made following a significant period of discussion and consultation with the renewable industry.

#### Connection policy

In terms of cost, CER has in the past few years introduced many connection policy decisions designed to facilitate the industry and meet the needs of windfarm developers. These include the following:

- Facilitation of transmission and distribution contestability;
- Development of and implementation of Least Cost Chargeable/ Least Cost Technically Acceptable charging;
- Transmission & Distribution standard charging policy
- Reduction of 8% in connection application fees in 2010;
- Development of the less onerous bonding requirements (CER/09/138);

**3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan. (Article 22(1)b) of Directive 2009/28/EC)).**

Further information on the evolution of the position in respect of the electricity, heating and transport sectors since publication of the NREAP in July 2010 can be found in the Annex to this document.

RES-E

REFIT (Renewable Energy Feed-In-Tariff) is the primary support scheme for RES-E in Ireland and there are three such schemes in place. The original version of the scheme (REFIT 1) got state aid clearance in 2007 and was open for new applications until 31/12/09. Currently 1379MW of renewable generation in REFIT 1 are eligible for payment under the 2015/2016 PSO Decision<sup>28</sup>. REFIT 1 will end in 2027.

The REFIT 2 scheme, open since March 2012, covers onshore wind, small hydro and landfill gas. Support under REFIT 2 cannot exceed 15 years and will not extend beyond the end of December 2032.

It is intended to continue to offer REFIT to support RES-E (including CHP) and ensure delivery of our 2020 renewable target. Support tariffs for biomass technologies ('REFIT 3') were introduced in February 2012 to add diversity to the renewable electricity generation portfolio and assist with the development of a sustainable biomass supply sector in Ireland. Technologies supported include Anaerobic Digestion, biomass combustion and co-firing of biomass with peat, opened in February 2012. The scheme also offers supports for high efficiency Combined Heat and Power (CHP). REFIT 3 will end in 2030.

Work has commenced on examining the appropriateness of introducing support schemes for electricity from renewable sources after the REFIT schemes have closed. It is anticipated that a new support scheme for renewable electricity will become available at the end of 2016. Any new scheme will be subject to EU State Aid clearance. AER (Alternative Energy Requirement), which preceded REFIT and was a series of tender competitions that were run from the mid-1990s to the mid-2000s to support RES-E schemes, is now winding up. The AER MW included in the 2015/2016 PSO decision has fallen to just 40 MWs as the earlier projects exit the scheme.

The Accelerated Capital Allowances (ACA) scheme for energy efficient equipment specifies certain technical standards to be met by renewable energy products to be eligible for ACA tax relief. Technologies covered include wind turbines >5kw, solar PV and CHP, with biomass boilers being added in 2010 and electric vehicles being added in 2011.

On microgeneration, SEAI has been running a microgeneration pilot programme comprising 42 installations that received capital grants. Qualifying projects in the pilot have also been able to avail of a feed-in-tariff offered by a commercial company. A report on the monitoring of the installations and the findings on microgeneration in an Irish context was completed by SEAI and submitted to DCENR in 2013.

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<sup>28</sup> Available at: <http://www.cer.ie/en/renewables-decision-documents.aspx#PSODecisions>  
<http://www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/REFIT.htm>

### Tax Relief

As described in the NREAP, section 486B of the 1997 Tax Consolidation Act (as amended) applies to corporate equity investments in certain renewable energy generation projects. The relief is given in the form of a deduction from a company's profits for its direct investment in new ordinary shares in a qualifying renewable energy company. This scheme was available to 31/12/2011. In Budget 2012, it was announced that the scheme would be continued for a further 3 years until 31 December 2014.

### RES-H

The REFIT 3 scheme, although payable on exported electricity, through the encouragement of biomass high efficiency CHP technologies also incentivises renewable heat production which along with the migration by certain heat users to renewable heat in response to market forces (where biomass is a cheaper alternative to oil), will make a contribution to achieving the RES-H target.

In 2013 and 2014, the Department of Agriculture Food and the Marine continued to operate the bio-energy scheme for non-food crops (willow) which encouraged the production of biomass.

The recast Energy Performance of Buildings Directive (EPBD) was transposed in 2012 by the European Union (Energy Performance of Buildings) Regulations to further include that a building's energy performance indicator be stated in advertisements relating to the sale or letting of the building. It also further provided that on or after 9 January 2013, any building in excess of 500 m<sup>2</sup> which is frequently visited by the public is required to display either a BER certificate or a Display Energy Certificate (DEC) in a prominent place clearly visible to members of the public and that from 9 July 2015, this requirement is extended to all buildings in excess of 250 m<sup>2</sup> which are frequently visited by the public when occupied by public bodies.

Part L Conservation of Fuel and Energy in Dwellings 2011 came into effect in November 2011. This requires that a typical new dwelling will have a primary energy performance of 59kWh/m<sup>2</sup>/yr when calculated in accordance with Annex I of the EPBD (recast). This is a significant milestone in the roadmap towards Near Zero Energy Buildings (NZEB) and also includes requirements for significant levels of renewables onsite or nearby.

The draft Bioenergy Plan, published in October 2014, identifies that an additional bioenergy-focussed measure in the heat sector represents the most cost effective means of meeting a number of different policy goals, including reducing the emerging gap to meeting 12% renewable energy in the heat sector and recommends, subject to further approvals, the introduction by 2016 of a Renewable Heat Incentive for larger heat users outside the EU ETS to change to heating solutions that produce heat from renewable sources.

### RES-T

The Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 became law on 1 July 2010 and is designed to ensure that Ireland can achieve a target of 10% biofuels in the fuel mix by 2020. This provides market players with long-term certainty to develop economically viable scale into their projects going forward. It facilitates industry in developing appropriate financing, planting, refining, storage, distribution and supply chain logistics.

Under the Biofuel Obligation provided for in the Act, road transport fuel suppliers must ensure that biofuels represent a certain percentage of the national annual fuel sales. The percentage will be increased periodically, taking account of, *inter alia*, the Fuel Quality Directive requirements and the requirements in respect of complying with the provisions of the Indirect Land Use Change (ILUC) Directive.

Biofuels Obligation Certificates are awarded for the supply of one litre of sustainable biofuel. To incentivise the use of biofuels from wastes and residues, two certificates are awarded for each litre placed on the market. In this regard, the National Oil Reserves Agency (NORA), which administers the scheme, has determined that biofuel from four feedstocks are eligible for double certificates. Two of these determinations – Palm Oil Mill Effluent and Spent Bleached Earth – were made in 2014.

For other types of sustainable biofuel, one certificate is awarded for each litre. At the end of each year, fuel suppliers must have a certain percentage of certificates in proportion to the amount of petroleum based fuel placed on the market. In 2011 and 2012, the obligation was for 4 certificates per 96 litres of petroleum based fuels (or notionally 4% by volume). From 1 January 2013, the obligation rate was increased to 6% (or 6 certificates per 94 litres of petroleum based fuels).

### Electric Vehicles

Ireland's third National Energy Efficiency Action Plan (NEEAP) to 2020, published in 2014, estimates that approximately 50,000 electric vehicles could form part of the transport fleet in 2020. However, the extent to which electric vehicles are adopted in the short-to-medium term will depend on a range of factors including, inter alia, the strength of the economy, the overall numbers of new cars being purchased, the cost of purchasing and running electric vehicles compared to fossil fuel comparators, and the number of different electric vehicle models available to purchase.

In April 2011 the Minister opened the Electric Vehicle Grant Scheme to assist in the purchase of electric vehicles. This scheme continued into 2013 and 2014 (and remained in place in 2015). Those purchasing a full battery electric vehicle (BEV) or plug-in hybrid electric vehicles (PHEV) are grant aided by up to €5,000, depending on the price of the vehicle. These grants are in addition to the VRT reliefs of up to €5,000 which apply to BEVs and the VRT reliefs of up to €2,500 for PHEVs.

The take-up, however, has been slower than originally anticipated which is largely consistent with the experience elsewhere in Europe. However, 2014 saw a significant increase in electric vehicle purchases through the EV Grant Scheme compared to previous years (a trend which continued in 2015). From the commencement of the scheme, in 2011, to the end of 2014, the purchase of 535 new EVs had been supported of which 276 were in 2014 alone. A further 555 new EVs were supported in 2015.

In addition, the Electricity Supply Board (ESB), through its ecars programme, continued to roll out EV charging infrastructure with 901 publicly available chargepoints in place by the end of 2014. Of these, 69 were fast chargers placed mainly along interurban routes.

ESB ecars is a partner in a number of EU Commission funded projects to the value of circa €4.1m. The EU projects cover various aspects of the overall EV programme including charging behaviour, standards, Grid Impact Studies, ICT, Interoperability, Charging Technologies and their impacts. There is also a number of significant enterprise opportunities for Irish companies around the infrastructure required to support the deployment of EVs.

A number of the EU projects have been invaluable to ESB from a technical and learning perspective. They have also been a vehicle to develop solid European relationships for Ireland in EV industry. As Ireland is seen as a leader in the EV industry our expertise is sought by a number of large EU players including the leading car manufacturers.

In collaboration with Enterprise Ireland, ESB is the main player involved in the “Small Business Innovation Research” (SBIR) programme. This encourages small innovative companies to develop solutions to technical requirements for ESB. One such project is to develop a solution for EV charging for those living in apartments. This is the first SBIR programme in Ireland.

The ESB has been worked closely with IBM Ireland on the development of an EV enablement platform which can be adapted to suit various energy market models and inter-jurisdictional settlement mechanisms. With Intel, ESB trialled the smart management of energy consumption by EVs, the design criteria for electric vehicle charging networks, fleet management of electric vehicles and studying the connection and construction techniques for charging points. More advanced charging systems are being developed as part of the project and some of these will be field trialled in Ireland.

Green eMotion is a Europe wide project involving 42 organisations from motor manufacturers, energy utilities, and academic institutions with the aim of advancing the use of EVs. A key objective of the project is to develop European processes, standards and IT solutions that allow electric vehicle motorists easy and seamless access to charging infrastructure and related services throughout the European Union. Standardisation is also a key factor for a fast and cost-efficient European roll-out of electric car infrastructure.

ESB was the first EV fast charging project to receive funding from the TEN-T Agency under DG-MOVE. The project was a cross-border collaboration with Department of Regional Development in Northern Ireland.. This project was completed in September 2014 and was 50% co-funded by EU Commission to the value of €2.1m. The project saw the rollout of 46 fast chargers across the island of Ireland, with 41 installed in RoI and 5 in NI. As a direct result of the success of this project, ESB were asked to collaborate in a similar project in UK rolling out 74 fast chargers across England, Wales and Scotland linking up with Irish ports. ESB is providing advice and expertise to other similar TEN-T funded projects in other EU Member States such as Austria, France, Slovakia and Germany.

#### CNG and Biogas in Transport

The Finance Act 2013 took vital first steps in communicating Government support for natural gas as a vehicle propellant by adding natural gas vehicles and associated equipment as well as natural gas vehicle conversions to the Accelerated Capital Allowances Scheme for energy efficient equipment.

The draft Bioenergy Plan published in 2014 also includes a recommendation to undertake an economic assessment of biogas and biomethane in order to identify the energy sectors where they can be cost-effectively deployed, the appropriate time horizon for such deployment, and the least-cost supports that would be required. The assessment will also address barriers to deployment, including the type and availability of feedstocks, and the means of distributing the gas and its potential end-use markets. Based on the analysis, appropriate policy options will be developed in consultation with relevant stakeholders, including the possible introduction of a tariff to support the injection of biomethane into the national gas grid, and potential demonstration projects for the use of biomethane with compressed natural gas in public transport and the freight sector.



**Table 3: Support schemes for renewable energy**

RES support schemes year n (e.g. 2013)		Per unit support	Total (M€)*
[(sub) category of specific technology or fuel ]			
Instrument (provide data as relevant)	Obligation/quota (%)	6% by volume of transport fuel mix must be biofuels	n/a
	Penalty/Buy out option/ Buy out price (€/unit)	Purchase certificates for biofuels from others with surpluses or 45c per litre buy out price for the biofuel obligation scheme	n/a
	Average certificate price	Not known/determined by market	Not known/ determined by market
	Tax exemption/refund	Not available	Not available
	Investment subsidies (capital grants or loans) (€/unit)	Aid is payable on 50% of the approved costs associated with establishing the crop, subject to a maximum payment rate of €1,300 per hectare	A total of €280,000 for the two years  €179,000 was granted in 2013 and €101,000 in 2014
	Electric Vehicle Grant Scheme	Up to €5,000	€1.445m
	VRT Relief	Up to €5,000	
	Production incentives		
	Feed-in -tariff	2013 Rates From €69.6 MWh for large scale wind up to €157.3 per MWh for small AD CHP. Also a fixed payment of €9.9 MWh for all technologies	€60.1m in 2014 (PSO levy for REFIT) ***** (
	Feed-in premiums	n/a	n/a
Tendering		AER Rates vary according to the prices bid in.	€5.3m ***
Total annual estimated support in the electricity sector		REFIT/AER/Tax Relief	€54.8m *** (see below re cost offset)
Total annual estimated support in the heating sector		Bioenergy Crops	€300, 000 on energy crops
Total annual estimated support in the transport sector		Biofuels Obligation	n/a

\*\*\* Note that total annual cost was achieved by averaging the estimated costs to the Public Service Obligation (PSO) from the AER and REFIT schemes during the PSO years 2012/2013 and 2013/2014. The PSO year runs from October to September.

A study carried out by EirGrid/SEAI in 2011<sup>29</sup> shows that the costs of REFIT and AER in that year were offset by the reduction in wholesale electricity prices.



The broad conclusion of the study was that:

- The wind generation in 2011 reduced Ireland's wholesale market cost of electricity by around €74 million.
- This reduction in the wholesale market cost of electricity is approximately equivalent to the sum of Public Service Obligation (PSO) costs (including REFIT scheme and the predecessor of REFIT, known as AER), estimated as €50 million, and the increased dispatch constraint costs incurred due to wind in 2011.
- Thus the total cost did not increase with the inclusion of the 2011 wind capacity.

Generally Ireland notes that it is difficult to estimate costs. For example in the transport sector, the obligation is on suppliers, but one can assume they recoup their costs in some way e.g. through increased charges on consumers, however these are not necessarily transparent. Furthermore all schemes have administration, overhead, salary costs etc. in state bodies and in private sector organisations and such costs are not always visible.

During the years under review, analysis was undertaken by the Department of Communications, Energy and Natural Resources, the SEAI, EirGrid and the Commission for Energy Regulation to assess the costs and value of choosing the path towards 40% renewable electricity generation in 2020, compared to a scenario where renewable electricity remained at 2013 levels. The resulting report, "The Cost of Transition to 40% Renewable Electricity in 2020" will be published in 2016 and will be available on the Department's website at [www.dcenr.ie/](http://www.dcenr.ie/).

The existing feed-in tariff schemes are a very cost effective tool to support renewable energy development relative to other EU Member States. Ireland's approach was confirmed as one of the most cost effective within the EU by a report published by the Council of European Energy Regulators in January 2015.

**3.1. Please provide the information on how supported electricity is allocated to final customers for purposes of Article 3 (6) of Directive 2003/54/EC. (Article 22(1)b) of Directive 2009/28/EC).**

Under the energy regulator (CER) Decision CER 11/824, in accordance with Statutory Instrument 147 of 2011, any renewable generator that is covered by REFIT or AER and wishes to remain in receipt of support will not receive a Guarantee of Origin (GO). The renewable generator will have the attributes of their generation transferred directly to the fuel mix of the supplier with whom they have their Power Purchase Agreement (PPA) under the support scheme. Neither the generator nor the supplier will be able to transfer the attribute to any other party and it will be applied to the supplier's fuel mix for the disclosure period in which the generation occurred.

In accordance with S.I. 483 of 2014, a GO is therefore not issued in respect of PSO supported generation (both AER and REFIT are supported through the public service obligation (PSO) levy fund.) The renewable attribute of the generation is thus captured in the fuel mix in a manner that reflects suppliers' activities in the electricity market. This is consistent with the underlying purpose of fuel mix disclosure by providing customers with reliable information with which to distinguish between suppliers on the basis of their fuel mix.

Ireland participates in the EU Concerted Action on the Renewable Energy Sources Directive (CA RES). One of the Core Themes is Guarantees of Origin/Disclosure in the context of Article 15 of Directive 2009/28/EC. Important topics being covered here are the facilitation of a harmonized implementation of GOs by all Member States and of international exchange of information for disclosure purposes. A key aim here is the avoidance of double counting of GOs in the context of disclosure of fuel mix to final electricity customers.

In addition, Ireland participates in the Reliable Disclosure Systems for Europe – Phase II” (RE-DISS II) project which was supported by the European Commission through the Intelligent Energy Europe (IEE) programme. The RE-DISS project (now known as RE-DISS II ) has developed a set of best practice recommendations for implementing reliable electricity disclosure systems and currently performs the calculation of the EU residual fuel mix for the purposes of fuel mix disclosure by Member States to final customers. Further information on RE-DISS is available here: <http://www.reliable-disclosure.org/>.

**4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material?) (Article 22 (1)c of Directive 2009/28/EC)).**

To encourage the development and use of second generation biofuels, Ireland’s Biofuel Obligation Scheme (provided for under the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010), in line with the EU Renewable Energy Directive, awards double certificates for each litre of second generation biofuel placed on the market and produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material per article 22 of the Directive. To date the National Oil Reserves Agency, which administers the scheme, has determined that four categories of fuel qualify for double certificates: Tallow category 1, used cooking oil, and, since 2014, palm oil mill effluent and spent bleaching earth. The list of determinations is available at <http://nora.ie/determinations/list-of-determinations.146.html>.

The structure of the biomass REFIT tariffs also provides for higher tariffs depending on size and for different biomass technology categories, with higher tariffs being awarded for high efficiency CHP and for anaerobic digestion when compared with biomass combustion and biomass co-firing. This ensures that additional benefits (particularly environmental benefits) are rewarded. Premium rate is also offered for electricity from combustion of purpose grown energy crops.

**5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system. (Article 22(1)d of Directive 2009/28/EC)).**

SEMO is the issuing body of Guarantees of Origin (GO) in Ireland. SEMO began registering interested parties for the scheme in December 2011 and registration has been open to eligible Generators since. To date 102 Generators and 8 Suppliers have registered. To date for the production year 2011, 2012 and 2013, the following number of GO certificates are now issued to Participants on a quarterly basis.			
		<b>2011</b>	<b>2012</b>
			<b>2013</b>
	Issued	1,630,984	1,658,502
	Exports	0	0
	Imports	533,992	1,411,229
			4,702,096

The Fuel Mix Disclosure Enduring Solution is a separate project linked to Guarantees of Origin. SEMO is the calculating body for the Fuel Mix Disclosure of both Ireland and Northern Ireland. The disclosure calculation for 2011 was the first year that the enduring solution was in place; this meant that Suppliers could declare GOs in their Fuel Mix submissions. This method is being used going forward. Suppliers have received their fuel mix breakdowns and a final publication of the data by the Regulatory Authorities was completed for the calculation from 2012 onwards.

In terms of reliability and fraud, measures have been developed by SEMO (in conjunction with the CER) to make the system as robust as possible. These measures include only communicating with authorized users from each participant and password protecting the certificates issued.

**6. Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes. (*Article 22(1)(g) of Directive 2009/28/EC*)).**

With regard to bioenergy crops, an additional 177 hectares of crops were established under the Department of Agriculture, Food and the Marine's Bioenergy Scheme, to bring the total area established under the Bioenergy Scheme since 2007 to a figure of 3,353 hectares approximately.

Indaver's waste to energy plant in Meath is an operational waste-to-energy facility which manages 200,000 tonnes of residual waste per annum and with a capacity of 15 MW. In 2013, 53% of the waste used as fuel was classified as renewable (26 ktOE). Indaver is a private company.

Co firing of biomass continued at Edenderry. 256,000 energy tonnes of biomass were used in 2013, accounting for 26.3% of the output of the plant.

12 letters of offer were issued for biomass projects under the REFIT3 scheme which was opened in early 2012 to support up to 310MW of biomass-powered electricity. Six of the projects are Anaerobic Digestion projects. The remaining projects are solid biomass CHP projects including one Waste-to-Energy project with a capacity of 72MW using approximately 50% renewable fuel to be built in Dublin. Completion of these projects will add approximately 108MW of additional renewables electricity capacity to the grid. REFIT3 also supports co-firing of 30% biomass with peat and it is anticipated that the existing Edenderry peat power station which is already co-firing in excess of 20% biomass with peat will apply to participate in REFIT.

Draft Bioenergy Plan

The Draft Bioenergy Plan was published in 2014 (available at <http://www.dcenr.gov.ie/>). It sets out the broader context for the development of Ireland's bioenergy sector, and the current status with regard to the range of policy areas that must be coordinated in order to create the conditions necessary to support the development of this sector. The draft Plan recommends the continuation of the REFIT schemes and the Biofuels Obligation Scheme, both of which provide a route to market for biomass. The Plan identifies that an additional bioenergy-focussed measure in the heat sector represents the most cost effective means of meeting a number of different policy goals and recommends, subject to further approvals, the introduction by 2016 of a Renewable Heat Incentive for larger heat users to change to heating solutions that produce heat from renewable sources which will further increase the demand for biomass.

The draft Plan recognises that meeting the demand for biomass from indigenous sources could deliver significant economic and employment benefits. Consequently, the draft Plan contains measures to stimulate and support the supply of Irish biomass. In this regard the key recommendations include: the continued support for the Afforestation Programme; the continuation of the Bioenergy Scheme for energy crops; and the establishment of Bioenergy Ireland, a joint venture between Bord na Móna and Coillte which would procure biomass at market rates from both Coillte and private sources and use this to supply the entire market (including Coillte's board companies and Bord na Móna's power station) on a competitive, commercial basis.

In terms of developing new sources of biomass, the draft Plan provides that the Department of Environment, Community and Local Government will endeavour to optimise the availability of waste for energy and that the Department of Agriculture, Food and the Marine will continue its support for innovative energy uses for animal by-products.

**Table 4: Biomass supply for energy use**

	Amount of domestic raw material (*)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU (*)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU(*)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
<b>Biomass supply for heating and electricity:</b>												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.) <sup>30**</sup>	360,000	NA	371	NA	6,872	NA	7.1	NA	518	NA	0.54	NA
Indirect supply of wood biomass (residues and co-products from wood industry etc.) <sup>**31</sup>	674,000	NA	694	NA	109,000	NA	112	NA	0	0	0	0
Energy crops (grasses, etc.) and short rotation trees (please specify)	30,000 tonnes	32,500 tonnes	13.1 ktoe	14.0 ktoe	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Short rotation coppice (SRC)	5,000 m <sup>3</sup>	NA	5.1	NA	0	NA	0	NA	0	NA	0	NA
Agricultural by-products / processed residues and fishery by-products **	207,974 (MBM & tallow) 21,899 (Fish meal & oil)	244,701 (MBM & tallow) 16,128 (Fish meal and Oil)	166 (MBM & tallow only)	196 (MBM & tallow only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biomass from waste (municipal, industrial etc.) **	371,296	370,139	97	99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Others (please specify)												
<b>Biomass supply for transport:</b>												
Common arable crops for biofuels (please specify main types)	Rapeseed 62,509 litres	None	0.05	None	None	None	None	None	None	None	None	None
Energy crops (grasses, etc.) and short rotation trees for biofuels (please specify main types)	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<sup>30</sup> This includes firewood, lop & top and roundwood chipped in forest

<sup>31</sup> This includes sawdust, bark and wood chip as produced by the sawmilling and wood-based panel (WBP) sectors

Others (please specify)	Biodiesel from waste material (Used cooking oil and tallow) 19.25 million litres	Biodiesel from waste material (UCO and tallow) 25 million litres	15	20	None	None	None	None	None	None	None	None
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\* Amount of raw material if possible in m3 for biomass from forestry and in tonnes for biomass from agriculture and fishery and biomass from waste

\*\* The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

**Table 4a. Current domestic agricultural land use for production of crops dedicated to energy production (ha)**

Land use	Surface (ha)	
	2013	2014
1. Land used for common arable crops (wheat, sugar beet etc.) and oilseeds (rapeseed, sunflower etc.) (Please specify main types)	320,599	318,042
2. Land used for short rotation trees (willows, poplars). (Please specify main types)	914	1,033
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	2,055	1,612

**7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources? Please provide where available references to relevant documentation on these impacts in your country. (Article 22(1) h) of Directive 2009/28/EC)).**

Bioenergy accounted for 3.21% of Ireland's 2013 Gross Final Consumption (GFC), equivalent to 319 ktoe (3,710 GWh) with 3.6% of GFC coming from bioenergy in 2014. Forest-based biomass is the largest single contributor to total biomass for bio-energy supply in Ireland. The balance of biomass for bio-energy was provided by landfill gas, anaerobic digestion of sewage sludge, waste-to-energy plants and combustion of residues (tallow and solid recovered fuel), with a minor contribution from pure plant oil derived from oilseed rape. In 2013 99.7% of biofuels placed on the Irish market and produced from Irish feedstock were from waste materials (used cooking oil and category 1 tallow)

The total area of oilseed rape in 2013 was 13,757 hectares, with this crop primarily acting as a break-crop in a cereal growing regime. 2,969 hectares was devoted to growing energy crops, primarily miscanthus and willow. In 2013 and 2014, this range of biomass feedstocks has had no detectable/material influence on commodity prices or land-use.

**8. Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and lingo cellulosic material. (Article 22(1) i) of Directive 2009/28/EC)).**

At end of 2014 there was no production or consumption of biofuels derived from non-food cellulose material or lingo cellulosic material in Ireland. All of the biofuel that was placed on the market in Ireland in 2013 and 2014 which qualifies to be counted twice under Article 21(2) was biodiesel derived from used cooking oil (UCO), category 1 tallow, spent bleached earth and palm oil mill effluent. In 2014, all biofuels produced in Ireland and placed on the market were from these two categories of waste materials.

In 2013, over 150 million litres of biofuels was placed on the Irish road transport fuel market, of which 94 million was biodiesel. Almost all of this biodiesel (over 93.6 million litres) was made from waste and residues. The remaining 56 million litres was bioethanol none of which qualified for double counting. Therefore, almost 99.6% of the biodiesel and 62.4% of biofuels in total was from wastes and residues.

In 2014, almost 167 million litres of biofuels was placed on the Irish road transport fuel market, of which over 114 million was biodiesel. Over 98 million litres of this biodiesel was made from waste and residues. The remaining 53 million litres was bioethanol none of which qualified for double counting. Therefore, 86% of the biodiesel and 59% of biofuels in total was from wastes and residues.

**Table 5: Production and consumption of Art.21 (2) biofuels (ktoe)**

<a href="#">Article 21(2) biofuels[1]</a>	2013	2014
Production – Fuel type Biodiesel	21.8	24.2
Production – Fuel type Bioethanol	0	0
Consumption – Fuel type Biodiesel	73.7	89.6
Consumption– Fuel type Bioethanol	28.6	26.6
Total production Art.21.2.biofuels		
Total consumption Art.21.2. biofuels	73.3	77.0
% share of 21.2. fuels from total RES-T	71.7%	66.2%

Note: Total biofuels used were 102 ktoe in 2013 and 116 ktoe in 2014.

**9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.** Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country. (*Article 22 (1) j) of Directive 2009/28/EC*)).

The most significant feedstocks for domestic biofuel production over the two years have been waste and residues – i.e. used cooking oil and tallow. A small amount (62,509 litres) of biofuel from rape seed oil which was produced in Ireland was placed on the market in 2013. In 2014 all biofuels produced in Ireland and placed on the market were made from used cooking oil or category 1 tallow.

The annual reports for the Biofuels Obligation Scheme for 2013 and 2014 are available at:

<http://www.nora.ie/biofuels-obligation-scheme/bos-annual-reports.225.html>

With this mix of feedstocks, domestic production of biofuels has produced no detectable impacts in terms of biodiversity, water resources, water quality or soil quality in Ireland in 2013 or 2014.

More information on compliance with the sustainability criteria for biofuels can be found at Annex 2.

**10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (*Article 22 (1) k) of Directive 2009/28/EC*)).**

**Table 6: Estimated GHG emission savings from the use of renewable energy (t CO<sub>2</sub>eq)**

Environmental aspects	Year 2013	Year 2014
<i>Total estimated net GHG emission saving from using renewable energy</i> <sup>32</sup>	2,888,761	3,319,275
- Estimated net GHG saving from the use of renewable electricity	2,304,749	2,629,125
- Estimated net GHG saving from the use of renewable energy in heating and cooling	368,837	447,561
- Estimated net GHG saving from the use of renewable energy in transport	215,175	242,588

270 MW<sub>e</sub> of new wind capacity was added in 2014 bringing total wind generation to 5.1 TWh of electricity, resulting in an avoidance of approximately 1.9Mt CO<sub>2</sub> and approximately €200 million of fossil fuel imports. The carbon intensity of electricity dropped to a new low of 457 g CO<sub>2</sub>/kWh.

<sup>32</sup> The contribution of gas, electricity and hydrogen from renewable energy sources should be reported depending on the final use (electricity, heating and cooling or transport) and only be counted once towards the total estimated net GHG savings.

Estimated savings elsewhere included solid biomass at 0.28 Mt CO<sub>2</sub>, hydro 0.28 Mt CO<sub>2</sub> and liquid biofuels used in transport at 0.24 Mt CO<sub>2</sub>.

#### Notes on the calculation methodology on which the figures in Table 6 were based

Estimation of GHG emissions avoided due to the use of renewable electricity

For both wind and hydro generated electricity the primary energy equivalent (PPE) is first calculated. The PPE is the amount of primary energy that is required to generate the equivalent amount of electricity by conventional means.

The primary and final energy consumption for non-combustible renewable energy sources such as wind and hydro are very similar. For most fuels this is not the case, due to the energy conversion losses associated with electricity generation. Depending on the efficiency of electricity generation, typically between 25% and 55% of the energy content of the fuel input into power plants is output in the form of electricity.

The primary energy of fossil fuels and combustible renewables is defined as the calorific content of the fuel, according to internationally agreed methodologies for presenting energy statistics. For non-combustible renewable sources (wind and hydro) the primary energy is equated with the quantity of electricity generated. This follows the IEA principle that the primary energy should be the first energy form downstream in the production process for which multiple energy uses are practical. This allows for harmonised international comparisons, but it does not accurately represent how fossil fuels used for electricity generation are displaced by non-combustible renewable energy. This is because, in primary energy terms, the fuel input into a fossil fuel plant is currently equated with the electricity output from a non-combustible renewable energy plant, such as a wind farm or hydro-power plant. An alternative approach is to equate the primary energy of the renewable energy with the primary energy of the fuel that would have been required to produce the equivalent amount of electricity.

This is the principle behind the primary energy equivalent (PEE) based on the partial substitution method. It requires an assumption to be made about the efficiency of the fossil fuel-based electricity generation being substituted by the non-combustible renewable generated electricity. The contribution from the renewable energy source is, in this approach, equated to the fossil fuel energy input that it displaces. The PEE for non-combustible renewable energy essentially represents the thermal fossil fuel energy avoided through the generation of renewable-based electricity. By quantifying the fossil fuel displacement achieved by renewable energy, the environmental benefits and indeed the security of supply benefits may be quantified and used to inform policy decisions.

This raises a key question however – what electricity generation is being displaced by renewable energy-generated electricity? The calculation of PEE can be based on a theoretical displacement by each kWh from renewable energy of a kWh generated from the entire fossil fuel plant mix. The methodology used here draws on approaches that have been developed for use in baselining studies in credit-based emissions trading systems.

Renewable energy plants are not generally displacing electricity from either ‘must-run’ plants (peat) or from baseload plants (coal fired station at Moneypoint). Calculating the PEE based on the remaining plant provides a more accurate estimate than using the entire plant mix and the approach is known as the Operating Margin Approach. The assumption underpinning this approach is that the renewable plant is displacing the last plants to be dispatched to meet electricity demand, i.e. the marginal oil and gas plants. There are clear limitations in this analysis but it does provide useful indicative results.

The limitations and caveats associated with this methodology include that it ignores any plant used to meet the associated reserve requirements of renewables. These open cycle plants will typically have lower efficiency and generate increased CO<sub>2</sub> and NO<sub>x</sub> emissions compared with CCGT and these emissions should be incorporated into the analysis. The purpose of presenting a simplified analysis here is to provide initial insights into the amount of fossil fuels that are displaced by renewables and the amount of emissions thereby avoided.



It is assumed the electricity from renewables (wind, hydro, landfill gas and the electricity portion of waste water biogas) avoids the amount of CO<sub>2</sub> produced by the weighted average electricity production from the same marginal plant considered above – i.e. oil and single cycle gas plant.

#### Estimation of GHG emissions avoided due to the use of renewable thermal energy (heat) and transport biofuels.

It is assumed that the thermal energy from renewable energy (solid biomass, biogas, geothermal and solar and the thermal portion of waste water biogas) displaces thermal energy from oil-fired boilers. The CO<sub>2</sub> avoided from thermal renewable energy is equated with the CO<sub>2</sub> emissions that would have arisen from this oil consumption.

The avoided CO<sub>2</sub> emissions associated with biofuels usage in transport assumes 100% displacement of emissions from conventional fuels. The emissions from biofuels production are accounted for in this analysis in accordance with the UNFCCC reporting guidelines. Thus the CO<sub>2</sub> avoided from bio-ethanol in transport is equated with CO<sub>2</sub> emissions that would have arisen from petrol consumption and CO<sub>2</sub> avoided from biodiesel and pure plant oil is equated with diesel consumption.

**11. Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22 (1) l, m) of Directive 2009/28/EC)).**

**Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in [Member State] (ktoe)<sup>33, 34</sup>**

GFC – Gross final consumption of energy; TFC – total final consumption

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total GFC (incl Aviation adj as per Article 5)</b>	11,337	10,907	11,099	10,994	11,713	11,668	11,670	11,683	11,663	11,701
<i>Of Which</i>										
GFC Electricity	2,429	2,368	2,362	2,353	2,502	2,520	2,543	2,570	2,603	2,665
GFC Heat	4,545	4,432	4,452	4,238	4,630	4,501	4,419	4,337	4,230	4,126
TFC Transport (as per Article 3(4))	3,657	3,524	3,612	3,714	3,694	3,758	3,818	3,880	3,935	4,006
<b>Total Renewable Energy</b>	<b>786</b>	<b>763</b>	<b>829</b>	<b>945</b>	<b>1,357</b>	<b>1,457</b>	<b>1,552</b>	<b>1,655</b>	<b>1,744</b>	<b>1,872</b>
<i>Of Which</i>										
Renewable Electricity	466	452	484	549	791	840	883	934	975	1,059
Renewable Heat	221	226	243	280	363	386	411	436	456	468
Renewable Transport	98	85	103	117	204	231	258	285	313	345
Renewable Transport for RES-T	138	141	176	194	211	239	270	302	334	392
RES %	6.5%	7.1%	7.6%	8.6%	12%	12%	13%	14%	15%	16%
Indicative Trajectory	n/a	671	817	817	1,043	1,039	1,340	1,342	1,603	1,872
Actual/estimated excess	n/a	110	22	390	314	418	212	313	141	0

<sup>33</sup> Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Member State may correct the data of the previous reports.

<sup>34</sup> When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).

### **11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.**

Following the signing of a Memorandum of Understanding on Energy Cooperation with the UK Government in January 2013, a joint programme of work was undertaken to consider how Irish renewable energy resources, onshore and offshore, might be developed to the mutual benefit of both Ireland and the UK.

Economic analysis conducted on the Irish side clearly indicated that, under agreed policy and regulatory conditions, renewable energy trading could deliver significant economic benefits to Ireland and the UK, as well as being attractive to developers. However, given the economic, policy and regulatory complexities involved, and some key decisions that the UK is not yet in a position to take, delivery by 2020 of renewable energy trading is not a realistic proposition.

### **12. Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates. (Article 22 (1) n of Directive 2009/28/EC)).**

CEN has published a technical standard that deals with the determination of biomass content in solid recovered fuels. The CEN/TS 15440 standard is used to estimate the biodegradable share of waste in cement plants in Ireland.

The recognised CEN standard for the calculation of the biomass content in the case of waste-to-energy is BS EN 15440:2011 - Solid Recovered Fuel, Methods for the Determination of Biomass Content. This standard specifies a number of methodologies namely, the selective dissolution method, the manual sorting method and the carbon 14 method.

The CER, as administrator of the PSO in Ireland, is currently drafting proposals on a number of potential methodologies for calculating the renewable energy fraction of waste for electricity production in the context of the above standard. Once these options are finalised, they will be reflected in the terms and conditions of the relevant support schemes. Once an approach is adopted this will be used to calculate the biodegradable fraction of waste where waste is used in the production of electricity covered by the REFIT scheme.

### **Response to 22 3(a-c) of Directive 2009/28/EC**

**Do you intend to**

- (a) establish a single body for authorisation, certification and licensing and providing assistance to applicants**

In theory, the establishment of a single body for authorisation, certification and licensing of renewable installations is appealing. However, by law, functions are assigned to specific bodies and setting up another body through which applications are channelled will not change the legal obligations on specified bodies in respect of these functions.

An example would be the planning system. The physical planning system in Ireland is operated by 31 local planning authorities. In the exercise of their planning functions, the day-to-day operation of the planning system is a matter for the planning authorities, and under planning legislation, the decision as to whether to grant a planning application, with or without conditions, is a matter for the relevant planning authority in the first instance.

Decisions of the planning authorities can, for the most part, be appealed to An Bord Pleanála, an independent third party planning appeals system. An Bord Pleanála reaches its own decision on each case, in line with the proper planning and sustainable development of the area.

Under the relevant legislation, the Minister for the Department of Environment, Community and Local Government is specifically precluded from exercising any power or control in relation to any particular case, with which a planning authority or An Bord Pleanála is or may be concerned.

Hence the setting up of a one stop shop, which among other tasks, would be responsible for planning decisions, is not compatible with the current system.

However, on the planning side, under the 2006 Strategic Infrastructure Act, significant advancements have been made in recent years in terms of streamlining planning processes for strategic infrastructure, including significant new renewable energy infrastructure. For major developments, the Strategic Infrastructure consent process which has been in operation since the 31st January 2007 provides for An Bord Pleanála to make a decision in respect of certain types of project subject to certain criteria being met, that the development:-

- would be of strategic, economic or social importance to the State or the region in which it would be situated.
- would have a significant effect on the area of more than one planning Authority.
- would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional planning guidelines in force in respect of the area or areas in which it would be situated.

It also provides specifically for certain types of energy infrastructure which would be subject to the streamlined process including: An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts.

The licence to generate electricity for example must be issued by the Commission for Energy Regulation (CER). The CER also has the statutory function relating to determining grid connection policy while applications for grid connection must be made to the appropriate network operator – EirGrid or ESB Networks. Projects involving development on the foreshore will require permission under the Foreshore Act from the Minister for the Environment, Community and Local Government. Applications for the REFIT scheme are processed by the Department of Communications, Energy & Natural Resources.

Essentially setting up another body or so called ‘one stop shop’ would not change the statutory functions of the different bodies. It would simply add an extra administrative layer to the processes and require additional state resources to fund and run. Rather than setting up additional state bodies, an example of where information on the requirements is set out in a comprehensible way is SEAI’s handbook of guidelines for connecting renewable projects – this kind of resource can prove very useful for developers of new projects.

#### **Do you intend to**

- (b) provide for automatic approval of planning and permit applications for renewable energy installations where the authorising body has not responded within set time limits**

There are no proposals currently to change planning legislation to provide for automatic approval of planning and permit applications for renewable energy installations where the authorising body has not responded within set time limits.

The provisions in section 23 of the 2010 Planning & Development Act exclude default permissions for applications where either an environmental impact assessment or a determination as regards whether an environmental impact assessment is required or where appropriate assessment is required.

These provisions were included to ensure compliance with our obligations under the Environmental Impact Assessment Directive and the Habitats Directives. There are no proposals currently to change these provisions.

There are various objectives statutorily provided to ensure projects are dealt with as expeditiously as possible. It is not proposed to provide for automatic approval for renewable energy projects where set time limits have not been met.

**Do you intend to**

- (c) indicate geographic locations suitable for exploitation of energy from renewable sources in land use planning and for the establishment of district heating and cooling**

SEAI has developed a series of geographical information system (GIS) maps covering wind, bio-energy and geothermal energy. These can be viewed on the SEAI website [www.seai.ie](http://www.seai.ie) under each of the identified renewable energy sources. The maps provide initial resource data for developers, allowing them to do preliminary assessments of the feasibility of projects. SEAI is considering further development of GIS, subject to budget availability, to enhance its utility and to facilitate accelerated deployment of renewable energy technologies in Ireland.

Many counties in Ireland have developed wind energy strategies identifying areas that are suitable for wind energy development. Under planning legislation, planning authorities and An Bord Pleanála are obliged to have regard to any guidelines that are issued by the Minister for the Environment, Community and Local Government, including the Wind Energy Development Guidelines published by the Department of Environment in 2006. These guidelines recommend that planning authorities prepare a Wind Energy Strategy to identify geographic areas which are suitable or otherwise for the development of wind energy and to include such strategies in the development plan for the area. These guidelines are currently being updated.

Local authorities, and in particular the planning function within these, will, by identifying and designating areas suitable for renewable energy projects and infrastructure and implementing appropriate project permitting processes, play a key role in achieving Ireland's renewable energy targets. Local authorities now deliver wind energy development plans in response to the statutory requirement to identify areas suitable for wind farm development and some authorities are engaging in developing holistic RE strategies encompassing all available renewable energy resources.

SEAI has developed tools to assist spatial planners in defining the spatial energy landscape of the future. One such spatial planning tool is the SEAI methodology for Local Authority Renewable Energy Strategies (LARES). Local authorities are required to adopt wind energy strategies in response to the statutory requirement to identify land for windfarm development. SEAI convened a steering group to oversee the preparation of a methodology and template to act as a guide for local authorities in preparing more holistic Renewable Energy Strategies (RES).

The LARES methodology aims to facilitate consistency of approach in the preparation of RES, and to assist local authorities in developing robust, co-ordinated and sustainable strategies in accordance with national and European obligations. The methodology also aims to address common issues encountered with renewable energy (RE) resources, technologies and projects.

The methodology defines the actions in the key steps to deliver a LARES, these are:

- The Preliminary Phase, which clarifies the local need for a LARES and identifies whether Strategic Environmental Assessment or Appropriate Assessment are required;
- Step 1: The Policy Review, identifying all renewable energy and other relevant policies
- Step 2: Identify the Renewable Energy Resources and their potential for exploitation
- Step 3: Review the Constraints and Facilitators that might affect exploitation
- Step 4: Develop the Local Renewable Energy Policy

The methodology provides an outline LARES structure and detailed guidance for planning authority staff on the execution of each of the steps to complete a LARES.

It also details the primary sources of information and data, relevant stakeholder organisations and land use interactions for renewable energy developments. The timing and scope of public consultation at key stages in the development of a LARES is also highlighted.

Preparation of a LARES will:

- Align County Development Plans with National Targets
- Facilitate Consistent Approach to RE by Local Authorities
- Ensure Alignment with Regional Development Plans
- Ensure All Available Resources are Considered
- Provide Appropriate Signals to RE Project Developers
- Facilitate Planning and Development of Electricity Infrastructure for Renewable Energy Projects

To date LARES have been published and/or adopted by the following planning authorities: Mayo 2011 - 2020, Kerry 2012 - 2015, Roscommon 2013, Clare 2014 – 2020, South Tipperary 2014 and Kilkenny County & Kilkenny City 2014 – 2020. LARES are also currently under preparation in Louth, Tipperary and South Dublin.

In order to support the robust implementation of LARES SEAI has, in cooperation with the Irish Planning Institute, developed the following suite of accredited LARES training courses:

- A. Renewable Energy Policy, Resources and Conversion Technologies
- B. Renewable Energy Utilisation in an Urban Environment
- C. Environmental Considerations for Renewable Energy Developments
- D. Planning and Implementing Community Engagement Programmes to Promote Social Acceptance of Renewable Energy Strategies

This suite of courses is aimed at planners, local and regional authority staff and other professionals who may engage with producing local and regional authority renewable energy strategies. The courses are directed at informing delegates of the key processes in developing a renewable energy strategy and the supporting consultation process and environmental assessments. These courses have been delivered at venues throughout Ireland during 2015 and have had active participation from planners, other staff and elected representatives in local authorities.

Under its Sustainable Energy Communities programme SEAI has also funded several local authorities and communities to develop their local Sustainable Energy Action Plans (SEAP), which were initiated under the Covenant of Mayors. It is recognised that, in order to embed SEAP energy targets in spatial plans, additional tools will be required. After funding the development of South Dublin County Council's SEAP in 2013, SEAI provided a grant to the Council in 2014 to carry out energy demand mapping to inform its LARES and to provide a basis for incorporating the SEAP within the County Development Plan. The City of Dublin Energy Management Agency (CODEMA) assisted in developing the methods to be applied to the energy mapping and have since applied these to energy mapping for Dublin City Council and are carrying out similar exercises for Fingal and Dun Laoghaire Rathdown Councils.

Separately, the Department of Communications, Energy and Natural Resources is preparing a Renewable Electricity Policy and Development Framework, which is to be underpinned by a Strategic Environmental Assessment and an Appropriate Assessment and focusing on requirements out to 2030. The Environmental Report developed to inform the Strategic Environmental Assessment will include areas designated pursuant to the Birds Directive and the Habitats Directive, and will also assess any effects on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, climatic factors, material assets and cultural heritage and the interrelationship between the above factors.

The proposed Framework will be a high level strategic policy, which is intended for the guidance of persons seeking development consent primarily in relation to large scale renewable electricity projects, as well as for the guidance of planning authorities, statutory authorities and the public.

A report on District Heating was completed by the SEAI in 2015 and fulfils the requirements of Article 14 of the Energy Efficiency Directive (2012/27/EU).

The key findings of the report are:

- The heat demand in Ireland is generally low density in nature. The heat mapping and analysis of linear heat density demonstrates that around 90% of the heat demand is at densities too low to make DH a viable proposition.
- The potential for heat networks at 3,000 MWh / km and 5,000 MWh / km linear heat densities is negligible at less than 0.1% of the country's heat demand.
- At 10,000 MWh / km linear heat density, an economic potential of around 300 GWh per year (roughly 30,000 dwellings) is identified with a cost benefit of around €33million NPV, largely based on a large zone in Dublin. This is equivalent to around 1.5% of Ireland's heat demand, and therefore whilst small, still an appreciable potential.
- If the heat density was lowered, the technical potential may increase, but the proportion which is uneconomic is likely to increase. The relatively small potential for heat networks will mean that CO<sub>2</sub> and primary energy savings at a national level will not be significant.

## Annex 1

### **Evolution in the position since Ireland's National Renewable Energy Action Plan (NREAP) was submitted to the European Commission in July 2010**

Energy use in Ireland has fallen since 2010 and was 9.8% lower in 2014 compared with 2010. Heat and transport have historically made up most of gross final consumption (GFC) in Ireland while electricity has had the smallest share. In 2014, electricity accounted for less than one fifth (19%) of final energy demand. Ireland's energy import dependency was 85% in 2014.

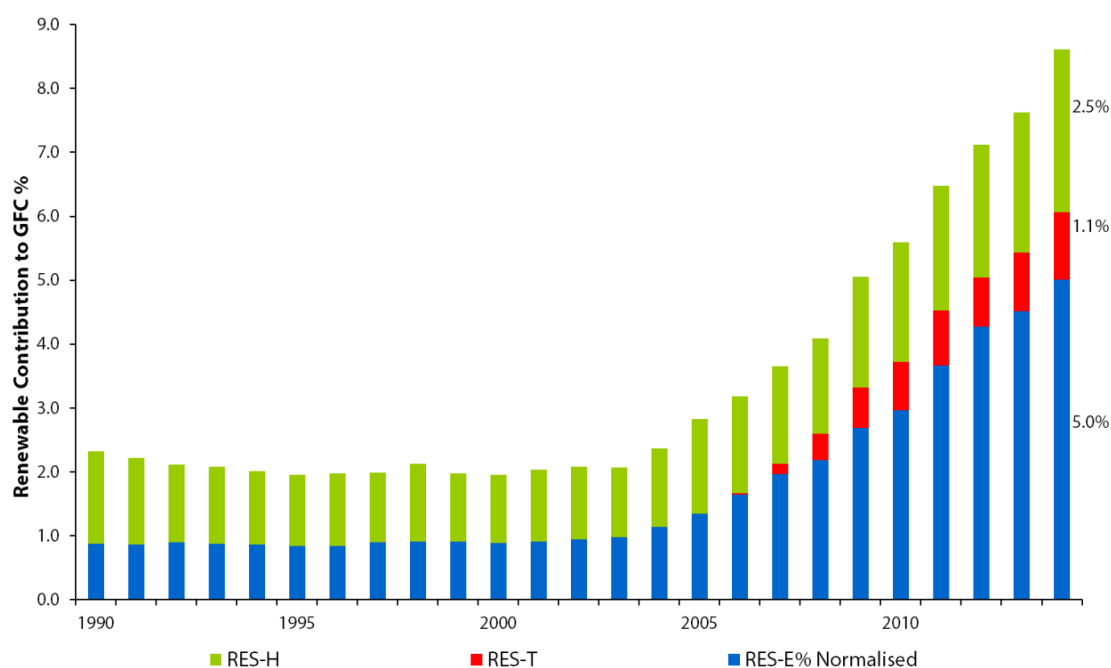
In 2014 gross final energy use from renewable energy was 8.6%. Ireland's target under Directive 2009/28/EC is 16%. Electricity generated from renewable energy (normalised in accordance with Directive 2009/28/EC methodology) reached 22.7% of gross electricity consumption (RES-E) in 2014. Renewable energy contribution to thermal energy (RES-H) was 6.6% in 2014. Renewable energy in transport (RES-T) reached 5.2% in 2014 when the weightings for double certificates are applied in accordance with the Directive. All sectors require considerable effort to meet the legally binding target of 16% under Directive 2009/28/EC.

Much of the data (figures/tables) in this annex is drawn from two SEAI documents published in November 2015: Energy in Ireland 1990-2014 (2015 report) and Energy Forecasts for Ireland to 2020 (2011 report). Both of these publications are available at [www.seai.ie](http://www.seai.ie)

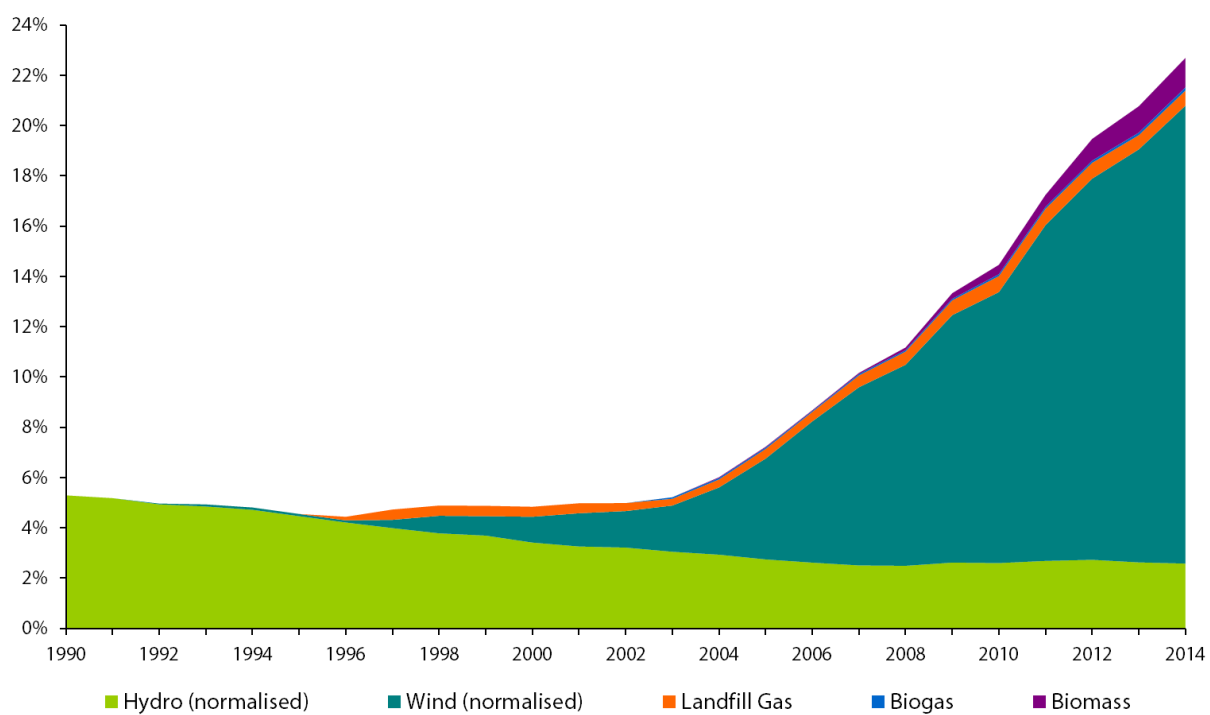
**Table 1**

% of each target	2009	2010	2011	2012	2013	2014
RES-E (normalised)	13.7	14.5	17.3	19.5	20.8	22.7
RES-T	1.9	2.4	3.8	4.0	4.9	5.2
RES-H	4.2	4.5	4.9	5.1	5.5	6.6
% of renewables in consumption across the 3 sectors	5.1%	5.6%	6.5%	7.1%	7.6%	8.6%

TFC= Total Final Consumption

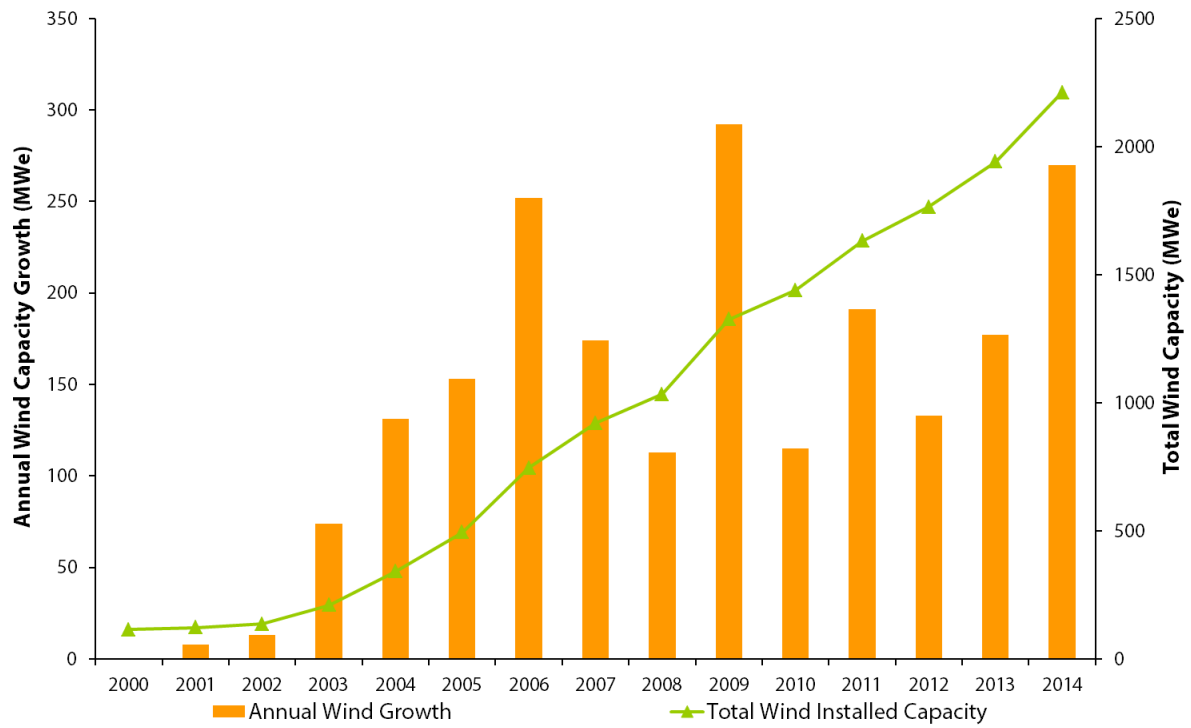


**Figure 1: In 2014, gross final energy use from renewable energy was 8.6%.**

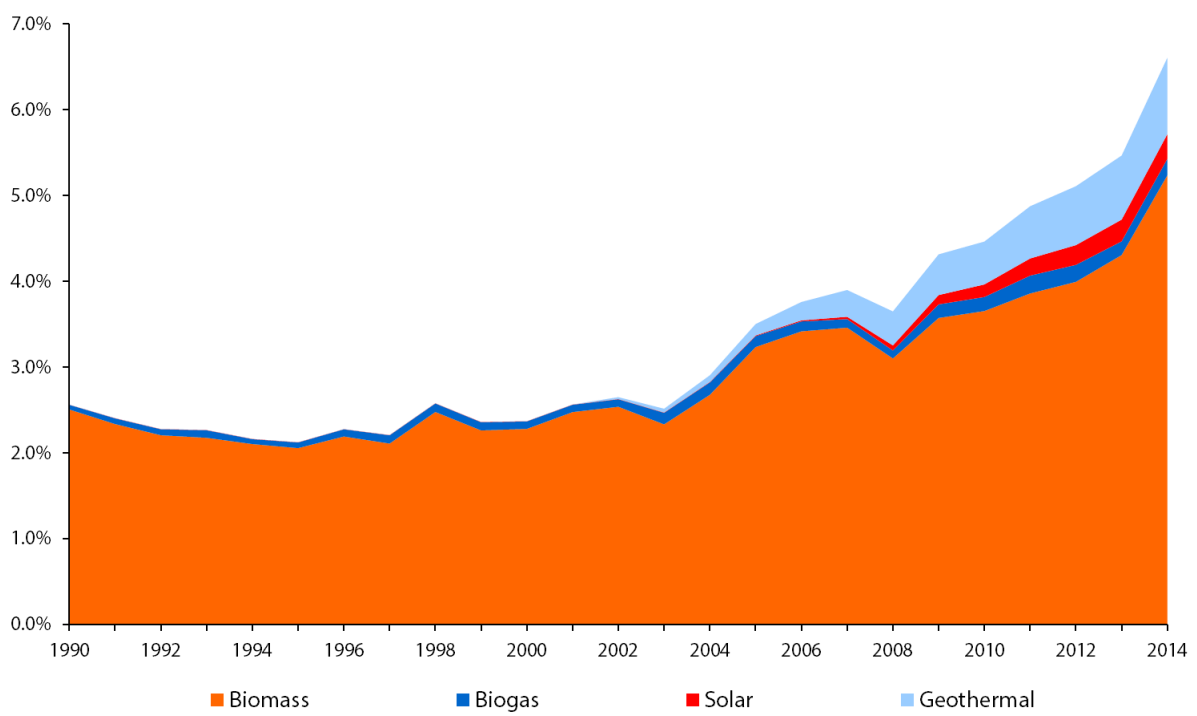


**Figure 2: RES-E – Electricity sector: 22.7% in 2014**

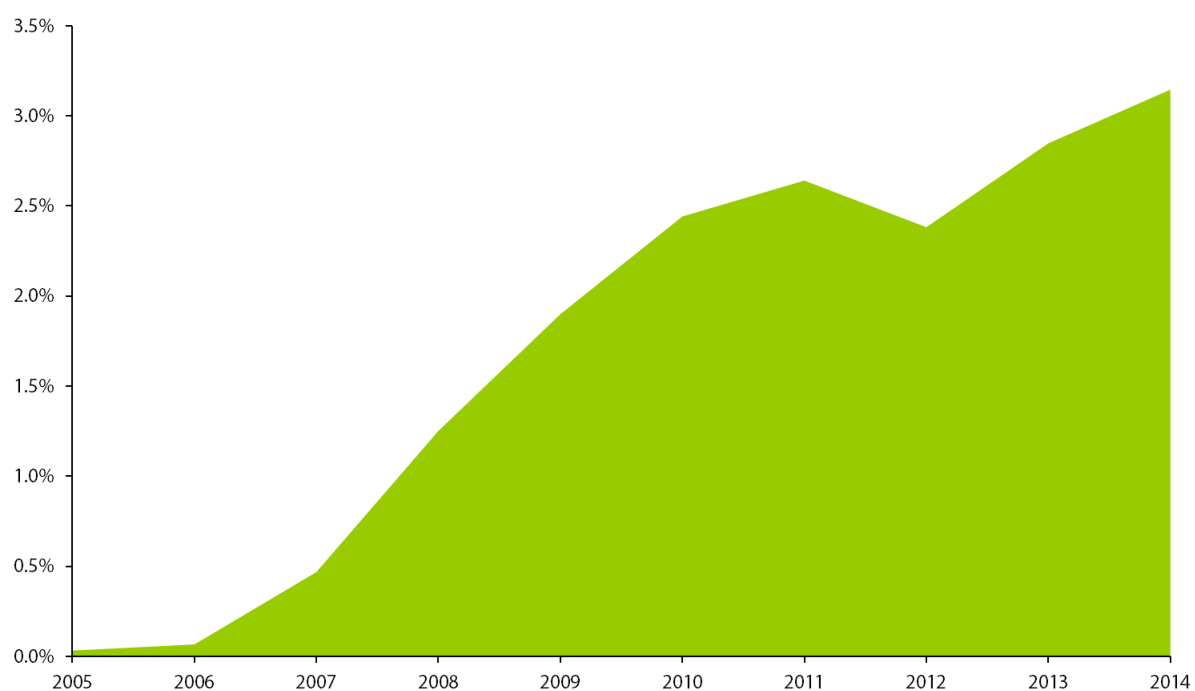




**Figure 3: Evolution of wind generating capacity to 2014**



**Figure 4: RES-H (Heat Sector) - 6.6% in 2014**



**Figure 5: RES-T (Transport sector) – renewable energy (biofuels) as a proportion of petrol and diesel: 5.2% in 2014**

## Renewable RES-E Technology Trajectory to 2020

The change in the contribution in biomass (now expected to be 274MW, up from 153MW in the original NREAP) is due to the inclusion of additional high efficiency biomass CHP, in view of the introduction of a new REFIT scheme for biomass technologies.

As set out in the NREAP, the development of ocean energy devices is being supported in Ireland through the Ocean Energy Prototype Research and Development Programme.<sup>35</sup> Commercially viable devices must be available before 2020 in order to reach 75 MW in that year.

Wind generation will provide the bulk of Ireland's renewable energy in 2020. To meet the RES-E target, it is expected that between 3,000 MW and 4,000 MW of wind needs to be connected. This is down from the 4,649MW of total wind generation envisaged in the original NREAP.

At the end of 2014, EirGrid<sup>36</sup> indicated 2,200 MW of installed wind capacity was connected to the national grid with total renewable generation connected at just over 2,500 MW. The average annual capacity added must increase to over 250MW if the required 2020 target is to be reached (approximately 185MW was connected in 2013). The growth in wind in the trajectory set out follows published data on those that have contracted with the system operator and are scheduled for connection up to 2014. Following that, the profile is based on published data on those projects expected to receive a grid connection under Gate 3 in the period to 2020, scaled for each year.

The National Renewable Energy Action Plan (NREAP) indicated a breakdown between onshore and offshore wind. In the current economic circumstances and in light of advice from various sources, including the Economic and Social Research Institute<sup>37</sup>, the Government has decided that in meeting our legal obligation to deliver the 2020 renewables target, onshore rather than offshore wind should be pursued in the first instance, in order to minimise any support scheme costs borne by electricity consumers. This is a change from what was indicated in the original NREAP.

The explanation of the Gate 3 and Grid 25 programmes are set out in the original NREAP. EirGrid's Incremental Capacity Transfer (ITC) programme links the Gate 3 process and Grid 25 investment and plans to deliver the required increase in annual construction. The Programme for Government has also committed that should any further Gate be required to deliver increased renewable generation, then other conditions apart from date of application should be taken into consideration in terms of the allocation of grid connections. It is noted that the energy regulator (CER) has the statutory function in relation to grid connections and introduced the Gate process.

All Gate 3 offers have now issued to those included in the CER Gate 3 direction, and there is now enough contracted wind generation to meet the 40% renewable electricity target. Even allowing for attrition in the planned connection rate there is still a fair amount of leeway in the overall figures to allow for the national target to be delivered. There is also the scope to put in place at an appropriate time a follow on a plan led onshore connection programme in the event of any necessary further capacity required to meet the 2020 target.

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<sup>35</sup> [http://www.seai.ie/Renewables/Ocean\\_Energy/](http://www.seai.ie/Renewables/Ocean_Energy/)

<sup>36</sup> <http://www.eirgrid.com/customers/connectedandcontractedgenerators/>

<sup>37</sup> [www.esri.ie](http://www.esri.ie)

## Renewable Transport (RES-T)

The biofuels obligation introduced in 2010 under the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 requires transport fuel suppliers to provide a specified amount of their sales in the form of biofuels. The obligation was increased to 6% by volume with effect from 1 January 2013. In 2014 a total of 167 million litres of biofuel were placed on the Irish market under the Biofuels Obligation Scheme. Increases in the biofuel obligation will be the primary means through which Ireland expects to meet the RES-T target of 10% in 2020. This increase is shown in the trajectory modelled by SEAI as gradual, but it is likely it will take the form of step changes as the technical aspects of using increasing blends under the Fuel Quality Directive are incorporated into the supply chain. The 345 ktoe of biofuel required in 2020 is equivalent to around 400 million litres. This equates to the average passenger car in Ireland covering 2,300 km powered by biofuels in 2020. Transposing the measures in the “Indirect Land-Use Change” Directive (Directive 2015/1513), the capacity of the Irish fuel retailer to accommodate the sale of high-biofuel blends and the capacity of the Irish car fleet to run on such blends, and the availability of advanced biofuels in sufficient volumes at an E.U. level and more specifically for obligated parties in Ireland are among the issues that will affect how the trajectory for future increases in the obligation rate will be determined.

Electric Vehicles (EVs) and Plug-in hybrid vehicles (PHEVs) are currently available for purchase from many of the major car manufactures. The deployment of EV is supported by an upfront grant and VRT relief for consumers. The extent to which electric vehicles are adopted in the short-to-medium term will depend on a range of factors including, inter alia, the strength of the economy, the overall numbers of new cars being purchased, the cost of purchasing and running electric vehicles compared to fossil fuel comparators, and the number of different electric vehicle models available to purchase.

There are signs that these factors are improving and nearly as many electric vehicles were purchased in 2014 as were in the previous three years of the grant scheme.

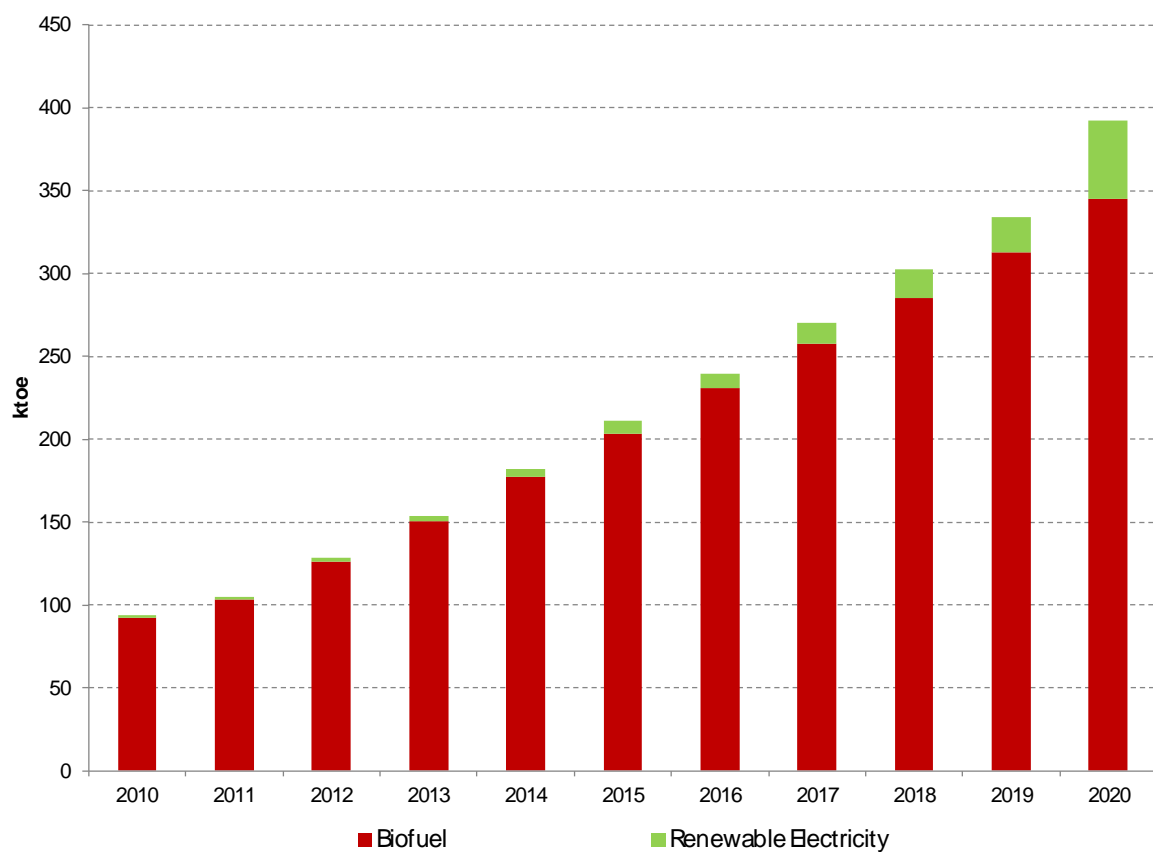
The deployment of publicly accessible charging infrastructure continues and as of the end of 2014, 901 public charge-points were installed. This includes 69 DC fast chargers installed on the main interurban routes. 95% of all major towns and cities have electric vehicle recharging infrastructure in place. Additionally there are 935 domestic/commercial installations in place. These include home chargers, which are currently supplied free of charge to anyone qualifying for a grant under the EV Grant Scheme.

ESB ecars is also a partner in a number of EU Commission funded projects to the value of circa €4.1m. The EU projects cover various aspects of the overall EV programme including charging behaviour, standards, Grid Impact Studies, ICT, Interoperability, Charging Technologies and their impacts. There is also a number of significant enterprise opportunities for Irish companies around the infrastructure required to support the deployment of EVs. Early involvement in the sector also provides additional enterprise opportunities for Irish based companies and in particular in the ICT sector and there are already a number of Irish companies involved in this sector. One of the Irish products developed for the EV market have won business internationally to supply charge points with the assistance of ESB and Enterprise Ireland.

The RES-T target of 10% by 2020 is set out as a minimum binding target in the transport sector in the Renewable Energy Directive. A separate calculation methodology is specified to calculate this target in the directive. Total transport energy consumption is calculated differently for the denominator in the overall (16%) RES target compared with the 10% RES-T target, in accordance with the EU Directive.<sup>38</sup> When calculating the overall RES target, total gross final consumption includes aviation as well as domestic road & rail and inland marine. When calculating the RES-T target, only road & rail consumption are included in the denominator, with electricity and second generation biofuels receiving a weighting in the calculation.

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<sup>38</sup> See article (3) of the directive 2009/28/EC



**Figure 6: Renewable transport trajectory to 2020**

## Renewable Heat (RES-H)

Due to the cost of transport, heat is generally consumed at the point of generation to maximise efficiency. Transportation costs have typically limited the use of biomass resources for heat. RES-H has remained largely static in Ireland from 1990 to the mid 2000s. Policy action has changed this somewhat in recent years with growth in biomass usage, solar thermal and heat pump technology.

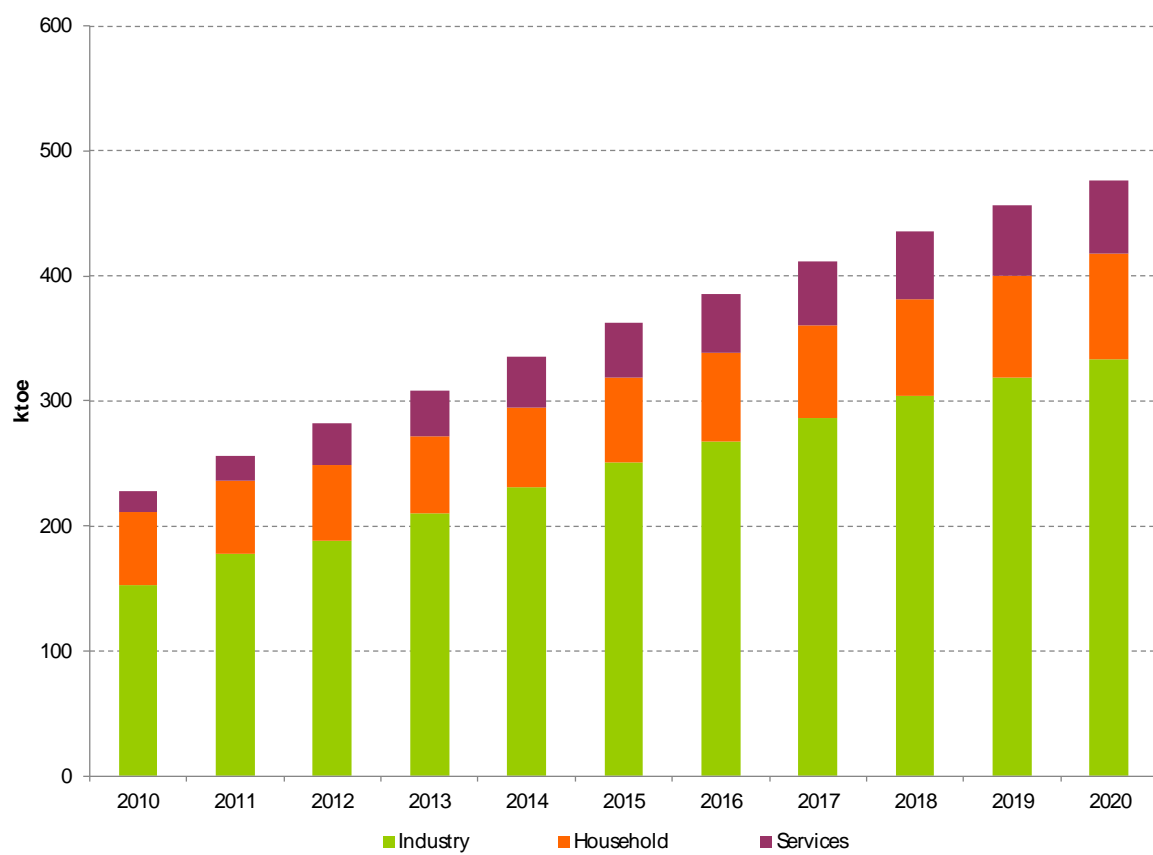
Policy instruments to end 2010 have focused on grants for renewable energy installations through schemes such as the Greener Homes scheme for households and the ReHeat scheme for businesses<sup>39</sup>. These were designed to build market capacity for various renewable heating technologies. REFIT 3 provides incentives for up to 185 MW of new biomass Combined Heat and Power (CHP) to be constructed.

The use of renewable heat must grow by 5.4% (RES-H in 2014 was 6.6%) to reach a RES-H of 12% by 2020. Renewable heat use in the industrial sector predominates over the period to 2020 – accounting for 8% of RES-H by 2020. The residential sector sees growth projected at 4% per year driven by newly built homes complying with the renewable energy requirement in Part L of the 2008 Building Regulations. REFIT 3, through its support of high efficiency cogeneration is also expected to contribute to achieving the RES-H 12%.

Analysis underpinning the Draft Bioenergy Plan, published in October 2014, indicates that an additional bioenergy focussed measure in the heat sector would represent the most cost effective means of meeting a number of different policy goals including addressing a potential shortfall in meeting our renewable heat target of 12% by 2020. Therefore, the draft Plan recommends the introduction of a Renewable Heat Incentive (RHI) to incentivise larger heat users in the industrial and commercial non-emissions trading sector to adopt heating solutions that produce heat from renewable sources.

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<sup>39</sup> Both of these schemes were closed to new applicants at the end of 2010. GHS was incorporated into Better Energy Homes and support limited to Solar Thermal.



**Figure 7: Renewable heat trajectory to 2020**



## **Annex 2**

### **Submission of information on compliance with the sustainability criteria per Article 18(3) fifth indent**

The information required is set out in the Biofuels Obligation Scheme Annual Reports produced by the National Oil Reserves Agency. The reports for 2013 and 2014 can be downloaded from <http://www.nora.ie/biofuels-obligation-scheme/bos-annual-reports.225.html>. In particular, Sections 4.6 to 4.8 are relevant in both reports.

#### **Voluntary Schemes**

In 2013 and 2014, 5 Voluntary Schemes were utilised as follows:

- ISCC

(International Sustainability and Carbon Certification)

- RBSA

(Abengoa RED Bioenergy Sustainability Assurance)

- REDCER

(Red Cert)

- ENSUS

(voluntary scheme applies to the production of bioethanol from the Ensus 1 plant, which is situated in the UK and commenced operations in 2010)

- BSIREN (2013 only)

(Bonsucro Voluntary Scheme, formerly known as the Better Sugar Cane Initiative)

In 2013, 94% of biofuels were covered by a Voluntary Scheme. In 2014, almost all biofuel (99%) was covered by a Voluntary Scheme.

## GHG savings

The following tables set out the carbon intensities of biofuels deployed in 2013 and 2014

Table 1: Breakdown in Carbon Intensities Reported in Sustainability Statements, by Feedstock

Year	Fuel Type	Feedstock	Description	Carbon Intensity (g CO2e/MJ)			Default Values
				Min	Avg	Max	
2013	Bioethanol	ECCORN	Corn – EC	5.0	24.9	43.0	42.7
		NECCOR	Corn – Non EC	23.0	32.9	18.0	-
		SCANE	Sugar Cane	24.0	24.0	24.0	24.3
		WHEAT	Wheat	27.0	35.0	44.0	-
		SBEET	Sugar Beet	24.0	37.3	40.0	
	Biodiesel	UCO11	Used Cooking Oil	13.0	14.0	14.0	14.2
		TALL1	Tallow – Category 1	14.0	14.0	14.0	14.2
		OSR	Oilseed Rape	36.0	47.3	52.0	
		POME	Palm Oil Mill Effluent	22.0	22.0	22.0	
		RME	Rape Methyl Ester	52.0	52.0	52.0	52.0
2014	Bioethanol	BARL	Barley	38	38	38	-
		ECCORN	Corn – EC	8	28.4	43	42.7
		NECCOR	Corn – Non EC	19	28.7	42	-
		SCANE	Sugar Cane	20	22.4	24	24.3
		WHEAT	Wheat	17	39.2	47	-
		SBEET	Sugar Beet	40	40	40	40.2
	Biodiesel	UCO12	Used Cooking Oil	14	14	14	14.2
		TALL1	Tallow – Category 1	14	14	14	14.2
		OSR	Oilseed Rape	52	52	52	52
		SBE	Spent Bleached Earth	42	42	42	
		PALM	Palm Oil	40	46.5	50	67.9
		SOY	Soybean	42	42	42	57.8
		TALL3	Tallow – Category 3	7	18.4	19	14.2

Table 2: Breakdown of Reporting of Actual Carbon Intensity Values, by Feedstock

Year	Fuel Type	Feedstock	Description	Total volume (l)	Volume Reported as Actual Values (l)	Percentage of Total Volume of Feedstock (%)
2013	Bioethanol	ECCORN	Corn – EC	29,895,665	18,156,932	60.7
		NECCOR	Corn – Non EC	4,024,415	474,246	11.8
		SCANE	Sugar Cane	4,511,838	-	0
		WHEAT	Wheat	11,503,722	6,805,641	59.2
		SBEET	Sugar Beet	6,458,850	2,436,167	37.7
	Biodiesel	UCO	Used Cooking Oil	73,853,578	2,323,755	3.1
		TALL1	Tallow – Category 1	18,372,682	-	0
		OSR	Oilseed Rape	363,671	-	0
		POME	Palm Oil Mill Effluent	1,408,815	1,408,815	100
		RME	Rape Methylester	22,862	-	0
2014	Bioethanol	ECCORN	Corn – EC	26,833,707	24,846,670	93
		NECCOR	Corn – Non EC	10,229,872	10,229,872	100
		SCANE	Sugar Cane	2,177,347	333,164	15
		WHEAT	Wheat	10,234,248	7,253,673	71
		SBEET	Sugar Beet	2,781,465	0	0
		BARL	Barley	313,332	313,332	100
	Biodiesel	UCO	Used Cooking Oil	70,625,375	164,596	0.2
		TALL1	Tallow – Category 1	27,599,893	-	0
		OSR	Oilseed Rape	10,246,421	29,655	0.3
		SBE	Spent Bleached Earth	31,712	-	0
		PALM	Palm Oil	3,701,711	3,264,108	88.2
		SOY	Soybean	1,128,497	909,391	80.6
		TALL3	Tallow – Category 3	1,016,436	1,016,436	100

### **Annex 3**

#### **Description of measures and procedures in force to ensure public participation in decision making in accordance with the requirements of Article 6, paragraphs 3, 4 and 8, of the Convention referred to in Article 7, including reasonable timeframes.**

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In Ireland, the Minister for the Environment, Community and Local Government has issued guidelines under Article 14 of the European Communities (Access to Information on the Environment) Regulations 2007 to 2014. Under Article 14, public authorities are obliged to take account of these guidelines in performing their functions under the Regulations.

The principle of public access to information on the environment, has been accepted for some time in Ireland. It has been given statutory effect by regulations on access to information on the environment and by the Freedom of Information Acts. Many public bodies perform environmental functions. A well informed public can promote the effective and timely discharge of these functions. The provisions of the amended AIE regulations give added impetus to this.

The 2014 regulations amend the European Communities (Access to Information on the Environment) Regulations 2007 and 2011 (S.I. No 133 of 2007, S.I. No. 662 of 2011 and S.I. 615 of 2014) and also transpose the Directive 2003/4/EC; this Directive replaced Council Directive 90/313/EEC, which was the previous EU instrument providing for access to environmental information.

A detailed description of and references to measures and procedures in force that ensure public participation are included in the Implementation Table referenced below.

<http://www.environ.ie/en/Publications/Environment/Miscellaneous/FileDownload,30637,en.pdf>

Each Article of the Convention is mapped to the corresponding legislative provision in this table. The main legislative provisions are in pages 32-45.

#### **The Green Paper/White Paper on Energy**

The Green Paper on Energy Policy in Ireland was launched on 12<sup>th</sup> May 2014 commencing a public consultation process on the future of energy policy in Ireland for the medium to long-term. That process concluded on 31<sup>st</sup> July and the Department of Communications, Energy and Natural Resources (DCENR) worked on the analysis of the 1,200 submissions received.

On the 24<sup>th</sup> September 2014 a further Stakeholder Engagement process was launched. This included six special topic seminars on each of the six priority areas and a seventh seminar on energy prices and costs. There were also four regional seminars in Moate, Cork, Sligo and Wexford to facilitate wider engagement of stakeholders. The White Paper was published on 16<sup>th</sup> December 2015.

1. Overall, in terms of Duration, there was a period of written consultation lasting two and a half months.
2. Regarding the Form of consultation, there was written consultation, stakeholder/ public meetings, and a green paper publication for comment.
3. The Feedback was primarily in the form of 1200 submissions, (<http://www.dcenr.gov.ie/energy/en-ie/layouts/15/website/submissions.aspx?ID=10>) and there were many other mails to the mailbox set up for the White paper, [whitepaper@dcenr.gov.ie](mailto:whitepaper@dcenr.gov.ie)