

Dublin Waste to Energy: Response to SEM Consultation: Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code (SEM/09/073)

Executive Summary

1. The Dublin Waste to Energy Facility is required by regulatory, policy and public health requirements to run constantly at full output.
2. The Facility should be treated as a ‘must-run’ generator unit in dispatch, and permitted to participate in the SEM as a predictable price taking generator unit. This may be achieved either by:
 - 2.1 Acknowledging the Facility’s status as a hybrid generator unit, with the full benefits of priority dispatch; or
 - 2.2 In recognition of the unique regulatory restrictions on a waste-to-energy plant and the policy benefits of ensuring it is dispatched, treat it as a special category of unit, with priority dispatch / ‘must-run’ status.
3. Hybrid generators should be afforded priority dispatch on the same basis as other renewable generators.
4. Priority dispatch generators should be afforded absolute priority over other generators.
5. Within a category of generators with priority dispatch, tie-breaks should be resolved:
 - 5.1 With regard to the contribution of each unit to system security;
 - 5.2 With regard to an economic merit order derived by reference to submitted decremental prices; and
 - 5.3 Finally by the application of subjective rules which take due account of the overall policy benefits of running a unit.
6. In the event of an Excessive Generation Event the SMP (as well as dispatch) should be set by reference to the economic merit order derived from decremental prices submitted by price taking generators. The SMP should apply only to the units actually dispatched.

1. Introduction

- 1.1 Dublin City Council as CER's licensee for the Dublin Waste to Energy Facility, and its operator Covanta Operations Europe Limited, hereinafter jointly "DWTE", are grateful for the opportunity to respond to the consultation concerning Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code (SEM/09/073) (the "Consultation").
- 1.2 DWTE is in the process of developing a waste-to-energy facility (the "Facility") to be located on the Poolbeg Peninsula in Dublin City. Planning Permission and an EPA Waste Licence¹ have already been granted for the Facility, which is expected to be operational in 2012. DWTE has secured its Licence to Generate and Authorisation to Construct. Furthermore DWTE received a non-firm grid connection offer from ESB Networks in February 2009. This offer was subsequently finalised and the Connection Agreement executed on 7th May 2009.
- 1.3 Waste-to-energy provides non-intermittent indigenously fuelled renewable energy generation capacity; offering many advantages both as a source of reliable base-load renewable generation capacity and in terms of the achievement of national and EU energy and environmental policy objectives.
- 1.4 Waste-to-energy has a number of unique technical and regulatory restrictions on its operation, which require that it operates as a 'must-run' generator unit. DWTE considers that the issues raised by the Consultation, particularly concerning the classification and treatment of hybrid generators and treatment of priority dispatch generators, are of critical importance to the efficient operation of the Facility.
- 1.5 The following document outlines DWTE's response to the key issues raised by the Consultation that impact on the operation of the Facility as a 'must-run' unit. DWTE is satisfied that the contents of this response will be published in full.

2. Policy Context

- 2.1 Before considering individual issues raised by the Consultation, it is useful to consider the legal and policy framework within which the Facility will operate.

Energy Policy

- 2.2 The recovery of energy from waste is an important objective of European waste and energy policy. The *EU Biomass Action Plan*², describes waste as an underused energy resource and seeks to actively promote waste management techniques that use waste as a fuel. The implementation of the Action Plan is, in turn, a key goal in the European Commission's Renewable Energy Roadmap,³ which considers the means to achieve a target of 20% of Europe's total primary energy requirement derived from renewable sources by 2020.

¹ Waste Licence for a Non-Hazardous Waste Incinerator/Waste-to-Energy Facility, Register No. W0232-01

² SEC(2005) 1573

³ COM(2006) 848 final; available at http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf

- 2.3 This target was incorporated in Directive 2009/28/EC (the “**Renewable Energy Directive**”) which amends and subsequently repeals the 2001 RES-E Directive. The Renewable Energy Directive provides that transmission system operators:

‘shall give priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria’.

Renewable resources as defined in Renewable Energy Directive include the biodegradable fraction of industrial and municipal waste.

- 2.4 Ireland’s *Energy White Paper: Delivering a Sustainable Energy Future for Ireland* emphasised three key energy pillars of security of energy supply, environmental sustainability and economic competitiveness. It further included a 33% renewable electricity target for 2020. The electricity target was subsequently revised upwards to 40% renewable by 2020. The White Paper supports the development of waste-to-energy projects. It also commits to implementing in full the *National Bioenergy Action Plan*, which seeks to:

“... maximise the recovery of useful materials and energy from residual waste, and accordingly suggests thermal treatment with energy recovery as the preferred option”.

To achieve this, the Plan undertook to extend the REFIT scheme to assist in the development of waste-to-energy projects. Biomass is supported by REFIT and attracts a reference price of 7.2 eurocents per kWh.

- 2.5 The Facility contributes to the achievement of EU and Irish targets for renewable energy. However it also provides key benefits for the operation of the SEM, and for broader policy objectives including security of supply. The Facility will generate energy from a local waste resource and thereby contribute to an overall objective of reducing reliance on imported fuel. The addition of waste to the fuel mix will not only benefit in terms of renewable targets, but will also enhance fuel diversity. The non-intermittent nature of unit, its fuel source and its likely 90%+ availability are such that it will provide a reliable capacity contribution to the market at a low cost (it is anticipated the Facility will operate as a price taker) which is entirely unrelated to international energy prices.

Climate Change Policy

- 2.6 Waste-to-energy facilities divert biodegradable waste away from landfill and use it to produce renewable energy, reducing methane emissions from landfill as well as displacing electricity from fossil fuels. The International Expert Panel on Climate Change has noted that waste-to-energy can provide significant mitigation potential for the waste sector, especially in the short term, by replacing landfill.⁴
- 2.7 The recently revised Waste Framework Directive (“**WFD**”),⁵ supports the reduction of greenhouse gas emissions through the thermal treatment of waste in waste-to-

⁴ IPCC Fourth Assessment Report (AR4). Climate Change 2007: Mitigation of Climate Change available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter10.pdf>

⁵ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.

energy plants insofar as it reclassifies efficient waste-to-energy facilities as recovery operations. In doing so, it moves waste-to-energy up the waste hierarchy, and encourages a reduction in the landfilling of waste (with associated greenhouse gas emissions) as well as the reduced consumption of fossil fuels.

- 2.8 Ireland's *National Climate Change Strategy* outlines the measures necessary to meet its Kyoto Protocol commitment to reduce emissions to 13% above 1990 levels by 2012. The Strategy notes that landfill is the main source of greenhouse gas emissions from the waste sector and supports efficient waste-to-energy technology as a means of minimising climate impacts through the sustainable management of waste.

EU and Irish Waste Policy

- 2.9 The objective of waste policy is to minimize the negative effects of the generation and management of waste on human health and the environment. This includes reducing the use of resources and favouring the practical application of the EU "waste hierarchy" which is set out in Article 5 of the WFD. The WFD provides the overall structure for waste management within the EU and is a touchstone for European waste management policy. The most recent revision of the WFD must be transposed into Irish law by 12 December 2010. Its impact can already be seen in Waste Licences recently granted by the EPA.

- 2.10 The WFD seeks to promote the alternatives to landfill by, *inter alia*, strengthening the role of the waste hierarchy. The five-step hierarchy must be strictly adhered to in all national policy and legislation, with options positioned higher up in the hierarchy being prioritised ahead of those positioned beneath them. The WFD definitively clarified that waste-to-energy plants which meet specified energy efficiency criteria are classified as recovery, which positions them on the waste hierarchy above disposal operations such as low quality sorting and landfilling. This is particularly significant in light of national waste diversion targets imposed under the Landfill Directive.⁶

- 2.11 The Landfill Directive provides that, by 2010, Ireland must reduce the amount of Biodegradable Municipal Waste ("**BMW**") going to landfill to 75% of the total amount (by weight) produced in 1995. Subsequently, the amount of BMW going to landfill must not exceed;

- 50% of the total amount (by weight) of BMW produced in 1995 by 2013; and
- 35% of the total amount (by weight) of BMW produced in 1995 by 2016.

- 2.12 Due to its historical reliance on landfill, Ireland obtained a four year extension on the first two targets, which were to be met by other Member States in 2006 and 2009. Despite this, Ireland is unlikely to meet its first target in 2010, and may face significant penalties under the Landfill Directive for failure to meet its diversion targets. Running the Facility at full capacity will assist in the achievement of the diversion targets.

⁶ Directive 99/31/EC

National Strategy for Biodegradable Waste

- 2.13 The National Strategy for Biodegradable Waste was prepared by the Department of the Environment Heritage and Local Government, and sets out a range of measures to meet Ireland's diversion targets. This document confirms that Irish Government policy in relation to waste management is grounded in the waste hierarchy. It further states that

“Thermal treatment with energy recovery in accordance with the internationally-accepted waste management hierarchy is a key element of Irish waste management policy.”

- 2.14 It also notes that recovering energy from waste is supported by the National Climate Change Strategy, since it can reduce dependence on imported fossil fuels and decrease the generation of methane in landfills.

Dublin Waste Management Plan

- 2.15 Each local authority is required by section 22 of the Waste Management Acts 1996 to 2008 to produce a waste management plan with regard, *inter alia*, to the prevention, minimisation, collection, recovery and disposal of non-hazardous waste within its function area.
- 2.16 The construction and operation of the Facility is a cornerstone of the Waste Management Plan for the Dublin Region, which cites the Facility as a key contributor to the achievement of Landfill Directive and National Biodegradable Waste Strategy objectives.⁷
- 2.17 We note that in granting planning permission for the Facility, An Bord Pleanála had specific regard to the objectives of the Dublin Waste Management Plan and to the Dublin City Development Plan and the Facility's role therein.
- 2.18 The operation of the facility at its nominal full output (which is sized to achieve the optimal rate of recovery by means of waste-to-energy for the Dublin region) will permit the achievement of a key element of the waste management objectives for the Dublin area and, by extension, the achievement of national landfill diversion targets.

3. The Facility as a 'Must Run' Generator Unit

- 3.1 From the foregoing, it is clear that there are a significant number of policy imperatives for the efficient operation of a waste-to-energy facility operating in the Dublin region. This, in tandem with additional licensing and operational constraints, has particular implications for the operation (and dispatch) of the Facility. In essence, as set out below, the Facility should be dispatched as a must-run unit and at nominal full output in the ordinary course of events.
- 3.2 The primary function of the Facility is to thermally treat municipal solid waste (“MSW”). The Facility is sized to process a specified volume of MSW on a yearly basis at a defined availability. This volume is dictated by the national and regional policy need for thermal treatment of MSW in the Dublin region, as outlined in Section 2 of this response. The process uses MSW as fuel to generate steam, which,

⁷ Dublin Waste Management Plan 2005-2010 available at http://www.dublinwaste.ie/Download_Complete_Plan.html.

in turn, is converted to electricity by a steam turbine generator, and is exported to the grid.

- 3.3 Steam that is not converted to electricity (in the event that the unit is not dispatched) is spilled through a cooling water system utilising water from the River Liffey. Steam by-pass is limited by EPA license restrictions on heat disposal to the river. The Facility is subject to water temperature restrictions as well as to discharge limitations.⁸
- 3.4 The Facility is also subject to an over-arching energy recovery efficiency requirement, set out in Condition 7 of its Waste Licence. The efficiency requirement is derived from Article 4 of the WFD, which provides that waste-to-energy plants shall be defined as recovery operations if they meet a minimum energy efficiency factor (R1) of 0.65 according to the formula included in Annex II of the WFD. This formula describes all energy flows to, from and within the plant and ascribes energy conversion factors to electricity and steam to reflect their relative usefulness. The operation of the Facility without associated electricity generation would significantly prejudice the achievement of this efficiency requirement. Failure to achieve the efficiency requirement would have implications not only for Waste Licence compliance, but also for achievement of national targets under the WFD.
- 3.5 Consequently, even where the unit is constrained down for a short period (a number of Trading Periods) in a Trading Day, it may not be feasible to merely spill the steam for that period. As a prudent operator, DWTE considers that the capacity to spill steam should be retained for emergency events including outages and system issues. The spilling of steam should not be considered a 'commercial' alternative, the cost of which would be capable of being compensated by a constraint or other market payment. Rather, it is an operational and regulatory / policy issue to the extent that spilling steam will limit the ability of the facility to meet its licence and efficiency requirements and also limit the ability of Ireland to meet national WFD and Landfilling targets.
- 3.6 If the Facility cannot spill steam, it would have to cease to process waste. This would impose significant costs on DWTE which are likely to far outweigh decremental costs faced by other generators. In addition to the economic disincentive for this approach, it should be noted that the failure to dispose of a requisite proportion of MSW through incineration will jeopardise the achievement of national landfill diversion targets imposed through the operation of Article 5 of the Landfill Directive.
- 3.7 We note that from 2010 - 2012 when it is anticipated that many landfill sites in the Dublin area will reach, or be close to, capacity, it will become increasingly difficult to obtain access to landfill even in the event of emergencies. While the Facility does comprise a bunker which can store waste equivalent to five days' incineration, it should be noted that the ability of the Facility to store waste at a given point in time will be related to how full the storage bunker is. Equally, as stored waste is putrescible, DWTE will seek to avoid prolonged outages on the grounds of public health and safety. The purpose of the bunker is to provide for delivery flexibility (there are planning-related restrictions on timing of deliveries to the Facility – while the Facility will run flat over 24 hours, deliveries will only be made by day), and the

⁸ Condition 5

bunker is not intended to provide for substantive output flexibility, and certainly not for any long term storage of waste.

- 3.8 It is critical to note that where the Facility generally operates at nominal full load, waste that is not burned in a given period cannot simply be burned later. The Facility is designed to run at full output and to the extent that it is constrained below this level, it will not be able ‘turn-up’ in subsequent Trading Periods to a sufficient degree to make up lost production. Waste that is not burned is notionally retained in the storage bunker indefinitely and would have to be disposed of by some other means. This principle applies irrespective of whether the unit is dispatched down for a prolonged period or for a constraint of relatively short duration. As, similar to wind, capacity that is not availed of in a particular half hour cannot be availed of later.
- 3.9 Consequently, DWTE does not consider that failure to process waste at the Facility is a viable option in light of Dublin City Council’s statutory public health undertakings and broader policy imperatives. For this reason, DWTE considers that the Facility should be treated as a “must-run” unit in SEM for its entire output. DWTE accepts that these commercial and policy imperatives should be reflected in the manner of its participation in the SEM. To this end, DWTE proposes to participate in the SEM as a predictable price taker generator unit.⁹ DWTE notes that the changes proposed by the Consultation may impact on its ability to participate in the market as such. Specifically, the definition and treatment of hybrid plant, and the meaning attributed to priority dispatch may have far-reaching implications both for DWTE and more generally for Ireland in the achievement of national and EU policy objectives for waste management, climate change and renewable energy.

4. **Definition and Treatment of Hybrid Plant (Consultation Section 4.9)**

- 4.1 Section 4.9 of the Consultation considers the treatment of hybrid generators, being “generating units which have a proportion of their output which is classed as renewable”. DWTE assumes that, to the extent that any of the current options outlined in the Consultation may allow for waste-to-energy, the Facility would most likely be dealt with under a ‘hybrid’ categorisation. The Consultation does not consider options for hybrid plant in detail, but suggests that any of the options chosen for priority dispatch (discussed further below) can be extended to hybrid units. At the Industry Forum held in Dundalk on 28 August 2009, the Regulatory Authorities sought comment on the proportion of renewable fuel required for a unit to be classed as hybrid. The following paragraphs note issues for consideration in calculating that proportion.
- 4.2 DWTE considers that there are a number of issues to consider in defining ‘hybrid generation’. Clearly any classification as ‘hybrid’ should require that a threshold proportion of a unit’s fuel should be from a renewable source. This proportion should be applied at a unit (as distinct from a trading site) level. The threshold should be applied to any unit that is capable of separate dispatch/operation. It should not suffice that a proportion of the generation behind a meter be derived from a renewable source. For example where a trading site contains three wind turbines supported by one conventional (flexible) generator, the conventional generator should not be

⁹ The TSC as currently drafted implicitly assumes that Predictable Price Takers will be dispatched according to their nominated profile, insofar as it provides that the market scheduled quantity for a predictable price taker will be set equal to the minimum of its nominated quantity or its availability profile.

classed as part of a larger 'hybrid' and therefore capable of availing of priority dispatch. Classification as 'hybrid' should apply only where the renewable and non-renewable elements of a fuel are not capable of separation or separate dispatch.

- 4.3 With regard to the level at which the hybrid threshold is set, DWTE considers that an appreciable proportion of a unit's fuel should be renewable in order for it to be classified as 'hybrid' for dispatch purposes. However we note the difficulties associated with establishing an exact threshold. For example, although a proportion of a waste-to-energy facility's fuel will always be renewable (the biodegradable portion of industrial and municipal waste), the exact proportion will change depending on the make-up and calorific value of a particular shipment of waste. This is not something that is within the control of the Facility operator, but depending on how narrowly the definition of hybrid is drawn, may result in the Facility being included or excluded from the 'hybrid' category on a given day. This would clearly be contrary to policy imperatives outlined in the earlier part of this response to the extent that failure to be classed as hybrid might prejudice the priority treatment of a waste-to-energy unit as 'must-run'. On the other hand, in setting the 'hybrid' threshold too low, priority may be afforded to units that are technically part-renewable but which do not confer the same benefits in terms of renewable targets as units with a higher proportion of renewable fuel.
- 4.4 The importance of setting a relatively high threshold for the classification of a unit as 'hybrid' is illustrated by the proposed treatment of 'hybrid' units in dispatch. It is submitted that, irrespective of the option chosen to implement priority dispatch, there should be no distinction in the treatment of hybrid generators and other renewable units qualifying for priority dispatch. A hybrid generator, once categorised as such, should be considered to have priority dispatch for its entire capacity. DWTE considers that to provide for anything less than that would cause practical difficulties for the market, as well as being conceptually difficult, given that the renewable and non-renewable portions of the fuel source are not capable of separation. We consider that this rationale is already reflected in existing market rules.
- 4.5 We note, for example, that paragraph 2.54 of the Trading and Settlement Code (the "TSC") provides for the registration of units as price takers where a generator unit has priority dispatch for its *entire* capacity. We further note that the SEM Committee Decision concerning *Revisions to the Criteria for Approval of Intermediary Applications under the Trading and Settlement Code* (SEM/07/11) requires that, in order to register an intermediary, a unit must be capable of being registered as a Price Taker Generator Unit under the TSC. As a unit must have priority dispatch for its entire capacity in order to be capable of registering as a price taker, then it follows that in order to appoint an intermediary, the unit must also have priority for its entire capacity. Article 4 (1G) of *Electricity Regulation Act 1999 (Public Service Obligations) Order 2002 (S.I. No. 217 of 2002)* as inserted by Article 6 of SI 284 of 2008 relates the commencement of a public service obligation to an underlying power purchase agreement and therefore, by implication, requires that generator units have a physical contract in place in order to avail of the REFIT subsidy. Above the de minimis threshold, only those units with intermediary arrangements in place are permitted to sell physical power. Consequently in order to obtain a REFIT payment, a unit must have an intermediary in place.
- 4.6 As the rules are currently drafted therefore, in order for a unit to be able to obtain REFIT support, it must be considered to have priority dispatch for its entire

capacity.¹⁰ While we accept of course that these rules could be altered, it is difficult to see how this would operate in practice. For units with varying proportions of renewable fuel, it is not practical to vary the availability of priority dispatch, and certainly not the ability to act as a price taker and to appoint an intermediary, in accordance with the proportion of renewable fuel in a given trading period.

- 4.7 Even leaving aside appointment of an intermediary and the implications for REFIT, and applying an average renewable proportion for a period of time, a 'proportionate' approach would not deliver a desirable outcome in practice. For example if priority dispatch was awarded for a portion of the output (the estimated renewable portion), it would not be desirable for that portion to be anything other than price taking (assuming that having both price and volume certainty could lead to perverse incentives). How then would the remainder of the capacity be bid in? Would the remaining portion be treated like a separate unit? Should start-up and no-load costs be ignored (assuming unit was already running)? And what of the 'renewable portion'? Where a 100MW unit is 75% renewable, if only 75MW is dispatched, only 56.25MW will be derived from a renewable source.
- 4.8 DWTE considers that a form of partial (or lesser order) priority dispatch is not workable in any case. As such, once a unit is considered to fall within a 'hybrid' category, it should obtain the full benefits of priority dispatch. A hybrid unit should be capable of appointing an intermediary, as to prohibit this would undermine the availability of REFIT payment for hybrid units who have already qualified for REFIT under the DCENR application process.
- 4.9 DWTE notes that it may not be necessary or appropriate in all cases to categorise a unit as 'hybrid' or 'priority dispatch' in order to ensure a 'must-run' status in dispatch. While the concepts may overlap (for example a waste-to-energy unit would most likely fall within a definition of 'hybrid' as well as being 'must-run') they do not have to be coincident. It is suggested that where a unit is required to run constantly by virtue of technical and regulatory requirements outside of its control, this unit should be considered to be 'must-run' and should always be dispatched irrespective of broader market rules to do with prioritising renewables and peat plants. A category of 'must-run' so defined must necessarily be very limited, particularly where legal and regulatory *imperatives* to run are distinguished from commercial drivers (including those resulting from policy driven incentive mechanisms). It is suggested that 'must-run' units should be required to register as price takers for their entire output, as to do otherwise would not only grant price and volume certainty to a unit, but would also allow SMP to be determined by a unit that is not in principle capable of responding to economic signals. We note that in providing that must-run units should register as price takers this would extend the availability of intermediary status and REFIT to these units.
- 4.10 It is worth noting that, with regard to policy and project feasibility, it is unlikely that the penetration of MSW derived waste-to-energy generation capacity in Ireland is unlikely to exceed 150MW.

5. **Priority Dispatch (Consultation Section 4.8)**

- 5.1 DWTE has already outlined that the Facility should, as a result of both regulatory and policy requirements, be treated as a must-run unit in the SEM. It is in light of this

¹⁰ This is notwithstanding that the REFIT payment is related to the renewable proportion only.

requirement that we have considered the options for priority dispatch set out in the Consultation. DWTE notes that a ‘must-run’ requirement and priority dispatch are in practice similar but not identical concepts. However given that a waste-to-energy facility is likely to have both ‘must-run’ and priority dispatch status, ‘priority dispatch’ is considered to include ‘must-run’ in the remainder of this response.

- 5.2 DWTE considers that, irrespective of whether the Facility is classed as a ‘hybrid’ generator or acknowledged to constitute a separate category of must-run unit, it should obtain priority dispatch for its entire capacity. DWTE further considers that this priority should be absolute, both by virtue of the legal requirement to provide priority dispatch under the Renewable Energy Directive, and for the commercial and policy reasons outlined above. As such we consider that *Option 1: dispatching irrespective of cost* is the correct starting point for the treatment of priority dispatch units.
- 5.3 DWTE notes that there are a number of difficulties with the alternatives proposed to Option 1. In the first instance we note that to provide ‘priority dispatch’ based purely on economic merit does not appear to provide any meaningful priority to renewable generators. Secondly, it appears that dispatch purely on economic merit (as under Option 2(a)) with or without the addition of priority dispatch to determine tie-breaks (under Option 2(b)) would require that renewable units be bid in to the market as price makers. It is difficult to see how the RCUC would derive implicit economic costs of dispatching renewables if renewable units were merely netted off demand as price takers currently are.¹¹ RCUC would require some form of bid data on which to base its choice and this bid data should be provided by the generator in question. If dispatch is based on a true economic cost it follows that the market schedule should be based on the same, and so price making bids should also determine the market schedule. It is not clear how this would impact on the appointment of intermediaries and the consequent availability of REFIT support.
- 5.4 Option 2(c) as put forward in the Consultation proposes that renewable units be dispatched taking into account subsidies. This does not appear to be a viable option as it creates a hierarchy of dispatch between similar technologies based purely on the level of external subsidy. In this context we note that offshore wind is likely to be made available in significantly larger volumes than the onshore equivalent, and will obtain a greater REFIT price than any other technology. Under this proposal therefore offshore wind would be dispatched ahead of all other capacity on the grid with the result that in periods of particularly low demand it might be (close to) the only generation on the system. Not only do we consider that this approach unfairly prejudices other forms of renewable generation, for no objective reason, it in fact promotes inefficient economic dispatch given that it dispatches plant which requires the greatest level of subsidy first. We do not support this approach.
- 5.5 Option 2(d) suggests dispatching at some other effective price. DWTE considers that, as a matter of principle, it cannot be preferable to base dispatch on an ‘arbitrary’ price. There should be a specific and objective rationale for the basis on which dispatch is effected. In picking an ‘arbitrary’ price it is entirely unclear whether priority dispatch will be correctly awarded or not.

¹¹ The Consultation provides an example whereby the implicit cost of running a priority generator is the cost of two-shifting a CCGT. Without including priority dispatch units in the scheduling algorithm it will be impossible to determine whether it may have been more economic to two-shift the CCGT in any event as a result of inter-temporal constraints or other interactions between conventional (and non-conventional) units running in the same Trading Period.

- 5.6 While we consider that absolute priority must be the preferred option for the dispatch of renewable generation, we acknowledge that, within the class of units with priority dispatch, it may be necessary in a given scenario to differentiate between a number of units which each have priority dispatch and which are not capable of being supported by the system at the same time (including where the volume of priority generation exceeds system demand). This is considered further in the following section concerning tie-breaks. In this context we note that it may also be possible to prioritise having regard to system stability. Just as the Renewable Energy Directive provides for the counterbalancing of the right to priority access with system requirements, it should be possible to differentiate between classes of units with priority dispatch based on the ability of the network to support the physical characteristics of individual plant. In such a scenario, the stability and reliability of the Facility should be acknowledged.

6. Tie Breaks (Consultation Section 4.13)

- 6.1 DWTE, in supporting absolute priority for hybrid and 100% renewable generators, notes that section 4.13 of Consultation considers tie-breaks between price taking generator units. (We note the Consultation as drafted refers only to variable price taking generator units). We support, in principle, the proposal that price taking generating units should submit decremental prices, and that TSOs should constrain down units based on an economic merit. As noted above, the decremental price faced by a waste-to-energy unit is objectively far in excess of that faced by other renewable units taking into account rules for the determination of marginal costs set out in the Bidding Code of Practice. DWTE would seek clarification that the decremental costs used to determine a merit order in this instance would be marginal costs as bid by a generator unit and not the implied / “effective” marginal costs to be determined by the TSO under option 2(a) for priority dispatch above.
- 6.2 We note that decremental prices could also be used to determine SMP where demand is met by price takers (i.e. in Excessive Generation Events). However, as priority dispatch units would continue to bid as price takers, we assume that DECPuh would continue to equal zero for the purposes of calculating constraint payments.
- 6.3 We note that the proportion of renewable fuel has been mooted as a means of differentiating/tie-breaking between plant types with priority dispatch and the same marginal cost. We consider that any subjective rule-based approach should be considered to be a last resort and to be applied after an objective economic or system based approach. Assuming a subjective tie-break might ultimately be required, DWTE would support the prioritisation of hybrid units over those that make little or no contribution to renewable targets. However, we would caution that a purely percentage based approach is unduly simplistic, particularly in respect of waste-to-energy facilities which offer benefits beyond the contribution to renewable targets such as contributions to the achievement of Landfill Directive and Kyoto targets. We consider a holistic approach should be taken in establishing any default dispatch rules. We note that a waste-to-energy facility not only offers benefits in terms of renewable, landfill and Kyoto targets, but it also offers security of supply benefits that are at least equivalent to peat as it too relies on an indigenous and local source of fuel.

7. **Quantity of Generation Paid PFLOOR/Determination of SMP when demand is met by Price Takers (Consultation Sections 4.11 & 4.12)**

- 7.1 We consider that decremental prices submitted by price takers could be used to determine SMP when demand is met by price takers, subject in any event to the regulated floor price (i.e. the price should not drop below the floor).
- 7.2 We do not support the application of priority dispatch based on implied effective bid prices as outlined in Options 2(a) and 2(c) in section 4.8 of the Consultation. As such we do not support the use of 'effective bid prices' to determine PFLOOR. We consider that this places an undue risk on price taking generators whose exposure in this scenario (eg an SMP derived from the cost of two shifting a CCGT) might far outweigh their economic incentive to continue to generate.
- 7.3 We support the proposal in the Consultation that the quantity of generation charged PFLOOR (or paid at the revised SMP set out above) in the event of an Excessive Generation Event arising from an excess of Price Taking Generation should not exceed System Demand. The MSQs of Price Taking Generation should, in such circumstances be pro-rated down so that the total quantity is equal to System Demand.

8. **Allocation of Access Rights (Consultation section 4.5)**

- 8.1 The Consultation proposes three options to deal with the 'over-allocation' of Inframarginal rents ("IMRs") behind export constraints. Each option permits IMRs to be allocated only to the amount of generation that the transmission system can accommodate.

Option 1: Allocate IMR to cheapest generator behind an export constraint

- 8.2 Under this option the market schedule allocates IMR to the "correct" quantity of generation behind each export constraint by modelling export constraints in the market schedule. Generators behind export constraints then compete for the IMR allocated to that export constraint.

- 8.3 This option has a number of drawbacks:

- (a) It effectively creates a second merit order behind a constraint. A unit may be out of merit behind a constraint that would otherwise be in merit in SEM; and
- (b) It creates an incentive for units at a particular location to resist new entry in their area as, particularly where the new unit is more efficient, it prejudices their access to the system, and effectively usurps their (firm) access.

Option 2: Allocates IMR only to generators having firm access quantities

- 8.4 Assuming the system operator dispatches the system to minimise production cost this option would mean that new, non-firm entrants (provided they are cheaper than existing units) are constrained on, receiving only their bid prices until transmission reinforcements are completed and they are allocated firm access.

- 8.5 This option is effectively a first-come first-served option. This is arguably a fairer option than Option 1, particularly when the extremely long lead times for wind

generator connections are considered and as the gate process is based on a first-come first-served process. We note however that this option may tend to increase SMP as cheaper units without firm access will not have access to the merit order. This option is not based on the least cost of production, and where the system operator dispatches the system to minimise production cost this will result in increased constraint costs for the market. This does however incentivise the earlier completion of connection works as a value (measured in constraint costs) will be placed on the cost of connection delays.

- 8.6 We note that until DWTE obtains firm access to the network (and provided it is treated as ‘must-run’ for dispatch purposes) it is possible that under this option the Facility may be considered to be ‘constrained on’ if there is another (even a more expensive) unit with firm access behind the same constraint as the Facility. In this scenario, DWTE would run (as a must-run unit, and in any event because the TSO dispatches based on the least cost of production) but would not be included in the market schedule. As such it would be considered to have been constrained on and would be ‘paid’ a constraint payment based on its bid price. As DWTE has a negative marginal cost however, it will have a negative bid price and thus in fact be ‘paid’ (i.e. charged) a negative amount.

Option 3: IMRs are allocated first to units with firm access. Spare capacity on any export constraint is then allocated to in-merit non-firm generation up to the limit of the export constraint.

- 8.7 This option requires a three-stage process for calculating the market schedule. It is difficult to see whether the benefits of this outweigh the cost and complexity. Equally, the inclusion of a non-firm generator at a particular point (albeit only to the limit of an export constraint) will displace a firm generator at another point. It is not clear what the principle underlying this option is.

Option 4 - Business as Usual - Variable Price Takers Alteration (Consultation Section 4.10)

- 8.8 DWTE notes that the Consultation also proposes a ‘fourth option’ which provides for the continuation of the existing rules, albeit extended to include Variable Price Takers (“VPTs”). The market rules currently limit access to the market schedule to the maximum of the actual dispatched quantity and Firm Access Quantity (“FAQ”) except in the case of VPTs. The RAs propose that where none of options 1-3 is adopted, and the existing arrangements for allocating IMRs behind export constraints are retained, then VPTs should be limited in the market schedule to the maximum of actual output and FAQ (or MEC when infrastructure works are complete and the VPT becomes fully firm).

- 8.9 DWTE considers that this option has a number of advantages. In the first instance it allocates IMRs to units which are needed by the network (and therefore dispatched). Secondly it tends to minimise the costs of production (by allowing cheaper units to be included in the schedule) and so should result in a lower SMP than would arise if only units with fully firm access were dispatched. This option also incentivises the development of more efficient units as units will have to compete for network access over their lifetime and the impact of new entry will not be deferred by access requirements. Finally this option requires minimal changes to the TSC and to the scheduling software, thereby minimising the costs to market participants.

- 8.10 We note the Consultation argues that this option provides incorrect incentives in that:
- (a) It will incentivise more expensive generators on the import side of an export constraint to only build BNE peakers as they will be displaced in the merit order by non-firm generators for the duration of the export constraint. As such they will be paid as bid for their power and will only recover the capacity costs associated with a BNE peaker.
 - (b) It will incentivise generators to invest in capacity that is not, or not yet, capable of being accommodated by the transmission system.
- 8.11 While we consider that such ‘incentives’ may exist in theory, the nature of the connection process in SEM (and in Ireland in particular) is such that units are not capable of responding to these incentives. We further consider that, over the lifetime of a generator unit, incentives provided by an individual export constraint will tend to be removed or dissipated over time in line with network reinforcement in the area. As such we do not accept that the selection or location of a generator unit would be driven by the existence of a network constraint.
- 8.12 From the foregoing DWTE considers that the allocation of access rights should be based on the approach set out in option 2 or option 4.

9. Conclusion

- 9.1 The development of efficient waste-to-energy facilities is a key element of Ireland’s strategy for the achievement of energy and environmental policy objectives. While, as noted in the Consultation, the RAs are not specifically tasked to deliver renewable energy targets, climate change objectives or waste policy objectives, it is appropriate that the design of the SEM should continue to operate effectively in light of these targets and allow such targets to be achieved economically and efficiently with continued security of supply. It is certainly not appropriate that the SEM design should frustrate Ireland’s broader waste and climate change obligations.
- 9.2 DWTE will contribute to the achievement of national renewable energy targets without any associated difficulties arising from intermittence. The Facility will offer significant renewable baseload capacity, which will be available consistently at low cost, while acting as a cornerstone of Ireland’s response to its obligations under the Landfill Directive.
- 9.3 As a result of regulatory restrictions on the operation of the unit and emissions from the plant, the Facility should be regarded as must-run in the SEM. To this end, DWTE wishes to participate in SEM as a predictable price taker. As such, DWTE wishes either to be classified as a hybrid generator, or alternatively proposes that ‘must-run’ units be specifically acknowledged in dispatch and permitted to register as price takers in the TSC. DWTE considers that no distinction should be drawn between the treatment of hybrid generators and other renewable generators with priority dispatch. Any movement away from this approach would require careful consideration of implications for the market, for the appointment of intermediaries and consequently for REFIT support.
- 9.4 DWTE considers that priority should be absolute, and that the forms of ‘qualified’ priority mooted in the consultation would require the participation of renewables as price making units. Again, any such reclassification away from price taking would

require careful consideration of the implications for REFIT. The RAs should also consider carefully the appropriateness of providing both price and volume certainty, to price makers with priority dispatch, albeit we acknowledge the risks associated with this will be mitigated by the application of the bidding code of practice.

- 9.5 DWTE considers that a better option would be to provide absolute priority to renewables/hybrid in the first instance, and that tie breaks between categories of generation could be resolved by reference to system security and decremental prices submitted for that purpose only. A subjective rule-based priority may be considered for remaining tie breaks after application of these approaches.
- 9.6 DWTE considers that the decremental prices submitted for the purposes of tie-breaks should be used to determine the SMP in the event of an Excess Generation Event, subject to the overall regulated floor price. DWTE considers that the quantity of generation charged PFLOOR (or paid at the revised SMP) in this event should not exceed System Demand. The MSQs of Price Taking Generation should, in such circumstances be pro-rated down so that the total quantity is equal to System Demand.
- 9.7 Finally, DWTE considers that allocation of access rights should be based on the existing rules, albeit extended to encompass VPTs.