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AEMO futureenergy@aemo.com.au

## Response to AEMO 2025 Transition Plan for System Security

Reactive Technologies welcomes the opportunity to respond to AEMO's 2025 Transition Plan for System Security. We commend AEMO's recognition of the technical challenges of system strength, frequency and inertia, voltage control in ensuring power system security. The dynamic nature of these grid characteristics will be amplified with the growing penetration of renewables into the NEM. Real-time measurement and analysis of these dynamics are critical in supporting future grid readiness.

We support AEMO's decision to focus on strengthening existing frameworks and progressing technical enablers, and our current submissions for delivery of Type 2 Transitional Services: Minimal System Load and Grid Forming Inverter Protection-quality Fault Current are evidence that we can deliver technical solutions to these current challenges.

As a global leader in grid stability technologies, we are committed to supporting the continued maturation of system security measurement capabilities and their integration into market frameworks. Our work in global energy markets has demonstrated the value of deploying measurement capability to maximise the data set, understand and manage the changing nature of power system security.

Reactive Technologies is actively working with system operators globally to deploy real-time system security measurement systems. Our technology is proven, scalable, and already delivering value in markets such as the UK, US, Japan and Taiwan.

In collaboration with AEMO and supported by ARENA, Reactive Technologies successfully delivered the System Inertia Measurement Demonstration Project, independently evaluated by the University of Melbourne. The findings, published in the Technical Knowledge Sharing Report (August 2024), confirmed that:

- Reactive's GridMetrix® technology accurately measured full system inertia across the NEM on a continuous, on-demand basis.
- Measured inertia values were on average 38% higher than AEMO's theoretical estimates, revealing significant hidden demand-side inertia.

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- The University of Melbourne quantified material economic benefits, including projected annual savings of \$26–\$87 million by 2037 and deferred infrastructure investments of up to \$145 million.

Reactive Technologies' inertia measurement system is in use by National Grid ESO (UK), where it supports the development of an inertia market as part of the UK's Net Zero Market Reform. The collaboration is publicly referenced in ESO's Innovation Annual Summary, and the data is used to inform operational decisions and market design.

In Taiwan, Reactive Technologies is working with Taipower on a five-year real-time inertia measurement project. This initiative includes deployment across ten locations and integration with energy storage systems. It was publicly presented at the 18th UK-Taiwan Renewable Energy Conference in September 2023.

Reactive Technologies is ready to work with AEMO and other stakeholders to deliver the world's most accurate system security measurement for the NEM and to help define the criteria for its integration into market mechanisms.

We appreciate the opportunity to contribute to this important transition plan and look forward to supporting its successful implementation.

Yours sincerely,

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#### References:

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