Energy Company
Obligation (ECO)

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ECO2t Solar PV scoring methodology

Introduction

Solar PV is an eligible measure under the Home Heating Cost Reduction Obligation (HHCRO) where electric heating is the primary heating source of the premises and the generated heat is used partly or fully for space heating. The current deemed scores developed for solar PV are based on the following assumptions;

- the installed capacity is 2.5kWp,

- the solar panels are installed in a south facing orientation with an inclination of 30°, and

- there is modest over shading.

These factors will vary by installation and they can have a material impact on the saving achieved by the measure. This methodology will therefore use the Percentage of Property Treated (POPT) to adjust the deemed scores for solar PV measures according to two of the characteristics of the installation.

Approach

The POPT of the solar PV deemed score will be adjusted based on two variables;

- Installed capacity

- Orientation and inclination of the installation

Installed capacity

The current deemed score is based on an installed capacity of 2.5 kWp. If an installation is greater or less than 2.5 kWp, the POPT should be adjusted on a pro-rata basis up to a maximum of 10 kWp. For example, where an installation has an installed capacity of 5 kWp, POPT should be increased to 200% to reflect that the installation has an installed capacity which is 200% of what the deemed score assumes.

Orientation and inclination

The current deemed score is based on solar panels in a south-facing orientation with an inclination of 30°. If installed outside of these parameters, the power generated by the installation could be significantly different to that assumed in the deemed score.

To recognise this, the POPT should be adjusted based on an orientation and inclination factor (OI factor). The OI factor represents the expected energy yield when considering the orientation and inclination values of a particular installation.

Suppliers should select the appropriate OI factor based on the orientation and inclination of a specific installation using table 1. The orientation of a system should be selected on the horizontal axis and the inclination on the vertical axis. Where these points meet will identify the correct band. The key should then be used to identify the OI factor for that band.

Table 1: OI factors for solar PV installations of different orientation and inclinations

Inclination \ Orientation	North	North West	West	South West	South	South East	East	North East	North
	-185° / -165°	-150° / -135° / -120°	-105° / -90° / -75°	-60° / -45° / -30°	-15° / 0° / 15°	30° / 45° / 60°	75° / 90° / 105°	120° / 135° / 150°	165° / 180°

(Table 1 is presented as a colour-coded heat map grid. Orientation angles from -185° to 180° are on the horizontal axis; inclination values 90°, 80°, 70°, 60°, 50, 45, 40, 35, 30, 20, 10, 0 are on the vertical axis. The colour of each cell corresponds to an OI factor band as defined in the key below.)

Key:

Band colour	OI factor (%)
Red	35
Orange	55
Yellow	74
Light green	86
Green	93
Blue	100

POPT Calculation Methodology for Solar PV

The deemed score should be adjusted using POPT and calculated using the formula below:

Solar PV POPT = Installed Capacity / 2.5 (kWp) x OI Factor (%)

Where:

Installed capacity is the capacity of the system installed in kWp.

OI Factor is the average % energy yield or power generation as determined using table 1.

Worked examples of methodology

Example 1: A 4 kWp solar PV installation with an inclination of 20° and orientation of 35° south-east. Table 1 provides an OI factor of 93%.

Solar PV POPT = 4 (kWp) / 2.5 (kWp) x 93 = 148.8

POPT is rounded to the nearest 20% giving a POPT of 140%.

Example 2: A 2 kWp solar PV installation with an inclination of 35° and an orientation of 60° south-east. Table 1 provides an OI factor of 86%.

Solar PV POPT = 2 (kWp) / 2.5 (kWp) x 86 = 68.8

POPT is rounded to the nearest 20% giving a POPT of 60%.

Example 3: A 3 kWp solar PV installation with an inclination of 35° and an orientation of -15° south/south-west. Table 1 provides an OI factor of 100%.

Solar PV POPT = 3 (kWp) / 2.5 (kWp) x 100 = 120

POPT is rounded to the nearest 20% giving a POPT of 120%