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Consultation on Electricity Market Reform: Response by AvVail UK Limited

[redacted] AvVail UK Limited - a company with consent to develop a 960,000 TPA waste processing plant at Doncaster; energy and utilities lawyer ranked by various publications as one of the UKs leading lawyers and previously involved in electricity privatisation, EU liberalisation and market reforms in several jurisdictions).

Please note, and I apologise for this, that this submission does not follow the questions posted. It is specific to that part of the market which deals with Energy from Waste **("EFW")** and its importance to the electricity market as a whole.

Waste Market and EFW Imperative

1. Background

1.1 AvVail UK **("AUK")** has obtained consent to develop a 960,000 TPA waste processing facility near Doncaster and has been considering the energy_ based options associated with the project. These options have included:

1.1.1 constructing a CHP on adjoining land in partnership with a substantial power generator;

1.1.2 selling biomass (we achieve greater than 90% purity in our process}to a power generator to utilise in UK plants; and

1.1.3 deploy various advanced gasification technologies ultimately producing electricity.

1.2 AUK carried out a detailed market assessment and a pre-marketing exercise to establish the attitude and approach of various segments of industry, lenders, waste management **companies, power companies and private equity investors to support substantial new** developments.

1.3 The market testing identified certain key constraints on the use of EFW as a potentially base load (or near base load) element of power policy and we thought we would share those constraints with you since the development of EFW in a better structure is potentially a grid enhancement through the local and embedded nature of EFW, an element of security of supply, a contributor to green policy objectives and EU waste objectives, the use of waste as a fuel and economically beneficial to the energy mix.

2. The Issues: Set Out

2.1 The issues which are identified as being critical to the use of waste as a fuel resource and market structured adjustments that could create the best possible and most economically efficient deployment were as follows:

2.1.1 planning costs and success ratios;

2.1.2 public procurement costs and awards;

2.1.3 the inability of Waste Management Company's **("WMC")** to invest m technologies that are an alternative to landfill;

2.1.4 PFI Credits - Are these really necessary;

2.1.5 the control by WMCs of the UK waste streams and how they contract or otherwise dispose of waste;

2.1.6 the imperative to invest in disposal technologies and the Landfill crunch;

2.1.7 Grid Connection;

2.1.8 the need to establish a Waste Pool Market or place an obligation on large scale WMCs to utilise forms of waste disposal;

2.1.9 amend the provisions relating to the quantum of ROCs and the Biomass purity;

2.1.10 need to encourage plant scale in waste processing (relevant to planning and economic deployment);

2.1.11 need to use the waste market and EFW developments to drive and enhance regional development in deprived areas;

2.1.12 ensure the economics of WMCs and Power Developers are sufficient and certain to guarantee their participation;

2.1.13 ensure that new and better waste processing and power generation technologies are deployed in the UK by "IPP" type developers (similar to the CCGT / Renewables rush in UK);

2.1.14 fuel purity (targets, ROCs and measurement);

2.1.15 establish the waste use market to create EFW as a guaranteed additional to base load;

2.1.16 further increase landfill tax - consider other methods to penalise those that utilise landfill because contractual structures often pass that risk straight back to local authorities;

2.1.17 some tax break for commercial waste business creators that provide waste on long term basis to ensure fuel certainty in EFW generation.

2.1.18 Financial observations and benefits of proposed market reform.

3. The Issues: Discussed

3.1 Planning Costs and Success Ratios

Our view is that we need to encourage the development of much larger plants with fantastic road and economically viable rail connections. In addition, these sites each of which should have c 1m TPA of waste processed or otherwise disposed need to be located optimally for grid connection.

To achieve this (and we have profiled 30 sites without too much effort that match) the proximity principle must change. In our view, the proximity principle (30 mile road limit / 100 mile rail limit) is out of date. The protection required is an economically and environmentally viable solution. Carbon would be reduced by moving to rail more of the waste streams. By altering the proximity principle larger scale facilities could be developed on sites such as the old coal mine areas where road, rail, power infrastructure exist and which are generally (a) removed from the nimby objectors and (b) have the size of site necessary to deploy advanced waste processing and power generation on site. The size of site would also allow the commercialisation of the tecyclates (except the metals) on site if technologies for glass block production, plastics to biodiesel etc. were ultimately sufficiently proven.

The size of site would also enable larger gasification and/or CHP/or EFW of a type (including biomass plants) to be developed.

In our view large scale, out of town developments enhance the UKs chances of dealing with our massive waste issue and go a long way to solving the planning related issues of multiple application failures. So we believe changing the market could save c £100m a year for project companies to use to enhance business economics.

Planning is not only about the very poor success rate it is substantially about cost. By improving the likelihood of success through encouraging out of town large cale waste

disposal technology / EFW developments the huge costs (well over £1m a go on average with all fees, EIA costs, legal and planning advisers and potential inquiries and appeals) will become mitigated. The reduction of planning costs will enhance the economics of all developers, encourage WMCs and Power Generators more and we believe help create the waste disposal technology and power generation mix that is needed to deploy waste or its derivatives as an efficient low cost fuel.

3.2 **Public Procurement** costs **and ratios**

In our opinion, the public procurement approach of local authorities and equivalent type organisations is a massive issue. We recognise (and have sought expert advice before submitting the view) that the essential nature of EU law and applicable procurement regulations in the UK cannot and must not be circumvented. That said our discussions with WMCs and other bidders for local waste contracts has indicated that each bid costs well over £1m on average for a losing attempt on up to £3m for a successful bid. These costs are, we believe, prohibitive to the market and the ability of WMCs artd others to participate as efficiently as they might. It is a very similar story at the local authority end - huge costs to look at all alternatives, source local sites fot development within existing proximity principle, prepare tenders, follow process, assess bids and negotiate contracts. This is hugely time consuming and even more expensive to local authorities than to WMC.

There is a well established method in other sectors that has served well which involves the creation of an IT system based market. It happens in various areas and the electricity pool was a type of example. In our opinion a central pool could be established (there might need to be regional pools in our opinion). Local Authorities, Commercial Waste entities or WMCs could offer waste volumes to the Pool against bids flom Waste Disposal Sites who could offer their capacity for life of project (i.e. 25 years). If there was a facility that said "we will take bids at £80ltonne up to 300,000 for 1 month to 25 years" then the waste creators or disposers could bid for the capacity on line and have access to a market. It would not be difficult to create waste collection and transfer hubs as required.

In order for a facility to participate it would have to meet minimum standards which would be set.

This would also allow local authorities or others to continue to select preferred methods of disposal (i.e. anaerobic, autoclave, gasification etc.) as these could be specified in the **"trade bids"**.

Because the market would be anonymous until the point of contracting (which would be on central system contracts: prices adjusted on CPI and landfill tax adjustments) there would be no question of offending public procurement rules because the process would be clear, transparent and would not favour any particular facility (beyond a specification of a preferred disposal / treatment technology).

This market change if implemented would also allow the landfill space to cease operating as **"base load"** equivalent and become "**peaking**" type capacity (see Paragraph 3(c)).

In creating such a market waste would become more available, easier for waste creators (I&C; LAs) to place the waste and remove a huge cost and risk to WMCs who would still inevitably be in the very best market position to grow and enhance their busin ss.

We estimate that the total cost per local authority tender including an average of eight bidders, 2 at final stage and contract award is £12m per tender. If there were (for example) 30 tenders a year which seems realistic (this part is a guess on our part) the procurement cost alone which would be saved is £360m a year for the industry. We think alternative and legal structures would cost only a fraction of this sum.

3.3 Inability of WMCs to invest in technology that are an alternative to landflll

It is a simple fact that WMCs are the main market players relating to waste disposal. They control substantial volumes through contracts with local authorities and I&C enterprises. As such, they have to take the main responsibility for the fact that the UK is woefully under resourced in terms of alternative technology disposal methods to supplement and ultimately replace landfill. In addition, WMCs are reluctant to engage with independents in a truly meaningful way and why should they? Each owes fiduciary duties to its own shareholders and given the huge costs in planning and procurement bidding it is not unreasonable that they continue to substantially landfill (passing the landfill tax costs to their customers). This is, however, a rather short sighted approach and we believe, from our engagement, that each is fully aware of the need to have a rebalanced disposal method and to have a back-end solution (i.e. EFW).

Our proposals and thoughts are based to a substantial extent on removing costs and uncertainties from the market which would allow WMCs and some independents to recapitalise their businesses and access debt markets for the c £20bn that is forecast as required for new investment in the waste market and associated power generation facilities.

3.4 PFI Credits - Are these really necessary?

In our opinion (and it is only that) if the market shape changes were made which further encouraged large scale out of town development (economies of scale benefit) and procurement savings which would be truly substantial and immediate to the WMC then the PFI Credit scheme could, and should, be cancelled.

We accept that our intended solution is only one of many that can be deployed but we have been totally open on our economics. We envisage that with an £80 gate fee / tonne at 2013 prices (indexed) our facility would achieve an IRR of c 25% (post tax). It has no credits and it seems to us that if the procurement market were simplified that cost savings and certainties arising would by a distance compensate <u>all</u> WMCs and not just those fortunate enough to win a bid with PFI credits provided.

3.5 The control by WMCs of the UK waste streams and how they contract or othenvise dispose of waste

On the face of it there are two principal positions for WMCs which relate first in regard to waste which they are required to dispose of as a consequence of success in a public tender. These are long term (i.e. 25 year) type contracts and as such it is easier for a WMC to use these "guaranteed" waste streams in any longer term back-end solutions such as EFW or advanced gasification etc. In our opinion there must be an obligation on WMCs to utilise non-landfill disposal and a consequence that only they suffer if that doesn't happen. We have the method tried and proven. The RO achieved just such a result and whilst the ROC benefit was a substantial contributor we believe the obligation and the consequence of failure to meet it was the prime driver in the renewable new build programs. We believe that if no pool of waste is established there must at the very least be a Disposal Technology Obligation and probably a certificate too (i.e. D-TOC). Government could set targets as with the RO so the implementation would work as a soft landing in the market. A D-TOC would certainly allow development to take place and independents, new technologies to be deployed both for waste processing and disposal and power generation from waste fuel derivatives.

Because facilities need 20 year contracts to be developed it would be desiraple that the WMCs are compelled to award a % of long term contracts within a D-TOC regime. This would help all lenders, private equity and infrastructure funds to participate. We have discussed such a concept and we are 100 per cent certain that the market can and would fund on such a basis.

The benefit of such long term contracts is that the fuel supply is secure and the power plant "base load". The benefits of such plants in cost terms (not scale) compared to offshore wind or nuclear is substantial which actually helps reduce subsidisation effects and reduce the requirement for non base load power. This is good news for electricity customers.

We believe that if, for example, 30m TPA of waste (current estimates are c 80m TPA) could find long term contracting positions with developers/WMCs and was theoretically deployed in efficient forms of EFW then a total of up to 5GW of power could be created using waste or processed waste as a fuel with the required cv content. Our assumption is based on technologies reviewed which produce 50MW from 300,000 TPA.

If 5GW of power were created in this way then it could supplement or replace much more expensive capex and apex power plant.

3.6 The imperative to invest in disposal technologies and the landfill crunch

We all know that landfill in the UK is running out. Indeed some companies are actually transporting waste overseas already to dispose of it cheaper and preserve valuable future landfill. In our opinion this is completely against the intentions of managing businesses in an environmentally friendly manner and reducing carbon. It should be prevented through some kind of taxation (waste export tax or similar) in our opinion.

Landfill needs to become the last source of disposal. Landfill is important to preserve as there is always some residual product remaining however one deals with waste. Investing in technology efficiencies also seems to us very important and we believe govermnent should consider some means which further encourages R&D and new or "improved" technology deployment to (a) deal with waste; (b) maximise waste as a resource; (c) generate the greatest amount of electricity per tonne of waste within a thermal efficiency banding.

3.7 **Grid Connection**

Everyone is aware of the issues around Grid Connection most importantly the timescales and the effect these have on power project implementation. It is apparent to us that EFW of an energy efficient / enviromnentally beneficial kind should get preference (as renewables do) in the connection priority of the various network owner / operators.

We do not see a need to alter the Charging Methodology or amounts. These seem fair to the networks and the developers and bankable within viable project structures.

3.8 **The need to establish a Waste Pool Market and/or place an obligation on large scale WMCs to utilise forms of waste disposal (D-TO)**

We are absolutely certain of the need to create a market dynamic that provides incentives / disincentives to the development of new build waste processing and EFW. The fuel component is a key element and we have already indicated the level of annual savings that we anticipate could be achieved by allowing the changes indicated in paragraphs 3.1 and /or 3.2.

In addition, if the fuel supply to new build facilities can crate a 20 year income stream that has more certainty then that can deliver substantial base load equivalent power at a very competitive price indeed.

In our view the D-TO (**"Disposal Obligation"**) might <u>not</u> require a certificate because the effect of landfill taxes already creates an equivalent market effect. So find a method to ensure (where possible) long term waste contracting and govermnent will have helped save the UK billions of pounds, improved the security of supply and enhanced green initiatives substantially.

3.9 **Amend the provisions relating to the quantum ofROCs and the Biomass** J.>Urity

From a bankability issue point of view is little chance that projects can rely on the 2 ROCs available on 90% purity. We have spent over 2 years alone just in the designs of the front end sorting system and steam treatment enhancement to achieve **"guarantees"** at 92% purity at a further anticipated capex cost of £40m (2010 figures). However, no guarantee can ever compensate for the drop from 2 ROCs at 90% to 0.5 ROCs at 89% and as such it is not possible to bank these arrangements.

However, we see a reasonably easy fix would be to set several bands. Noting that to be about 80% purity actually does require a substantial investment in process we would reset the ROCs as follows for biomass from waste:

90% purity	2ROCs
80% purity	1.5 ROCs
70% purity	1 ROC
50% purity	0.5 ROCs

We believe the market can "bank" a loss from 2 ROC to 1.5 ROCs and that participants can understand sophisticated process and separation will get a processor of waste over 80%. The additional 0.5 ROC at 90% remains economically attractive to increase the purity levels.

3.10 **Need to encourage plant scale in waste processing and EFW (relevant to planning and economics)**

We have already indicated the potential value of "out of town" in planning and scale terms. It allows also the substantial investment by Rail Freight operators. We have had substantial discussions and agreement with such entities which because of the possible volumes can offer excellent transportation prices plus support for investment on site.

No large scale project financed development ofEFW or waste plants can occur without:

- planning;
- long term fuel (waste supply) contracts;
- guaranteed revenues - gate fees driven by high landfill tax and ROCs for electricity are sufficient;
- long term PPAs;
- Grid Connections;
- Road and Rail connections to bring in volume / mitigate risks.

3.11 Need to use the waste market and EFW (including market reform) to drive and enhance regional development in deprived areas

Since most of the sites that are likel y to comply with the ideal template (rail, road, grid connection and over 30 acres developable) are situated in areas of the UK where previous industry has existed and there is a large indigenous out-of-work populace, we see a fantastic opportunity to use the reform to not only enhance the power market but create regional benefits and jobs.

3.12 Ensure the economics of WMCs and Power Developers are sufficient and certain to guarantee positive engagement and participation and potentially shareholder value enhancing

As such the savings and certainty that our suggestions provide, do, we suggest, compensate substantially WMCs for being placed under a Disposal Obligation. The D-TO could, by the way, be satisfied by participation in the Waste Pool as an alternative to awarding direct contracts to facilities.

3.13 Ensure that new and better waste processing and power generation technologies are deployed in the UK by "IPP" type developers (similar to what occurred on IPPs in dash for gas and the UK Renewables markets through NFFO and RO)

At the heart of our concerns are the need to have market reforms financially viable, certain and bankable as well as enhancing the green agenda (which are fundamental to our business drivers). We believe the D-TO proposed and suggestions for long term contracts to be awarded by WMCs to facility developers (in conjunction with amended ROCs for biomass purity and increased landfill taxes) will bring all the financial, development and contractor support required to deliver the market enhancements at a cost which will be lower than is currently the case because it allows a reduction in certain generation which is substantially more expensive to build and operate per MW and removes PFI credits.

3.14 Fuel Party (targets, ROCs and measurement)

We have already indicated above at Paragraph 3.9 our view on the current issues around the drop from 2 ROCs to 0.5 ROCs.

In similar vein we do feel that more clarity is required around the ultimate verification period. Waste streams do alter over a 12 month period and we would prefer a clearer expression on the ROCs being indicatively set monthly but ultimately reconciled annually. If the average 12 month purity from COD of a relevant plant is above 90% it must be clear that all the output in that period counts for 2 ROCs and any month below 90% is compensated by those months that are above 90% on the "Average Test". We propose measurement would be from COD to avoid all measurements falling on Ofgem or its accredited testers at similar dates.

3.15 **Establish the waste use market to create EFW as a "guaranteed" addition to base load**

Please not our comments paragraph 3.2, 3.5 and 3.8.

3.16 **Further increased landfill tax - consider other methods to disincentivise those that utilise landfill because contractual structures often pass tax risk straight back to local authorities and waste creators (not disposers)**

The UK has been increasing the landfill tax element by £8 per year and this will continue until 2014. In our view, the increase in tax should move to £20 per year with the introduction of a **"Landfill Tax Top Up" ("LTTU").** That element would apply to the failure of a WMC to meet the Disposal Obligation. Primary legislation would provide that the LTTU element could not be passed away in existing contracts by the WMCs since it related solely to their failure to meet a disposal obligation. Remembering that there would be a **"soft land"** process this should not be unmanageable by WMCs or similar.

3.17 **Some tax break for commercial waste business creators that provide waste on a long term basis to ensure fuel certainty in EFW generation**

As a flip side to Paragraph 3.16, if contracts of 20 years or beyond were entered into which allowed non-landfill disposal to occur and assisted in the new build development and base load characteristics of such plant over a 20 year period then tax relief should be granted to such business at the level of 1% Corporation Tax multiplied by the % of waste held by that entity. So if a WMC had 5m TPA to dispose of it managed to get 2.5 TPA long term contracted it would receive 0.5% CT relief per relevant year.

3.18 **Financial observations and benefits of proposed market reform**

The current market is just not structured to either maximise the use of waste as a fuel resource to generate electricity or deliver base load enhancement. It needs to be so.

Neither is the current market structured to deliver bankable projects either at the front end waste sorting / processing end (except through PFI related facilities at huge public and private cost) or at the power generation end. These proposals contain (possibly with the exception of the Waste Pool suggestion) easy to implement and balanced set of incentives and disincentives. They remove, potentially, substantial costs and uncertainties and deliver a market reform for EFW that would act as a catalyst for new build.

The investor and lender markets will put the necessary investments forward to such a structure.

The balanced scorecard for government economics would be achieved through cancellation of PFI credits, further landfill tax increases and the D-TO effect.

4. Recommendations

4.1 Amend Proximity Principle and encourage scalable waste / EFW;

4.2 Consider introducing a Waste Pool to assist with market reform objectives and remove procurement costs and uncertainties;

4.3 Introduce a Disposal Obligation on the major WMCs and regulate them as though waste were a fuel (like gas) and the DO operated like the RO;

4.4 Cancel all PFI Credits;

4.5 Introduce measures to incentivise long term waste supply contracts to facilities (tax breaks);

4.6 Increase landfill tax and apply the increase to failure to deal with the Disposal Obligation of using facilities that are not landfill - apply soft landing approach for WMCs;

4.7 Offer some tax holiday or break for rail developments on the side of waste / EFW new build to the developer of Rail Hubs;

4.8 Amend biomass purity graduation to avoid drop from 2 ROCs to 0.5 ROCs and clarify annual reconciliation and **"Average Test"**;

4.9 Possible further tax concessions for development in the deprived areas of UK and for creating new jobs;

4.10 Drive 20 year waste supply contracts to facilities. the ROCs already have that effect for the power side.

5. Closing

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We fully support the market assessment with a view to reform process and hope these thoughts contribute positively to your deliberations.

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