

SwitchDin Pty Ltd
Level 1, Building B, 91 Parry Street,
Newcastle NSW 2302

10 May 2023

Akshay Kaul
Interim Executive Director
Infrastructure and Security of Supply
Ofgem
ACT 2600 Australia

Dear Mr Kaul,

RE: Call for Input - The Future of Distributed Flexibility

SwitchDin welcomes the opportunity to provide feedback to the Call for Input on 'The Future of Distributed Flexibility'.

SwitchDin is an energy software company that bridges the gap between energy companies, equipment manufacturers and energy end users to integrate and manage energy resources on the grid. Founded in 2014 in Australia, SwitchDin's technology enables our clients to build and operate vendor-agnostic virtual power plants (VPPs) and microgrids, and to optimize site performance across fleets of diverse assets.

SwitchDin is the key solution provider for Project Symphony, Australia's largest orchestration of distributed energy in a multi-gigawatt-scale grid. This \$35.5 million partnership with the government of Western Australia (WA), utilities and the market operator is more than just a VPP for thousands of households and businesses. It is a market platform for network services, combining central dispatch with local coordination and site-level optimisation. Rooftop solar recently supplied more than 60% of electricity generation in WA, and that proportion continues to grow. By enabling the reliable operation of a multi-gigawatt-scale grid dominated by distributed energy, Project Symphony is blazing the trail for the net zero electricity networks and energy markets of the future.

SwitchDin is expanding to Europe and the UK, to provide leading-edge distributed energy projects, flexibility programs and VPPs. We are currently in the process of establishing partnerships so that we can leverage our experience into the UK markets.

SwitchDin strongly endorses Ofgem's vision for distributed flexibility, enabled by a common digital energy infrastructure. There is a compelling 'case for change' for distributed flexibility. It is crucial to enable the acceleration of the shift from fossil fuels to clean energy at the least overall cost to all consumers.


We strongly support Ofgem's proposed vision: that consumer energy resources (CER) should be actively engaged in all Great Britain energy markets via a common digital energy infrastructure, assisted by a wide variety of enabling market changes and standards.

We warmly welcome Ofgem's initiative to design markets for a flexibility-centric energy industry that is smart and digitalised. Markets will provide the best indicator of what distributed assets should be doing where and when. Markets should always be operated by a neutral third party.

We support the development of the 'medium' archetype, involving an exchange where multiple markets are visible and coordinated under a known governance framework. It would deliver most of the benefits without the limitations and implementation challenges of the 'thick' archetype.

Thank you for the opportunity to respond to these important issues. I remain available for further discussions and inputs.

Best regards,

A handwritten signature in dark ink, appearing to read 'D Gladman', with a long horizontal flourish extending to the right.

Darren Gladman
Head of Policy & Regulatory Affairs

Responses to questions raised in the Call for Input

1. *What do you think distributed flexibility could contribute to the energy system?*

Distributed flexibility will change the way we think about matching electricity supply and demand by enabling demand to follow electricity supply, especially when electricity is at its cheapest and most abundant. This will enable better utilisation of variable renewable sources of energy without the need for investment in infrastructure for transmission, distribution and energy storage that might otherwise have been required.

Distributed flexibility will deliver benefits to all consumers in the form of lower electricity prices for all. It will also benefit consumers who invest in solar, batteries, flexible load and other forms of distributed energy by enabling them to vary their demand in response to market signals.

Distributed flexibility is crucial to enable the acceleration of the shift from fossil fuels to clean energy at the least overall cost to all consumers. We concur with Ofgem's observation that "flexibility is not optional, it is essential".

2. *Will a focus on CER flexibility also help enable other forms of flexibility, especially distributed flexibility?*

Yes. We support Ofgem's vision that, "Consumers must be at the heart of the future energy system". We agree that CER such as electric vehicles, heat pumps and modern white goods are a key component of distributed flexibility. The value of services that can be provided by an individual CER system will likely remain small compared with transaction costs, so we see an important role for aggregators and operators of virtual power plants (VPPs).

CER is the logical place to begin because reforms that advance CER will also advance distributed energy resources (DER) more broadly. We agree with the observation that "Tackling the CER-specific challenges has the immediate consequence of resolving DER-specific challenges simultaneously" whereas resolving only DER-specific challenges would leave significant CER flexibility excluded.

3. *Is there a 'case for change' and a need for a common vision for distributed flexibility?*

Yes. There is a compelling 'case for change' for distributed flexibility. We agree that a common end vision for distributed flexibility is needed.

We strongly support the proposal to develop a common digital energy infrastructure to address three of the market failures "by delivering information provision, market coordination of operations and actions, and trust and governance".

4. *What is your vision for how to accelerate the delivery of accessible, coordinated and trusted markets for distributed flexibility?*

We warmly welcome Ofgem's initiative to design markets for a flexibility-centric energy industry that is smart and digitalised.

We agree that energy markets are the best indicator of what distributed assets (including CER) should be doing where and when. Markets should always be operated by a neutral third party and CER should be able to participate across many different energy markets. Aggregated CER should be able to participate in wholesale energy markets, frequency control markets and markets for local energy services without barriers to market entry and with minimal transaction costs.

Encouraging competition will be crucial to reducing costs to consumers. Markets must be made up of many sellers and, wherever possible, many buyers. In cases where the market is a 'natural monopsony', the single buyer role should either be undertaken by a government agency or a regulated entity operating with transparency and accountability.

5. Will certainty of an end vision help accelerate enabling work and make it cohesive?

Yes. Ofgem's clearly articulated strategic vision for flexibility based on a common digital energy infrastructure will give direction to policy makers and regulators in their enabling work and will encourage private sector investment. We agree with Ofgem's assessment that a flex-centric electricity system will not emerge either organically or in time. There is a crucial role for the Government in providing strategic direction.

We strongly support Ofgem's proposed vision: that CER should be actively engaged in all Great Britain energy markets via a common digital energy infrastructure, assisted by a wide variety of enabling market changes and standards.

6. When should a common digital energy infrastructure be in place? And therefore, when should development begin?

Development should begin immediately so that the common digital infrastructure can be in place as soon as practicable.

7. What should a common digital energy infrastructure look like, and why? Please consider the archetypes or develop your own proposition.

We warmly welcome Ofgem's global-minded approach and the recognition that core software, hardware and networking approaches can and should be designed to enable scalable deployment globally. International companies like SwitchDin will be more likely to expand into markets that use international data standards and communication protocols.

We agree that a single common solution would remove the most friction by delivering the maximum information, coordination, and trust. We support the goal of a solution that is independent, accountable and offers all actors a 'single source of truth'. To operate at the speed, scale and complexity required the solution must be digital.

We agree that the achievement of Ofgem's vision will require trusted, well-governed institutions and infrastructures, based on neutrality, transparency and clear accountability and responsibility.

8. What is your view on the desirability and feasibility of the archetypes or your own alternative proposition?

Archetype 1: Business as usual

The 'Business as usual' archetype is clearly inadequate. A flex-centric electricity system will not emerge either organically or in time.

Archetype 2: Thin

A directory that would assist buyers and sellers of distributed flexibility to understand the landscape of markets and assets available would be better than 'business as usual'. However, on its own it would be inadequate to the task. Its reliance on bilateral interactions would not deliver the desired level of transparency.

Archetype 3: Medium

The 'medium' archetype, involving an 'exchange' where multiple markets are visible and coordinated under a known governance framework, would be sufficient to achieve Ofgem's vision. It would provide a single source of truth for information, services for market coordination and single point of access, and governance for common services. It would deliver most of the benefits of the 'thick' archetype without the limitations and implementation issues of the 'thick' archetype. On balance, the 'medium' archetype is SwitchDin's preferred option.

Archetype 4: Thick

The 'thick' archetype involving a central platform with cross-market optimisation would likely face considerable implementation challenges and could limit scope for innovation. Considering the risks involved in this approach, SwitchDin recommends against adoption of the 'thick' archetype *at this time*.

9. Should a common digital energy infrastructure be new-build, or should it build out from existing infrastructure?

The proposed common digital infrastructure should be new-build and designed to accommodate integration with existing infrastructure, wherever practicable. This would allow independent, purpose-built design and would avoid the risks of legacy technology lock-in.

10. What are the important areas for consideration when designing institutional delivery models for a common digital energy infrastructure?

Governance, transparency and accountability are key considerations that will instill the trust required for a new energy infrastructure to succeed. Spreading ownership and management responsibility over multiple entities would present significant risks. The common digital energy infrastructure would be best owned and operated by a mandated central entity, preferably by the Future System Operator.

11. What are the important areas for consideration when designing financial delivery models for a common digital energy infrastructure?

The common digital infrastructure should be owned and operated on a not-for-profit basis. It should be considered a public good and regulated accordingly. It could be funded by a levy on energy market participants or from Consolidated Revenue.