



University : Universitas Padjadjaran  
Country : Indonesia  
Web Address : [www.unpad.ac.id](http://www.unpad.ac.id)

**Ratio of renewable energy production divided by total energy usage per year**



Solar Panel in Parking lot



## Laporan Akhir Proyek

Proyek Pengadaan dan Pemasangan Lanjutan Solar Panel untuk Area Parkir Utara Gedung Rektorat Kampus Universitas Padjadjaran Jatinangor



PT. ARRA MANDIRI ENERGY



### Commissioning Test

Project : Pengadaan dan pemasangan solar panel lanjutan untuk area parkir utara gedung Rektorat kampus Universitas Padjadjaran Jatinangor  
 Date : 29 Maret - 10 April 2023  
 Location : Jl. Raya Bandung-Sumedang KM.21, Hegarmanah, Kec. Jatinangor, Kabupaten Sumedang, Jawa Barat 45363  
 Specification : - PV 460WP x 200pcs  
 - Inverter On Grid Three Phase Merk GoodWe

No	Test Item	Test Condition	Result	Note	
1	PV String Voltage	Inverter 1			
		String 1 : 710 VDC	Pass	OK	
		String 2 : 690 VDC	Pass	OK	
		String 3 : 692 VDC	Pass	OK	
		Inverter 2	String 1 : 699 VDC	Pass	OK
		String 2 : 731 VDC	Pass	OK	
2	Voltage From Grid	Inverter 1			
		R : 241,7 VAC	OK	Value max 270V	
		S : 243,1 VAC	OK	Value max 270V	
		T : 245,9 VAC	OK	Value max 270V	
		Inverter 2	R : 246,9 VAC	OK	Value max 270V
		S : 248,1 VAC	OK	Value max 270V	
3	Power Production	Inverter 1	Total : 14.235 Watt	Value max 1507	
		Inverter 2	Total : 1.560 Watt	Value max 160	
		Hour : 10.54			
		Date : 10/04/23			



## Final Project Report



Solar panel for nanobubbles and lamps in Print-G location usage



Solar panel for street lighting facilities and research



Clean biomass Processor



Clean biomass



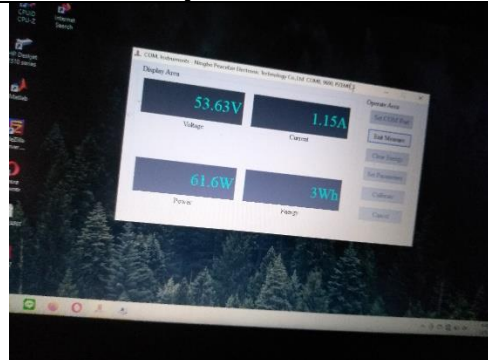
Portable Nano Hydro Generator



Portable Nano Hydro Generator Monitoring



Piko hydro Generator



Piko hydro monitoring



Wind Power



**Description:**

Universitas Padjadjaran keeps moving forward for using renewable energy. For several years, Universitas Padjadjaran has two alternative energy source, i.e. solar panel and biogas. The amount of energy produced from this technology is still far from half usage of Renewable

Renewable Energy	Appliance	Production (kWh)	Production per year (kWh)
Solar Panel	Nanobubble/WTP/Lamp	0.303	110.5
	JPU	0.197	72
	Easy Bike	0.12	44
	Rectorate Electricity	350	127,750
Biomass	Lamp	0.12	43.8
Nano Hydro	Lamp	0.27	98.55
Piko Hydro	Lamp	0.06	21.9
Wind Power	Lamp	0.6	219
<b>Total Production</b>			<b>128,359.75 Kwh</b>

There is increasing amount of total energy from solar cell significantly, around 128 mWh/year (see table above). This reflects our strong commitment to sustainability. Our university is dedicated to a greener and more environmentally responsible future, with renewable energy at the forefront of our efforts. Universitas Padjadjaran keeps moving forward for using the Renewable energy (see graphic below).

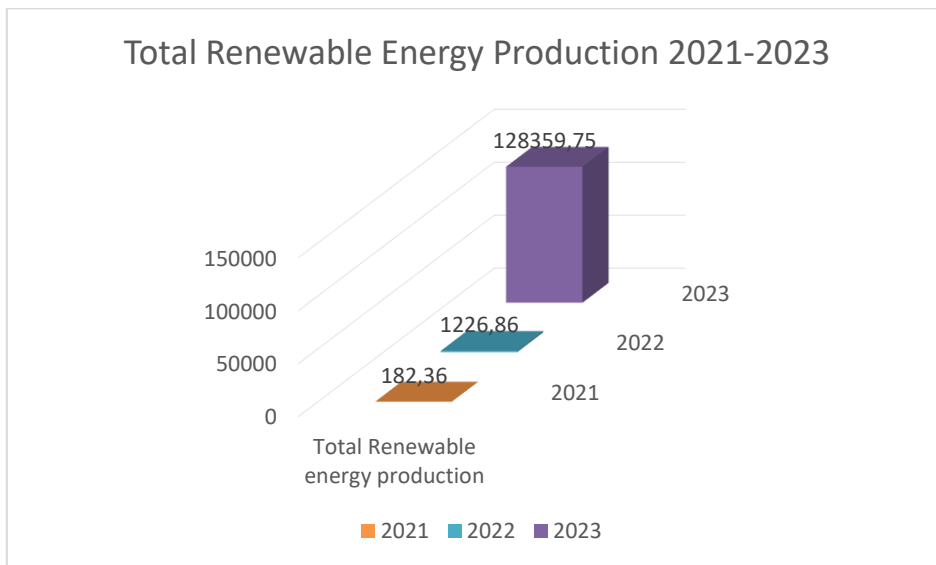
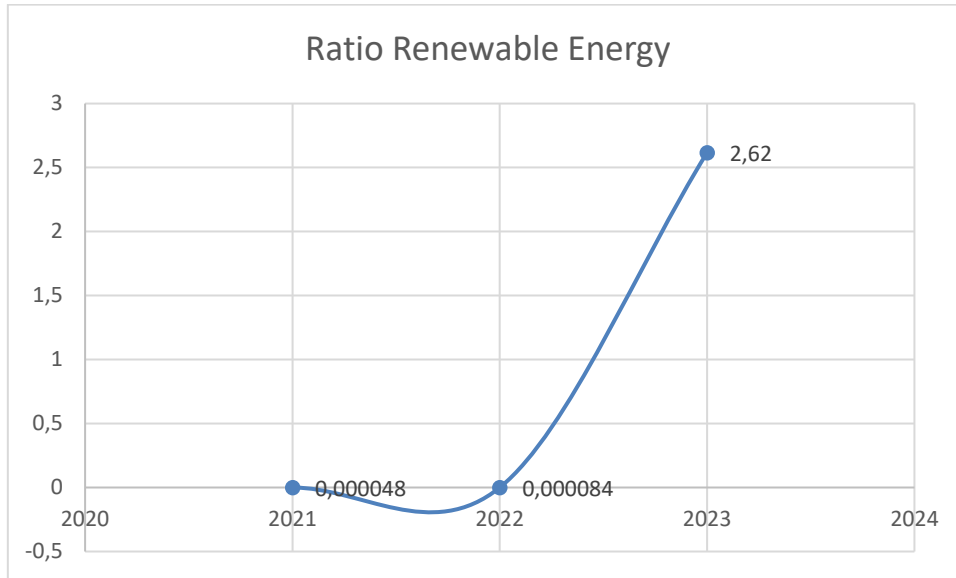


Figure 1. Total Renewable Energy 2021-2023

Total consumption energy : **4,905,122.34 kWh**

Ratio renewable energy: **128,359.75 kWh/4,905,122.34 kWh\*100 = 2.62%**

At Universitas Padjadjaran, we've achieved a significant milestone in renewable energy. Our biogas and solar panels have generated approximately **128,359.75 kWh**, while our total energy demand stands at **4,905,122.34 kWh**. This results in a commendable ratio of **2.62%**, highlighting our commitment to sustainable energy practices and a greener future. The data presented in the graphic below clearly demonstrates a substantial and noteworthy increase in the ratio of renewable energy sources. This positive trend underscores our unwavering commitment to sustainable and eco-friendly energy solutions.



**Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):**