

Energy Management for Our Better Future: Sustainable Communities in the Cities for supporting Low Carbon Development Program 2020-2024 in North Sulawesi, Indonesia



SAM RATULANGI UNIVERSITY



VISION:
MANADO

SMART CITY 2021



MISSION



Establishing Manado, a "smart" city that has intelligent and strong human resources by improving the quality of education and increasing community interest in reading



Establishing Manado as a "ecotourism" destination based on marine and island conservation



Building an increasingly "religious" urban community and highly supporting moral, social and tolerant values



Building a city that has a "competitiveness" oriented in investment improvement and quality of public service based on Information and Communication Technology.



Achieving a "safe and comfortable" Manado by increasing the quality of security systems and development of urban infrastructure with a good quality, environmentally friendly and orderly space.



Creating a "healthy" city by improving the quality of health service to create a healthier and wealthier community in a clean and beautiful urban environment.



MANADO DEVELOPMENT



1. OLD CITY REVITALIZATION

- RIVER BANK SETTLEMENT REVITALIZATION (MULTI STOREY & GREEN SPACE)
- WATER TRANSPORTATION DEVELOPMENT (COASTAL AND RIVER)
- OLD CITY REVITALIZATION (CULTURAL HERITAGE REGULATION)

2. NEW CITY 5.000 HA (SMART CITY)



EXISTING MEASURES IN ACCORDANCE TO Low Carbon Model Town (LCMT)

- ☐ REAL TIME CITY LIGHTING POWER MANAGEMENT
- ☐ LED STREETLIGHTS (SOLAR PANELS)
- ☐ REAL TIME CCTV FOR ROAD TRAFFIC MONITORING



IMPLEMENTATION PLANS

- ☐ Study on energy efficiency towards Manado Smart Energy City
- ☐ Solar panels on Rooftops
- ☐ LED Streetlights
- ☐ Solar powered boats/ electric boats
- ☐ Transportation:



RIVER TRANSPORTATION BASED ON SOLAR POWERED BOATS/ ELECTRIC BOATS





LOW INCOME RESIDENTS' FLATS ADJACENT TO TONDANO RIVER

Data in 2015

Existing Houses = 72.958

Households = 91.386

Housing demands = 18.427

Apartment demands = $18.247 / 50 \text{ unit} = \pm 368 \text{ Apartment}$





ENERGY SOLUTION FOR LOW INCOME FLATS

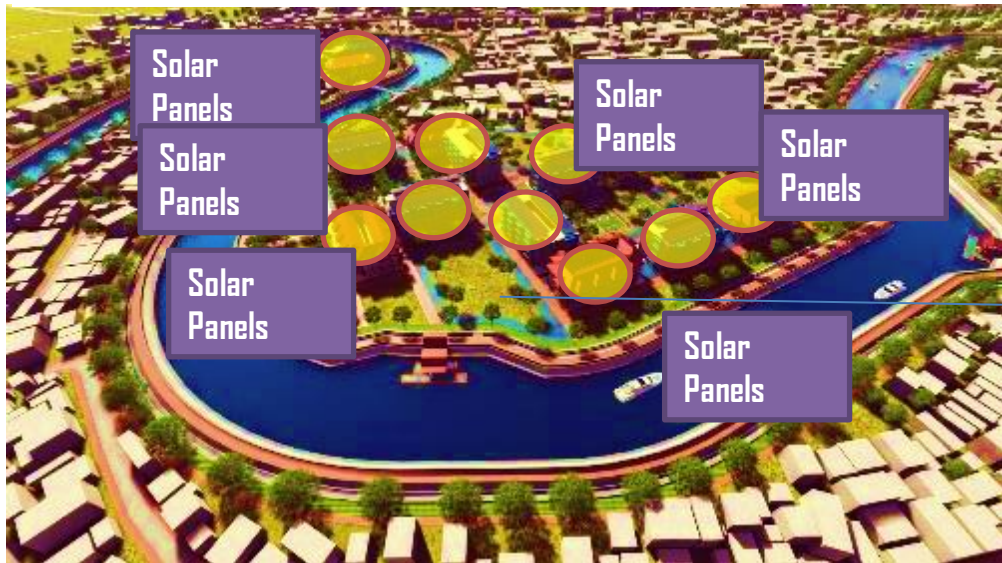
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**GENERATING AND
BUYING (cheap?)
RENEWABLE
ENERGY
TECHNOLOGY**



ENERGY SOLUTION: FITTING SOLAR CELL LEDS ALONG TONDANO RIVER



PANDU RELOCATION RESIDENTIAL AREA

PHASE - I : RELOCATED AND BUILT HOUSING IN 2015



BUILT INFRASTRUCTURE

PHASE - I : BUILT INFRASTRUCTURE IN 2015



DRAINAGE



**NEIGHBORHOOD
STREET**



DUIKER PLAT



TALUD



ELECTRICITY FROM PLN



STREET LAMPS



**COMMUNAL WASTE
WATER**



CLEAN WATER

Thanks!
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