



NETWORKS

ESB Networks

New update to the PSO Levy Allocation Methodology

Version 1.3
March 2017

Table of Contents

1.0	Related Documents	3
2.0	Summary	3
3.0	Legal Basis	3
4.0	Regulatory Requirement	4
5.0	PSO Levy Allocation	4
6.0	Standard Load Profiles.....	4
7.0	Associated DUoS Tariff Groups	5
8.0	PSO Levy Allocation Methodology – Current and New Updated	5
8.1	Current Allocation Methodology	5
8.1.1	Domestic Accounts.....	5
8.1.2	Small Accounts.....	6
8.1.3	Medium-Large Accounts	6
8.1.4	Apportionment of PSO Levy	6
8.2	Update to Allocation Methodology	7
8.2.1	Domestic Accounts.....	8
8.2.2	Small Accounts.....	8
8.2.3	Medium-Large Accounts	8
8.2.4	Apportionment of the PSO Levy	9
9.0	Charging Mechanism	9
10.0	Summary of Change to Allocation Methodology.....	10

1.0 Related Documents

Electricity Regulation Act 1999

<http://www.irishstatutebook.ie/1999/en/act/pub/0023/index.html>

S.I. No. 217 of 2002 - Electricity Regulation Act 1999 (Public Service Obligations) Order 2002 as amended

<http://www.irishstatutebook.ie/2002/en/si/0217.html>

CER Direction 2003

<http://www.cer.ie/document-detail/PSO-Invoicing-and-Collection-Procedures/753/4609>

SUSTAINABLE ENERGY ACT, 2002

<http://www.irishstatutebook.ie/2002/en/act/pub/0002/>

2.0 Summary

The Commission for Energy Regulation (CER) has requested ESB Networks to review the current allocation methodology of the Public Service Obligation (PSO) levy to investigate whether the methodology can be improved using information available to ESB Networks. This document sets out the current methodology, new updated methodology and the differences between both.

The new update to the cost allocation methodology relates to the method of calculating the demand peak attributable to the Medium-Large account category. The current methodology determines this by subtracting the Domestic and Small account load profile data from the Total System Demand profile data and taking the peak of the residual data. The Medium-Large account demand peak is therefore determined indirectly. At the time that this methodology was put in place, load profile data was not available for Medium-Large accounts. This data is now available however and the new methodology would use load profile data for Medium-Large accounts to calculate the demand peak directly. This is a more accurate method of determining the peak demand associated with the Medium-Large account category and has therefore been identified by ESNB as an improvement to the existing methodology, which can now be made as the required data has become available.

3.0 Legal Basis

The current methodology is in compliance with the governing legislation which, *inter alia*, stipulates¹ that the PSO levy is allocated among three customer

¹ S.I. No. 217/2002 - Electricity Regulation Act 1999 (Public Service Obligations) Order 2002

categories. The current methodology for the apportionment of the PSO levy to these three stipulated customer categories is described further in this document

As required by the Electricity Regulation Act² the PSO amount to be levied for a 12 month PSO period is apportioned to the above three customer categories according to each category's percentage of the overall aggregated maximum demand of each the three customer categories.

4.0 Regulatory Requirement

The total amount of the PSO Levy to be collected in any year is estimated by the CER in accordance with Section 9 of S.I. 217 of 2002. This amount is allocated to three customer categories by the Distribution System Operator (DSO), in accordance with Section 39 of the Electricity Regulation Act 1999, and is submitted for approval to the CER annually.

5.0 PSO Levy Allocation

ESB Networks, as DSO, is responsible for attributing maximum demands in respect of three customer categories of electricity account, on an annual basis, with the approval of the CER in respect of each levy period. This entails ESB Networks using forecast demand figures for each category and applying these to Standard Load Profiles and Metered Profiles (as appropriate) for each category. The peak demand for each category is then determined from the load profiles.

6.0 Standard Load Profiles

The Standard Load Profiles are produced by ESB Networks and published by Retail Metering Data Services (RMDS) annually. These load profiles are full year, 15 minute interval, standard load profiles for domestic and non-domestic customers.

The Standard Load Profiles were developed for the Irish Market, in consultation with Electricity Association Consultants, UK. The project to develop these load profiles was approved by the CER in December 2001, following discussions with all parties. At the time, it was agreed to develop 9 x Standard Load Profiles for the retail market, together with derived load profiles for the unmetered Public Lighting supplies. To achieve this, sample meters were installed during 2003 and early 2004 and the load profile data collected, validated and processed to create the base load profiles for the 2005 calendar year. The load profile data is now collected

² Article (5A)(a) of Section 39 ("Public Service Obligations") of the Electricity Regulation Act, 1999

and processed annually, using the most recent load profile data from sample meters, to create the base Standard Load Profiles for the following year.

7.0 Associated DUoS Tariff Groups

Every electricity customer is assigned a Distribution Use of System (DUoS) Group (DG) tariff. The customer's DUoS tariff group is effectively set, via the customer's connection agreement (or quotation), by applying a combination of the type of use, nature of the connecting network, contracted Maximum Import Capacity (MIC), contracted Maximum Export Capacity (MEC) and the metering installation.

Each PSO category includes a portion of customers who are associated with different DUoS tariff groups.

8.0 PSO Levy Allocation Methodology – Current and New Updated

8.1 Current Allocation Methodology

This section outlines the current CER approved PSO allocation methodology and how the PSO levy is attributed to electricity customers. The current method has been in place since 2004. In essence, the allocation model forecasts the peak (maximum) electrical demand, using full year load profiles, for three separate customer categories, for the upcoming PSO year (October - September).

The three customer categories are defined as:

- Domestic Accounts;
- Small Accounts (<30kVA); and,
- Medium-Large Accounts (≥30kVA incl. Public Lighting).

The PSO levy amount is then apportioned across the three customer categories in proportion to their peak (maximum) demands, as illustrated in figure 1 below.

8.1.1 Domestic Accounts

Domestic customers, for the purpose of the PSO levy, are urban and rural domestic customers. The load profile for these domestic customers consists of a combination of the load profiles associated with DUoS tariff groups DG1 and DG2.

These load profiles are added together and combined with forecast demand data and the maximum GWh value is selected as the peak.

8.1.2 Small Accounts

The Small Accounts load profile consist of a combination of the load profiles associated with DUoS tariff groups DG5 and DG6.

For each of these DUoS tariff groups, a weighting is applied to apportion and exclude the number of accounts in each group that are greater than or equal to 30kVA as these accounts are covered by Medium-Large Accounts. The Small Account load profiles are added together and combined with forecast demand data and the maximum GWh value is selected as the peak.

8.1.3 Medium-Large Accounts

The Medium-Large Accounts profile is created using full system demand data and subtracting Domestic and Small Accounts profiles.

The Medium-Large Accounts Individual Peak is derived by subtracting the Domestic and Small Accounts profile data from the system demand data, as follows:

(Total System Demand Profile) – (Domestic Profiles + Non-Domestic Profiles).

As with the Domestic and Small Accounts categories, the maximum GWh value is selected as the peak.

8.1.4 Apportionment of PSO Levy

The peak demand figures for each of the three categories are calculated as described above. The PSO levy is then apportioned across the three customer categories in proportion to the peak demand figures for each category.

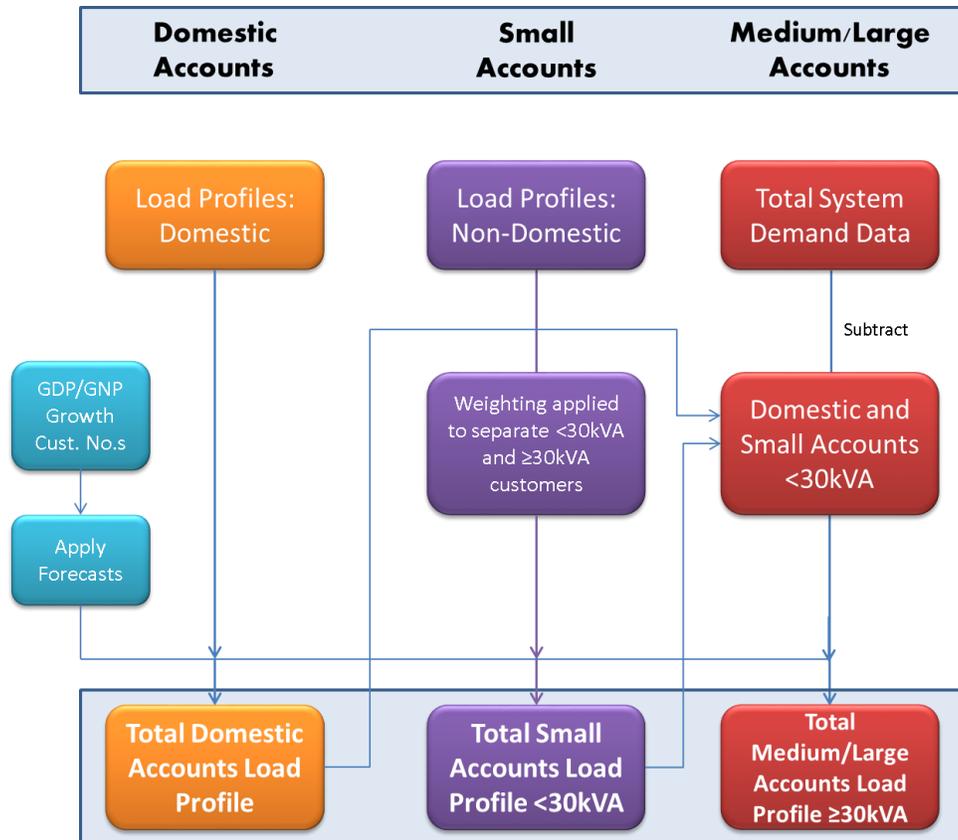


Figure 1 – Process flow chart for current PSO levy allocation methodology

8.2 Update to Allocation Methodology

Following a request by CER, ESB Networks reviewed the PSO model to investigate any potential improvements that could be made to the model. The following is a new update to the allocation of the PSO levy.

The new update to the allocation methodology differs from the current methodology in that the current methodology uses a subtraction method to calculate the PSO category 'Medium/Large Accounts' peak and the new method uses actual meter data from DUoS tariff groups associated with Medium-Large Account customers.

As illustrated in figure 2 below, similarly to the current methodology, the new updated PSO allocation methodology takes publicly available electricity standard load profiles that are available on the RMDS website, forecast figures and actual measured electricity consumption, and then combines these to determine the individual peak for each of the three customer categories:

- Domestic Accounts;
- Small Accounts (<30kVA); and,

- Medium-Large Accounts ($\geq 30\text{kVA}$ incl. Public Lighting).

8.2.1 Domestic Accounts

The Domestic Accounts load profile consists of a combination of the load profiles associated with DUoS tariff groups DG1 and DG2.

These load profiles are added together and combined with forecast demand data and the maximum GWh value is selected as the peak.

This is the same as methodology currently used – no change to the methodology.

8.2.2 Small Accounts

The Small Accounts load profile consists of a combination of the load profiles associated with DUoS tariff groups DG5 and DG6.

For each of these DUoS tariff groups, a weighting is applied to apportion and exclude the number of accounts in each group that are greater than or equal to 30kVA. These accounts are covered by Medium-Large Accounts. The Small Account load profiles are added together and combined with forecast demand data and the maximum GWh value is selected as the peak.

This is the same as methodology currently used - no change to methodology.

8.2.3 Medium-Large Accounts

The Medium-Large Accounts load profile consists of a combination of the Non-Quarter Hour (NQH) and Quarter Hour (QH) load profile data associated with DUoS tariff groups DG5-DG10, Transmission connected customers, and load profiles associated with Public Lighting (DG3).

For DG5 and DG6 tariff groups, a weighting is applied, using actual DUoS billing data, to apportion and exclude the number of accounts in each group that are less than 30kVA. These accounts are covered by the Small Accounts category.

The load profiles of all groups are added together and combined with forecast demand data and, as with the Domestic and Small Accounts categories above, the maximum GWh value is selected as the peak.

This part of the allocation model is different to the methodology currently used.

In summary,

- Current Allocation Methodology:

Load profiles are created for the Medium-Large category by subtracting Domestic and Small Account load profiles from the Total System Demand profile.

- **New Updated Allocation Methodology:**
Load profiles are created for the Medium-Large category using actual QH and NQH meter data.

8.2.4 Apportionment of the PSO Levy

The peak demand figures for each of the three categories are calculated as described above. The PSO levy is then apportioned across the three customer categories in proportion to the peak demand figures for each category.

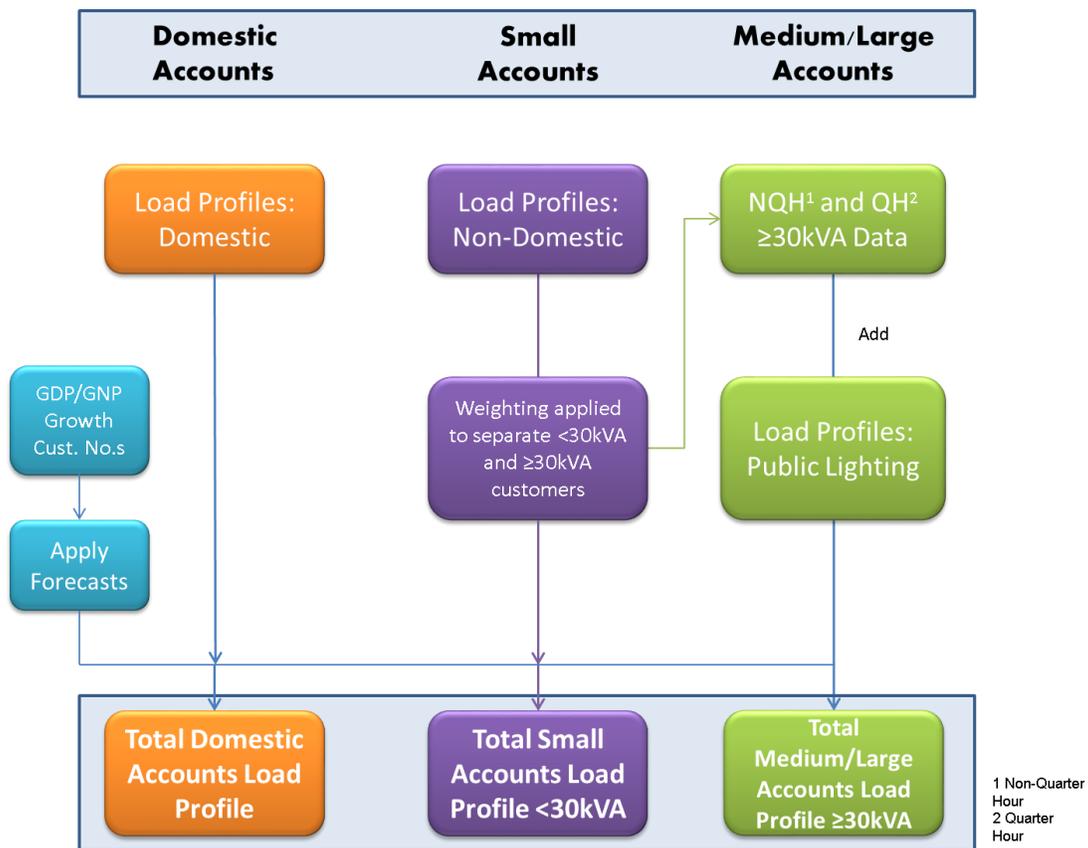


Figure 2 - Process flow chart for new updated PSO levy allocation methodology

9.0 Charging Mechanism

The total PSO levy associated with Domestic Accounts is divided by total customer numbers to determine a charge per customer. The same process is applied for the Small Accounts to determine a charge per customer. The PSO levy for the Medium-Large Account category is divided by the sum of the network connection

capacities for such account holders, to determine a standard charge per kVA of MIC.

10.0 Summary of Change to Allocation Methodology

The following summarises the primary differences between current and new updated methodologies.

The new update to the allocation methodology differs from the current methodology in that the current methodology uses a subtraction method to calculate the PSO category 'Medium-Large Accounts' peak and the new method uses actual meter data from DUoS tariff groups associated with the Medium-Large Account customers.

- **Current Allocation Methodology:**
Load profiles are created for the Medium-Large category by subtracting Domestic and Small Account load profiles from the Total System Demand profile.
- **New Updated Allocation Methodology:**
Load profiles are created for the Medium-Large category using actual QH meter data.