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Southeast Asia Free Trade Agreements modernisation review

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Entura in Australia is certified to the latest version of ISO 9001, ISO 14001, and ISO 45001.

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Introduction to Entura

Entura is a specialist power and water professional services firm, which currently provides renewable energy, water and power engineering services in Australia and the Indo-Pacific, including Southeast Asia. The activities we undertake include renewable energy, water management and the development of climate-resilient infrastructure – delivering greater access to affordable, reliable, sustainable and modern energy. This makes tangible contributions to the environmental, social and economic outcomes enshrined in the UN Sustainability Goals, to which Australia is committed.

Entura delivers practical and commercially sound solutions across the whole lifecycle of energy and water assets (such as dams, hydropower stations, electrical substations, wind and solar farms, pumped hydro energy storage, battery storage and hybrid renewable power systems), helping our clients throughout Australia and the Indo-Pacific region manage risks and achieve valuable outcomes. We have a unique asset-owner heritage as part of Hydro Tasmania (owned by the State of Tasmania), which grounds our technical expertise in more than 100 years of experience contributing to the development, operation and maintenance of sustainable renewable energy and water infrastructure.

Entura's engineering experience includes resource monitoring, data management and data analysis; energy yield estimates; feasibility studies; project and systems design and specifications; hybrid energy system design; tender specifications and tender evaluation for civil, mechanical, renewable energy, energy storage and electrical designs; Owner's Engineer roles reviewing designs and overseeing construction and commissioning; and technical due diligence.

Our Entura clean energy and water institute (ECEWI) is a registered training organisation (RTO) which formalises a long history of knowledge sharing, capability development and training across our full range of expertise and services. We deliver short courses on a range of topics and develop customised training programs to meet our clients' specific business requirements. We develop our courses with a clear focus on risk minimisation and business certainty, whether technical, commercial, social or environmental. In Asia, ECEWI has enjoyed close relationships with Bangkok's Asian Institute of Technology (AIT), Kuala Lumpur's Universiti Tenaga Nasional (UNITEN), the Malaysian Committee on Large Dams (MYCOLD), Sarawak Energy Berhad (SEB) and others. Through the Department of Foreign Affairs and Trade (DFAT)-funded Australia Awards, we have delivered training to counterparts in the Philippines.

Based in Tasmania, Entura supports long-term Tasmanian clients such as TasNetworks and TasWater, and is deeply involved in supporting parent company Hydro Tasmania's major hydropower projects, which aim to develop a pathway of future opportunities in Tasmania's hydropower system expansion. We also support a great range of power and water clients nationally, and we continue to offer services throughout Southeast Asia, South Asia and the Pacific. We have offices in Hobart, Melbourne and Adelaide, and we have maintained an office and a skilled team in New Delhi since 2006.

Entura has strong connections with international networks and has longstanding relationships with international funding bodies. We have extensive experience of working on projects funded by the World Bank and Asian Development Bank (ADB) throughout our regions. We are included on the Australian Infrastructure Financing Facility for the Pacific (AIFFP) panel of preferred service providers. Our technical experts are highly regarded internationally, including representation on a number of committees associated with the International Commission on Large Dams (ICOLD) and its Australian equivalent (ANCOLD). We are also a member of the Australian Water Partnership and the International Hydropower Association.

Entura welcomes the opportunity to help inform the development of the *Southeast Asia Free Trade Agreements (FTAs) modernisation review* by contributing our insights and experience of delivering consulting services in Southeast Asia over more than 30 years.

This is an important time for the region in terms of the clean energy transition, ongoing economic development and geopolitical dynamics, climate adaptation and resilience, and ensuring quality long-lasting infrastructure that embeds greater environmental and social sustainability. Through knowledge sharing and capacity building, significant opportunities are available to strengthen the contribution of Australian businesses in the region. Government support will be essential for long-term success and scale.

What are potential gaps or opportunities for trade in Southeast Asia and areas for improvement?

Southeast Asia currently accounts for 20% of Entura's international business activities, primarily in the Philippines, Laos, Malaysia and Indonesia (with assignments also in Thailand and Vietnam).

Our focus is on wind, solar, battery energy storage systems (BESS) and hydropower, with services delivered through our renewables, electrical and hydropower teams and supported by our environmental, social and governance specialists.

With governments facilitating market access particularly in the context of renewable energy and water security, we have the opportunity to form in-country partnerships that enhance both Entura's and Australia's **competitiveness, local relevance** and **reputation.**

Success in this region is made more timely and effective through **physical presence, representation** and **connections**. FTAs that create in-country opportunities for closer connection, cultural and market understanding and joint initiatives (e.g. with DFAT/Austrade and Australian providers) are valuable for all parties. There may be opportunity to leverage our donor/member status with international aid lenders, such as World Bank and ADB, to increase access and participation of Australian companies.

What are the opportunities in specific industries, sectors, goods, services and investment in Southeast Asian economies?

Climate change impacts, emissions targets, geopolitical instability and supply chain issues have, for many nations, acutely highlighted the ongoing need to secure vital energy and water resources. Several governments in this region have announced ambitious targets for reaching carbon neutrality and curbing reliance on coal-fired power. **Integrating renewable energy into power networks** whilst providing firm and reliable electricity supply through **storage** is a global trend and priority. With

increasing energy demands and ongoing plans to decarbonise the energy supply chain, broad economic opportunities will be realised through renewables, water and hydropower projects specifically. In addition to infrastructure, knowledge sharing/transfer and capacity building are essential for long-term in-country sustainability.

Renewable energy and hydropower projects primarily consist of:

- **Pumped hydro and battery storage:** These continue to be the most practical forms of energy storage on a large scale and are cost-competitive in the international market. As global efforts escalate to bring forward a transition to renewables, decarbonise and meet clean energy targets, storage will become increasingly important in our regions.
- **Isolated hybrid energy systems:** These systems are ideal in Southeast Asia due to the high prevalence of island communities and remote regions that still rely on diesel generation and/or have instituted renewable energy targets.
- **Hydropower:** Conventional hydropower is likely to continue to play a major role in the energy mix in Southeast Asia. It remains a leading renewable source of electricity generation globally. Small-scale hydropower is also a renewed focus as a source of increased renewable energy capacity with fewer new environmental and social impacts overall.
- **Asset management, refurbishments and upgrades:** This is a growing challenge in our regions as many power and water assets are reaching the later part of their expected life cycle. It is anticipated that by 2050 approximately half of the existing hydropower equipment globally will have undergone modernisation, including digitisation. Refurbishment of hydropower and dam schemes can also provide additional generation, storage and supply volumes, greater flexibility to provide grid support services, longer asset life, and increased resilience to climate impacts – all of which improve overall sustainability outcomes. For this reason, asset management opportunities will continue to remain a priority for Entura.
- Due to physical separation between generation hotspots and load centres across our markets, more **regional interconnection** will be required. A number of interconnectors are under consideration in Southeast Asia. Countries in Southeast Asia are at varying points in terms of power grid connectivity and national or regional power market trade. Australia can offer capability and experience in this area. Australia can also gain from the physical and economic interconnection of other nations in SE Asia when power assets and infrastructure are purchased from outside those nations.
- There are growing requirements for support in **institutional strengthening and training**. Entura is well placed to take up these opportunities via the Entura clean energy and water institute (ECEWI). ECEWI has a proven track record of capability development in the power and water sectors in the region, which could be further expanded with commitments under an FTA.

What ways or approaches to FTA disciplines could increase Australian exports and investment in Southeast Asia and/or make trade easier for Australian businesses?

1. **Facilitating and supporting networking and relationship-building in the region.**
    - Leveraging in-country government-to-government and government-to-business relationships is useful for identifying key contacts and opportunities. This could take the form of trade/business delegations to establish and strengthen connections and lay the foundation for providing services.
    - In some cases, it may be helpful to Australian businesses if Australian aid/grant funding is coupled with requirements for using Australian service providers, consultants and contractors (such as the Australian Infrastructure Financing Facility for the Pacific, AIFFP, which maintains a panel of preferred service providers).
    - It would also help Australian businesses such as ours if government could leverage mechanisms to promote high standards of quality, ESG and sustainability, which could also include support to pre-screen organisations and suppliers.
2. **Share and encourage consideration of common technical standards, research and compliance where appropriate.**
    - We recommend supporting regional alignment to **reduce design variation** and create longer-term consistency of construction, maintenance and asset management. Shared experiences will build momentum for continued improvement.
    - Developing **standardised methodologies** for environmental impact assessments, geotechnical surveys and grid impact studies will create economies of scale and greater efficiencies, allowing technical resources to work across countries and projects.
    - We recommend increasing support for regional cooperation on **climate-resilience research**, specifically addressing engineering requirements and future considerations.
3. **Support and encourage skilled renewable energy professionals across borders.**
    - Encouragement of **workforce development initiatives** will help build technical experience and transferable skills across the region and in Australia.
    - **Training programs** and centres of excellence in renewable energy can be supported by Australia and companies like Entura and rolled out across the region. A successful example is the South Asia Regional Infrastructure Connectivity (SARIC) program.
    - It will be beneficial to continue to focus on and support **placement programs**. DFAT facilitates ASEAN placements through programs like the Professional Placements Program (for young professionals in business), Aus4ASEAN Scholarships (for ASEAN leaders to study in Australia), ASEAN-Australia Centre Grants (for creative/business/research initiatives), and the Government-to-Government Partnerships program (SEAG2G) for knowledge exchange between agencies. All of these programs support stronger business, education and people-to-people ties, which supports *Invested: Australia's Southeast Asia Economic Strategy to 2040*. These placements help build expertise, new markets and regional cooperation and could benefit from consideration of a broader scope of fundable activities.

Appendices

Miscellaneous projects

Entura has worked on many renewable energy and water projects in the following Southeast Asian countries over many years. A selection of links to projects and news are included here per country but are not exhaustive.

We continue to pursue and/or accept opportunities in these countries where appropriate projects arise that match our expertise and resource availability and meet our integrity and sustainability standards.

1.1 Lao PDR

- Dam safety guidelines: https://www.entura.com.au/news/entura-supports-dam-safety-improvement-in-laos/
- Nam Pha Gnai hydropower project: https://www.entura.com.au/projects/8597/
- Nam Gniep 1, Nam Long 2 , Nam Hao, Nam Bak, Nam Song, Nam The hydropower projects

1.2 Vietnam

- Coc San hydropower project
- Nam Xay Luong and Nam Tha cascades of hydropower projects
- Minh Loung hydropower project
- Assessment studies for Nam Na, Pac Ma and Nam Cum hyropower projects

1.3 Thailand / Cambodia and Lower Mekong region

- Basin-wide hydropower sustainability assessment (Mekong River Commission): https://www.entura.com.au/projects/5578/

1.4 Philippines

- Bulanog Batang hydropower project https://www.entura.com.au/projects/9225/
- Failure modes assessment for multipurpose dams https://www.entura.com.au/projects/7536/
- 'Remaining Useful Life' (RUL) assessment at two hydropower stations https://entura.com.au/projects/12333/
- Caraga hydropower projects (feasibility studies)
- Support to ADB and PSALM (Power Sector Assets and Liabilities Management) with technical, environmental and social review of three separate power projects in the province of Laguna, Philippines, with an aggregated generating capacity of 728 MW to support their privatisation goals

- Bubunawan hydropower project
- Review of mini-hydro projects: Lingod, Taft, Maslog, Lake Mainit, Kiangan

1.5 Malaysia (including Sarawak and Peninsular Malaysia)

- Murum hydropower project https://www.entura.com.au/projects/5793/
- Sarawak hydropower feasibility studies https://www.entura.com.au/projects/5083/
- Kuala Lumpur flood detection and mitigation https://www.entura.com.au/projects/5068/
- Kota 2 small hydropower project https://www.entura.com.au/projects/5024/
- Certified Dam Safety Instructor training 2020-23 for MYCOLD via ECEWI https://entura.com.au/projects/11032/
- Temengor reservoir flood forecasting and early warning system for TNB
- Baleh, Bakun, Batang Ai hydropower projects

1.6 Indonesia

- Confidential large hydropower project, 2019–22 (major hydropower feasibility review and tender design, environmental and social impact assessment, and Owner's Engineer services).

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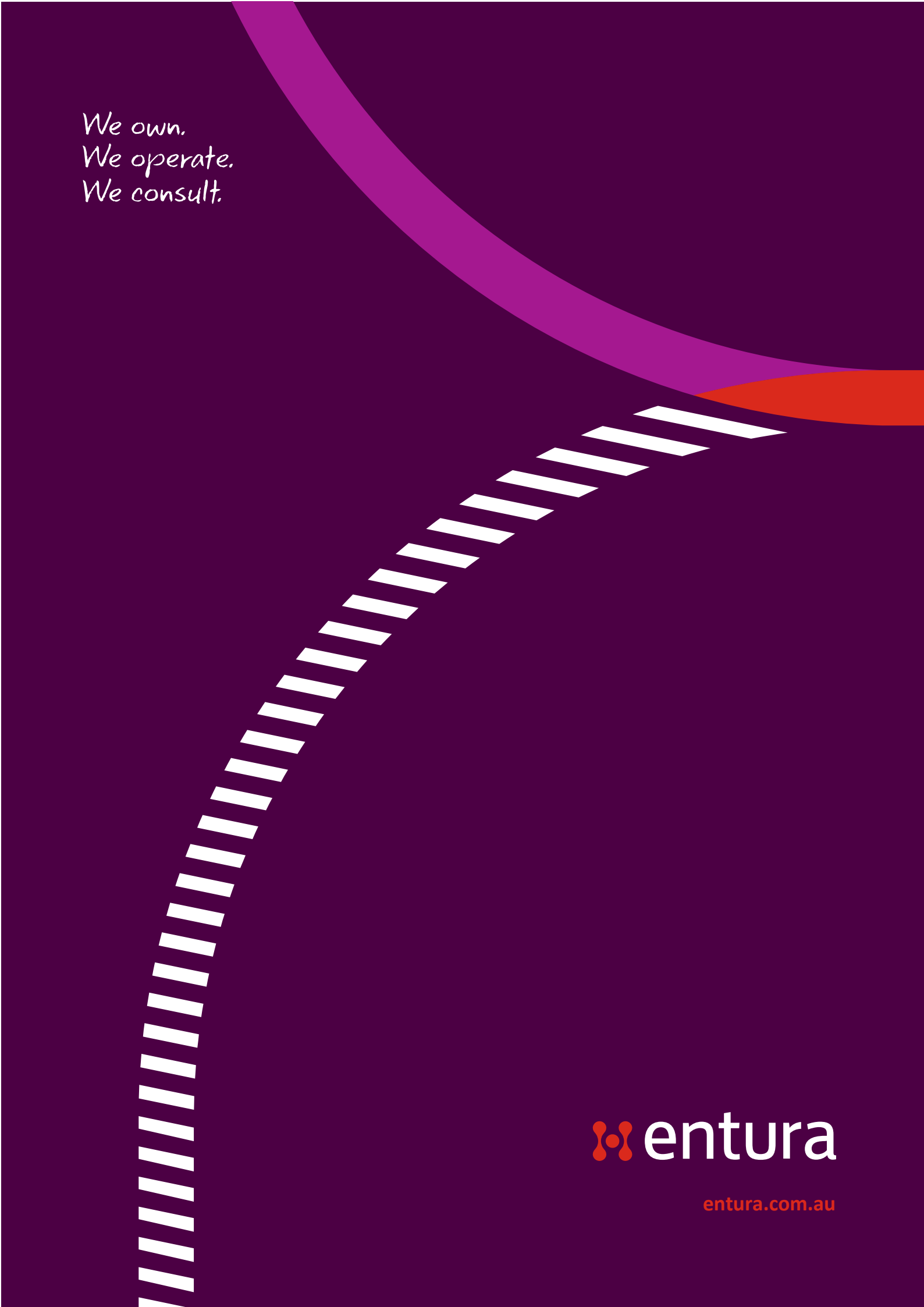

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