



Department of
**Energy and Economic
Diversification**

Appendix I – comparative scenario inputs and assumptions

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1. Comparative scenarios inputs and assumptions

This appendix brings together the principal inputs and assumptions used for the three FESO scenarios in a single comparative table. It builds on the scenario settings established in the Approach to Determining Scenarios and reflects the further development of those settings as the detailed FESO modelling inputs have been prepared.

The following table is intended to make the main differences between Central, Rapid Change and Constrained easy to compare. Detailed numerical inputs, project assumptions and source data are provided in the Inputs and Assumptions workbook.

Table 1.1: Comparative scenario inputs and assumptions

Parameter	Central	Rapid Change	Constrained	Principal source(s)
International Energy Agency World Energy Outlook scenario alignment	IEA Stated Policies Scenario. Continued global decarbonisation supports demand for commodities and products with low embedded emissions.	IEA Stated Policies Scenario. Strong global decarbonisation supports greater demand for commodities and products with low embedded emissions.	IEA Current Policies Scenario. Slower global decarbonisation results in weaker demand for commodities and products with low embedded emissions.	IEA World Energy Outlook
WA economic growth	Expected economic growth, consistent with current expectations.	Higher economic growth, supported by stronger industrial development.	Slower economic growth under weaker economic conditions.	WEM ESOO 2026 Expected demand forecast, relevant WA Government economic forecasts and scenario assumptions
WA population growth	Expected population growth.	Higher population growth.	Slower population growth.	WA Tomorrow population forecasts and other relevant government population forecasts. Central: Band C. Rapid Change: Band E. Constrained: Band A.
WA Government emissions 80% by 2030	Assumed to be met.	Assumed to be met.	Assumed to be met.	WA Government policy and emissions objectives
Net zero by 2050	A net zero emissions constraint is applied to the SWIS by 2050.	A net zero emissions constraint is applied to the SWIS by 2050, with a faster emissions reduction pathway than Central.	A net zero emissions constraint is not applied to the SWIS by 2050, allowing greater residual emissions than Central and Rapid Change.	WA Government policy and relevant emissions projections
Consumer decarbonisation	Occurs over time, reflecting current policies, technology uptake and observable trends.	Occurs more quickly, reflecting faster technology uptake, electrification and	Occurs more slowly, reflecting slower technology uptake and electrification.	Government policies, technology forecasts and relevant demand modelling assumptions

		adoption of lower-emissions technologies.		
Electrification of existing industry	Occurs over time for a proportion of existing industry, including some electrification of alumina production.	Occurs more quickly and for a greater proportion of existing industry, including greater electrification of alumina production.	Occurs more slowly and for a lesser proportion of existing industry, including limited electrification of alumina production.	AEMO demand forecasts, government and industry information, stakeholder engagement and project-specific evidence
New industries connected to the SWIS	Data centres, green iron, hydrogen and other emerging industries develop gradually. Some very large loads emerge, with much of their electricity demand supplied by co-located generation.	Data centres, green iron, hydrogen and other emerging industries develop more rapidly. Some very large loads emerge and may connect partly to the SWIS, with a significant proportion of demand supplied by co-located generation.	Very large data centre, green iron and hydrogen projects do not emerge, although some new industrial development continues.	Government and industry information, stakeholder engagement, connection information and project-specific evidence
Hydrogen availability	Moderate to low production for domestic use.	Moderate production for domestic industries and green commodities.	Low production for domestic use.	Government and industry information and project-specific evidence
Industrial load flexibility	New industrial loads and electrified existing industry exhibit increasing demand flexibility over time.	New industrial loads and electrified existing industry provide greater demand flexibility.	Limited additional flexibility from new industrial loads and electrified existing industry.	Stakeholder engagement, project-specific evidence and relevant technical or industry studies
DER uptake and operation, including batteries, PV and EVs	Expected uptake consistent with current policies and observable trends.	Higher uptake of rooftop PV, batteries, EVs and other DER.	Uptake initially continues but plateaus over time.	WEM ESOO assumptions, relevant government programs and technology forecasts
Coordinated DER, including VPP and V2G uptake	Coordinated DER participation increases over time, including a V2G component.	Coordinated DER participation increases more rapidly and at greater scale, with V2G emerging earlier and at greater scale.	Coordinated DER participation grows initially but does not develop at scale. V2G does not emerge as a viable resource.	WEM ESOO assumptions, WA Residential Battery Scheme settings and relevant AEMO, Western Power, government and industry information

Energy efficiency	Expected improvement in energy efficiency.	Faster improvement in energy efficiency.	Expected improvement in energy efficiency, rather than the faster improvement assumed under Rapid Change.	AEMO demand forecasting assumptions, government policies and relevant technical studies
Gas-powered generation	The common gas price trajectory applies. Industrial electrification reduces gas demand over time. Gas-powered generation remains important for firming and is subject to the gas deliverability constraints represented in the modelling.	The common gas price trajectory applies. Industrial electrification reduces gas demand more rapidly. Gas-powered generation continues to provide firming and is subject to the gas deliverability constraints represented in the modelling.	The common gas price trajectory applies. Slower electrification results in greater continuing reliance on gas by industry and electricity generation. Gas-powered generation remains subject to the gas deliverability constraints represented in the modelling.	WA GSOO, government and industry information, and relevant gas modelling assumptions
Delayed delivery of new industry and energy infrastructure due to logistics and workforce availability	Expected constraints affect the timing and cost of new industry and energy infrastructure, including normal planning, approvals, workforce, supply chain and construction constraints.	Delivery is less constrained than under the other scenarios, allowing new industry and energy infrastructure to develop more rapidly.	Greater workforce, supply chain and other resource constraints delay new industry and the delivery of energy infrastructure.	Western Power planning information, AEMO project information, government infrastructure plans and industry evidence

