Session 1.2: Rural Clean Energy: A Crucial Solution for NDCs

A community-based PV mini-grid Management in Indonesia: *What we have learned so far?*

Virtual Asia Clean Energy Forum (ACEF)

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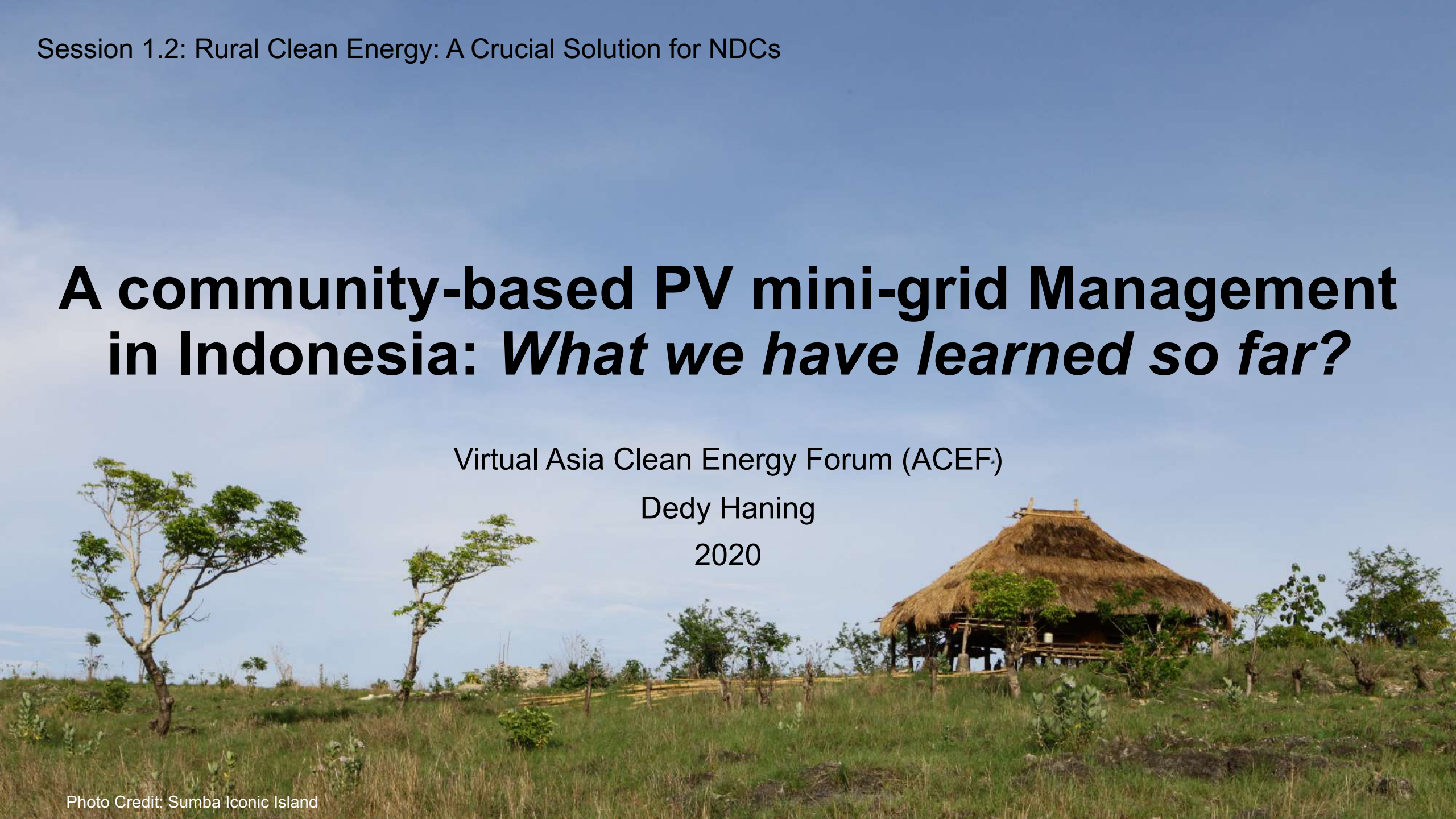


Photo Credit: Sumba Iconic Island

Introduction to Rural Electrification Program by MEMR in Indonesia from 2012-2017

(MEMR – The Ministry of Energy and Mineral Resources)

- Close to 700 units (villages) of PV mini-grid across the archipelago
- More than 75,000 households, minimum of 2,000 jobs creation
- Close to 50 MW capacity added, offsets around 2,610 tons CO2 per year
- Growing opportunities for skilled employment through Engineering, Procurement and Construction (EPC) services

The map does not include mini-grids developed through other ministers

Source: GIZ http://remap-indonesia.org/

Geographic Challenge

Photos from Tepal in Sumbawa, Muara Enggelam in East Kalimantan and East Nusa Tenggara – limited infrastructure especially in eastern Indonesia

The Program Phases

Feasibility study and proposal by local goverment to the MEMR DGNREEC*

Evaluation of the proposal and tender process

Installation and training

Commisioning

Hand over to Provincial government (current Law no 23/2014)

Managed by local operators, mostly *Kelompok Masyarakat (Pokmas)*

Not clearly defined and the provincial government lacks leverage

*Directorate General of New and Renewable Energy and Energy Conservation

The Challenges

- The *Pokmas* does not have a strong establishment, different with cooperatives or Village Owned Company (BUMDes) leads to weak management
- Weak bargaining power with the community – reflected on failure on fee collection/ tariff, conflicts with the community, little transparency on the use of the fund, abondance of the operation
- Weak linkage with technology suppliers and no O&M company support* (e.g. Hivos established RESCO Bright Sumba, a local O&M company servicing off-grid installations)
- The business is financially is not self-sustain, in need of funding interventions

Main Lesson Learnt

Photo Credit: Sumba Iconic Island

01 Leadership

- Ownership is important but leadership is crucial to the sustainability of PV management
- Visionary PV-management is rare
- Visionary head of the village, despite the argument on the clear asset ownership and fear of being charged with miss-management of the budget
- Successfull cases exist but rare

Photo Credit: GIZ ELREN

Leadership does matter!

Cooperative Peduli Kasih, Mr. Umbu Hinggu Panjanji, manages two hydro systems, one windmill and pv hybrid in Sumba

BumDes Tanjung Hutan, Ms. Nopara manages 3 solar PV systems in District of Karimun, the Riau Islands Province

Photo Credit: Umbu Hinggu and GIZ ELREN

Leadership does matter!

BUMDes Bersinar Desaku, Desa Muara Enggelam, East Kalimantan, Mr. Ramsya, manages 30 kWp with O&M support from a national level EPC company

Photo Credit: GIZ and Ramsya

Leadership does matter!

Cooperative Puncak Ngegas, Mr. Ahdar, manages 2 hydro (25 and 40 kWp) in Sumbawa West Nusa Tenggara

Cooperative Arung Pulau Moyo, Rusni, manages 15 kWp
In Moyo Island – West Nusa Tenggara

Photo Credit: both cooperatives and GIZ ELREN

02 A gap between technology advancement and operators' capacity

- The more advanced the technology, the more difficult to be operated by village operators
- Lack of STEM education background among operators
- Short training allocated during installation
- No more training support
- EPC support is limited during the warranty period of one year
- Lack of monitoring and supervision from the local provincial government

Photo Credit: GIZ Endev and RESCO Sumba Terang

03 Post-installation

- Rural electrification goal is limited **to installation of facilities** – short term outputs with *an expectation that grid extension will reach the site in no more than three years.*
  - There is no clear plan on what to do when grid arrives *PVs are grid-connected ready
  - Decommissioning plan has not been developed
  - No clear plan on areas that are likely to be remain ‘off-grid’
  - No fund available for mini-grids to access when facing distruptions on their operation occur e.g. Replacement of batteries, recover from force majeur events etc.
- Government constraints on budgeting and complicated coordination line lead to:
  - Missing opportunity to nurture more innovations e.g. Project structure, financing, technology, etc
  - O&M sector is not being intervened
  - Weak knowledge anchoring to the provincial government
  - Weak coordination inter-ministers

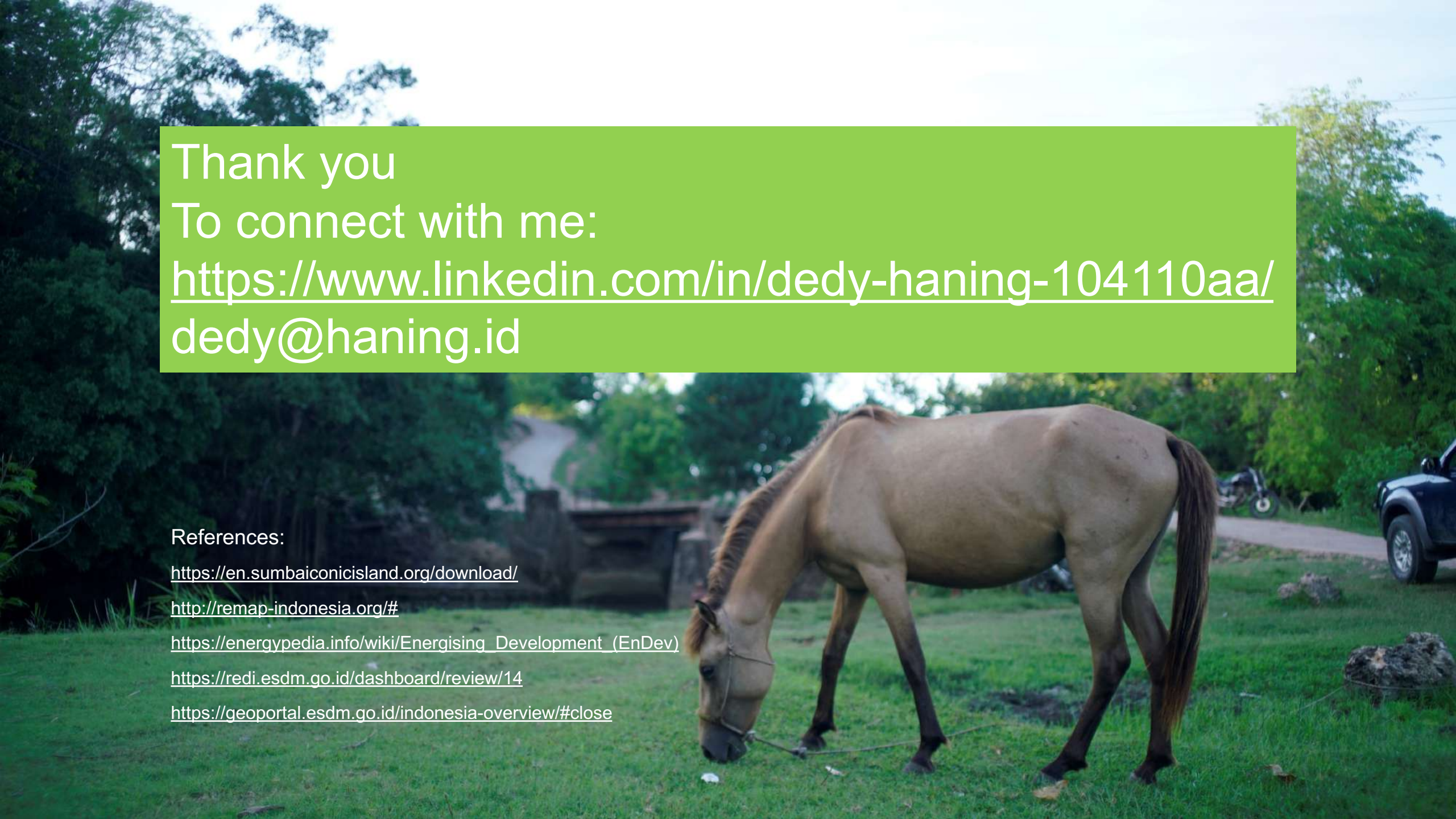
Photo Credit: RESCO Sumba Terang

Recommendations

1. Allow strong establishment of local operators
2. Inter-ministers corporations, with a clear task and responsibilities
3. Transfer of knowledge to provincial government knowledge
4. Ownership has to be created with the destined asset holder before installation in forms of operational budget committment and safeguarding functions
5. Thrive innovations including exploring different management structure, financial structure and partnersips with private sector or third sector and vocational institutions

Supported through ELREN GIZ

SOLID, Rural Electrification Solutions is an inter-ministers platform, established in 2018 by MEMR – Directorate General of New and Renewable Energy and Energy Conservation – aims to develop fruitful discussions and collaborated projects for rural electrifications among ministers



Thank you
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