



# Central Java Commitment As A Solar Province In Indonesia

Presented by :

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On :

Report Launch and Round Table Discussion

“Unleashing Indonesia Solar Potential”

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Via Zoom

# INTRODUCTION

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# LEGAL BASIS FOR DEVELOPMENT OF RENEWABLE ENERGY

1

**UNDANG-UNDANG NO. 30 TAHUN 2007  
TENTANG ENERGI**

One of which is Renewable Energy

2

**UNDANG-UNDANG NO. 30 TAHUN 2009  
TENTANG KETENAGALISTRIKAN**

The priority of utilizing energy sources for the provision of electricity using renewable energy sources

3

**UNDANG-UNDANG NO. 23 TAHUN 2014  
TENTANG PEMERINTAH DAERAH**

About the authority of regional government on energy

4

**PERATURAN PEMERINTAH NO. 79/2014  
TENTANG KEBIJAKAN ENERGI NASIONAL**

The Renewable energy target in 2025 is 23% of total National Energy Mix

5

**PERATURAN PRESIDEN  
NOMOR 22 TAHUN 2017**

About National Energy General Plan (RUEN)

6

**PERATURAN DAERAH PROVINSI JAWA  
TENGGAH NOMOR 12 TAHUN 2018**

About Regional Energy General Plan (RUED)

7

**PERATURAN MENTERI ESDM  
NOMOR 49 TAHUN 2018 jo. PERATURAN  
MENTERI ESDM NOMOR 13 TAHUN 2019**

Use of Rooftop Solar PV System by PT PLN (Persero) Consumers

8

**PERATURAN MENTERI ESDM  
NOMOR 50 TAHUN 2017 jo. PERATURAN MENTERI  
ESDM NOMOR 53 TAHUN 2018 jo. PERATURAN  
MENTERI ESDM NOMOR 4 TAHUN 2020**

About utilization of Renewable Energy Sources for Electricity



## ACHIEVEMENT IN REGIONAL ENERGY MIX TARGET (RUED)



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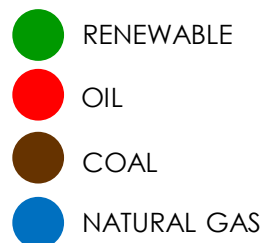
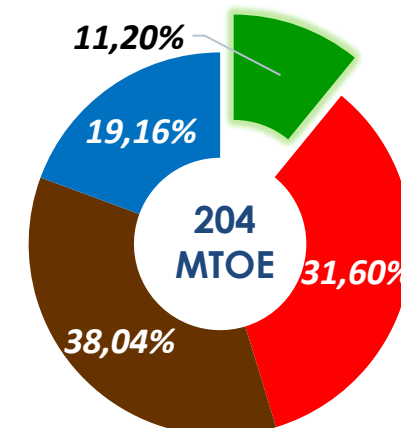
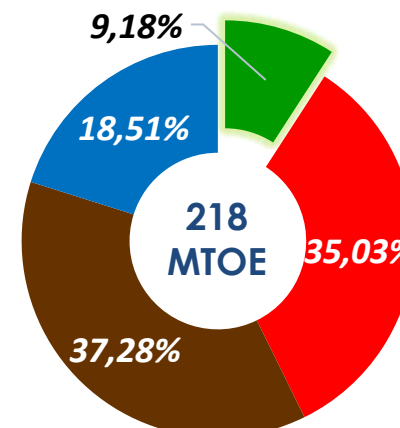
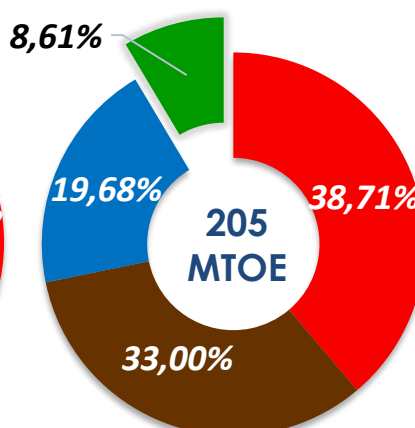
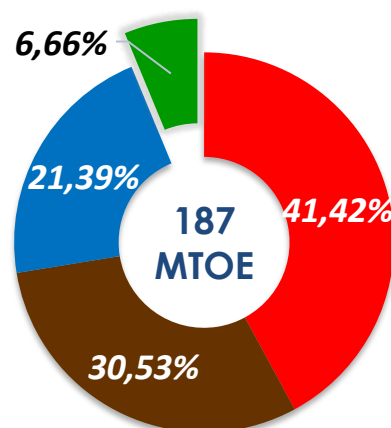
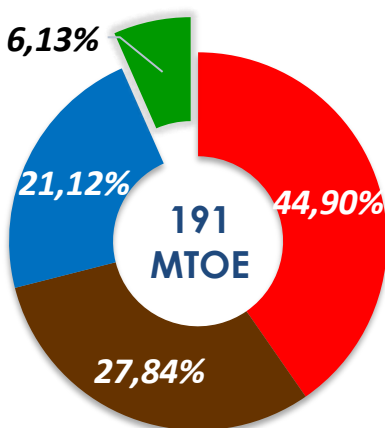
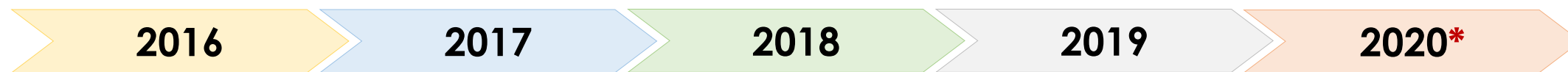
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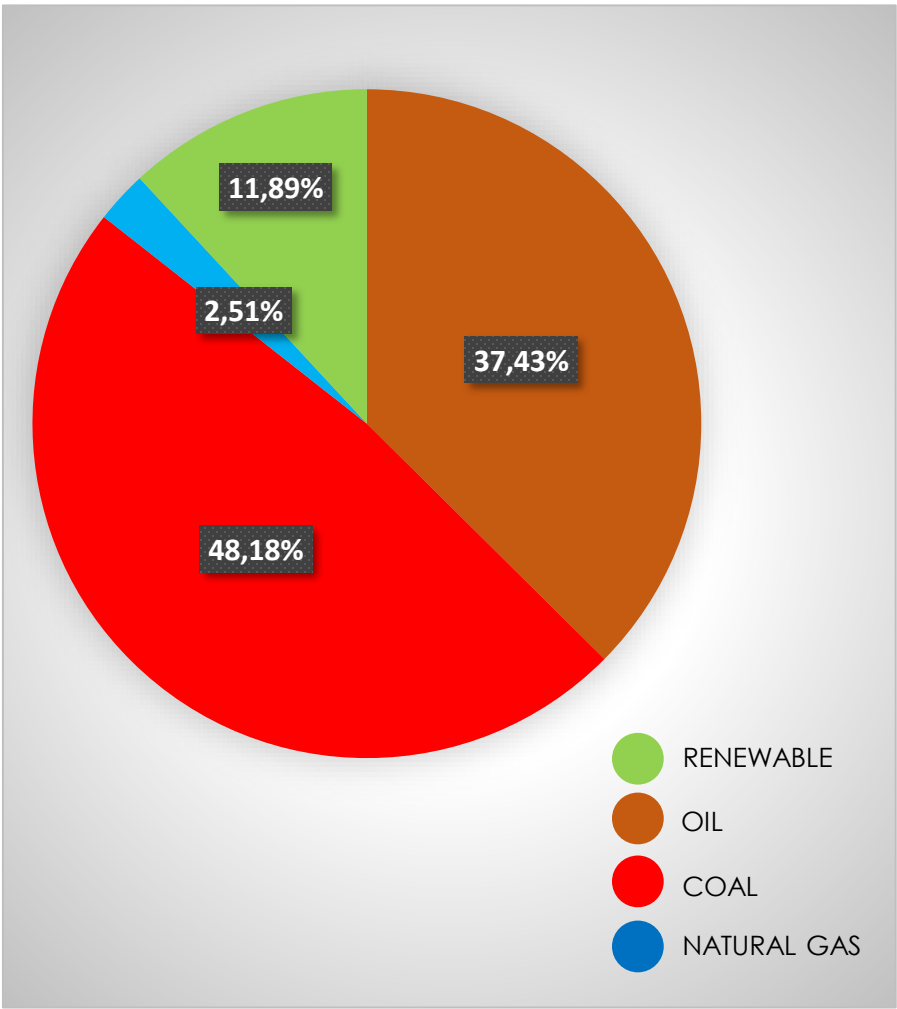
# DEVELOPMENT OF NATIONAL ENERGY MIX FROM 2016 – 2020\*

	2016		2017		2018		2019		2020	
	Target	Realization	Target	Realization	Target	Realization	Target	Realization	Target	Realization*
RENEWABLE	22,80	11,73	25,5	12,45	28,93	17,65	32,75	20,05	38,56	22,84
	10,42%	6,13%	10,93%	6,66%	11,58%	8,61%	12,20%	9,18%	13,42%	11,20%
OIL	76,48	85,87	77,7	77,41	79,35	79,38	81,46	76,46	82,88	64,42
	34,96%	44,90%	33,32%	41,42%	31,75%	38,71%	30,35%	35,03%	28,84%	31,60%
COAL	73,54	53,24	80,7	57,05	88,47	67,67	97,64	81,39	104,89	77,55
	33,62%	27,84%	34,58%	30,53%	35,40%	33,00%	36,38%	37,28%	36,49%	38,04%
NATURAL GAS	45,95	40,40	49,4	39,98	53,19	40,36	56,54	40,40	61,08	39,07
	21,01%	21,12%	21,18%	21,39%	21,28%	19,68%	21,06%	18,51%	21,25%	19,16%
<b>TOTAL</b>	<b>218,8</b>	<b>191,24</b>	<b>233,3</b>	<b>186,91</b>	<b>249,9</b>	<b>205,06</b>	<b>268,4</b>	<b>218,30</b>	<b>287,40</b>	<b>203,88</b>



# ROADMAP of CENTRAL JAVA ENERGY FROM 2018 to 2050

	2018	2019	2020	2021	2025	2030	2040	2045	2050
Target	10,32%	11,11%	11,60%	13,14%	21,32%	22,55%	25,50%	27,11%	28,82%
Realization	10,82%	11,69%	11,89%	??					



Energy Sources	Energy Mix Evaluation 2020	
	TBOE	Percentage
OIL	39.762,00	37,43%
COAL	51.179,94	48,18%
NATURAL GAS	2.665,43	2,51%
RENEWABLE ENERGY:	12.627,59	11,89%
-BIOSOLAR	4.087,23	3,85%
-BIOGAS	3.274,23	3,08%
-Hydro Power	3.632,74	3,42%
-Solar PV	26,83	0,03%
-Geothermal	878,71	0,83%
-Garbage Power Plant	26,83	0,09%
-Biomass	627,55	0,59%
TOTAL	106.234,95	100%

# CENTRAL JAVA POLICY ABOUT DEVELOPMENT OF RENEWABLE ENERGY

## Policy

Formulating policies to ensure reliable and equitable energy distribution for all people of Central Java



## Regional Energy General Plan (RUED)

Prepare technical Guidelines for the implementation of RUED



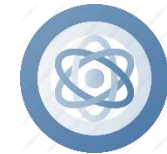
## Efisiensi

Control the efficiency and energy conservation at the consumption level.



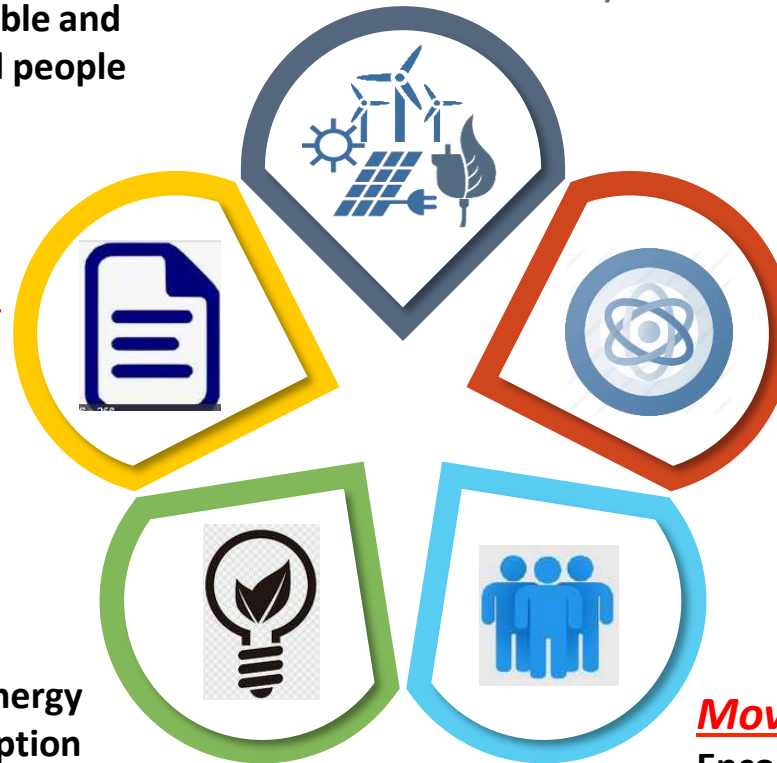
## Development of Local Potential

Developing renewable energy based on local energy resources



## Implementation

Implement the operational policies to ensure adequate, reliable and equitable energy distribution



## Movers

Encourage the participation of local communities in the development of renewable energy



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# EXISTING CONDITIONS OF SOLAR ENERGY DEVELOPMENT IN CENTRAL JAVA

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## 1. Solar Home System (SHS)

The SHS in Central Java that has been built from 2013 to 2018 as many as 575 units with installed capacity of 33,1 KWp.



## 2. Communal Off Grid Solar PV

There are 21 Units of Communal Off Grid Solar PV with a total capacity of 561 KWp spread in several areas in Central Java



## 3. Solar Street Lightning

Total development of solar street lightning in Central Java up to 8861 unit



# Solar PV For Water Pump



In 2020, a solar powered water pump has been built in Kaliwungu Village, Purworejo Regency to irrigate 20 ha of rice field. It raising water from the nearby river with a pump sourced from solar energy with the capacity of 12 KWp with a budget of 550 million Rupiah.



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# ROOFTOP SOLAR PV

## REGIONAL BUDGET

## NATIONAL BUDGET

2017

ESDM Departement  
(35 KWp)



2018

Bappeda  
(30 KWp)



2019

Central Java  
House of Representative  
(30 KWp)

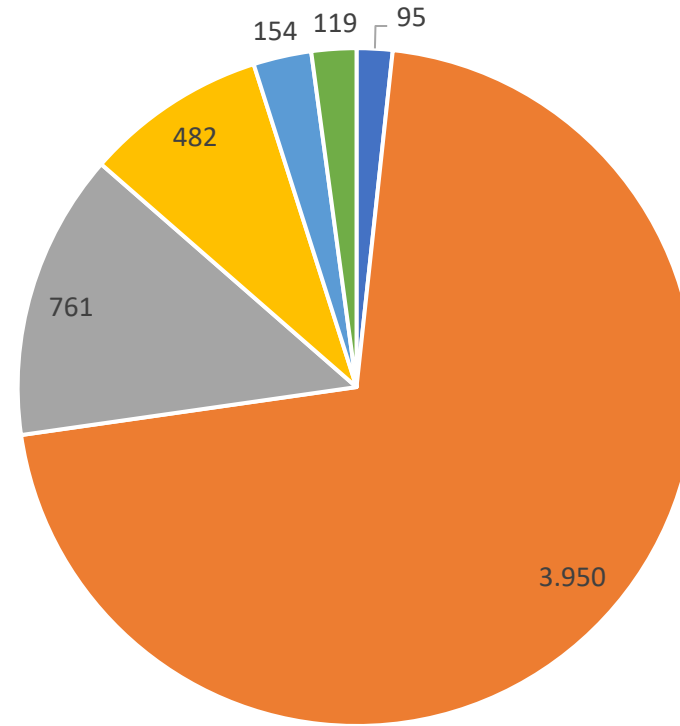
2019

22 unit in  
Pesantren (271  
kWp)



2020

14 unit in 11 Regency  
with total capacity of  
490 kWp



2019 Pesantren with National Budget



PT. Aqua Danone with a capacity of 2 MW

Sector	Number of unit	Capacity (KWp)
National Budget	36	761
Regional Budget	3	95
Industry	7	3.950
On grid household	37	154
Off grid household	48	119
Others	40	482

Until the end of December 2020, there were around 171 units of rooftop solar pv users in Central Java with a total capacity of 5.5 MWp.



**Some Solar PV Rooftop Engineering & Procurement Company  
(EPC) that interested in Investing and Establishing Branch  
Office in Central Java**



# OPERATIONAL & MAINTENANCE (O&M) TRAINING FOR ROOFTOP SOLAR PV

In addition to the construction of Rooftop Solar PV, there were also Operational & Maintenance (O&M) training in collaboration with the Center of Human Resources Development (PPSDM) EBTKE for 30 vocational high school (SMK) graduates this year.



## **Development of Renewable Energy Rooftop Solar PV for Fiscal year of 2021**

- The development of Renewable Energy for Fiscal year of 2021 is focused on economic recovery after Covid 19 through the construction of Rooftop Solar PV at Pesantren and Micro, Small and Medium Enterprise (UMKM)
- The construction in the Fiscal year of 2021 are around 31 units spread in 8 Regency in Central Java
- The hope that the construction will significantly reduce the burden of electricity, so the existing savings can be used for business development

# OBSESSION & COMMITMENT OF CENTRAL JAVA SOLAR PROVINCE

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# COMMITMENT OF CENTRAL JAVA SOLAR PROVINCE



- ❖ On September 17<sup>th</sup> 2019, Central Java Departement of Energy and Mineral Resources (Dinas ESDM) held the “ Central Java Solar Province 2019” forum as a form of seriousness of Central Java Provincial Government in increasing the utilization of Solar PV in Central Java. Collaborating with IESR, AESI and Ministry of Energy and Mineral Resources (K ESDM)
- ❖ This follows up the *Surat Edaran Gubernur Nomor 671.25/000468* about the Implementation of Rooftop Solar PV and *Surat Sekda Nomor 671/4649* about The Implementaion of Rooftop Solar PV Instalation in the Provincial Government Building in Central Java
- ❖ The letter had encourage the development of Rooftop Solar PV in the Private Sector, one of which is PT Tirta Investama Klaten (Danone Aqua) that installed a 2.9 MW Rooftop Solar PV in October 2020



# SUPPORT OF THE CENTRAL JAVA PROVINCIAL GOVERNMENT AT DEVELOPING ROOFTOP SOLAR PV

1

## Circular Letter

Issue of Central Java Governor Circular Letter to Provincial Government Departement and the General Public



2

## Rooftop PV Implementation

Provincial Government Secretary issued a letter to the Provincial Government Departements to ensure that the Rooftop Solar PV Construction can run.



Seventeen Provincial Government Departements have budgeted for the 2020 Rooftop Solar PV Development plan, but it has not been implemented because the budget is refocused for the Covid 19 relief



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# Information Sharing to the Community and Stakeholders

## Tak Lagi Beli Pulsa Listrik, Hemat Rp 200 Ribu/Minggu

**Sambungan dari hal 1**

Pemasangan panel ini merupakan tahap pertama. Ia akan meningkatkan daya untuk memenuhi kebutuhan yang lebih besar. "Untuk uji coba ini, saya gunakan untuk penerangan saja," ujar Viga saat disambangi di rumahnya. Sementara untuk kebutuhan lainnya, ia masih menggunakan listrik dari PLN.

Dan benar, pemanfaatan energi matahari mampu membantunya berhemat untuk pengeluaran.

## Pemprov Gerakkan SKPD dan Dunia Usaha

**Sambungan dari hal 1**

Batik di sektor produk maupun jasa, seperti perhotelan dan perbankan. Surat ini berisi ajakan untuk memanfaatkan tenaga surya.

Surat Edaran ini didasari bukti empirik, tenaga surya menunjukkan penghematan bagi penggunaannya. Yang sudah ada, ada Dinas Energi dan Sumber Daya Mineral (ESDM) Jateng mampu menekan pengeluaran kebutuhan listrik hingga 31 persen dengan PLTS atap berdaya 35 KwP. Padahal, belum semua potensi tenaga surya di kantor ini dimanfaatkan secara menyeluruh. Terus, sangat disayangkan kalau yang dilakukan di Dinas ESDM ini tidak dilakukan di dinas lainnya.

"Dengan pemasangan itu, boleh jadi kami bisa menghemat total BBM dan listrik konvensional. Maka Jateng akan handal. Karena cita-cita Pak Gubernur dalam memimpin Jateng ini memang menciptakan kemandirian pangan dan energi," kata Kepala Dinas ESDM Sujarwanto Dwiastoko.

sekarang sudah nggak mikir lagi untuk yang penerangan. Sebenarnya selain berhemat, niatnya juga untuk mengurangi beban pemerintah dalam keterbatasan menyuplai listrik," ujar pria yang mengaku tidak menghabiskan banyak biaya untuk pemasangan ini.

Pemanfaatan tenaga surya untuk listrik ini juga menarik perhatian Ketua Lembaga Pembinaan dan Perlindungan Konsumen (LP2K) Semarang Ngungmo. Dalam satu kesempatan mengaku tertarik menggunakan PLTS atap dengan segala keuntungan yang didapat. Hanya saja, sebagai masyarakat, ia merasa biaya pemasangan di awal cukup berat.

Berdasarkan informasi yang ia terima, ia menyebut, untuk pemasangan panel surya dan segala kelengkapannya termasuk instalasi, setidaknya ia harus merogoh kocek sekitar Rp 30 juta. Ini untuk panel surya dengan kapasitas 2 KwP, jumlah kapasitas yang setidaknya dibutuhkan rumah tangga.

"Dengan biaya awal sebanyak itu, saya yakin banyak masyarakat yang akan berpikir ulang untuk memasangnya. Meskipun ke depan pasti ditunjang dengan penggunaan PLTS atap ini," ujarnya. "Saya tertarik sebenarnya," ujarnya menambahkan. (aga/ida)



Sujarwanto Dwiastoko

saat dijumpai di kantornya jalan Madukoro, Blok AA-BB No.44, Semarang.

"Makanya Pak Gubernur mengajak untuk memanfaatkan tenaga surya untuk kebutuhan listrik," ujarnya menambahkan.

Saat ini, ia katakan, sudah ada 3 kantor pemerintah yang memanfaatkan tenaga surya. Selain kantor Dinas ESDM, ada juga Kantor Bappeda Jateng dan gedung DPRD Provinsi Jateng. Selanjutnya, akan ada 17 SKPD, dinas dan badan, yang merencanakan akan memasang pada 2020 nanti.

Gayungbenambur, dikatakan, PLN sudah menyiapkan meteran-meteran untuk in-out atau untuk ekspor dan impor hasil listrik tenaga surya ini. PLN juga siap mengganti di semua pemasangan. "Jadi PLN don'tasi jalur sudah menyiapkan meteran untuk mengganti kalau sudah pasang surya, ini sangat menarik tenanya," jelasnya belum lama.

Meteran ini, akan mencatat berapa jumlah listrik yang diproduksi dan berapa yang dikirimkan PLN ke pemasangan. Nantinya, akan ada kalkulasi yang menunjukkan total yang



## UMKM: Jatuh Akibat Pandemi, Bangkit Bersama Energi Terbarukan

Rizqi Mahfudz Prasetyo

**T**idak dapat terelakkan lagi, pandemi COVID-19 telah menghantam perekonomian di Indonesia, termasuk Provinsi Jawa Tengah. Pemberlakuan protokol kesehatan, pembatasan fisik, dan kenormalan baru membuat aktivitas produksi dan konsumsi, termasuk di tingkat rumah tangga, juga menurun tajam. Berdasarkan data Badan Pusat Statistik (BPS), perekonomian Jawa Tengah turun hingga -5,94% (yoy) pada triwulan II tahun 2020, meskipun pada triwulan I, Jawa Tengah masih mencatatkan pertumbuhan sebesar 2,61%. Penurunan tersebut dirasakan secara langsung maupun tidak langsung terhadap korporasi

Energika | 1001



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# OBSESSION ON THE SOLAR PV DEVELOPMENT



- ❖ The Targets for solar pv in the future are the Industrial and Commercial sectors.
- ❖ There are a financing scheme with “*zero capex*” or no initial investment cost with soft credit involving financial institution
- ❖ Construction of a Charging Station that can support electric vehicles (EV)

# CHALLENGES AND OPPORTUNITIES

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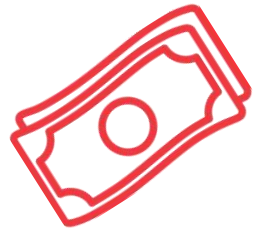


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# CHALLENGES



There still limited Solar PV EPC / construction service provider in Central Java



The price of renewable energy still cannot compete with the price of conventional energy



Ease to access conventional / fossil energy



There are not yet any regulation that provide incentives or direct benefits for those who have installed Rooftop Solar PV

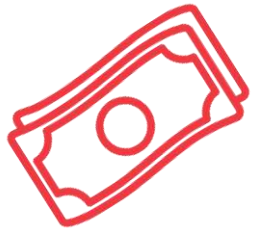


The new regulation regarding National Standardization for Solar PV Modules still raises pros and cons, especially for importers and Solar PV providers

# OPPORTUNITIES



The trend of using renewable energy has increased rapidly in the past 10 years



The renewable technology price are getting cheaper and more affordable for general population



More Government Regulation tend to support the development of renewable energy



More better information dissemination about renewable energy to the public



Renewable financing scheme that increasingly varied and affordable for several levels of potential customers



There has been coordination with the PLN so that the installation of KWh Exim in the future will be easier and faster



*Jateng*  
gayeng

Thank You

