

NEM Reform foundational & strategic initiatives: Business Case Options and Assumptions



- Industry Data Exchange (IDX)
- Identity Access Management (IDAM)
- Portal Consolidation (PC)



Charting Future Success: Business Case Options



Option 1: Maintain status-quo

Extend the life of existing capabilities

IDAM:

- MVP focused on addressing legislatively-driven requirements such as SOCI and AESCSF to enhance the security posture

IDX:

- Enhance Data exchange mechanism with a focus on addressing legislatively-driven requirements such as SOCI and AESCSF to strengthen the security posture
- Any new reform initiatives will define and implement only the channels, patterns, protocols and payload formats applicable to that initiative scope.

Portal Consolidation:

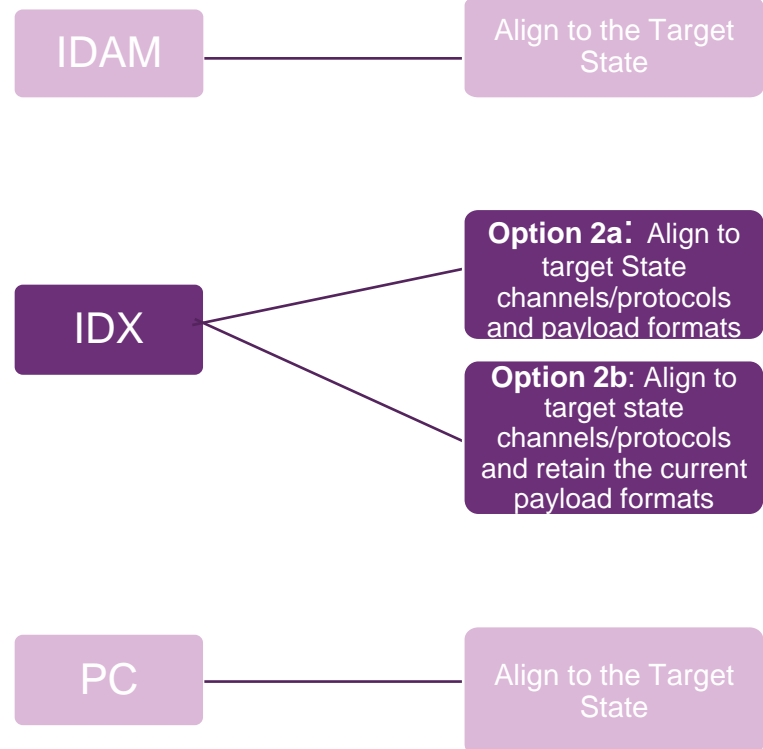
- Integrating IDAM MVP to address legislatively-driven requirements such as SOCI and AESCSF to enhance the security posture

Option 2a & 2b: Phased Investment

Foundational capability for energy transition and industry-driven priorities

- A phased investment approach focused on addressing industry-driven priority areas where critical improvements are required
- Leverages an integrated roadmap to clearly articulate investments in business services by tranche
- Transitional support capability over an agreed sunset timeframe to provide participants with the flexibility to determine their individual investment timing and sequence
- Establish **foundational technology capability** for **energy transition** requirements such as DER, Electric Vehicles, Dynamic Operating Envelopes, etc.
- Variants 2a & 2b reflect different treatments of existing business services for IDX (see panel to right)

Phased Investment: For the transition of the IDX legacy interfaces, below are the two transition options



Any new Business service (e.g. DER) will align to the IDX target state channels and payload formats

IDX Options 2a & 2b for Cost Estimation



For the transition of the legacy interfaces, below are two target state options proposed for costing.

Characteristics	Option 2a: Align to target State channels/protocols and payload formats		Option 2b: Align to target state channels/protocols and retain the current payload formats	
	Retail	Wholesale	Retail	Wholesale
Market	Retail	Wholesale	Retail	Wholesale
Definition	<ul style="list-style-type: none"> Adopt business-function-specific schemas and endpoints. Transitioning Retail B2B and B2M to modular schemas aligned with modern payload standards. Implementing unified IDX schemas across all AEMO fuels, markets, and domains. Transition the wholesale AEMO CSV formats to the target state payload standards and formats 		<ul style="list-style-type: none"> Adopt business-function-specific endpoints (to be further assessed during design phase) Continue using the aseXML (Retail) and AEMO CSV (Wholesale) schema concepts as it is in production today n & n-1 transformation managed at the time of the Participant pulling the message from outbound queue based on request header parameters 	
Transactional Message Format	JSON (New)	JSON (New)	Existing aseXML	Outbound: Existing AEMO CSV Inbound: Existing JSON
Bulk Data Format	AEMO CSV (New)	Existing AEMO CSV	Existing Miscellaneous CSV formats	Existing AEMO CSV
Inquiry Services	Use a modern open-source query language such as GraphQL services using JSON format.	Use a modern open-source query language such as GraphQL serviced using JSON format.	<ul style="list-style-type: none"> No inquiry services introduced for existing services Opportunities to support GraphQL for new services in Retail 	Opportunities to support GraphQL for Wholesale current business functions
MDMF	Retired (Deprecated)	N/A	Retained	N/A
MDFF Interval	AEMO CSV (New)	N/A	Existing NEM12	N/A
MDFF Basic	Existing NEM13	N/A	Existing NEM13	N/A

For both options, any new business service (e.g. DER) will align to the industry agreed IDX target state channels and payload formats

Costing Assumptions

Option 1: Assumptions



- All existing services will retain their current payload formats
- Any new reform initiatives will be required to define and implement channels, patterns, protocols and payload formats on a case-by-case basis (given no foundational capability)
- AEMO supplied software for participants will continue with separate wholesale (Pdrbatcher) and retail (participant batcher) data exchange products.

Option 2a & 2b: Common Assumptions

- The operating model of markets will retain centrally managed identity and data hub services.
- A High-level conceptual design is sufficient detail to inform the business case, detailed design will be factored into tranche delivery plans
- Foundational tranches will make target state capabilities available for up-coming NEM reforms initiatives to leverage these capabilities.
- New NEM services delivered post the completion of the IDX foundation will leverage the new protocols, patterns and payloads. Services in this context are the equivalent of introducing a new transaction group (such as DER). Change within a transaction or addition of a transaction to an existing transaction group would be enabled on legacy protocols within the sunset period as well as on the new protocols once the associated tranche is delivered.
- NEM reform initiatives may change their timeline, could be removed or new reforms could be added. Where this occurs, an assessment will be made for impact to the roadmap for these 3 initiatives
- Governance process for procedures and protocols will remain with their existing governing bodies with regard oversight and coordination of updates to enable the transition
- Opportunities for further procedural improvement and / or transactional enhancement in NEM Retail would be assessed in detailed design, the business case will remain conservative and not assume these outcomes.

Option 2a: Assumptions

- JSON will leverage strong types to provide transactional validation. AEMO will continue to provide validation extensions (as currently available in EVM) to capture procedural level transactional compliance (not involving data look up). The combination of these validations will be equivalent to the current aseXML schema validation and EVM validation capabilities provided to participants.
- All non csv based B2B and B2M transactions will move from aseXML to JSON involving definition of new JSON schema on a broadly 'like for like' basis to simplify support for backwards compatibility across the sunset timeframe.
- NEM13 CSV will be maintained however delivered using the IDX protocols and patterns (not embedded in aseXML) given the die on the vine approach in the market to basic metering. All other CSV payloads will move to the new AEMO CSV to be defined within the detailed design phase. Note the AEMO supplied gateway will provide conversion capability for all NEM Retail and Wholesale transactions within the sunset period and the conversion routines as at the end of the sunset period will be available should a participant wish to continue to maintain these if there was a subsequent timepoint. Changes are assumed to be confined to aligning to the new payload format on a 'like for like' basis to simplify support for backwards compatibility across the sunset timeframe. Opportunities for improvement beyond this would be assessed in detailed design however not accounted for at this time.
- Existing JSON payloads may require minor refactoring to comply with industry-agreed payload standards and schemas.

Option 2b: Assumptions

- Existing NEM Retail and Wholesale services will be made available under the new foundational IDX channels and protocols. Existing payloads will be retained with no change
- IDX channels and protocols and IDAM identity patterns in alignment with a IDX target state presented to the industry
- AEMO gateway software will still consolidate wholesale (Pdrbatcher) and retail(Participant batcher) data exchange products
- Participants will retain the ability to choose their own transition timing across the sunset period.
- AEMO will provide interoperability in the AEMO hub and the AEMO supplied gateway throughout relevant sunset periods

List of Historical changes for Industry Data Exchange



Historical Changes



Retail

Wholesale

	2009	2017	2018-19	2019	2021	2022
		Shared Market Protocol	Wholesale API Enablement + DERR Market Interactions	DERR Installer App	5MS	MSDR
Retail	B2B: FTP + aseXML	B2B: FTP + aseXML	B2B: FTP + aseXML	B2B: FTP + aseXML	B2B: FTP + aseXML	B2B: FTP + aseXML
	B2M: FTP + aseXML	B2M: FTP + aseXML	B2M: FTP + aseXML	B2M: FTP + aseXML	B2M: FTP + aseXML	B2M: FTP + aseXML
		B2B: API+API Keys + aseXML	B2B: API+API Keys + aseXML	B2B: API+API Keys + aseXML	B2M: Sync Services	B2M: Sync Services
		B2B Outbound: API Push	B2B Outbound: API Push	B2B Outbound: API Push	B2B: API+API Keys + aseXML	B2B: API+API Keys + aseXML
		B2B Outbound: API Pull	B2B Outbound: API Pull	B2B Outbound: API Pull	B2B Outbound: API Push	B2B Outbound: API Push
		B2B: Sync Services	B2B: Sync Services	B2B: Sync Services	B2B: API+Basic Auth + aseXML	B2B: API+Basic Auth + aseXML
		B2B: P2P Sync Services	B2B: P2P Sync Services	B2B: P2P Sync Services	B2M Outbound: API Push	B2M Outbound: API Push
					B2B Outbound: API Pull	B2B Outbound: API Pull
					B2B: Sync Services	B2B: Sync Services
					B2B: P2P Sync Services	B2B: P2P Sync Services
Wholesale	Inbound: FTP + Report Format/AEMOCSV	Inbound: FTP + Report Format/AEMOCSV	Inbound: FTP + Report Format/AEMOCSV	Inbound: FTP + Report Format/AEMOCSV	Inbound: FTP /AEMOCSV	Inbound: FTP /AEMOCSV
	Outbound: FTP + Report Format/AEMOCSV	Outbound: FTP + Report Format/AEMOCSV	Outbound: FTP + Report Format/AEMOCSV	Outbound: FTP + Report Format/AEMOCSV	Outbound: FTP + Report Format/AEMOCSV	Outbound: FTP + Report Format/AEMOCSV
			Inbound: API + Basic Auth + JSON	Inbound: API + Basic Auth + JSON	Inbound: API + Basic Auth + JSON	Inbound: API + Basic Auth + JSON
				DERR: API + OAuth + JSON	DERR: API + OAuth + JSON	DERR: API + OAuth + JSON
					Inbound: FTP + JSON	Inbound: FTP + JSON
						Inbound: FTP + JSON

Observations:

- Frequency of new business service needs increasing over time
- Progressive proliferation of patterns, protocols and payloads
- No roadmap to consolidation

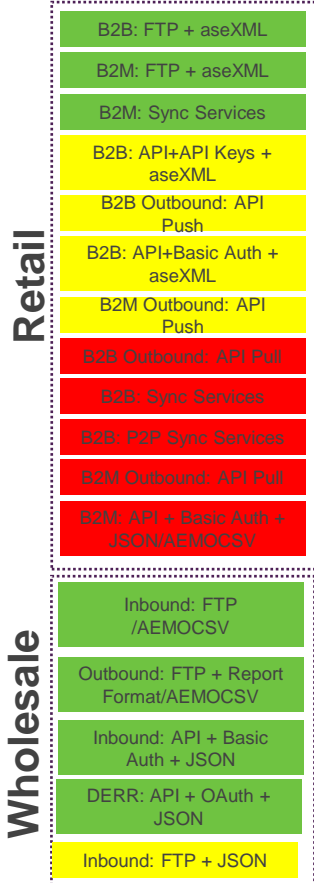
Industry Uptake		
High	Moderate	Low

Introduced Elements

IDX Options for the Target State



Current State

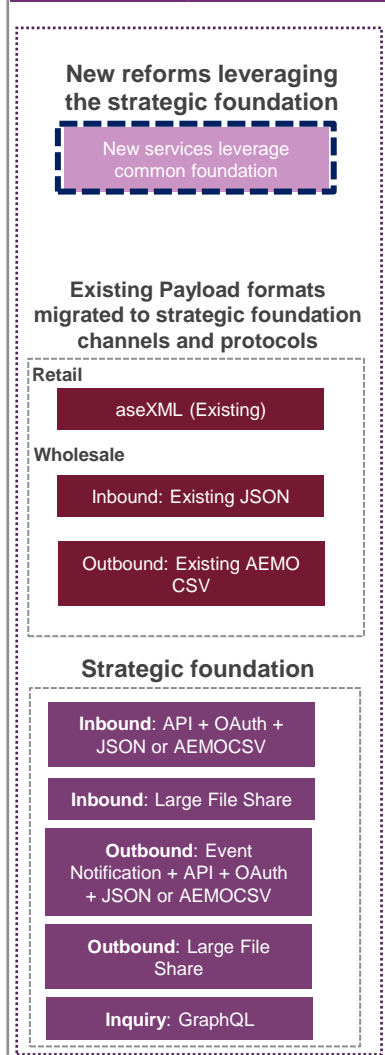


Business Case options for the Target state

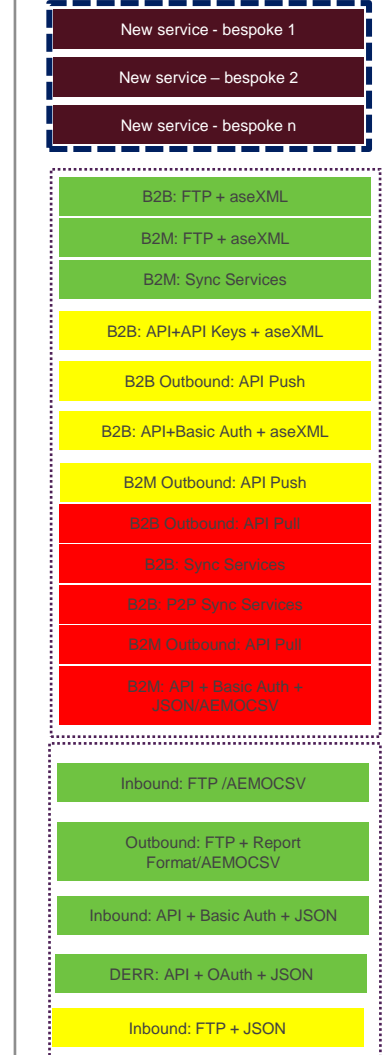
Option 2a: Align to target State channels and payload formats



Option 2b: Align to target state channels and retain the current payload formats



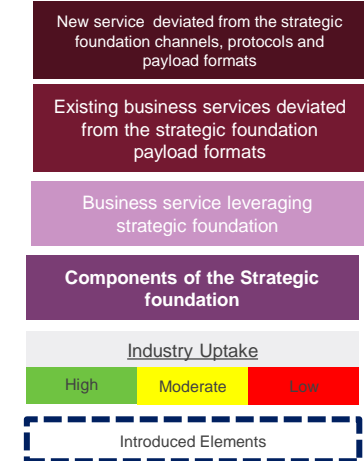
Option 1: Maintain Status Quo



Key Observations:

- Option 2a and 2b share common strategic foundation
- Option 1 does not avoid the need to address new services

Legend



Heads of power

Heads of power



- Reform initiatives sit with the AEMC or Energy Ministers
- Strategic and Foundational initiatives sit with AEMO.
- IDX, IDAM and PC have been identified as Strategic and Foundational initiatives.
- AEMO have committed to engaging with industry for assessment, including the development of business case, prior to proceeding in accordance with the governance framework established for the Program available at the following link: [NEM Reform Implementation Roadmap Governance \(aemo.com.au\)](https://aemo.com.au/nem-reform-implementation-roadmap-governance)

Please reach out



NEMReform@aemo.com.au



[AEMO | NEM Reform Foundational & Strategic Initiatives Focus Group](#)





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