



Stathis Mokkas
Electricity System Framework
9 Millbank
London
SW1P 3GE

10 March 2017

Dear Stathis,

Origami Energy welcomes the opportunity to respond to Ofgem's consultation on the future arrangements for the electricity system operator.

At Origami Energy we are working to unlock all asset flexibility and intelligently manage a network of many thousands of diverse generating, demand and storage assets to deliver multiple valuable services and peer-to-peer interaction in real time. As part of this, we are already providing flexibility to the System Operator through our participation in the frequency response markets and have plans to increase the number of balancing services we provide.

Whilst most companies are focused on today's system (e.g. the aggregators delivering specific services to National Grid), we are focused on the future and what will be necessary to ensure a sustainable secure and affordable energy supply. As a result, the strategic and policy decisions taken by Government and Ofgem on the future structure and role of the SO today are of great interest and importance to us.

We have provided our responses to the questions outlined in the consultation below. We'd welcome the opportunity to discuss any of these further if necessary.

Yours faithfully,

Peter Bance
CEO
Origami Energy Limited



About Origami Energy:

At Origami Energy we want to unlock all asset flexibility and intelligently manage a network of many thousands of diverse generating, demand and storage assets to deliver multiple valuable services and peer-to-peer interaction in real time.

Origami software, analytics and hardware solutions focus on the management and optimisation of power flexibility across all spectrums of the UK energy system. To date, we have been focusing on linking flexibility buyers (such as National Grid) to flexibility providers (asset owners) with our core differentiator the ability to interface securely with any asset class across all relevant flexibility incentives. Managing load and demand in real-time against criteria set by generators and users of energy enables an optimum financial position to be established for both parties. This is further enhanced by 'stacking' multiple flexibility services, increasing revenue opportunities ensuring future services to be deployed, we are currently working with multiple partners to deliver the roll-out of this peer-to-peer solution.

Origami also has benefits from an in-house energy storage development capability, which has deep domain expertise to assess storage business model feasibility, provide design and deployment services for projects that contribute reliable flexibility to this edge of grid market place. To date we have been working with I&C site and land owners, investors and the evolving storage supply chain to originate projects, provide technology-neutral advisory, development and we are developing a pipeline of storage assets from kW-scale behind-the-meter projects, through to grid-scale and co-located projects.

Chapter Two

Question 1: What are your views on our proposed objectives for the SO?

In general, we agree with the proposed objectives and are pleased that they include the requirement to drive competition and efficiency across the system along with promoting flexible solutions.

At Origami Energy, we believe that ensuring flexibility providers are able to compete effectively, on a level playing field with fossil fuel generators, in an array of markets presents the largest opportunity to reduce the overall cost of the UK electricity system as the penetration of low carbon generation technologies rises. Non-traditional Business Models and new entrants like ourselves play a vital role in offering a route to market for the flexibility of large, diverse networks of smaller electricity consuming, storing and generating assets and will play a crucial role in enabling system flexibility in a cost-effective manner. It is extremely important the SO recognises this explicitly. As such, we feel there is an opportunity to use these objectives to 'give teeth' to the non-binding 30-50% target of balancing capability from demand side resources and would like to see this included.

In relation to this, we note with interest that a proposed 'action' for the SO will be to 'develop balancing services and new smart approaches with industry'. As we outlined in our response to the Smart, Flexible Energy System CfE we feel there is a huge opportunity for the SO to improve the current suite of services and further facilitate the participation of flexibility providers. We believe this should be explicitly expressed in objectives also.

Our CfE response also communicated our view that the SO could improve the efficiency of the system by enabling real time balancing markets and more near real time allocation of resources to enable flexibility providers to offer their flexibility to multiple buyers in the market. As the energy system becomes rapidly more distributed and localised, it will be more efficient to increase the level of local balancing (promoting the number of buyers/users of flexibility) and the way resources are allocated. Whilst some of the onus is on DNOs, as they transition to DSOs, the SO's procurement strategy will have a role to play here as it could allow more efficient options for balancing to be identified. In general, the SO has a leadership position in the market for flexibility and should therefore be given explicit responsibility to facilitate new, more efficient markets (or at least not obstruct their development contractually or procedurally).

We believe that currently there is a severe lack of coordination and sharing of information between the DNOs, TOs and the SO as well as amongst other market participants. Currently the DNO is best placed to understand what is connected and being developed at distribution level. Likewise, the TOs/SO are best placed to

understand what is connecting and developing at transmission/system level. These parties should be interacting and sharing information to ensure the development of an efficient system, particularly as resources become more distributed. Only when this information is available to all will parties be able to make effective system wide decisions on appropriate solutions, and the market will be able to respond. Included here is the requirement for these parties to provide the correct market signals for parties to respond and provide. Information sharing should be explicit in the objectives.

Finally, we'd like to stress that no matter how much refinement is made to the proposed objectives the success or failure of the 'new SO' will depend heavily on the incentives placed upon it. The current SO incentives are not fit for purpose and are in danger of hindering the development of a flexibility marketplace. Given that the SO should already be meeting some of the objectives listed above under current licence conditions, real, sustained progress will be difficult to achieve without revisiting the SO incentive framework.

Question 2: What are your views on our expectations for how the SO should seek to achieve these objectives?

Residual Barrier

In general, we agree with the expectations laid out in the document.

We welcome the recognition that transparency around the SO's actions and information provision will be vital to achieve an efficient system and that the SO should be releasing as much information about the system and its actions as possible. Doing so will allow participants to make effective operational and investment decisions and will help to address one of the largest current barriers to participation in balancing services by flexibility providers (lack of market information and transparency).

We would fully agree with paragraph 2.22. As outlined above, the current SO incentives framework is not doing enough to ensure the SO is meeting its current license obligations. For example, if status quo was to continue, we fear there would not be the level of engagement between the SO and DNOs required to facilitate their transition to DSO in a useful time frame (i.e. before the end of RIIO-ED1, 2023). We would welcome a move by Ofgem to clarify expectations and to review the SO incentive framework.

Facilitating Competitive Markets

In general, we agree with the expectations laid out in the document.

As outlined above we feel there is a huge opportunity for the SO to improve the current suite of balancing services so we agree that the SO should place more focus on ensuring services are transparent, accessible and work together effectively. We worry that the current 'simplifying services' workstream, taking place through Power Responsive, is not ambitious enough and will therefore fail to achieve this. Much more work needs to be done, engaging willing stakeholders throughout.

The SO should also recognise the rise of new technology and the associated value that it may be able to provide to the system (e.g. security, reliability, fast-response).

We would echo all comments around exclusivity of services to the SO and the current limitation on stacking of services. If we are to fully realise the benefits of a truly flexible marketplace, flexibility providers need to be able to stack and combine revenue streams, offering flexibility to parties other than just the SO. Again, the SO could learn a lot about this by engaging with stakeholders and listening to the needs of current market participants.

Whilst we agree that there should be some concern with the existing arrangements around bilateral contracts, we believe there is merit in the SO having the ability to preserve these for new, innovative services. Even in this case, details of each bilateral agreed (value, duration, description, counterparty etc.) should be published by the SO.

We have no specific comments on the SO's role in industry codes or electricity market reform.

Facilitating efficient whole system outcomes

We agree with all comments relating to a greater need for coordination but would reiterate that the correct incentives are required (both on the SO and DNO) to achieve this.

Supporting competition in networks

We have no specific comments on this section.

Question 3: Do you agree with our proposals for what licence changes are needed to support these changes?

As alluded to earlier, we believe that the current SO incentive framework is not fit for purpose. We would be in favour of Ofgem setting specific/binding objectives for the SO (subject to consultation) to ensure it is held accountable and is pushed to do as much as possible.

Ofgem also needs to recognise the fact that for the SO to succeed and meet some of the objectives listed earlier it will require the co-operation of other parties (mainly DNOs). DNOs too need to be incentivised to ensure this happens. For a flexibility market to develop in the short to medium term, this is required as soon as possible, and certainly well before 2023 (end of RIIO-ED1).

Chapter Three

Question 1: Do you agree that greater separation between NC's SO functions and the rest of the group is needed?

We have no specific comments on this question.

Question 2: What are your views on the additional separation measures we are proposing?

We have no specific comments on this question.

Question 3: What are your views on our proposed approach for implementing these changes?

We have no specific comments on this question.

Chapter Four

Question 1: What are your thoughts on our proposed approach for implementing the proposed changes set out in this consultation?

We have no specific comments on this question.

Question 2: What further evidence should we consider in finalising our impact assessment of the proposals on the SO's roles and level of independence?

We have no specific comments on this question.