

# RENEWABLE ENERGY ON NGENTAK-KUARU- SRANDAKAN-BANTULAS INTERESTING TOURISM OBJECT

*by* Nur Suhascaryo

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**Submission date:** 05-Nov-2020 02:53PM (UTC+0700)

**Submission ID:** 1436763710

**File name:** e\_energy\_on\_ngentak-kuaru-srandakan-bantul...\_compressed\_1.pdf (469.95K)

**Word count:** 2133

**Character count:** 11822



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## Regional Geoheritage Conference 2016

THE 9<sup>TH</sup> INDONESIA-MALAYSIA CONFERENCE

ISBN : 978-602-19765-4-8

*" Exotic Past For Our Future "*

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24-25 NOVEMBER 2016



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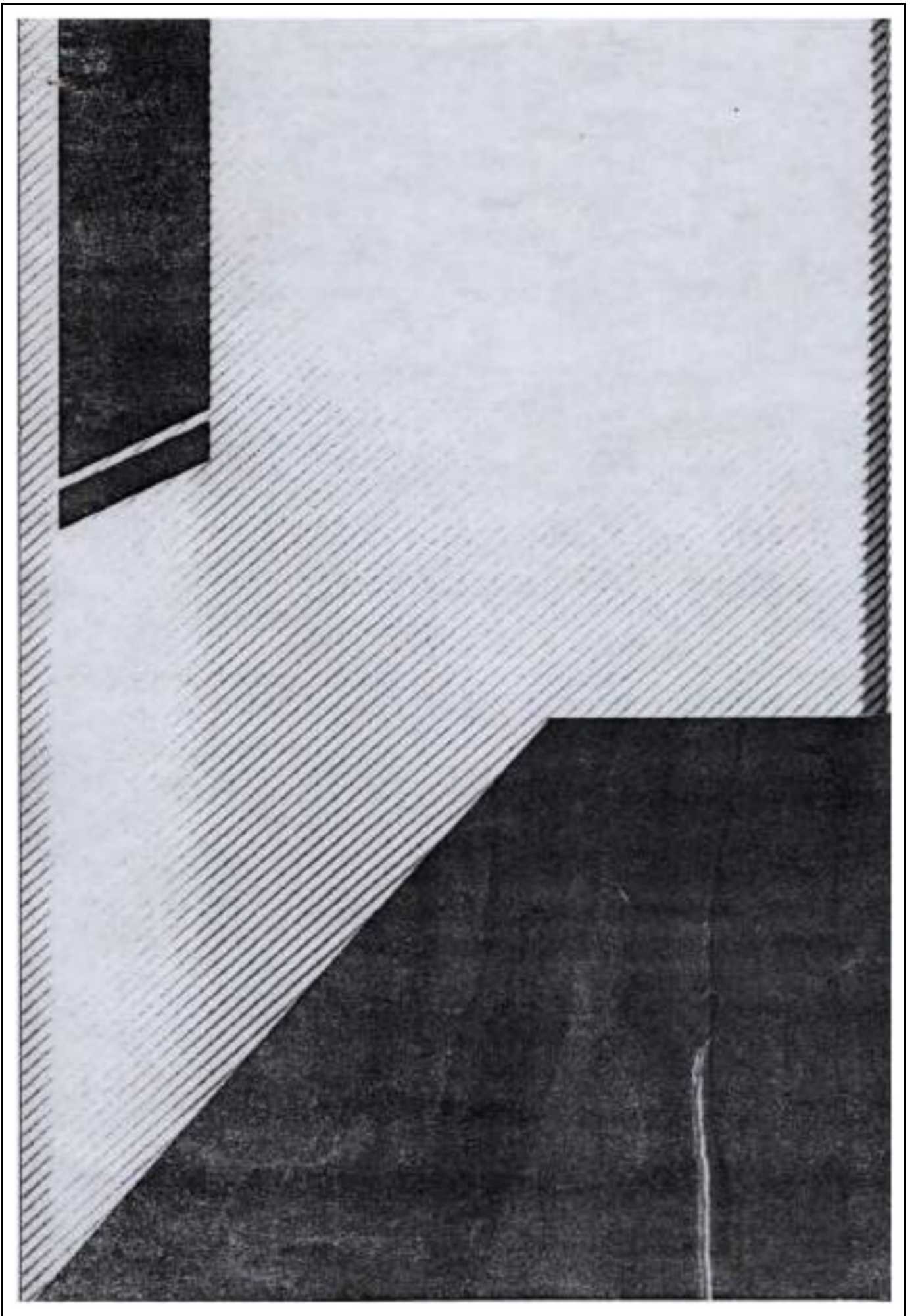
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# Proceedings

## Regional Geoheritage Conference 2016

The 9<sup>th</sup> Indonesia-Malaysia Conference

**“Exotic Past for our Future”**



Seminar Held on 24 November 2016  
In Hotel Hyatt Regency Yogyakarta, Indonesia

Field Trip Held on 25 November 2016

# Proceedings

## Regional Geoheritage Conference 2016

### The 9<sup>th</sup> Indonesia-Malaysia Conference

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## Preface

Bismilahirrahmanirrahim, Assalamu'alaikum wa rahmatulahi wa barokatuh.

Dear distinguished participants and committee.

In this nice opportunity, I appreciate to all of you for your considerable effort that made the Regional Geoheritage Conference 2016 or the 9<sup>th</sup> Joint Conference Indonesia – Malaysia Geoheritage Conference happened.

I really thankful to your participations for joining and attending the Conference in Yogyakarta. Special Region of Yogyakarta is well known as education and cultural city. Yogyakarta also become a considerable touristic region especially in cultural heritage. Right now geoheritage in Yogyakarta become more attractive.

In this occasion, the conference is very simple. Conference will be held over two days. First day we will held conference and geotrack in the second day.

There is two main speakers for RGC 2016. The first speaker is Mr. Ibrahim Kurno as Vice President Global Geoparks Network (GGN) and Mr. Yuntas Kusumahbrata as Expert Staf Ministry of Energy and Mineral Resources of Indonesia Republic. For the next season, we also have speakers from Thailand and two speakers from Gunungsewu UGG and Batur UGG Indonesia. Moreover, we have 30 outstanding papers that will be presented in this conference. The papers are consist in 12 oral papers and 23 posters presentation with the same value.

In geotrack we will discover several geoheritage sites in Gunungsewu UGG, such as Miocene pillow lava of Berbah; ancient volcanic product of Nglanggern; exciting bioturbation within shallow marine Sambipita Formation; and Karst Museum of Indonesia at Wonogiri.

I wish this conference will give us inspirations and enhance the cooperation in Southeast Asia countries, especially in the field of geoheritage. Happy sharing for the progress of our region.

Finally, I would like to express my gratitude to Geological Agency – Ministry of Mineral Resources, especially Center of Geological Survey perform a booth concerning the wonderful of geoheritage and geopark of Indonesia.

Wassalamu'alaikum wa rahmatulahi wa barokatuh.

Prof. Dr. Ir. Bambang Prastitho, M.Sc.  
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## RENEWABLE ENERGY ON NGENTAK-KUARU-SRANDAKAN-BANTUL AS INTERESTING TOURISM OBJECT

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### ABSTRACT

This research are located at Ngentak, Kuwaru, Srandakan, Regency of Bantul. They have two kind of energy resources which is new energy like a wind energy and renewable energy like waste of cows. The new renewable energy in this area had transferred like as Liquid Natural Gas (LPG). Besides, this biogas is used at most of restaurant at Pantai Baru Kuwaru, Bantul. This purpose are to make Ngentak, Kuwaru as destination for energy tourism as geosite to support geology tourism at province D.I. Yogyakarta.

Key words : Ngentak-kuwaru, wind energy, Geosite, geology tourism,

### INTRODUCTION

Pantai Baru, Dusun Ngentak, Srandakan, Bantul is one destination of several tourism place in Bantul. This area needs much improvements, especially electricity to support its tourism value.

Geographically, southern coast of Yogyakarta is open field, sun shines whole day, and wind speed is about 4 m/s (LAPAN). It is located directly facing Indies Ocean make it suitable for site of PLTH (Hybrid Power Generator) which using wind turbines and solar panels. Besides wind turbines and solar panels, Pantai Baru also utilizes biogas to substitute LPG gas usage. Main source of biogas are cow wastes from from "rancher group" Kelompok Ternak Sapi PandaMulyo which have more than 150 cows.



Figure 1 : Location Map of Pantai Baru, Dusun Ngentak, Srandakan.



*Figure 2: Panoramic View of Pantai Baru, Dusun Ngentak, Srandakan,*

## **METHOD**

Methodology used in this research are observations and interview. Research was held at PLTH Pantai Baru Pandansimo, Ngentak, Srandakan, Bantul, DIY on September-Oktober 2016 by UPN research team.

## **RESULTS**

Wind turbines and solar panels support each other on producing electricity. If sun shines brightly and wind blows with low speed, solar panel will be the ones which produces electricity and electricity will be stored in batteries/accu. So is wind turbines, if it is cloudy but it is windy, wind turbines will take charge to supply electricity.

1. Electricity produced by PLTH Pantai Baru has been used to support tourism activities such as;
2. providing electricity for nearby restaurants and household.
3. road lighting
4. fresh water pump system for household, fishery, and sand based farming
5. ice cube makers, for food and beverages.

Biogas is mainly used as fuel in the nearby restaurant. Biogas is used to cook, to boil water, etc. Biogas is connected to network providing fuel for more than 50 restaurants and household.



Figure 3 : Diagram of Wind Turbine used at PLTH Pantai Baru Pandansimo, Ngentak, Srandakan, Bantul, DIY



Figure 4 : Wind Farm at Pantai Baru, Dusun Ngentak, Srandakan,

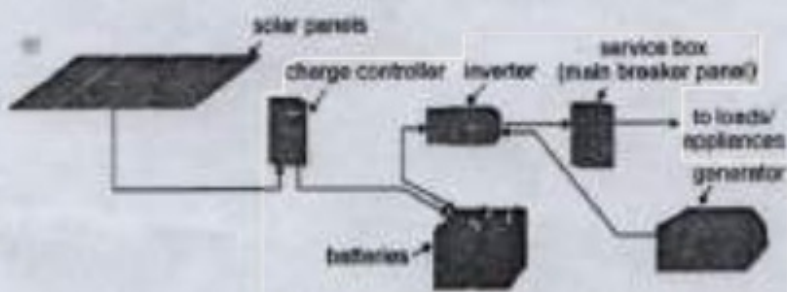


Figure 5 : Diagram of Solar Panel used at PLTH Pantai Baru Pandansimo, Ngentak, Srandakan, Bantul, DIY

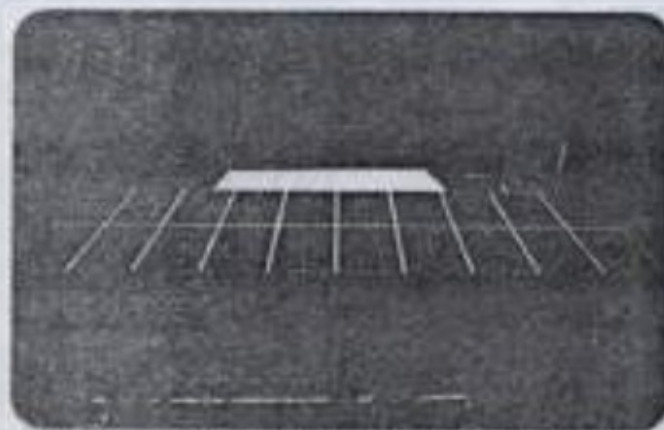


Figure 6 : Solar Panel used at Pantai Baru, Dusun Ngentak, Srandakan

Table 1 : Technical Data of PLTH (Hybrid Power Generator) Pantai Baru, Dusun Ngentak, Srandakan, Bantal

Generator Type		Number	Capacity	
Eastern Group	48 V System	Wind Turbine 1 KW (Triangle)	4	4 KW
		Wind Turbine 1 KW (Lattice)	2	2 KW
	240 V System	Wind Turbine 2,5 KW (Lattice)	2	5 KW
		Wind Turbine 10 KW (Lattice)	1	10 KW
		Wind Turbine 10 KW (Triangle)	1	10 KW
		Wind Turbine 5 KW (Lattice)	1	5 KW
		Solar Panel 4 KW /140 V	40 @100W	4 KW
120 V System	Wind Turbine 2 KW (Lattice)	2	4 KW	
Western Group	240 V Sytem	Wind Turbine 1 KW (Lattice)	21	21 KW
	120V System	Solar Panel 15 KW (Lattice)	150 Unit @100 W/12 V	15 KW
KKP Group	48 V System	Panel Surya 10 KW	48 Unit @220W/24 V	10 KW
Total Electricity Generated				90 KW

## CONCLUSION

Biogas produced from cow wastes and electricity produced by wind turbines and solar panels in PLTH Pantai Baru expected to support development of tourism sector and its supporting factor such as farming, fishery, and culinary enterprise.

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