



**Energy Transformation
Taskforce**

Supplementary ESS Procurement Mechanism

Information Paper

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Energy Transformation Taskforce

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1. Purpose

1.1 The Energy Transformation Strategy

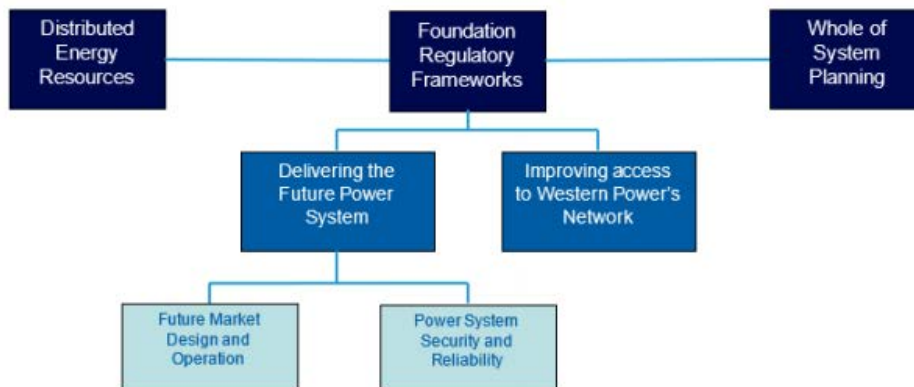
This paper forms part of the work to deliver the Energy Transformation Strategy. This is the Western Australian Government's strategy to respond to the energy transformation that is underway and to plan for the future of our power system.

The delivery of the Energy Transformation Strategy is being overseen by the Energy Transformation Taskforce (Taskforce), which was established on 20 May 2019. The Taskforce is being supported by the Energy Transformation Implementation Unit (ETIU), a dedicated unit within Energy Policy WA, a sub-department of the Department of Mines, Industry Regulation and Safety.

More information on the Energy Transformation Strategy, the Taskforce, and ETIU can be found on the Energy Transformation [website](#).

This paper is prepared as part of the *Future Market Design and Operation* project within the Foundation Regulatory Frameworks work stream of the Energy Transformation Strategy, as shown in Figure1, below.

Figure1: Energy Transformation Strategy Workstreams



The Future Market Design and Operation project is undertaking improvements to the design and functioning of the Wholesale Electricity Market (WEM):

- modernising WEM arrangements to implement a market design using security-constrained economic dispatch that optimises the benefits of the introduction of constrained network access for Western Power's network; and
- implementing a new framework for acquiring and providing Essential System Services (ESS).

1.2 The purpose of this paper

This paper outlines the framework and processes for the Supplementary Essential System Services Mechanism (SESSM) to procure Frequency Co-optimised Essential System Services (FCESS) in the WEM.

The paper draws on Taskforce decisions outlined in related Information Papers published to date as part of the Energy Transformation Strategy:

- [Frequency Control Technical Arrangements](#)
- [Frequency Control Essential System Services: Acquisition, Cost Recovery and Governance](#)
- [Essential System Services - Scheduling and Dispatch](#)
- [Market Settlement - Implementation of Five-Minute Settlement, Uplift Payments and Essential System Services Settlement](#)

The purpose of this paper is to outline the core processes and design elements of the SESSM and the consequent rule obligations to be placed on different types of participants and facilities under the new WEM arrangements, to be implemented on 1 October 2022, with transitional obligations implemented earlier. The paper outlines the processes for triggering, procuring, awarding and dispatching SESSM in the new WEM.

The Transformation Design and Operations Working Group (TDOWG) meeting held on 11 March 2020 considered the proposed design of the SESSM. The industry has supported the principles underpinning the SESSM framework and appreciated the role the mechanism will perform in ensuring FCESS markets deliver effective outcomes. Further consultation is planned with TDOWG on Supplementary Mechanism for Non-Co-optimised ESS (NCESS), prior to the commencement of related WEM Rule drafting by the Taskforce.

The detailed design of the SESSM has been developed in consultation with AEMO and the ERA. The project team has given detailed consideration to ensure the SESSM process will be appropriate for the relatively small size of the WEM in terms of efficiency, and that it will work seamlessly with other elements of reform being implemented as part of the Energy Transformation Strategy.

2. Supplementary Mechanism Objectives

2.1 Background

ESS are the non-energy services provided in the WEM that ensure secure and reliable operation of the power system by maintaining power system frequency within required standards, minimising the risk of involuntary load shedding, and providing location specific support.

Frequency control ESS in the WEM are currently procured via a range of market and administrative mechanisms and are not fully co-optimised with energy procurement. These services are currently defined as Load Following Ancillary Services (LFAS), Spinning Reserve Ancillary Service (SRAS) and Load Rejection Reserve (LRR).

Under the new market arrangements being delivered under the Strategy, the WEM will adopt a facility-based, Security Constrained Economic Dispatch (SCED) market model, co-optimising energy with five markets for frequency control ESS:

1. Contingency Reserve Raise, replacing the Spinning Reserve service
2. Contingency Reserve Lower, replacing the current Load Rejection Reserve service
3. Regulation Raise (replacing the frequency-raising component of the current Load Following Service)
4. Regulation Lower (replacing the frequency-lowering component of the current Load Following Service)
5. a new Rate of Change of Frequency (RoCoF) Control Service (RCS).

These revised services are collectively known as FCESS and will be implemented alongside the locational NCESS support services, together comprising the new ESS framework in the WEM.

FCESS will be primarily procured via real-time markets, with participation from all capable and accredited facilities enabled, but not mandatory. Nevertheless, to protect against the risk of market failure in what will be relatively small and concentrated markets, the Taskforce has endorsed the SESSM to provide a means for longer-term contractual arrangements to increase certainty, mitigate market power, support new market entry, and avoid a shortfall in ESS provision. Contrasting with current arrangements, the SESSM will be implemented through a transparent tender process in the WEM Rules, rather than through individually negotiated bilateral contracts.

2.2 Problem definition

The existing Ancillary Services in the WEM are currently provided by a small number of Market Participants. While the new FCESS markets are designed to facilitate new entry, the WEM is small and is likely to remain highly concentrated in the short-to medium-term. There are risks that the real-time FCESS markets alone may not deliver the objectives of the new WEM arrangements due to the potential for:

- insufficient participation (scarcity), resulting in shortfall in FCESS provision;
- insufficient new FCESS providers entering the market, resulting in highly concentrated markets; and
- exercise of market power in highly concentrated markets, resulting in inefficient market outcomes.

In response to these identified risks, in August 2019 the Taskforce endorsed establishing a mechanism to supplement real-time FCESS markets with longer-term, centrally-managed arrangements to mitigate market power and facilitate development of a competitive FCESS market over time. The existing administrative arrangements for the provision of all Ancillary Services (LFAS, SRAS and LRR) will be superseded by the new FCESS markets, and supported by the SESSM.

2.3 Objectives of the SESSM

At a high level, the broad objectives of the SESSM are to:

- incentivise new FCESS providers to enter the market;
- mitigate scarcity in FCESS markets, manifesting either as a shortfall of accredited facilities, or shortfall of participation; and
- mitigation of market power by:
 - the threat of competitive entry; and
 - a mechanism of ex-ante review of the operating costs of ESS providers by the Economic Regulation Authority (ERA).

Table 1: WEM Objectives and the Taskforce’s desired SESSM outcomes

	WEM Objective	Desired SESSM Outcomes
a)	To promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West Interconnected System.	<p>To maximise opportunity for real-time co-optimised markets to function, the default market setting will be for the SESSM to not be activated or triggered prior to the commencement of the new WEM.</p> <p>Transitional arrangements will be in place to ensure depth of market participation at market start.</p> <p>Following market start, the SESSM will provide a mechanism to respond to scarcity.</p>

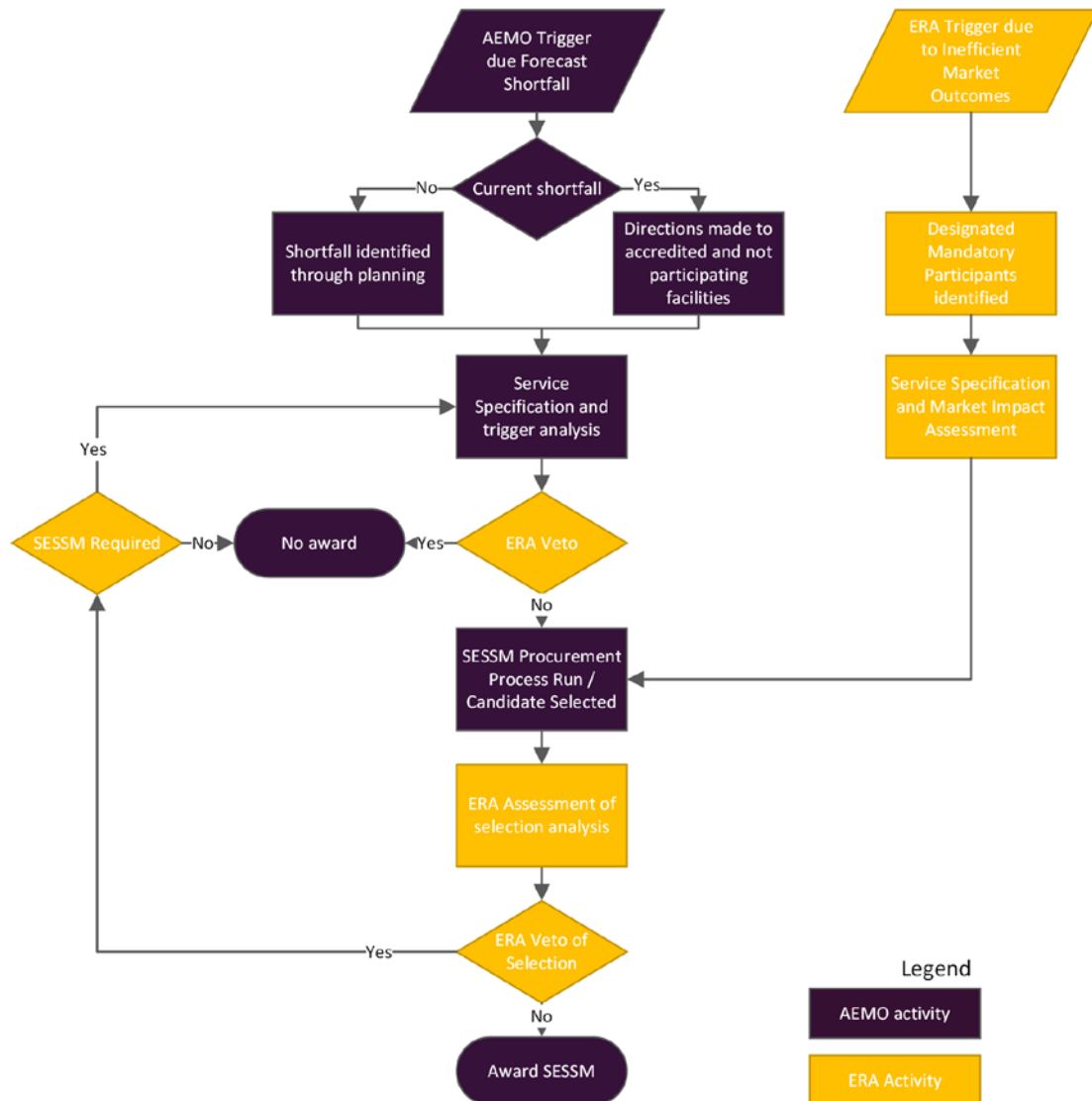
	WEM Objective	Desired SESSM Outcomes
b)	To encourage competition among generators and retailers in the South West Interconnected System, including by facilitating efficient entry of new competitors.	Incentivising new FCESS providers to enter the market (where more technically-efficient and cost-effective) by providing revenue certainty.
c)	To avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions.	Technology-agnostic procurement against a common service specification to ensure participation opportunities for all capable technologies.
d)	To minimise the long-term cost of electricity supplied to customers from the South West Interconnected System	Mitigate market power by the threat of competitive entry. Establishing a mechanism for ex-ante review of the operating costs of FCESS providers by the ERA.
e)	To encourage the taking of measures to manage the amount of electricity used and when it is used.	The 'causer pays' principle adopted to allocate the costs of FCESS acts to reduce the quantity of FCESS services required by incentivising facilities to improve their power system performance. The SESSM acts in support of FCESS markets.

2.4 SESSM process overview

A high-level process for the procurement of SESSM is shown in Figure 2, consisting of the seven stages.

1. Triggering – AEMO and ERA
2. Service Specification
3. Veto of Procurement
4. Procurement Process
5. Selection
6. Veto of Award
7. SESSM awarded

Figure 2 High Level SESSM Process



3. Supplementary Mechanism triggers and service specification

3.1 Triggering the SESSM

The triggers for the SESSM should align with any failure of the market to achieve the objectives of the new WEM. The triggers should therefore be based on measurable success of the market in achieving these objectives.

For FCESS, the Taskforce has determined that two parties can trigger the SESSM:

- AEMO, based on:
 - forecast medium-term shortfalls in capacity accredited to provide one or more FCESS; and/or
 - frequent short-term forecast shortfalls in capacity participating in real-time FCESS markets, leading to AEMO directions to accredited facilities that are not participating.
- The ERA, based on inefficient market outcomes observed in:
 - bidding patterns in the real-time market; and/or
 - pricing information received from biennial EOI processes or other sources of market information (Section 7.4).

3.2 Shortfall triggers

The ability to meet FCESS quantity requirements is a key indicator of market effectiveness. This ability can be measured over:

- ‘planning’ (longer-term) timeframes, to identify shortfall of accredited facilities to meet ESS quantities (not enough accredited capacity to meet forecast requirements) – defined as an ‘accreditation shortfall’; and
- ‘operational’ (shorter-term) timeframes, to identify lack of participation by accredited facilities (not enough offers of synchronised and available facilities in real-time to meet forecast requirements) – defined as a ‘participation shortfall’.

Both accreditation and participation shortfalls will serve as triggers for the SESSM. The specific circumstances in which the triggers occur will be used to define the quantity, timing, and duration of the service to be procured.

3.2.1 Planning-timeframe shortfall

Identification of shortfalls in the total capacity of FCESS-accredited Facilities can be made through AEMO planning processes, specifically the Short Term and Medium Term Projected Assessment of System Adequacy (ST-PASA and MT-PASA).¹

These planning processes will forecast the total capacity of accredited Facilities which are expected to be available to offer into the real-time FCESS markets. The forecasted quantity of capacity

¹ MT and ST PASA are studies conducted by AEMO over different time horizons to determine Ancillary Service requirements, outage planning and availability of capacity holding Capacity Credits. The MT PASA planning horizon is three years with the study conducted every month. The ST PASA planning horizon is three weeks with the study conducted every week.

available from accredited Facilities must include the capacity available from existing Facilities and new FCESS accredited Facilities, and taking into account planned outages. The forecast of available accredited capacity will be compared to the forecast quantity required in each FCESS market. Trigger requirement will be met when the forecast requirement exceeds accredited capacity. An example of a planning timeframe shortfall triggering the SESSM is shown in Figure 3, below.

Figure 3: Example of planning timeframe trigger for the SESSM

An example of a planning-time trigger for the SESSM is as follows:

1. AEMO forecasts identify a Contingency Reserve Raise requirement increase of 20 MW from 2022 – 2023, during summer months between 2pm and 7pm
2. Requirement exceeds existing available Contingency Reserve from accredited facilities by 10 MW
3. The shortfall cannot be alleviated by recalling or cancelling outages of accredited Facilities.
4. SESSM will be triggered for procurement of 10 MW between 2pm-7pm through summer months in 2022-2023

The characteristics of the periods in which the shortfall occurs will form a part of the Service Specification (discussed in Section 3.5).

3.2.2 Operational timeframe shortfall

In an operational timeframe, shortfalls would be identified in WEMDE pre-dispatch schedules (PDS), and result in Constraint Violation Quantities² (CVQ's) for FCESS requirement constraints. In such cases, where market participants do not respond to a signalled shortfall by adjusting offers and commitment plans, AEMO would direct accredited facilities to offer into the FCESS markets where they are not currently doing so. Accredited facilities are required to commit if pre-dispatch results show that they would be cleared if running but are offering as 'available' rather than 'in-service', and/or AEMO may relax FCESS constraints to reflect the shortfall available from the market. In shortfall conditions, it is expected that FCESS market prices will rise, providing an incentive for increased participation by accredited facilities, but if directions resulting from participation shortfall are frequent, SESSM procurement would be triggered.

An example of an operation timeframe shortfall triggering the SESSM is provided below in Figure 4.

² The new clearing engine design will co-optimize offers for energy and FCESS. Where insufficient capacity is offered by Market Participants to meet forecast demand and FCESS requirements, a non-zero constraint violation quantity (CVQ) will occur in one or more constraints. CVQ's carry a cost (Constraint Violation Penalty (CVP)) in the objective function, which allows the engine to violate constraints in preferential order to achieve the lowest cost (with a preference for energy over ESS). CVPs are determined by AEMO to denote the relative preference for failing to satisfy the requirements to service energy and all ESS. [Information Paper: ESS Scheduling and Dispatch](#) outlines how CVPs are determined.

Figure 4: Example of an operational timeframe trigger (CVQ-based) for the SESSM

An example of a CVQ-based trigger is as follows:

1. Over a three-month period, CVQs for Contingency Raise occurred within 4 hours of real time dispatch for more than 100 dispatch intervals.
2. In greater than 50% of these intervals, CVQs were addressed by AEMO direction to participants, rather than voluntary response.
3. More than 50% of directions occurred between 2am and 6am on weekdays, and the 90th percentile directed quantity in these intervals was 90 MW.
4. SESSM is triggered to procure for this quantity in these time periods.

3.3 Triggers for inefficient market outcomes

The ease of entry into a market is a key mitigant of market power. The SESSM reduces barriers to entry for new entrants by enabling the recovery of incremental fixed costs relating to participation in real-time FCESS markets.³

In addition to its regular market monitoring functions, ERA will have the power to trigger the SESSM based on reasonable suspicion of inefficient market outcomes, whether caused by an exercise of market power that ERA observes in the real-time market through observation of bidding patterns, or structural issues in the market that lead the ERA to suspect that new entrants may be able to provide ESS at a lower price than is being observed in the real-time markets. Analysis and triggering of the SESSM by the ERA will be based on data provided by AEMO through the Market Surveillance Data Catalogue,⁴ including by testing FCESS market offers and outcomes against:

- offers from similar facilities;
- expected or known costs for a facility;
- offers from the same facility in different time periods;
- the offer construction guidelines published by ERA;⁵
- existing facility costs with potential new entrant costs (which the ERA may receive through Expression of Interest (EOI));
- FCESS market outcomes in other comparable jurisdictions⁶;
- historical ESS prices;

³ Where new entrants do not seek to participate in FCESS markets because of uncertainty of recovering incremental fixed capital costs to provide FCESS, the availability payment received through a SESSM Award aims to fill that gap.

⁴ The information provided through the Market Surveillance Data Catalogue will be reviewed through the Monitoring and Compliance workstream

⁵ An example is PJM's cost development guidelines available here:

<https://www.pjm.com/-/media/documents/manuals/archive/m15/m15v29-cost-development-guidelines-05-15-2017.ashx>

⁶ ERA has historically compared WEM outcomes to state-level outcomes in the National Electricity Market. While any comparison must acknowledge differences in underlying circumstances, potential comparators include other markets of roughly similar size like New Zealand, Singapore, and Ireland.

- information received from the Market Test (EOI and Accreditation Test) conducted prior to WEM Commencement Day (discussed in Section 7.3 of this paper); and
- information received from the biennial Market Test EOI process (Section 7.4).

When ERA triggers the SESSM it must publish:

- the rationale for its conclusion that market outcomes may not be consistent with efficient market operation;
- a view on whether the inefficiency in the market is restricted to certain time intervals (e.g. day of week, time of year), or is present at all times; and
- an estimate of the difference in cost of ESS under current market outcomes and under efficient market operation.

3.4 ERA veto of running the SESSM process

Under the current WEM design, when AEMO seeks to enter into Ancillary Service contracts with participants other than Synergy, the ERA must approve the contract, applying a test of whether the new award will reduce the cost of procuring the service.

Under the SESSM process, the ERA will be able to veto the:

- triggering of the SESSM procurement process; and
- selection of a facility (or a combination of facilities) from candidate submissions to be awarded the SESSM (discussed in Section 5.4).

Where AEMO identifies that a trigger for shortfall has occurred and the SESSM should be run, it will provide to ERA (in advance of procurement) the:

- reason for triggering the SESSM;
- characteristics of the service(s) to be procured;
- additional quantity that would be expected to rectify the shortfall if a SESSM Award was made (where triggered for accreditation shortfall); and
- number of AEMO Intervention Events that would have been avoided had a SESSM award been in place (where triggered for a participation shortfall).

The ERA will review the process applied by AEMO in identifying the forecast shortfall. If, in the ERA's reasonable opinion AEMO has not triggered the SESSM for a forecast shortfall in accordance with the Market Procedure, the ERA may veto the trigger of the SESSM. At this time, AEMO may choose to revise and resubmit the specification of the proposed ESS in which case the process restarts, or take no further action in which case AEMO continues to issue directions to accredited, non-participating facilities, or relax constraint violation quantities resulting in FCESS market price spiking.

3.5 Service specification

The service specification will be based on the trigger quantities and the characteristics of each service to be procured under the SESSM. Multiple services may be procured as part of the same process; however, these would be specified separately. The service specification for a SESSM will include the:

- name of the service (or services) to be awarded under the SESSM;
- Service Commencement Date (when the requirement begins);
- Award Duration (which must be a default of 1 year);
- Service Timing (the time period over which availability is sought);
- Service Quantity Profile (megawatt (MW) or MWs of FCESS required, which may be represented by a profile over time and may be zero at some times of year or some hours):
 - For accreditation shortfall, the quantity would reflect the forecast shortfall.
 - For participation shortfall, the quantity sought would be zero in time periods where there is no pattern of frequent directions.
 - For inefficient market outcomes, the quantity sought would reflect the entire forecast requirement in relevant time periods.
- minimum availability requirement, representing the percentage of the required time period which the facility must offer into the relevant real-time FCESS market, and below which the facility would be subject to availability payment refunds discussed in Section 6.1.2 (analogous to refunds in the Reserve Capacity Mechanism and current System Restart contracts).

3.6 Taskforce Design Decisions – SESSM Triggers and Service Specification

The Taskforce has determined the following design elements.

- The SESSM can be triggered by AEMO, based on:
 - forecast medium-term shortfalls in capacity accredited to provide one or more FCESS; and
 - frequent short-term forecast shortfalls in capacity participating in real-time FCESS markets, leading to directions to accredited facilities that are not participating.
- The SESSM can be triggered by ERA, based on inefficient market outcomes whether identified from:
 - observation of bidding patterns;
 - information from Market Test and/or biennial EOIs from existing participants and potential entrants; and
 - other market data.
- When triggered by AEMO, the ERA can veto the running of the SESSM process, if in the ERA's reasonable opinion, AEMO has not triggered the process in accordance with the Market Procedure.
- SESSM service specification will be defined by trigger quantities, providing flexibility to procure across various time-periods, duration and quantities and can specify a minimum availability requirement.

4. Participation

4.1 Participation requirements for a shortfall trigger

Where AEMO has triggered the SESSM due to forecast shortfall in accredited capacity, facilities already accredited for FCESS may only participate if proposing an increase in their accredited FCESS capability. Otherwise, new facilities and existing facilities without a current SESSM award may participate. For new proposed Facilities, in order to offer into the SESSM process, participants would be required to supply supporting evidence of their ability to deliver to the service specification. Obligations following award would be placed on new SESSM Facilities to provide reports on progress towards Facility commissioning at least once every:

- three months, from the date the SESSM Award is confirmed; and
- one month, from six months prior to the Service Commencement Date.

In the event that the Market Participant is unable to demonstrate sufficient progress towards Facility commissioning, AEMO may revise the Service Commencement Date, or cancel the SESSM Award.

4.2 Participation requirements for a trigger due to inefficient market outcomes

Participants assessed as potentially contributing to inefficient market outcomes (for example, through pricing offers above the economically efficient level expected for that type of technology) will be obligated to participate in the SESSM.⁷

When triggering the SESSM due to inefficient market outcomes, the ERA will nominate mandatory participation, whereby the ERA:

- can designate registered facilities but not prospective facilities;
- can only designate a facility for participation in a SESSM procurement for a co-optimised FCESS for which it is accredited;
- cannot designate a facility which already has a current SESSM award for the relevant service, unless the new service specification covers additional capacity or time periods not included in the award; and
- can only designate facilities or participants which are able to meet the service specification.

While the ERA may nominate mandatory participation, the SESSM procurement process will be open to new Facilities and to existing Facilities not currently providing ESS. New Facilities seeking to participate in the SESSM will be required to register in the WEM within a specified period.

⁷ This requirement to participate in the SESSM and disclose costs to the ERA will assist the ERA to discover the actual costs of that participant providing the relevant service in the real-time market.

4.3 Taskforce Design Decisions – Participation Requirements

The Taskforce has determined the following design elements:

- Only new Facilities and Facilities offering an increase in accredited capacity may submit into a SESSM process for accreditation shortfall.
- The ERA will have the ability to designate Facilities for mandatory participation in the SESSM process, when the trigger was due to inefficient market outcomes.

5. Procurement Process

5.1 Tendering

If the ERA does not veto the running of the SESSM process, AEMO will advertise a call for submissions. The call for submissions must include:

- a notice published on the market website (open to all); and
- direct contact with any participants designated by ERA as mandatory participants (to ensure they submit their offers into the SESSM process).

AEMO must include in the notice:

- the date and time at which any person wishing to tender must have completed and lodged with AEMO the specified form;
- contact details for AEMO;
- a high-level description of the quantity, type and timing of the required service;
- the location on the Market Web Site of the submission form to be used; and
- the location on the Market Web Site of the service specification.

AEMO will develop a submission form to be used by those applying to provide services.

5.2 Submission Structure

Participants will make SESSM submissions on a facility basis, with each submission including the desired:

- award duration;
- availability quantity, that is the MW or Megawatt seconds (MWs) quantity of the FCESS to be made available in a dispatch interval;
- weekly Availability Payment, which:
 - is the dollar amount payable to the participant for offering the Availability Quantity into real-time markets according to the service specification; and
 - represents the incremental fixed costs of being available to offer the service, after accounting for any capacity credit payments;
- Offer Cap, that is the price (excluding enablement costs⁸) at or below which the participant commits to offering into the applicable real-time FCESS market (the Offer Cap may vary according to the time periods set out in the service specification); and
 - whether the offer is contingent on holding a SESSM award for more than one FCESS being procured, and if so which ones.

⁸ Participants may still include enablement costs (relating to the difference between the energy market clearing price and the cost of generating at minimum running, including start costs) to real-time offers above the Offer Cap.

For existing Facilities, submissions must also include:

- a comparison of proposed Availability Quantity to historic offer quantities over the past 12 months;
- a comparison of proposed Offer Cap to historic offer prices over the past 12 months (with explicit adjustment for enablement costs in intervals where the facility was cleared for energy at minimum generation); and
- information on the proportion of cleared FCESS offers that related to enablement costs.

Submissions for new Facilities must also include:

- whether or not the facility has applied for or been granted Certified Reserve Capacity or Capacity Credits in respect of the capacity that would provide the FCESS;
- expected minimum enablement limit;
- expected generation cost at minimum enablement limit; and
- expected start-up cost.

To the extent that a Facility holds capacity credits, its offer would be expected to include only those costs specifically incremental to the provision of the required service, and not fixed costs of availability.

Submissions may include assumptions and cost information used to develop proposed availability payments and offer caps. Assumptions and cost information must be subject to the same good faith offer obligations as the Short Term Energy Market and real-time markets.

A participant may include additional submissions with different prices in its response. All submissions must meet the service specification, except that additional submissions may propose a different duration (longer and shorter) than set out in the service specification.

5.3 Selection

5.3.1 Selection Methodology - Shortfall

For SESSM triggered by AEMO for shortfall, the analysis of SESSM submissions would include:

1. discarding submissions not complying with the Specification;
2. identifying historical dispatch intervals matching the Service Specification (date, time, load);
3. calculating three per interval price profiles for energy matching the Service Timing (average, high, low);
4. calculating effective ESS offer prices for each SESSM Submission comprising:
 - a. proposed per-interval availability payment divided by the proposed availability quantity;
 - b. proposed Offer price cap;
 - c. expected enablement costs based on:
 - (i) enablement limits;
 - (ii) start costs; and
 - (iii) minimum running costs; and
5. calculating the lowest cost combination of submissions to deliver the requirement under each of the three energy price profiles.

An assessment of the award outcomes with the average, high and low interval price profiles will provide additional information to support the proposed selection of Facilities for SESSM awards.

5.3.2 Selection Methodology – Inefficient Pricing

For SESSM triggered by the ERA due to inefficient market outcomes, the same approach as outlined for shortfall will be used to identify the lowest cost combination of submissions. This analysis will also be conducted by AEMO; however the ERA may carry out additional analysis (within a limited time period) in its consideration of the awards.

In addition, submissions from existing participants will need to include a comparison of proposed availability quantity to historic offer quantities over the past 12 months and a comparison of the proposed offer cap to historic offer prices over the past 12 months (with explicit adjustment for enablement costs in intervals where the facility is trapped at the bottom end of the FCESS trapezium, as discussed in the Taskforce Information Paper: [ESS Scheduling and Dispatch](#)).

5.3.3 Award Notification

AEMO will notify the ERA of the outcome of the SESSM, including:

- the proposed awards;
- the estimated cost of the awards;
- the estimated cost of providing the services without the awards, according to AEMO heuristic assessment; and
- a comparison of the calculated effective ESS offer prices to the market clearing prices of the relevant FCESS over the previous 12 months.

5.4 ERA Veto of Award

The ERA will review the proposed awards and supporting information.

Where AEMO triggered the SESSM procurement for shortfall reasons, the ERA will have a short window to veto the proposed awards if, in its reasonable opinion, AEMO has not followed the process set out in the Market Procedure.

Where the ERA triggered the SESSM procurement itself, the ERA will have a longer window to review the selection process, and may veto one or more of the proposed awards if, in ERA's reasonable opinion, based on information available to it:

- the SESSM award will not achieve the lowest practicably sustainable cost of delivering the service; or
- a participant's SESSM submission does not reflect reasonable costs and assumptions.

If the ERA does not veto an award, AEMO will complete the award by notifying the participant responsible for the selected facility.

Even after the veto period has expired, the ERA may determine that a participant has breached the good faith offer provisions by submitting misleading or erroneous costs and assumptions in a SESSM submission.

In the event that the ERA determines that a participant's behaviour breaches these obligations, the SESSM award would remain in place, but the ERA may do any or all of the following:

- Adjust the availability payment or the offer price cap.
- Pursue remedies through its market monitoring and compliance function.
- Impose penalties under its infringement or civil penalty powers.

5.5 Notification

Notification to the market will be made for all SESSM awards, providing information relating to the procurement process and the award. In addition to notifying participants with selected facilities, AEMO will publish information relating to the procurement:

- number and identity of respondents;
- proposed award information and supporting selection process information as submitted to ERA; and
- terms of awards including:
 - Facility.
 - Service Specification.
 - Award Duration.
 - Availability Payment.
 - Offer Cap.

SESSM submissions remain confidential to AEMO and the ERA. Only the final awards are made public.

5.6 Taskforce Design Decisions – Procurement

The Taskforce has determined the following design elements.

- Facility submissions must include an availability payment, and an offer price cap for the relevant FCESS market.
- Facility submissions must be subject to the same good faith offer obligations as the STEM and real-time markets.
- Heuristic pricing analysis undertaken by AEMO will be utilised in the assessment of submissions.
- The ERA will be able to veto a recommendation for a SESSM award based on AEMO's analysis.
- The ERA may modify the availability payment or offer price cap in the SESSM award if the ERA identifies a breach good faith of bidding obligations. The ERA may also pursue other remedies through its monitoring and compliance function.

6. Dispatch and Settlement for SESSM Facilities

6.1 Bidding and dispatch

Facilities holding a SESSM award for any FCESS will be required to offer into the relevant FCESS markets as being either In-service or Available for the quantities and the Dispatch Intervals required under the service specification, subject to planned/forced outage arrangements.

In advance of any Dispatch Interval for which the Facility holds a SESSM award the Facility must offer as follows:

1. FCESS offers totalling at least the relevant Availability Quantity where the offer price includes:
 - the variable, per MW or MWs cost of providing the service, which must not exceed the offer price cap as prescribed under the award;
 - if the facility is forecast to run at its Minimum Enablement Limit,⁹ enablement losses (the difference between the per MW price of the tranche of the Facility's energy offer which relates to the Minimum Enablement Limit and the participant's expectation of the energy market clearing price based on any available pre-dispatch schedules; and
 - where start costs are not included in energy offer prices, start costs amortised across expectation of running period (if the short run marginal cost inclusive of start costs is expected to exceed the energy price)

Participants with facilities holding SESSM awards must monitor pre-dispatch outcomes. The PDS Reference Scenario will include enablement limits, but the alternative PDS scenario will exclude enablement limits. Where the pre-dispatch schedule (whether the PDS Reference Scenario or the alternative scenario) indicates that the facility would be cleared for energy and FCESS if it were running, the participant must ensure that the facility is in-service and operating for energy at or above its enablement minimum so as to be able to provide FCESS in the relevant dispatch intervals.

In these circumstances the participant must ensure that its SESSM-award-holding facility is dispatched and operating for energy above its enablement minimum for all intervals when its FCESS offers are cleared.

AEMO will monitor pre-dispatch outcomes. If a SESSM-holding-facility does not adjust its offers appropriately (e.g. by changing from offering 'available' to offering 'in-service' for FCESS) AEMO may instruct the participant to do so based on pre-dispatch outcomes.

Where a Facility holds a SESSM award for only part of its total FCESS capability, it must offer its total capacity, but the offer price for non-SESSM-award capacity is not restricted to the SESSM offer price cap.

6.2 Settlement

6.2.1 Payments

Participants holding SESSM Awards will receive Availability Payments through regular market settlement as discussed in the Taskforce Information Paper: [Implementation of five-minute settlement, uplift payments and Essential System Services settlement](#).

⁹ Enablement limits are outlined in [Information Paper: ESS Scheduling and Dispatch](#)

6.2.2 Refunds

Where a Facility receives an Availability Payment, but is not available to the extent required under its SESSM Award, it will be required to pay back some of the Availability Payment.

The Facility would be considered not fully available in any interval:

- where it has a non-zero Availability Quantity; and
- the total offered quantity of the relevant FCESS is less than the Availability Quantity.

Refunds would apply in any interval where the facility:

- is not fully available; and
- has exceeded the number intervals of less than full availability as set in the minimum availability requirement for the current capacity year.

Examples of the refund mechanism include:

- Where the Service Specification has a minimum availability requirement of 100% and non-zero Availability Quantity for the month of March, the facility would be subject to refunds in every interval in March it was not fully available.
- Where the Service Specification has a minimum availability requirement of 90%, and non-zero Availability Quantity for 10am to 2pm every weekend in the year (a total of 2,496 Dispatch Intervals), the facility would be subject to refunds from the 250th interval in which it was not fully available between these times.

The refund calculation will:

- use a refund factor greater than 1 so that the refund represents proportionally more than the relative payment for a single Dispatch Interval;
- be prorated according to the quantity of offer shortfall, to provide incentive for Facilities to offer as much as they can; and
- be capped at the total annual Availability Payment.

6.3 Taskforce Design Decision – dispatch and settlement

The Taskforce has determined the following design elements:

- Facilities with a SESSM award must offer to ensure they are dispatched for energy in all intervals where their FCESS offers are cleared in the pre-dispatch reference scenario or the alternative pre-dispatch scenario without enablement minimums.
- A refund regime will recover availability payments for Facilities not achieving availability and quantity requirements of the SESSM award.

7. Transitional Arrangements

7.1 Options to ensure participation

The SESSM is a backup for the real-time markets. In advance of triggering the supplementary procurement mechanism the WEM will rely fully on the real time markets for FCESS. In order to ensure participation in the market and thereby provide adequate liquidity, three objectives have been identified:

1. Ensure sufficient accredited FCESS is available to the market on WEM Commencement Day.
2. Ensure sufficient lead time and cost is identified for additional existing facilities to become accredited prior to WEM Commencement Day.
3. Ensure sufficient lead time and cost is identified for additional new facilities to become accredited prior to WEM Commencement Day.

7.2 Mandatory Accreditation

Real-time FCESS markets will perform best where participation of capable facilities is maximised. Achieving participation in the FCESS markets on WEM Commencement Day is essential to ensure the market performs effectively. To ensure sufficient participation in the FCESS markets, all registered facilities which are participating in Ancillary Services provision in the 2020 Capacity Year will be required to accredit for the provision of the equivalent FCESS from the commencement of the new WEM in October 2022. AEMO must provide information to Synergy on which of its facilities within the balancing portfolio have been used to provide LFAS, Spinning Reserve or Load Rejection Reserve services.

Accreditation will be undertaken in advance of WEM Commencement Day, with sufficient time to enable upgrades required to facilitate operation in the new co-optimised FCESS markets.

Facilities which accredit for FCESS services are expected to accredit for all services they currently participate in. Equivalence between existing and new markets is shown in Table 2.

Table 2 Equivalence consideration for mandatory accreditation of facilities.

Service	Existing	Future
Regulation	Load Following Ancillary Services	Frequency Regulation Raise Frequency Regulation Lower
Contingency	Spinning Reserve Ancillary Services Load Rejection Reserve Ancillary Services	Contingency Reserve Raise Contingency Reserve Lower
Inertia	NA	Rate of Change of Frequency Control Service (RCS) ¹ .

1. All capable Synergy Facilities would be required to accredit for RCS.

Accredited facilities will be required to offer their full accredited capability in the first six months of the market.

Any SESSM triggered during the two years following WEM Commencement Day will be limited to an award tenure of one year.

7.2.2 Accreditation procedure

The accreditation of facilities for FCESS requires the provision of additional standing data to AEMO. Each FCESS will require specific facility information and capabilities to demonstrate compliance with the requirements of each service. Transitional rules will govern the process for existing Facilities to gain accreditation prior to WEM Commencement Day.

7.3 Accreditation Test for existing facilities not currently providing FCESS

In order to assess the capability of existing facilities not currently providing Ancillary Services, AEMO will conduct an Accreditation Test process. This process will require all registered facilities as at 12 months prior to WEM Commencement Day to provide additional standing data, identifying what would be required for them to provide ESS. Additional standing data requirements will include provision of Facility information including:

- MWs inertia of the facility when running (which can be sourced from AEMO where already available);
- RoCoF ride-through capability if greater than the RoCoF safe limit on WEM Commencement Day, which will be used as a default for the purposes of cost recovery;
- start costs (based on a default fuel price); and
- minimum generation costs (based on a default fuel price).

Where a facility does not meet accreditation requirements, AEMO would seek to work with Participants to confirm what may be required, including the:

- cost for any required augmentation of existing plant to meet accreditation requirements;
- cost of additional SCADA, Control Systems and other ancillary equipment; and
- lead time to undertake any required modification, accredit and make available services.

This process is designed to minimise obligations on market participants, whilst providing visibility over additional FCESS capability, lead-time and budget costs. Physical equipment testing would be voluntary for facilities not currently providing Ancillary Services.

The running of the accreditation test provides for:

- AEMO and the ERA to have visibility of the lead-time and fixed costs for Facilities potentially entering the FCESS markets (including the SESSM); and
- Facilities to have the opportunity to explore participation in FCESS markets without being required to participate in the full SESSM procurement process (this visibility should provide preliminary business case inputs for future accreditation, to allow for participation in the co-optimised market, or in the SESSM if triggered).

7.4 Market Test for new facilities

In order to assess the willingness of developers to build new Facilities to participate in the Real Time market or the SESSM, AEMO will conduct a Market Test process prior to WEM Commencement Day.

A formal Expression of Interest (EOI) process would be conducted to allow open submissions from developers to provide detail regarding the:

- Project lead time to commercial operations;
- Project network location;
- for each FCESS:
 - Availability Quantity;
 - Availability Payment;
 - Offer Cap;
- expected minimum enablement limit;
- expected generation cost at minimum enablement limit; and
- expected start-up cost.

The EOI process would provide an opportunity for intending participants to engage with AEMO, understand the requirements of the FCESS markets and process to register and accredit facilities.

These inputs would enable the ERA to compare bidding patterns in the co-optimised FCESS/Energy market against the pricing of services received through the EOI process. This would assist the ERA to determine whether market power exists and is potentially being exercised in the real-time markets, or structural issues are emerging in the market (i.e., a new entrant can provide FCESS at a cheaper price than observed in the market) to enable a trigger of the SESSM to rectify inefficient market outcomes. Where the ERA triggers the SESSM on a reasonable suspicion of exercise of market power, the mandatory participation by facilities participating in the real-time market will enable the ERA to discover the actual costs of that facility providing that service. If this facility ultimately gets selected for a SESSM Award, its offers in the real-time market will be capped – this will act as an ex-ante market power mitigation measure.

Any pricing received from the market through a Market Test or Expression of Interest (EOI) will become less representative of market pricing over time (due to technological and/or commercial changes). Following the initial Market Test conducted prior to WEM Commencement Day, AEMO will run a Market Test EOI process every two years.