



Revaluation 2010

Public Utilities Committee

Electricity Generation Lands

Practice Note 2

Valuation of On-Shore Turbines/Wind Farms

1.0 Introduction

- 1.1 This guidance note is to assist with the valuation of any new or altered on-shore wind turbines/wind farms used to generate electricity where the power generated is mainly or exclusively for distribution for sale to consumers and are in receipt of either Renewable Obligation Certificates (ROC's) or Feed-In Tariffs (FITs) as administered by the Office of Gas and Electricity Markets (Ofgem).
- 1.2 This guidance note is not appropriate for the valuation of those sites accredited with Scottish Renewables Obligation (SRO) under a price contract with the Non Fossil Purchasing Agency Scotland Ltd (NFPA Scotland Ltd). In practice no new site should fall into this category.
- 1.3 At Revaluation 2010 all on-shore wind generating lands and heritages were valued on the Revenue Principle.

2.0 Basis of Valuation

- 2.1 New sites that have become operational since 1 April 2010 cannot be valued by the Revenue Principle and should be valued by application of the comparative principle to tone of the roll. These are subjects where the volume of trade or business carried on the lands and heritages is a relevant factor and accordingly the valuation according to tone of the roll must take this into account.
- 2.2 The values adopted for existing subjects entering the Roll as at 1 April 2010 have been analysed in order to derive a unit of comparison expressed on a rate/MW basis for sites with different Load Factors. This allows comparison to be made with sites with a similar volume of trade or business at the valuation date. The data has been produced in tabulated format outlined in Appendices 1, 2 & 3.
- 2.3 The exception to this is wind powered generating subjects with a generating capacity of 50kW or less. These are defined as micro generation per The Valuation for Rating (Plant and Machinery) (Scotland) Amendment Regulations 2008. In terms of this legislation certain items of plant and machinery defined as having "micro generation capacity" are excluded from valuation for rating. Consideration should be given to making an entry in

respect of any buildings or other relevant rateable plant and machinery if applicable. Rateable items of plant and machinery should be valued by application of the Contractor's Basis of valuation with reference to guidance and replacement costs contained in the 2010 SAA/VOA Rating Cost Guide.

3.0 Entry in Valuation Roll

- 3.1 It is suggested that these subjects be described as Electricity Generation Lands.

4.0 Valuation Considerations

4.1 Site Accreditation

- 4.1.1 Prior to 1 April 2010, sites were accredited either as Scottish Renewables Obligation (SRO) under a price contract with Non Fossil Purchasing Agency Scotland Ltd (NFPA Scotland Ltd), or Renewable Obligation Certificates (ROC's) as administered by the Office of Gas and Electricity Markets (Ofgem). The earliest of the arrangements was SRO1 which was introduced in 1994 followed by SRO2 in 1997 and finally SRO3 in 1999. SRO contracts are due to expire between 2012 and 2019. ROC's were introduced in 2004.
- 4.1.2 With effect from 1 April 2010 an additional scheme has been introduced by the Government via Ogem that offers financial support for eligible low-carbon electricity technologies known as Feed In Tariffs (FIT's). This scheme is aimed at small scale installations generating up to a maximum capacity of 5MW. Those operators who are eligible can choose between the Renewable Obligation Scheme (ROC's) or transfer to the new Feed In Tariff Scheme (FIT's). Once an operator moves to FIT's they cannot change back to ROC's.
- 4.1.3 This Guidance Note relates to sites accredited with ROC or FIT contracts only. It is therefore vital that the valuer ascertains the type of contract the operator has entered into. In practice all new sites will be ROC or FIT.

4.2 Total Installed Generating Capacity of the site. (TIGC)

- 4.2.1 The Valuer should establish the Total Installed Generating Capacity (TIGC) of the site in megawatts (MW) from the operator. As a check, this information is available publicly on the Office of Gas and Electricity Markets (Ofgem) website which lists all accredited stations.
(www.ofgem.gov.uk)

4.3 Output of the site expressed as Load Factor (L.F.)

- 4.3.1 The volume of trade or business produced by any given site is determined by the output. The unit of measurement for electricity Generation Lands is based on Megawatt hours (MWh). Where possible, the Valuer should seek to obtain documentary evidence of any historical records that would assist in determining the volume of MWh the site is likely to generate per annum.

4.3.2 This may be available from a variety of sources. For example, anemometer mast readings, meteorological or modelling data gathered by the operator or any alternative source of data that the operator can provide that confirms the anticipated output for the development. In some instances it could also be disclosed during the planning process. This may be provided as an expected Load Factor expressed as a percentage or as expected Megawatt hours of output.

4.3.3 If the output in MWh's has been provided, the load factor percentage may be calculated as follows:-

$$\frac{\text{Electricity generated by the development in Megawatt Hours}}{\text{Total Installed Capacity in Megawatts} \times 8760 \text{ Hours}} \times 100$$

4.3.4 Care should be taken when determining the anticipated annual output for a site. Past experience suggests data used to measure anticipated output levels tends to overstate actual performance typically by around 10%. For example, an anticipated 30% LF site is more likely to perform at 27% in practice. The Valuer may wish to give this consideration when determining the appropriate Load Factor to apply to the valuation

4.3.5 If the operator is unable to provide sufficient information, the table below outlines the recommended Load Factor percentage that should be adopted in order to determine the appropriate Rate/MW to be applied in the valuation.

LOCATION	LOAD FACTOR
Orkney & Shetland	40%
Highland & Grampian	30%
All Other Areas	25%

5.0 Valuation

5.1 The recommended Rate/MW for the appropriate Load Factor should be applied to the TIGC expressed in megawatts in accordance with the figures in Appendices 1, 2 & 3.

5.2 *Guidance on the use of the tables contained in Appendices 1, 2 & 3:-*

5.2.1 The rates provided in these Appendices are produced in order to facilitate a comparative valuation of all on-shore wind farms coming into the 2010 Revaluation Roll throughout the quinquennium where either a ROC or FIT contract has been entered into.

5.2.2 Appendix 1 provides recommended Rates/MW for various Load Factors to be applied to subjects with a Total Installed Generating Capacity (TIGC) greater than 0.05MW up to 5MW.

For example, the NAV for a site with a TIGC of 2.5MW and LF of 30% would be calculated as follows:- $2.5 \times \text{£}21,023 = \text{£}52,557$, say $\text{£}52,500$.

5.2.3 Appendix 2 provides recommended Rates/MW for subjects that have Total Installed Generating Capacities (TIGC) greater than 5MW but less than 10MW. When calculating the NAV, for such sites, the Total Installed Generating Capacity should be adopted and the rates/MW outlined in Table 2 interpolated as necessary.

5.2.4 Appendix 2 indicates the level of value per MW for the particular TIGC starting with a Load Factor of 20%. When calculating the NAV for subjects that have a higher LF, an addition of £1,143 should be added for each 1% increase in LF.

For example, the NAV for a site with a TIGC of 7.25MW and a LF of 29% would be calculated as follows:- $7.25 \times (\pounds 11,611 + (9 \times \pounds 1,143)) = \pounds 158,760$, say £158,500.

5.2.5 Appendix 3 provides recommended Rates/MW to be applied to subjects with a Total Installed Generating Capacity (TIGC) of 10MW or more relative to the appropriate Load Factor (LF) of the site.

A site with a TIGC of 12.5MW and a LF of 30% would be calculated as follows:- $12.5\text{MW} \times \pounds 24,250 = \pounds 303,125$, say £303,000.

5.2.6 Rounding of values will be determined by each assessor in line with their local scheme.

6.0 Alterations to Existing Sites

6.1 Any alterations made to an existing site either in terms of an increase or decrease in Total Installed Generating Capacity, should be valued by applying the appropriate table for the new TIGC and adopting the same Load Factor that was applied to the original valuation.

Exceptions to this would be:-

6.1.1 Where the change to the existing TIGC is so significant that the subjects could be considered to be entirely different in character from the original site.

6.1.2 A generating site on an existing SRO contract which expands with the new capacity qualifying for ROC's/FIT's thereby resulting in a mix of any of the 5 types of accreditation noted, namely SRO 1, SRO 2, SRO 3, ROC's or FIT's.

6.2 In both cases assistance can be provided by Lanarkshire Valuation Joint Board.

Appendix 1

Table 1 - Recommended Rate/MW to NAV

TIGC above 0.05MW up to 5.0MW	
Load Factor	Rate/MW
20%	£9,595
21%	£10,738
22%	£11,881
23%	£13,023
24%	£14,166
25%	£15,309
26%	£16,452
27%	£17,595
28%	£18,737
29%	£19,880
30%	£21,023
31%	£22,166
32%	£23,309
33%	£24,452
34%	£25,594
35%	£26,737
36%	£27,880
37%	£29,023
38%	£30,166
39%	£31,308
40%	£32,451
41%	£33,594

Appendix 2

Table 2 - Recommended Rate/Megawatt to be applied to NAV

TIGC Ranging From 5.00MW to 10MW			
TIGC MW	Rate/MW	L.F.	Addition for each 1% increase in L.F.
5.00	£9,595	20%	N/A See Appendix 1
5.25	£9,904	20%	£1,143
5.50	£10,185	20%	£1,143
5.75	£10,442	20%	£1,143
6.00	£10,687	20%	£1,143
6.25	£10,894	20%	£1,143
6.50	£11,094	20%	£1,143
6.75	£11,279	20%	£1,143
7.00	£11,451	20%	£1,143
7.25	£11,611	20%	£1,143
7.50	£11,760	20%	£1,143
7.75	£11,900	20%	£1,143
8.00	£12,031	20%	£1,143
8.25	£12,154	20%	£1,143
8.50	£12,270	20%	£1,143
8.75	£12,379	20%	£1,143
9.00	£12,482	20%	£1,143
9.25	£12,579	20%	£1,143
9.50	£12,672	20%	£1,143
9.75	£12,759	20%	£1,143
10.00	£12,843	20%	N/A See Appendix 3

Interpolate as necessary

Appendix 3

Table 3 - Recommended Rate/MW to NAV

TIGC 10MW or Greater	
Load Factor	Rate/MW
20%	£12,843
21%	£13,985
22%	£15,128
23%	£16,271
24%	£17,414
25%	£18,557
26%	£19,700
27%	£20,842
28%	£21,985
29%	£23,128
30%	£24,271
31%	£25,414
32%	£26,556
33%	£27,699
34%	£28,842
35%	£29,985
36%	£31,128
37%	£32,270
38%	£33,413
39%	£34,556
40%	£35,699
41%	£36,842