

Date	27 April 2023
Subject	NEM2025 Gate 1 Business Case – Industry Version (Addendum)

Purpose

To outline an addendum to AEMO’s Gate 1 business case for the NEM2025 Program (herein referred to as the NEM Reform Program), to:

- present the capital and operational cost estimates for each initiative that is included within the scope of the August 2022 Gate 1 Business Case, and
- present Update One in relation to the removal from scope of the Turn-up Services initiative.

Background

In August 2022, AEMO published its Gate 1 business case that set out two delivery options for the NEM Reform Program and recommended a preferred option based on cost estimates appropriate for a Gate 1 business case and qualitative benefits assessment.

Two delivery Roadmap pathways, Regulatory-led and Strategic, were developed in consultation with industry to deliver the initiatives that comprise the NEM Reform Program. Both options have the same scope but differ in the bundling, sequencing and timing of delivery and were the basis for the business case assessment.

Further, updated Program cost estimates¹ and cash flows over a 10-year evaluation period from 1 July 2022 were developed for both pathway options accounting for the majority of initiatives within the NEM Reform Program.² The cost estimates targeted a +/- 40% level of accuracy to account for the early stage of estimation, the policy and design uncertainty that remains for some of the reform initiatives (and the corresponding increasing complexity and scope risks) and other risks such as delivery uncertainty. This provided a range within which the Program’s costs are expected to lie as shown in The initiatives comprising the Gate 1 Business Case were grouped according to a logical bundling and the cost estimates were subsequently presented in aggregated form. The table below unbundles these groupings and presents the individual cost estimates. This provides for additional transparency and enables any changes to the overall cost estimates for the Program to be more easily and clearly identified and managed.

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¹ The cost estimates in the Gate 1 business case are an update to those original estimates previously provided in the ESB’s Final Advice, taking into consideration a clearer understanding of scope for pre-requisite initiatives, or assumed scope for uncertain reforms, where possible. ESB Final Advice to Energy Ministers available here: <https://esb-post2025-market-design.aemc.gov.au/32572/1629944958-post-2025-market-design-final-advice-to-energy-ministers-part-a.pdf>.

² The scope of cost estimates did not include the following initiatives due to policy and scope uncertainty: Capacity Mechanism, Congestion Management Mechanism (now Enhanced Information, Congestion Relief Market & Priority Access Model) and all Data Strategy initiatives.

provided a range within which the Program's costs are expected to lie consistent with the early-stage evaluation required of a Gate 1 business case assessment.

As an initiative progresses towards a stage gate or investment decision, the level of uncertainty associated with the scope, design, requirements, or timeline for implementing that initiative reduces. Similarly, the risks associated with implementation of an initiative are assessed and factored into a funding request accordingly. This will typically lead to an uncertainty range typical of IT development projects in the order to +/- 15% at the time of making an investment decision.

Table 1 below.

Having considered feedback from stakeholders, the business case recommended the adoption of a hybrid pathway complemented by a stage gate process. This approach commits to a Regulatory-led pathway to undertake mandatory and no regrets initiatives in a timely way. It also sets the NEM Reform Program budget envelope to allow for the full scope of Strategic pathway but imposes implementation and investment disciplines for delivery of those initiatives with greater uncertainty in policy, design, scope or timing.

At the time of publication, the Gate 1 business case aligned with the NEM Reform Implementation Roadmap (Roadmap) also published in August 2022.

Similar to Roadmap, which is intended to be a living document that will be reviewed regularly and updated as necessary, the Gate 1 business case noted further refinements to the scope and therefore costs of the NEM Reform Program will be undertaken as the program progresses in alignment with established governance arrangements including change management and stage gate processes.³

August 2022 Gate 1 Business Case – Cost Estimates⁴

The initiatives comprising the Gate 1 Business Case were grouped according to a logical bundling and the cost estimates were subsequently presented in aggregated form. The table below unbundles these groupings and presents the individual cost estimates. This provides for additional transparency and enables any changes to the overall cost estimates for the Program to be more easily and clearly identified and managed.

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³ Further details of the NEM Reform Program governance arrangements are available on AEMO's website here: <https://aemo.com.au/-/media/files/initiatives/regulatory-implementation-roadmap/reform-update-v1/nem-reform-implementation-roadmap-governance--statement-of-approach.pdf?la=en>

⁴ NEM2025 Program, Gate 1 Business Case. August 2022. Available here: <https://aemo.com.au/-/media/files/initiatives/regulatory-implementation-roadmap/reform-update-v1/nem2025-gate-1-business-case-industry-version.pdf?la=en>

Table 1. NEM Reform Program Gate 1 Business Case – Cost Estimates (August 2022, \$m)

Pathway*	Initiative	Total capital costs (±40%)	Ongoing costs (±40%, per annum)
RAMS	Increased MT PASA Information	\$0.9 - \$2.1	\$0.2 - \$0.5
	Capacity Incentive Scheme	Not included in the business case due to scope/design uncertainty	
ESS	Fast Frequency Response	\$2.5 - \$5.9	\$0.3 - \$0.8
	Frequency Performance Payments	\$6.9 - \$16.0	\$0.8 - \$1.8
	Operational Security Mechanism	\$6.9 - \$16.0	\$0.8 - \$1.8
	Operating Reserves Market	\$6.9 - \$16.0	\$0.8 - \$1.8
TA	Enhanced Information	Not included in the business case due to scope/design uncertainty	
	Congestion Relief Market & Priority Access Model		
DER & FD	Integrating Energy Storage Systems	\$19.3 - \$44.9	\$1.8 - \$4.3
	Flexible Trading Arrangements (Model 2)	\$2.6 - \$6.2	\$0.4 - \$0.9
	Scheduled Lite	\$10.9 - \$25.5	\$0.9 - \$2.2
	Turn Up Services	\$2.7 - \$6.2	\$0.2 - \$0.6
	Dynamic Operating Envelops	\$0.6 - \$1.3	\$0.1 - \$0.2
	Distribution Local Network Services	\$0.6 - \$1.3	\$0.1 - \$0.2
	DER Data Hub & Registry Services	\$7.6 - \$17.7	\$0.6 - \$1.4
	DER Operational Tools	\$2.7 - \$6.2	\$0.2 - \$0.6
DS	Data Services	Not included in the business case due to scope/design uncertainty	
	EV Charging Standing Data Register		
	Bill Transparency		
	Network Visibility		
AEMO F	Identity and Access Management	\$7.6 - \$17.7	\$0.8 - \$1.8
	Industry Data Exchange	\$7.6 - \$17.7	\$0.8 - \$1.8
	SCADA Lite	\$2.6 - \$6.1	\$0.3 - \$0.8

Pathway*	Initiative	Total capital costs (±40%)	Ongoing costs (±40%, per annum)
AEMO S	Portal Consolidation	\$7.6 - \$17.7	\$0.8 - \$1.8
	Consolidated Master Data Repository	\$7.6 - \$17.7	\$0.8 - \$1.8
	FRC Target State	\$30.0 - \$70.0	\$2.7 - \$6.2
	Dispatch, Bids & Offers and Constraint Target States	\$26.3 - \$61.4	\$2.7 - \$6.2

* RAMS: Resource Adequacy Mechanisms, ESS: Essential System Services, TA: Transmission & Access reform, DER & FD: Integrating DER and Flexible Demand, DS: Data Strategy, AEMO F: AEMO Foundational, AEMO S: AEMO Strategic

Update One (April 2023) – Turn-up Services

The Energy Security Board (ESB) provided its final advice to the Energy National Cabinet Reform Committee (National Cabinet) in a manner that set out four interrelated reform pathways outlining a timetable for their implementation, towards the year 2025 and beyond.⁵

Turn-up Services was an initiative captured under the ESB’s Integration of Distributed Energy Resources (DER) and Flexible Demand pathway. Turn-up Services aims to increase the capability and capacity of load to respond to low or negative price signals during times of abundant variable renewable energy, which is correlated to periods of minimum system load.

Turn-up Services was included in the suite of the initiatives that made up the NEM Reform Program and included in the subsequent cost estimates of the two reform pathways featured in the Gate 1 business case. Specifically, Turn-up Services was included among other initiatives under Work Package (WP) 3: DER Flexible Demand and Marketplace.

In August 2022, Turn-up Services was deemed to be at a concept / trial phase noting further work was to be completed to develop policy direction and scope for implementation. Since this time no further work has progressed in relation to this initiative. Further, AEMO understands Turn-up Services does not feature on the future work plans for the ESB or as part of any known trials.

For these reasons, this addendum removes Turn-up Services from the NEM Reform Program, including Gate 1 business case and NEM Reform Implementation Roadmap.⁶

Given the uncertainty regarding this initiative AEMO has assessed there to be no material impacts on the delivery of the NEM Reform Program by removing the Turn-up Services initiative. Further, by removing Turn-up Services from the scope of the NEM Reform Program the following costs (see Table 2) are no longer included in the NEM Reform Program budget envelope previously identified in the Gate 1 business case.

⁵ The four reform pathways were: Resource Adequacy Mechanisms, Essential System Services and Ahead Mechanisms, Transmission and Access, Integrating DER and Flexible Demand. These four pathways are complemented by a Data Strategy for the National Electricity Market.

⁶ Subject to further planning work or trials AEMO note it is possible for the initiative to feature as part of the NEM Reform Program again. AEMO will continue to monitor any work further work in this space and assess accordingly.

Table 2. Turn-up Services Gate 1 Business Case Cost Estimates (August 2022)

Cost component	(\$m)
Total capital costs ($\pm 40\%$)	\$2.7 - \$6.2
Ongoing costs ($\pm 40\%$, per annum)	\$0.2 - \$0.6

Reform Delivery Committee

AEMO raised the issue of removing Turn-up Services with the Reform Delivery Committee (RDC) at their collaborative workshop on 8 February 2023. At this workshop RDC members agreed with AEMO's recommendation to remove the initiative at this time.