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Inenco Group Ltd

Distributed Energy:

Response to Initial Proposals for More Flexible Market and Licensing Arrangements

Inenco is one of the most experienced energy services companies in the UK, having been in business for nearly 40 years and with expertise ranging from carbon reduction engineering to energy markets, these views are an opinion and have been formed to assist with stimulating debate on distributed generation across the UK.

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EXECUTIVE SUMMARY

It is of great concern that there is little regulation on the service and pricing of renewable generation and no clear labelling of “green power” to consumers. There are many varying styles of offsetting carbon, and presenting renewable generation tariffs, all in differing ways between suppliers at varying premiums. Intrinsic to this problem is the qualification of renewable generation incorporating the trading of all Distributed Energy (DE). There are seen to be four major problems:

- The manipulation of statistics – UK energy suppliers are not controlled from inferring green energy supply using differing indicators. With many aspects of the various CO₂ measurements overlapping there is a double counting of green electricity occurring denting consumer and investor confidence.
- There are no standards for a green tariff charging structure. Although suppliers must justify their green accreditation to charge a premium, there is no standard on the level of the premium and what this implies the consumer has bought.
- There is little to no evidence of this green premium finding its way back to individual generators who could be credited with the energies creation, which is stifling a competitive market to fuel distributed generation. It is understood that ROC monies are passed back to generators for encouragement, though as the ROCs are subject to market price the same as other major aspects of Power Purchase Agreements (PPAs), investment favours industry expert over the renewable energy enthusiast or speculator.
- The options for sale of energy from DE are limited, and flawed to promote competition. Direct cash out options on the spot market are too complex and severe. Forward risk pricing by suppliers is available, though the charging is worked out from the complex wholesale energy markets which make it difficult for commitment on long term contracts. The shortcoming of options and advice is holding back potential investors.

RECYCLING THE GREEN PREMIUM

The simplest way to promote control of green energy pricing is to allow only standardised tariffs to be publicised by suppliers which have the added effect of re distributing the profit back to the generation assets where it is needed. The following is a brief example of how this could work:

- There would be a tariff produced ranging from tariff A at 100% green energy backed up with 100% Renewable Energy Guarantee of Origin certificates (REGOs) down to tariff G with no green credit.
- There would be an independent accredited agent who would distribute REGOs from a REGO register as the sole audit of UK green electricity accreditation.

- ROCs should continue to have no green status bar proof of conformity with a supplier's Renewables Obligation (RO). It should be made clear to all concerned that this is the case. There should be a clear picture of options for the generator to sell ROCs when contracting to sell the power. Many energy services companies would be able to advise on the best route and many paths for sale of ROCs at a given time to maximise their value, In Power Purchasing Agreements (PPAs), suppliers can currently control the ROC price and therefore reduce the value of their exposure to the RO which is not in the spirit of which the RO was arranged.
- LECs have no new financial position in the published green tariff but could be taken into account of other schemes imposed on industry and commerce such as CRC and EUETS.
- The REGO register would become the only official representation of green electricity and could provide finance to DE initiatives as follows.

The REGO is given a face value, for example £3 /MWh.

The REGOs are then bought by suppliers to be resold in green tariffs with an acceptable margin on top, the tariffs rated from A-G and priced accordingly.

Some of the green power is left to auction to the highest bidder to generate more funding for DE. For example only 75% of the REGOs are circulated leaving an auction for the remaining 25% of REGOs for commercial consumers with CSR high on their agenda.

The lowest tariff G would be 100% brown power from inefficient sources remaining at a low price in the market to aid with domestic fuel poverty, tariff F would be CCGT and other higher efficiency brown power, tariff E would be Nuclear, GQCHP and other low CO₂ rated power whilst A-D would be supported by REGOs up to tariff A at 100%.

The tariffs can be altered as the supply of renewable energy increases.

- To retain supplier margins the "A" tariff exists, the profitability should favour the green tariffs for their promotion. To aid this, Ofgem could impose a mandatory target of green energy that is to be consumed by all businesses, for example a 1% of overall supply starting point and rising year on year. Use of the different tariffs could also be reflected in other legislation such as CRC and EUETS.

Banding the REGO System

This follows on from the concerns arising from major energy users, particularly BT of providing a clear labelling and choice of green energy tariffs.

If the REGO system were banded in a similar method to the Renewables Obligation technologies, the technology type could be aligned with the CO₂ output and rewarded accordingly.

The premium charged at source to the supplier can be recycled to operate the REGO agent, fund other DE initiatives and provide grant funding.

Simplifying the structure in this manner will make it possible to publish a league table of green tariffs to the British consumer. Putting this extra tier of business between the suppliers and independent / renewable generation will provide support to a new industry of energy service companies with dedicated focus on distributed generation, getting the profits back to the renewable energy speculators and investors.

Standardising PPA pricing makes it easier to raise finance for new projects now, maximising generator margins and shortening project paybacks stimulates growth for the future.

AN EXTERNAL CONSOLIDATED BALANCING MARKET

The current Balancing Mechanism run by Elexon does not favour small-scale DE projects for direct participation and independent registration as is widely acknowledged, for the following reason.

- Severe penalties in onerous cash out arrangements.
- High set up costs of full participation for a consolidator including the communication, staffing and industry monitoring required.
- Complex industry rules discourage participation.

A suggested answer would be to operate a DE balancing market that operates outside of the main Balancing Mechanism (BM) with the following functions:

The balancing market is made up of licensed consolidators of distributed energy. The market is run by a system operator who manages the market in the same manner as a forward exchange.

The trading function of the system operator is to set a guideline price for individual technologies based on market conditions. These prices are published at intervals and passed onto the consolidators. The system price for a technology type is passed on to the individual generators with a slight adjustment dependent on risk which is assessed by the consolidator. The system operator may also put other constraints on the generator dependent on their attitude to risk i.e. length of notification in the event of an unplanned outage and tolerance on delivery of expected export volumes.

The price awarded to the DE generators is worked out from prices the forward markets are willing to pay for electricity. Once this figure is known along with the expected volumes of DE traded, the fund of monies available to the consolidators as a whole is known, the system operator can retain an amount of money required to balance the external market using the main balancing mechanism, and then is able to publish tariffs to filter down through consolidators to individual generators with the remaining funds.

In principle, this would only work if DE has priority of supplying UK energy, it is assumed that a forward price can be judged to a period in the future due to the price inelasticity of energy use.

The consolidators will submit notifications of overall volume of their portfolio to the system operator. These expected volumes will be fed by the system operator into the balancing mechanism; any long or short volumes are balanced using the main BM.

In short:

- A new Balancing Market is set up for DE which has a separate system operator.
- Consolidators amalgamate volumes of individual generators.
- A forward price for the priority supply of distributed energy is set by the system operator.
- An energy price factor is set for each generator telling them what portion of the forward price they will get and is adjusted subjectively by the consolidators.
- Consolidators research information on individual risks and outputs of generation types – Wind, Advanced Conversion Techniques etc.
- The price given acts as a flexible feed in tariff to reduce risk exposure from all sides this would remove some of the need for credit cover to become a small scale consolidator of DE – giving a more fluid route to becoming a licensed supplier.

In the short-term, registering individual small generating units in a supplier's BM unit could be simplified by putting in place standards for charging methodology.

RESPONSE TO THE CONSULTATION

Question 1: If the exemption limits for supply and distribution to domestic customers were to be raised, what measures would be required to ensure ongoing and effective protection of energy customers, and how would this be enforced or monitored?

- Extending the exemptions to operate outside of the current licensed framework will put more strain on the Balancing Mechanism. It is our opinion that provision of a mandatory Balancing Market which collates DE volumes to trade, working alongside the BM is more applicable.

Question 2: Should the existing per company maximum exemption limit be removed allowing one company to develop a number of different sites?

- Yes, by having a stake in the project, greater diligence will be taken on their operation, increasing expertise across DE. Sites could be limited to a certain number of projects per company. This would be an extra layer of business within DE controlled by the consolidation role highlighted above.

Question 3: We welcome evidence on the size of DE scheme that would be considered economic and efficient in different settings if exemption thresholds were not an issue. We also seek views on what the appropriate exemption limits should be across generation, supply and distribution.

- Any capacity DE that is not absorbed into a supplier's BM Unit, that is not sizeable enough to buffer or trade out of its imbalance is economic until the input costs and export reward price vary, both of which are out of their control in the current trading options. A plant that is built on a feasibly economic model may not necessarily remain so. Control of the pricing structure and the extra layers of observation leave plant operators to focus more clearly on economics. If a standard price on power exports were given as far into the future as possible, this would give a better position for financial forecasting.

Question 4: We welcome views on the 2001 Class Exemption Order, and areas where there could be more clarity in particular.

- The Exemption Order could use clarity as to how the varying limits are specifically of use to gain the supply and distribution exemptions for small domestic and commercial DE projects shared between willing parties. There is little information on how communities and developers may create private wire networks to share distributed energy. This also links in with providing a tariff and comparison of costs for providing contestable connections from ICPs or the host DNO, or making use of existing networks for use as a virtual private network.

Question 4: Do you consider it appropriate to use the provisions of the BSC to increase the representation of DE schemes in BSC governance processes?

- Yes, expertise could be provided by industry contribution to the BSC to provide and then constantly monitor a set of risk premiums for each type of technology for the energy price they receive. It could also address the major issues of cash out, communication methods and credit cover for energy indebtedness which are the main barriers to DE participation.

Question 5: Do you consider that there is a case for allocating funding for DE representation in BSC governance? If so, do you have views on where the funding should come from?

- Yes, from a risk margin prevailing from the energy price awarded to generators which is charged and set by the system operator of a balancing market that operates outside the cash-out of the main Balancing Mechanism. Also potentially from the retail sale of green energy through REGO charging as highlighted above.

Question 6: Have we considered all the options to address the risk DE schemes are exposed to if trading in the wholesale markets? We welcome any other proposals to accommodate the needs of DE schemes selling their electricity in this way.

- See above.

Question 7: Do you consider that third party purchasers undervalue exports from DE schemes? We would welcome information from both generators and purchasers on prices that have been agreed for electricity from small generators. If necessary, the information can be provided in confidence.

- Standard industry practice for licence exempt and especially renewable generation is to only accept the power export from a plant if it is accompanied by the ROCs, LECs, REGOs and Embedded Benefits.

During the commissioning phase of generation (which has no industry standard duration), common practice is to award System Sell Price minus a margin to the generator and varying percentage margins and handling fees are taken from the other benefits of the Power Purchasing Agreement of ROCs, LECs, REGOs and embedded benefits, including handling fees on subsidies.

Once the commissioning concludes and a forward price is awarded, there is no clarity or exact method for Energy Price Factor given. The energy price awarded is designed to cover the risk the margins associated with imbalance of the power export. The margins charged on other generator income of the Power Purchase Agreement such as ROCs, LECs and REGOs appear to be high in comparison to the administration costs and internal rate of interest they are in place to cover.

Though the stipulations placed on small DE generators regarding outage periods which result in imbalance are necessary, these requirements are very onerous to participants who are not industry experts and again, have no industry standard procedures.

Question 8: We would welcome views on whether there is a lack of competition in the market for small generator output?

- Generation will no doubt increase, with the banding of the RO due to be ratified and a general view that a good energy price will be maintained. This alone will not stimulate competition and distribution of funding for the current trading arrangements.

Question 9: Have we considered all the reasons for the lack of development of consolidation services in the market? We welcome views on whether further changes to the market rules may be warranted to remove any barriers to entry that continue to exist for consolidators.

- A consolidator / facilitator and ESCO market function may be facilitated by granting powers that exclude licensed electricity suppliers from handling ROC, LEC and REGO subsidies leaving this duty to a tendered third party outside of Ofgem. By granting consolidator licences that allow for handling and trading smaller licence exempt power into the Balancing Market outside of the Balancing Mechanism and standardising its procedures, confidence will grow within the DE market.

Question 10: Do you think there is a case for a specialist Energy Trader? What are your views on the scope and functions the specialist agency could perform as an interface between DE generators and the current trading arrangements?

- A specialist energy trader could lock and unlock the volumes of DE traded into the Balancing Mechanism being sympathetic to seasonal and technological constraints of the DE generation portfolio.

Question 11: An Energy Trader option could be implemented by allowing the market to deliver, placing an obligation on suppliers or by tendering for the role. We welcome views on these suggested routes and any others we have not considered in this consultation document.

- A separate tendered energy trader could work alongside Elexon and NGET to trade and manage the DE portfolio. There would be a need to prioritise the delivery of DE into the Balancing Mechanism over centralised generation in order to be able to secure a feed-in price.
- In response to the other options, the market requires guiding towards the best option for DE participants, an obligation on suppliers would work by implementing pricing controls on Power Purchase Agreements and using ESCOs as an extra layer of support between suppliers and individual generators.

Question 12: Do you have any views on how the understanding and forecasting capability for DE technology could be improved?

- Yes, a study could be commissioned by an independent specialist for each generation type. Half hourly data from existing wind turbine, advanced conversion technique, PV, biomass and differing CHP etc. The specialist could provide a standardised assessment of risk and output which leads to prices awarded for all generators in a technology type.

Going forward, consolidators could provide monthly updates on output, forecasting and fuel mix disclosure. If the consolidator finances were sought by linking their fees to ROC handling on a /MWh basis, this should give more resources to study emerging and unknown technologies as they progress with the RO banding, also encouraging consolidators to seek a greater output of DE.

Question 13: What are your views on the implementation of a dedicated wholesale market for DE?

- Essential to recycle resources to support DE and encourage investment in generation. Investor confidence is currently low due to fluctuations in overall returns on like for like investment due to lack of price control. At the feasibility stage of DE projects it is very difficult to provide any quotation of likely income making financial planning and securing private finance difficult.

Question 14: Have we considered all the options to address the lack of competition in the market for small generator output?

- So far as is known, unless otherwise mentioned in this document.

Question 15: DE schemes face a trade-off between carrying the cost and ongoing maintenance of a private wire network linking their sites, and the direct and indirect costs

of using the licensed distribution network. We are keen to better understand circumstances that lead a scheme to favour the private wire option and how incentives vary depending on the distance of the second (or multiple) sites?

- The most cost effective form of using electricity generated from DE is on-site use and exempt supply. Economy of a project is too subjective to make comment.
- Grant funding could be made available for users extending private wires or extending existing network to extra sites, coupled with the possibility of providing financial incentive such as a heat ROC or REGO for heat exported for third party use. All new connections could be reviewed by a third party local ESCO at the same time as planning departments to link up current and future projects, also to provide advise on connection options of Independent Connection Providers.
- DUoS could be provided at cost for all network extensions, or use of network to create licence exempt virtual private networks.

Question 16: Is there adequate availability of Exempt Supplier Services in the market place? If the demand for such services is likely to increase with expected development of DE, we welcome views on whether the market will respond appropriately or whether intervention is required to ensure the availability of these services.

- If a centralised Top Up and Standby service cannot be sought from a centralised DE Balancing Market then a standard equation for supplier reactive power charge for imports required by DE projects should be published and incorporated into the supply code. It is understood the charge will need to be subjective dependent on the export / import shape of a DE plant, though by publishing charges made to all generators across the UK, it will put an industry averaging on the service.

Question 17: We welcome views on whether an Exempt Supplier Services obligation (similar to the former Standard Condition 53) should be imposed on all suppliers and whether any specific additional requirements are now necessary.

- Our response to this is intrinsic of our overall view and response to these questions. The obligation would include:
- Standard charging methodology for reactive import;
- A clear top up and standby contract which makes provision of one energy bill for industrial user import and export where on-site generation is present, with clear and standard charging methodology.
- Provision of metering services and advice for all generation import / export. Independent metering site works can be contracted to ESCOs for collating DA / DC / MOP and is already something promoted within Inenco.

Question 18: We welcome views on the feasibility of Exempt Supplier Services being provided at system cost – i.e. merely the costs incurred by suppliers from third parties in registering meters, using the network, etc. Are there ways of integrating with supply

systems such that Exempt Suppliers do not create any overhead on Supplier operations?

- We are unaware of barriers to opening up competition of metering, with advances in Automatic Meter Reading it can be remotely verified and reallocated to a data aggregator, a service which should naturally roll towards the ESCO / consolidator function.
- The exempt supplier services could be incorporated into the Balancing Market as previously mentioned.

Question 19: Is there a case for DE representation at the Energy Network Association working group examining the technical standards for connection? If so, do you have views on how representation might be funded?

- Not answered.

Question 20: We welcome examples of where technical standards may be unduly onerous and discourage connection to the network for small generators.

- From our limited experience it has been seen that individual DNOs do not publish their connection specification, it is therefore difficult for business to move between DNOs for independent connection provision as the costs will vary with design across the country.

Question 21: We welcome views on the proposed options to improve the accessibility of the licensed network to DE schemes, and whether there are any other relevant options we have not considered.

- Not answered.

Question 22: What are the costs of start-up for small suppliers? What is the break even point for small suppliers?

- Not answered.

Question 23: Do the economics of CHP justify the additional investment over and above that of a boiler based system? What are the contexts where CHP might be chosen over heat-only schemes?

- We have seen evidence of high costs of servicing and maintenance for gas turbines coupled with low power prices rewarded to seasonal generation, especially where the CHP is only exporting power during winter for space heating. In these scenarios, running the well placed plant for electricity export without use for heat demand has an effect on carbon allowances and retaining GQCHP status, which requires further investigation. Investment into uses for this thermal output and matching it to demand sites, requires engineering investment to provide advice and procedures for how heat from CHP can be displaced, there is a possibility to combine intelligent heat use with a heat REGO.

- CHP would be considered by the majority of industry and commerce questioned if it would have a more transparent payback.

Question 24: Is there a case for granting a limited number of supply licences to new entrant DE schemes that restrict customers switching to an alternative supplier for a period of, say, 5 years?

- This goes against free market principles and provides many undue new areas with need for control and would surely conflict both consumer interest and the current supply market.

Question 25: We welcome views on what types of advice and information would usefully help DE schemes start up and interact with the wider electricity system, and who should provide this?

- The advice to DE should be issued by companies without integration of generation and supply making their independence visible.

Question 26: Do you consider that there is a case for a new DE supply licence? If so, do you have views on its key terms? Please explain your reasoning in detail.

- The key to operating a separate Balancing Market would be to have a sympathetic energy trader balancing the power within the licensed framework under NGET. Keeping this activity separate from supply within the licensed framework would retain its security through balancing its demand and consumption within the BSC.

It would be more applicable to consider new DE consolidator / facilitator licenses to keep the UK power system within current excellent standard of regulation whilst distributing funds and responsibility of licence exempt power purchasing gong hand in hand with green certification as illustrated above.

Question 27: We welcome views on the proposed options for reducing the costs of becoming a licensed supplier and any other options that we have not considered in this consultation document.

- Not answered.