



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

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Commission for Regulation of Utilities

Decision Paper

Public Service Obligation Levy 2018/19

Decision Paper

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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 Commission for Regulation of Utilities (CRU) 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 decision paper (CRU/18/148), which sets out the PSO levy to apply to electricity customers from 1 October 2018 to 30 September 2019.

Following publication of the proposed decision paper on the PSO levy for 2018/19 (CRU/18/106), the CRU has updated the benchmark price forecast and completed its review of PSO cost submissions. As a result, the CRU's revised calculation is that a PSO levy of €209.19 million will be required for the 2018/19 PSO period, which represents a decrease of €262.71 million (56%) on the 2017/18 levy of €471.9 million. A number of drivers are contributing to the decrease in the PSO levy, including in particular, a higher benchmark price and an increased R-factor arising from the 2016/17 PSO period.

From a customer impact perspective, the 2018/19 PSO levy will result in a monthly charge of €3.48 and €11.97 for domestic and small commercial customers respectively. In comparison to the 2017/18 PSO, this equates to a monthly decrease of €4.21 and €14.58 for domestic and small commercial customers respectively. Customers in the medium/large commercial category will be subject to a monthly charge of €1.32/kVA, which constitutes a decrease of €2.32/kVA relative to 2017/18. The reduction in PSO charges for customers has increased since the proposed decision on the 2018/19 PSO levy due to an increase in the forecast benchmark price.

Public/Customer Impact Statement

For the year starting 1 October 2018, the CRU has calculated that the PSO Levy will decrease by 56% in total. The new PSO levy rate from 1st of October 2018 to 30th September 2019 is €3.48 per month for domestic customers. This means that each household will pay €4.21 per month less on the PSO charge on their electricity bill than in the current PSO year.

The PSO levy rates from 1st October 2018 to 30th September 2019 for small commercial customers (where MIC <30Kva) is €11.97 per month. This means that each small commercial customer will pay €14.58 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 €1.32 per kVa per month. Medium/Large customer's PSO levy will decrease by €2.32/kVA relative to 2017/18.

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 notes that in recent months most energy suppliers have announced increases in electricity prices, primarily as a result of a higher electricity costs in the wholesale market.

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	Meaning
ACPS	Annual Capacity Payment Sum
AD	Anaerobic Digestion
AER	Alternative Energy Requirement
CfD	Contract for Difference
CHP	Combined Heat and Power
DCCAE	Department of Communications, Climate Action & Environment
DUoS	Distribution Use of System
MIC	Maximum Import Capacity
MWh	Megawatt Hours
PPA	Power Purchase Agreement
PSO	Public Service Agreement
REFIT	Renewable Energy Feed-In-Tariff
SEM	Single Electricity Market
S.I	Statutory Instrument

1. Introduction

1.1 The Commission for Regulation of Utilities

The Commission for Regulation of Utilities (CRU)¹ 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.

1.2 Purpose of this Document

This document explains the Public Service Obligation (PSO) levy to apply to electricity customers in Ireland from 1 October 2018 to 30 September 2019. This follows a proposed decision paper (CRU/18/106) containing the preliminary determination of the PSO levy for the 2018/19 PSO period.

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 used in calculating the PSO levy for 2018/19.

Section 4 – 2018/19 PSO Levy: Gives a high level overview of the 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 – Key Comments Received: Summarises main comments received to the proposed decision paper, along with CRU's responses to these comments.

Section 6 – Cost Breakdown of Levy: Provides a breakdown of the PSO levy in terms of the support schemes and generation technologies that it supports.

Section 7 – Next Steps

¹ Previously known as the Commission for Energy Regulation (CER)

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

Appendix 2 – Lists audited outturn costs for 2016/2017 PSO period.

1.4 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

EU State Aid Notifications and Clearance Decisions

- [State Aid N 553/2001: AER](#)
- [State Aid N 826/2001: AER I-V](#)
- [State Aid N 475/2003: Capacity and Differences Agreements \(CADA\)](#)
- [State Aid N 571/2006: REFIT 1](#)
- [State Aid SA.31236 \(2011/N\): REFIT 2](#)
- [State Aid SA.31861 \(2011/N\): REFIT 3](#)

CRU Papers

- PSO Benchmark Price Setting Methodology Decision Paper ([AIP-SEM-07-431](#))
- Arrangements for the Public Service Obligation Levy ([CER/08/153](#))
- Calculation of the R-factor in determining the PSO levy ([CER/08/236](#))
- Arrangements for the Public Service Obligation Levy – A Decision by the Commission for Energy Regulation ([CER/08/153](#))
- 2017/18 PSO Decision Paper ([CER/17/241](#))
- Decision on Updated Cost Allocation Methodology ([CER/17/073](#))
- Notification to Suppliers- Submissions to the CRU in relation to the 2018/19 PSO Levy ([CRU/18/038](#))
- Notification to Suppliers – Engagement of Auditors Regarding Certification for the PSO Levy ([CER/17/021](#))
- Proposed Decision Paper – Public Service Obligation Levy 2018/19 ([CRU/18/106](#))

2. Background

2.1 Overview of 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)².

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 of this paper for further details. 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 levy collected is passed to ESB Networks and then EirGrid. EirGrid pays out the appropriate PSO amounts to the relevant parties.

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

² 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 Legislation Governing the PSO Levy

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 electricity market players. 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 Notification³ 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. 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.

2.3 Government Schemes Supported by the PSO Levy

The PSO levy is used to fund the following Government electricity support schemes:

- i. Alternative Energy Requirement (AER);
- ii. Peat PSO Support; and
- iii. Renewable Energy Feed in Tariff (REFIT).

³ 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.

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-18-010b) under the revised trading arrangements. For clarity, this SEM model has been applied to the entire PSO period from Oct 2018 to Sept 2019. 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 2018/19 PSO period.

For the purpose of calculating the PSO levy contained in this decision paper, the CRU's forecast benchmark price of €61.17/MWh has been used. The exchange rates and forward fuel and carbon prices used in modelling the 2018/19 PSO period are from the 28 June 2018, with the main determinant of the benchmark price being the forward fuel prices. This benchmark price is higher than the benchmark price of €57.13/MWh used in calculating the proposed PSO levy for 2018/19.

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. The new SEM arrangements are due to commence on the 1 October 2018. In the new SEM (arising from I-SEM implementation), the administratively determined CPM is being replaced by the Capacity Market. Going forward,

capacity providers will only receive capacity payments if they are successful in a Capacity Auction. The first Capacity Auction took place in December 2017. The Final Capacity Auction Results 2018/2019 T-1 are available on the SEMO website⁴. The CRU have used the results of this auction to determine capacity revenue remunerated to generators for the purpose of the 2018/19 PSO calculation.

⁴ [Final Capacity Auction Results 2018/2019 T-1 Capacity Auction](#)

4. 2018/19 PSO Levy

4.1 Total levy cost & generation capacity supported

The total PSO levy for the 2018/19 period, calculated based on the benchmark price and Capacity Payment described in Section 3, is **€209.19** million. A high level breakdown of the 2018/19 PSO levy into its components is shown in Table 1.

Component	Generation capacity supported (MW)	Forecast cost 2018/19 (million)	R-factor 2016/17 (million)	Total PSO support 2018/19 (million)
Renewables	3,835.00	€237.01	-92.22	€144.79
Peat	250.00	€87.75	-22.24	€65.52
Security of Supply	—	—	-0.24	-€0.24
PSO CfDs	—	—	-€0.16	-€0.16
Admin	—	—	—	€0.36
Bord Gáis Energy correction	—	—	—	-€1.09
Total	4,085.00	€324.8	-€114.9	€209.19

Table 1: Breakdown of total PSO levy⁵

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.

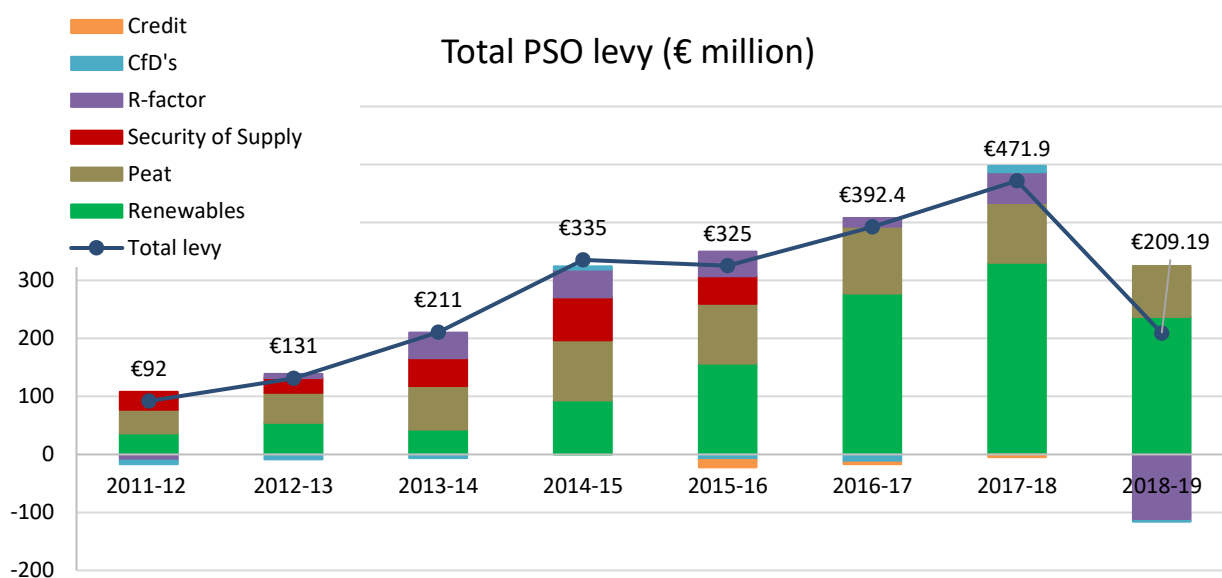


Figure 1: Trend in total PSO levy amount and breakdown by component

⁵ *Additional information regarding Bord Gáis Energy correction is available in section 6.5 of this decision paper.

4.2 Drivers of year on year change

The PSO levy for 2018/19 of €209.19 million represents a decrease of €262.71 million (56%) on the 2017/18 levy of €471.9 million. A number of drivers are contributing to the decrease in the 2018/19 PSO levy, principally the 2016/17 R-factor and the increased benchmark price. Other drivers, including an increase in renewable generation and lower capacity payments are exerting minimal upward pressure on PSO levy.

Downward Drivers on the 2018/19 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 2016/17). This latter calculation is referred to as the “R-factor”.

A 2016/17 R-factor of -€114.9 million is being included in the 2018/19 PSO levy calculation, which accounts for the difference between the costs and revenues estimated for 2016/17 ex-ante and actual costs and revenues for 2016/17 certified ex-post. The negative 2016-17 R-factor (i.e. -€114.9 million) has been the main driver behind the decrease in the 2018/19 PSO levy. This constitutes a decrease of €167.5 million in comparison to the 2017/18 R-factor (€52.6 million).

- ii. Higher Benchmark Price: The forecast benchmark price of €61.17/MWh is higher than the benchmark price of €46.18/MWh used in calculating the 2017/18 PSO levy. This acts to reduce the overall levy by approximately €108.8 million relative to the 2017/18 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 2018/19 PSO Levy:

- i. Increased Renewables: 4,085 MW of mostly renewable will be supported by the 2018/19 PSO levy. This is an increase of 518 MW, or 15% more than 3,567 MW supported in the 2017/18 PSO period.
- ii. Lower Capacity Payments: Due to the introduction of the capacity auction, actual remuneration is now deducted from ex-ante payments to be paid applicable suppliers. As anticipated, the new capacity market has resulted in intermittent generation receiving reduced capacity revenue through the new capacity market.

4.3 Changes since the proposed decision

The final 2018/19 PSO levy of €209.19 million represents a decrease of €49 million relative to the proposed PSO levy of €258.6 million. The main change to the calculation of the PSO levy for 2018/19 since the proposed decision is the benchmark price. The proposed PSO levy was calculated on the basis of a benchmark price of €57.13/MWh. Based on up to date forecasts of the wholesale price of electricity for the 2018/19 PSO period, this benchmark price has been revised to €61.17/MWh for the calculation of the final PSO levy. This has decreased the 2018/19 PSO levy by approximately €47 million relative to the proposed PSO levy for this period. The remaining decrease in the total levy is due to further review of suppliers' submission and the inclusion of a rebate due to the PSO for the 2018/19 period (see section 6.5).

4.4 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 2018/19 PSO calculation. The proportion of the PSO levy of €209.19 million to be allocated to each of the three customer categories are presented in Table 2, these are the costs for the levy period 1 October 2018 to 30 September 2019.

PSO Customer Category	Monthly Levy Amount (2017/18)	Monthly Levy Amount (2018/19)	% Change year on year
Domestic	€7.69 / customer	€3.48 / customer	-55%
Small commercial (MIC < 30 kVA)	€26.55 / customer	€11.97 / customer	-55%
Medium/Large commercial (MIC ≥ 30 kVA)	€3.64 / customer	€1.32 / customer	-64%

Table 2: Cost of 2018/19 PSO levy by customer category

One of the factors influencing the scale of the percentage decrease in the 2018/19 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 2018/19, the updated forecast demand data resulted in an increased percentage allocation (1.54%) of the total PSO levy to Domestic Customers (i.e. in 2017/18 domestic customers accounted for 40.23% of peak demand, compared to 41.77% in the 2018/19 PSO period), thereby lessening their reduction in the PSO levy relative to other customer categories.
- **Small Commercial Customers:** For 2018/19, the updated forecast demand data resulted in an increased percentage allocation (i.e. 0.37%) of the total PSO levy to Small Commercial Customers (i.e. in 2017/18 Small Commercial Customers accounted for 11.46% of peak demand, compared to 11.83% in the 2018/19 PSO period), thereby decreasing their reduction in the PSO levy relative to Medium/Large customers.
- **Medium & Large Commercial Customers:** For 2018/19, the updated forecast demand data resulted in a decreased percentage allocation (1.9%) of the total PSO levy to Medium & Large Customers (i.e. in 2017/18 Medium & Large Customers accounted for 48.31% of peak demand, compared to 46.41% in the 2018/19 PSO period), thereby increasing 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 2018/19. 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 Network's model, the number of Domestic Customers has increase by 1.8% and the number of Small Commercial customers has also increased by 1.5%. The Medium and Large customer category saw the largest growth, with non-domestic MIC increasing by 17.8%. This increase has resulted in a higher year on year percentage decrease in the PSO levy (kVA) compared with the other PSO customer categories. Further detail on the calculation of the cost allocation is provided in Appendix 1.

5. Key Comments Received

This section provides a summary of public responses received to the proposed decision on the 2018/19 PSO levy (CRU/18/106), along with CRU responses to the key points made.

5.1 List of respondents

Respondents to the CRU's proposed decision on the 2018/19 PSO levy are listed in the table below. One confidential response was also received, which is not included in this list.

1) Aughinish Alumina Limited	3) Irish Wind Energy Association
2) Energia	4) Society of St Vincent de Paul

5.2 Key comments and CRU responses

5.2.1 Economic and Social Impact

One respondent welcomed the decrease in the 2018/19 proposed PSO decision, however noted that in the last six months nearly all energy suppliers have increased their tariffs as a result of increasing wholesale prices. From a social perspective, the respondent expressed concern over the impact of such increases for people living in poverty. Another respondent stated that the PSO levy is an additional cost of doing business in Ireland, which cannot be passed on to customers. The respondent observed that the ability to compete in the international market is being negatively impacted by indirect costs such as the PSO.

CRU's response

The CRU notes the correlation between the decrease in the PSO levy and the increase in the wholesale market prices, so although a decrease in the PSO levy will reduce the fixed charge element on electricity bills, the variable charge 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

In relation to the impact of the PSO levy on Ireland's competitiveness, the CRU notes that the PSO levy has been designed by Government to achieve overall policy objectives related to renewable energy and security of supply through the use of indigenous fuels. The CRU's role in relation to the PSO is to calculate the PSO levy in accordance with the governing legislation (see Section 2.2) and to help ensure that the calculation is administered efficiently. The CRU

does not have a role in policy making with respect to the PSO levy. The CRU is therefore not in a position to abolish / reduce or change the PSO levy.

5.2.2 Public awareness and engagement with Government

One respondent raised concerns over a lack of public awareness of the PSO levy, specifically how the PSO is an essential tool needed to drive growth in renewable energy and help meet Ireland's EU 2020 renewable targets. The respondent also stated that there is an inverse correlation between the amount of renewable energy and the wholesale price of electricity and requested that CRU highlight the critical importance of renewable energy. The respondent also requested that the CRU take a more proactive approach to explaining the purpose of the PSO levy to consumers.

CRU's response

The CRU's role in relation to the PSO is to calculate the PSO levy in accordance with the governing legislation. In terms of explaining the PSO to the public, the CRU publishes, on an annual basis, its proposed decision paper regarding the PSO levy for the forthcoming period available. The CRU also participates in forums (e.g. Consumer Stakeholder Forum) to explain rationale for the PSO levy.

5.2.3 Renewable energy policy and design of support schemes

One respondent stated that despite High Efficiency CHP contributing to a reduction in CO2 omissions, this technology currently receives no support under the PSO levy. The respondent observed that current PSO policy regarding HE CHP does not recognise the benefits of HE CHP, and therefore is a barrier to further HE CHP installation in Ireland. Additionally the respondent noted the current calculation for the PSO levy charges is based on the MIC, and that the PSO calculation does not reflect actual consumption. The respondent was of the view that this methodology is unfair as many business (who own their own generator) do not utilise its full MIC and may only use it on rare occasions such as outages and maintenance.

CRU's response

The CRU does not have the mandate to decide on the specific types of generation being supported under the PSO. The design of the support schemes funded by the PSO levy and the specific types of generation supported are determined directly by government. The legislation governing the PSO dictates that the CRU allocate the PSO levy on the basis of kVA of MIC for medium/large customers. This applies irrespective of CHP use or of usage profile. Specifically, the Electricity Regulation Act 1999 (Public Service Obligations) Order 2002, states that:

“The Commission shall make a final determination of [...] 22 (v) the PSO Levy amount per electricity account for Domestic Accounts and Small Accounts and the PSO Levy charge per kVA of maximum import capacity for Medium-Large Accounts”

5.2.4 PSO cost allocation methodology

One respondent observed that the percentage allocation of total PSO levy to domestic customers is proposed to increase, while the other categories (small non-domestic and medium/large non domestic) decreased. The respondent called upon policymakers to look at spreading the burden of risk more evenly between electricity customers and called for a review of the application of the PSO levy to low income families.

CRU's response

The CRU notes that the decrease in the monthly charge for domestic customers is less than that of the medium/large non domestic customer. This is due to the PSO cost allocation methodology and is a result of an increase percentage of peak demand accounted for by domestic customers relative to the other customer categories. The second factor contributing to this variation is the number of domestic customers. According to ESB Network's model the number of domestic customers has increased marginally (1.8%) when compared with the medium and large non domestic category with non-domestic MIC increasing 18%. This resulted in a lower year on year decrease for domestic customers.

In terms of the social impact of the PSO levy on low income households in particular and of the recognition of “people's ability to pay”, the CRU notes that the allocation of the PSO levy to domestic and small commercial customers on a per customer basis is prescribed in legislation “The amount of levy to be imposed on each electricity account in respect of a levy period shall be computed- in the case of a Domestic Account by dividing the amount of the levy attributed to that category of accounts in accordance with section 39 (5A) by the number of electricity accounts certified by the distribution system operator as falling within that category;”.

The review or amendment of this legislation is outside the remit of the CRU and is a policy matter for the relevant Minister.

5.2.5 PSO volatility and future direction of PSO Levy.

One responded noted that the ex-ante nature of the PSO levy presents an inherent risk for suppliers and customers, particularly at times of wholesale price volatility. The respondent noted

that a difference between the forecast price and actual outturn SMP can result in either a significant cash flow for the supplier, where forecast prices are too high (ex-ante payments will be low) or where forecasts are too low (the PSO levy charge will be high). The respondent observes that the fact that the R-factor correction is only applied two years after the relevant PSO period also adds to volatility.

Whilst acknowledging that a forecast is only an estimate the respondent suggested that SMP forecast is calculated as late as possible to secure the most up to date data is captured. The respondent also suggested that the CRU utilise an average or rolling average of inputs as the basis for the forecast particularly when prices are volatile.

CRU's response

The CRU acknowledges that the wholesale price and the forecast benchmark of electricity is central to the calculation of the PSO levy. The benchmark price is currently calculated using an average of the forecast wholesale market price of electricity over the PSO period. The CRU is currently updating its R-factor methodology in accordance with the new SEM arrangements. The CRU will consider issues associated with the benchmark price in its forthcoming consultation on its arrangements for the valuation of the PSO levy.

6. Cost breakdown of levy

6.1 Overview of support schemes

The CRU received 63 supplier submissions for the 2018/19 PSO levy period, which contained 268 generation projects. As detailed in Section 2, the PSO covers various subsidy schemes designed by the Irish Government. Table 3 provides a breakdown by support scheme and technology type of the capacity supported and the ex-ante cost estimates covered under the levy for 2018/19. The individual support schemes will be discussed in more detail in the sections that follow.

Table 3: Breakdown of ex-ante PSO payment and capacity supported for 2018/19 by support scheme and technology type.

Support Scheme & Technology	Indicative support rates (€ / MWh)	Total Ex-ante PSO payment for 2018/19 (€ million)	Capacity supported in 2018/19 (MW)	Capacity supported in 2017/18 (MW)	% Change in Capacity
AER					
Wind	46.00	-0.83	29.8	31.1	-4%
Sub-total		-0.83	29.8	31.1	
Peat					
Lough Ree	—	40.89	100.0	100.0	0%
West Offaly	—	46.85	150.0	150.0	0%
Sub-total		87.75	250.0	250.0	
REFIT 1					
Biomass	89.04	2.48	18.2	18.2	0%
Hydro	89.04	0.17	1.6	1.6	0%
Landfill	86.57	2.74	17.6	17.6	0%
Large Wind	70.49	67.22	1223.1	1222.2	0%
Small Wind	72.96	9.17	145.2	145.2	0%
Sub-total		81.77	1405.68	1404.78	
REFIT 2					
Hydro	89.04	0.29	1.2	1.2	0%
Landfill	86.57	3.56	15.5	11.8	31%
Large Wind	70.49	101.41	2036.2	1660.4	23%
Small Wind	72.96	7.57	130.1	108.7	20%
Sub-total		112.83	2183.01	1782.14	
REFIT 3					
AD CHP > 500 kWe	138.11	2.74	11.1	2.0	453%
AD CHP ≤ 500 kWe	159.35	5.01	6.1	5.7	7%
Biomass CHP <1500 kWe	148.72	0.77	4.0	0.0	N/A
Other Biomass Combustion	90.30	34.72	195.3	89.9	117%
Biomass Energy Crops	100.92		0.0	1.4	-100%
Sub-total		43.2	216.5	99.0	
Total REFIT		237.8	3,805	3,286	16%
Total	—	324.8	4,085	3,567	15%

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 for the 2018/19 PSO period for the AER schemes is -€829,000.

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 4.

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

Table 4: 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 for the 2018/19 PSO period for the REFIT schemes is €237.8 million. This represents a decrease of €85.4 million (26%) on the €323.2 million support for these contracts included in the 2017/18 PSO levy period. The corresponding increase in REFIT generation capacity supported under the PSO is 519 MW (16%), from 3,286 MW in 2017/18 to 3,805 MW in 2018/19.

Peat

There are now 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 continue until the end of 2019. Their combined capacity is 250MW and the ex-ante amounts included in the 2018/19 PSO levy are €40.89 million and €46.85 million respectively, giving a combined total of €87.75 million. This compares with a total of €103.4 million of support for electricity generated from peat in 2017/18.

Summary of support schemes

The breakdown by technology of total ex-ante PSO cost and generation supported under the 2018/19 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.

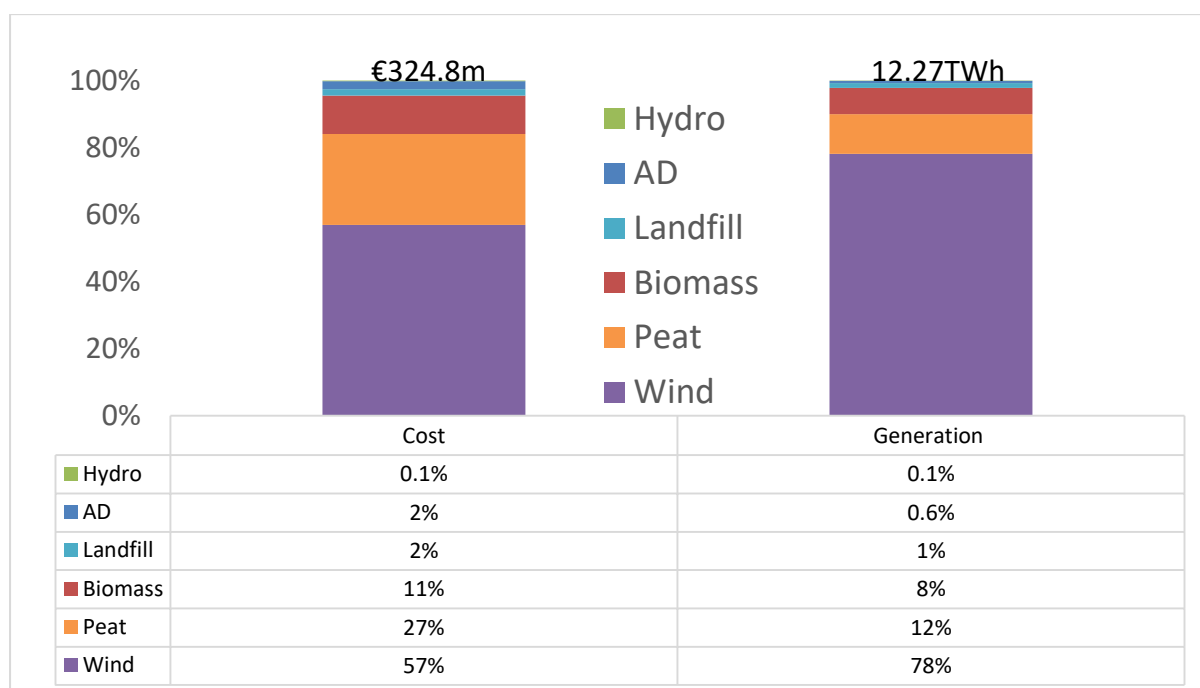


Figure 2: Breakdown of ex-ante cost & generation supported by technology type under 2018/19 PSO levy.

6.2. Publication of individual payments

The CRU stated its intention to publish actual outturn payments made in respect of individual generators and suppliers for the PSO year for which the R-factor applies in the “Notification to Supplier Submissions to the CRU in relation to the 2018/19 PSO Levy” (CRU/18/038).

For the 2018/19 PSO period therefore, the CRU have collated and published the actual amounts paid in respect of each generator and supplier for the 2016/17 PSO years. These actual amounts are the audited outturn costs submitted by suppliers, for the 2016/17 PSO year, as part of suppliers 2018/19 PSO submissions. The list of payments are provided in Appendix 2.

6.3. R-factor

The ex-ante estimate of costs associated with each of these schemes for 2018/19 constitutes the main part of the total PSO levy. In addition however, the settlement of the ex-ante estimate component of the 2016/17 PSO levy, based on actual outturn costs and market revenues, must be included. The 2016/17 R-factor, included in the 2018/19 PSO levy, accounts for the difference between the costs and revenues estimated for 2016/17 ex-ante and the actual costs and revenues for 2016/17 certified ex-post. Further detail on the methodology used in calculating the R-factor can be found in CER/08/026.

A negative R-factor of €114.9 million has been included in the calculation of the 2018/19 PSO levy, due to an over-recovery of monies in the 2016/17 PSO period. The breakdown of the R-factor by support scheme is shown in Table 5.

Component	R-factor 2015/16 (€ million)
REFIT	-90.37
AER	-1.85
Peat	-€22.2
Security of Supply	-0.24
PSO CfDs	-0.16
Total	-114.9

Table 5: Breakdown of 2015/16 R-factor

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 PSO supported plant for 2016/17 was 12% lower than the estimate generation submitted for the period. This over estimation of generation resulted in an over

recovery of revenues through the 2016/17 ex-ante payment and will be remedied through the R-factor.

The second key component of the R-factor is due to a higher average outturn SMP of €49.89/MWh in 2016/17 PSO period, compared to the ex-ante benchmark price of €43.26/MWh. The benchmark price for 2016/17 was based on a series of forecast commodity prices, and ran using the SEM PLEXOS model. These forecast prices included gas, coal and carbon prices. Comparing the 2016/17 forecast prices to actual outturn prices, the CRU observed an increase in actual commodity prices. This increase has contributed to a higher average outturn SMP for the 2016/17 period. This higher outturn resulted in PSO plants receiving more market revenue than anticipated.

The underestimation of the 2016/17 benchmark price (relative to the outturn price) resulted in an over recovery of revenues through the 2016/17 ex-ante payment and will be remedied through the R-Factor.

6.4. 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 generation, backed by the PSO levy. The total difference payment resulting from these CFDs is €160,000 due back to the PSO levy. This reflects an outturn SMP for the 2016/17 period which was lower on average than the strike price

6.5. Bord Gáis Energy Rebate

Errors were identified within Bord Gáis Energy historical PSO cost submissions, which resulted in Bord Gáis Energy over-stating their actual PSO costs. These errors have been reviewed by the CRU, which has resulted in a rebate due to the PSO levy fund of €1.09 million. This over recovery of PSO levy by Bord Gáis Energy will be deducted from the PSO payment due to be paid to Bord Gáis Energy in 2018/19. The rebate due, €1.09 million is inclusive of Euribor annual interest payments to account for the present value of monies due since 2009.

6.6. Bad Debt in the PSO levy

On 11 December 2017, a Liquidator was appointed to supplier (i.e. Aughrim Power Supply) who participated in the REFIT scheme. Aughrim Power Supply are 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

amounts to €695,091 inclusive of Euribor annual interest. While some or all monies may be recovered through the liquidation process, the outstanding payment due to the PSO for 2018/19 (i.e. the 2016/17 R-factor of €695,091) will be considered bad debt in the interim.

The CRU is currently examining options to mitigating the risk of bad debt to the PSO, and in May 2018 published a consultation paper on this matter (i.e. CRU/18/092)⁶. The CRU's consultation paper identified a number of options for mitigating the risk of bad debt, including the CRU's preferred option, a PSO Withholding Mechanism. Under this option, PSO payments would be withheld from suppliers in respect of all generation projects that have not yet reached a defined operational milestone, which indicates that the generation project is nearing completion/commercial export. The CRU intends publishing a decision paper on the approach it will take to mitigating the risk of bad debt to the PSO in Q3 2018.

6.7. Review of PSO Arrangements

The CRU is currently reviewing its arrangements for the calculation of the PSO levy. As part of this review, the CRU will be updating:

- CER/17/021 “Engagement of Auditors Regarding Certification for the PSO Levy”; and
- CER/08/236 “Calculation of the R-factor in determining the Public Service Obligation Levy”

The CRU intends providing additional clarity on the arrangements for calculation of the PSO levy under the revised SEM arrangements (arising from I-SEM implementation), while also clarifying the information that the CRU will require in a supplier's auditor certificate in order to reduce the risk of potential errors in supplier's PSO cost submissions.

⁶[Addressing the risk of Bad Debt in the PSO levy \(CRU/18/092\)](#)

7. Next Steps

The PSO levy charges, as set out in Section 4.4 and Appendix 1 of this decision paper, are to be applied to the electricity bills of all customers by their electricity suppliers for the period of 1 October 2018 to September 2019.

The 2018/19 PSO payments will only be made in respect of generation projects that have been included in the calculation of the PSO levy as published in this decision paper and that are listed in the forthcoming S.I amending the 2002 PSO Order. Between the publication of this decision paper and the issuance of the S.I., the CRU will continue to liaise with the DCCAE regarding eligibility of REFIT projects for inclusion in the 2018/19 PSO levy.

Appendix 1 Allocation of 2018/19 PSO Levy

Allocating 2018/19 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 € per Cust €/kVA		Monthly Charge Monthly €	Monthly Charge
Domestic Profile	2,317,402	41.77%	87.37	2,094,909		41.71		3.48	€ per Customer
Small Profile	656,163	11.83%	24.74	172,267		143.61		11.97	€ per Customer
ie. non-domestic (excl PL) <30kVA									
Medium & Large Profile	2,574,842	46.41%	97.08		6,148,646		15.79	1.32	€/kVA
TOTAL	5,548,407	100.00%	209.19						

Number of months to recover charge

12

Appendix 2 2016/17 PSO Outturn Cost

As per [CRU/18/038](#) and [CRU/18/106](#), the CRU is publishing a list of actual outturn payments made in respect of individual generators and suppliers for the 2016/17 PSO period. The stated costs, as detailed below, do not include the 2018/19 R-factor or ex-ante payments.

For clarity, under REFIT, the associated payments are made to electricity *supply companies* and the indirect beneficiaries of the grant aid are the renewable generators (i.e. the REFIT payment is made to the electricity supplier and is passed on to the electricity generator under the terms of the PPA between the supplier and the generator).

	Supplier name	Generator name	Total REFIT cost for 16/17
1	Bearna Gaoithe Power Supply Ltd	Bearna Gaoithe Teoranta	€ 88,130.75
2	Bord Gais Energy Ltd	Jaroma Windfarm Ltd	€ 141,433.53
3	Bord Gais Energy Ltd	Highland Wind Energy	€ 233,873.10
4	Bord Gais Energy Ltd	Dublin City Council	€ 2,988.00
5	Bord Gais Energy Ltd	Rahora Windfarm Ltd	€ 253,154.86
6	Bord Gais Energy Ltd	Reenascreena Windfarm Ltd	€ 250,659.84
7	Bord Gais Energy Ltd	Cuillalea Windfarm Ltd	€ 101,168.10
8	Bord Gais Energy Ltd	Cronelea Windfarm Ltd	€ 191,824.58
9	Bord Gais Energy Ltd	Sunflower Design Ltd	€ 116,650.52
10	Bord Gais Energy Ltd	Derrynadivva Windfarm Ltd	€ 337,752.29
11	Bord Gais Energy Ltd	Adeery Hydro	€ 19,788.84
12	Bord Gais Energy Ltd	Menard Limited	€ 263,739.26
13	Bord Gais Energy Ltd	Templederry Windfarm Ltd	€ 257,135.80

14	Bord Gais Energy Ltd	Sigatoka Ltd	€ 444,947.41
15	Bord Gais Energy Ltd	Fairbourne Commercial Limited	€ 246,167.46
16	Bord Gais Energy Ltd	Monaincha Wind Farm Ltd	€ 2,569,981.00
17	Bord Gais Energy Ltd	Acres Energy Ltd	€ 1,502,152.00
18	Bord Gais Energy Ltd	Barranfaddock Sustainable Electricity Ltd	€ 2,306,068.05
19	Bord Gais Energy Ltd	Gallia Commercial Limited	€ 226,569.76
20	Bord Gais Energy Ltd	Old Mill Wind Limited	€ 1,323,286.73
21	Bord Gais Energy Ltd	McDonnell Farms Biogas Limited	€ 329,532.00
22	BRI Green Energy Ltd	Inchincoosh Wind Farm Ltd - Inchincoosh generator unit	€ 2,555,041.14
23	BRI Green Energy Ltd	Inchincoosh Wind Farm Ltd - Sillatherane generator unit	€ 722,487.00
24	BRI Green Energy Ltd	Inish Wind Ltd	€ 430,815.21
25	BRI Green Energy Ltd	Lisheen Windfarm Ltd	€ 2,738,240.76
26	BRI Green Energy Ltd	Garracummar Windfarm Ltd	€ 3,695,347.87
27	BRI Green Energy Ltd	Knockacummar Wind Farm Ltd	€ 5,418,069.04
28	BRI Green Energy Ltd	Sorne Wind Ltd	€ 1,992,959.84
29	BRI Green Energy Ltd	Sorne Wind Ltd	€ 436,553.11
30	BRI Green Energy Ltd	Ballymartin Windfarm Ltd	€ 492,224.78
31	BRI Green Energy Ltd	Lisheen Wind Farm 2 Ltd	€ 1,853,307.07

32	BRI Green Energy Ltd	BW2 Wind Farm Ltd	€ 992,439.45
33	BRI Green Energy Ltd	Kill hills Windfarm	€ 2,487,956.21
34	BRI Green Energy Ltd	Smithstown Windfarm Ltd	€ 689,886.64
35	Burren Energy Supply Limited	Knocknagoum Windfarm Limited	€ 3,508,787.40
36	Burren Energy Supply Limited	Knocknagoum Windfarm Limited	€ 143,128.05
37	Castledockrell Supply Ltd	Castledockrell Windgroup Ltd	€ 2,632,774.97
38	Dunman Energy Supply Limited	Killaveenoge Windfarm Limited	€ 672,680.77
39	Dunmore Power Supply Limited	Dunmore Wind Power Limited	€ 49,196.44
40	Dunmore Power Supply Limited	Collon Wind Power limited	€ 109,506.89
41	Edenderry Supply Company Limited	Edenderry Power Ltd	€ 14,591,604.00
42	Bruckana Supply Company Limited	Bruckana Supply Company Limited	€ 3,015,843.00
43	Dublin Waste To Energy Supply Limited	Dublin Waste To Energy Limited	€ 946,647.49
44	Gaelectric Energy Marketing and Supply Limited	Knocknagashel Windfarm Limited	€ 2,683,764.64
45	Glencarbry Energy Supply Company Limited	Glencarbry Windfarm Limited	€ 817,125.39
46	ESBIE T/A Electric Ireland Ltd	Mountain Lodge Power Ltd	€ 1,818,367.00
47	ESBIE T/A Electric Ireland Ltd	Mountain Lodge Power Ltd	€ 426,730.00
48	ESBIE T/A Electric Ireland Ltd	SWS Knockawarraiga Windfarm Ltd	€ 1,713,474.00
49	ESBIE T/A Electric Ireland Ltd	Garvagh Glebe Power Ltd	€ 1,721,407.00

50	ESBIE T/A Electric Ireland Ltd	Hibernian Wind power	€ 1,164,486.00
51	ESBIE T/A Electric Ireland Ltd	Hibernian Wind power	€ 1,176,674.00
52	ESBIE T/A Electric Ireland Ltd	Gortadroma	€ 250,822.00
53	ESBIE T/A Electric Ireland Ltd	Edrans Wind Ltd	€ 276,670.00
54	ESBIE T/A Electric Ireland Ltd	Woodhouse Windfarm Ltd	€ 1,423,019.00
55	ESBIE T/A Electric Ireland Ltd	Raheenleagh Power Windfarm	€ 3,494,875.00
56	ESBIE T/A Electric Ireland Ltd	ESB (Moneypoint)	€ 499,065.00
57	ESBIE T/A Electric Ireland Ltd	Cappawhite Wind Limited	€ 72,609.00
58	GAEL Force Power Ltd.	Gairdini	€ 2,196.00
59	GAEL Force Power Ltd.	W.E.D Cross Energy Ltd.	€ 57,525.00
60	Indaver Energy	Indaver Ireland Ltd	€ 2,637,099.63
61	Killowen Biogas Limited	Ormonde Organics Limited	€ 459,551.51
62	Killowen Biogas Limited	Ormonde Organics Limited	€ 460,594.33
63	Lantanier Limited	Janssen Biologics (Ireland)	€ 71,768.77
64	Lantanier Limited	DePuy(Ireland)	€ 25,126.23
65	LGLP Energy Supply Limited	Coirna Gaoithe Teoranta	€ 3,630,208.64
66	Panda Power Limited	Michael Alyward Windfarm Limited	€ 111,661.00
67	Sliabh Bawn Supply DAC	Sliabh Bawn Power DAC	€ 2,567,566.00

68	Slieveveagh Power (CS) Ltd	Slieveveagh Power Ltd	€ 234,961.00
69	Slieveveagh Power (CS) Ltd	Slieveveagh Power Ltd	€ 20,026.00
70	Slieveveagh Power (CS) Ltd	Slieveveagh Power Ltd	€ 230,980.00
71	SSE Airtricity	Bioverda Power Systems Limited	€ 922,275.00
72	SSE Airtricity	March Winds Limited	€ 2,225,742.20
73	SSE Airtricity	Tornado Electrical Limited	€ 102,674.00
74	SSE Airtricity	Bindoo Windfarm (ROI) Limited	€ 3,009,653.00
75	SSE Airtricity	Green Energy Company Limited	€ 4,378,981.00
76	SSE Airtricity	Carrig Wind Farm Limited	€ 139,488.00
77	SSE Airtricity	Carrons Windfarm Limited	€ 238,944.00
78	SSE Airtricity	Coomacheo Wind Farm Limited	€ 3,123,525.00
79	SSE Airtricity	Curragh Mountain Windfarm Limited	€ 1,588,085.00
80	SSE Airtricity	Dromada Windfarm (ROI) Limited	€ 2,205,189.00
81	SSE Airtricity	Brickmount Limited	€ 812,925.00
82	SSE Airtricity	A.C. Brosna Properties Limited t/a Brosna Hydro Energy	€ 10,778.00
83	SSE Airtricity	Everwind Limited	€ 679,245.00
84	SSE Airtricity	Kerry Power Limited	€ 247,603.00
85	SSE Airtricity	Midas Energy Limited	€ 1,019,177.00

86	SSE Airtricity	Knockastanna Limited	€ 353,957.00
87	SSE Airtricity	Greenstar Gas Energy (Meath) Limited	€ 267,560.00
88	SSE Airtricity	Greenstar Gas Energy Limited	€ 202,692.00
89	SSE Airtricity	Western Power Limited	€ 275,658.00
90	SSE Airtricity	Mahon Hydro Limited	€ 44,536.00
91	SSE Airtricity	Meenacloghspar Limited	€ 54,206.00
92	SSE Airtricity	Meentycat Limited	€ 1,332,261.00
93	SSE Airtricity	Mullananalt Windfarm (ROI) Limited	€ 352,450.00
94	SSE Airtricity	Limerick West Wind Farm Limited	€ 1,317,259.00
95	SSE Airtricity	Redwind Energy Phase III Limited	€ 174,799.00
96	SSE Airtricity	Richfield Windfarm (ROI) Limited	€ 1,842,342.00
97	SSE Airtricity	Skehanagh Wind Farm Limited	€ 223,210.00
98	SSE Airtricity	Tournafulla Windfarm (ROI) Limited	€ 345,509.00
99	SSE Airtricity	Tournafulla Windfarm (ROI) Limited	€ 1,192,423.00
100	SSE Airtricity	Comhlacht Gaoithe Teoranta	€ 2,026,397.00
101	Templederry Renewable Energy Supply Ltd	Stradbally Hall Promtions Ltd	€ 1,204.45
102	Templederry Renewable Energy Supply Ltd	South Tipperary County Council	€ 100.82
103	Templederry Renewable Energy Supply Ltd	Salvaged Energy Ltd	€ 8,140.59

104	Templederry Renewable Energy Supply Ltd	Athgarvan Grain Company	€ 76.79
105	Vayu Ltd	Greenstar Gas Energy	€ 160,331.39
106	Vayu Ltd	Greenstar Gas Energy	€ 192,838.96
107	Vayu Ltd	Knocknalour Wind Farm	€ 183,038.21
108	Vayu Ltd	Carrownaweelaun Energy Limited	€ 235,628.78
109	Vayu Ltd	Carrickeeny Wind Limited	€ 389,464.58
110	Vayu Ltd	Starus Landfill Gas	€ 332,199.80
111	Vayu Ltd	Gilmore and Clarke Electricial Limited	€ 47,845.10
112	Vayu Ltd	Bord Na Mona Environmental Limited	€ 1,151,251.79
113	Vayu Ltd	Louth County Council (Whiteriver)	€ 92,563.14
114	Vayu Ltd	Devine and Associates Derrinnumera Ltd	€ 5,832.04
115	Vayu Ltd	Starrus Landfill Gas	€ 549,580.37
116	Vayu Ltd	Cork City Council t/a KRLF Power	€ 90,982.16
117	Vayu Ltd	Portfinch Limited (Beale Hill) Ltd	€ 80,003.72
118	Vayu Ltd	Kilmeedy Windfarm Ltd	€ 255,169.85
119	Vayu Ltd	Lisdowney Wind Farm Ltd	€ 480,310.13
120	Vayu Ltd	Regan Wind Ltd.	€ 227,436.94
121	Vayu Ltd	METRO ENERGY LIMITED	€ 153,406.71

122	Vayu Ltd	Tullabrack Energy Ltd.	€ 142,928.12
123	Vayu Ltd	Green Generation Limited	€ 728,222.45
124	Vayu Ltd	Ballyshannon Recycling	€ 52,146.65
125	Vayu Ltd	Carrons Wind Farm Ltd.	€ 221,932.28
126	Viridian Energy Ltd	Caherciveen Wind Ltd	€ 386,636.08
127	Viridian Energy Ltd	Ballynancoran Wind Farm Ltd	€ 248,335.37
128	Viridian Energy Ltd	Shannagh Wind Farm Ltd	€ 149,290.03
129	Viridian Energy Ltd	I.Q. Wind Ltd	€ 93,383.36
130	Viridian Energy Ltd	Plukanes Windfarm Ltd	€ 42,904.57
131	Viridian Energy Ltd	Caher Downey Wind Farm Ltd	€ 431,638.42
132	Viridian Energy Ltd	Venti Windfarm Energy Ltd	€ 105,996.53
133	Viridian Energy Ltd	Reirk Energy Ltd	€ 383,209.40
134	Viridian Energy Ltd	Clydaghroe Windfarm Ltd	€ 296,398.36
135	Viridian Energy Ltd	Tullynamoyle Windfarm Ltd	€ 240,197.95
136	Viridian Energy Ltd	Ballaman Windfarm Ltd	€ 233,261.32
137	Viridian Energy Ltd	B9 Power Ltd	€ 43,262.60
138	Viridian Energy Ltd	Windfarm Management Ltd	€ 388,194.49
139	Viridian Energy Ltd	Arthur Davidson	€ 14,162.58

140	Viridian Energy Ltd	Ballycadden Windfarm Ltd	€ 1,016,252.71
141	Viridian Energy Ltd	Reirk Energy Ltd	€ 245,002.73
142	Viridian Energy Ltd	Pallas Windfarm Ltd	€ 2,355,163.35
143	Viridian Energy Ltd	Corkermore Windfarm Ltd	€ 334,735.03
144	Viridian Energy Ltd	Ballybane Windfarms Ltd	€ 1,736,532.12
145	Viridian Energy Ltd	Carrigcannon Wind Farm Ltd	€ 1,123,030.92
146	Viridian Energy Ltd	Mount Eagle Windfarm Ltd	€ 101,128.33
147	Viridian Energy Ltd	North West Wind Ltd	€ 395,501.06
148	Viridian Energy Ltd	Airoshin Wind Energy Ltd	€ 1,350,159.95
149	Viridian Energy Ltd	Bawnmore Windfarm Ltd	€ 1,848,399.55
150	Viridian Energy Ltd	Lackan Wind energy Ltd	€ 318,730.37
151	Viridian Energy Ltd	Muingnaminnane windfarms Lrd	€ 917,807.34
152	Viridian Energy Ltd	North Tipperary Windpower Ltd	€ 138,035.60
153	Viridian Energy Ltd	Killybegs Wind Power Ltd	€ 146,958.96
154	Viridian Energy Ltd	Holyford Windfarm Ltd	€ 520,105.18
155	Viridian Energy Ltd	Sheeragh Wind Ltd	€ 277,299.91
156	Viridian Energy Ltd	Gortahile Windfarm Limited	€ 1,711,858.90
157	Viridian Energy Ltd	Glenough Windfarm Limited	€ 2,591,290.79

158	Viridian Energy Ltd	Tra Investments Ltd	€ 869,803.59
159	Viridian Energy Ltd	Powercon Wind Energy Ltd	€ 2,620,838.68
160	Viridian Energy Ltd	West Clare Windfarm (Services) Ltd	€ 215,636.32
161	Viridian Energy Ltd	Glackmore Wind Power Ltd	€ 144,206.82
162	Viridian Energy Ltd	Knocknalour Wind Farm Ltd	€ 211,941.39
163	Viridian Energy Ltd	Wexwind Ltd	€ 1,307,327.00
164	Viridian Energy Ltd	Rathnameneenagh Energy Ltd	€ 321,117.93
165	Viridian Energy Ltd	Faughary Wind Farm Limited	€ 403,119.87
166	Viridian Energy Ltd	Ballybane Windfarms Limited	€ 1,020,816.10
167	Viridian Energy Ltd	Ballycadden Windfarm Ltd	€ 647,372.88
168	Viridian Energy Ltd	Ballybane Windfarms Limited	€ 174,507.08
169	Viridian Energy Ltd	Windgeneration Ireland Limited (1)	€ 3,256,202.58
170	Viridian Energy Ltd	Windgeneration Ireland Limited (2)	€ 173,133.69
171	DWL Energy Supply Limited	Green Energy Supply Ltd	€ 5,518,160.85
172	Mount Lucas Supply Limited	Mount Lucas Supply Limited	€ 6,244,250.00
			€169,236,331