

*Submission to*

**Department of Communication, Climate Action and Environment**

*On*

**Electricity Support Schemes: Transitioning to I-SEM Arrangements**

*From*

**Bioverda Power Systems**

**11<sup>th</sup> January 2018**

Bioverda Power Systems welcomes the opportunity to comment on the Department of Communication, Climate Action and Environment Proposed Decision Paper "Electricity Support schemes: Transitioning to I-SEM Arrangements".

Bioverda Power Systems including its sister company Starrus LFG, Bioverda, specialise in the design, construction, installation, operation and maintenance of landfill gas power generation stations. Bioverda has been operating landfill gas power generation facilities in Ireland since 1996 and currently operates 20 landfill gas generators on 9 different landfills in the country. Bioverda sells the electricity it generates to Licensed Suppliers under both REFIT and Merchant Power Purchase Agreements. Bioverda Power System has one REFIT PPA at its site in Arthurstown and Starrus LFG Ltd., has 4 REFIT PPAs across its KTK, Kilconnell, Knockharley and Ballynagran sites.

Bioverda is the largest Landfill Gas Generator in the country and an important stakeholder in the REFIT electricity support scheme. Bioverda notes that there has been substantial engagement with wind generators representative groups however minimum engagement with landfill gas generators.

Bioverda agrees with Proposed Decision 1 and Proposed Decision 3 however we do not agree with proposed Decision 2.

To allow for the "inevitable forecast error of wind generation and spread associated risk across the relevant near-term markets" it is proposed in this paper that the market revenue calculation for wind generation will be based on the lower of a blend of Day Ahead Market, DAM and Balancing Market, BM Price and the Day Ahead Market Price. Bioverda believes as the short term predictability of landfill gas and resultant forecast error is similar to that of wind that this should also apply to the Biomass Landfill Gas power generation technology category also.

Wind forecast variability as measured by the Mean Absolute Error in the 0 to 48 hour period is between 9.5% and 22.8%<sup>[1]</sup>. Landfill gas forecast variability in a similar period based on Bioverda data compiled over the last month can vary from 8% to 23%, see Appendix.

While wind forecast error is impacted predominantly by meteorological influences, landfill gas generation forecast errors are impacted by several different factors, these include;

#### 1. Impact of operating on a working landfill

- Bioverda have 5 REFIT contracts on operating landfills which are accepting waste. While waste is being deposited, gas extraction pipework is consistently being removed and added to the gas collection network. This is completed at the front face of a landfill. Bioverda regularly experiences issues where the gas engines incurs unscheduled stoppages due to high oxygen. This can be due to gas collection Infrastructure pipes being disconnected to deposit waste in an area, gas pipework not corrected properly or gas pipework being damaged by waste vehicles. This is a regular occurrence particularly at the end of the working day when the front face of the landfill is being covered to minimise odours overnight. This impacts on short term forecast accuracy.
- Another major impact on predictability is during capping works when an area of the landfill which has been filled with waste is capped with a HDPE liner. During this process gas extraction is either limited or removed from the area under attention. This works impacts on the short term generation output from a landfill and the corresponding predictability of landfill gas generation.

[1] <sup>\*</sup> [Benchmarking exercise on short-term forecasting of renewable power forecasting](#), *Energies*, vol. 8, pp 119, 2015