CIAC 2025 CCEA
ENERGY TRANSITIONS & ENERGY SECURITY
TRANSITIONS ÉNERGÉTIQUES ET SÉCURITÉ ÉNERGÉTIQUE

ASIA PACIFIC FOUNDATION OF CANADA | FONDATION ASIE PACIFIQUE DU CANADA

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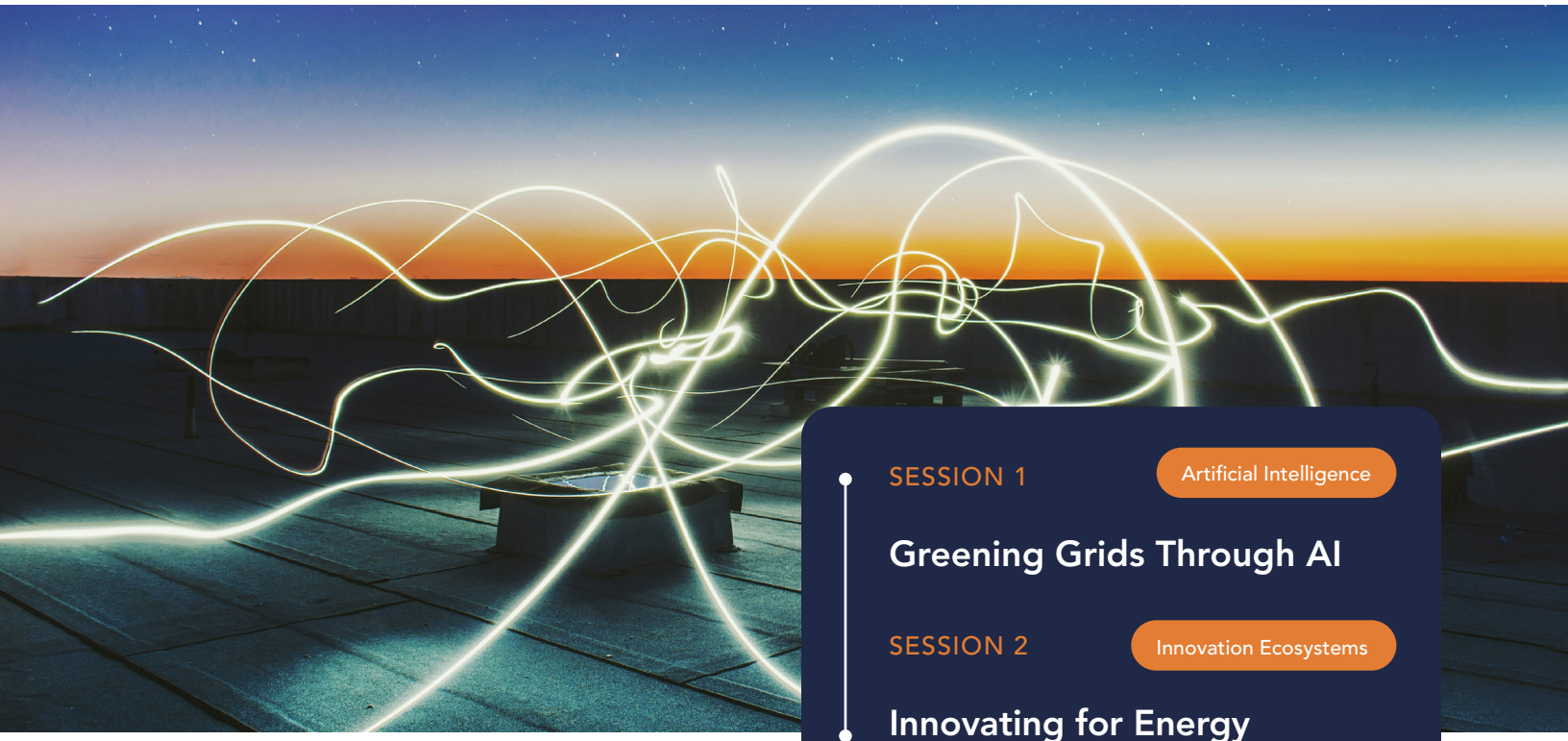
SUMMARY REPORTS



The annual Canada-in-Asia Conference (CIAC) is a multi-directional engagement platform for Canada-based and Asia-based companies, institutions, universities, and governments. CIAC convenes business leaders, experts, investors, policy-makers, researchers, and innovators from across Asia and Canada to exchange perspectives, knowledge, and ideas, with the goal of facilitating collaborative partnerships. The conference's plenary and concurrent sessions, as well as dedicated networking times, provide a range of opportunities for engagement and exchange with likeminded partners.

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SESSION 1 — Artificial Intelligence

Greening Grids Through AI

SESSION 2 — Innovation Ecosystems

Innovating for Energy Transitions in Asia and Canada

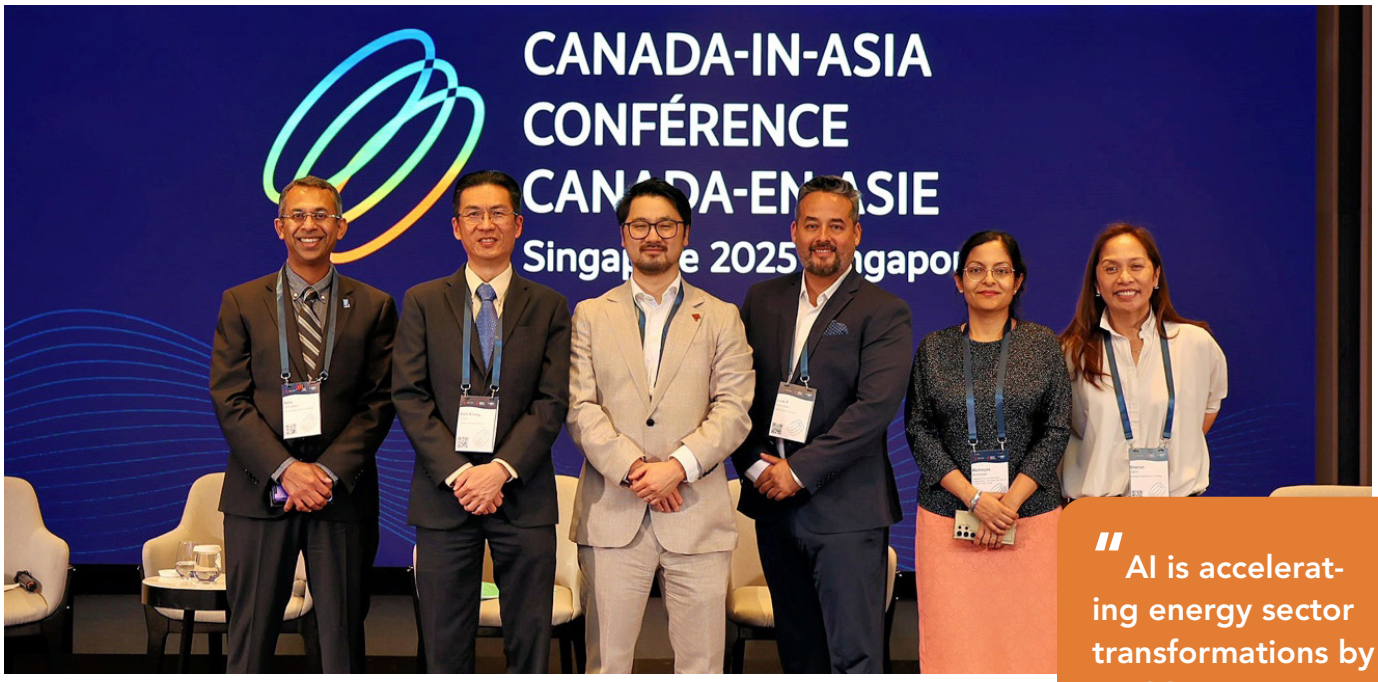
SESSION 3 — Investment & Finance

Powering Asia's Energy Transitions Through Investment Partnerships

SESSION 4 — Trade & Supply Chains

Canadian Energy Supplying Transitions in Asia: Renewables, Nuclear, Data Centres

Greening Grids Through AI



From left: Bala Venkatesh, Academic Director, Centre for Urban Energy, Toronto Metropolitan University; Tiong Sieh Kiong, Senior Professor, College of Engineering, Universiti Tenaga Nasional (Malaysia), David Lederhendler, Founder and CEO, Yeji Data Lab (moderator); Luis Gonzalez, Chief Data & AI Officer, Aboitiz Power; Maitreyee Mukherjee, Postdoctoral Fellow, Institute for Environment and Sustainability, Lee Kuan Yew School of Public Policy, National University of Singapore; Sharon S. Garin, Undersecretary, Department of Energy, Republic of the Philippines.

Executive Summary

As electricity systems across Asia undergo profound transformation, artificial intelligence (AI) is emerging as a powerful driver of grid decarbonization and resilience. Panellists at the CIAC2025 "Greening Grids Through AI" session discussed how AI can accelerate energy transitions and grid decarbonization by speeding improvements in enhancing forecasting, optimizing operations, integrating renewable energy into aging infrastructure, and enhancing connectivity and electricity sharing between countries in the region.

The conversation highlighted that AI is no longer a distant innovation – it's already embedded in everything from predictive maintenance and load forecasting to real-time simulations and market behaviour prediction. In Ontario, AI-powered forecasting tools developed by the Centre for Urban Energy at Toronto Metropolitan University are helping utilities optimize

> **"AI is accelerating energy sector transformations by enabling smarter, more efficient electricity grids from predictive maintenance and demand forecasting to real-time grid optimization. AI is already demonstrating significant carbon footprint reduction while improving energy reliability and resilience."**
>
> *– David Lederhendler, Founder and CEO, Yeji Data Lab*

grid use and reduce infrastructure costs. In Malaysia and the Philippines, national efforts are leveraging AI to stabilize grids while enabling higher renewable energy penetration.

Panellists underscored that AI doesn't just help build technological solutions; it also catalyzes challenges and opportunities for people working at all points in energy and electricity systems, and for the development of appropriate, context-specific policy. The importance of 'symbiotic AI' – designing tools that enhance human decision-making rather than replace it – was a recurring theme.

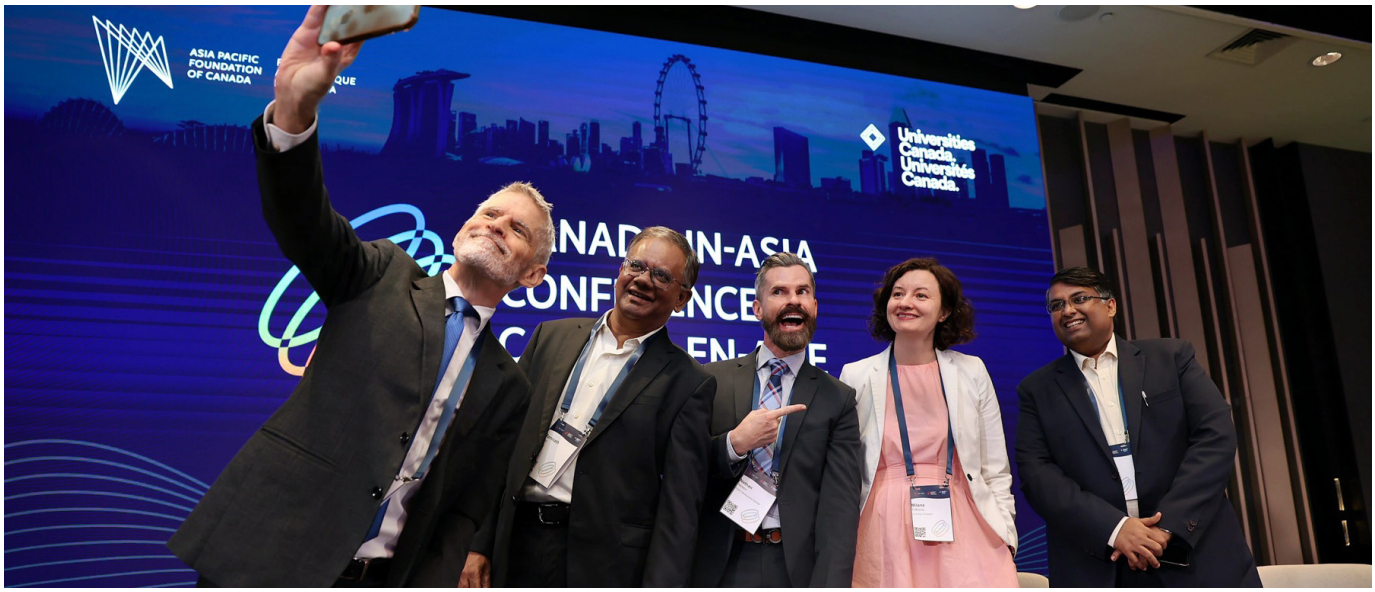
Canada was positioned as a valuable partner, with its deep AI research ecosystem, clean energy expertise, and regulatory and technical leadership in areas like small modular nuclear reactors (SMRs).

In ASEAN contexts, increasing effective collaboration across borders will be critical to ensure the energy transition is not only green but equitable, resilient, and inclusive.

Key Takeaways

- **AI Must Empower People, Not Replace Them:** Real-world deployments show AI is most effective when it enhances human decision-making. "Symbiotic AI" helps grid operators, not just algorithms, make faster, better decisions while creating more skilled jobs in the process.
- **AI for Forecasting, Simulation and Integrating Renewables:** From load prediction and typhoon impact modelling to optimizing the integration of renewable energy in electricity systems, AI tools are helping energy providers pre-empt disruptions and optimize resource use.
- **Infrastructure Compatibility, Data Quality are Major Barriers:** Inconsistent, siloed, or inaccessible data is a fundamental challenge. Modernizing grids with smart tools and streamlining data governance will help unlock AI's potential in the energy sector.
- **Opportunities in Finance and Regulation:** Public-private financing mechanisms and new regulatory structures can de-risk innovation to support scalable AI deployment in national grids.
- **Canada-Asia Collaboration Holds Immense Potential:** Canadian expertise in AI, renewables, and nuclear (including SMRs) aligns well with ASEAN energy transition goals. Strategic partnerships can drive scalable innovation and mutual benefit.

Innovating for Energy Transitions in Asia and Canada



From left: Benjamin Cashore, Director, Institute for Environment and Sustainability, Lee Kuan Yew School of Public Policy, National University of Singapore (moderator); Ramnath Iyer, Lead for Sustainable Finance, Institute for Energy Economics and Financial Analysis; Nathan Nelson, Regional Vice President, South & Southeast Asia, Export Development Canada; Milana Trifkovic, Professor, Department of Chemical and Petroleum Engineering, University of Calgary; Saarthak Khurana, Senior Manager, Climate Policy Initiative (India).

Executive Summary

The CIAC2025 panel "Innovating for Energy Transitions in Asia and Canada" brought together dynamic thought leaders from academia, finance, government, and industry to unpack the complex realities of accelerating energy transitions across Asia and Canada. One broad theme emerged: innovation must be as much about policy and finance as it is about technology.

The panel highlighted that renewable technologies for electricity generation – especially solar and wind – are no longer fringe or expensive; they're cheaper than fossil fuels in many regions. Barriers to such technologies being

> **"In matters of national interest, economic development should not take a back seat. The cheapest way to develop electricity capacity is renewables. It also happens to be the fastest way. A gas power plant is going to take about five years. . . whereas renewables, you can do that in about 10 to 12 months, six to 12 months in many cases."**
>
> *– Ramnath Iyer, Lead for Sustainable Finance, The Institute for Energy Economics and Financial Analysis*

incorporated quickly and at scale into countries' energy generation and distribution grids lie in financing, regulatory gaps, and policy inertia. Southeast Asia's energy transition, in particular, was profiled as both an immense opportunity and layered complexity – from Vietnam's evolving feed-in tariffs to the Philippines' private-sector-led initiatives and infrastructure hurdles.

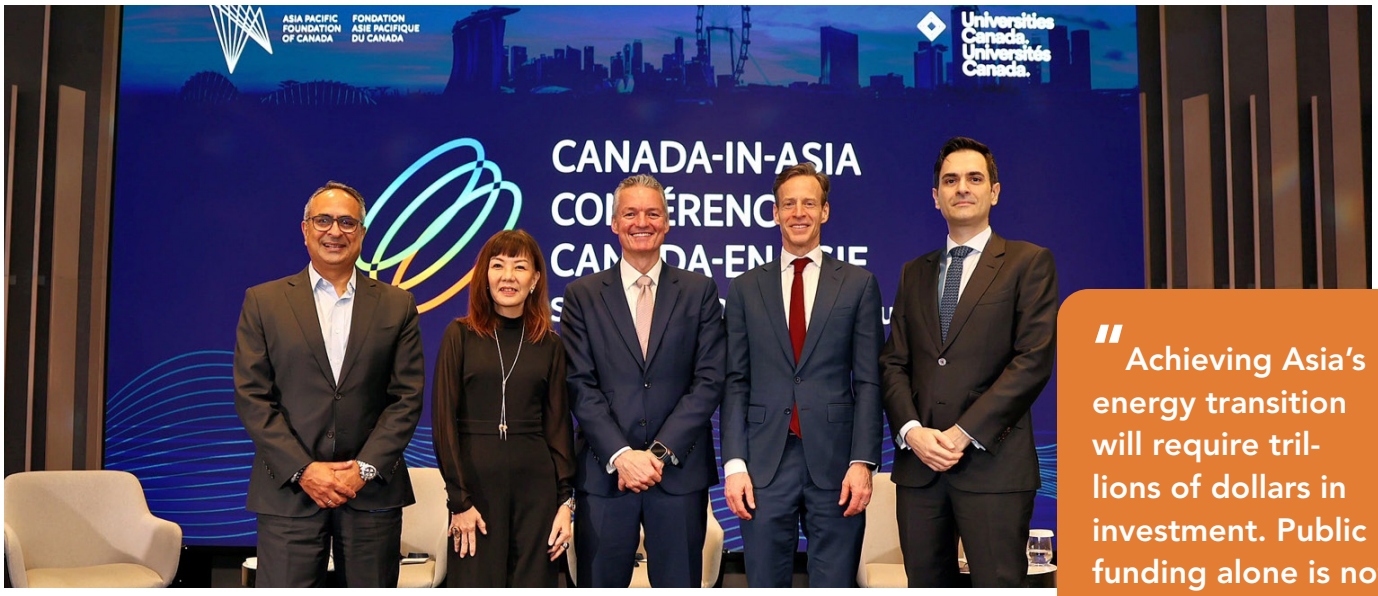
Speakers emphasized that simply having a breakthrough technology is not enough; it must be deployable at scale. Universities such as the University of Calgary are rethinking how clean technology research is conducted, integrating social scientists, community engagement, and policy from day one to help technology innovators build clean tech companies that are ready to accept investment and deploy technologies in market. Meanwhile, global finance experts underscored that emerging economies remain starved of capital despite strong business cases for renewables, with innovative financing models like blended finance and risk aggregation across multiple geographies suggested as vehicles for catalyzing faster deployment of clean technologies at scale in developing economies.

Canada's strengths in a range of clean technologies, including nuclear, offer rich potential for partnerships in Asia. Realizing such potential requires smarter policy, stronger alignment with industry, and faster movement – from pilot to practice.

Key Takeaways

- **The Technology is Ready – Policy and Finance Must Catch Up:** Solar and wind are now the cheapest sources of electricity in many regions, yet policy and regulatory uncertainty, and access to capital, continue to stall their deployment, particularly in emerging markets.
- **Universities Leading Beyond the Lab:** Institutions such as University of Calgary are pioneering integrated research ecosystems that pair scientists with policy experts, social researchers, and entrepreneurs – accelerating innovation from idea to impact.
- **Policy is Not an Afterthought – It's a Catalyst:** Smart policy design, like Germany's solar feed-in tariff, can shift markets and cultures. Local context shapes policy outcomes and economies in Southeast Asia have had mixed results. One example of relative success is Vietnam's approach to solar uptake.
- **Innovative Finance Can Bridge the Capital Gap:** Startups and clean energy projects in Asia often fail not due to tech limitations, but due to a lack of access to patient or risk-mitigated capital. Public-private collaboration can help de-risk investment.
- **Canada-Asia Partnerships Can Accelerate Global Progress:** Canada's strengths in sustainable finance, critical minerals, nuclear, and other clean technologies align with Asia's energy needs. Co-developing and co-deploying clean energy tech and clean energy financing offers mutual economic and environmental dividends.

Powering Asia's Energy Transitions Through Investment Partnerships



From left: Vikas Arora, Chief Impact Investing Officer, Asian Venture Philanthropy Network (AVPN) (moderator); Wai Leng Leong, Managing Director and Regional Head of Asia Pacific, CDPQ Global; Robert Todd, Managing Director, Energy, Infrastructure & Transition, CIBC Capital Markets; Mike Crawley, Former President & Chief Executive Officer, Northland Power Inc.; Simone Grasso, Chief Investment Officer, Vena Energy.

Executive Summary

The "Powering Asia's Energy Transitions Through Investment Partnerships" at CIAC2025 brought together leading voices from global investment, renewable energy, and development finance to explore how Asia can navigate its energy transition with the right mix of capital, partnerships, and policy. As Asia accounts for nearly 50% of global emissions and faces surging electricity demand, panellists emphasized the urgency and opportunity of decarbonization, highlighting it not just as an environmental imperative but a catalyst for economic resilience, inclusive growth, and regional competitiveness.

The session spotlighted the sheer scale of investment needed (trillions of dollars) and the crucial role of bringing all types of financial institutions and financial vehicles – including blended finance, public-private collaboration, and impact-focused investing – to meeting that demand. Vikas Arora (Asian Venture Philanthropy Network, AVPN) outlined the need for people-centric transitions that include small businesses, communities, and the workforce.

> **"Achieving Asia's energy transition will require trillions of dollars in investment. Public funding alone is not enough. This can be done through policy incentives like green bonds, tax breaks, guaranteed returns, and through blended finance, which combines concessional and commercial capital to really re-risk investments in high potential markets."**
>
> *– Vikas Arora, Chief Impact Investing Officer, Asian Venture Philanthropy Network (AVPN)*

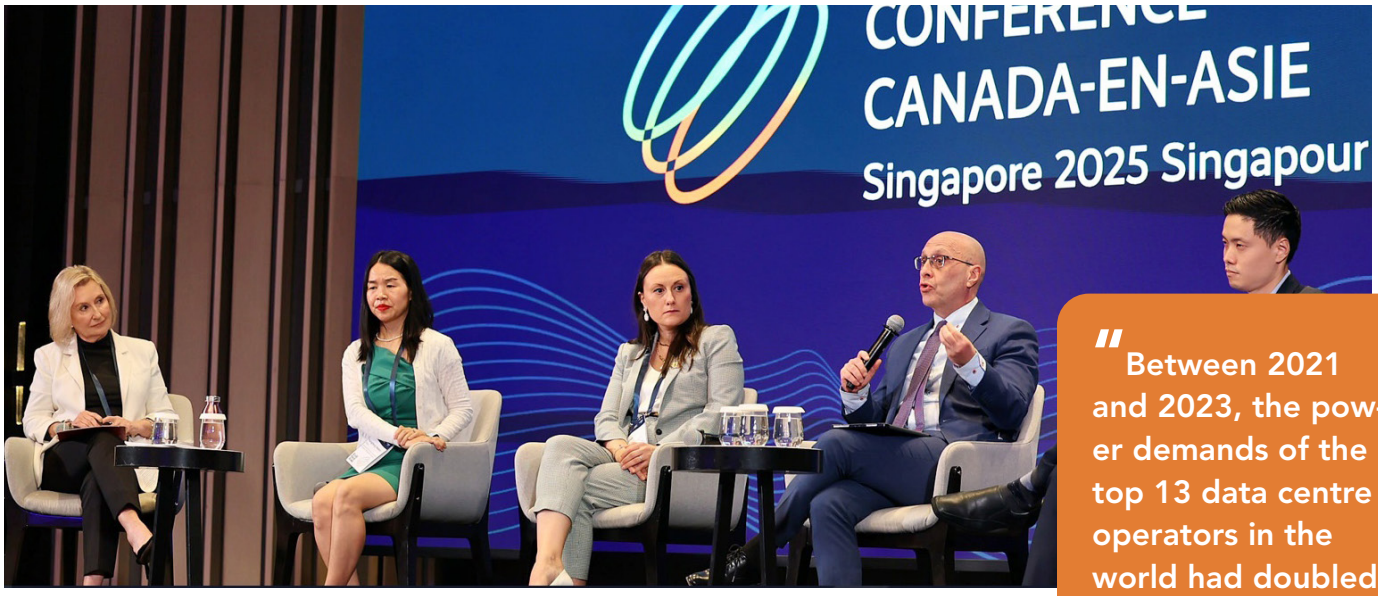
CDPQ's Wai Leng Leong underscored ESG integration and the importance of bringing together different pools of capital for sustainable energy projects. Robert Todd (CIBC) shared insight on deal flow, investor caution in the current macroeconomic climate, and the importance of Indigenous and international partnerships. Mike Crawley (formerly of Northland Power) emphasized that energy transition has shifted from a policy-driven issue to a hard economic necessity, with demand from AI and data centres as a primary force, and identified the importance of strong national-level policy frameworks that create certainty for investors. Finally, Simone Grasso (Vena Energy) shared that renewables are already the cheapest, fastest-growing energy source, especially in emerging Asia, but the key constraint is not capital but rather scale, regulation, and readiness.

Asia's clean energy transition is well underway, and its success hinges on creating the right enabling frameworks, aligning capital with long-term value, and keeping people at the centre of the energy equation.

Key Takeaways

- **A Focus on Blended Finance and Partnerships:** Transitioning Asia's energy landscape requires blended finance models that merge public, private, and philanthropic capital. As CDPQ and AVPN emphasized, scalable success will depend on structuring deals that reduce risk and mobilize massive investment.
- **Attracting Capital to Emerging Economies:** Some financial institutions prefer to invest in mature Indo-Pacific economies where returns are more predictable and risk premiums are lower. Blended finance solutions incorporating concessional capital can help catalyze sustainable energy investment in emerging economies.
- **Data Centres, AI Reshaping Energy Demand:** Asia is witnessing a rapid surge in energy consumption from data centres and AI infrastructure. These new demands require urgent policy action, streamlined permitting, and rapid renewable energy adoption to keep up with expanding energy demand.
- **Regulatory Certainty Attracts Capital:** Taiwan's proactive and consistent energy policies stood out as a best-practice example of how stable frameworks can unlock billions in investment, while markets with shifting rules risk losing credibility and capital.
- **Energy Transitions, Energy Security, Economic Development:** In many economies in Asia, rapid economic development will require significant sources of new electricity generation. The quickest electricity to bring on stream is from renewable sources, backed up by battery storage.

Canadian Energy Supplying Transitions in Asia: Renewables, Nuclear, Data Centres



From left: Jan De Silva, Canada Co-Chair, Canada-ASEAN Business Council (moderator); Yangfang (Helen) Zhou, Associate Professor of Operations Management, Lee Kong Chian School of Business, Singapore Management University; Andrea Kraj, CEO and President, CORE Renewable Energy; George Christidis, Acting President & CEO, Canadian Nuclear Association; Ooi Kai Yong, Head of Technical Solutions for Data Centres, Keppel.

> **"Between 2021 and 2023, the power demands of the top 13 data centre operators in the world had doubled. And in 2023 these top 13 consumed the equivalent energy of a whole year in the entire country of France. The prediction is data centre power consumption will be doubling every couple of years as we continue down this digital path."**
>
> *– Jan De Silva, Canada Co-Chair, Canada-ASEAN Business Council*

Executive Summary

As Asia experiences surging growth in digital infrastructure and energy demand, Canada's clean energy sector can contribute as a vital partner in supporting the region's sustainable energy transitions. The CIAC2025 panel "Canadian Energy Supplying Energy Transitions in Asia: Renewables, Nuclear, Data Centres" featured Asia-based and Canada-based experts with expertise in renewable energy, nuclear, grid integration, and data centres in a discussion on energy demand caused by artificial intelligence (AI) powered data technologies in the context of transitioning to cleaner energy consumption.

The session was framed by a central reality: the digital and clean economies – from AI to EVs – is triggering surging electricity needs. Discussions ranged from the nuclear industry in Ontario pioneering small modular reactors (SMRs) to the deployment of advanced

bidirectional vehicle chargers that allow energy stored in EV batteries to be transferred back to the electricity grid and integrated energy systems for remote communities based on renewables and energy storage.

Panellists underscored the importance of customizing energy solutions to the "place and space" constraints of each Asian economy. From land-scarce Singapore exploring hydrogen supply chains and a floating data centre, to India tapping large-scale solar and nuclear, the message was clear: there is no one-size-fits-all path to energy transition.

The future demands not just exporting energy technologies, but building enduring partnerships rooted in mutual need and shared innovation.

Key Takeaways

- **Digital Demands are Reshaping Energy Infrastructure:** The rapid expansion of data centres alone is driving gigawatt-scale demand. Energy systems need to evolve quickly to supply associated energy demand and do so in ways that are clean and sustainable.
- **Tailored Energy Mixes:** Asia's energy transitions will reflect geographic, economic, and technological contexts. Canadian expertise across clean technologies could be applicable to the different "place and space" realities across the region.
- **Canada's Nuclear Know-How is Scalable, Exportable:** With SMRs approved in Ontario and plans to expand to Saskatchewan and Poland, Canada's nuclear technology and knowledge ecosystem can provide modular, efficient, and viable solutions for Asia's high-density and industrial needs.
- **Microgrids and Storage Systems Unlock Local Resilience:** Companies like Core Renewable Energy demonstrate that combining renewables with innovative storage can deliver 100% clean power even in remote or disaster-prone regions, reducing costs by up to 78%.
- **Collaborative Partnerships, Not Just Exports:** The panel emphasized cross-border collaboration as the true catalyst and discussed combining Canadian technology and regulatory models with Asia's scale, speed, and manufacturing capabilities for shared progress.

About the Asia Pacific Foundation of Canada

ASIA PACIFIC FOUNDATION OF CANADA

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The Asia Pacific Foundation of Canada (APF Canada) is an independent not-for-profit organization focused on Canada's relations with Asia. APF Canada is dedicated to strengthening ties between Canada and Asia through its research, education, and convening activities. For over four decades, our research has provided high-quality, relevant, and timely information, insights, and perspectives on Canada-Asia relations for Canadians and stakeholders across the Asia Pacific. Our mission is to be Canada's catalyst for engagement with Asia and Asia's bridge to Canada.

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