SUMMARY REPORT DOCUMENT

Tri Hita Karana G20 Bali Global Blended Finance Alliance Dialogue "New Era Bali Kerthi Roadmap: Quantum AI, Innovation and Blended Finance for Better Business Better World"

Friday, June 20th 2025

Breakout Workshop 3:
"Green and Renewable Energy Transition"

Introduction

A shift to renewable energy to provide 65% of the world's total electricity supply by 2030 could decarbonize 90% of the power sector by 2050. This could massively cut carbon emissions and help mitigate climate change. Under the Green Bali Plan announced in 2022, Bali aims to achieve net-zero emissions by 2045. Success depends on technological adoption, policy enforcement, and community engagement. This breakout discussion explores the opportunities and challenges of Bali's renewable energy transition that is just, efficient, accessible, and affordable, as well as the need for a multistakeholder program such as HEAL (Happy Energy Action Leadership) to align policy, investments and community-engagement to drive a meaningful decarbonization process.

The breakout session on Green and Renewable Energy was held as part of the broader dialogue to explore sustainable pathways aligned with Bali's Net Zero Emissions (NZE) 2045 vision. The session brought together key stakeholders from government, civil society, and private sectors in a collaborative dialogue format to identify current challenges, explore opportunities, and build collective commitment.

Context Setting by Government Patron

The session commenced with context-setting remarks from **Mr. Samsi Gunarta,** Head of Transportation Department of Bali Provincial Government and **Mr. Aulia Rizky,** Sub-Coordinator of Geothermal Partnership, Directorate General of New, Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources (MEMR).

Mr. Samsi Gunarta, Head of Transportation Department, Bali Provincial Government

Starting off the session, Mr. Samsi shared a comprehensive overview of Bali's current landscape and challenges in driving forward green and renewable energy initiatives, particularly from the transportation sector perspective. His remarks highlighted several structural and systemic issues that need to be addressed to ensure sustained progress toward Bali's low-emission development goals.

Mr. Gunarta began by explaining that the Project Management Office (PMO), previously responsible for coordinating major infrastructure and sustainability programs, is currently paused due to a budget freeze. However, he noted that these programs are still being integrated into Indonesia's Government Work Plan (RKP). To be included in the RKP, initiatives must be ecosystem-enabling—designed to foster broad government ownership and allow for multi-stakeholder execution, emphasizing both technical soundness and institutional scalability.

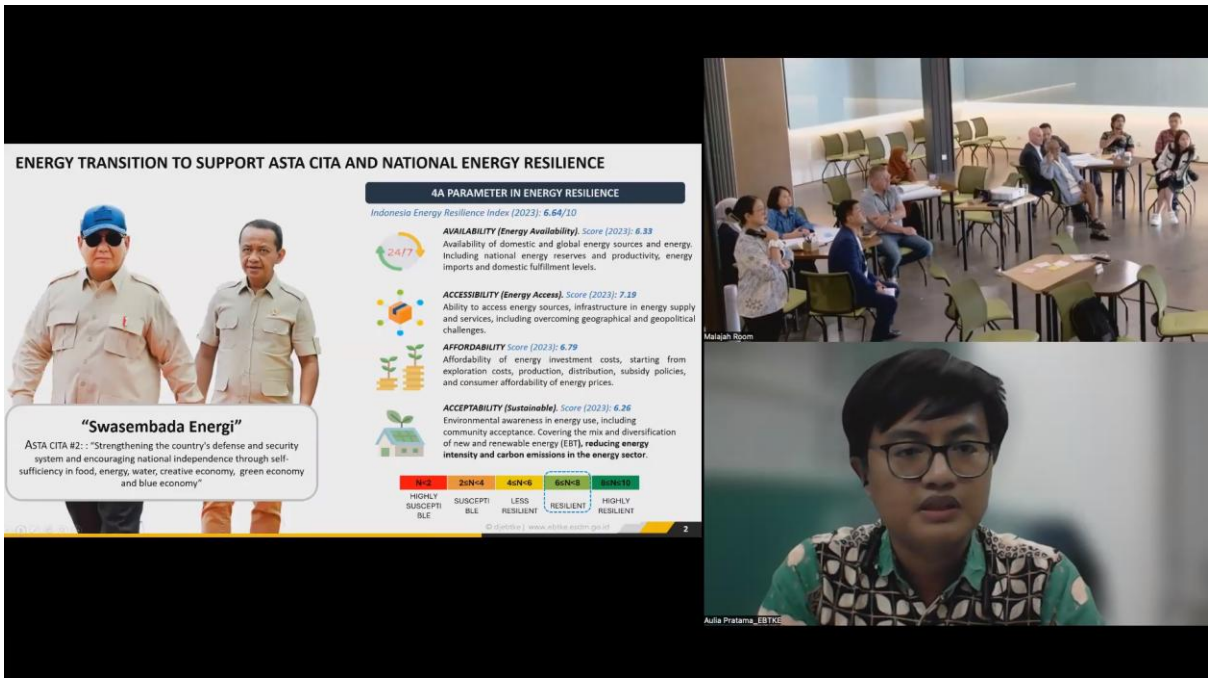
On governance and execution, Mr. Gunarta stressed the importance of oversight and facilitation, especially in securing financing and ensuring delivery. He proposed that sectoral agencies (OPD) and execution partners, including private actors and regulators, serve as stewards to guarantee program continuity. Yet, he acknowledged a major challenge: insufficient financial backing. He cited the example of the Millennium Challenge Corporation (MCC), whose support was discontinued due to political changes in the U.S., illustrating the fragility of international funding streams.

Despite progress in technical assistance, Mr. Gunarta noted that financial implementation has lagged, with limited on-the-ground outcomes. Key infrastructure and energy programs are either in development or ongoing, including the Bali Subway/MRT system, BRT Trans Sarbagita, Ubud–Tegalalang integrated transport service, EV charging infrastructure, solar energy development in East Bali, and renewable energy transition in Nusa Penida.

Funding was identified as the main bottleneck, particularly for transportation and energy projects. An estimated IDR 14 trillion is required, not including production costs. To overcome these hurdles, he advocated for more focused and smaller-scale working meetings to address operational and financial issues in depth.

Despite the challenges, some promising initiatives are underway. The Bali Provincial Government's Department of Transportation has started implementing ESG principles in the taxi sector and is setting up a formal operational unit. Additionally, the department is working to secure funding for electric vehicle (EV) fleet expansion, with a planned pilot of 2–5 EV units to demonstrate viability and guide future scaling

Mr. Aulia Rizky, Sub-Coordinator of Geothermal Partnership, Directorate General of New, Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources (MEMR)



Mr. Aulia Rizky presented Indonesia's energy transition roadmap to support national resilience and the country's commitment toward Net Zero Emission (NZE) by 2060 or sooner.

Indonesia's energy transition strategy, framed under the national vision of "Swasembada Energi" (Energy Self-Sufficiency) and aligned with ASTA CITA #2, focuses on securing national energy resilience as part of a broader effort to reinforce defense, food, and economic independence. The Directorate General of New, Renewable Energy and Energy Conservation (DJEBTKE) introduced the 4A framework to assess resilience: (1) Availability, scoring 6.33, reflects the state of energy reserves and reliance on imports; (2) Accessibility, scoring 7.19, gauges access to energy infrastructure and geopolitical risks; (3) Affordability, scoring 6.79, considers costs from production to consumer pricing; and (4) Acceptability, scoring 6.26, evaluates public acceptance and environmental sustainability. These indicators place Indonesia in the "Resilient" category, though improvements are needed in sustainability awareness and emissions reduction.

To support long-term decarbonization, the government has outlined a Net Zero Emission (NZE) 2060 roadmap, divided into three phases. The first phase, the High Carbon Energy Era (until around 2030), introduces green transportation, energy management systems, and begins the integration of green hydrogen and ammonia, with GHG emissions projected at 1,028 $MtCO_2e$. The second phase, the Low Carbon Energy Era (2030–2050), will see a shift to solar PV dominance, increased electrification, and the adoption of CCS and co-firing technologies, reducing emissions to 558 $MtCO_2e$. The final phase, the Free Carbon Energy Era (2050–2060), targets full electrification, geothermal and biofuel expansion, and a complete coal phase-out, bringing emissions down to 129 $MtCO_2e$.

To achieve NZE 2060, Indonesia is pursuing several key strategies: scaling up renewable energy both on- and off-grid, deploying CCS and CCUS technologies, investing in new energy sources like nuclear and hydrogen, electrifying various sectors, promoting energy efficiency and behavioral change, and enforcing a moratorium on new coal power development, as regulated under Presidential Regulation 112/2022.

Discussion Summary

Discussion 1: Identifying Bottlenecks & Challenges

What key bottlenecks or challenges do you think are not getting enough of our collective attention in transforming Bali's energy sector to support the transition toward a green and circular economy, as envisioned in the New Era Bali Kerthi Roadmap? And what is keeping us from giving it attention?

1. Limited Access to Green Funding

Participants underscored the **low accessibility to green financing mechanisms**, especially at the regional and local levels. Despite the availability of climate finance globally, many stakeholders in Bali—especially smaller project proponents and local innovators—struggle to connect with financing instruments that are appropriate for their scale and readiness. This disconnect hampers the development of viable green energy initiatives.

2. High Cost of Capital for Clean Energy Projects

The discussion revealed that **the cost of capital for renewable and clean energy projects in Indonesia remains relatively high**, which significantly impacts the financial feasibility of many initiatives. Risk perception among financial institutions, coupled with the absence of supportive de-risking tools, continues to deter private sector investment in the sector.

3. Capacity Gaps in Project Development and Financial Literacy

A recurring theme was the **limited local capacity to design, structure, and pitch clean energy projects in ways that meet bankability standards**. Many developers, particularly at the community or regional level, lack the financial literacy and technical skills needed to align proposals with investor expectations. This capacity gap limits the pipeline of investable projects in Bali and leads to missed opportunities for funding.

4. Underestimated Link Between Air Pollution and Climate Change

While climate change is widely discussed, **the connection between local air pollution and broader climate challenges is not sufficiently recognized or prioritized**. Participants noted that pollution from transport and diesel-based electricity generation continues to pose both health and environmental risks, but receives limited policy attention. Addressing this issue could offer dual benefits—improving public health while contributing to emission reductions.

Discussion 2: Identifying Opportunities to Progress

What existing strengths, capital, or momentum can we build on? Where are the untapped opportunities for real progress towards green and renewable energy transition for Bali? What are some first steps we can take to create pathways for success?

1. Bali's Attractive Economic Growth and Rising Energy Demand

Participants recognized that Bali's strong economic growth and dynamic tourism-driven development present an important opportunity to shape future energy use. As the province continues to modernize, electricity and energy demand is expected to rise—creating a strategic entry point for clean energy investments that are aligned with Bali's environmental and cultural values.

Harnessing this economic momentum can help position green infrastructure, particularly in energy and transport, as central components of Bali's growth story.

2. Momentum from the Newest RUPTL (Electricity Supply Business Plan)

The latest National Electricity Supply Business Plan (RUPTL) was cited as a key policy momentum that supports Bali's green transition. This most recent version of RUPTL—referred to as the "greenest RUPTL" to date—includes provisions for increased grid development, integration of renewable energy, and a more diversified energy mix.

Participants noted that this opens up pathways for **greater renewable energy penetration**, especially in areas currently dependent on fossil-based generation such as diesel.

3. Revisit and Reinforce Renewable Energy Integration into the Power Grid

A strategic opportunity identified was the reassessment of renewable energy's role in Bali's power grid. There is untapped potential to revisit and revise current regulatory and technical frameworks to enable higher absorption of renewables into the grid. This includes enhancing grid flexibility and stability, deploying energy storage solutions and encouraging distributed energy resources (e.g., rooftop solar,

microgrids). By strengthening these systems, Bali can better accommodate intermittent renewable sources while ensuring reliability and affordability.

Discussion 3: Reflections & Taking Action

What specific actions or commitments do I feel called to take to contribute to bridging the gap between intention and implementation in Bali's green energy transformation? What partnership, advocacy, or innovation can I champion starting today?

1. Strengthen Cross-Sector Partnerships

Participants expressed a strong desire to **collaborate with academic institutions**, such as **Tsinghua University**, the **London School of Economics (LSE)**, and the **Bali NZE Coalition**, to mobilize research, policy insight, and capacity to support Bali's green transition. These partnerships are seen as a catalyst to bring **global expertise into local practice**.

2. Revisit Utility-Scale Renewable Energy Development

Several contributors advocated for a **reassessment of large-scale renewable energy project plans** in Bali, particularly those that had been previously proposed but not implemented. There is growing momentum to **revive utility-scale solar, wind, or hybrid projects**, provided they are designed with community and environmental safeguards.

3. Connect Global Innovation with Local Relevance

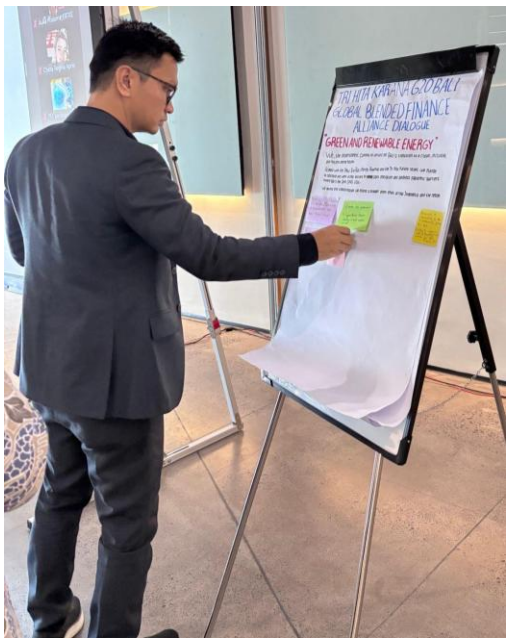
There is a clear call to **bridge global sustainable knowledge and technologies with Bali's local context**. This includes finding a balance between **imported solutions and domestic capabilities**, ensuring that the transition supports **local job creation** and **inclusive economic development**.

4. Engage Local Government and Policy Stakeholders

Participants emphasized the importance of **actively involving local government actors** in Bali throughout the energy transition process—not only for political endorsement but also to ensure alignment with regional development priorities and regulations.

5. Empower MSMEs in the Green Economy

There was a shared commitment to **support micro, small, and medium enterprises (MSMEs)** in participating in and benefiting from the green transition. This involves enabling **access to green technologies**, **energy efficiency solutions**, and **green financing** tailored to small-scale actors.



6. Increase Bali's Renewable Energy Absorption and Public Awareness

Participants proposed actions to **enhance Bali's renewable energy absorption capacity**, including infrastructure upgrades and grid integration strategies. In parallel, efforts are needed to **increase public awareness and adoption** through targeted outreach, education campaigns, and stakeholder engagement.

7. Plan for End-of-Life Renewable Energy Solutions

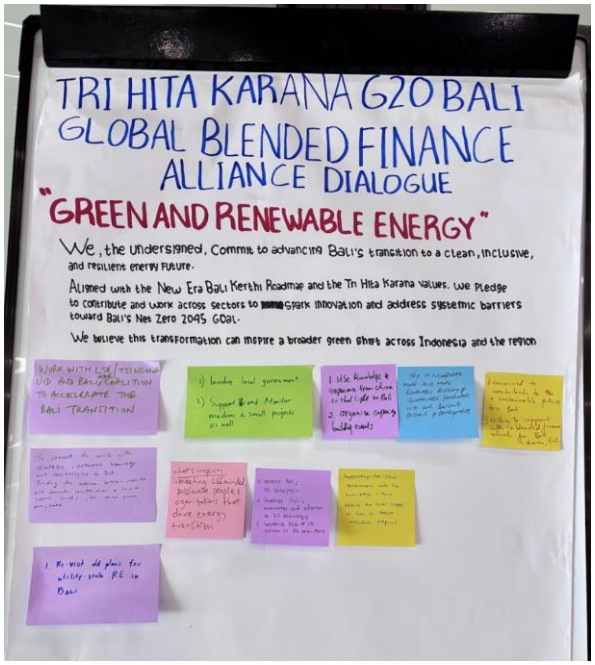
A forward-thinking insight from the group was the need to **integrate end-of-life (EOL) solutions** into renewable energy planning. This includes the **responsible disposal or repurposing** of solar panels, batteries, and other technologies to ensure environmental sustainability throughout their lifecycle.

8. Organize Capacity Building and Skills Development

Lastly, participants committed to **organizing and participating in capacity-building initiatives**—ranging from technical training to policy workshops—to accelerate the skills and knowledge needed for successful green energy deployment in Bali.

Commitments

The result from the last discussion is built upon the group's commitment as below:



"We, the undersigned, commit to advancing Bali's transition to a clean, inclusive, and resilient energy future.

Aligned with the New Era Bali Kerthi Roadmap and the Tri Hita Karana values, we pledge to contribute and work across sectors to spark innovation and address systemic barriers toward Bali's Net Zero 2045 goal.

We believe this transformation can inspire abroader green shift across Indonesia and the region."