

# LEADING PROGRAMS SOCIAL & ENVIRONMENTAL RESPONSIBILITY

PT PERTAMINA (PERSERO)



# THE ENERGY BERDIKARI VILLAGE PROGRAM



The Energy Berdikari Village Program is part of the ESG (Environment, Social, Governance) commitment carried out by Pertamina. This effort is to support the realization of the Sustainable Development Goals, particularly to have access to more affordable, reliable and sustainable energy, with a total energy production of **35,400 KWH** and **95,400 L** of environmentally friendly fuel and an increase in community income of more than **Rp. 870 million/year**.



## LEADING PROGRAMS

### SELF-SUFFICIENT VILLAGE ELECTRIC ENERGY

#### TARAKAN

- Provide electricity with Solar Cell Home System and PV mini-grid.
- Reducing emissions by replacing solar generators

### ENBAR TER WASTE

#### TARAKAN

- Processing used cooking oil into Biodiesel
- Processing seaweed waste into Bioethanol
- Processing waste into Organic Fertilizer

### WASTECO

#### BALIKPAPAN

Utilization of methane gas flow to reduce the use of LPG gas.

### BIOGAS ENERGY VILLAGE

#### LAMPUNG TENGAH

Utilization of Biogas for cooking

### E-MAS BAYU & E-MBAK MINA

#### CILACAP

- Utilize solar power to generate electricity.
- Produce NRE with reduced emissions and produce 240 Litres of fresh water/hour.



## ENVIRONMENTAL IMPACT

- Reduced gas emission up to **115.51 tons CO2e/year**.
- Waste processing into methane gas **172,800 m3/year**.
- Produce **35,400 KWH** of renewable energy.
- **1.4 Tons** of Waste Processing into Biodiesel and Bioethanol.
- Reserving fuel usage up to **28,080 litres of fuel/year**.
- Reserving 3 kg of LPG, with a total of **1,440 cylinders / year**.



## ECONOMIC IMPACT

- Increase in income by **Rp 870 million/year**.
- **160 KK** customers of the Garbage Bank Community Garbage Group.
- Utilization of pond products: **160 Kg of Milkfish, 50 Kg of Shrimp, 20 Kg of Crab / month**.





# E-MAS BAYU & E-MBAK MINA\* PROGRAM

## Dusun Bondan, Kampung Laut

Through the Energy Independent Village  
Program Based on Local Community  
Capacity



### GOAL

- Realizing Dusun Bondan as a reference for the EBT Village based on energy independence

### PARTNERSHIP

Central Java Energy and Mineral Resources Service, DLH Cilacap Regency, Disnakerperin Cilacap, Health Office, Cilacap State Polytechnic, Ujungalang Village Government, Bondan Community Group

### ASSESSMENT CRITERIA

- A. Climate Change Adaptation
- d. 1.a. Increased vegetation cover
- b.1.f Use of renewable energy and energy conservation through the use of wind power
- b.1. g. The use of renewable energy and energy conservation through the use of solar cel power

\*) EMAS BAYU: Energi Mandiri Tenaga Surya dan Angin; EMBAK MINA : Energi Mandiri Tambak Ikan

### BACKGROUND



Lagging villages have an index value of **48.42 out of 100**  
(source: Ministry of Development of Disadvantaged Regions and Transmigration of Republic of Indonesia )



No access of electricity



Difficulty accessing clean water (**9 km distance**)



The **flood** disaster of rob and **seasonal drought**

### PROGRAM



Development of PLTH E-Mas Bayu 12.000 WP



Silvofishery Pond



Sidesi Water Treatment



Mas Kuter Pond



## Nature

- **16200 WP** of renewable energy
- Emission Reduction : **7.51 ton CO2 eq/year**
- **Producing 240 litres** of fresh water/hour
- Reduction of dissolved solids to 97% from 16,100 ppm to 366 ppm
- Reduction of heavy metals by 0.0032370 mg/liter
- **CO2 storage** from silvofishery ponds 77653.84 tons CO2/year



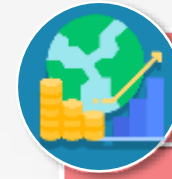
## Well-being

- **Energy Independent Village Champion of Central Java in 2019 and 2020**
- **100% of students can study at night**
- Cilacap State Polytechnic Research Laboratory
- Easy access to fresh water
- PLTH & SIDESI maintenance skills increased by 10 people



## SUSTAINABILITY COMPASS

## SELF-SUFFICIENT ENERGY VILLAGE



## Economy

- Savings in electricity expenditure for **37 families** , estimated as **Rp. 50,000,- up to Rp. 70,000,- month.**
- **The average savings in purchasing clean water per household is 76%, from Rp. 743,590,- to Rp. 185,897 /ball**
- Increased turnover of the MSME group to **Rp. 7,500,000,-/month**
- Increase in group aquaculture to **1.5 tons/Ha**



## Social

- **SK Ujungalang Village Head regarding PLTH and Sides management**
- The creation of 1 new productive activity for the Independent Mothers Group: drip method organic vegetable garden
- 78 families, 1 place of worship, and 1 production house can access electricity and clean water
- Poverty reduction as much as 4 KK
- **242 program beneficiaries**

# MANGROVE ECO-TOURISM TO INCREASE TOURISM THROUGHOUT THE PANDEMIC – PHE WMO

Labuhan, Sepulu, Kabupaten Bangkalan, Madura



## INITIAL CONDITION

- Loss of function of mangrove forest & high level of abrasion
- Mangrove criticality level of 17.5 ha is severely damaged, and the highest of the surrounding 5 villages
- Conservation was initiated to tackle the issues of abrasion



## PROGRAM IMPACT

### ECONOMY

- Rp 3 billion Valuation of Economic Value of Mangrove Forest
- Rp 552 Million Total Group Income
- Rp 518 Million Economic Potential of the Multiplier Effect of SMEs
- Rp300 Million Savings from Waste Utilization

### SOCIAL

- Accumulated Number of Visitors are estimated as 106,309 people
- 145 families of former migrant workers are empowered
- 37 Members of the Prosperous Farmers Group
- 30 Members of Labuhan Village Pokdarwis
- 3 Pioneers of the Waste Bank Group
- 1,500 beneficiaries

### NATURE

- Carbon Sequestration 4,235 Tons CO<sub>2</sub>eq
- Mangrove Density 3,200/Ha East and 4,300/Ha
- 29 Types of Mangroves
- 31 protected bird species
- 2 bird species Near Threatened by IUCN Bird Heart Index 3.02 by the end of 2019
- 300 Coral Domes

### WELLBEING

- Decrease in RTM of Poor Households by: 95% : 2019: 1 RTM, 2018: 28 RTM, 2016: 125 RTM
- Government Inclusiveness of TOP 21 Priority Programs for Bangkalan Regent



## ROADMAP

### 2013

#### Mangrove Logging & Hunting

- Loss of function of mangrove forest & abrasion
- Mangrove criticality level of 17.5 ha is badly damaged
- Conservation was initiated to tackle the issues of abrasion

### 2015-2016

Mangrove Park Becomes a Tourism Centre

### 2017 - 2018

- Development of the Western Region through Coral Reef conservation
- Development of the Western Region through Coral Reef conservation

### 2019 - 2020

- Strengthening the Capacity of the Human Resources Involved
- Expansion of the Business Network (BUMDES Barokah has been formed through the Decree of the Village Regulation No. 03 of 2016)

## DOCUMENTATION



## STAKEHOLDER

- KLHK RI – BPHM Region I Denpasar
- Provincial and District Environmental Agency
- Labuhan Village Government
- East Java Province Mangrove Working Group
- Trunojoyo University Madura
- Mangrove Center Foundation
- District Forestry Service of Bangkalan
- Government of Sepulu





## LABUHAN BEACH (2014-2020)

Before



After



Around **75.600** the accumulation of mangrove and sea pine planting 2014-2020

### New Species Identified on 2020: Javan white-eye (*Zosterops flavus*)

- Endemic and protected birds (Ministerial Regulation LHK 106, Year 2018)
- **Species category** *Endangered* according to IUCN Red List



## TLANGOY BEACH (2018-2020)

Before



After



- Protect the white sand from illegal mining and piles of garbage
- Thickening of the sandy shoreline
- Regular beach cleaning
- Reducing the volume of landfill waste 543.236 m<sup>3</sup>/year
- 2000 mangroves and sea pine planted



## INITIAL CONDITION

- The production of waste increases annually, where per day can reach 350 tons.
- People's perception that garbage is useless object.
- The condition of the scavenger community around the area has not been optimally utilized.



## ROADMAP

### 2018

- Repairment of methane gas installations and building connection to residents' houses
- Addition of methane gas Wells in 2 zones.
- Procurement of measuring instruments for methane gas.

### 2019

- Establishment of methane gas management
- Increased production and continuity of methane gas
- Innovation in the use of inorganic waste as an alternative energy source

### 2020

- Construction of mini-gas power plan for TPAS electricity
- Provision of K3 equipment and formation of an emergency response team
- Supporting infrastructure assistance to SME groups

### 2021

- Program monitoring
- TPAS emergency response team training and SME training
- Methane gas education park upgrade
- Construction of Café gas

### 2022

- Program monitoring
- Strategic partnership



## PROGRAM IMPACT (SUSTAINABLE COMPASS)



### ECONOMY

- Rp 43 million/year savings on family cooking costs.
- Rp 7.2 million/year cash contribution for Methane Gas
- Rp 15.7 million/year savings in street lighting electricity costs.
- 1 SME, 2 stalls and 1 tofu factory utilizing methane gas for business.

### NATURE

- 4,320 m3/year Utilization of methane gas by residents.
- 28,080 m3.year Fuel savings for internal TPAS
- 96 m3/year Savings on firewood for the tofu factor

### WELLBEING

- 390 residents who able to use methane gas safely
- 26 Women who able to do financial management of methane gas
- 1 Trained Emergency Response Team for disaster management.

### SOCIAL

- 1 SME formed and being the driving force of the renewable energy campaign.
- 60 connections improved gas connections to residents in 2020.

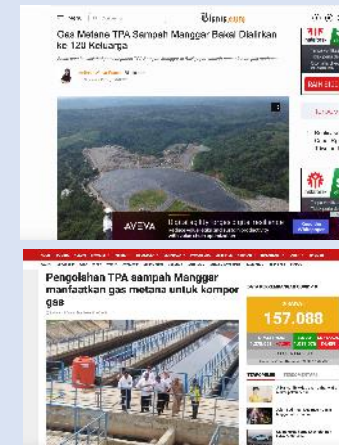


## STAKEHOLDER COLLABORATION

- Bappeda Government, DLH Balikpapan City UPT TPAS Manggar
- Community Institution LPM Manggar
- Community RT 36 and 61 Manggar
- Balikpapan University Practitioners



## NEWS PROGRAMS



Indonesian Business

Antara News



## SAVINGS PER-MONTH



**Energy Saving Cost for 18 MSME per month**

**Rp 2,94 million**



The MSME Association in the Manggar TPAS has around 36 members. Currently, several MSMEs are inactive due to a decline in turnover due to the Covid-19 pandemic.



In supporting the Pillar of Social Development, Especially Health, Pertamina has made a real contribution, mainly during the Covid-19 pandemic. In addition, through the CID Program Pertamina has succeeded in achieving several achievements in area relevant to the SDGs as follows:



## HEALTHY AND PROSPEROUS LIFE

### 5 Major Actions to Overcome Covid including:

1. Construction, operation, and transfer of functions of the Covid-19 Special Hospital under IHC Pertamedika (Modular RSPJ, Modular RSPP, Tanjung Duren RSPP, Hajj Dormitory Extension RSPJ)
2. Assist the Ministry of Health and the Ministry of SOEs to accelerate the distribution of Oxygen in Java.
3. Vaccination support with the Ministry of SOEs and institutions.
4. Ventilators for state-owned hospitals as many as 305 units in 2020.
5. Strengthening the development of Micro and Small Enterprises for being adaptive towards Covid-19 has succeeded in creating a sales value of around Rp 20 billion.

### Distribution of Covid-19 Relief Aid:

1. Mask **573.035 Units**
2. The transfer function of the RSPJ as being a special hospital for Covid-19
3. PPE/Hamzat as many as 209,343 units
4. ICU Bed Conversion at State-Owned Hospital Covid-19
5. Ventilators for state-owned hospitals as many as 305 units
6. PCR Test
7. Hand Sanitizer as total as 1,536 Liters
8. Spraying disinfectant in 1,112 points
9. Food packages for medical staff and the community as total as 6,750 packages
10. Gloves 32,735 pieces
11. Portable sinks for health centres and other public facilities as total as 581 units

### CID Program of Sehati Pertamina :

1. **28.879** people become health cadres
2. **103** *posyandu* health service
3. **489** Beneficiaries of Malnutriniton
4. **44 %** Reduction in stunting
5. Cost savings of **Rp 42.390.000/ year**





## PROKLIM (PROGRAM KAMPUNG IKLIM)

A national-wide program managed by the Ministry of Environment and Forestry in order to increase the involvement of the community and other stakeholders to strengthen adaptation capacity to the impacts of climate change and reduce greenhouse gas emissions as well as to provide recognition for climate change adaptation and mitigation efforts that have been carried out that can improve welfare at the local level in accordance with regional conditions.



## PERTAMINA HAS MET THE REQUIREMENTS ACCORDING TO THE REGULATION OF THE MINISTER OF ENVIRONMENT & FORESTRY:



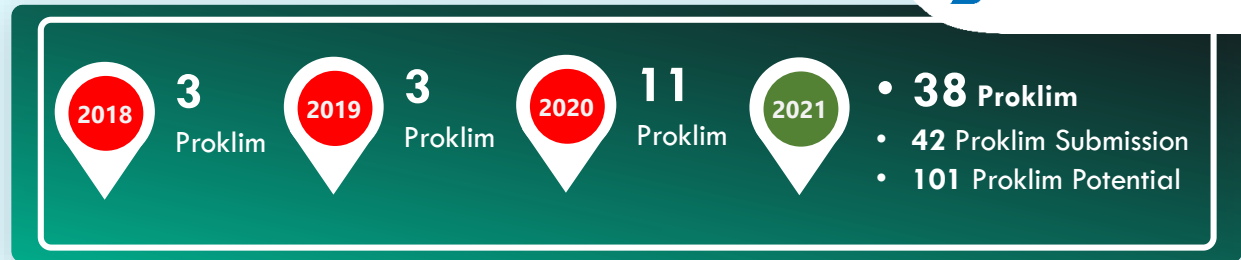
### ADAPTATION EFFORT :

- Drought, Flood, and Landslide Control;
- Improving Food Security;
- Handling or Anticipating Sea Level Rise, Rob, Sea Water Intrusion, Abrasion, Ablation, and High Waves;
- Control of Climate-Related Diseases; and/or
- Other Activities Related to Efforts to Improve Adaptation to Climate Change.



### MITIGATION EFFORT:

- Management of waste, solid and liquid waste;
- use of new and renewable energy and energy conservation and saving;
- Handling agricultural land with low greenhouse gas emissions;
- Increase and/or maintain vegetation cover;
- Prevention and control of forest and land burnings; and/or
- Other activities related to efforts in reducing greenhouse gas emissions.



## THE PROGRAM OF KAMPUNG IKLIM - WK KAMPAR - ( SUB HOLDING UPSTREAM)

PROBLEM	SOLUTION	IMPACT
<ul style="list-style-type: none"> <li>• <b>10 Ha</b> barren land.</li> <li>• <b>Floods and landslide.</b></li> <li>• The community has not been educated enough about the use of the environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Planting <b>10.000 Trees</b> for reforestation on <b>10 Ha land</b></li> <li>• Manufacture and utilization of more than 2,000 units of biopore holes</li> <li>• Training on <b>making environmentally friendly fertilizers</b> (organic liquid fertilizer)</li> <li>• Development of family <b>medical plants</b> (TOGA)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>0.03 Ton CO<sup>2</sup>eq</b> carbon sequestration from <b>1.000 plants</b></li> <li>• <b>4kg/KK/day reduction of non-B3 waste</b> to be processes at the Waste Bank</li> <li>• <b>Rp180.000/KK/month</b> from non-B3 waste recycling activities</li> <li>• <b>4 community groups were formed</b> including the fire response groups, waste bank, tosga groups and fish farming.</li> </ul>

## WONOPOTRO ECOEDUTOURISM – FT BOYOLALI (SUB HOLDING COMMERCIAL & TRADING JBT)

PROBLEM	SOLUTION	IMPACT
<ul style="list-style-type: none"> <li>• <b>Critical land</b>, less of use</li> <li>• The <b>rampant poaching</b></li> <li>• Habitat of <b>flora and fauna threatened</b> by environmental damage</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Planting 1000 trees</b> on Wonopotro Hill</li> <li>• <b>Timor Deer Conservation</b></li> <li>• Construction of conservation cages according to BKSDA standards</li> <li>• Regional Development <b>into Ecoedutourism</b></li> </ul>	<ul style="list-style-type: none"> <li>• Group revenue <b>IDR 160 million/year</b></li> <li>• <b>31,968 area</b> visitors/year</li> <li>• <b>1.6 Ha of village</b> treasury land cover is utilized</li> <li>• <b>20 types of potential local biopharmaceutical plants</b> identified and conserved</li> <li>• <b>1.6 Ha The village</b> treasury land cover is utilized</li> </ul>

## KOLAK SEKANCIL – RU IV CILACAP ( SUB HOLDING REFINING & PETROCHEMICAL)

PROBLEM	SOLUTION	IMPACT
<ul style="list-style-type: none"> <li>• Decrease in mangrove area <b>46.2%</b></li> <li>• Watershed Sedimentation <b>1 million m<sup>3</sup>/year</b></li> <li>• <b>Low income</b> people</li> <li>• The conversion of mangrove forest functions is <b>1,904.38 ha (12%)</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Consistent conservation.</li> <li>• Development of an arboretum based on Eduwisata.</li> <li>• Development of processed mangrove products.</li> <li>• Establishment of POKDARWIS.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased selling value of mangrove seedlings by <b>50%</b>.</li> <li>• Improved welfare of <b>53 recipients</b>.</li> <li>• CO<sub>2</sub> absorption <b>41,371,680 pounds/year &amp; O<sub>2</sub> production 224,096,600 pounds/year</b>.</li> </ul>

## ASMAN TOGA MELATI AND THE WASTE BANK - GUNUNG IBUL (SUB HOLDING GAS – PERTAMINA GAS SSA)

PROBLEM	SOLUTION	IMPACT
<ul style="list-style-type: none"> <li>• <b>Poor air condition</b> and</li> <li>• <b>High flood</b> potential</li> <li>• Drought area</li> <li>• <b>Abundant waste is not managed</b></li> </ul>	<ul style="list-style-type: none"> <li>• Flood control by <b>doing reforestation</b></li> <li>• Increase <b>food security</b> through agriculture</li> <li>• Processing of agricultural products</li> <li>• Use of <b>new energy and energy conversion</b></li> </ul>	<ul style="list-style-type: none"> <li>• People are starting <b>to care about the cleanliness of the yard</b></li> <li>• <b>Rp 96.000.000/year</b> group member income</li> <li>• <b>Increased skills possessed</b> from the training provided</li> </ul>