



## Supporting quality infrastructure development in Southeast Asia

An update on the Partnerships for Infrastructure program





Image: Australia is supporting Southeast Asia's integration of renewable energy technologies through technical knowledge exchange programs. In 2023, energy professionals from Malaysia, Thailand and the ASEAN Centre for Energy visited Australian energy storage technology sites in Western and South Australia. Source: P4I

# Delivering results

Partnerships for Infrastructure (P4I) is Australia’s flagship regional infrastructure development initiative in Southeast Asia. Funded through Australia’s development program, P4I is supporting partners to manage and deliver new infrastructure worth over **A\$50 billion annually**. In its first phase, P4I has strengthened our two-way infrastructure development partnerships in the region:

109

Australian organisations

and

64

Southeast Asian counterpart agencies

supported to engage in direct technical and policy exchanges to advance priority infrastructure issues in the region.

3,000+

infrastructure professionals per year from across the region have built deeper technical and policy understanding in collaboration with Australian government and infrastructure professionals.

This has assisted major policy and planning reforms and improved infrastructure investment outcomes in the region, including:

|   |   |   |
|---|---|---|
| <p>P4I partnered with Austroads to develop <b>Cambodia’s</b> national standards for roads and bridges – to be used across its</p> <p><b>US\$1.6 billion road infrastructure pipeline</b></p>  | <p>P4I’s collaboration with <b>Malaysia’s</b> Sarawak Energy is helping reshape its future investment planning involving a potential</p> <p><b>fourfold increase in its renewable energy capacity</b></p> | <p><b>Thailand’s</b> first large-scale procurement of</p> <p><b>1,500 EV buses</b></p> <p>adopted P4I financing recommendations as well as P4I’s gender and accessibility metrics</p>   |
| <p><b>Indonesia</b> has commissioned a</p> <p><b>12-month hydrogen generator trial</b></p> <p>with an Australian firm as a direct result of a P4I-supported technical exchange with Australia</p>   | <p>P4I’s work with <b>Vietnam</b> enabled the adoption of Vietnam’s new Electricity Law and Power Development Plan VIII, which will unlock</p> <p><b>44 gigawatts of renewables capacity</b> by 2030</p>  | <p>P4I is working with the <b>Philippines’</b> Public-Private Partnership Center to bring to completion new legislative reforms on public-private partnership deployment and financing approaches. Expanding public-private partnerships is key to addressing the Philippines’</p> <p><b>US\$69 billion infrastructure investment gap</b></p> |
| <p>Bringing together Timor-Leste, the Northern Territory Government and Indigenous landholders, P4I is helping <b>Timor-Leste</b> to improve power access in remote communities. Using the Northern Territory model of renewable-powered microgrids will in some cases increase electricity access from 14 hours a day to</p> <p><b>24-hour power</b></p> |   | <p>P4I and the <b>Laos’</b> Ministry of Public Works and Transport co-developed Laos’ multimodal transport strategy. This has already</p> <p><b>unlocked projects worth a combined US\$12.5 million</b></p> <p>Work on broader funding and financing reform options is now underway</p>   |



# Partnering on quality infrastructure development

With Southeast Asia set to become the world’s fourth-largest economy by 2040, the development of quality infrastructure will be key to ensuring its growth is sustainable and inclusive.

Closing the region’s estimated US\$3 trillion infrastructure investment gap will require significant and sustained effort from Southeast Asian governments and their partners.

The **Australia – Southeast Asia Regional Development Partnership Plan 2024–2028** commits Australia to sharing its infrastructure know-how and experience to support the region’s efforts to invest in quality, sustainable and inclusive infrastructure.

**Launched in 2020, P4I is supporting partners’ efforts to improve infrastructure policy and regulation**, build a pipeline of investable projects, attract quality financing and enhance infrastructure productivity.

**Working with 8 Southeast Asian economies and ASEAN, P4I is supporting partners to manage and deliver new infrastructure worth over A\$50 billion annually.**

P4I does this by providing infrastructure advisory services, facilitating technical knowledge exchanges, building partners’ technical capacity, and supporting government-to-government and other partnerships between Australian and Southeast Asian organisations.

P4I is delivered through a partnership between the Department of Foreign Affairs and Trade, EY, Adam Smith International, The Asia Foundation and Ninti One.



Image: P4I brings together Australian and Southeast Asian government counterparts to partner on quality infrastructure development. Source P4I.

A continuation of P4I was announced at the ASEAN–Australia Special Summit in March 2024 as recommended in *Invested: Australia’s Southeast Asia Economic Strategy to 2040* (*Invested*). P4I’s sector priorities are transport, energy, telecommunications, and improving infrastructure financing. P4I’s work is closely aligned with the 4 categories of action outlined in *Invested*:



**Raising awareness** of Australia’s infrastructure experience, expertise and offerings in Southeast Asia; and raising Southeast Asian literacy among Australian government agencies (109 Australian organisations supported to engage in direct technical and policy exchanges with 64 Southeast Asian counterpart organisations)



**Building capability** on infrastructure policies, practices, processes and systems through technical advice, training, coaching and mentoring, and co-development of procedures, tools and frameworks (over 3,000 Southeast Asian participants in P4I-supported workshops, training and study tours)



**Removing blockages** that constrain the development and financing of quality infrastructure – from policy and technical reforms through to financing and procurement strategies and approaches, and project-level support



**Deepening investment** in quality infrastructure in the region – including the mobilisation of greater Australian investment where possible (coordinating closely with the Australian Government’s Investment Deal Teams and Southeast Asia Investment Financing Facility, and with Australia’s blended finance platforms and partners)



# Transport



Image: The shipping industry has a critical role in the global path to net zero. There is great demand and need for Australia's expertise in transitioning our own shipping industry and establishing green corridors across Southeast Asia. Port of Melbourne is collaborating with Malaysia's Port of Tanjung Pelepas (PTP) on research to support PTP to become a regional green shipping hub. Source: P4I

Drawing on Australia's own experience, P4I is expanding its work with governments and port authorities on maritime decarbonisation strategies. This work includes greening port facilities, transitioning to low-carbon fuels, and the development of potential green shipping corridors within the region and with Australia.

In **Malaysia**, P4I worked with the Ministry of Transport (MOT) to establish the business case for investment in low-carbon fuels. A roadmap to unlock market opportunities for future fuels was developed with a proposed 40% target for low-carbon fuel penetration in maritime transport by 2050. P4I is now supporting MOT to develop a new regulatory framework to boost investment.

**Thailand** and **Vietnam** have approached P4I for similar work. Both governments are seeking to strengthen their maritime decarbonisation

policies and regulations in line with international commitments and the International Maritime Organization (IMO) net-zero framework.

- **Thailand** has committed to mitigation actions, including the use of alternative 'greener' fuels and new vessels that can run on these fuels.
- **Vietnam** is encouraging all domestic ships to meet IMO standards, with new ships using green energy from 2035 and full transition by 2050. Green energy investments in Vietnamese ports will begin in 2031, with all port equipment and signalling systems to be converted by 2050.

Linking this to region-wide efforts, P4I is working in this area with the **ASEAN Secretariat**. P4I is providing analysis and recommendations on shipping container processing and circulation, port digitalisation and automation, and the use of public-private partnerships to boost maritime connectivity and competitiveness.

Australia's experience in delivering high-quality land transport networks – in a way that is both cost-effective and using innovative financing – has led to several high-impact activities.

P4I worked with **Laos' Ministry of Public Works and Transport** to co-develop its **Multimodal Transport Strategy**, the first of its kind for Laos. The strategy sets out a clear plan for the development and interaction of different forms of transport infrastructure across Laos' transport network. It is a key tool for the Government of Laos to select and prioritise transport infrastructure projects. The strategy process has unlocked an initial US\$12.5 million in project finance and an immediate project pipeline worth US\$140 million. The Government of Laos has now engaged P4I to work with it on broader financing strategies to support the strategy's rollout.

**P4I supported Thailand's Ministry of Transport and its Department of Land Transport** to develop a plan for **electrification of Thailand's public transport network**. This work shaped the financing approach used in the first large-scale procurement of 1,500 (of a planned 8,500) electric buses. Thailand's National Electric Vehicle Policy Committee has also included P4I's recommendations on accessibility and employment for women as part of its central decision-making criteria.

P4I worked with **Cambodia's Ministry of Public Works and Transport (MPWT)** and **Austrroads** to update **Cambodia's road and bridge asset standards**, integrating disaster- and climate-resilience principles. These standards are now incorporated into design and procurement processes for MPWT and will be used in all future tender and public procurement processes, for a road infrastructure investment pipeline of US\$1.6 billion.



# Energy

As noted in *Invested*, the transition to a clean energy economy is both the most significant challenge and an opportunity for Southeast Asia and Australia. Australia has the expertise and technology to assist the region with its transition needs, and there is scope to attract investment to support Australia's clean energy manufacturing objectives. P4I is supporting partner governments to develop efficient energy markets, establish the required policy and regulatory architecture, and build the technical capacity necessary to integrate higher levels of renewable energy into the region's energy systems while addressing energy access, reliability and security.



Image: P4I supports partner governments to integrate clean energy technologies. Source: P4I

P4I is working with the **Malaysian** state-owned utility **Sarawak Energy Berhad (SEB)** to support its investment planning on deployment of **solar and energy storage** – this could lead to a quadrupling of SEB's renewable energy capacity, accelerating Sarawak's progress toward its 15 gigawatt target by 2035. This work is part of expanding regional energy integration (including through the ASEAN Power Grid initiative) and will help meet cross-border renewable energy needs from Indonesia.

P4I and **CSIRO** are supporting the **Electricity Generating Authority of Thailand (EGAT)**, the country's largest electricity generation and storage provider, to explore different **energy storage** options. As a direct result, EGAT has expanded its energy storage team and subsequently increased investment in battery energy storage systems at its Sirindhorn Dam floating solar farm, part of a A\$4.2 billion investment to supply clean power to the country. EGAT and CSIRO have now signed an memorandum of understanding to cooperate on energy storage technologies, batteries and clean hydrogen and are working on development of additional battery projects across Thailand.

P4I supported the **ASEAN Centre for Energy** to develop the region's flagship annual energy report: the **8th ASEAN Energy Outlook (AEO8)**. The report provides a roadmap for ASEAN's energy transition, which will require a predicted US\$190 billion in regional energy investment annually by 2035 to align with climate goals. AEO8 is considered by policymakers as an important evolution on previous reports by including a carbon neutrality scenario to 2050 and strengthening consideration of disaster resilience, gender equality and social inclusion.

P4I and the **Australian Energy Regulator** worked with **Laos' Ministry of Energy and Mines** to share Australia's experience in **establishing a national energy regulator** to encourage investment and better service delivery outcomes. This work led to Laos amending its electricity law to enable the establishment of its first energy regulatory body – which P4I is now supporting. The regulator will oversee a sector that generates almost 13% of Laos' GDP.

P4I worked with Australia's **Department of Climate Change, Energy, the Environment and Water** to bring **Indonesia's** state electricity company **Perusahaan Listrik Negara (PLN)** to Australia to meet with the hydrogen industry and regulators. As a result, PLN signed a **commercial agreement with an Australian firm** for a 12-month trial of hydrogen generators. PLN is looking to replace its aging diesel generators, with a current capacity of 5.2 gigawatts.

P4I's technical exchanges with Timor-Leste on microgrids in remote communities has seen the **Government of Timor-Leste** initiate development of a **micro solar and battery grid** modelled on the Daly River microgrid in the **Northern Territory**. This project is part of Timor-Leste's first wave of new renewable energy investments and will provide 24-hour electricity to Atauro Island (previously only 14 hours per day). P4I is now supporting the Government of Timor-Leste and the Northern Territory Government to partner directly on build engineering, procurement and construction expertise for the first project site.

Through the **Future of Electricity Vietnam** project, P4I bought together a network of Australian energy sector partners to support **Vietnam's** planning on decarbonising its energy sector. These engagements helped shape the new **Electricity Law and Power Development Plan (PDP) VIII** – under which Vietnam now plans to add approximately 44 gigawatts of new renewables capacity by 2030 – a 50% increase to Vietnam's energy capacity. The new PDP will also usher in household rooftop solar generation for the first time – creating around 38 million new power generators and leading to even greater interest in Australia's experience and expertise.



# Telecommunications

Australia's open, competitive and innovative telecommunications market, delivery of services in challenging environments, and leading approach to developing and safeguarding undersea cable network assets is well regarded. This is underpinning interest from partners in Southeast Asia to work with P4I on telecommunications.



Image: Telecommunications tower, Indonesia. Source: Shutterstock

P4I is supporting **Cambodia's** Ministry of Post and Telecommunications and Telecommunications Regulator to overhaul key policies and regulations governing radio frequency spectrum. When completed, this will ensure critical communications are stable and protected for domestic and international aviation and maritime users. This work also includes creation of a roadmap to enable mobile operators to transition to 5G services across multiple frequency bands – contributing upwards of 60% of the expected 5G-driven GDP growth in Cambodia by 2030.

**The Philippines'** Department of Information and Communications Technology is working with P4I to develop the business and financing model for the Philippines' **national broadband network**. This will guide decisions on the most effective financing strategies to mobilise the investment needed to boost reliability and affordability of broadband access. The Philippines has the lowest internet access rates in the region, with only 70 million of its 115 million citizens having any form of access. The Philippines has also approached P4I to begin work on radio spectrum management as part of this cooperation.

P4I has been working with **Indonesia, the Philippines** and **Vietnam** on policy and planning for undersea cable security and resilience in collaboration with **Australia's new Cable Connectivity and Resilience Centre**. For example, the **Philippines** is well positioned to be a digital hub for trans-Pacific and intra-Asia **submarine cable networks**, but the absence of effective regulation constrains investment. P4I is working with the Philippines' Department of Information and Communications Technology to draft an executive order that delivers a reform pathway to establish cable protection zones and streamline permitting requirements to boost investor confidence.

# Improved infrastructure financing

Australia is recognised for delivering high-quality infrastructure using innovative financing models. Drawing on this experience, P4I has responded to high demand for support to strengthen infrastructure planning, prioritisation and procurement, and to improve access to more diverse and better-quality infrastructure finance.



Image: Representatives from Australia's Infrastructure and Commercial Advisory office, together with colleagues from the Philippines' Public-Private Partnership Center in Manila, Philippines. Source: P4I

**The Philippines' Department of Transportation** has been working with P4I to develop **planning and assessment systems** to improve the success rate of proposals submitted to central agencies for funding approval.

This is in parallel with cooperation with the **Philippines' Public-Private Partnership (PPP) Center** on **PPP deployment** and financing approaches. This work is directly shaping value-for-money analyses and PPP financing models underpinning the government's broader strategy to mobilise private investment in infrastructure and address an estimated infrastructure investment gap of US\$69 billion.

P4I and the **Victorian Department of Treasury and Finance** are working with the newly established **Cambodian Cost Efficiency Department (CED)**, within the Ministry of Economy and Finance. P4I is building CED capability to screen and prioritise all major infrastructure projects in Cambodia in its role as secretariat to **Cambodia's Public Investment Committee**. Through its investment planning work with Cambodia's Ministry of Public Works and Transport, P4I is piloting new approaches for investment proposals to the CED (such as those using the new road and bridge standards P4I has also supported).



# P4I's approach

**P4I brings together Australian and Southeast Asian government counterparts, regulators, utilities and infrastructure operators to collaborate on technical and policy issues relevant to Australia and the region.**

During its first phase, P4I has delivered a broad range of activities across the transport, energy and telecommunications sectors. The program has identified several areas where Australia is recognised by governments in Southeast Asia for having world-leading expertise. This includes maritime decarbonisation, land transport resilience, integration of renewable energy technologies, expanding digital connectivity, and improving access to infrastructure investment and financing. Partner governments are keen to access this expertise to advance their domestic and regional infrastructure objectives.

P4I has supported 64 Southeast Asian government agencies and 109 Australian agencies to collaborate on infrastructure challenges in the region. Of these collaborations, 25 have matured into formal partnerships between Australian and counterpart agencies ranging from CSIRO's work with Laos' Ministry of Mines and Energy, and Austroads' partnership with Cambodia's Ministry of Public Works and Transport, to the Australian Energy Regulator's partnership with the Electricity Regulatory Authority of Vietnam.

P4I has directly supported over 3,000 infrastructure professionals per year (34% women) from across Southeast Asia to work with Australian professionals and gain deeper exposure to each other's infrastructure capability and future planning.

**P4I embeds inclusive design principles across its activities** – including gender, disability, social inclusion and accessibility.

66% of activities have mainstreamed gender and inclusion analysis and actions, while 34% have specific gender and inclusion objectives (this percentage has grown year on year since P4I's inception).

Due to partner demand, P4I is now building a dedicated 'women in infrastructure' program to support greater participation and influence of women in the sector. To date, this work has supported 102 women across P4I's sectors of focus with capacity building, training and mentoring from senior Australian infrastructure experts.

For example, together with Cambodia's Ministry of Public Works and Transport, P4I launched a mentorship program connecting Cambodian infrastructure professionals with women leaders from across Australia's transport infrastructure sector. Australian mentors were drawn from a range of P4I's government-to-government partners, including the Victorian Department of Treasury and Finance, Victorian State Tolling Corporation and Austroads.

**P4I integrates low-carbon and disaster-and climate-resilience principles** across its activity planning and delivery cycle, both as part of Australia's own commitments and in direct response to demand from governments and investors in the region.

61% of P4I activities have included low-carbon and disaster-and climate-resilience objectives, with the highest percentage of activity in the energy sector.

The resilience of land transport networks is fast becoming a major area of demand for P4I, given Australia's experience managing the economic and social impact of increasingly severe weather events. P4I is expanding its network of Australian partners to help respond to this demand.



Image: Cikubang Bridge, part of the Cipularang Toll Road in West Java, Indonesia. Source: Shutterstock



## Additional resources

- [Australia – Southeast Asia Regional Development Partnership Plan 2024–2028](#)
- [Invested: Australia’s Southeast Asia Economic Strategy to 2040](#)

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## Disclaimer

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Image: Jatiluhur Dam on the Citarum River in West Java, Indonesia. Source: Shutterstock

Cover images: Wind turbine and solar farm at Phan Rang, Ninh Thuan, Vietnam; Tan Thuan Export Processing Zone, Ho Chi Minh City, Vietnam; Bangkok expressway, Thailand. Source: Shutterstock





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