



An Coimisiún  
um Rialáil Fóntas  
**Commission for  
Regulation of Utilities**

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# Proposed Decision Paper

## Public Service Obligation Levy 2019/20

### Proposed Decision Paper

<b>Reference:</b>	CRU/19/068	<b>Date Published:</b>	07/06/2019	<b>Closing Date:</b>	28/06/2019
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## Executive Summary

The Public Service Obligation (PSO) levy is a subsidy charged to all electricity customers in Ireland. It is designed by the Irish Government and consists of various subsidy schemes to support its national policy objectives related to renewable energy and indigenous fuels (peat).

Government policy determines the level of subsidy provided to generators supported under the PSO, with the CRU's primary role being the calculation of the PSO levy. Specifically, in accordance with Government policy, the CRU's role is to calculate the PSO levy annually based on support rates that are set by Government, and to help ensure that the scheme is administered appropriately and efficiently. The CRU has therefore prepared this proposed decision paper (CRU/19/068), which sets out the proposed PSO levy to apply to electricity customers from 1 October 2019 to 30 September 2020.

Following a review of the PSO cost submissions from eligible suppliers, the CRU's initial calculation is that a PSO levy of €120.63 million will be required for the 2019/20 PSO period, which represents a decrease of €88.56 million (-42%) on the 2018/19 levy of €209.19 million. A number of drivers are contributing to the decrease in the PSO levy, including an increased negative R-factor arising from the 2017/18 PSO period, a higher benchmark price and the expiry of the Peat PSO Scheme at the end of 2019.

From a customer impact perspective, the 2019/20 PSO levy, as currently proposed, will result in a monthly charge of €1.92 and €7.15 for domestic and small commercial customers respectively. In comparison to the 2018/19 PSO, this equates to a monthly decrease of €1.56 and €4.82 for domestic and small commercial customers respectively. Customers in the medium/large commercial category will be subject to a monthly charge of €0.84/kVA, which constitutes a decrease of €0.48/kVA relative to 2018/19.

The final PSO levy for the 2019/20 PSO year will be published by the CRU before the statutory deadline of 1 August 2019. However, due to potential changes arising from a revised forecast benchmark price and a further review of PSO cost submissions, it is envisaged that the final 2019/20 PSO levy will differ from the indicative PSO levy discussed in this paper. This difference to the levy may be an increase or a decrease, depending on the final forecast figures and the outcome of the review of submitted costs.

# Public/Customer Impact Statement

For the year starting 1 October 2019, the CRU has calculated that the PSO levy will decrease by 42% in total. The new PSO levy rate from 1st of October 2019 to 30th September 2020 is €1.92 per month for domestic customers. This means that each household will pay €1.56 per month less on the PSO charge on their electricity bill than in the current PSO year.

The PSO levy rates from 1st October 2019 to 30th September 2020 for small commercial customers (where MIC <30kVa) is €7.15 per month. This means that each small commercial customer will pay €4.82 per month less on the PSO charge on their electricity bill than in the current PSO year. Additionally, the PSO levy rates from 1st October to 30th September 2019 for medium/large customers (where MIC=>30 kVa) is €0.84 per kVa per month. Medium/Large customer's PSO levy will decrease by €0.48/kVA relative to 2018/19.

A number of factors determine what a customer is charged for the PSO levy in a given period. The biggest influence is the wholesale price of electricity. There is an inverse relationship between the PSO levy and the wholesale electricity price. This means if the wholesale electricity price is high, less money needs to be raised through the PSO levy to subsidise PSO support generators. This is because these generators receive more money from the wholesale market for the electricity they produce.

Given the correlation between the decrease in the PSO levy and the increase in the wholesale market prices, the CRU notes that although a decrease in the PSO levy will reduce one fixed charge element on electricity bills, variable charges (e.g. the unit rate) may in fact increase. The CRU emphasises that savings on the variable aspect of the electricity bill can be gained through switching electricity supplier and through energy efficiency.

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## Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
<b>ACPS</b>	Annual Capacity Payment Sum
<b>AD</b>	Anaerobic Digestion
<b>AER</b>	Alternative Energy Requirement
<b>CfD</b>	Contract for Difference
<b>CHP</b>	Combined Heat and Power
<b>I-SEM</b>	Integrated Single Electricity Market
<b>MIC</b>	Maximum Import Capacity
<b>MWh</b>	Megawatt Hours
<b>PPA</b>	Power Purchase Agreement
<b>PSO</b>	Public Service Obligation
<b>REFIT</b>	Renewable Energy Feed-In-Tariff
<b>SEM</b>	Single Electricity Market
<b>S.I.</b>	Statutory Instrument

# 1. Introduction

## 1.1 The Commission for Regulation of Utilities

Commission for Regulation of Utilities (CRU) is Ireland's independent energy and water regulator. Our mission is to regulate water, energy and energy safety in the public interest. Further information on the CRU's role and relevant legislation can be found on the CRU's website at [www.cru.ie](http://www.cru.ie).

## 1.2 Purpose of this Document

This document explains the proposed Public Service Obligation (PSO) levy to apply to electricity customers in Ireland from 1 October 2019 to 30 September 2020. A final decision on the PSO levy will be issued by 1 August 2019 in compliance with statutory requirements.

## 1.3 Structure of Paper

The remainder of this document is structured as follows:

**Section 2 – Background:** Provides detail on the PSO levy and the legislative framework governing the PSO.

**Section 3 – Key Assumptions:** Provides detail on the benchmark price and capacity payment used in calculating the proposed PSO levy for 2019/20.

**Section 4 – Proposed 2019/20 PSO Levy:** Gives a high-level overview of the proposed PSO levy in terms of total cost and total generation capacity supported, as well as the allocation of the cost to different customer categories.

**Section 5 – Cost Breakdown of Proposed Levy:** Provides a breakdown of the proposed PSO levy in terms of the support schemes and generation technologies that it supports.

**Section 6 – Next Steps**

**Appendix 1:** Contains key data from ESB Networks' model used to allocate the proposed PSO levy to the different categories of customer.

## 1.4 Responding to this Document

Responses to this proposed decision paper should be forwarded to Sheena Byrne by close of business on 28 June 2019, preferably in electronic format to [PSO@cru.ie](mailto:PSO@cru.ie) or alternatively by post to:

Sheena Byrne.  
Commission for Regulation of Utilities  
The Exchange  
Belgard Square North  
Tallaght, Dublin 24

Unless marked confidential, all responses may be published on the CRU's website. Respondents may request that their response is kept confidential. The CRU shall respect this request, subject to any obligations to disclose information. Respondents who wish to have their responses remain confidential should clearly mark the document to that effect and include the reasons for confidentiality. Responses from identifiable individuals will be anonymised prior to publication on the CRU website unless the respondent explicitly requests their personal details to be published. Our privacy notice sets out how we protect the privacy rights of individuals and can be found [here](#).

## 1.5 Related Documents

- [Electricity Regulation Act, 1999](#)
- [S.I. No. 217](#) of 2002 - Electricity Regulation Act, 1999 (Public Service Obligations) Order 2002 as amended
- [S.I. No. 284](#) of 2008 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 444](#) of 2009 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 532](#) of 2010 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 513](#) of 2011 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 438](#) of 2012 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 421](#) of 2013 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 603](#) of 2014 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 556](#) of 2015 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 600](#) of 2016 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 459](#) of 2017 – Amending S.I. No. 217 of 2002 for REFIT
- [S.I. No. 403](#) of 2018 – Amending S.I. No. 217 of 2002 for REFIT

## **EU State Aid Notifications and Clearance Decisions**

- EC C(2001)3265, [State aid n° N 6/A/2001 – Ireland](#), “Public Service Obligations imposed on the Electricity Supply Board with respect to the generation of electricity out of peat”;
- EC C(2002) 5, [State aid n° N 826/01 - Ireland](#), “Alternative Energy Requirements I to IV”;
- EC C(2002) 3, [State aid N 553/01 – Ireland](#), “Aid to promote renewable energy sources in Ireland” (AER V);
- EC C(2003)4488, [State aid N/475/03 – Ireland](#), “Public Service Obligation in respect of new electricity generation capacity for security of supply” (Capacity and Differences Agreements (CADA));
- EC C(2007)4317, [State aid N 571/2006 – Ireland](#), “RES-E support programme” (REFIT 1);
- EC C(2012)8, [State aid SA.31236 \(2011/N\) – Ireland](#), “Renewable Feed In Tariff” (REFIT 2); and
- EC C(2011)7593, [State aid SA.31861 \(2011/N\) – Ireland](#), “Biomass electricity generation” (REFIT 3).

## **CRU Papers**

- [CER/03/013](#) PSO Invoicing and Collection Procedures
- [CER/08/153](#) Arrangements for the Public Service Obligation Levy
- [CER/08/236](#) Calculation of the R-factor in determining the Public Service Obligation Levy – Decision Paper
- [CER/17/073](#) Decision on ESB Networks’ Updated PSO Levy Cost Allocation Methodology
- [CRU/18/148](#) Public Service Obligation Levy 2018/19 – Decision Paper
- [CRU/18/259](#) Notification to Suppliers – Submissions to the CRU for the 2019/20 Public Service Obligation (PSO) Levy
- [CRU/18/258](#) Notification to Suppliers -Engagement of Auditors Regarding Certification of the PSO Levy.
- [CRU/18/261](#) Addressing the Risk of Bad Debt to the PSO Levy
- [CRU/19/017](#) Information Note: Clarification on 2019/20 PSO Submissions

## 2. Background

### 2.1 The PSO Levy

The PSO levy is charged to all electricity customers in Ireland. It covers various subsidy schemes designed by the Irish Government to support its national policy objectives related to renewable energy and the use of indigenous fuels (peat)<sup>1</sup>.

Given that PSO-supported generation typically costs more to deliver than it can earn in the market, PSO-supported generators can enter into contracts with suppliers, which guarantee them a certain price. The PSO levy is used to pay the difference between this price and the price that can be earned in the market.

The policy and terms associated with the generation plants supported by the PSO levy are mandated by Government in legislation and approved by the European Commission, see Section 2.2. The CRU has no discretion over the terms of PSO schemes. The CRU's only role in relation to the PSO is to calculate the levy in accordance with Government policy and to help ensure that the scheme is administered appropriately and efficiently.

The PSO levy is collected from electricity customers by their electricity suppliers. The collected levy is passed to ESB Networks and then to EirGrid, who pay out the appropriate PSO amounts to PSO-supported suppliers.

The PSO levy is calculated in advance each year for the forthcoming PSO period 1 October to 30 September. It principally consists of:

1. The estimated eligible costs that suppliers are forecast to incur in the forthcoming PSO period. These costs are then reduced by the level of market revenue which is forecast to be earned. The market revenue is forecast based on a benchmark wholesale electricity price which is set by the CRU.
2. A settlement for the PSO period two periods prior to the forthcoming period. As the PSO levy for each year is based on estimated costs and forecast market revenues, there is also an adjustment made when the full actual costs and revenues are known. This adjustment is known as the "R-factor". The R-factor may be positive or negative, depending on whether the actual costs incurred are higher or lower than had been

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<sup>1</sup> Until 2016, it also supported security of supply policy objectives.

estimated. The differences can arise primarily due to differences between the estimated and the actual level of generation and to differences between the estimated and the actual market payments received. The PSO levy for each 12-month period therefore includes both the estimate of the levy costs for that period, and the R-factor adjustment for the PSO period two years previous.

## **2.2 Legislative Framework Governing the PSO**

In accordance with Section 39 of the Electricity Regulation Act, 1999, the CRU is directed by order of the Government to impose the PSO on those electricity market participants who are party to the support schemes. Statutory Instrument (S.I.) No. 217 of 2002 sets out more detail in relation to the PSO levy rules. It provides for the calculation of the PSO levy by the CRU in accordance with State Aid Notifications to the European Commission for the various PSO schemes.

The original State Aid Notification<sup>2</sup> of November 2000 sets out the broad areas that may be covered by the PSO as listed in Section 39 of the Electricity Regulation Act, 1999. These are security of supply, use of indigenous fuel sources and environmental protection. It refers specifically to the schemes developed at that time i.e. support for the generation of electricity from peat and from renewable, sustainable or alternative forms of energy.

Since the original notification, new schemes have been notified by the Government to the EU Commission and have received state aid clearance. These include the AER (Alternative Energy Requirement) schemes, as well as the “Capacity 2005” plants, which were supported under the PSO in order to address security of supply concerns.<sup>3</sup> In 2006, the REFIT 1 scheme was notified to the EU and in 2011 REFIT 2 and REFIT 3 were notified to the EU and received state aid clearance to provide support for the generation of electricity from renewable technologies. S.I. No. 217 has been amended by successive S.I.s to provide for the recovery of costs under the PSO for each of the above schemes.

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<sup>2</sup> The purpose of the Notification was to inform the European Commission of the Irish Government’s intention to impose public service obligation and of the proposed mechanism to recover the additional costs of fulfilling the obligation.

<sup>3</sup> Aughinish Alumina (160MW) and Tynagh (400MW) received support under Capacity 2005. The PSO for these plants was notified to the EU Commission in October 2003 and were cleared by the EU Commission at the end of 2003. These arrangements were put in place for a 10 year period, and ended in 2016.

## **3. Key assumptions**

### **3.1 Benchmark price**

The benchmark price is an average of the forecast wholesale market price of electricity over the PSO period. It is used by the CRU to calculate the forecast market revenue of generation plants supported under the PSO for the given PSO period, based on their estimated generation. This forecast market revenue is subtracted from the guaranteed revenue of the supported plants in order to determine the amount to be paid via the PSO levy. The lower the benchmark price, the higher the top up required from the PSO levy and vice versa.

The benchmark price was calculated using a PLEXOS model of the SEM (SEM-18-175) under the revised trading arrangements. For clarity, this SEM model has been applied to the entire PSO period from Oct 2019 to Sept 2020. Any difference due to the use of this model between the benchmark price applied here and actual wholesale prices under the revised SEM trading arrangements, will be captured in the R-factor for the 2019/20 PSO period.

For the purpose of calculating the PSO levy contained in this proposed decision paper, a forecast benchmark price of €62.02/MWh has been used. The exchange rates and forward fuel and carbon prices used in modelling the 2019/20 PSO period are from the 8 May 2018, with the main determinant of the benchmark price being the forward fuel prices. It is envisaged that there will be a change to forward fuel prices and therefore to the benchmark price before the decision paper containing the final PSO levy is published (by 1 August 2019).

### **3.2 Capacity payment**

Historically for the purpose of the PSO capacity payment, an estimate price was used to approximate the revenue a generator would earn from the Capacity Payment Mechanism (CPM) in the SEM. The CPM is a mechanism which remunerated generators for the provision of generation capacity. The Annual Capacity Payment Sum (ACPS) was calculated by the Regulatory Authorities, and this data was used as a proxy to calculate the PSO capacity payments for a given PSO period. Deviations between the estimation and actual remuneration was rectified through the R-factor.

The mechanism for the remuneration of capacity is fundamentally different in the new SEM market, arising from I-SEM implementation. These new SEM arrangements commenced on the 1 October 2018. In the new SEM (arising from I-SEM implementation), the administratively

determined CPM has been replaced by a Capacity Market. Capacity providers only receive capacity payments if they are successful in a Capacity Auction. The Final Capacity Auction Results 2019/2020 T-1 are available on the SEMO website<sup>4</sup>. The CRU has used the results of this auction to determine capacity revenue remunerated to generators for the purpose of the 2019/20 PSO calculation.

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<sup>4</sup>[Final Capacity Auction Results 2019/2020 T-1 Capacity Auction](#)

## 4. Proposed 2019/20 PSO levy

### 4.1 Total levy cost and generation capacity supported

The total PSO levy for the 2019/20 period, calculated based on the benchmark price and capacity payment assumptions described in Section 3, is **€120.63 million**. A high-level breakdown of the 2019/20 PSO levy into its components is shown in Table 1.

Component	Generation Capacity Supported (MW)	Forecast Cost 2019/20 (million)	R-Factor 2017/18 (million)	Total PSO support 2019/20 (million)
Renewables	3991	€269.4	-€171.4	€98.0
Peat	250	€27.5	-€6.3	€21.2
PSO CfDs	—	—	—	€2.1
Admin	—	—	—	€0.7
Rebate <sup>5</sup>	—	—	—	-€1.3
<b>Total</b>	<b>4,241</b>	<b>€296.9</b>	<b>€-177.7</b>	<b>€120.63</b>

Table 1: Breakdown of total proposed PSO levy

Additionally, Figure 1 provides an annual breakdown of the total PSO levy since 2011-12 and presents the overall trend in the cost of the PSO.

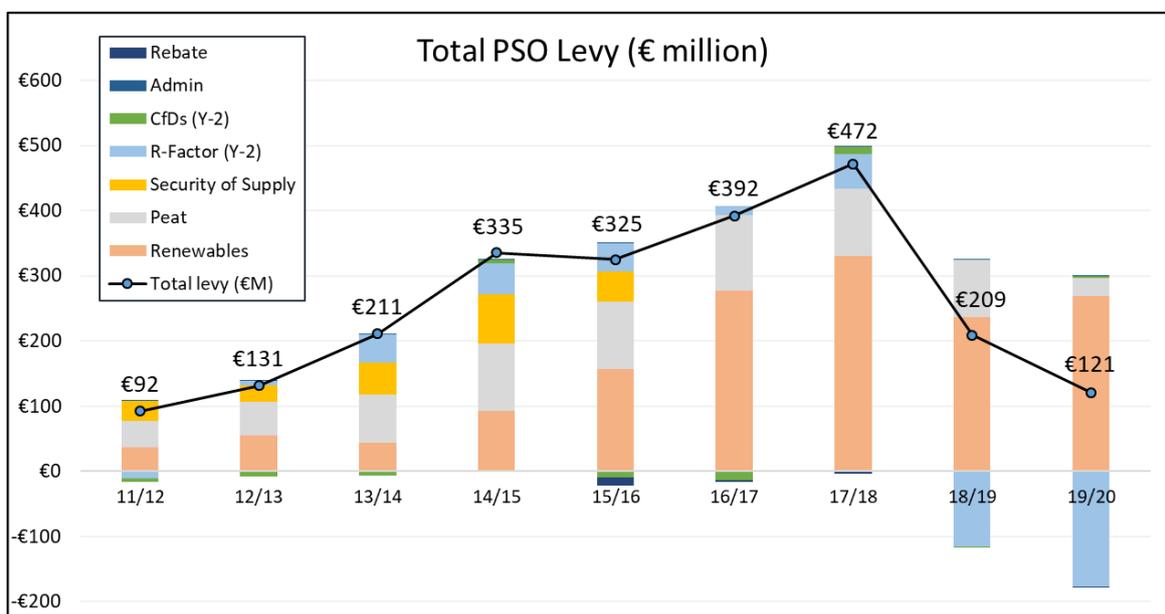


Figure 1: Breakdown of total proposed PSO levy

<sup>5</sup> Rebate relates to PSO payments that were withheld from suppliers, by EirGrid, in the 2018/19 PSO year. This money is now being paid back to the PSO.

## 4.2. Drivers of year on year change

The proposed PSO levy for 2019/20 of €120.63 million represents a decrease of €88.65 million (42%) on the 2018/19 levy of €209.19 million. A number of drivers are contributing to the decrease in the 2019/20 PSO levy, principally the 2017/18 R-factor, the increased benchmark price and the expiry of the Peat PSO Scheme at the end of 2019. Other drivers, including an increase in renewable generation and lower capacity payments are exerting minimal upward pressure.

### Downward Drivers on the 2019/20 PSO Levy

- i. Negative R-factor: The calculation of the PSO levy requires an ex-ante estimation of the monies recoverable in a given PSO period by suppliers plus the calculation of the monies that should have been recovered by such parties two PSO periods ago (in this instance 2017/18). This latter calculation is referred to as the “R-factor”.

A 2017/18 R-factor of -€177.7 million is being included in the 2019/20 PSO levy calculation, which accounts for the difference between the costs and revenues estimated for 2017/18 ex-ante and actual costs and revenues for 2017/18 certified ex-post. The negative 2017-18 R-factor (i.e. -€177.7 million) has been the main driver behind the decrease in the 2019/20 PSO levy. This constitutes a decrease of €62.8 million in comparison to the 2016/17 R-factor (-€114.9 million). The CRU notes the scale of the 2019/19 R-factor is significant relative to previous years, which ultimately increase the volatility of the PSO. The CRU, as administrators of the PSO levy, will liaise further with the relevant Government Department that is responsible for PSO policy matters (i.e. DCCA) in order to identify potential measures for minimising the scale of volatility in the PSO levy.

- ii. Expiry of Peat Scheme: ESB’s Lough Ree and West Offaly plants are the only remaining plants under the Peat PSO Scheme. The ex-ante payment due to these plants in the 2019/20 PSO year, under the Peat PSO Scheme is €27.5 million. This is a reduction of €60.25 from the €87.75 million received in the 2018/19 PSO year. This decrease has come about as the Peat PSO Scheme expires at the end of 2019 and therefore only covers about one quarter of the upcoming PSO year.
- iii. Higher Benchmark Price: The forecast benchmark price of €62.02/MWh is higher than the benchmark price of €61.17/MWh used in calculating the 2018/19 PSO levy. This

acts to reduce the overall levy by approximately €10.6 million relative to the 2018/19 PSO levy. This is because the higher forecast market revenue decreases the amount required from the PSO levy to compensate suppliers up to the guaranteed rates that they are obliged to pay to PSO supported generators.

#### Upward Drivers on the 2019/20 PSO Levy

- i. Increased Renewable Capacity: An estimated 3,991 MW of renewables will be supported by the 2019/20 PSO levy. This is an increase of 213 MW, or 6% more than the 3,778 MW supported in the 2018/19 PSO period.

### 4.3. Allocation of Costs

The cost of the PSO levy is allocated across three categories of customer – Domestic, Small Commercial (MIC < 30kVA) and Medium/Large Commercial (MIC ≥ 30kVA). The peak demand associated with each category based on standard load profiles, metered data and forecast demand data is determined by ESB Networks. The cost of the PSO levy is then allocated in proportion to the ratio of these demand peaks.

Following consultation by the CRU in 2016 (CER/16/374), an updated methodology from ESB Networks was used by the CRU in determining the allocation of costs for the 2017/18 PSO levy (see CER/17/073). ESB Networks updated methodology incorporated a more accurate method of determining the peak demand associated with the Medium-Large account category.

Using this methodology ESB Networks have updated their cost allocation model since the 2017/18 PSO levy, using the most recent growth forecasts available to them for the 2019/20 PSO calculation. The proportion of the proposed PSO levy of €120.63 million to be allocated to each of the three customer categories are presented in Table 2 (these are the indicative costs for the levy period 1 October 2019 to 30 September 2020).

PSO Customer Category	Monthly Levy Amount (2018/19)	Monthly Levy Amount (2019/20)	% Increase year on year
Domestic	€3.48 / customer	€1.92/ customer	-45%
Small commercial (MIC < 30 kVA)	€11.97 / customer	€7.15 / customer	-40%
Medium/Large commercial (MIC ≥ 30 kVA)	€1.32 / kVA	€0.84 / kVA	-36%

**Table 2: Cost of proposed 2019/20 levy by customer category**

One of the factors influencing the scale of the percentage decrease in the 2019/20 PSO levy (across customer categories) is the share of peak demand applied to each category of customer for this period, as outlined below.

- **Domestic Customers:** For 2019/20, the updated forecast demand data resulted in an decreased percentage allocation (1.2%) of the total PSO levy to Domestic Customers (i.e. in 2019/20 domestic customers accounted for 40.6% of peak demand, compared to 41.8% in the 2018/19 PSO period), thereby marginally increasing their reduction in the PSO levy relative to other customer categories.
- **Small Commercial Customers:** For 2019/20, the updated forecast demand data resulted in an increased percentage allocation (i.e. 0.3%) of the total PSO levy to Small Commercial Customers (i.e. in 2019/20 Small Commercial Customers accounted for 12.1% of peak demand, compared to 11.8% in the 2018/19 PSO period), thereby marginally reducing their reduction in the PSO levy relative to Domestic Customers.
- **Medium & Large Commercial Customers:** For 2019/20, the updated forecast demand data resulted in a slightly increased percentage allocation (0.9%) of the total PSO levy to Medium & Large Customers (i.e. in 2019/20 Medium & Large Customers accounted for 47.3% of peak demand, compared to 46.4% in the 2018/19 PSO period), thereby marginally reducing their reduction in the PSO levy relative to Domestic Customers and Small Commercial Customers.

Another factor which impacts the year on year percentage change (across customer categories) is the variation in the total number of customers for the Domestic and Small Commercial categories and the total non-domestic Maximum Import Capacity (MIC) for the Medium & Large Commercial category for 2019/20. The cost attributed to each category is apportioned to the number of customers in the Domestic and Small Commercial and the MIC for Medium & Large customers and determines the annual charge kVA. According to ESB Networks' model, the number of Domestic Customers has increased by 1.2% while the number of Small Commercial customers has decreased by 0.9%. The Medium and Large customer category saw a significant decline, with non-domestic MIC decreasing by 8%.

Further detail on the calculation of the cost allocation is provided in Appendix 1.

## 5. Cost breakdown of proposed levy

### 5.1. Overview of support schemes

The PSO covers various subsidy schemes designed by the Irish Government. Table 3 provides a breakdown, by support scheme and technology type, the support rate that generators will receive under the 2019/20 PSO.

Support Scheme & Technology	2019 support rates (€/MWh)	2020 Indicative support rates (€/MWh)
<b>AER</b>		
Wind	46.00	46.00
<b>Peat</b>		
Lough Ree	-	-
West Offaly	-	-
<b>REFIT 1</b>		
Biomass	88.86	89.75
Hydro	88.86	89.75
Landfill	86.39	87.26
Large Wind	70.35	71.05
Small Wind	72.82	73.55
<b>REFIT 2</b>		
Hydro	88.86	89.75
Landfill	86.39	87.26
Large Wind	70.35	71.05
Small Wind	72.82	73.55
<b>REFIT 3</b>		
AD CHP > 500 kWe	137.83	139.21
AD CHP ≤ 500 kWe	159.04	160.63
AD (non-CHP) ≤ 500kWe	116.63	117.79
AD (non-CHP) > 500kWe	106.02	107.08
Biomass CHP ≤ 1500 kWe	148.43	149.92
Biomass CHP > 1500kWe	127.23	128.50
Biomass Energy Crops	100.72	101.73
Other Biomass Combustion	90.12	91.02

**Table 3: Breakdown of PSO support rates**

Table 4 provides a breakdown, by support scheme, of the capacity supported and the ex-ante cost estimates covered under the proposed levy for 2019/20. The individual support schemes will be discussed in more detail in the sections that follow.

Support Scheme	Total Ex-ante PSO payment for 2018/19 (€ million)	Total Ex-ante PSO payment for 2019/20 (€ million)	% Change in Payment	Capacity supported in 2018/19 (MW)	Capacity supported in 2019/20 (MW)	% Change in Capacity
AER	-€0.83	€0.47	157%	29.80	26.40	-11%
Peat <sup>6</sup>	€87.75	€27.47	-69%	250.00	250.0	0%
REFIT 1	€81.77	€80.92	-1%	1398.8	1398.8	0%
REFIT 2	€112.83	€135.27	20%	2135.3	2356.0	10%
REFIT 3	€43.20	€52.72	22%	213.7	210.3	-2%
<b>Total</b>	<b>€324.72</b>	<b>€296.85</b>	<b>-9%</b>	<b>4,028</b>	<b>4,241</b>	<b>5%</b>

**Table 4: Breakdown of ex-ante PSO payment and capacity supported for 2019/20 by support scheme.<sup>7</sup>**

### AERs

The technologies supported historically under the 15-year AER schemes included onshore and offshore wind energy, small-scale hydropower, combined heat and power (CHP), biomass (landfill gas), biomass-CHP and biomass-anaerobic digestion. Since the AER was launched in 1995, six AER competitions have been held. The AER scheme is closed to new entrants and the only remaining technologies actively supported under this scheme are onshore and offshore wind energy. There are 2 projects remaining under the AER scheme, with support for the last project due to terminate at the end of 2021.

The plants involved contract with Electric Ireland (ESB's supply entity), which is then entitled to compensation from the PSO levy if the revenue it receives for selling the electricity is less than what it paid the renewable generators. Similarly, Electric Ireland returns money to the PSO in the event of over-compensation.

The ex-ante PSO amount proposed for the 2019/20 PSO period for the AER schemes is €470,000.

<sup>6</sup> The Peat PSO Scheme expires at the end of 2019 and therefore only covers about one quarter of the upcoming PSO year.

<sup>7</sup> A number of minor capacity corrections have contributed to the difference between the *capacity supported in 2018/19* figures in Table 4, and those shown in Table 3 in the CRU's 2018/19 PSO Decision Paper.

**REFIT**

The first Renewable Energy Feed-in-Tariff (REFIT 1) scheme was introduced in 2006, followed by REFIT 2 and 3 in 2012. The REFIT schemes are designed to incentivise the development of renewable electricity generation in order to help Ireland to meet its target of 40% of electricity coming from renewable sources by 2020. The technologies covered under each scheme are summarised in Table 5.

Scheme	REFIT 1	REFIT 2	REFIT 3
<b>Technologies supported</b>	<ul style="list-style-type: none"> <li>— Biomass</li> <li>— Hydro</li> <li>— Landfill</li> <li>— Large Wind</li> <li>— Small Wind</li> </ul>	<ul style="list-style-type: none"> <li>— Hydro</li> <li>— Landfill</li> <li>— Large Wind</li> <li>— Small Wind</li> </ul>	<ul style="list-style-type: none"> <li>— AD (non CHP) &gt; 500 kWe</li> <li>— AD (non CHP) ≤ 500 kWe</li> <li>— AD CHP &gt; 500 kWe</li> <li>— AD CHP ≤ 500 kWe</li> <li>— Biomass CHP ≤ 1500 kWe</li> <li>— Biomass CHP &gt; 1500 kWe</li> <li>— Biomass Combustion (non-CHP)                             <ul style="list-style-type: none"> <li>○ Energy Crops</li> <li>○ Other Biomass</li> </ul> </li> </ul>

**Table 5: Technologies supported under the three REFIT schemes.**

In contrast to the AER scheme, REFIT is open to all suppliers (not just Electric Ireland) to contract with renewable generators. The compensation streams under the REFIT scheme are paid to electricity suppliers in exchange for entering 15-year Power Purchase Agreements (PPAs) with renewable electricity generators.

The ex-ante PSO amount proposed for the 2019/20 PSO period for the REFIT schemes is €268.9 million. This represents an increase of €31.1 million (13%) on the €237.8 million support for these contracts included in the 2018/19 PSO levy period. The corresponding increase in REFIT generation capacity supported under the PSO increased by 217 MW (5.8%), from 3,748 MW in 2018/19 to 3,965 MW in 2019/20.

Of the proposed payment for 2019/20 under REFIT 1, 94% is to wind generators. Under REFIT 2, 98% is to wind generators. Under REFIT 3, 84% of the proposed payment for 2019/20 is to generators in the category Other Biomass Combustion.

**Peat**

There are 2 peat plants remaining under the PSO – ESB’s Lough Ree and West Offaly plants. These plants sell their electrical output into the SEM and receive revenue from the market for that output. If the revenue they receive is less than entitled, notified costs incurred by these plants, then ESB recover the deficit from the PSO. Similarly, if either plant receives revenue from the SEM that is greater than the entitled, notified costs incurred, monies are returned to the PSO fund.

Support for Lough Ree and West Offaly will expire at the end of 2019. Their combined capacity is 250MW and the ex-ante amounts proposed for inclusion in the 2019/20 PSO levy are €12.47 million and €15 million respectively, giving a combined total of €27.5 million. This compares with an ex-ante total of €87.75 million of support for electricity generated from peat in 2018/19.

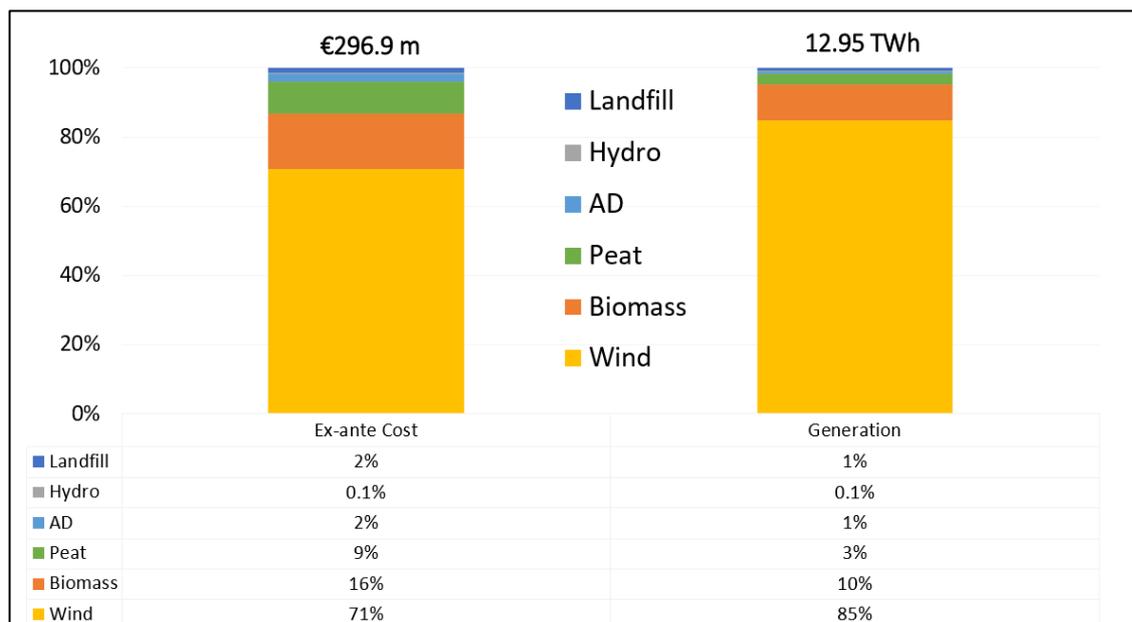
ESB have included in their submission of estimated costs for the 2019/20 period, the net cost of dismantling the Lough Ree and West Offaly plants on termination of support for peat under the PSO at the end of 2019. The submitted dismantling costs have been deemed ineligible and are therefore excluded from the calculation of the proposed 2019/20 PSO levy.

ESB have also included in their submission of estimated costs for the 2019/20, the cost of the recovery of write down on plant stocks attributed to the Lough Ree and West Offaly plants. ESB are also claiming the value of all stocks owned by the Lough Ree and West Offaly plants, at the end of the PSO Support Scheme, as a cost as they consider these assets to no longer have any use. These costs are currently under review by the CRU and therefore excluded from the calculation of the proposed 2019/20 PSO levy.

Following the expiry of the Peat PSO Scheme, as stipulated in REFIT 3 Terms and Conditions, both Lough Ree and West Offaly plants may claim REFIT 3 support for co-firing biomass with peat, up to 30% of the plant capacity in any single year. Both of these plants have made ex-ante submissions to the 2019/20 PSO.

### **Summary of Support Schemes**

The breakdown by technology of total ex-ante PSO cost and generation supported under the proposed 2019/20 levy for AER, REFIT and peat is shown in Figure 2, with similar categories grouped together. As there are different support rates for the different technologies, the breakdown by cost differs from the breakdown by generation supported.



**Figure 2: Breakdown of ex-ante cost and generation supported by technology type under the proposed 2019/20 PSO levy.**

## 5.2. R-factor

The ex-ante estimate of costs associated with each of these schemes for 2019/20 constitutes the main part of the total PSO levy. In addition, the settlement of the ex-ante estimate component of the 2017/18 PSO levy, based on actual outturn costs and market revenues, must be included. The 2017/18 R-factor, included in the 2019/20 PSO levy, accounts for the difference between the costs and revenues estimated for 2017/18 ex-ante and the actual costs and revenues for 2017/18 certified ex-post. Further detail on the methodology used in calculating the R-factor can be found in CER/08/026 and CRU/19/054.

A negative R-factor of €177.7 million has been included in the calculation of the proposed 2019/20 PSO levy, due to an over-recovery of monies in the 2017/18 PSO period. The breakdown of the R-factor by support scheme is shown in Table 6.

Component	R-factor 2017/18 (€ million)
REFIT	-€165.1
AER	-€6.3
Peat	-€6.3
<b>Total</b>	<b>-177.7</b>

**Table 6: Breakdown of R-factor by support scheme**

This over recovery of costs is a result of actual costs incurred deviating from estimated costs. Actual costs are determined by two key factors, actual generation levels of the PSO plants and actual market revenues received by these plants.

Actual generation by REFIT supported plant for 2017/18 was -23.8% lower than the estimated generation submitted for the period. This over estimation of generation resulted in an over recovery of revenues through the 2017/18 ex-ante payment and will be remedied through the R-factor. This overestimation may, in part, be explained by lower wind generation in the 2017/18 PSO year. In 2017/18, the average capacity factor of installed wind capacity in Ireland was 26.6%. In the five-year period up to 2017/18, the average capacity factor was 28.5%<sup>8</sup>.

The second key component of the R-factor is due to a higher average outturn SMP of approximately €59/MWh in 2017/18 PSO period, compared to the ex-ante benchmark price of €46.18/MWh. The benchmark price for 2017/18 was modelled using a series of forecast commodity prices and ran using the SEM PLEXOS model. These forecast prices included gas, coal and carbon prices.

The CRU observed a substantial increase in commodity prices between those used to model the 2017/18 benchmark price and actual prices that occurred in the 2017/18 PSO year. Comparing the 2017/18 forecast commodity prices used to model the benchmark price and actual 2017/18 commodity prices, on average, gas prices increased by approximately 37%, coal prices increased by approximately 28% and carbon prices increased by approximately 157%.

This increase has contributed to a higher average outturn SMP for the 2017/18 period. This higher outturn resulted in PSO plants receiving more market revenue than anticipated. The underestimation of the 2017/18 benchmark price (relative to the outturn price) resulted in an over recovery of revenues through the 2017/18 ex-ante payment and will be remedied through the R-factor.<sup>9</sup>

### **5.3. PSO CfDs**

PSO related Contract for Differences (CfDs) are offered by ESB Power Generation, see SEM-11-020 for further details. These are forward contracts for PSO supported dispatchable

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<sup>8</sup> Source SEAI

<sup>9</sup> Refer to Appendix 2 for summary of the forecast commodity prices used in the calculation of the 2017/18 benchmark prices, relative to actual commodity prices in 2017/18.

generation, backed by the PSO levy. The total difference payment resulting from these CFDs is €2,083,000 owed to ESB Power Generation, from the PSO levy. This reflects an outturn SMP for the 2017/18 period which was higher on average than the strike price.

#### **5.4. PSO Bad Debt**

On 11 December 2017, a liquidator was appointed to Aughrim Power Supply who participated in the REFIT scheme. Aughrim Power Supply were due to pay back money to the PSO over the 2018/19 period as a result of a negative total R-factor for 2016/17, which amounted to €695,091 inclusive of Euribor annual interest. This is an outstanding payment due to the PSO and is currently being considered as a bad debt. EirGrid are pursuing Aughrim Power Supply's liquidator regarding the possible recovery of this payment.

## 6. Next Steps

The final PSO levy for the 2019/20 period will be published by the CRU before the statutory deadline of 1 August 2019. The figures reported in this proposed decision paper are likely to change before the final decision paper is published, principally for two reasons:

1. The forecast benchmark price is likely to change; and
2. The generation estimates used in the calculation may be amended on further review of submissions by the CRU.

As noted in the “Notification to Suppliers 2019/20” (CRU/18/259) the CRU will publish the actual outturn payments made in respect of individual generators and suppliers for the PSO year to which the R-factor applies. For the 2019/20 PSO therefore, the CRU will publish in the PSO Decision paper the actual amounts paid in respect of each generator and supplier for the 2017/18 PSO year

## Appendix 1 – Allocation of 2019/20 PSO

Allocating 2019/20 PSO									
	Individual Peak	% of Individual Peak	PSO Allocation €m	Total Mkt Cust Nos Mid Year (excl PL a/cs i.e. DG3)	Total Non-domestic mkt MICs kVA	Annual Charge		Monthly Charge Monthly €	Monthly Charge
						€ per Cust	€/kVA		
<b>Domestic Profile</b>	<b>2,306,163</b>	40.55%	48.92	<b>2,120,766</b>		23.07		<b>1.92</b>	€ per Customer
<b>Small Profile</b> <small>ie. non-domestic (excl PL) &lt;30kVA</small>	<b>690,710</b>	12.15%	14.65	<b>170,747</b>		85.81		<b>7.15</b>	€ per Customer
<b>Medium &amp; Large Profile</b>	<b>2,689,811</b>	47.30%	57.06		<b>5,654,003</b>		10.09	<b>0.84</b>	€/kVA
<b>TOTAL</b>	5,686,683	100.00%	<b>120.63</b>						

Number of months to recover charge

12

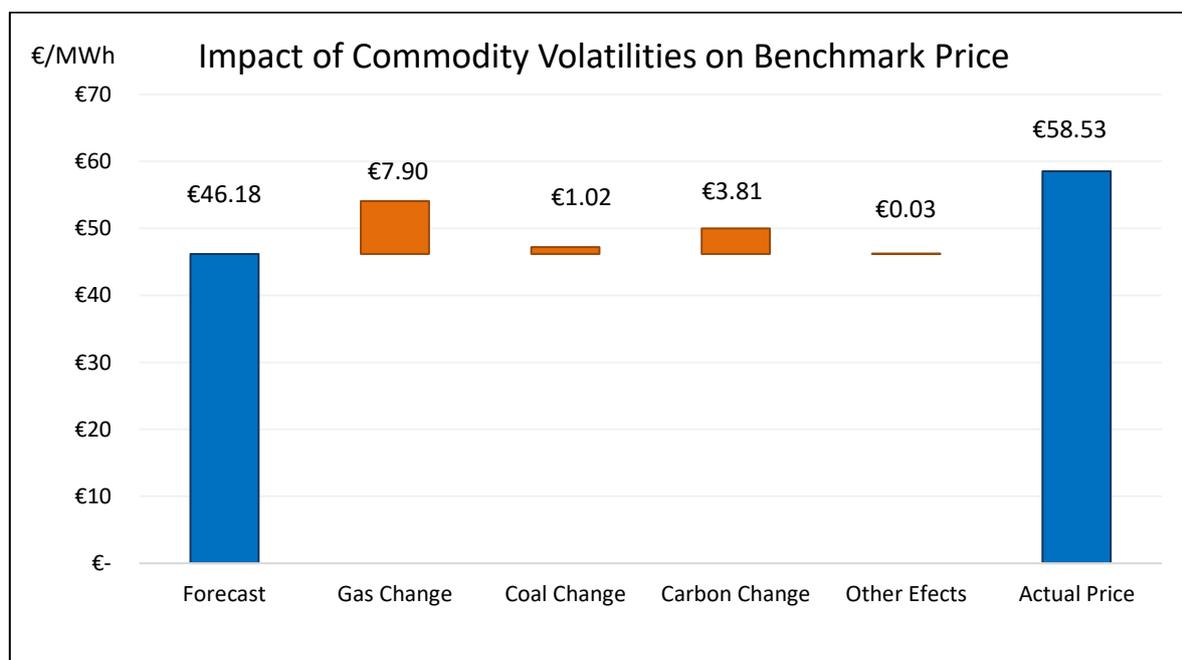
## Appendix 2 – 2017/18 Benchmark Price

The Benchmark price for the 2017/18 PSO Levy was €46.18. The actual out-turn average price for wholesale electricity was €58.53, which is approximately 25% higher than forecasted. The reason for this increase is due to the volatility of commodity prices in 2018. As can be seen from Table 1, commodity prices rose sharply in 2018. There was an average of 37% increase in the price of gas, and a 157% increase in the price of carbon credits.

	Coal Forecast	Coal Actual	Change	Gas Forecast	Gas Actual	Change	Carbon Forecast	Carbon Actual	Change
Q4 17	\$ 77.05	\$ 93.46	21%	£ 43.23	£ 52.02	20%	€ 4.93	€ 7.47	51%
Q1 18	\$ 73.50	\$ 86.86	18%	£ 46.64	£ 58.05	24%	€ 4.97	€ 9.77	97%
Q2 18	\$ 69.95	\$ 89.11	27%	£ 39.51	£ 53.96	37%	€ 4.97	€ 14.66	195%
Q3 18	\$ 68.32	\$ 99.12	45%	£ 38.49	£ 64.47	67%	€ 4.97	€ 19.14	285%
Avg			28%			37%			157%

**Table 1: Forecast versus actual commodity prices for PSO Benchmark Price.**

Figure 1 below graphs the impact each commodity had on how the actual wholesale electricity market price deviated from the forecasted benchmark price.



**Figure 1: Impact of commodity volatilities on 2017/18 Benchmark Price**