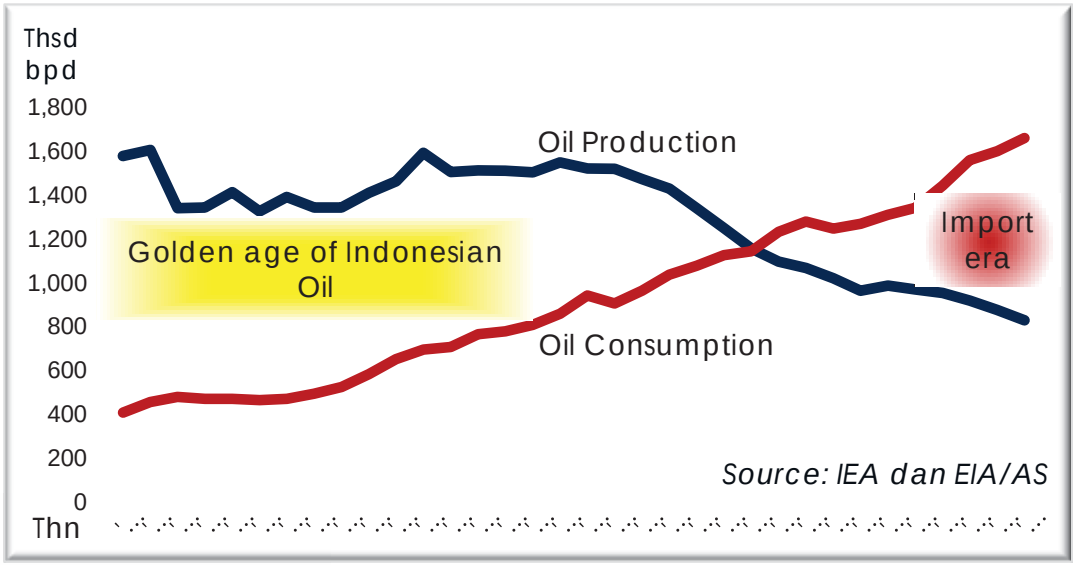
KEMENTERIAN ENERGI
& SUMBER DAYA MINERAL

INVESTING IN NEW AND RENEWABLE ENERGY IN INDONESIA

Energy for All Investor Forum
Manila, 16 June 2015

1 THE PARADOX OF INDONESIAN ENERGY - NO LONGER AN OIL EXPORTER

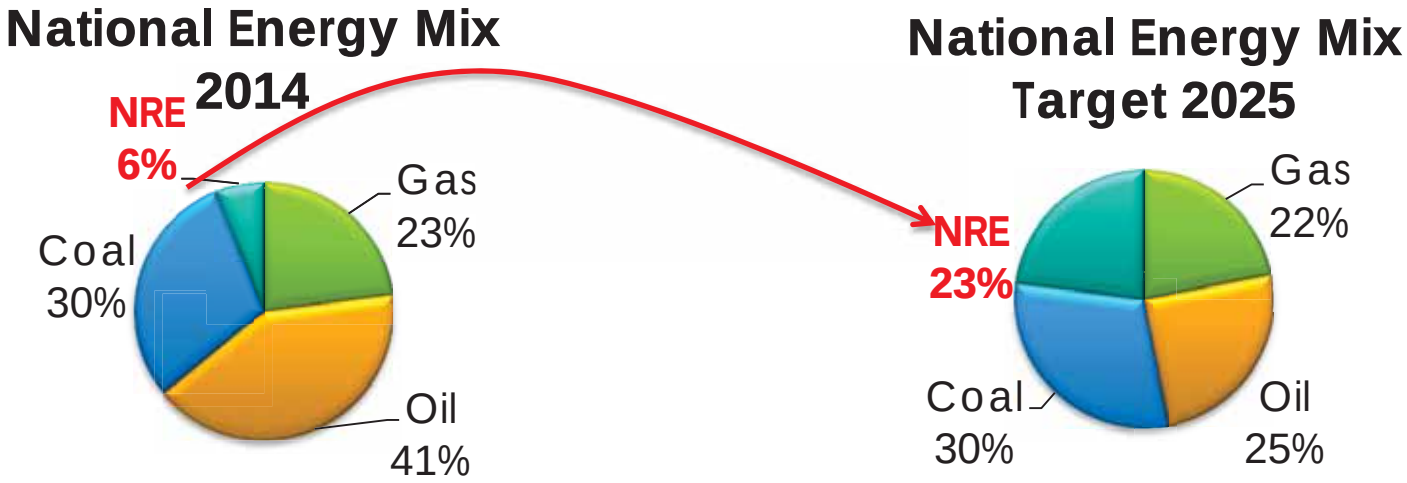
Historical changes of Indonesian energy, from Member of OPEC to Oil importer



"Proven reserves of petroleum are feared to be exhausted within 10-13 years"
-RPJMN 2015-2019, 7 January 2015

2 THE ENERGY SITUATION IN INDONESIA - TARGETING 23% FROM NRE SOURCE

17% increase of new & renewable energy (NRE) in 11 years



NO	NRE	RESOURCES	INSTALLED CAPACITY (IC)	RATIO OF IC/RESOURCES (%)
1	2	3	4	5 = 4/3
1	Hydro	75,000 MW	7,572 MW	**10.1 %**
2	Geothermal	28,910 MW	1,403.5 MW	**4.9 %**
3	Biomass	32,654 MW	1,717.9 MW	**5.4 %**
4	Solar	4.80 kWh/m^2/day	48.05 MW	-
5	Wind	3 – 6 m/s	1.87 MW	-
6	Ocean	49 GW ***)	0.01 MW ****)	-
7	Uranium	3,000 MW *)	30 MW **)	-

*) Identfied in the Kalan Basin in West Kalimantan

**) As a center of research, non-energy

***) Source: National Energy Council

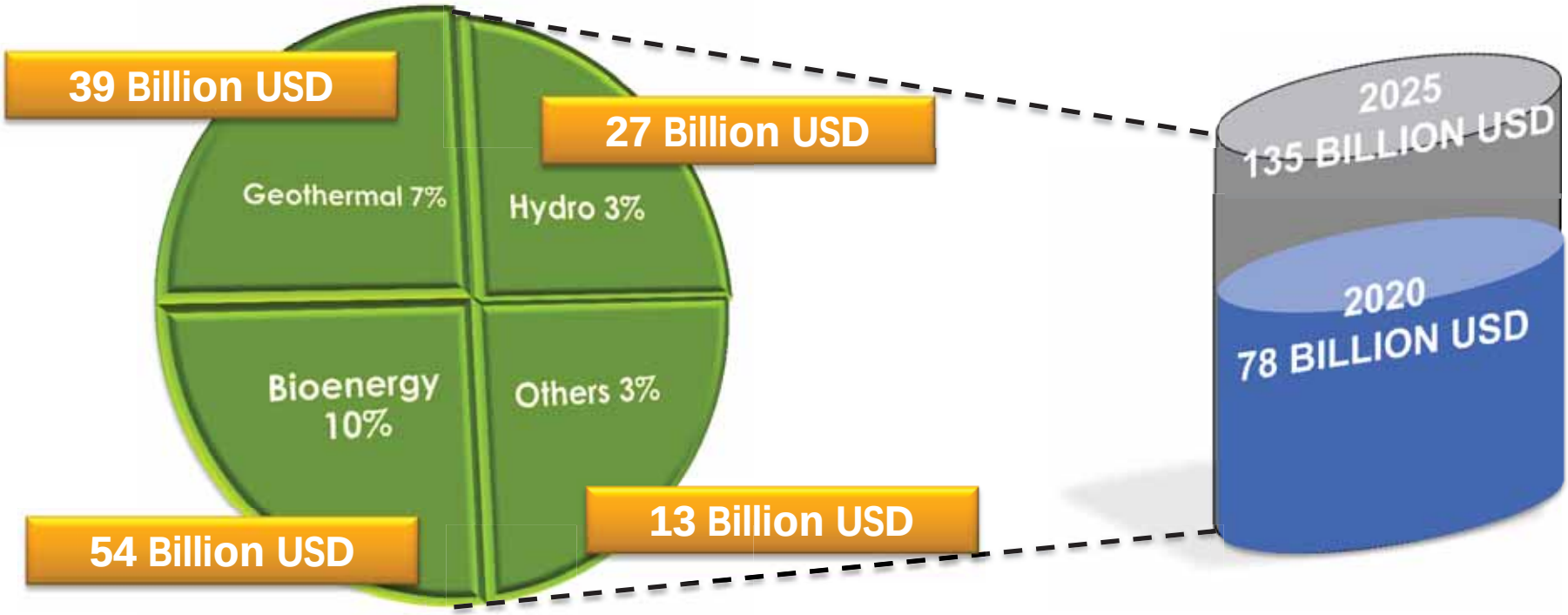
****) BPPT's Prototype

Indonesia NRE potential could reach more than 200.000 MW. Today, Indonesia has just used 6.8% of the total NRE Potential.

INVESTING ON NRE 2015 – 2025

23% NRE

A TOTAL OF 135 BILLION USD INVESTMENT IN 2025



4 CHALLENGES FOR INVESTMENTS ON NRE

Challenges

- Access to site condition
- Availability of logistic facility (ports, road availability)
- On-site main resources
- Availability of local construction company and material

Risks Factors

- Land/site contractual risk
- Capital cost over-run: licenses, logistics (transport facilities), construction delay, grid interconnection, etc
- Technology: life-time and efficiency of module and equipment, grid reliability
- Financial viability of PLN (long-term PPA)
- Disasters: flood, fire, earthquake

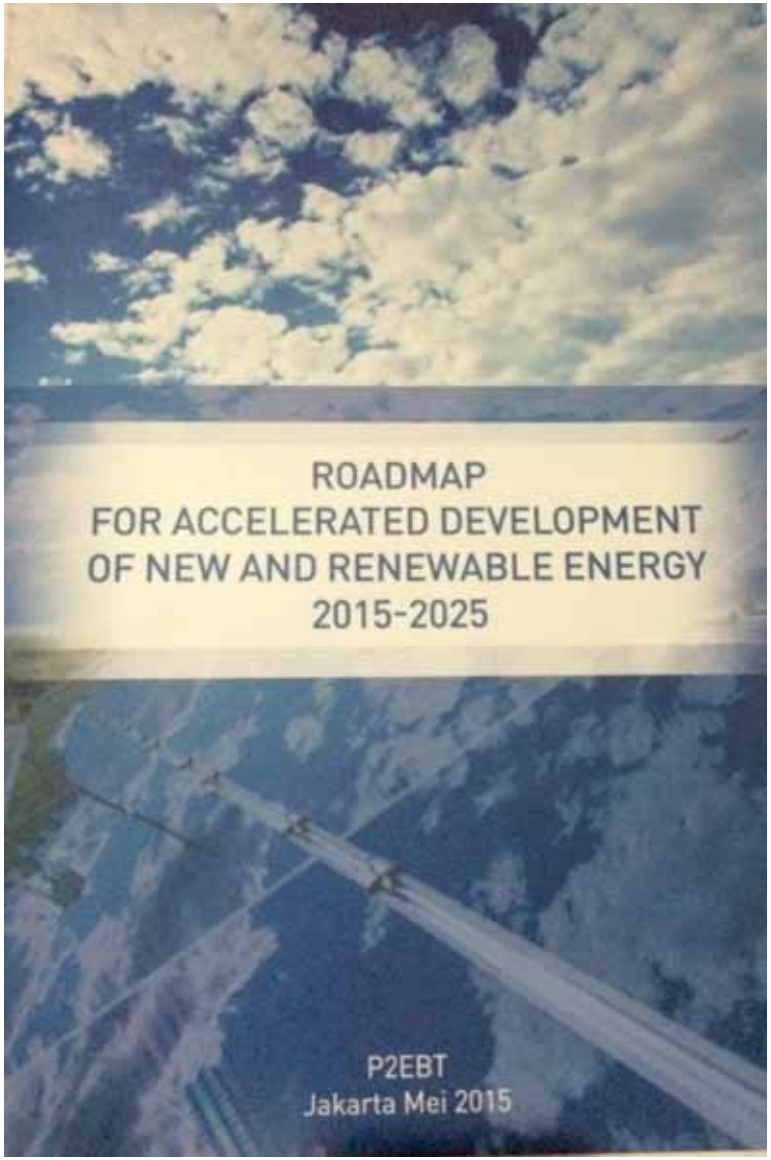
Tariff

- Existing FiT shall be attractive enough for the investor to cover risk and gain expected financial return (ROR > 15%)
- Technology supply relies on mainly from offshore

Barrier to entry

- Capacity and technology transfer: lack of experience of local investor to build and operate utility scale plants needs experience partner
- Low learning curve, slow market penetration
- Limited access to most efficient technologies

ROADMAP FOR ACCELERATED DEVELOPMENT OF NRE



FOUR PILLARS OF BREAKTHROUGH

1 POLICY

Issuing policy package, facilitating good energy industries development for all NRE program and investment.

2 FINANCIAL

Innovative funding mechanism that allows the channeling of various sources of funding to renewable energy initiatives.

3 TECHNOLOGY

Breakthrough of technological advancement in the development of renewable energy.

4 CAPACITY

Increase in public and industrial capabilities in the supply and use of renewable energy.

6 SETTING UP INVESTMENT CLIMATE FOR NRE DEVELOPMENT

INVESTMENT COORDINATING BOARD

- One Step Service (OSS) for license application.
- Interlink with sectoral Ministries.

MINISTRY OF FINANCE

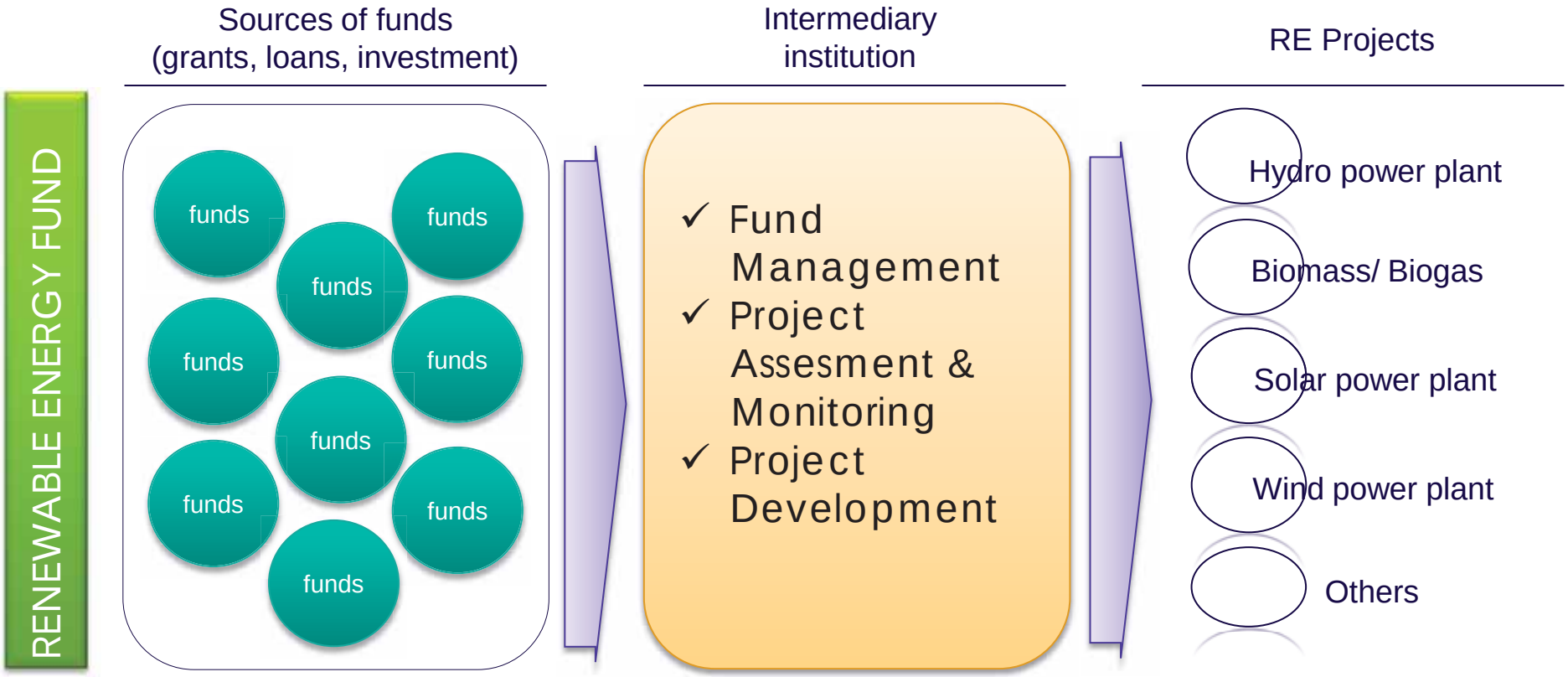
- Fiscal Incentives
- Import Duty Facilities
- Tax Holiday
- Tax Allowance
- PPP facilities for NRE projects: i) PDF; ii) VGF; iii) Guarantee; iv) Infrastructure Fund

MINISTRY OF ENERGY AND MINERAL RESOURCES

- Data and Information Update
- Capacity building to stakeholders
- Subsidies and infrastructure support to poor and remote communities
- Policy on Tariff
- Facilitation-based planning and budgeting

RENEWABLE ENERGY FUND

7 RENEWABLE ENERGY FUND TO ACCELERATE NRE DEVELOPMENT

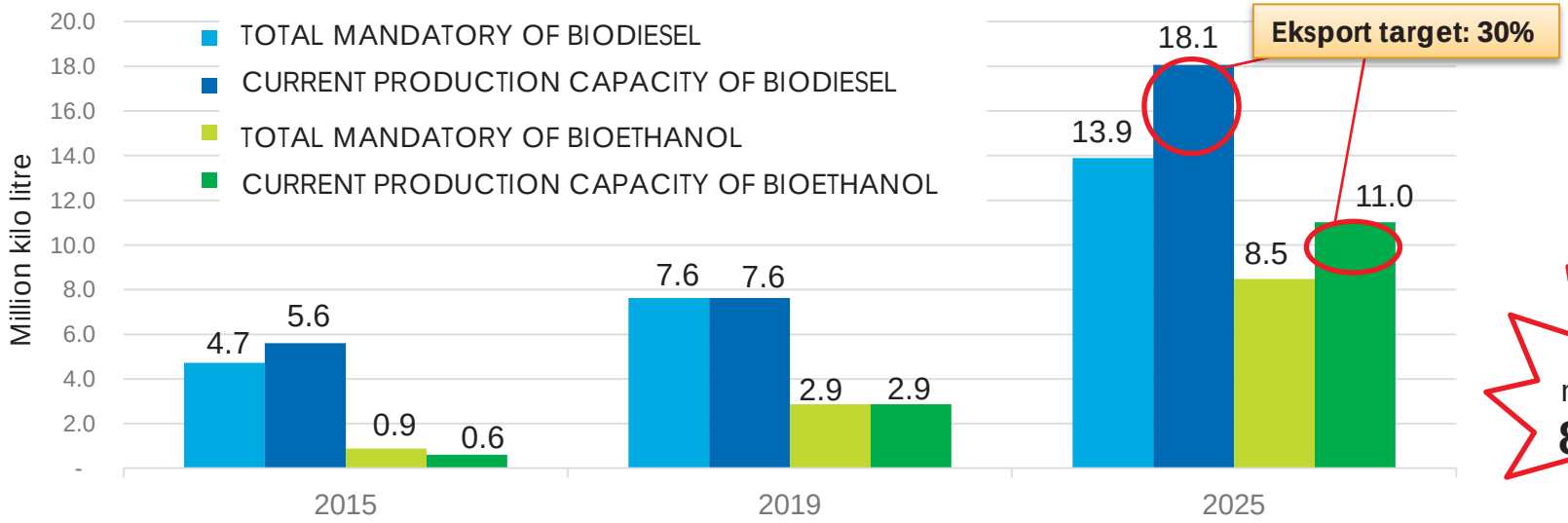


Supported by: PT SMI, as SOE in financing PPP infrastructure development
Indonesian Infrastructure Guarantee Fund (IIGF), as SOE providing guarantee facility for infrastructure development

SOME CASES OF INVESTMENT OPPORTUNITIES:

1. BIOENERGY INDUSTRY
2. SOLAR PV INDUSTRY
3. BALI AS CLEAN ENERGY ISLAND

BIOFUEL SUPPLY SCENARIO 2015-2025



Total land needed till 2025: **8.1 mio Ha**

	till 2019	till 2025
Target of biodiesel production capacity increase	2.0 millions kiloliter (covered from existing production of CPO)	10.5 millions kiloliter (covered from the ratio between CPO and sustainable plants = 50:50)
Total land needed  NYAMPLUNG JARAK KEMIRI SUNAN	-	**3.3 millions Ha**
Target of bioethanol production capacity increase	2.3 millions kiloliter	8.7 millions kiloliter
Total land needed  SUGARCANE SWITCHGRASS CASSAVA	**1.0 millions Ha**	**3.8 millions Ha**

STRENGTHENING BIOENERGY VALUE CHAIN AND INDUSTRY

APPROACH ON STRENGTHENING BIOENERGY SUPPLY CHAIN AND INDUSTRY

Assertiveness of Government policies presents on every stage of bioenergy supply chain

DEGRADED LAND AND LOCAL COMMUNITY

- Planting on degraded lands.
- Diversification of feedstock type based on soil characteristics and localities.
- Collaboration with local people & local government.

FEEDSTOCK PRODUCTION

CONNECTIVITY AND FEEDSTOCK PRICE

- Encourage proper transport modes with policy and incentives.
- Maintain feedstock price with incentive/subsidy.
- Maintain feedstock supply with Domestic Market Obligation policy.

FEEDSTOCK LOGISTICS

PRODUCTION INCREASE

- Encourage new establishment of bioenergy factories or production capacity increase with incentives.
- Support blending plant technology.
- Develop intermodal network & connectivity.

BIOENERGY PRODUCTION

DISTRIBUTION CAPACITY AND SUPPLY

- Encourage proper bioenergy distribution modes with policy and incentives.
- Increase network capacity.
- Maintain supply with Domestic Market Obligation policy.

BIOENERGY DISTRIBUTION

INDUSTRY AND MARKET

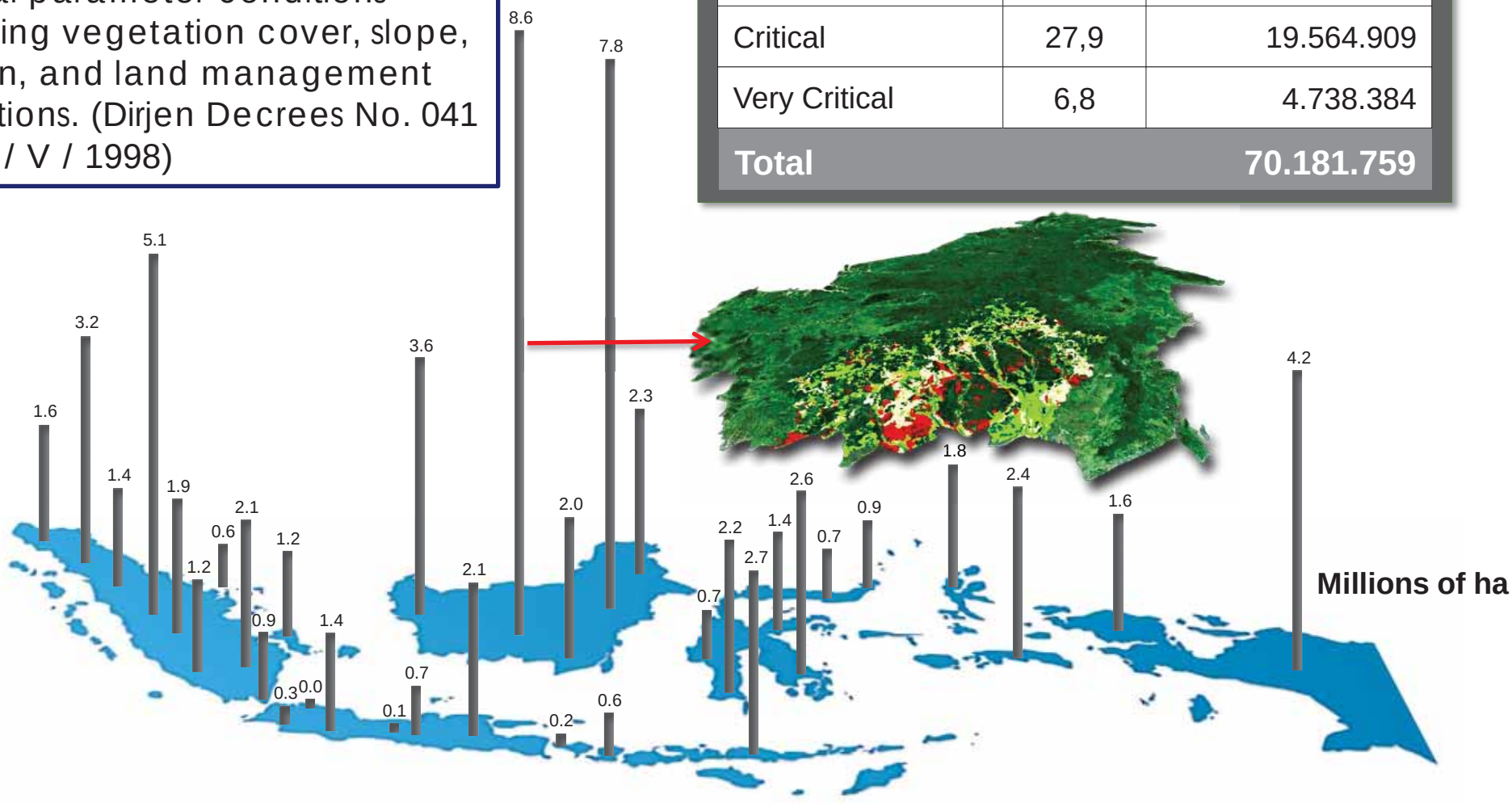
- Monitoring of biofuel blend policy application.
- End user target: **mining industry, power plant & transportation**.
- Ensure OEM (Original Equipment Manufacturer) to support biofuel utilization.
- Encourage automotive industries to support biofuel utilization.

BIOENERGY CONSUMPTION

UTILIZATION OF DEGRADED LAND FOR BIOENERGY DEVELOPMENT

Definition of Degraded Land: land that is critically assessed based on several parameter conditions including vegetation cover, slope, erosion, and land management conditions. (Dirjen Decrees No. 041 / Kpts / V / 1998)

Category	%	Area (ha)
Slightly Critical	65,4	45.878.466
Critical	27,9	19.564.909
Very Critical	6,8	4.738.384
Total		**70.181.759**



Source: Directorate PEPDAS, DG BPDASPS Ministry of Forestry, 2013

TARGET OF BIOENERGY DEVELOPMENT IN KATINGAN & PULANG PISAU DISTRICT, CENTRAL KALIMANTAN PROVINCE

KATINGAN

Target: 50.000 Ha

PULANG PISAU

Target: 50.000 Ha

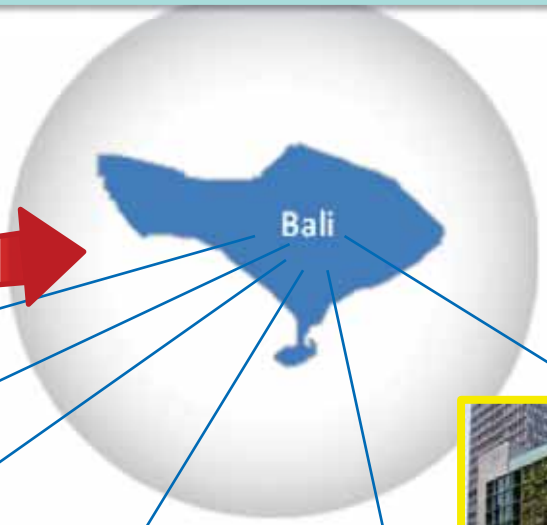
A glance of degraded land in Central Kalimantan

INVITING INVESTMENT ON SOLAR PV INDUSTRY

- Feed in tariff: USD 25 cent/kwh
- Quota: 1 GW per year
- Transfer technology policies
- Rooftop PV policy program
- Regional-based feed in tariff

BALI AS CLEAN ENERGY ISLAND

Bali Hosts Centre of Excellence



Geothermal

Building Technologies

Bioenergy

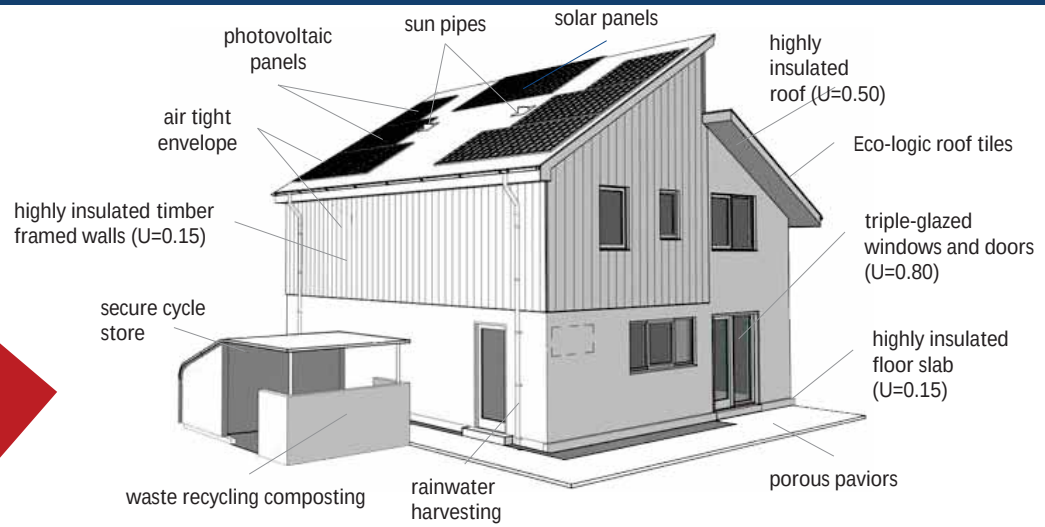
Solar PV

Hydro Power

Biofuel Utilization

DEVELOPMENT OF CENTER OF EXCELLENCE

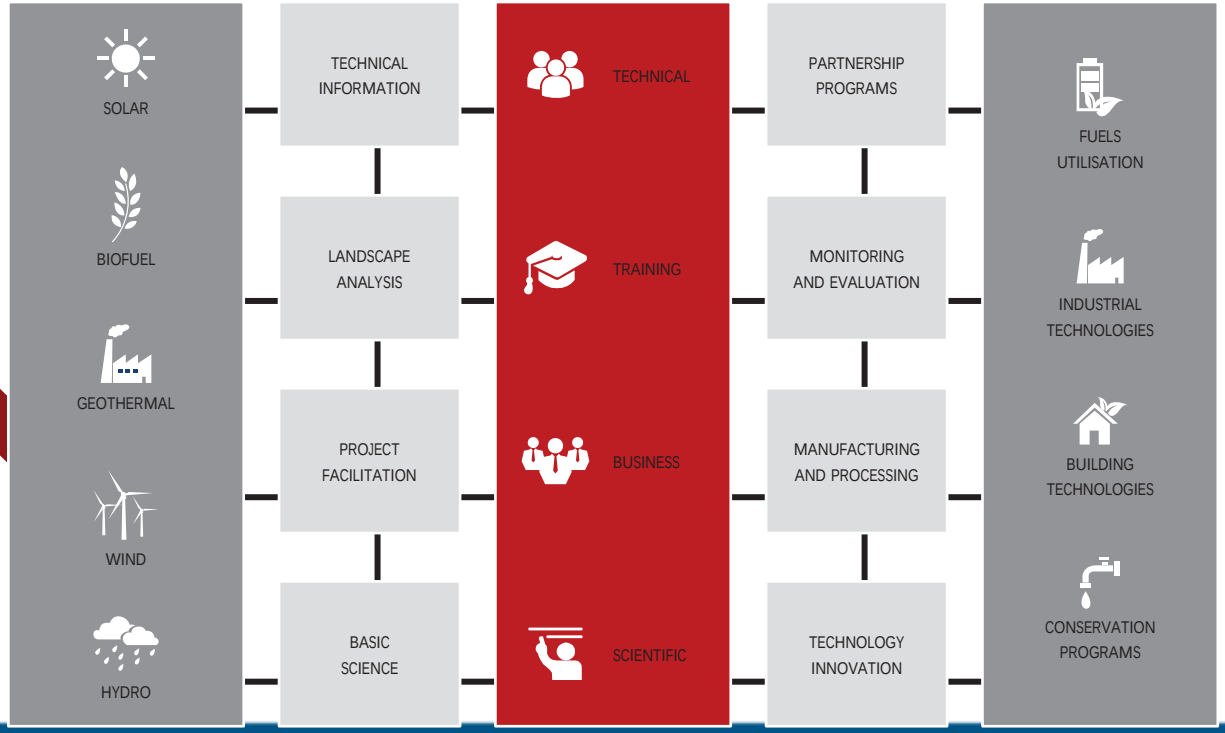
- Coordination center for the development of NRE technology;
- Facilitation of technology implementation at local and industrial level;
- Enhancing energy efficiency and conservation; and
- Boost knowledge on NRE research and development



Knowledge Support
- Technical Information
- Landscape Analysis
- Project Facilitation
- Basic Knowledge

Support Team
- Technical
- Training
- Business
- Knowledge

Implementation Support
- Partnership Program
- Monitoring and Evaluation
- Manufacture and Processing
- Technology Innovation



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THANK YOU