



DSO COMMERCIAL ARRANGEMENTS PRINCIPLES

FINDINGS FROM THE SCOTTISH RENEWABLES
DSO COMMERCIAL ARRANGEMENTS TASK FORCE

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Scottish Renewables is the voice of Scotland's renewable energy industry, working to grow the sector and sustain its position at the forefront of the global clean energy transition. We represent around 260 organisations across the full range of renewable energy technologies in Scotland and around the world, ranging from energy suppliers, operators and manufacturers to small developers, installers and community groups, as well as companies throughout the supply chain.

As our energy system transitions away from centralised fossil-fuelled plant and embraces distributed low-carbon technologies, the electricity network has begun a period of transformational change. Part of this involves electricity network operators becoming more dynamic 'distribution system operators' (DSOs).

It is widely anticipated that through this transition, DSOs – in whatever form they take – will look to manage their networks by procuring a variety of grid services. This paper is concerned not with the technical elements of this transition, which are being considered elsewhere, but with the market principles under which that procurement will operate.

For a smart, flexible, energy system to be delivered, a suite of distributed energy resources (DER) will need to be available to provide energy and flexibility services.

The Scottish Renewables DSO Commercial Arrangements Task Force considered the operational principles of this new market model that would ensure a suite of DER will be able to connect and participate in this new system.

Scottish Renewables is involved in projects which are seeking to evolve the technical detail of this transition, as well as some of the emerging market considerations. The Task Force has therefore considered a suite of broad principles which a variety of parties can consider as work on this transition further develops.

This report sets out our findings.

Commercial Principles

The Scottish Renewables DSO Commercial Arrangements Task Force recommends the following commercial principles are adopted as DSO models are realised:

1. Low-carbon service markets

The Task Force recommends that future DSOs should develop products which support the procurement of low-carbon service providers to ensure alignment with the wider move to a low-carbon economy and focus on developing products which support that ambition.

The UK Government has made several commitments concerning the transition to a low-carbon energy system and economy. The Climate Change Act (2008) committed the UK Government to reducing greenhouse gas emissions by at least 80 per cent by 2050 compared to 1990 levels. Similarly, the UK Government played a central role in developing the 2015 Paris Agreement, in which 195 countries agreed to stretch national targets to keep global temperature rises below two degrees.

In order to meet the fourth and fifth carbon budgets, the Government's Clean Growth Strategy sets out that a significant increase in the pace of decarbonisation is required. There is also widespread recognition of the potential economic opportunity created by the low-carbon transition, with an estimated \$13.5 trillion of public and private investment in the global energy sector required by 2030 if we are to meet these objectives. Clean growth is therefore a central element of the UK's Industrial Strategy.

BEIS and Ofgem's sets out a Smart Systems and Flexibility Plan, out a range of measures to develop a low-carbon, agile, energy system. If this system is to come to fruition - and consumers are to fully benefit from the transition - it is vital that low-carbon energy assets are able to participate in new DSO-led service markets.

This Task Force recommends that these ambitions are at the heart of the DNO-DSO transition.

At a practical level, we recommend this could be achieved through the following measures:

- Implementing a number of policies – including the Carbon Price Floor – to ensure that DSO procurement takes Government decarbonisation objectives into account
- Utilising carbon prices to ensure carbon-emitting service providers are weighted accordingly in the procurement process
- Consulting with a varied set of representatives from low-carbon industries to ensure that markets can best support the delivery of new renewable energy assets
- Continuing work to ensure that additional renewable energy enablers, such as battery storage solutions and demand side response, are efficiently connected to the DSO network, and considering methods by which renewable energy and enabling technologies can be connected ahead of carbon-intensive forms of generation
- Ensuring that DSOs have a responsibility to respond to national obligations on carbon by developing a regulatory framework which recognises that long-term investments may be the best solution to enable low-carbon service providers to come forward.

2. An accessible market

Barriers to market entry must be removed and a level playing field must be created to ensure the right set of low-carbon DER resources are available to provide network services.

Application costs for service provision must be proportionate, and the process to apply to offer network services made as easy to navigate as possible. The Task Force has found that the pre-application process and associated costs currently act as barriers to market entry for some would-be market participants.

The Task Force has identified it as a crucial consideration, particularly as DER resources are more likely to be operated by small businesses which may lack capacity to engage with a complex and costly application system.

Similarly, communications infrastructure requirements must be designed in such a way as to not exclude low-carbon DER resources from entering the market. A variety of communications assets exist, reflective of the varied asset types, locations and circumstances under which they have connected to the system. As upgrades to communications infrastructure across small-scale assets may not be practical, a common communications interface should have the inbuilt flexibility to accommodate infrastructure already embedded in DERs so as not to create a barrier to market entry.

The Task Force recognises the need for security standards across the network but would caution that, without careful consideration of how to implement them, they could become a barrier to participation in service markets.

3. Ensuring smart product design

Delivering well-designed products which meet both system and generator requirements will be central to ensuring the availability of DER to participate in DSO markets.

While procurement of low-carbon solutions should be encouraged, service/market products should be technology agnostic in their design, creating a level playing field between DER solutions. This will ensure maximum availability of assets and help deliver an accessible market. One way this could be achieved, is through careful consideration of availability requirements, ensuring that practical and technical options are best-utilised to enable renewables-based DERs to participate in the market.

For DER resources to adequately participate in the market, and to meet the ambition of using DSO service markets to support the further development of DERs, contracts must be investible and a level playing field must be in place. The service market must be palatable to project investors and lenders and must not disadvantage the financing of new projects. The Task Force puts forward two ways in which a market suitable for investment can be created: visibility of products and a coherent revenue-stacking interface.

Good visibility of products, procurement methods and the lifespan of a product are crucial factors in enabling businesses to participate in DSO service markets. It is only with adequate foresight that businesses can assess commercial requirements and align their business planning with providing services to the DSO. We recognise that the Open Networks Project is already considering standardisation of services, which the Task Force welcomes.

Similarly, a clear and consistent revenue stacking interface needs to be developed to give DER providers clarity as to where they can potentially provide multiple DSO services and where they can additionally provide services to the Transmission System Operator (TSO). This Task Force welcomes work ongoing through, for example, TSO/DSO interface projects, however a greater level of certainty is required to enable commercial decision-making across low-carbon assets.

Along with supporting the decarbonisation agenda, the Task Force recommends that, to ensure maximum availability of service providers, DSO products should be developed to support innovative network solutions, particularly around local energy system development, load balancing, and electric vehicle uptake.

Pre-qualification criteria should be developed early, where possible encompass several services and, as above, come at a reasonable cost.

4. Future Network Scenarios

As well as ensuring that DSO service markets respond to current network requirements the Task Force acknowledges that system needs are likely to change over time, and that there are benefits to running service markets which address both the requirements of today and of tomorrow.

The Task Force would expect future market development to encompass both generation and demand, with products looking to address likely challenges arising from increasing intermittency on the system, the impact of electric vehicle uptake on local networks, vehicle-to-grid solutions and the impact of electric heat solutions on local networks.

Foresight of longer-term market opportunities and an understanding of future operational and commercial requirements is vital to allow projects to secure the investment which will lead to participation in these markets. For example, an understanding of when procurement will take place, its structure, and how frequently products will be procured all aid business planning.

Concluding Remarks

Scottish Renewables DSO Commercial Arrangements Task Force supports the work underway to shape the DNO-DSO transition.

It is anticipated that by adhering to the above principles of market design, a DSO model supporting a vibrant suite of low-carbon energy resources can be developed in a way which meets our carbon ambitions while delivering a smart and flexible energy system, as well as ensuring the availability of service providers and supporting the commercial requirements for new-build assets.

As Ofgem and other industry players work to develop the DSO transition, we anticipate that these principles will be taken into account to ensure a suite of DER flexibility providers are able to come forward.

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