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## **Initial Consultation on Electricity Balancing Significant Code Review**

24 October 2012

DONG Energy welcomes the opportunity to respond to the Ofgem Initial Consultation on the Electricity Balancing Significant Code Review (SCR).

Our ref.

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The balancing arrangements are extremely important for a well-functioning market and they must support and facilitate the Government's policy vision of a transformation to a low carbon economy. However, significant adjustments particular if they are done prematurely may have unintended consequences for other policy developments. Below, we present our key recommendations and concerns as regards to the interaction with other policies, the preconditions for a strong market and on specific considerations raised in the Balancing SCR.

### **Executive summary**

*Policy alignment is crucial*

- DONG Energy believes that the Balancing SCR process is premature and that there is a high risk the suggested changes in the Initial Consultation document will not be aligned with the outcome of the EMR and the EU Network Codes.
- Currently, it is not certain if and how balancing costs are included in the CfD FiT strike price setting for variable renewables. In case of more marginal cash-out prices as suggested there should be a compensation, e.g. through higher level of CfD FiT strike prices or in some other form, as otherwise, there would be a negative impact on investment cases for variable renewables.
- It remains unclear how a Capacity Market will be designed and how such would interact with a changed balancing arrangement. This interaction needs to be clarified before the suitable balancing considerations can be determined.

- The build out of interconnectors and implementation of the EU Network Codes will make the GB market more integrated with neighbouring markets. The network codes also calls for an assessment of the need for market splitting in the GB into price zones. In this regard, there is an urgent need to make a decision if price zones are needed in GB as the most efficient way to solve system constraints and to provide incentives for transmission investments.

Our ref.

#### *Strong balancing arrangement needs strong markets*

- Enhancing competitive and transparent markets for both balancing energy and system reserves should be a key objective, e.g. through separation of the two markets.
- Through its on-going GB market liquidity work, Ofgem should focus on close monitoring of the intraday market and the balancing mechanism to ensure that these markets are well-functioning.
- Further measures to create more competitive, liquid and transparent short-term markets should be a pre-condition for exposing wind generators and other generators to sharper and spikier balancing prices.

#### *Key recommendations on the Balancing SCR considerations*

- Introducing an effective separation of trading accounts together with further measures to enhance liquidity would create the best conditions for competition and well-functioning markets.
- Shortening the gate closure time to half an hour would improve flexibility for market participants, accommodate use of more accurate short-term forecasts and lower the volume and costs of balancing actions.
- Balancing variable renewable generation should be done together with the rest of the market as market players themselves are in the best position to optimise and innovate to handle balancing risks. An alternative centralised approach should be avoided as it would effectively discriminate among technologies and contradict general market principles as well as endanger new and existing aggregator businesses.

About DONG Energy

Our ref.

DONG Energy is one of the leading energy groups in Northern Europe. We are headquartered in Denmark. Our business is based on procuring, producing, distributing and trading in energy and related products in Northern Europe. We have approximately 6,000 employees and generated DKK 57 billion (£ 6.2 billion) in revenue in 2011.

In the United Kingdom DONG Energy is one of the most active offshore wind investors and operators with a total capacity of approximately 3 GW, including four offshore wind farms in operation, a stake in further four sites currently under construction and a strong pipeline of future projects. In thermal generation, DONG Energy is operating the highly efficient CCGT power station Severn in South Wales.

This spring we established DONG Energy Sales UK with an annual supply of around 2.5 billion cubic metres of natural gas after acquiring the gas supply business Shell Gas Direct.

Developments of the GB electricity market arrangement and structure are very important to DONG Energy both in terms of present generation capacity, but certainly also for our significant future investment programme.

DONG Energy would be pleased to discuss any of the issues raised in the consultation response and look forward to engaging with Ofgem. Should you have any questions relating to our response, please contact either Svitlana Sukhodolska on +45 99 55 73 75 or Jakob Forman on +45 99 55 91 66.

Yours sincerely

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## **DONG Energy responses to the questions raised in the consultation**

### *Introduction*

Through its 2020 renewables target and 2050 decarbonisation target, the Government has shown its commitment to transform the electricity system to ensure secure, low-carbon and affordable electricity supply in the future. This transformation will have an impact on all aspects of the electricity system, and changes in the balancing arrangements and all other market regulations need to be viewed with this in mind.

Technical and market rules for balancing power generation and consumption will to a large extent influence the cost efficient integration of variable renewables into the system. Changing the balancing arrangements need to facilitate the transformation to a future low-carbon and secure electricity system.

### *The future electricity system and market*

The UK electricity system is undergoing a large transformation towards a more diverse generation mix with large amounts of variable renewable generation. In the UK, as in many other countries, variable generation will increasingly play the role of baseload generation. Furthermore, European power markets will be more interconnected and electricity will be traded cross border to a larger extent than today.

To be able to incorporate large amounts of variable generation and to function efficiently from an economic perspective, the power market needs to be transparent and flexible enough to accommodate the use of short-term forecasts and enable larger churn in the power transactions close to gate closure among commercial generators, suppliers and Transmission System Operators (TSOs).

The future balancing arrangement would have to be more dynamic and reflect the value associated with the provision of short term balance at all times. Such arrangements could benefit from greater participation of market actors and less dependence and off market arrangements by the System Operator.

These changes implies that intraday and balancing markets need to be adjusted to enable greater use of the flexibility in the demand side engagement, the transmission system and the different generation technologies to effectively respond to the increasing intermittency associated with a low carbon system.

*The Electricity Balancing Significant Code Review*

DONG Energy supports the work Ofgem is doing to improve the functioning of the electricity markets. The future electricity generation mix and system calls for well-functioning balancing arrangements and the consultation process on the Balancing SCR Ofgem has identified a number of concerns. However, considering the market widely, we believe that there are other issues which must be resolved before engaging in significant changes to the balancing and cash-out arrangement.

We believe that any changes to the current cash-out mechanism necessitate a well-functioning market for intraday trade. Market participants must have the opportunity to trade out of their perceived imbalances. The current levels of liquidity in the intraday market will not be sufficient as the level of wind generation increases, and must be improved before it is reasonable to submit market participants to stricter cash-out penalties.

Furthermore, gate closure needs to be moved as close to delivery as possible, eg. half an hour before delivery, to allow market participants to make final physical notifications based on better forecasts of production and demand. This will minimise procurement needs and out-of-market actions of the system operator and subsequent cash-out penalties.

Also, the depth of bids and offers in the balancing mechanism must be fit for purpose, such that the balancing market can absorb major unexpected events to generation and demand without cash-out prices spiking to extreme levels. If not, we are concerned that market participants often will be subject to extreme cash-out penalties.

From an investment perspective, a greater risk of very high cash-out prices is likely to deter new investment in variable generation assets. This effectively creates a barrier to entry in the electricity market for independent generators.

In this context Ofgem should take a view on the long term vision for the balancing arrangements and set out a clear roadmap for achieving a successful transition to such arrangements.

Moreover, we would like to emphasize a need to manage the transition to the future in a coherent and transparent manner, in order for all stakeholders to function on even terms. This should include new market players who currently face high barriers to entry due to the complexity of the market arrangement and a structure that favours vertical integration.

**Question 1: Do you agree with the approach and the proposed stakeholder engagement throughout the SCR?**

We would like to emphasize the importance of having a clear vision of the role that balancing arrangements will play in the future and a need for a longer and more evolutionary approach to enable the transition to the new arrangement.

We acknowledge that Ofgem has a need to collect views for a position towards the EU Network Code development process. This can, however, be done without the very fast process of reaching a 'draft policy decision' on the balancing SCR before key policy decisions on other parts of the market have been taken.

We find that when assessing the Balancing SCR there needs to be a clear focus of the future generation mix and the impacts it will have on Governmental policy and vice versa.

The technical and market rules for balancing the power system are very important for a cost efficient integration of variable generation. From the Initial Consultation document it is not very clear to us if there has been any assessment of 1) the needs for the changes in the light of the transformation of the electricity system, 2) the detailed interactions with other policy changes, and 3) what the impacts on stakeholders are.

One of the Balancing SCR objectives is to "increase the efficiency of electricity balancing", but no evidence is provided that there are large efficiency gains to be achieved by incentivising participants more. In DONG Energy, we under the current balancing arrangement work continuously to improve our offshore wind forecasts and thereby our ability to be in balance. There will, however, always be some deviation from the actual output within the last hour to delivery. This is the nature of integrating this variable resource that is key to achieve the Government's objective of decarbonisation and being more independent from fuel imports.

The Energy Bill about to enter into parliament will reform the financial support mechanism for renewable and low carbon generation. The new model, a Feed-in Tariff with Contracts for Difference (CfD FiT) will introduce new risks to the investors that need to be balanced against the level of support available through the strike price that projects will receive. It has not yet been acknowledged whether balancing costs will be included in the mechanism for setting the strike price. The interaction between a Balancing SCR and the new support mechanism is important to consider as more marginal cash-out prices will increase the cost of balancing, and thus the cost of investing in wind generation. More volatile cash-out prices will further increase the risk investors need to overcome. All other things equal, this could lead to less new wind capacity for the same amount of financial support and money invested. To mitigate this increase in investment risk

there would need to be some form of compensation for variable generation, e.g. either through higher CfD FiT strike prices, or a more direct mechanism for wind balancing compensation, like in Denmark.

Our ref.

In conclusion, changes to the balancing and cash-out arrangements need to be coordinated with the overall risk and cost picture and financial incentive mechanisms available to both new and existing variable generation. Further measures to get well-functioning, competitive, liquid, and transparent short-term markets should be a pre-condition for exposing wind generators and other generators to further market risks.

We further recommend that balancing efficiency is linked more closely to assessments of shortening gate closure times and moving to a cost-based bidding for BOA in the balancing mechanism.

**Question 2: Do you have any evidence that you would like to submit that may be relevant for any aspect set out in this document?**

As outlined above the intraday market and balancing arrangements are crucial to achieving a cost efficient integration of intermittent renewables in the system. There is a clear interconnection across the entire market sequence, and especially between the intraday and the balancing arrangements. Cash-out prices provides a basis for signalling the value of energy close to real time.

It is therefore important that these markets are well-functioning and exhibit sufficient liquidity in order for market players to be able to adjust their positions in reaction to improved forecasts as imbalances are recognised closer to real time. Through its on-going GB market liquidity work, Ofgem should put more focus on close monitoring of the intraday market and the balancing mechanism to ensure that these markets are well-functioning.

If short-term markets are well-functioning, market players would be able to optimise their positions and reduce the costs of and need for balancing energy, and benefit the consumers through reduced retail electricity prices.

Furthermore, our experience with handling offshore wind farms in the UK suggests that there are benefits in optimising our positions ahead of gate closure on a number of wind farms simultaneously. We would like to emphasise that it is not necessary to pool all GB wind farms centrally or for individual generators to have a very big portfolio. Significant efficiency gains can be achieved through diversification in terms of a geographical spread. The balancing arrangements in the GB market are already incentivising our continuous innovation and improvements in avoiding imbalances. We also view the entry of independent wind aggregators as beneficial to the market.

It is our experience that there are other ways for independent wind generators to reach the market than through entering PPAs with such new entrants or existing

vertically integrated players, but market entry without PPAs would be much less risky if the GB market had a higher level of liquidity in all segments of the market.

Our ref.

We recommend Ofgem to look more closely at experiences of different balancing arrangements in other countries. This could include comparison of the balancing arrangements in Denmark which feature a combination of dual cash-out for production and single cash-out for consumption, marginal prices in cash-out combined with a recognition of the features of wind and an economic compensation for wind power producers, pay-as-cleared for balancing services, separate trading accounts with a de facto self-supply restriction to enhance market liquidity and to avoid market power and undue competitive advantages for vertically integrated companies.

It is however valuable to emphasize that the arrangements in Nordic markets exist on top of the markets separated into price zones which takes into account locational aspects of system balancing and operation. This has to a large extent enabled the Nordic regulators and TSOs to separate the procurement of balancing energy from the procurement of operational reserves, which results in a very transparent and efficient balancing operation of the market.

### **Question 3: What is your view on the interactions between our considerations and the aspects of the EU Target Model?**

Given that not all EU Network Codes are known at this point in time, we would be cautious to draw firm conclusions.

In general, we support full integration of the European markets. Getting efficient, transparent, liquid and well-functioning market will ensure security of supply at lowest costs. Sharing reserve and balancing resources across interconnected markets will be important for the transformation of the energy sector. We therefore support integration of the GB electricity market with neighbouring markets to the fullest extent possible.

An important interaction between the CACM Network Code and the Balancing SCR is the locational aspect, i.e. the splitting of the market into price zones. The CACM Network Code suggests that price zones should be developed where there are significant constraints on the system. It is important for the further assessment of the most suitable and efficient balancing arrangements to get a clear view on whether the GB market is expected to be split into price zones. In the Balancing SCR process there is therefore an acute need for presenting an assessment of the impacts of moving to price zones in the GB market. This will be fundamental to most on-going policy initiatives.

Furthermore, to safeguard the efficiency of the interconnected markets it is important to establish alignment in the gate closures and products, which is being put forward by the EU Target Model. It is therefore essential that Balancing SCR is consistent with such plans.



**Question 4: Do you feel there are any further alternatives to the reform options presented under our primary considerations?**

We believe that in order to get a more efficient electricity balancing the secondary consideration of amending the gate closure time should be prioritised as a primary consideration.

Shorter gate closure time will create better conditions for all consumption and production units (especially, variable generation) to balance themselves with higher accuracy due to having improved forecast available within the hour of delivery.

We would suggest a gate closure time of half an hour, which should be harmonised across Europe in order to maximise the benefits of the flexibilities in the whole system.

The feasibility of a half hour gate closure time needs to be assessed via a cost benefit analysis taking into account future flexibility and optimisation possibilities of the TSOs, as well as the costs of taking actions towards imbalances within this compressed time window given that imbalances would have decreased.

**Question 5: What other benefits or drawbacks can you identify for each of our primary considerations? Please provide any evidence you may have to support your position.**More marginal main cash-out price

As outlined earlier we believe that market participants are currently incentivised to do their best effort to be in balance. The effect of sharpening cash-out prices without combining it with other initiatives could easily be marginal.

If implemented, more marginal cash-out should be linked to the overall investment climate for wind and some sort of compensation should be introduced.

A more marginal cash-out price increases the risk for independent wind power producers who are particularly exposed to imbalance prices. With the market structure in the GB market with large vertically integrated companies it would also create incentives for these and other parties to hold their own reserve.

This may lead to an inefficient balancing of the system as each company would use its own resources to self-balance instead of trading imbalances in the intraday market using the most cost efficient plant on the entire market.

Single or dual cash-out price

We believe the dual price mechanism is the one that allows for trading and managing risks in a most efficient way for the balancing market overall. However, due to its associated risky spread, the dual price mechanism can result in extra costs to generators of variable capacity with relatively small portfolios.

Our ref.

On the other hand, a single cash-out price has the benefit of simplicity and transparency, which would benefit generators of variable capacity with relatively small portfolios.

Ofgem suggests that some combinations of single and dual cash-out would be possible, e.g. a single price when the system is long and a dual price when system is short, which could have some merits. These alternative combinations would need a thorough impact assessment to compare the detailed benefits and drawbacks.

#### Single or separate trading accounts

Ofgem seems to argue that separated trading accounts do not matter as parties have found ways to avoid having the intended separation of production and consumption. We believe this indicates that either rules are not appropriately enforced, or that there needs to be a revision of the rules in order for the separation to live up to the original intention.

In Denmark, DONG Energy has both production and consumption and in this market the separate trading accounts work as intended.

We believe that the original rationale for separation is still valid and that the current rules governing this area should be scrutinised as they are clearly not fit for purpose. Several stakeholders have during the Ofgem Balancing SCR workshops and in the process round BSC Modification P282 communicated that the separation is de facto not working.

Furthermore, if a parallel can be drawn to the BSC Modification P282 National Grid assessed that this would increase volatility and uncertainty for the System Operator, requiring the SO to hold more reserve and incur additional cost.

The rational behaviour from a VI company would be first to net off the production and consumption positions internally. In this way the VI company will not need to trade in the day ahead market or intraday market to balance their position. This is one of the main causes of the lacking liquidity in the GB market.

The benefits of large vertically integrated position would be enforced by having single trading accounts and make it more difficult for independent generators.

#### Pay-as-bid or pay-as-clear for energy balancing services

Theoretically, the two methods would converge towards the same price at the same cost, but again theoretically pay-as-clear seems more transparent for all players.

If Ofgem's objective with the Balancing SCR is to address the missing money problem, then the pay-as-clear mechanism would in a clear way provide infra-

marginal rents to generators offering balancing services. However, if missing money is the reason for changing the payment model, there is a clear link to the Capacity Market, and that should be outlined and explored in more detail.

Our ref.

It has been argued that pay-as-clear would need to be paired with taking the marginal price in the cash-out. We do not believe this has to be the case. Under a pay-as-clear for balancing services there is still a bid ladder – all incoming bids are ordered from lowest to highest – and the PAR500 could be derived in the same way as it is today.

Pay-as-bid might be more efficient from the perspective of managing market power, as a pay-as-clear system could have adverse effects on the market efficiency giving incentives to large portfolios to withhold or otherwise manipulate their assets to raise or lower the pay-as-clear price.

There are merits in both approaches, but to avoid some of the concerns in either way it should be considered if cost-based bidding and offering should be introduced to avoid gaming.

#### Attributing a costs to non-costed actions

DONG Energy would like to caution against the introduction of payment for involuntary demand disconnection directly in the cash-out price. While it is correct that such actions currently have no associated value alternative ways of dealing with this issue should be explored.

Ofgem argues that including payments for involuntary demand disconnection in the cash-out would provide appropriate incentives to avoid imbalance.

When looking at this from a wind generator's perspective there is little we can do to control the wind and avoid imbalances. A wind generator would to a large extent bear the additional risk of the whole system being short due to larger than average imbalance volumes. Moving the gate closure time and enhancing liquidity in the intraday market could alleviate part of the unmanageable risks, but wind generators would still bear significant additional risks and costs.

Our understanding is that the Capacity Market will be introduced to ensure there is enough capacity on the system and that this capacity will be incentivised to deliver under system stress. Hence, we would think the non-costed actions should be considered in the context of Capacity Market rather than in the context of the cash-out mechanism.

#### Improved allocation of reserve costs

In general, we consider that there is a solid rationale for allocating costs to cash-out prices in a more accurate way through an improved allocation of reserve costs.

Our ref.

We do, however, favour a separation of balancing energy and reserves e.g. via a reserve market, as this would make allocation of reserve costs into the cash-out easier and more transparent. We also believe it would provide more certainty and stronger investment incentives for flexible generation and demand aggregation.

#### Balancing Energy Market

There have been many questions what this option really implies and we hope to see a more detailed description from Ofgem. We understand the introduction of a BEM as related to the clear separation of balancing activities and procurement of operational reserves, and as such locational aspects need to be addressed via market splitting.

If a BEM gives opportunities for balancing closer to real time, then its implementation can be viewed as a clear improvement to the current arrangements. It would lead to increased trading activities and a more efficient pricing of the balancing services provided and actions taken.

However, if such a BEM is combined with the proposal for a single trading account for both production and consumption this might drain out liquidity due to internal trading and netting off.

#### Alternative arrangement for renewables

We do not believe that any centralised alternatives of balancing variable renewable generation is the most cost effective solution for society or in the interest for consumers. Allowing market participants to optimise and trade to get in balance themselves incentivises innovation in optimisation e.g. in getting the best forecasting tools, bringing forth demand aggregation etc.

Most importantly, establishing an alternative market for renewables will have discriminatory effects on the energy mix and will have detrimental effects on wind aggregators and traders who are essential for a healthy and liquid market.

#### **Question 6: Which of the reform options considered under each of our considerations do you believe would provide the most efficient balancing incentives and why?**

First and foremost, we would like to underline the importance of aligning balancing arrangements to the new support mechanism for low carbon generation and the capacity market in that the former needs to reflect any added costs to new investments and latter has an objective to establish stronger investment incentives for flexible resources. Furthermore, should any of the existing assets

incur significant higher costs as a consequence of the new balancing arrangements, this needs to be reflected through a compensation mechanism.

Our ref.

Looking over the reform options considered by Ofgem, we believe that it is essential to set the marginality of cash-out prices such that it reflects potential ability and cost of balancing parties. We see setting the cash-out price formation at PAR1 as a farfetched target at the moment (it is fundamental that market liquidity is improved prior to that, because a party needs to be able to trade out its imbalances to the largest extent possible on the intraday market). At the same time, the extra costs that will be incurred by intermittent generation as a result of increasing marginality in the cash-out prices needs to be compensated both for existing and new assets.

A system which maintains a dual price mechanism in our view is more beneficial to the market as it provides incentives for active balancing and trading rather than spilling into the market.

Given that the pay-as-bid balancing arrangements in the UK exist in combination with the single market price zone, locational aspects of price would first need to be introduced (e.g. through market splitting) before moving to a pay-as-clear system. This is because the cash-out price at the moment takes into account locational and system actions of balancing, hence the pay-as-clear may not necessarily reflect the true cost of balancing itself. Furthermore, we believe that pay-as-clear system allows for finding most efficient price of balancing, however it has to be implemented alongside with bidding and offering on a marginal cost-basis.

We are strongly in favour of the proposal to move the gate closure closer to real-time, and believe this will provide improved incentives for balancing as it will allow parties to reduce their imbalances further. Gate closure half an hour before real time will create better conditions for the consumption and production units (especially, variable demand and renewables) to balance with higher accuracy due to having improved forecast available within the hour of delivery.

To facilitate this move to shorter gate closure time an assessment should be carried out to analyse how the System Operator can handle this. Furthermore, gate closure time should be aligned with the EU Network Code on Balancing.

**Question 7: Alongside this initial consultation we have published preliminary analysis of the last modification to the cash-out arrangements, P217A. Do stakeholders agree with the initial findings of this analysis?**

In general, we do not have any comments to the findings of preliminary analysis presented.

However, concerning the impact of introducing a more marginal price it should be taken into account that the analysis round the P217A is done in a system that is not under stress. Rather it is a system with a very high capacity margin. Therefore

more marginal cash-out prices would in the future system be even higher and significantly above the results presented in this analysis.

Our ref.

**Question 8: What additional analysis could be done as part of the SCR around Modification P217A and the flagging methodology it introduced?**

No comments.

**Question 9: Do you agree with our rationale for considering making cash-out prices 'more marginal'?**

We suggest there needs to be a line set between the future Capacity Market which aims to incentivise investment in flexible resource and the cash-out mechanism which aims to provide incentives to power market participants to balance their production and consumption portfolios and operate efficiently.

Introducing more marginal pricing implies that cash-out prices will be higher and spikier. Uncertainty in the price forecast however is not expected to improve and will remain foreseeable only on the short term. Hence, there is no substantial rationale to expect that an investor would be able to take a decision of whether or not to build any plant if the cash-out price was to be spikier (they cannot predict the spikes, their length and frequency, nor the average cash-out price level over a long period of time spanning the lifetime of the power plant).

Finally, the barrier to entry aspects need to be understood in the context of the rationale for making prices more marginal. At the present moment, new entrants face a very complex, illiquid and politically risky market entry choice. Making balancing prices perfectly marginal does not alleviate these issues and may further exacerbate interest from independent entrants especially if they choose to balance some of the intermittent generation output (which may become subject to spikier cash-out prices).

**Question 10: Do you agree with the circumstances we have identified in which the secondary considerations are important?**

We would like to stress as mentioned before that there should be much more focus on shortening the gate closure as this will together with other measures alleviate many of the problems identified.

**Question 11: Do you have any other comment on the secondary considerations presented here? Please provide any evidence you may have to support your position.**

Our ref.

Regarding the secondary consideration of 'setting an information imbalance charge', we believe that given the new license obligation there is already an incentive to provide accurate data. It therefore seems unnecessary with additional measures.