Webinar 12 Highlights

Net Zero Energy Innovation: Developing a Needs-Based Innovation Ecosystem Supported by Government and SMEs

ADB Energy Sector Emerging Areas Knowledge Sharing Series
29 October 2025

To watch the webinar recording and download the presentations, please visit **Emerging Areas webpage.**

You can also check past webinars on this **page.**

Background

As countries seek to support decarbonization, energy security, and reliability, they increasingly turn to innovative solutions and small companies to drive the necessary change. Through appropriate stimulation of collaboration and market entry strategies, governments are able to streamline the adoption of these technologies using intermediaries such as Catapults and other organizations. By working to understand needs at a deeper level, genuine change was delivered by leveraging new technologies and small, nimble companies.

This webinar brought together the Energy Systems Catapult from the United Kingdom to discuss its role in accelerating innovation across the energy system and to highlight its flagship program, *Innovating for Transport and Energy Systems*, which recently concluded in India.

Participants also heard from several UK innovators who were developing their international markets with support from Catapult and learned how their technologies could benefit ADB developing member countries (DMCs).

The event was moderated by **Johnny Bland**, Energy Specialist, Emerging Areas Team, ADB. **Dr. Cindy Tiangco**, Director, Energy Sector Office (Emerging Areas), ADB, opened the session and in her remarks, emphasized that innovation requires shared learning environments and collaboration across sectors to ensure clean energy technologies and solutions deliver inclusive and lasting impact.

Presentation 1: Catalyzing Energy Innovation Through Collaboration

Speaker: Andrew Pease, International Business Lead, UK Energy Systems Catapult

Key Highlights

1. **About ESC** – A not-for-profit innovation hub established by the UK Government to connect academia, industry, and policymakers, driving clean energy solutions across sectors.
2. **Innovating for X (IFX) Program** – A collaborative model that brings together startups, SMEs, and partners to co-develop and pilot clean energy technologies addressing real-world challenges.
3. **Flagship Initiative: Innovating for Transport and Energy Systems (India)** – Supported over 50 SMEs, generating GBP12 million in commercial revenue and creating large-scale industry partnerships with Tata Power and Motivolt.
4. **Approach** – Focuses on challenge-driven innovation, combining technical expertise, policy engagement, and financial enablement to accelerate market entry and scale-up.
5. **Impact** – Demonstrated the importance of cross-border collaboration, data-driven decision-making, and evidence-based policy development for sustainable innovation ecosystems.

Conclusion / Way Forward

The ESC model highlights how structured partnerships and pilot-driven innovation can accelerate energy transition across ADB DMCs, supporting scalable, inclusive, and commercially viable net-zero solutions.

Presentation 2: Reinventing the Grid – The Hybrid Intelligent Transformer (HIT)

Speaker: Matthew Williams, Founder and CEO, Ionate

Key Highlights

1. **Innovation Overview** – Introduced the Hybrid Intelligent Transformer (HIT), a next-generation hardware backbone for the smart grid enabling real-time visibility and precision control of power flow.
2. **Challenges Addressed** – Modern electricity grids face growing instability from renewables and electrification; HIT mitigates blackouts and losses through AI-enabled control.
3. **Performance Benefits** – Allows 33% more renewable and EV integration, 25% higher grid capacity utilization, and 6% reduction in transmission losses.
4. **Business Model** – Uses an “Intel Inside” approach, partnering with established manufacturers globally to scale production efficiently.

5. **Market Potential** – Positioned to modernize and reinforce critical power infrastructure in Europe, North America, and Asia.

Conclusion / Way Forward
Ionate's HIT technology strengthens grid resilience, optimizes renewable integration, and offers scalable solutions for developing countries seeking secure and flexible energy systems.

Presentation 3: Artificial Intelligence for Predictive Infrastructure Management

Speaker: Leo Alder, Co-Founder, AIM Group

Key Highlights

1. **Core Innovation** – AI-driven platform that predicts, monitors, and optimizes infrastructure health using existing data, extending asset life without requiring new sensors.
2. **Efficiency Gains** – Reduces maintenance costs by up to 65%, increases infrastructure lifespan by up to 5 years, and achieves 99% accuracy in identifying early defects.
3. **Real-World Impact** – Demonstrated GBP40 million in cost savings in the UK by preventing structural replacement through predictive AI monitoring.
4. **Adaptability** – Applicable to energy assets such as wind turbines, pipelines, and power plants, using pre-existing data for rapid, low-cost deployment.
5. **Regional Relevance** – Provides high-impact solutions for Southeast Asia, where optimizing limited data and infrastructure budgets remains a key challenge.

Conclusion / Way Forward
AIM Group's predictive AI solutions can help ADB DMCs improve asset reliability, enhance safety, and extend infrastructure lifespan, supporting cost-effective energy transitions.

Panel Discussion

During the discussion, panelists emphasized the importance of **AI integration**, **system interoperability**, and **local partnerships** in achieving energy transition goals. They discussed applications for predictive analytics in managing renewable intermittency, strengthening utility performance, and ensuring grid resilience amid rising self-generation and digitalization trends.

Conclusion / Way Forward

The session underscored how **collaboration, digital innovation, and cross-border partnerships** can accelerate the adoption of clean energy technologies. Leveraging AI, advanced grid systems, and data-driven innovation offers a pathway for ADB DMCs to achieve resilient, inclusive, and net-zero energy futures.