ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy Innovations, Regional Cooperation and Integration, and Financing Solutions

2–6 June | ADB Headquarters

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ADB

Strengthening Critical Minerals to Manufacturing Value Chains for Sustainability and Resilience

Lessons learned from implementing low-carbon power supply in mines in developing Asia

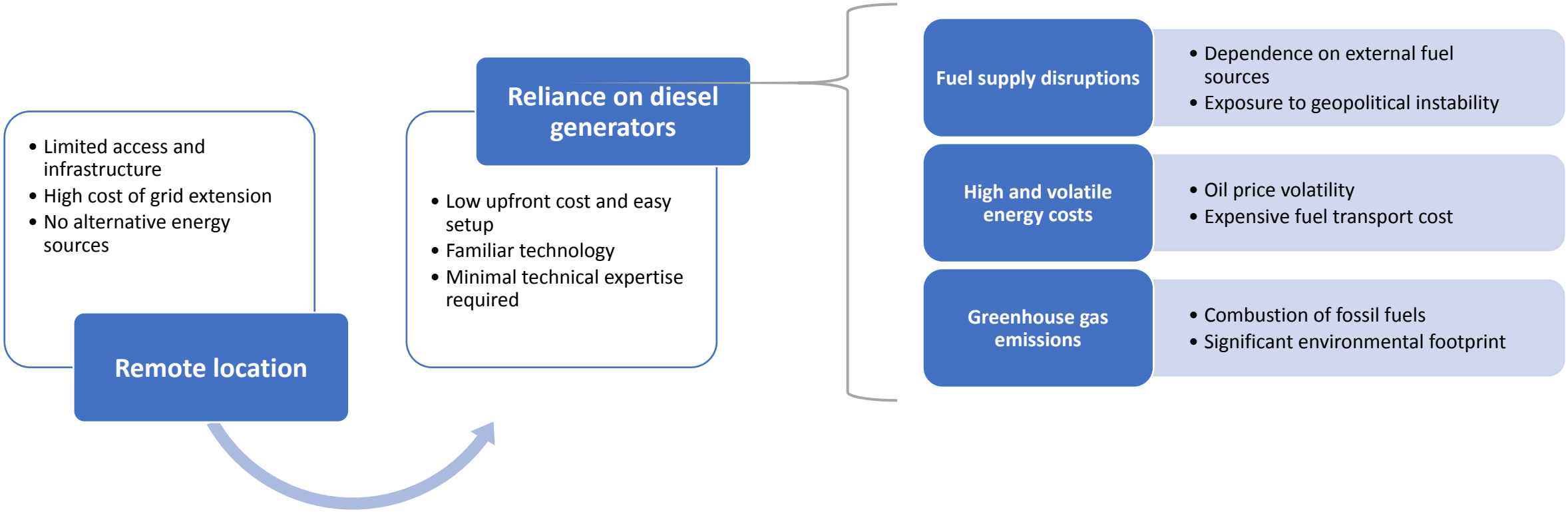
5 June 2025 | 02:00 PM – 03:30 PM (GMT+8)

In cooperation with

DORNIER Group

The Challenge: Dependance on Diesel

Mines and island grids often rely heavily on diesel generators



Large industrial consumers may face comparable challenges.

The Opportunity: Embracing Renewable Energy

Solar, wind, and battery storage offer a compelling alternative

- Lower O&M costs
- Long-term price stability

- Increased resilience to adverse conditions
- Diversified energy sources

- Reduced carbon footprint
- Compliance with ESG commitments

- Improved shareholder value
- Higher long-term asset value

Integrating Renewables in Mining & Processing in Asia

- **Crucial for mining operations and downstream processing (e.g. smelting), both for mining companies and for industrial off-takers:**

Opportunities

Hybrid Solutions	Cost Advantages	Power Purchase Agreements (PPAs)	Floating PV
Highly relevant for reliable power supply.	Lower implementation costs compared to Europe, Africa, or the Americas (favourable logistics, customs, taxation).	Fixed-tariff PPAs common for IPP projects, enabling reliable forecasting.	Frequently considered and can achieve higher acceptance than ground-mounted solar.

Challenges

Tropical Storms	Financial Challenge	Long-Term Perspective	Spatial Constraints
High wind loads necessitate robust designs; fixed-tilt solar PV is often preferred.	Low conventional electricity prices create pressure on financial models.	Grid-connected projects require longer operational lifetimes (up to 20 years payback) due to low energy prices.	Site-specific analysis is crucial; deforestation/rainforest encroachment often restricted.

Solutions Are Different for On-Grid & Off-Grid and Each Project

Grid connected mines

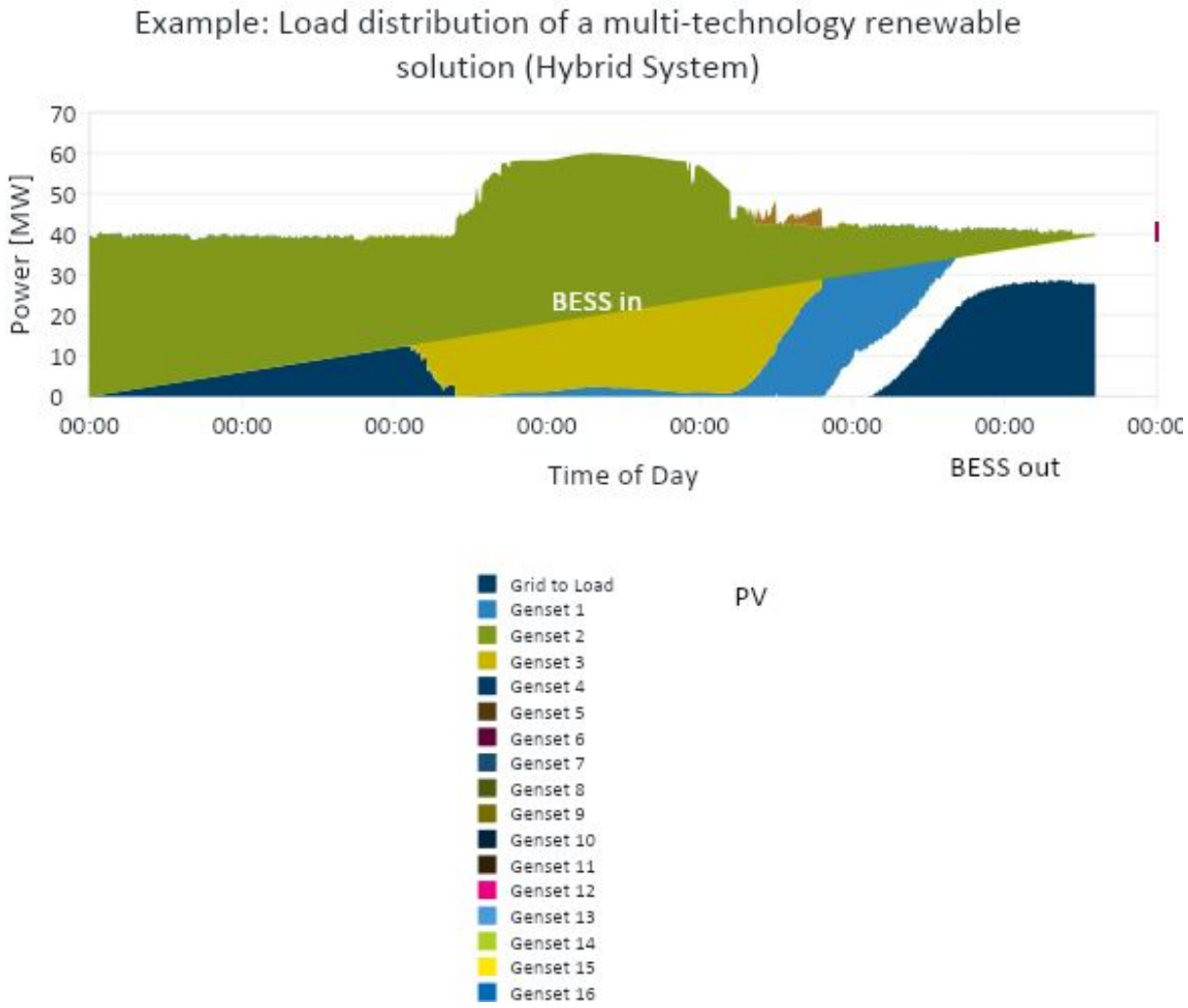
1. Baseline is primary energy factor of the grid
2. Reliablility of grid supply (load shedding, ...)
3. Option for private green PPA (Hydro, PV, Wind)
4. Option for on-site generation and/or storage

Off-grid mines

1. Baseline is fossil fired power generation
2. Add on-site generation and storage (site specific)
   - Solar (15-50% RE share)
   - Wind (50-65% RE share)
   - Energy storage (intra-day fluctuations)
   - Keep fossil generation as back-up

Technical and economic feasibility

1. Every mine requires a tailored solution
2. Determine mine and fleet decarbonization options
3. Based on feasibility and budget implement in stages



Conclusions and Summary: 100% renewables is a target - phased implementation is key

RE value drivers large-scale consumers

- Lowest energy cost
- Hedging operating cost
- Increase profitability
- Extend economic reach
- Reduce carbon footprint
- Compliance with ESG commitments

Phased approach: from “economic now” to “economic next”

- Lowest hanging fruit: renewable energy generation
- Next: energy efficiency, electrification of transport
- Quick pay-off investments first
- Observe market for next stage decision
- Off-grid mini-grids: Best economics for renewables
- On-grid: In fair cost environments, renewables do pay off

Contact Information

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VENTURE THE IMPOSSIBLE
TO ATTAIN THE BEST...

PROF. CLAUDE DORNIER

Dornier Renewables covers all main Renewable Energy Technologies

- Solar Photovoltaic, Floating Photovoltaic
- Concentrating Solar Power, Concentrating Solar Heat & Cooling
- Wind
- Biomass
- Battery Electric Storage System (BESS)
- Other Storage Options: Molten Salt, Pumped Hydro
- Grid & Transmission

Dornier Renewables

TURNOVER	EUR 20 Million (2024)
PROJECTS	70 completed on average per year
EMPLOYEES	95 Professionals
SERVICES	○ Advisory on Renewable Energy (RE) projects ○ Solar, Wind, Hybrids, Biomass ○ From Concept to Implementation ○ Installation PV & Wind ○ Operation & Maintenance Wind, Biomass ○ Grid & Energy Storage

MILESTONES	○ Over 20 GW of Renewable Energy Projects, from Engineering to Erection
	○ Commercial & Industrial Decarbonization:
	  ○ Mining Industry
	  ○ Industrial & Municipal Sites
	  ○ Airports
	○ Floating Photovoltaic

COUNTRIES	> 50 Countries

Engineering: Based on holistic analysis, we optimise your project design and implement it

OUR APPROACH

CLIENT NEEDS ANALYSIS
- Energy Requirements,
- Generation Cost
- Grid Conditions

RENEWABLE RESOURCES
Solar, Wind, Hydro etc.
(on-site, off site)

FINANCIAL REQUIREMENTS
On-balance (EPC)
Off-balance (IPP)
Rental/Lease

RENEWABLE TECHNOLOGY OPTIONS
PV, Wind, Other
Energy Storage
Grid Connection

OPTIMIZED CONCEPT
Technical Concept & Sizing / Economics / Timeline

COMPETITIVE SELECTION
Procurement of RE Plant or PPA

IMPLEMENTING
Building of the RE Project

Dornier Renewables Value Proposition

We tailor leading, holistic renewable energy solutions for our customers.

We optimize returns rather than energy yield or MW’s.

Efficiently manage implementation.