

Background — NERA and OIIE alignment

NERA (National Energy Resources Australia) is an Industry Growth Centre for the energy resources sector and is engaged across the value chain to achieve significant industry efficiencies; identify and support digital, automation and other innovative technologies; develop future workforce skills; and ensure that there are regulatory frameworks that support future investment, innovation, productivity and global trade.

The Open Industrial Interoperability Ecosystem (OIIE) is a specification, implementations of which provide a framework for multiple stakeholders to work more efficiently and effectively via digital formats. Stakeholders can then focus on developing value-added applications and systems, leveraging their own core competencies and areas of interest while collaborating with each other to provide comprehensive solutions composed of their interoperating applications and systems.

The initiative by NERA in adoption of OIIE is driven by the following trends:

- Digital transformation as the future for energy and energy-related products.
- NERA as an energy resources sector facilitator, linking Australian service providers to energy industry consumers. When facilitating relationships between digital services providers and enterprises, digital interoperability would reduce the cost of service provision, provide the ability to combine solutions, and reduce risk for the consumer, thereby increasing the value to both the supplier and consumer of digital services.

This initiative also aligns with other NERA initiatives.

NERA's Sector Competitiveness Plan — report

NERA's Sector Competitiveness Plan (SCP) is a strategic 10-year vision for Australia to be a global energy powerhouse, a sought-after destination for investment and the leading source of knowledge and solutions. This report provides an insight into where opportunities to improve exist in the energy resources sector.

The energy market sustains 98,000 direct jobs and nearly 1 million indirect jobs, while also adding a gross value of \$55 billion dollars.

NERA is looking to unlock more than \$10 billion dollars of new value for the Australian economy through:

- Lower cost and efficient performance across the life cycle
- Automation and digitisation
- Clean technologies
- Independent in environmental science (decommissioning)
- Social licence to operate (energy literacy)
- Regulatory reform

You can access the SCP online at www.nera.org.au/SCP.



Within the SCP, NERA has identified eight knowledge priorities:

- Develop new markets and business models
- Enhance skills and business capability to support automation and digitisation
- Build talent and enable effective collaboration and innovation
- Pursue a sustainable and low carbon energy future
- Understand and unlock Australia's resource base
- Commercialise technology and research
- Enhance efficiency in operations and maintenance
- Optimise the regulatory framework and reputation

OIIE has application in six of the eight knowledge priorities.

Developing new markets and business models

OIIE opens the possibility for new markets and business models for the Australian energy industry. Australian suppliers can join forces to provide comprehensive, component-based, best-of-breed solutions that can be applied to both Australian and international energy companies. This opens up new global markets in which small and medium Australian enterprises can compete, which would not be possible on their own.

Enhance skills and business capability to support automation and digitisation

With a common, supplier neutral framework such as OIIE, skills developed in automation and digitisation are transferable across a sector, require less skills development as a sector and provide ease of communication between sector participants for initiatives that fine tune operations, reduce waste across the value stream or provide system-wide optimisation.

Build talent and enable effective collaboration and innovation

Effective collaboration and innovation will be enhanced and accelerated with a common, supplier neutral framework such as OIIE particularly when collaboration requires interactions at a digital level between humans and digital systems or interactions between systems of systems that span an entire sector and its participants.

Commercialise technology and research

Using OIIE, comprehensive solutions can be designed and component solutions incorporated. Research can provide solutions as a component within the ecosystem, allowing for technology to be commercialised without the infrastructure costs. The infrastructure costs can be distributed across existing commercial solutions and new solutions from research.

Enhance efficiencies in operations and maintenance

Operations and maintenance of energy systems is complex. OIIE means that many solutions can collaborate to optimise operations and maintenance with minimal costs.

Optimise the regulatory framework and reputation

Having a common interoperability framework for the industry and all of its supply chain participants provides a significant opportunity to efficiently model, monitor and manage risks, including those associated with regulators. A standard interoperability framework like the OIIE could be used to link industry to regulators in an efficient and secure manner that does not require lots of extra work as

tends to be the case with current regulatory processes. This can be done in the context of modelling, monitoring and managing critical infrastructure risks and most regulations efforts involve identifying, modelling and managing risks of one type or another.

Staying Ahead of the Game — Report (NERA and METS Ignited)



The *Staying Ahead of the Game* report by NERA and METS Ignited provided further insights into opportunities for Australian energy sector stakeholders. The report outlines that digital automation technologies in the mining and oil and gas sectors continue to present tremendous opportunity for Australia and has the potential to add \$74 billion dollars in value to the national economy by 2030 and create more than 80,000 new jobs.

Having an OIIE for the Australian energy sector is a key strategy in enabling this value to Australia. Alignment of the key strategies from the report to OIIE are indicated below:

- 1. Strengthened collaboration.** The OIIE enables collaboration at a digital level; this is extremely important since most interactions today are digital.
- 2. Create Clusters.** An OIIE-based energy cluster can easily be connected to other OIIE-based clusters in related industries, allowing automated supply chains to interoperate more effectively.
- 3. Create an Entrepreneurial Ecosystem.** OIIE is a way of getting value from suppliers to consumers by identifying gaps that represent opportunities for Entrepreneurs, testing the results of research, and allowing multiple service providers to collaborate.
- 4. Boost skills and R&D.** The OIIE will help energy industry participants connect with and use university-based research centres offering OIIE-enabled technical and business services such as advanced analytics in addition to more traditional professional skills development.