



Rialtas na hÉireann  
Government of Ireland

# Micro-generation Support Scheme (MSS)

## Final Scheme Design

2022

Prepared by the Department of the  
Environment, Climate & Communications  
[gov.ie](http://gov.ie)

# Table of Contents

1. Micro-generation Support Scheme.....	4
1.1 Executive Summary.....	4
1.2 Introduction.....	5
1.3 Glossary.....	7
1.4 MSS Final Scheme Design.....	8
Summary of MSS remuneration and supports.....	8
1.4.1 MSS and the Clean Export Guarantee (CEG).....	10
1.4.2 Additional Analysis to support the MSS FSD.....	10
1.4.3 Supports for new micro-generation installations.....	16
1.4.4 Establishing volumes of exported electricity.....	17
1.4.5 Influence of minimum BER requirement on uptake numbers.....	17
1.4.6 Uptake numbers for MSS.....	18
1.5 Policy provisions.....	20
1.5.1 Technology neutral.....	20
1.5.2 Battery Energy Storage Systems (BESS).....	21
1.5.3 Interaction with National Retrofit Plan.....	22
1.5.4 Cross-sector subsidisation.....	22
1.5.5 Planning.....	23
1.5.6 Community participation.....	24
1.5.7 Policy on cost: cost neutral viability gap.....	25
1.5.8 Policy on cost: Market value of electricity above the CEP feed-in-tariff.....	26
2. Scheme Costs.....	27
2.1 Capital Grant costs.....	27
2.2 Clean Export Premium (CEP) costs.....	28
2.3 Total Projected Scheme costs.....	30
3. Scheme Requirements.....	32
3.1 Technical requirements.....	32
3.1.1 Eligible Technology.....	32
3.1.2 Grid connection details.....	32
3.1.3 Measurement of export volumes.....	33
3.2 Capital Grant requirements.....	34
3.2.1 Eligible buildings.....	34
3.2.2 Minimum Building Energy Rating (BER).....	34
3.2.3 Certification of Installations.....	35

3.2.4	Standards and Certification of Installations .....	35
3.3	Clean Export Premium requirements .....	35
3.3.1	Scheme size limits and export support caps .....	35
3.4	Administration of the supports.....	36
3.4.1	Settlement of excess electricity supplied to the grid .....	36
3.4.2	Administration of the MSS Capital Grant.....	36
3.4.3	Remuneration of Clean Export Guarantee (CEG) .....	37
3.4.4	Administration of the Clean Export Premium (CEP) feed-in tariff.....	37
3.4.5	Remuneration of Clean Export Premium (CEP) feed-in tariff.....	37
3.4.6	Taxation.....	37
3.4.7	Scheme Review.....	38
4.	Impacts of the Framework support.....	39
4.1	Electricity Market Impacts .....	39
4.1.1	Network tariffs/charges .....	39
4.1.2	Impacts on fuel poverty/ low-income households .....	40
4.1.3	Administration Costs .....	40
4.1.4	Impacts of increase in PSO levy .....	41
4.2	Impact of scheme costs .....	41
4.2.2	Costs to electricity consumers .....	41
4.2.3	Impacts on Distribution System Operator (DSO) Grid .....	42
4.2.4	State Aid Assessment.....	42

# 1. Micro-generation Support Scheme

## 1.1 Executive Summary

This document sets out the Final Scheme Design for the Micro-generation Support Scheme (MSS) as a key tool for Ireland to deliver on the commitments contained within the Climate Action Plan 2021 and the 2020 Programme for Government, in relation to supporting micro-generators and as part of an overall solar strategy. It follows Government approval for the Micro-generation Support Scheme (MSS), in December 2021. This approval was the culmination of an extensive consultation and design process, including an assessment of submissions to a public consultation on a high-level scheme design in January 2021<sup>1</sup> and a series of subsequent further detailed analysis and engagements throughout 2021.

In developing the scheme design, a range of support options were considered, including the appropriate levels of export to meet the needs of all sectors and suitable payback periods that ensure citizens, businesses, farms and communities are incentivised to invest in micro-generation, primarily for self-consumption. The optimum arrangement for the final scheme design is to offer:

- An Exchequer grant for small new domestic installations.
- An Exchequer grant for small new non-domestic installations up to 6kWe in size and:
- A Feed-in-tariff, known as the Clean Export Premium (CEP), to provide support for installations greater than 6.0kWe up to 50kW in size.

The underlying principle for the MSS is that microgeneration projects should focus on self-consumption first and foremost, with the potential for export payments being an additional benefit but not the primary driver for engaging in micro-generation. To allow for this, the MSS framework is also designed to work in tandem with the existing Clean Export Guarantee (CEG) tariff, which is an export payment for residual renewable electricity exported to the grid by renewables self-consumers and renewable energy communities.

The introduction of the MSS is on a phased basis to allow for its integration with the existing Sustainable Energy Authority of Ireland (SEAI) grant schemes and the establishment of new

---

<sup>1</sup> <https://www.gov.ie/en/consultation/0ada2-public-consultation-on-a-micro-generation-support-scheme-mss-in-ireland/>

arrangements by the Commission for Regulation of Utilities (CRU) to both administer CEP applications and to provide for payment and settlement by industry.

The CEP is a feed-in tariff for export of renewable electricity, with any shortfall between the wholesale market rates for that electricity and the CEP tariff being funded through the Public Services Obligation (PSO) levy. The PSO is a levy to support renewable energy generation that all electricity consumers in Ireland pay to their suppliers. The amount of the levy is calculated by the CRU and the rate is typically shown separately on the electricity bill. The income from this levy is transferred to the wholesale power providers and used to cover costs related to increasing the share of renewable energy in Ireland.

It is envisaged that up to 380MW of installed capacity could be delivered by 2030, generating over 300GWh of renewable electricity per annum, with the potential to abate 1.4 million tonnes of CO<sub>2</sub>e<sub>q</sub> over the lifetime of the installations.

## 1.2 Introduction

Under the Climate Action Plan 2021 and the 2020 Programme for Government, Ireland is committed to supporting the development of up to 380MW of installed micro-generation capacity and the implementation of a wider solar strategy to support renewables self-consumption, to contribute to meeting our ambition of up to 80% renewable electricity by 2030.

The Micro-generation Support scheme (MSS) delivers a range of measures to support micro-generation (both for self-consumption and for export) in Ireland out to 2030 and beyond to meet these commitments and the requirements of the recast Renewable Energy Directive<sup>2</sup> (RED II). This will be achieved through a Framework that will be implemented by the Department of the Environment, Climate and Communications (DECC), the CRU and the SEAI with support from other industry stakeholders including ESB Networks.

A High-Level Design (HLD) document was developed using the evidence base from an assessment report carried out by Ricardo AEA<sup>3</sup> on behalf of DECC, to support the design and implementation of the new micro-generation support scheme in Ireland. A public

---

<sup>2</sup> [EUR-Lex - 32018L2001 - EN - EUR-Lex \(europa.eu\)](#)

<sup>3</sup> Economic and policy advice to support the design and implementation of the new microgeneration support scheme. Available at : <https://assets.gov.ie/118533/f484235d-8ef1-40ba-94b0-b9caf317708d.pdf>

consultation based on the HLD was published in January 2021 and a summary report on the assessment of those submissions was published on the DECC website in June 2021<sup>4</sup>.

The resulting overall MSS framework provides capital grant supports for domestic applicants and for small non-domestic applicants for installations up to 6kWe; as well as a feed-in tariff support, known as the Clean Export Premium (CEP), for installations greater than 6.0kWe up to 50kW in size. The MSS framework also aligns with and provides a mechanism for the delivery of an export payment for residual renewable electricity exported to the grid by renewables self-consumers and renewable energy communities, in accordance with Articles 21 and 22 of RED II, called the Clean Export Guarantee (CEG) tariff. The responsibility to introduce an enabling framework to deliver the CEG has been assigned to the CRU. A Statutory Instrument (SI)<sup>5</sup> to give effect to Articles 21 and 22 of RED II and the related Articles 15 and 16 from the Internal Market in Electricity Directive (EU/2019/944) ('IMED') was transposed into Irish law on the 15<sup>th</sup> of February 2022.

An addendum<sup>6</sup> to the Ricardo AEA assessment report was also commissioned by DECC, with the aim of providing additional analysis to determine the viability gap that remains after self-consumption savings *and* remuneration from the CEG are taken into account. This addendum was also completed by Ricardo AEA.

This Final Scheme Design (FSD) for the Micro-generation Support Scheme is therefore a culmination of the HLD Document, the Ricardo Assessment and Addendum reports, a public consultation process, a series of extensive stakeholder engagements and a Government Decision; as a means to provide a comprehensive and enduring solution for supporting and developing microgeneration in Ireland.

---

<sup>4</sup> <https://www.gov.ie/en/consultation/0ada2-public-consultation-on-a-micro-generation-support-scheme-mss-in-ireland/>

<sup>5</sup> [S.I. No. 76/2022 - European Union \(Renewable Energy\) Regulations 2022 \(irishstatutebook.ie\)](#)

<sup>6</sup> Placeholder for Addendum report - to be published Q4 2022

## 1.3 Glossary

Abbreviation	Description
BER	Building Energy Rating
BESS	Battery Energy Storage Systems
CAP	Climate Action Plan 2021
CEG	Clean Export Guarantee
CEP	Clean Energy Premium
CHP	Combined Heat and Power
CRU	Commission for Regulation of Utilities
DAFM	Department of Agriculture, Food and the Marine
DECC	Department of the Environment, Climate and Communications
DHLGH	Department of Housing, Local Government and Heritage
DSO	Distribution System Operator
FIT	Feed-in-Tariff
IMED	Internal Market in Electricity Directive
LCOE	Levelised Cost of Energy
MPRN	Meter point registration number
MSS	Micro-generation Support Scheme
NSMP	National Smart Metering Programme
PSO	Public Service Obligation
PV	Photovoltaic
REC	Renewable Energy Community
RED	Renewable Energy Directive (EU 2018/2001)
RESS	Renewable Electricity Support Scheme
RSC	Renewables Self-consumer
SEAI	Sustainable Energy Authority of Ireland
SME	Small and Medium-sized Enterprises
SSRH	Support Scheme for Renewable Heat
TAMS	Targeted Agricultural Modernisation Scheme

## 1.4 MSS Final Scheme Design

### Summary of MSS remuneration and supports

While self-consumption levels will underpin the viability of microgeneration installations, the results from the Ricardo AEA Addendum report indicate that supports are required to bridge the gap in the financial viability associated with installing new renewable technologies in the domestic, SME and other sectors.

The full details are provided in the sections that follow but **Table 1** below provides a summary of the Capital Grants and Feed-in tariff supports that are being delivered under the MSS, alongside the Clean Export Guarantee (CEG) tariff.

Category	Clean Export Guarantee (CEG) <sup>7</sup>		Clean Export Premium (CEP)		Grant
	Eligible?	Export Limits?	Eligible?	Export Limit?	Eligible?
Existing micro-generator	Yes	No	No	N/A <sup>8</sup>	No
Existing micro-generator <4kWe adding new capacity	Yes	No	No	N/A	Yes <sup>9</sup> (based on additional new capacity only)
Existing non-domestic Micro-generator >6.0kWe adding new capacity	Yes	No	Yes (based on additional capacity only)	Yes (based on additional capacity only)	No
New domestic micro-generator	Yes	No	No	N/A	Yes
New non-domestic micro-generator ≤6.0kWe	Yes	No	No	N/A	Yes
New micro-generator >6.0kWe <50kWe	Yes <sup>10</sup>	No	Yes	80%	No

**Table 1: Remuneration and Support framework under the MSS**

<sup>7</sup> Subject to eligibility criteria under CRU Interim enabling Framework. <https://www.cru.ie/wp-content/uploads/2021/12/CRU21131-Interim-Clean-Export-Guarantee-Decision-Paper.pdf>

<sup>8</sup> The CEP feed-in tariff support is only available for new non-domestic installations >6.0KWe <50KWe or for additional new capacity on non-domestic installations >6.0KWe < 50KWe

<sup>9</sup> where no grant has been previously provided to the MPRN.

<sup>10</sup> where CEP feed-in tariff support is availed of, only residual export above 80% of total generation will be remunerated at the CEG tariff, in the first 15 years. Thereafter, all export is eligible to be remunerated at the CEG tariff.



**Table 2** below provides a summary of the projected financial benefits of the MSS. Where applicable, the one-off capital grant is payable based on the year of system installation, for installations ≤6kWe. CEP feed-in tariff supports will be available for a 15 year period, at the fixed rate applicable for the year of system installation, for installations >6kWe≤50kWe.

Year of Microgen System Installation	Domestic System & Non-domestic System ≤6kW		Large Non-Domestic >6kW ≤50kW system
	CEG tariff	Indicative Maximum Grant Amount	Indicative CEP feed-in tariff €/kWh
2022	Competitive market rate available to all microgenerators	€2,400	€0.135
2023		€2,400	€0.135
2024		€2,100	€0.125
2025		€1,800	€0.115
2026		€1,500	€0.105
2027		€1,200	€0.095
2028		€900	only competitive market tariff

**Table 2. Financial benefits for new smaller and larger micro-generators in 2022 and 2023, and indicatively for subsequent years**

Administration of the financial benefits offered are as follows:

- **MSS Capital Grants:**
  - SEAI is responsible for the administration of the MSS capital grant supports.<sup>11</sup>
- **CEP Feed-in tariff:**
  - Suppliers will be responsible for administering the CEP feed-in tariff.
  - The CRU will be responsible for maintaining a central register of approved applicants in receipt of the CEP and will manage the reporting associated with the remuneration provided by the PSO levy.
- **CEG Tariff:**
  - Suppliers are responsible for the administration of the CEG tariff.

Full details are provided in **Section 3.4**.

<sup>11</sup> [Solar Electricity PV Grants | Home Energy Grants | SEAI](#)

### 1.4.1 MSS and the Clean Export Guarantee (CEG)

Under Article 21, 2(d) of RED II, customers are entitled to ‘receive remuneration, including, where applicable, through support schemes, for the self-generated renewable electricity they feed into the grid, which reflects the market value of that electricity and which may take into account its long-term value to the grid, the environment and society’. The Clean Export Guarantee (CEG) is intended to achieve compliance with Article 21, 2(d) and Article 22, 2(a) of RED II, which ultimately came into effect on 15 February 2022 following the signing of Statutory Instrument No. 76 of 2022.- known as the Renewable Energy Regulations 2022<sup>12</sup>.

In advance of the enabling legislation being in force, DECC asked the CRU to provisionally develop a regulatory framework to ensure that renewables self consumers are paid for the surplus electricity which they export to the grid. The CRU subsequently published a decision on an interim enabling framework on 1 December 2021<sup>13</sup> which outlined the details, including eligibility criteria and timescales for the introduction of a Clean Export Guarantee (CEG) payment for exported renewable electricity, to give effect to these Articles in RED II.

This enabling framework provides for the commencement of CEG tariff payments to micro-, mini- and small-scale generators, by their electricity suppliers. The framework includes the methods for establishing the volumes of exported electricity to be remunerated, i.e. the use of smart meter data where appropriate and a deemed estimated export calculation where the customer is not eligible for a smart meter at that specific phase of the smart meter roll-out.

It should be noted that the CEG is not limited to micro-generators and does not involve Government or market support; rather it imposes an obligation on suppliers to ensure that eligible customers receive payment from their suppliers in accordance with their rights under RED II.

### 1.4.2 Additional Analysis to support the MSS FSD

Viability Gap:

Self-consumption levels underpin the viability of microgeneration installations. Payback periods for applicants will vary depending on self-consumption rates, with the additional

---

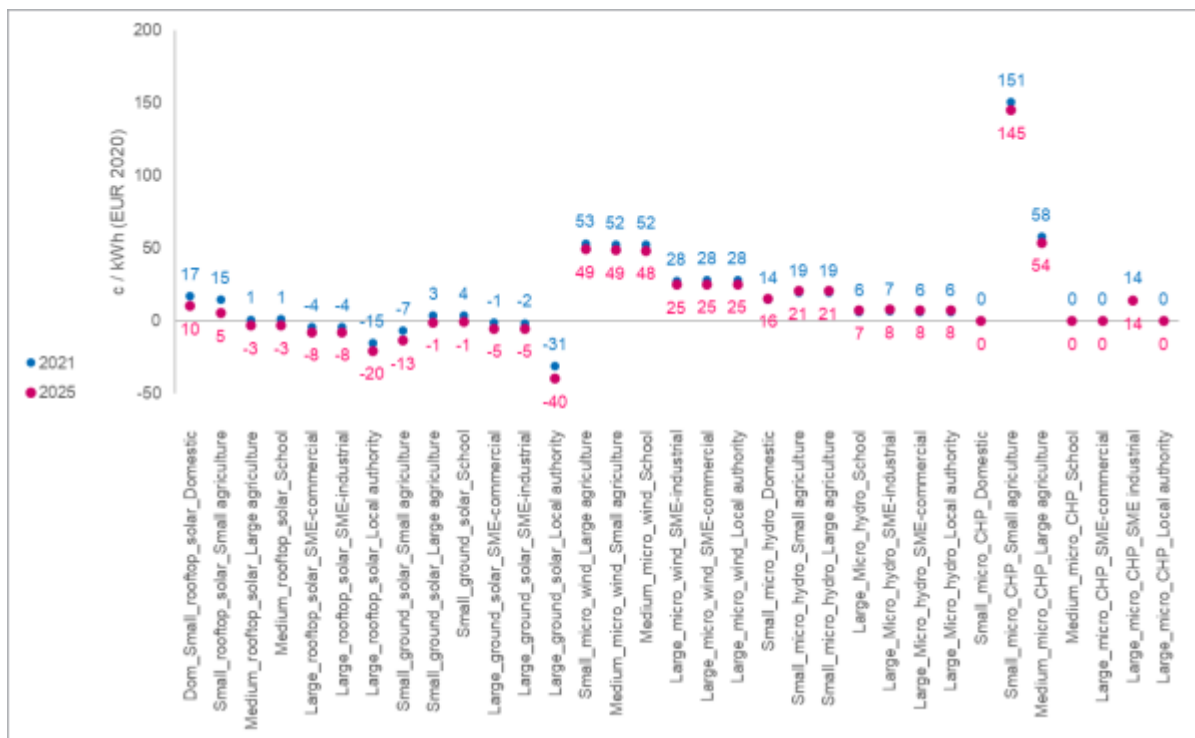
<sup>12</sup> S.I No 76 of 2022. Available at: [pdf \(irishstatutebook.ie\)](https://www.irishstatutebook.ie)

<sup>13</sup> CRU Interim enabling Framework. <https://www.cru.ie/wp-content/uploads/2021/12/CRU21131-Interim-Clean-Export-Guarantee-Decision-Paper.pdf>

benefit of the CEG providing a further reduction in the payback period. However, micro-generators will benefit most when they maximise their self-consumption by actively matching their demand with their generation whenever possible.

Even with this approach, the Ricardo AEA Addendum report containing further modelling and analysis, indicates that supports are required to bridge the gap in the financial viability associated with installing new renewable technologies in the domestic, SME and other sectors. The **Viability Gap** is defined as the gap between the installation and maintenance costs for the system and the expected savings on electricity costs to renewable self-consumers, plus any remuneration from the CEG over a 15-year period, expressed in €/kWh.

These results are shown in **Figure 1** below.



**Figure 1. Viability gap over export for a 15-year support period**

Solar PV technologies show the lowest viability gaps. The results clearly show two cohorts within the Solar PV archetypes:

The first cohort is small domestic and small agriculture rooftop Solar PV archetypes which have a large viability gap (€0.17/kWh and €0.15/kWh respectively) on export, after self-consumption savings and CEG are taken into account. This clearly demonstrates that there is a need for a support for this cohort.

The second cohort is made up of non-domestic rooftop Solar PV archetypes. The viability gap on export after self-consumption savings and CEG are taken into account are much lower and even negative for a number of the archetypes, demonstrating that on average a support is required in order to achieve a return within 15 years.

#### Electricity Prices:

DECC has reviewed changes in wholesale electricity prices, how this affects wholesale price trajectory assumptions and the impacts these have on the forecasts for savings from retail rates from self-consumption, remuneration from the CEG and the costs for a feed-in-tariff. The wholesale and retail electricity prices in Ireland have risen sharply in response to unprecedented global wholesale energy price rises since mid-2020. Some of these effects are temporary and others are enduring; meaning that the use of the low wholesale electricity price assumptions in this analysis may present a disproportionately harsh assessment of potential benefits and PSO costs, with respect to CEP support. While wholesale prices are currently above the high wholesale price assumptions, modelled over 15 years of support; this model assumes the mid-point wholesale price to be a reasonable basis for assessment of costs, comparisons and impacts over the scheme duration. Although it can be hard to envisage during an energy crisis event, over long horizons (such as this scheme, which begins in 2022 and ends in 2042 at the earliest), wholesale electricity prices are forecast to return to levels that are near, albeit higher, than the levels forecast in the Ricardo AEA Addendum report analysis.

#### Comparative Supports and Counterfactual:

Further to the economic assessments undertaken by Ricardo AEA, DECC has taken account of the importance of supporting behavioral change among citizens, businesses, farms and communities engaging as renewables self-consumers within the MSS. DECC has assessed what parameters need to be considered to balance out the desire to offer supports that deliver micro-generation uptake levels in the scheme; which can make a meaningful contribution to the renewable energy targets with the lowest cost alternative, i.e. the Renewable Electricity Support Scheme<sup>14</sup> (RESS), and the counterfactual case.

The counterfactual is represented by the deployment of micro-generation without supports. Prior to the introduction of the SEAI pilot Solar PV domestic grant, the deployment level of micro-generation in Ireland was negligible; being primarily through compliance with Part L of the 2011 Building Regulations. It is notable that the size of solar PV systems being delivered

---

<sup>14</sup> [gov.ie](http://gov.ie) - Renewable Electricity Support Scheme (RESS) ([www.gov.ie](http://www.gov.ie))

through Part L of the 2011 Building Regulations is typically the minimum that is needed to meet the compliance requirement, at about 1.2kW. With the advent of capital grants in mid-2018, deployment levels increased substantially. Access to the grants under the pilot was restricted by the requirement to achieve a minimum BER C and by the pre-2011 year of build criteria.

The evidence overwhelmingly demonstrates that without supports, micro-generation levels within Ireland will remain one of the lowest in Europe. If the grant supports from the pilot scheme were removed, there would be a small and diminishing amount of micro-generation (i.e. solar PV) deployed, primarily via new build homes to meet compliance with Part L of the 2011 Building Regulations in conjunction with new oil or natural gas boilers. This route to solar PV being deployed will end due to the installation of fossil fuel boilers in new homes being effectively banned by 2023, as noted in section 14.4.8 of the Climate Action Plan 2021.

Potential Micro-generators may not be well versed in the energy sector and would not be expected to have professional energy expertise. Many will be moving into energy generation for the first time, though some may have experience through their local Sustainable Energy Communities. The supports offered by Government need to inspire citizens to engage in energy transition investments and gain confidence to inspire others based on a positive experience. In this sense, at the outset there should be favourable conditions and support levels that recognise that this is not purely a commercial or economic decision on behalf of the individual micro-generator. In looking at the level of support available elsewhere, DECC has concluded that participants in the MSS are most closely aligned to communities engaging in the RESS Community auction category rather than commercial developers, given their common incentives, the contribution to targets they provide and the benefits their participation have to public acceptance in the overall energy transition. This suggests that supports offered in the MSS should align with those offered in the Communities category in RESS.

#### Self-consumption rates and payback periods:

Self-consumption levels have a significant bearing on the viability of microgeneration installations. Payback periods for applicants under the pilot scheme grant arrangements vary between 14 and 18 years based on a self-consumption rate of 60% of total generation. The additional benefit of the CEG will reduce this range to between 11 and 14 years. It should be

noted that increasing the self-consumption to 90% brings the payback period to between 9 and 11 years.

Therefore, the focus should be on self-consumption first and foremost, with the potential for export being an additional benefit but not the primary driver for engaging in micro-generation.

#### Clean Export Guarantee tariff:

Using a mid-point wholesale electricity price forecast of €0.064/kWh, it is estimated that the CEG tariff would remunerate a 3kWe domestic installation, generating on average 797 kWh per kWe installed per annum and exporting 40% of generated electricity, up to €61.20 per annum or €918 over 15 years.

#### Capital Grants:

The above analysis provides the basis for the transition of the capital grant supports offered under the pilot SEAI Solar PV scheme to become the grant supports offered under the MSS, i.e. €900/kWe up to 2kWe and an additional €300/kWe between 2kWe and 4kWe assuming an average of 40% electricity is exported and remunerated by the Clean Export Guarantee tariff. The combination of the CEG and the proposed grant for a 3kWe system equals a benefit of €3,000 over 15 years, which is higher than the average grant amount paid out under the pilot SEAI domestic Solar PV scheme, which amounted to €2,291. Maintaining these grant rates, when coupled with the additional remuneration provided by the CEG, will increase confidence and interest in the scheme.

The policy approach over the scheme duration is therefore to maintain the grant at the same level for 2022 and 2023, and then reduce it by up to €300 for each subsequent year. DECC is forecasting a reduction in system costs over the same period and anticipate that no grant will be required from 2029 onwards.

#### Clean Export Premium Feed-in-tariff:

DECC analysed a range of Clean Export Premium (CEP) Feed-in-tariffs, percentages of export electricity and deployment capacities assuming a mid-point wholesale electricity price forecast to assess their impacts on the PSO levy, the cost per unit of generated electricity and payback periods. Results for a CEP of €135/MWh are shown in Table 3 below.

<b>CEP PSO Costs (€ m)</b> <b>for CEP Feed-in-tariff €135/MWh</b>			
<b>Deployment Capacity Ranges</b>	<b>Export %</b>		
	40%	60%	80%
<b>110MW</b>	27.2	40.8	54.4
<b>153MW</b>	36.4	54.6	72.7
<b>200MW</b>	42.5	63.8	85.1
	<b>PSO Max Year</b>		
<b>110MW</b>	1.81	2.72	3.63
<b>153MW</b>	2.42	3.64	4.85
<b>200MW</b>	2.84	4.25	5.67
<b>€/MWh gen</b>	18-21	27-31	36-41
<b>Payback period (yrs)</b>	9	10	11

**Table 3: Analysis of costs for CEP feed-in tariffs, export percentages and deployment capacities**

A Clean Export Premium Feed-in-tariff of €0.135/kWh for 200MW of deployment will result in a cost to the PSO levy of between € 42.5 million and € 85.1 million over the period of the scheme for a range of export limits between 40% and 80%, with a maximum cost in any PSO levy year of € 5.67 million, while achieving a payback period of between 9 and 11 years and a cost per unit of generated electricity of between €18/MWh and €41/MWh.

A CEP feed-in tariff below the retail rate, available roof space and grid export connections are barriers to higher export percentages. Therefore, micro-generators exporting at 80% will be the minority. Notwithstanding this, a maximum export of 80% will also encourage self-consumption by all applicants. This analysis suggests that a CEP feed-in tariff of €0.135/kWh with a maximum export of 80% of total generation capacity and fixed for 15 years is a suitable feed-in tariff support to bridge the residual viability gap in 2022. Any residual volumes above 80% of total generation capacity exported to the grid will be eligible to be remunerated by the CEG tariff.

The policy approach over the scheme duration is to maintain the CEP feed-in tariff rate offered in 2022 and 2023 at the same level, and then reduce the tariff offered by up to €0.01/kWh in each subsequent year. DECC are forecasting a reduction in system costs over the same period and anticipate that no CEP Feed-in tariff support will be required from 2028 onwards.

### 1.4.3 Supports for new micro-generation installations

Domestic micro-generators and small non-domestic micro-generators of less than or equal to 6.0kW, seeking support for a new installed capacity will be eligible for a capital grant via the SEAI. The results of the assessment suggest the following arrangements for the grants:

- Beginning in 2022 they will be €900/kWe up to 2kWe and an additional €300/kWe between 2kWe and 4kWe.
- From January 2024 and each subsequent year the grant will be reduced by up to €150/kWe, reducing the maximum grant amount by up to €300. Details are summarised in **Table 4** below.

Cohort	Size limit	Grant
<b>Domestic</b>	No	€900/kWe up to 2kWe plus €300/kWe between 2-4kWe. Maximum grant €2,400
<b>Non-domestic</b>	Up to 6.0kW	

**Table 4: Grant limits and amounts**

- Larger micro-generators seeking support for a new installed capacity of greater than 6.0kW and 50kW will be eligible for a Clean Export Premium (CEP) Feed-in tariff for excess electricity exported to the grid for eligible technologies for a period of 15 years, based on the viability gap of the lowest cost eligible technology, which is rooftop solar. The total remuneration per annum will be capped at 80% of total new generation capacity, in order to ensure a minimum amount of self-consumption is met, whilst also ensuring that those applicants with large roof or ground space and access to grid export capacity can maximise their installations.

The results of the assessment for the Clean Export Premium suggest a feed-in tariff support of €13.5c/kWh is required, subject to a maximum remunerated volume of 80% of the total generated electricity. This €13.5c/kWh will be made up of the technology capture price from the wholesale market provided by the supplier with any residual payment to be supported by the PSO levy. Any volume exported above the 80% threshold will be remunerated at the market rate by the supplier.

It should be noted that the design of supports for new installations under the scheme is based on the premise that the optimum outcome for applicants and electricity consumers is to make self-consumption a minimum requirement which aligns with the aim of optimum emissions reduction.



#### **1.4.4 Establishing volumes of exported electricity**

The MSS will leverage the enabling framework for micro-generation being implemented by the CRU as per 1.4.1 above in order to establish the volumes of exported electricity to be remunerated under the Clean Export Premium.

#### **1.4.5 Influence of minimum BER requirement on uptake numbers**

As a stand-alone mechanism, micro-generation support will reduce electricity consumption from the grid, reduce peak demand and losses on the grid and contribute to renewable electricity targets. However, it was noted during public consultation that where grants are offered, they represent a potential risk to other Climate Action Plan targets, including the retrofit of 500,000 homes to BER B2 and 400,000 heat pumps by 2030. This is because homeowners and business premises occupants considering retrofit projects may choose to complete a less expensive and less intrusive solar PV stand-alone measure under the MSS, rather than a deeper retrofit project which would reduce fossil fuel consumption through increased energy efficiency and the installation of a heat pump. DECC has considered four options to align grants in the MSS with the other schemes:

1. Continue with a minimum BER C3 requirement as per the pilot SEAI domestic Solar PV Scheme
2. Introduce a minimum BER B2 requirement as per the home retrofit targets.
3. Offer two grant amounts based on the post-works BER achieved:
  - a. €750/kWe for achieving a minimum of BER C3
  - b. €900/kWe for achieving a minimum of BER B2
4. Remove the minimum BER requirement for domestic applicants

In assessing the impacts of these, evidence is drawn from the existing Solar PV scheme. In January 2020, SEAI introduced a minimum BER requirement for the first time, set at a C3 rating. There was no reduction on the number of scheme applications, which actually increased by 50% on the previous year. Additionally, in 2020 and 2021, approximately 2,800 homes that received a solar PV grant achieved a post-works BER of B2 or better. However, SEAI estimate that only 50% of all homes in Ireland are BER D1 or better and less than 25% of homes are BER B or better. Thus, a minimum BER C requirement limits access to the scheme and increasing the minimum post-works BER to B2 would significantly limit access to the scheme.

On the risk of homeowners and business premise occupants choosing to complete a less expensive and less intrusive solar PV project under the MSS, instead of a deeper retrofit project, there is currently no evidence to support this.

Moreover, offering different grant amounts based on BER levels achieved may conflict with existing grant arrangements in the SEAI retrofit schemes and create confusion in the marketplace. Finally, deployment of roof-top solar PV can assist in enabling consumers to manage currently high electricity prices.

Having given all of the above due consideration, DECC has decided to proceed with Option 4, which is to remove the minimum BER requirement for domestic applicants. This is to maximise the population of homes eligible for the scheme by removing barriers to deployment.

.

#### **1.4.6 Uptake numbers for MSS**

Outputs for the MSS scheme form part of national targets for onshore renewable technologies and the commencement of an associated Solar Strategy being developed by DECC. At present, the target under consideration for total micro-generation deployment is 1GW by 2030 based on the findings of the assessment report. Up to 2021, micro-generation was being deployed through two key mechanisms:

1. Approximately 10MW per annum from new house building to meet Part L of the Building Regulations.
2. Approximately 16MW per annum from the pilot Solar PV scheme from SEAI in 2021.

In trying to find the right balance on the scale of stand-alone supports for micro-generation, DECC has worked with SEAI to forecast micro-generation delivery across the three key mechanisms listed above out to 2030, as shown in **Table 5** below:

Sector	2030 Forecast				Total Capacity, 2030
	New Build (Part L)	Retrofit Schemes	MSS	Total Installations	Total (MW)
Small Micro-generators ≤6.0kW	40,000	150,000	60,000	250,000	500
Micro-generators 6.1kW - 50kW	5,000	15,000	9,000	29,000	500
<b>Total</b>	<b>45,000</b>	<b>165,000</b>	<b>69,000</b>	<b>279,000</b>	<b>1,000</b>

Table 5: Forecast of micro-generation to 2030 across all delivery mechanisms

Therefore, the proposal within the MSS to support installation of new systems is shown in Table 6 below:

Category of installations	Estimated quantity in 2030	Target for Installed capacity (MWp)
Small Micro-generators ≤6kW	60,000	180
Micro-generators >6kW	9,000	200
<b>Total</b>	<b>69,000</b>	<b>380</b>

Table 6: MSS forecast of installations by 2030

In delivering up to 380MW of installed micro-generation capacity generating 300GWh of renewable electricity per annum, the scheme will save 1.4 million tonnes of CO<sub>2</sub>eq over the lifetime of the installations.

The scheme will be reviewed by DECC after 2 years or 50MW of deployment to take account of historic costs and uptake rates and to make changes to capital grant and feed-in tariff support amounts, remuneration caps and scheme arrangements where appropriate. Grants and export feed-in tariff remuneration rates will be reduced over time until they are no longer required where that is supported by updated viability gap data assessed as part of the review.

## 1.5 Policy provisions

### 1.5.1 Technology neutral

Eligible technologies under the new MSS are micro-wind, micro-hydro, micro-renewable CHP and solar photovoltaic (PV). The aim for the scheme is to be technology neutral, which means that any eligible technology can receive support, although from historical data and international experience it is expected that solar PV will be the dominant technology incentivised by a support scheme<sup>15</sup>.

While all eligible technologies are eligible for support, the scheme support levels will be based on the lowest technology viability gap, which, based on the assessment report findings, is solar PV in all sectors<sup>16</sup>.

This study found that there is a role for all the technologies assessed except micro-CHP from fossil fuels as it does not reduce primary energy or CO<sub>2e</sub> based on the projections for reduction in grid electricity carbon emission levels over the scheme duration. It therefore does not align with the climate ambitions of Government as it would lock-in fossil-fuel technologies.

DECC has considered the suggestion from some submissions to the public consultation that fossil-fueled CHP, hydrogen, micro-anaerobic digestion (AD) / renewable biogas, geothermal and battery storage should be added to the definition of eligible technologies. However, DECC

---

<sup>15</sup> The feed in tariff in the UK resulted – over a period of X years - in over 2,700GW of installed microgeneration of solar, micro wind, micro-hydro and micro-CHP, of which the most significant contribution was solar PV (94%), with micro-wind (5%) next. Ofgem. 2019. Feed-in Tariff Annual Report. Available from: [https://www.ofgem.gov.uk/system/files/docs/2019/12/feed-in\\_tariff\\_annual\\_report\\_2018-19.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/12/feed-in_tariff_annual_report_2018-19.pdf)

<sup>16</sup> except domestic micro-hydro

has decided not to change the definition at present and to keep it under review pending new industry or technology developments.

Specifically:

- Fossil fueled CHP is not a renewable technology.
- Hydrogen and geothermal are not available micro-generation technologies.
- Micro/AD and biogas are supported through the SEAI SSRH scheme.
- Battery storage costs are eligible costs for grant or CEP support when combined with eligible technology installations, but battery energy storage systems are not eligible for direct support as a stand-alone measure.

### **1.5.2 Battery Energy Storage Systems (BESS)**

Battery energy storage systems (BESS) installed by prosumers help storage of excess onsite renewable generation, in particular for Solar PV, in periods of low demand (e.g. when residential consumers are not at home, at weekends for businesses) for use in periods when energy demand is high and renewable production is low (e.g. peak-time in the evening). Thus, storage can enable prosumers to capture and utilize the electricity generated by their renewable energy systems more effectively by decoupling time of generation and consumption, while also supporting the grid, e.g. by reducing local voltage fluctuations as well as congestion problems.

At the same time SEAI note that current battery costs are high relative to retail electricity costs and their storage capabilities are typically only a few hours. This means that battery storage will not correlate well for periods of low daylight and peak demands, such as in winter when daylight ends at 4pm and electricity requirements will continue into late evening. Furthermore, batteries have a short lifetime, currently in the region of ten years.

The Government offers supports to deliver on the target of 1 million Electric Vehicles (EV) to be deployed by 2030. The battery in EVs is of a higher capacity than a typical domestic battery storage solution for micro-generation. In the future, it may be possible for EV batteries to be used to store excess micro-generated electricity during the day and provide electricity after daylight, and this could represent a better investment for the prosumer.

As a result of the above, micro-generation installations including battery storage will be eligible for support, but battery storage systems are not targeted for specific supports in the MSS.

### 1.5.3 Interaction with National Retrofit Plan

Based on the principle that energy efficiency first investments bring the most benefit to end users, customers at risk of energy poverty will not receive specific supports under this scheme as there are significant provisions for such customers included in the National Housing Retrofit Plan, where Solar PV is an eligible technology as part of a range of energy retrofit measures and which also provides access to low-cost finance.

### 1.5.4 Cross-sector subsidisation

It is not permissible for support to be provided from two different support mechanisms for the same capital investment. Given the modular nature of some renewable technologies, in particular solar PV, there is a risk that a new support scheme could be subject to abuse from recipients of support from other schemes if the necessary information is not clearly defined.

- In this regard, applicants to the MSS supports must be installing new equipment and must not be in receipt of another grant or capital support for their installation.

The SEAI use the Meter Point Registration Number (MPRN) to determine if an applicant's address has been in receipt of an SEAI grant previously. For the CEP feed-in-tariff, suppliers who are administering applications can confirm with SEAI if applicants have been in receipt of or are currently availing of renewable energy technology grants from their schemes in the past, via a consent for sharing of data (I.e. MPRN) that must be provided by all applicants.

The Department of Finance has confirmed that the Accelerated Capital Allowance (ACA) scheme for Energy Efficiency Equipment will continue to be available to businesses who access the MSS.<sup>17</sup>

Under State Aid rules, specific capital supports for the same micro-generation costs should not be available from multiple Government-funded schemes, for example from the Support Scheme for Renewable Heat (SSRH), EXCEED or Better Energy Communities schemes administered by SEAI, or the Targeted Agricultural Modernisation Scheme (TAMS) II administered by the Department of Agriculture, Food and the Marine (DAFM). Therefore, it will be a criterion for eligibility of applicants receiving support for installing micro-generation under the scheme that they confirm they are not in receipt of supports from other schemes

---

<sup>17</sup> The ACA scheme was extended for three years to end-2023 as part of Budget 2021. [b43b20d.pdf](#) ([oireachtas.ie](#))

for the eligible costs. Applicants will be required to grant consent to SEAI and DAFM to share data on previous scheme applications with suppliers.

DECC understands that installations supported through TAMS are capped at 11kW and should be designed for 100% self-consumption. If farms increase the capacity of their installations for additional self-consumption, they could be eligible for the CEG for any residual exported electricity. For access to CEP payments, farm applicants could only apply for support for micro-generation capacity that is separate or additional to that supported by TAMS.

### **1.5.5 Planning**

It is the responsibility of all micro-generators to ensure they comply fully with the Planning Regulations. In order to remove barriers to micro-generation using solar PV, DECC has worked with the Department of Housing, Local Government and Heritage (DHLGH) to draft revised planning exemptions which will increase the exemptions limits for most building types in a proportionate manner and introduce exemptions for buildings not covered in the previous Statutory Instruments. These revised exemptions are expected to include provision of exemptions for apartment, education and social enterprise buildings. The draft regulations have been reviewed by DHLGH under the Strategic Environmental Assessment (SEA) Directive and it has been determined that they are likely to have significant effects on the environment, necessitating the undertaking of a full SEA on the draft proposals. The draft regulations have also been screened for Appropriate Assessment (AA) under the Habitats Directive by DHLGHs Ecological Assessment Unit (EAU) and the need for AA has been screened out.

The DHLGH has published the Draft Planning and Development Act 2000 (Exempted Development) (No. 3) Regulations 2022 and the Draft Planning and Development (Solar Safeguarding Zone) Regulations 2022 for public consultation which closed on 13 July 2022. A Strategic Environmental Assessment (SEA) has been carried out on the draft Regulations and its findings are presented in an Environmental Report.

As required under planning legislation, the proposed exempted development regulations must be laid in draft form before the Houses of the Oireachtas and receive a positive resolution from both Houses before they can be made binding and the SEA process concluded. Accordingly, the process for finalising the solar panel planning exemptions will be completed in the coming months.

### 1.5.6 Community participation

The CRU engaged with DECC and additional stakeholders during 2020 and 2021 to develop an understanding of active consumers, jointly acting consumers and renewables self-consumers prior to, and during, the transposition of the Internal Market in Electricity Directive (IMED) and RED II.

Building on this work, the CRU published a Consultation Paper<sup>18</sup> in March 2021 on the framework to be developed with regards to the related topics of active customers/renewables self-consumers/energy communities, to enable input from interested parties.

Community enterprises (e.g. sports clubs, community halls) who operate their own premises can participate in the MSS as renewables self-consumers, i.e. they can access the CEG if they have installed renewable generation primarily for self-consumption, or can avail of the CEG and grants or CEP if they install eligible new renewable generation under the scheme.

Community groups who operate within a premise or as part of a jointly acting renewables self-consumer (JARSC) can participate in the MSS as renewables self-consumers, i.e. they can access the CEG if they have installed renewable generation primarily for self-consumption, or can avail of the CEG and grants or CEP if they install eligible new renewable generation under the scheme. For example, in a multi-occupancy apartment building, the JARSC could install solar PV on the roof of the building and self-consume the generation to meet the common area demands (e.g. entrance foyer, common hallways, plant room, site lighting, etc.). Any excess can be exported and receive a CEG for existing installations prior to the scheme, or CEG and grant or CEP for new installations under the scheme. The CRU published a conclusions paper on a call for evidence on Active Consumers & Jointly Acting Active Consumers under the Clean Energy Package in November 2021.<sup>19</sup>

Renewable Energy Communities (REC) may wish to participate in the MSS. For the purposes of assessing their eligibility, it is assumed that the RECs have at least one premises which is an existing electricity consumer. A REC will be required to meet the

---

<sup>18</sup> [CRU\\_21028\\_Consultation-on-Energy-Communities-and-Active-Consumers.pdf](#)

<sup>19</sup> [Energy Communities and Active Consumers - Commission for Regulation of Utilities \(cru.ie\)](#)



eligibility requirements and will be subject to the export limits for CEP feed-in tariff support if they wish to install a new eligible installation of greater than 6kW. It is assumed that any residual electricity for export can be used by the REC via energy sharing, aggregation, Peer to Peer (P2P) or other appropriate trading arrangements that are outside the scope of the MSS.

Renewable Energy Communities (REC) will be eligible to participate in the MSS if they fulfil the criteria, as defined in the recast RED as follows:

“Renewable Energy Community” means a legal entity:

- (a) which, in accordance with applicable law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located (in the case of SMEs or local authorities) or resident (in the case of natural persons) in the proximity of the project that is owned and developed (or proposed to be owned and developed) by that legal entity;
- (b) the shareholders or members of which are natural persons, SMEs, local authorities (including municipalities), not-for-profit organisations or local community organisations;
- (c) for any shareholder or member (with the exception of “Sustainable Energy Communities” as registered with SEAI), that shareholder or member’s participation does not constitute their primary commercial or professional activity;
- (d) the primary purpose of which is to provide environmental, economic, societal or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits;
- (e) in respect of which, each shareholder or member is entitled to one vote, regardless of shareholding or membership interest.

RECs who own existing micro-generation installed prior to the MSS will be eligible for the Clean Export Guarantee. RECs who install micro-generation installations under the scheme will be eligible for the CEG and a grant or (depending on the size of their installation), the Clean Export Premium, for a period of 15 years.

### **1.5.7 Policy on cost: cost neutral viability gap**

The Levelised Cost of Energy (LCOE) is typically used when comparing large-scale electricity generators. It is not an appropriate measure of competitiveness for micro-generation technologies since they compete with the price of retail electricity, as opposed to the cost of electricity supplied in the wholesale market.

A more appropriate metric to use is the viability gap, which measures the level of financial support needed per unit of electricity for the investment to be viable. The MSS policy is to remove supplementary supports when the viability gap of the lowest cost eligible technology is zero. Cost reduction of technologies can be achieved by the scale economies of increased deployment under the scheme, coupled with technology cost reductions which are a feature of renewable technologies over many years.

### **1.5.8 Policy on cost: Market value of electricity above the CEP feed-in-tariff**

The long-term forecast is for wholesale electricity prices to return to an average of between €0.04/kWh to €0.06/kWh. When wholesale prices are at these levels, the PSO contributes the top-up to the guaranteed tariff of €0.135/kWh to the CEP feed-in-tariff recipient.

However, with wholesale electricity prices significantly above this level and forecast to continue at this level for the foreseeable future, there is potentially a significant benefit to the CEP feed-in-tariff recipient that would not be available unless the policy is clear on how to treat this additional market revenue. Additionally, if the policy is silent, the additional market revenue will be recovered by suppliers.

Two alternative choices were considered for how to treat this additional market revenue – firstly to ensure it is received by the CEP feed-in-tariff recipient, or secondly to allow the PSO levy to benefit. These two options mirror the historical arrangements in the market for large renewable generators, under the REFIT and RESS schemes. The REFIT tariff allows generators the potential to benefit from the market upside when wholesale electricity prices are above the REFIT tariff level. The more recent RESS arrangements provide for a 2-way Contract for Difference (CfD) which routes additional revenues above the RESS bid price to the PSO levy.

Under the MSS, the policy decision in respect of the CEP is to allow CEP feed-in tariff recipients to receive the benefit of additional market revenues above the CEP feed-in tariff level. This provides additional reassurance in their investment by way of the CEP feed-in tariff contract, which guarantees them a fixed return for 15 years (as the primary mechanism to underwrite the total investment for solar PV installations); whilst also allowing them to receive the upside of high wholesale electricity prices and thereby the potential to recover the total cost of the Solar PV installation investment in a shorter timeframe.

This decision is based on both learnings from the REFIT scheme, which indicate the importance of ensuring new market mechanisms such as the CEP feed-in tariff are supported as much as possible; and also in response to the current energy crisis, where it is recognised there are significant benefits in getting as many renewable installations connected as early as possible.

## 2. Scheme Costs

The Government approval of the MSS scheme is for a maximum Exchequer support of **€62.8 million** and for a grant rate that is fixed at a maximum of **€2,400**. The MSS is intended to be a scheme with a total cost (Exchequer and PSO) below €100m. It will be subject to a mandatory review after 2 years, or when financial commitments equivalent to half the Exchequer cost estimated in this scheme have been made, whichever is soonest. This will protect the scheme from excessive costs, ensure the targets are being delivered in a manner consistent with value for money principles and that the support amounts are appropriate to the cost of new installations. DECC will engage with the Department of Public Expenditure and Reform on the completion of this review and to agree if any changes to the scheme are necessary to limit the risk to the Exchequer. If demand for the scheme is higher than projected, further Government approval, in line with the provisions of the Public Spending Code that apply to major projects, will be required.

### 2.1 Capital Grant costs

The level of funding approved by Government for capital grants to be provided to new installations less than or equal to 6.0kWe in size, is **€62.8 million**. This is based on grant rates reducing each year from 2023 to 2028.

Forecasts indicate that the level of funding required for capital grants to be provided to new installations less than or equal to 6.0kWe in size, when grant rates are fixed for the first two years (2022 and 2023) before reducing each year from 2024 to 2028; is **€79.3** million.

Further details are shown in **Table 7** below:

Year	Projected No.	Annual export (40%) GWh	grant amount (avg) €	Cost of export (15yrs) €/kWh	Cost of generation (15yrs) €/kWh	Total Cost € m
2022	5,100	4.9	€2,100	€0.146	€0.058	10.7
2023	6,200	6.0	€2,100	€0.146	€0.058	13.0
2024	7,500	7.2	€1,800	€0.125	€0.050	13.5
2025	9,000	8.6	€1,500	€0.104	€0.042	13.5
2026	10,000	9.6	€1,200	€0.083	€0.033	12.0
2027	10,800	10.4	€900	€0.063	€0.025	9.7
2028	11,400	10.9	€600	€0.042	€0.017	6.8
<b>Sub-total</b>	60,000	58				79.3
<b>Total capacity (MW)</b>						180.0
<b>€/kWh export</b>						€0.092
<b>€/kWh generation</b>						€0.037

**Table 7: Forecast of costs for MSS Capital Grants to 2028**

Given the cost forecast in **Table 7**, the scheme will be subject to a mandatory review after 2 years; or when financial commitments equivalent to half the Exchequer cost approved have been made, whichever is soonest. Therefore, a higher level of demand for grants will result in the review being undertaken sooner, with further Government approval, in line with the provisions of the Public Spending Code that apply to major projects, being required.

## 2.2 Clean Export Premium (CEP) costs

The CEP is a feed-in tariff support and any shortfall between the wholesale electricity price and the CEP tariff, is to be supported by the PSO levy.

The forecast cost to the PSO levy for the CEP feed-in tariff beginning in 2022 to support 200MW of new installations between 6.1kWe and 50kWe in size, using a mid-point

wholesale electricity price, is € 33.3 million between 2022 and 2042. The maximum additional cost to the PSO levy from the CEP feed-in tariff in a particular year is forecast to be € 2.22 million. These costs are based on a €0.135/kWh CEP feed-in tariff in 2022 with an average export of 40% of total generation and reducing the CEP tariff by €0.01/kWh in 2023 and each subsequent year until this support is no longer available in 2028.

Where the CEP feed-in tariff is €0.135/kWh in 2022 and 2023, with an average export of 60% of total generation and reducing the CEP feed-in tariff by €0.01/kWh in 2024 and each subsequent year until it is no longer available in 2028; the forecast cost to the PSO levy for the CEP feed-in tariff beginning in 2022 to support 200MW of new installations between 6.1kWe and 50kWe in size using a mid-point wholesale electricity price, is € 63.8 million between 2022 and 2042. In this instance, the maximum additional cost to the PSO levy from the CEP feed-in tariff in a particular year is forecast to be € 4.25 million.

Further details for the latter scenario are shown in **Table 8** below:

Year	Size, kW			Annual Export GWh	CEP top-up €/kWh	annual PSO cost € m	total cost (15yrs) € m
	9	25	50				
<b>Quantity</b>							
<b>2022</b>	150	100	50	3.0	€0.072	0.2	3.3
<b>2023</b>	250	150	100	5.2	€0.072	0.4	5.7
<b>2024</b>	500	300	200	10.5	€0.062	0.7	9.8
<b>2025</b>	900	400	300	15.8	€0.052	0.8	12.2
<b>2026</b>	1450	450	600	25.9	€0.042	1.1	16.2
<b>2027</b>	1650	550	900	35.1	€0.032	1.1	16.6
<b>Total</b>	<b>9000</b>			95.6		<b>4.3</b>	<b>63.8</b>
<b>Total capacity (MW)</b>							200
<b>€/kWh export</b>							€0.045
<b>€/kWh generation</b>							€0.027

**Table 8: Forecast of costs for MSS CEP feed-in tariff to 2042**

## 2.3 Total Projected Scheme costs

The Government approval of the MSS scheme is for a total cost of **€ 96.1** million, including a maximum Exchequer support of **€ 62.8** million for Capital Grants and **€ 33.3** million for PSO support for the Clean Export Premium. The combined forecast cost for the scheme taken from **Table 7** and **Table 8** above, which takes into account the need to accelerate microgeneration, is **€ 143.1** million. As this forecast is above the Government approval level of € 96.1 million, the scheme will be subject to a mandatory review after 2 years as per 2.1 above.

Funding of € 41 million for solar PV and micro-generation has been allocated under the National Development Plan 2021 to 2030 as part of the overall capital envelope provided to the SEAI. Further details are shown in **Table 9** below:

	No.	Annual Export GWh	Capacity installed MW	Total Cost € m
<b>Total</b>	69,000	153.2	380	143.1
<b>€/MWh export</b>				62
<b>€/MWh generation</b>				31

**Table 9: Forecast of MS scheme costs to 2030**

DECC have also assessed the forecast cost of the MSS in the context of the Renewable Electricity Support Scheme (RESS) in order to compare the costs against an alternative. The mid-point wholesale electricity price element of the above RESS-1 prices is forecast at €64 on average over the scheme support period. From RESS-1 auction results<sup>20</sup>, the average prices are shown in **Table 10** below:

<sup>20</sup> [RESS-1-Final-Auction-Results-\(R1FAR\).pdf \(eirgridgroup.com\)](#)

	Community €/MWh	Solar €/MWh	All Projects €/MWh
<b>Average Price</b>	104.15	72.92	74.08
<b>Wholesale</b>	63.52	63.52	63.52
<b>PSO support</b>	40.63	9.40	10.56

**Table 10: Average PSO support costs for mid-point wholesale price from RESS-1**

Based on these values, it is possible to calculate the equivalent costs of 380MW of MSS deployment to RESS-1, as shown in **Table 11** below.

MSS €/MWh	RESS Communities €/MWh	RESS Solar €/MWh	RESS All Projects €/MWh
<b>31</b>	<b>41</b>	<b>9</b>	<b>11</b>

**Table 11: Forecast of MSS unit costs of generation compared to RESS-1 forecast costs**

The MSS therefore represents good value for money on an equivalent basis using RESS-1 average prices. As there are projects that have cleared RESS-1 at prices that are higher than the average prices above, the MSS will be even better value than those projects. Additionally, the additional grid costs associated with RESS are not a feature of the MSS and therefore the MSS compares even more favourably on a total cost basis.

## 3. Scheme Requirements

### 3.1 Technical requirements

#### 3.1.1 Eligible Technology

REDII defines energy from renewable sources as:

‘energy from renewable sources’ or ‘renewable energy’ means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas;’

The following are the eligible technologies:

1. Micro-Hydro, maximum 50kWe
2. Micro-Wind, maximum 50kWe
3. Solar Photovoltaic (PV), maximum 50kWe
4. Micro-renewable CHP, maximum 30kWe

Micro-renewable CHP excludes oil, solid fuel, natural gas and other non-renewable fuels as it does not reduce primary energy or CO<sub>2</sub> given the projections for reduction in grid electricity carbon emission levels, and therefore does not align with the climate ambitions of Government as it would lock-in fossil-fuel technologies.

Evidence from other jurisdictions has indicated that support schemes that include the range of technologies listed above have resulted in greater than 98% of all installations being solar PV installations, even with technology-specific supports<sup>21</sup>. Currently, there are no grant schemes for micro-wind and micro-hydro supported by the SEAI, who have advised that they would need to invest in new processes and systems development to include them in the MSS. Given the low numbers estimated for these technologies in Ireland, the cost to include them will be relatively high and there is a need to assess the cost of supporting those technologies to determine if the advantage of extending the scheme outweighs the costs.

#### 3.1.2 Grid connection details

All applicants will need an export grid connection in order to be able to access the Clean Export Guarantee payment or Clean Export Premium feed-in tariff. Evidence of grid

---

<sup>21</sup> [Annual reports: FIT | Ofgem](#)



connection details (technology type, technology capacity, MEC, etc.) will need to be provided to the Supplier.

Connection of micro-generation to the network for less than 6kW single phase and 11kW for 3 phase is set out in the CRU technical arrangements for micro-generation [Decision Paper CER/07/208](#). Micro-generation installations should be installed and connected by a qualified installer and Registered Electrical Contractor.

There is a separate process for larger connections under the [Enduring Connection Policy Stage 2 \(ECP-2\)](#) and a decision on this was published in 2020.

ESB Networks introduced a pilot scheme for projects above 11kW and below 50kW who can apply for an export grid connection through the new mini-generation process. ESN published the details of the new mini-generation grid connection process on 17 December 2021.

ESB Networks must be informed of the intention to install micro-generation, e.g. through a Micro-generation Installation Notification Form (NC6) for system sizes up to 6kW single phase and 11kW for 3 phase, or through a Mini-Generation Installation Notification Form (NC7) for system sizes between 6kW and 17kW for single phase and 11kW and 50kW for 3 phase.

### **3.1.3 Measurement of export volumes**

Measurement of exported electricity can be achieved via a smart meter. It is expected that over the course of the scheme applicants can be provided with a smart meter in order to measure exported electricity. Data related to micro-generation will be acquired by ESB Networks via a smart meter and provided to the Applicant's supplier. The National Smart Meter Programme (NSMP) has commenced the phased rollout of smart meters and smart services until 2024, with the initial focus on MCC01 (single phase, 24hour domestic) customers. To date circa 830,000 smart meters have been installed and there are a range of smart time-of-use tariffs in the market that is changing consumers' behavior on when and how they consume electricity.

The enduring Smart Metering solution will include import and export data at 30-minute intervals in support of active engagement by prosumers in the energy market. However, an interim settlement arrangement will be in place for the first number of years of the scheme so that customers who do not yet have a smart meter can be remunerated for their exported electricity

The CRU is responsible for implementing the framework for determining and ensuring settlement of exported electricity volumes to facilitate remuneration of the CEG as part of the enabling framework for renewables self-consumers. The export volumes provided to suppliers for the Clean Export Guarantee (CEG) may also be the basis for remuneration under the CEP feed-in tariff. In their decision on the CEG<sup>22</sup>, the CRU decided on a deemed export volume of **35% of total generation capacity** for renewables self-consumers that are not in receipt of a smart meter. Therefore, there is likely to be a period between the commencement of the CEG and the deployment of smart meters that applicants to the MSS will not be able to receive CEP support payments for volumes of export above a Deemed volume.

## 3.2 Capital Grant requirements

Applicants wishing to avail of a capital grant for new retrofit eligible technologies must comply with the following:

### 3.2.1 Eligible buildings

For domestic applicants, the grant is available to existing homes built before 2021.

All applicants must have a Meter Point Registration Number (MPRN) from the Meter Registration System Operator (MRSO) and be registered with a Supplier.

### 3.2.2 Minimum Building Energy Rating (BER)

Domestic applicants will not be required to achieve a minimum post-works BER rating.

Given the complexity and cost of assessing and certifying non-domestic buildings, there will be no minimum BER or Energy Audit requirement for the non-domestic sector.

Domestic applicants will still be required to complete a post-works BER Assessment to be eligible for MSS grant support from SEAI. This is to ensure that valuable data on building energy performance is acquired as part of Exchequer supported schemes.

---

<sup>22</sup> [Remuneration of Renewables Self-consumers for exported electricity - Commission for Regulation of Utilities \(cru.ie\)](https://www.cru.ie/en/reports-and-publications/consultations/2022/06/remuneration-of-renewables-self-consumers-for-exported-electricity/)

### 3.2.3 Certification of Installations

Currently, Solar PV installers operating under SEAI grant schemes are certified via a Certified Installers Register maintained by SEAI. SEAI is examining the possibility of extending this process to micro-hydro, micro-wind and micro-renewable CHP, which would also enable them to gather data on installation costs.

### 3.2.4 Standards and Certification of Installations

As part of the registration process for an export connection from ESB Networks, applicants must supply certification of the installation in compliance with I.S. EN 50549.

The National Standards Authority of Ireland has published Standard Recommendation (SR) 55:2021 - Solar photo voltaic micro-generators for dwellings - design, installation, commissioning and maintenance. This S.R. provides guidelines for the design, installation, commissioning and maintenance of solar PV systems with outputs that are connected to and operate in parallel with the Low Voltage (LV) Network. This S.R. applies to single phase microgeneration as defined by the network operator in both new and existing dwellings.

Micro-generation technologies that meet the required European and international standards are listed on the SEAI Triple E register<sup>23</sup> for accredited energy efficient equipment. Listed equipment qualifies for a favourable depreciation regime for corporation tax under the Accelerated Capital Allowances scheme or V.A.T. refunds for the installation.

## 3.3 Clean Export Premium requirements

Applicants wishing to avail of a CEP feed-in tariff for new eligible technologies must comply with the relevant requirements of Section 0 above and the following:

### 3.3.1 Scheme size limits and export support caps

The Ricardo AEA assessment report confirms that feed-in tariff support payments for exported electricity are required in order to incentivise the retro-fit of new larger micro-generators in Ireland. A CEP feed-in tariff below the retail rate, available micro-generation potential (e.g. roof space) and grid export connections are barriers to higher export percentages. Therefore, micro-generators exporting the majority of their generation will be the minority. A maximum export cap will ensure self-consumption for all applicants.

---

<sup>23</sup> [Triple E Register for Products | Business & Public Sector | SEAI](#)

- A cap of **80% of total new generation capacity** is an appropriate limit which balances the desire to leverage available generation potential (e.g. large roof space with grid export potential) with the need to protect the scheme from over-remuneration.

The minimum size of eligible new installations installed under the CEP is 6.1kW<sub>DC</sub>, the upper size limit is 50kW<sub>DC</sub> for micro-wind, micro-hydro and solar PV and the upper size limit is 30kW<sub>DC</sub> for micro-renewable CHP. The cap on support for export volumes is 80% of the total new generation capacity on an annual basis, where generation capacity is calculated based on an assumed 800kWh/kWp/annum for all installations. Any residual export volumes will be available for remuneration by the CEG, subject to eligibility.

## 3.4 Administration of the supports

### 3.4.1 Settlement of excess electricity supplied to the grid

The CRU has agreed the design<sup>24</sup> of the interim Micro-generation Settlement solution with industry to allow for a market-based price to be paid to micro-generators based on the volume of electricity exported. This solution, coupled with a Smart Meter, can measure and record a customer's import of any electricity consumed in addition to their export of any excess micro-generation exported to the grid for each 30-minute period. Additionally, aggregate data on import and export from micro-generators for each supplier will be made available to the wholesale market systems to allow for settlement of suppliers.

### 3.4.2 Administration of the MSS Capital Grant

The SEAI is responsible for administering MSS Capital Grants and the management of the grant scheme. This includes making changes to any existing grant schemes, including the previous pilot Solar PV domestic scheme, to facilitate a transition to the grant supports detailed in the MSS. This also includes assessing the viability of extending the list of eligible technologies to include micro-wind, micro-hydro and micro-renewable CHP and to extend

---

<sup>24</sup> Refer to [CRU21131](#)

the scheme to non-domestic applicants. The transition of such schemes to the new MSS commenced on a phased basis in February 2022.

### **3.4.3 Remuneration of Clean Export Guarantee (CEG)**

The CRU has responsibility for introducing an enabling framework for micro-generators that provides for the payment of the CEG. The CRU has published a decision on an enabling framework<sup>25</sup> that includes the eligibility criteria, treatment of smart meter and/or deemed electricity volumes and the competitive approach to setting a CEG tariff in a deregulated retail market. Suppliers will be free to determine the level of CEG tariff to offer in the market and the arrangements for payment, e.g. quarterly, bi-monthly, annually, etc.

### **3.4.4 Administration of the Clean Export Premium (CEP) feed-in tariff**

Suppliers will be responsible for administering applications to the CEP feed-in tariff. Applicants will be required to provide details to their supplier as per Section 3.3 above.

The CRU will be responsible for maintaining a central register of approved applicants in receipt of the CEP and will manage the reporting associated with the remuneration provided by the PSO levy.

### **3.4.5 Remuneration of Clean Export Premium (CEP) feed-in tariff**

The CEP is a one-way feed-in tariff for export of renewable electricity, with any shortfall between the wholesale market rates for that electricity and the CEP tariff being funded through an increase in the PSO Levy, which is administered by the CRU.

Recipients of the CEP will receive the greater of the CEP tariff or the wholesale market price of the electricity exported, should the wholesale market price exceed the CEP

An implementation plan for the CEP feed-in tariff will be developed by the CRU, which will include a review of the PSO process and the approach to drafting of the associated Statutory Instrument.

### **3.4.6 Taxation**

If export payments are provided by Suppliers, the issue of taxation arises, in particular for domestic consumers. Consequently, the Department of Finance has advised that for

---

<sup>25</sup> CRU Interim enabling Framework. <https://www.cru.ie/wp-content/uploads/2021/12/CRU21131-Interim-Clean-Export-Guarantee-Decision-Paper.pdf>

Domestic customers, an exemption from income taxes for remuneration from the CEG will apply, up to a maximum of €200 per annum.

Non-domestic customers will be liable to tax on export payments as part of their normal sector specific taxation arrangements.

### **3.4.7 Scheme Review**

DECC is responsible for reviewing the requirements for, and support levels offered in, the scheme. The scheme will be subject to a mandatory review after 2 years, or when a financial commitment equivalent to half the approved Exchequer cost (€62.8 million) has been made, whichever is soonest, to protect the scheme from excessive costs and ensure supports are targeted at the latest viability gaps for new installations. If demand for the scheme is higher than projected, further Government approval, in line with the provisions of the Public Spending Code that apply to major projects, will be required.

## 4. Impacts of the Framework support

### 4.1 Electricity Market Impacts

#### 4.1.1 Network tariffs/charges

Electricity bills are comprised of variable unit charges based on the amount of electricity consumed, fixed standing charges and other charges including the Public Sector Obligation (PSO) levy. Customers with micro-generation can reduce the variable (or per kWh) component of their electricity bills by replacing imported energy with self-generated electricity. This self-consumption will reduce the portion of their bill related to the electricity consumed.

Currently, customers with or without micro-generation pay the same fixed component of electricity charges. Suppliers are charged the same network charges for each household regardless of whether or not micro-generation is installed, as these charges relate to the development, maintenance and operation of the transmission and distribution networks. Customers with micro-generation continue to use the transmission and distribution networks when they import electricity, often at peak times and should therefore continue to pay a fair contribution to those charges. They will also be using these networks to export their electricity to other consumers and the market in order to receive remuneration.

The CRU is of the view that customers who may not be in a position to invest in micro-generation should not be disadvantaged or cross-subsidise those customers who can do so. All customers should have the opportunity to contribute to the transition to a low carbon energy system, whether through micro-generation, taking up time of use or dynamic tariffs or through demand response.

On October 18<sup>th</sup> 2021 the CRU published a consultation on an electricity network tariff structure review<sup>26</sup> and, along with a range of other factors, will consider the equity, transparency, distributional aspects and fairness of network charges in the context of micro-generation during this review.

---

<sup>26</sup> [The Electricity Network Tariff Structure Review - Commission for Regulation of Utilities \(cru.ie\)](https://www.cru.ie/en/reports-and-publications/consultations/2021/10/18/electricity-network-tariff-structure-review/)

### **4.1.2 Impacts on fuel poverty/ low-income households**

Any support scheme needs to be developed in a way that is equitable and fair and does not overcompensate those participating or over burden those who are unable to, in particular those with low incomes, in energy poverty or in multi-occupancy and/or rented accommodation. While stand-alone premium export tariff supports for new micro-generation installations may increase costs to electricity consumers through increased administration costs for Suppliers and increases in the PSO levy, the impacts of costs related to network charges and the PSO levy are being reviewed by the CRU with a view to ensuring a proportionate charging system is in place.

### **4.1.3 Administration Costs**

The CRU has formed a view on interim arrangements for settlement of any payments associated with micro-generation.<sup>27</sup> They note that there are a number of balanced and transparent options that can be considered to facilitate payment and settlement for micro-generators once a smart meter is in place, and before systems are fully developed for the transfer of information on import and export from smart meters in 2024 as part of Phase 3 of the National Smart Metering Programme (NSMP). Following a workshop with industry, the CRU determined the interim settlement solution will need to be carried out on a manual basis for any support scheme put in place by DECC in 2022. The CRU is also progressing work in relation to the development of a facilitative framework for aggregation, based on the requirements under the new Internal Market on Electricity Regulation and Internal Market on Electricity Directive and is of the view that this could potentially provide a route to consumers interacting with the wholesale electricity market while minimising their exposure to balancing market risks. These approaches will minimise the costs to Suppliers for implementing the settlement process.

Suppliers will incur additional costs for administering the CEG and CEP payments and for registering eligible Applicants to the scheme. ESNB will incur costs for administration of export meter data, additional export connection requests and liaison with Suppliers. The CRU will incur costs for maintaining the central register of approved applicants in receipt of the CEP, for the administration of the PSO levy and for reporting on the volumes remunerated via the PSO levy. Finally, SEAI will incur costs for administration of grants and may incur costs for managing the certification of installers and liaison with Suppliers.

---

<sup>27</sup> Refer to [CRU21131](#)



#### **4.1.4 Impacts of increase in PSO levy**

The MSS requires that eligible customers with new installations between 6.1kWe and 50kWe in size be paid a CEP Feed-in tariff for electricity exported to the grid, with any shortfall between the wholesale market rates for that electricity and the CEP tariff being funded through an increase in the PSO Levy. The additional costs to suppliers of these payments to micro-generators will be incorporated into the annual review of the PSO levy charges.

## **4.2 Impact of scheme costs**

### **4.2.1 Overall scheme costs**

The MSS is funded by a mixture of Exchequer grant funding and the PSO levy supporting the Clean Export Premium.

- The grant funding to support approximately 180MW of installed capacity is estimated to be € 62.8 million from 2022 to 2028.
- The CEP feed-in tariff support for approximately 200MW of installed capacity is estimated to be € 33.3 million from 2022 to 2042. The overall costs of the scheme are estimated to be € 96.1 million.

### **4.2.2 Costs to electricity consumers**

Support of € 33.3 million is forecast for the CEP, to be recovered through the PSO levy on electricity consumers, which is managed by the CRU. The key principles the CRU considers important in relation to micro-generation are as follows:

- Customers should be facilitated to contribute to decarbonisation, enabling a reasonable, market-based price for exports, while minimising impacts on customers that do not have the means or opportunity to invest in micro-generation.
- Customers should be supported and encouraged to manage their own demand in an affordable and low-carbon way.
- Network, system operation and market costs associated with the provision of a reliable, safe and secure supply of electricity; should continue to be attributed in an equitable and transparent way between customers with and without micro-generation.

Based on the above, the impact of the MSS will be assessed by the CRU as part of their review of network tariffs and charges. It is anticipated that given the current number of existing micro-generators and the gradual ramp up in deployment of micro-generation installations over the scheme life, the impact in the early years will be minimal.

### **4.2.3 Impacts on Distribution System Operator (DSO) Grid**

Increased uptake of micro-generation will have potential impacts on both the transmission and distribution systems which may be dependent on the configuration and age of the network. This will be influenced by existing installed micro-generation, trends in installation of electric vehicles, heat pumps and electrification of heat. Any additional costs associated with significant reinforcement due to the interaction between these factors will need to consider the most equitable means of recovering additional network costs. Any potential benefits accruing from micro-generation, or the efficient aggregation of same in the longer term, could also be considered such as the potential for reduction in system losses associated with the transport of electricity at the distribution level. The DSO, ESB Networks, has published a report that assessed the impacts of increased penetration of micro-generators on their network<sup>28</sup>. They have concluded that all electricity consumers could install up to 3kW in rural areas and 4kW in urban areas with little or no impact on the network. The impacts of exported electricity from micro-generation during the lifetime of the scheme will be assessed as part of the 5-year Price Review process managed by the CRU.

### **4.2.4 State Aid Assessment**

EU State Aid applies to supports to companies. Therefore, the costs in this scheme to support the domestic sector are not considered in the State Aid assessment. The cost to support the non-domestic sector relates to the capital grant and the Clean Export Premium. It is important to note that support given to enterprises under the capital grant and the Clean Export Premium will be considered State aid. According to the assessment carried out by DECC, EU State Aid approval will not be required for the overall Micro-generation Support scheme as the amount of support to businesses is below the De Minimis Aid threshold of €200,000 over any three fiscal years. There is no requirement to notify the EU of the details of the scheme under the De Minimis Regulation (1407/2013).

---

<sup>28</sup> [assessment-of-the-scope-for-higher-penetrations-of-distributed-generation-on-the-low-voltage-distribution-network.pdf \(esbnetworks.ie\)](#)

The Regulations requires that public authorities keep records of all de minimis aid paid out for 10 years from the last payment. The SEAI will maintain records for both domestic and non-domestic grants in this regard.

The beneficiaries must keep records of de minimis aid for 3 years.

Records must also be kept to show that all conditions of the de minimis regulation have been met.

DECC has engaged with the Department of Agriculture, Food and the Marine on the issue of state aid for the agriculture sector. The agriculture sector has different rules regarding state aid, with the de minimis aid threshold lower at €20,000 over 3 years. Given the maximum amount of supports to be offered under the MSS, recipients of supports from the agriculture sector will be able to avail of the agriculture de minimis regulation.