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Action:	For Decision

SEC Strategic Events Update

1. Purpose

The purpose of this paper is to seek TABASC input to and endorsement of the suggested approach to managing net zero related strategic events including Demand Side Response, Heat Electrification, and Dynamic Time of Use Tariffs.

2. Background

The Strategic Working Group has identified several events which might have an impact on the SEC in the future. SECAS, in conjunction with its Community of Experts, has been considering how best to plan for these. Prior to any significant work being undertaken in these areas, the TABASC is asked to endorse the proposed approach. A recommendation will then be made to the Strategic Working Group and SEC Panel for this work to progress.

3. Demand Side Response

3.1 Event description

An increasing number of financial incentives are being provided to consumers to temporarily reduce their energy consumption by turning down non-essential processes during times of peak-demand, allowing the electricity grid to stay balanced without the need for additional generation. Many of these processes that can be turned down involve devices which have the potential to be connected to Smart Metering infrastructure and controlled remotely by a third party. Examples of these could be electric heating, heat pumps and other non-essential equipment.

3.2 Impact on the SEC

There is a need to understand the impact of the integration and security challenges on the SEC, and to highlight the impact for any SEC Parties involved in the long-term management of the electricity grid.

Currently, only licensed energy suppliers can control load through the DCC system. The consultation on Smart Metering System Proportional Load Control Functionality proposes some changes which would allow proportional load control devices to act on messages from a non-supplier User to curtail load. This could lead to future provision of demand management services by a third party without it needing to be, or act through, a licensed energy supplier. The changes allowing additional Users to send load constraining messages would require changes to the SEC, specifically to Appendix E (the DCC User Interface Services Schedule) and Appendix AD (the DCC User Interface Specification).

There are also likely to be additional cross-code implications for the Balancing and Settlement Code (BSC) and Distribution Connection and Use of System Agreement (DCUSA).

3.3 Impact on the Consumer

More organisations will have the ability to control consumer demand beyond energy suppliers, for example Chargepoint Operators (CPOs) and Electricity Aggregators.

Consumers may relinquish some control of their energy usage but will have increased access to financial incentives intended to encourage demand side optimisation. This may come with complex commercial models between the multiple parties in charge of the energy management at a premises.

3.4 Key dates and Triggers for Panel to act

The British Standards Institution (BSI) has recently published two new standards for energy efficient appliances: PAS 1878:2021 and PAS 1879:2021. PAS 1878 sets out to encourage the uptake of safe, secure and interoperable Energy Smart Appliances (ESA), which are needed for the active management of Demand Side Response (DSR). It details the requirements and criteria necessary to make an ESA compatible with DSR activities. PAS 1879 sets out minimum recommendations to perform DSR-based activities involving electrical appliances that are used in domestic or small business settings. SECAS will consider these standards and their impact on the SEC and come to a future TABASC with proposed next steps.

The Government intends to consult on an appropriate regulatory approach for flexibility service providers and other organisations controlling load during 2022. When the Government policy decision has been made the outcome will be reviewed and the impact considered. If required, changes to the SEC will be made.

DSR is intrinsically linked with Distributed Energy Resources (DER) and Electric Vehicles (EVs). As part of the 'next steps' from the Strategic Technical Review project, SECAS is looking closely at integration of DER, and EV CPO platforms into DCC systems. When complete, the output of this work will be presented to the TABASC for consideration. Once direction has been provided by TABASC, SECAS will return with a Project Brief, which, once endorsed will be recommended to SEC Panel and Board for approval.

3.5 Approach

BEIS are awaiting the results of several focused trials involving EV technology and smart metering, as well as consulting with stakeholders. When these activities are complete, BEIS will put forward their preferred options for EV and smart metering interaction (expected in early 2022). Once this information has been shared, SECAS will complete the 'next steps' identified as an output from the Strategic Technical Design Review project, looking specifically at:

- integrating EV CPO Platforms into the DCC systems; and
- ensuring the integration of DER from a device perspective to the DCC systems.

If appropriate, recommendations will be made to SEC Panel and Board for approval.

In addition, SECAS will monitor the development of any regulatory aspects by managing the following activities:

- Review PAS 1878 and PAS 1879 standards; and
- Review applicable Consultations for insight.

SECAS will return to the TABASC during its 73 meeting in January with an outline of proposed next steps, having looked closely at the PAS 1878 and PAS 1879 standards.

4. Heat Electrification

4.1 Event description

With the ongoing success of renewable electricity generation, the Government is aiming to increase the use of electric heating methods, such as heat pumps. This is subject to political considerations and decisions being taken around the cost impact of this transition, and the distribution of where costs fall. The extent of the rollout will be affected by the level of support for hydrogen as an alternative fuel.

4.2 Impact on the SEC

The electrification of heat should have a minor impact on the SEC. There will be no change to the SEC if the only requirement is more energy consumption. Further consideration should be taken if smart metering interaction with heat pumps goes beyond increased energy consumption – this may require changes to the SEC.

4.3 Impact on the Consumer

There is little to no consumer impact expected from a smart metering perspective for Heat Electrification. More flexible use of energy will be granted to consumers using smart metering technology within their domestic properties, contributing to a more cost-effective, efficient, and secure energy system. Smart, digital technology provides greater choice, flexibility, and control to customers.

4.4 Key dates and Triggers for Panel to act

A clear policy steer from the Government. Although the Heat and Buildings Strategy was published in October 2021, no specific triggers have been identified. Further government consultations and policy relating to this strategy will be monitored, and triggers identified when they arise.

4.5 Approach

In addition, SECAS will track the development of any policy or regulatory aspects by monitoring the publication of the Government Heat and Building Strategy and accompanying consultation documents.

5. Dynamic Time of Use Tariffs

5.1 Event description

A dynamic time-of-use (DToU) tariff offers a different price per unit of energy depending on the time of day. The times and rates can change daily. For example, the rates that apply are dependent on trends like wind or solar generation.

The current penetration of DToU tariffs is low in the domestic market, but this will change as the energy framework incorporates further learnings.

5.2 Impact on the SEC

If the wider energy system changes to make use of and take account of DToU tariffs, the SEC may need to be adjusted to make the same considerations.

This could be in the realms of system changes to the DCC to facilitate the configuration of DToUs, or changes to the legislation to make sure DToUs are offered as products to the energy consumer.

5.3 Impact on the Consumer

If the SEC or smart metering cannot facilitate the use of DToU tariffs when the wider energy systems evolve to support them, consumers with existing smart devices will not be able to benefit from the use of these tariffs.

5.4 Key dates and Triggers for Panel to act

Currently, DToU tariffs are not yet widely used across the domestic retail market. The proliferation of such products should be monitored so that the SEC and Smart Metering infrastructure does not prevent consumer uptake.

5.5 Approach

SECAS will monitor the progress of enabling technologies being integrated into the DCC, as well as look at the business models for the use of DToU tariffs. When appropriate, SECAS will undertake a piece of work to understand how DToU tariffs can be proliferated using the Smart Metering infrastructure and return to a future TABASC outlining next steps.

6. Recommendation

The TABASC is requested to:

- **NOTE** the contents of this paper; and
- **ENDORSE** the proposed approach to planning for these events.

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25 November 2021