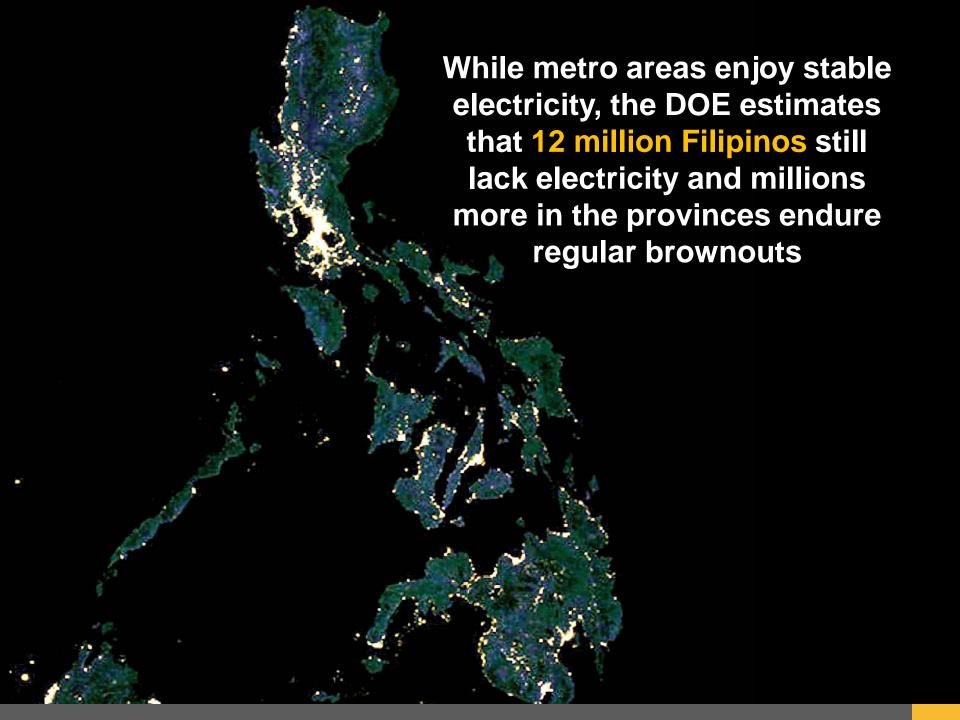




# ENDING ENERGY POVERTY IN THE PHILIPPINES BY 2022



#### **PROBLEM**

#### ACCESSIBILITY, RELIABILITY, AFFORDABILITY

The Duterte administration has declared the target to achieve 100% electrification in the Philippines by 2022, and a comfortable life with reliable, affordable electricity for all.

The Philippines has among the highest electricity rates in Asia, and inadequate service has slowed economic development. A Pulse Asia survey in June 2018 indicated 82% of Filipinos favor new options for electric service providers, with support across Luzon, Visayas, and Mindanao:

WHETHER FOR HIS / HER ELEC	TRIC SER	RVIC ne 15	E PROV - 21, 2018	/ Philips	OR ELE			RES	ISE A	
			(Row Perc	ent)						
Are you in favor or not in fa new option for your electric provider or electric utility?										
IN FAVOR		82	88	78	84	83	81	82	79	
NOT IN FAVOR		14	12	17	12	13	15	14	14	
VOLUNTEERED										
Don't know		4	1	4	4	4	2	3	6	
Refused		0.3	ò	1	0	ó	2	o	o	
	(Estimated			Ba	se: Total	Interview	vs. 100%			
	Population		IN	T	NOT		Volunteered			
Demographic variables	Percentage)			FAVOR	Dor			Refused		
Total Philippines	(100%)		82	82 14			4		0.3	
NCR	(14%)		88		12	1		0		
Balance Luzon	(45%)	$\vdash$	78	+	17		4		1	
Northern/Central Luzon	(22%)	1	68		25		6		ò	
CAR	(2%)	1	11		44		39		6	
Region 1	(5%)	1	64		33		3		ō	
Region 2	(3%)	1	74		24		2		ō	
Region 3	(12%)	1	77		20		4		0	
Southern Luzon	(23%)	1	88		8		3		1	
Region 4A	(15%)	1	87		8		3		2	
Region 4B	(3%)	1	92		7		ĭ		ō	
Region 5	(5%)	1	89		10		i		ō	
Visayas	(19%)	$\vdash$	84		12		4		0	
Western Visayas	(7%)	1	88		8		4		ō	
Central Visayas	(7%)	1	88		6		6		ō	
Eastern Visayas	(4%)	1	70		29		1		0	
Mindanao	(23%)	1	83		13		4		0	
Western Mindanao	(11%)	1	79		13		8		0	
Region 9	(3%)	1	77		14		9		0	
Region 12	(4%)	1	84		16		0		0	
ARMM	(3%)	1	73		8		19		0	
Northern Mindanao	(7%)	1	82		18		0		ō	
Region 10	(4%)	1	78		22		ŏ		ō	
Region 13 / Caraga	(2%)	1	89		11		ō		ō	
Southern Mindanao / R11		1	94		6		ő		o	

An estimated 12 million Filipinos lack access to electricity, including nearly 3 in 10 Mindanaoans:

#### **Unelectrified Households as of 2016**



REGION	UNELECTRIFIED HOUSEHOLDS
CAR	43,529
I	84,172
II	64,546
III	93,611
IV-A	129,498
IV-B	115,132
NCR	61,136
V	123,199
LUZON TOTAL	714,823
VI	60,823
VII	58,688
VIII	113,788
NIR	75,620
VISAYAS TOTAL	309,918
ARMM	315,219
CARAGA	37,675
IX	178,790
X	201,683
XI	305,405
XII	298,582
MINDANAO TOTAL	1,337,354
PHILIPPINES	2,361,096

Most Filipinos live in areas where brownouts are a regular occurrence, based on official statistics, which may even underestimate the severity of the problem of unreliability:

#### **Provinces with Most Power Interruptions as of 2017**

PROVINCE	Region	% Connection Completion	Average Systems Rate (Php/kWh)	Average Power Rate (Php/kWh)	System Loss	Ave. Duration of Power Outage per customer (in mins.) - SAIDI	Ave. Frequency of Power Outage Per Customer (Per Year) - SAIFI
MASBATE	5	49%	8.56	5.12	17.12%	7,626.75	100.09
SULU	ARMM	24%	8.53	5.00	29.68%	5,074.89	70.14
PALAWAN	4b	56%	9.41	6.06	11.00%	2,476.58	33.07
SURIGAO DEL SUR	CARAGA	97%	10.93	6.61	12.97%	731.60	33.06
NEGROS ORIENTAL	NIR	63%	9.35	6.21	13.41%	367.45	29.89
SORSOGON	5	95%	9.51	5.67	11.37%	2,555.62	26.60
BATANES	2	96%	10.21	6.01	4.46%	2,112.75	26.27
ZAMBOANGA CITY	9	71%	7.98	5.23	21.94%	1,416.03	25.47
MINDORO	4b	78%	10.31	6.13	15.52%	1,267.07	24.82
MARINDUQUE	4b	97%	10.15	6.03	11.35%	1,906.25	23.92
LUBANG	4b	96%	13.38	6.01	11.55%	730.90	22.87
IFUGAO	CAR	91%	9.84	5.13	16.46%	1,565.74	21.83
CAMARINES NORTE	5	87%	8.54	5.45	10.80%	675.20	21.43
CAMARINES SUR	5	93%	8.24	5.68	12.51%	139.64	20.51
CAGAYAN	2	99%	10.12	7.16	11.88%	1,310.65	19.67
NEGROS ORIENTAL	NIR	89%	9.12	6.91	11.59%	17.11	19.45
ANTIQUE	6	100%	9.29	5.97	9.17%	2.47	18.81
NUEVA VIZCAYA	2	93%	5.98	3.84	9.19%	775.59	18.56
PANGASINAN	1	99%	9.05	6.20	12.95%	693.39	18.55
SIQUIJOR	7	97%	10.45	6.51	10.26%	681.62	18.27
BUSUANGA	4b	64%	9.17	5.35	10.85%	1,159.19	17.37
NEGROS ORIENTAL	NIR	85%	9.01	5.91	12.44%	566.95	17.21
SULTAN KUDARAT	12	59%	8.54	5.72	10.68%	527.30	17.08
LEYTE	8	92%	10.22	6.09	11.47%	1,260.09	16.84
PANGASINAN	1	99%	8.89	5.86	12.27%	1,443.82	16.44

#### **SOLUTION**

#### BENEFITS OF MINIGRIDS



Reliable 24/7 Service



Lower Rates



Disaster Resiliency



**Energy Security** 



**Employment and Investment** 



**Encourages Innovation** 



Responsive Service



**Environmental Preservation** 

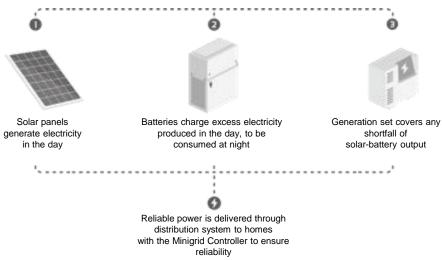


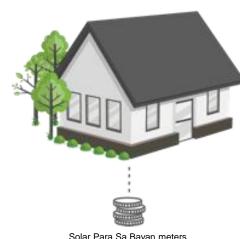
Climate Change Mitigation



Zero Cost to Government

#### **HOW IT WORKS**





Solar Para Sa Bayan meters, bills, and collects directly from consumers



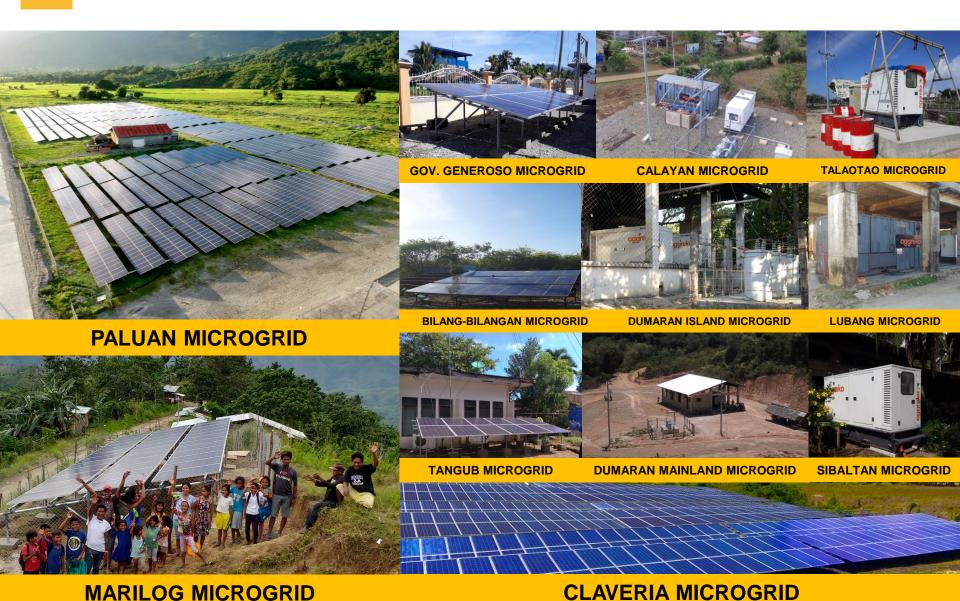
transmission systems or other minigrids

## **3 X 2MW PALUAN MICROGRID**

PALUAN, OCCIDENTAL MINDORO



### MICROGRIDS IN 12 TOWNS, BENEFITING OVER 200,000 FILIPINOS



Solar Para Sa Bayan has brought 24/7 power to over 12 towns for the first time, benefiting over 200,000 Filipinos at zero cost to government in regions including MIMAROPA, Cagayan, Bicol, Central Visayas, Davao, to help achieve the DOE goal's of 100% electrification by 2022



# Let's work to ensure that no Filipino will lack reliable and affordable electricity ever again. leandro@solarphilippines.ph

