



Australian Government
Australian Renewable
Energy Agency

ARENA

8 August 2019

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Via <https://www.aemc.gov.au/contact-us/lodge-submission>

GPO Box 643
Canberra ACT 2601
Tel: +61 2 9243 7773
ABN: 35 931 927 899
www.arena.gov.au

ARENA submission on the Regulatory Sandbox Arrangements Draft Report

This submission provides information gained from ARENA funded projects relevant to the AEMC Regulatory Sandbox Arrangements Draft Report.

In summary ARENA:

- supports the creation of the sandbox toolkit as proposed by the AEMC, including the establishment of the innovation inquiry service, enhanced regulatory waiver and rule change powers to facilitate trials,
- suggests further consideration in relation to:
 - whole of sector consultation and coordination which ensure trials are identified and prioritised in relation to the needs of the sector and ultimately the broader benefit to the Australian economy,
 - ensuring the AER has the capacity and processes that can support effective trial identification and development,
 - funding support for trials.
- considers knowledge is the principal value generated from any trial or demonstration and effective knowledge sharing should be integral to the toolkit design.

About ARENA

ARENA was established to make renewable energy solutions more affordable and to increase the supply of renewable energy in Australia.

ARENA provides financial assistance to support innovation and the commercialisation of renewable energy and enabling technologies by helping to overcome technical and commercial barriers. A key part of ARENA's role is to collect, store and disseminate knowledge gained from

the projects and activities it supports for use by the wider industry and Australia's energy market institutions.

Whole of sector coordination

The draft report notes the importance of coordination across the market bodies in relation to the innovation enquiry service and the potential of the inquiry services to act as a first step towards an industry trial for which a waiver or enabling rule change may be required. This suggests that the overall approach to sandboxing will include an important reactive element, where the AER and market bodies respond to the interests of innovators and businesses.

ARENA considers that whole of sector coordination and governance will be critical in this process and should work to apply a whole of industry development perspective to the process for filtering or escalating new challenges and opportunities. This is not something that any one party (including the market bodies) is well placed to do in isolation from broader sector interests and insights including consumer and industry representative organisations. This is because each party naturally has limited information about the future as well as current activities across the sector. This suggests that the process for filtering and escalating potential trials would benefit from having access to a broader strategic consultation and coordination network. With regard to distributed energy this could be achieved through a network such as the Distributed Energy Integration Program (DEIP¹) Steering Group and similar approaches could be developed for other areas of change in the energy system building on networks created via Rule Change consultations and AEMO or ESB working groups.

One of the problems that ARENA has observed through its innovation programs is that strategically important potential trials and demonstrations sometimes do not have a natural private sector proponent. An example of this is the opportunity to demonstrate how primary frequency control could be efficiently provided by a diverse range of resources under a flexible incentives framework. ARENA's experience in this area is that there is great interest from innovators in industry but it can be challenging to get a commercial party to step forward to participate in a demonstration due to the high opportunity costs and uncertainty that a sustainable commercial return can be achieved (e.g. a rule change could make primary frequency control a mandatory requirement eliminating any prospect of future commercial return). In these cases ARENA can provide grant funding to get the trial off the ground, however this may not be the best approach in all cases, such as if the trial wishes to explore the operation of incentives frameworks in a live market context. Further, ARENA's funding is expected to be fully committed in the next 12 to 18 months so alternative approaches will need to be relied on beyond that.

This suggests that useful trials may also be identified via more proactive approaches, which respond to strategic needs in the sector rather than relying on prospective commercial proponents to self identify. A **Strategic Consultation and Coordination Network**, like DEIP, could provide an important vehicle for identifying and prioritising trials of strategic importance for the sector.

ARENA agrees with responses to the consultation paper that significant financial and human resources will be required to develop trials by all participants including the market bodies and

¹ <https://arena.gov.au/knowledge-innovation/distributed-energy-integration-program/>

potentially regulated and contestable businesses. This is consistent with ARENA's experience to-date of proof-of-concept trials and demonstrations. ARENA considers that the design of the sandbox toolkit should be fully integrated with the eventual solution to Finkel Recommendation 2.9 (establishing an ongoing funding source for proof-of-concept trials to support the energy transition). The challenge of integrating regulatory and funding processes further points to the value of a strategic consultation and coordination layer which can effectively prioritise efforts and allocate roles and responsibilities and support rapid and robust decision-making.

AER capacity and culture change

The toolkit approach places the AER as the manager of the pipeline of inquiries and prospective trials and demonstrations and this has implications for AER resourcing and business processes. ARENA's experience indicates that innovation pipeline facilitation requires significant active facilitation, a strong commercial as well as regulatory focus, awareness of the needs of the market and a culture that encourages strategic risk taking. This may not naturally associate with a regulatory compliance body such as the AER. ARENA is able to support the AER in identifying the necessary skills and processes but we note that this will also require dedicated resourcing by the AER and a concerted effort to ensure that this new function is able to effectively drive innovation across the energy sector.

Knowledge sharing

Knowledge is the principal value generated from any trial or demonstration and knowledge sharing is enshrined in ARENA's legislation. ARENA shares knowledge gained by trial participants through trial design or operation, as well as trial outcomes relevant to the broader market, which are beyond the scope of matters considered in the draft report. Effectively sharing the lessons, challenges and successes of trials allows others to learn from these experiences and subsequently fast-tracks industry development.

ARENA recommends that knowledge sharing should be framed as an integral feature of the sandbox toolkit, supported by appropriate skills and resources. ARENA engages in a range of knowledge sharing activities which are highly valued by industry. Examples of ARENA's knowledge sharing activities are below.

- **Technical project reports:** All projects are required to prepare a series of reports for the public, which are published on the ARENA website. These reports provide an overview of the project, methods, challenges, lessons learnt, successes and next steps. Reports include appropriate levels of technical detail to maximise value and inform an industry-focused audience in a timely manner. ARENA often provides input during the design phase of these reports in order to ensure known industry knowledge gaps are addressed.
- **ARENA reports:** ARENA continually identifies interesting trends and valuable lessons across its portfolios that are suitable for public dissemination. These reports anonymise, aggregate, and analyse data and information from multiple projects, and the results are published on an accessible public platform (the ARENA website). This allows ARENA to report on highly valuable information without attributing specific outcomes to a project or recipient.

- **Internal (non public) presentations:** Recipients are regularly invited to present on their projects to an internal audience and engage with staff during Q&A. Internal knowledge sharing is a core driver of ARENA's success and innovation, where the successes, challenges and lessons from our projects inform strategy.
- **Roundtable discussions:** Current projects are invited to participate in regular online discussions to promote connectivity and visibility between projects. This valuable forum encourages discussion between relevant projects on recent experiences and lessons that other proponents can benefit from.
- **Workshops:** Invite-only events that bring together selected ARENA funding recipients, representatives from peak industry bodies, and key stakeholders from across the industry. Workshops are designed to discuss a specific topic in significant detail (e.g. Regulatory Distributed Energy Integration Program (DEIP) Dive Workshop), resulting in deep and highly valuable outcomes, learnings, and actions. Chatham House Rules apply to these events to enable free discussion amongst attendees. Summary notes containing high-level information and key takeaways are then published on the ARENA website for the public.
- **Webinars (public):** ARENA has explored providing broader opportunities for the public to engage with ARENA-funded projects via webinars. These events can be highly accessible (only an internet connection is required) and enable the public to learn about the technologies, challenges, and valuable lessons directly from project proponents.
- **Forums (public):** Biannual invite-only events that bring together key stakeholders to showcase the latest progress in ARENA-funded projects. Feedback has been overwhelmingly positive with attendees valuing the technical details of the presentations, the relevance of the session topics, and the opportunity to network in particular.

It is difficult to see how these forms of knowledge sharing could be effectively integrated within the current proposal, which lacks a formal cross-sector strategic coordination and governance layer (as discussed above). ARENA does not consider that requiring the AER to report on the projects in the pipeline will be sufficient.

It is also important to note that while vital, knowledge sharing is not free. Knowledge sharing can take significant resources in terms of knowledge production and dissemination and requirements need to be considered carefully to ensure they are commensurate with the value of the knowledge produced.

Management of Intellectual Property

ARENA has not found Intellectual Property issues to be a major barrier to effective knowledge sharing. This is because of the difference in the nature of information in which the proponent has a specific commercial interest (including information brought into the project) and the information that is of value to the broader market which can be of a more general nature (including information produced through the course of the project).

ARENA balances confidentiality with public knowledge sharing through contractual arrangements. Any recipient confidential information is required to be specified in the funding agreements, and can only be disclosed by ARENA in accordance with certain contractual clauses, which includes the Knowledge Sharing Plan (KSP). All items included within the KSP are considered to be public, except where specified. Furthermore, funding recipients are contractually required to grant ARENA the rights to, among other things, disseminate project-related information for the purposes of knowledge sharing.

Where relevant, the recipient may be required to develop an Intellectual Property Management Plan that includes:

- Detailed descriptions of relevant Intellectual Property.
- Detailed descriptions of relevant licences, property technology or potential licences necessary for achieving the outcomes.
- Clear identification of mitigation strategies the recipient determines necessary to appropriately manage the identified intellectual property.

Examples of potential trials

ARENA's experience indicates that the rate of change in the electricity system will require the co-evolution of technology and regulatory frameworks. While this can be difficult to predict beyond the medium term, active consultation across industry can reveal trends, and sometimes consensus, in the direction of travel and this can lead to trials to inform and accelerate the change process. Trial design can involve complex trade-offs with regard to speed, cost, risk and demonstration value which result in a variety of trial design options, some of which may be able to progress easily within the current regulatory framework, while others may require special regulatory provisions.

Examples of potential trials that could make use of the sandbox tool kit process include:

- **Incentives for inertia and primary frequency control** - ARENA considers that frequency control may be most efficiently achieved by a broad range of large and small resources across the system responding to incentives. The consideration of potential incentives frameworks will benefit from an understanding of technology performance (hardware and software) as well as resource availability under different market conditions and in different locations. While it may be possible to use grant funding to simulate alternative market incentives frameworks, out-of-market funding may interact with in-market incentives (such as causer pays or registration requirements) in ways that undermine trial outcomes. As such, in some trial designs it may be more beneficial to suspend or amend causer pays or other obligations for the purposes of a trial.
- **Access arrangements for Renewable Energy Zones** - Significant questions exist about the interaction between potential access reform options and the real world decision making context for generators and transmission businesses. As such, there is a risk that rule changes echo previous failed reform attempts such as the Scale Efficient Network Extension Framework which, despite looking good on paper, failed to achieve any traction with industry. It may therefore be advantageous to offer transmission businesses a limited right to trial alternative arrangements in a specific location (with the

right to trial potentially allocated on a competitive basis) and use the information from trials to inform the broader reforms to transmission access regimes. This example illustrates the potential scale (in cost terms) at which a sandbox tool kit may be required to operate.

- **Distribution markets** - Distribution market options range widely in terms of their institutional frameworks, scope and potential outcomes for consumers. A systematic approach to distribution market development may include the real-world demonstration of key features of potential market design options (building on the many existing ARENA and other industry trials and design processes). In this case distribution businesses may require limited waivers in relation to Tariff Structure Statement requirements and retailers may seek a limited exemption to retail law provisions such in relation to contestability and/or billing (for customers that provide informed consent to participate in the trial).
- **Two-sided market operation** - ARENA notes the risks and opportunities presented by an increasingly flexible demand side and the current trends towards the registration and scheduling of specific technologies like batteries, solar PV or EVs. ARENA sees this trend as being difficult to sustain in the long term as demand side resources become more diverse and integrated and that ultimately a more flexible performance-based, technology neutral, approach may be beneficial. There is scope for trials which demonstrate different ways in which customers can participate in the market in relation to forecasting, scheduling, ramping and settlement, both at the individual customer or retail portfolio level, and relative merits of alternative approaches.

Please contact Jon Sibley, Principal Policy Advisor (jon.sibley@arena.gov.au) if you would like to discuss any aspect of ARENA's submission.

Yours sincerely

Darren Miller

Chief Executive Officer