



# UNLOCKING THE POTENTIAL of SOLAR ENERGY IN CAMBODIA

*Jack Pegler, NRG Solutions*  
*5<sup>th</sup> June | Auditorium D, ADB*

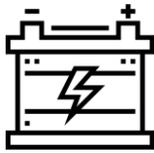


A photograph showing a Panasonic battery and a television set in a rustic wooden structure. The battery is white with red and blue text. The television is a small, dark-colored CRT model. The structure is made of rough wooden planks and beams. In the background, there is a piece of yellowish, fibrous material and a colorful patterned fabric.

**PANASONIC**  
TOKYO JAPAN



# ENERGY IN CAMBODIA



## OFF-GRID

- More than **9 Million people**
- Using car-batteries & kerosene
- Waste time and money

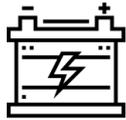


## ON-GRID

- Un-reliable power quality
- Blackouts
- Expensive electricity prices



# TWO MARKETS – TWO BRANDS



**គ្រួសារសូឡា**  
Kruosar Solar  
ធ្វើអោយជីវិតប្រសើរឡើង

Rural distribution network  
providing solar home systems  
to *off-grid households*



**NRG solutions**  
solar energy and lighting

Engineering and consultancy  
servicing *residential, commercial  
and industrial customers*



# TWO MARKETS – TWO BRANDS





# គ្រួសារសុឡា

Kruosar Solar

ធ្វើទោយជីវិតប្រសើរឡើង



# WHO is Our Customer?

Over 60% household  
*are using car batteries*



**Polluting**



**Inconvenient**



**Expensive**



# WHO is Our Customer?

Over 60% household  
*are using car batteries*



\$50M market  
opportunity for solar





# Solar is the solution



Clean



Convenient



Cheaper

## But what's stopping the customers?



# But what's stopping the customers?

## Trust

- ***Poor quality*** products
- Lack of proper engineering
- Little/ no ***after-sales support***

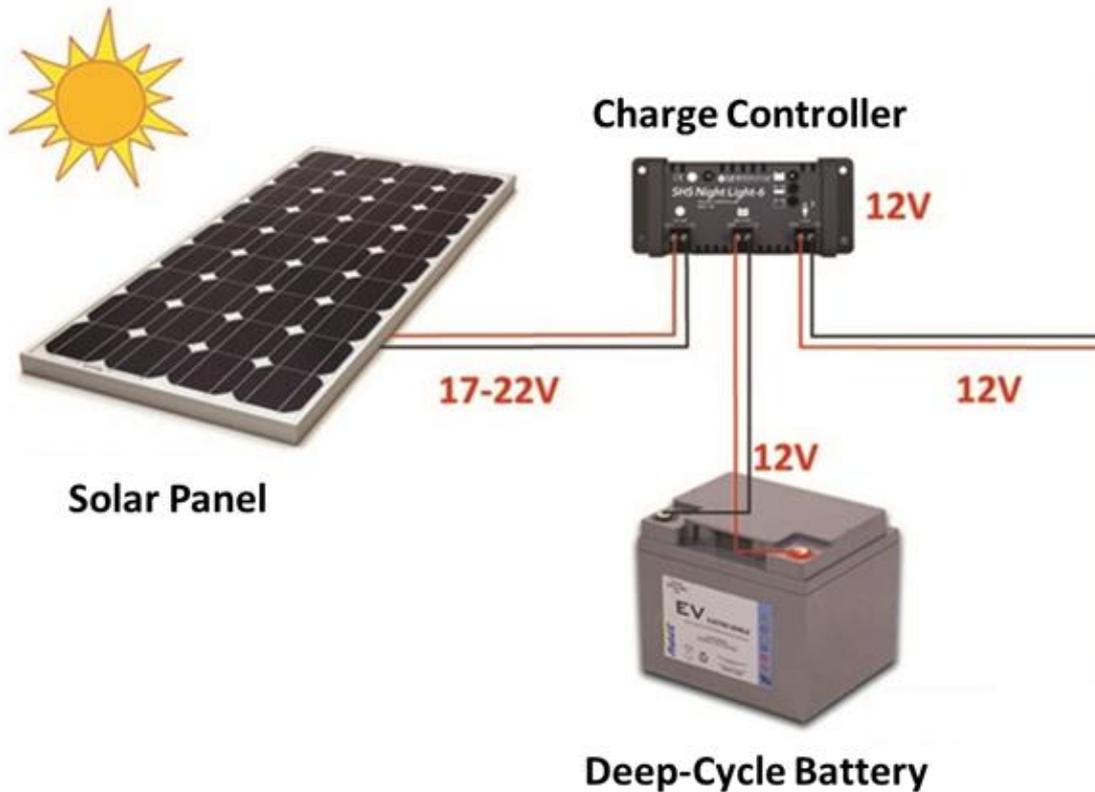
## Affordability

- Solar cheaper ***in long-term***
- Up-front cost prohibitive



# HOW do we build trust?

*By providing quality products*



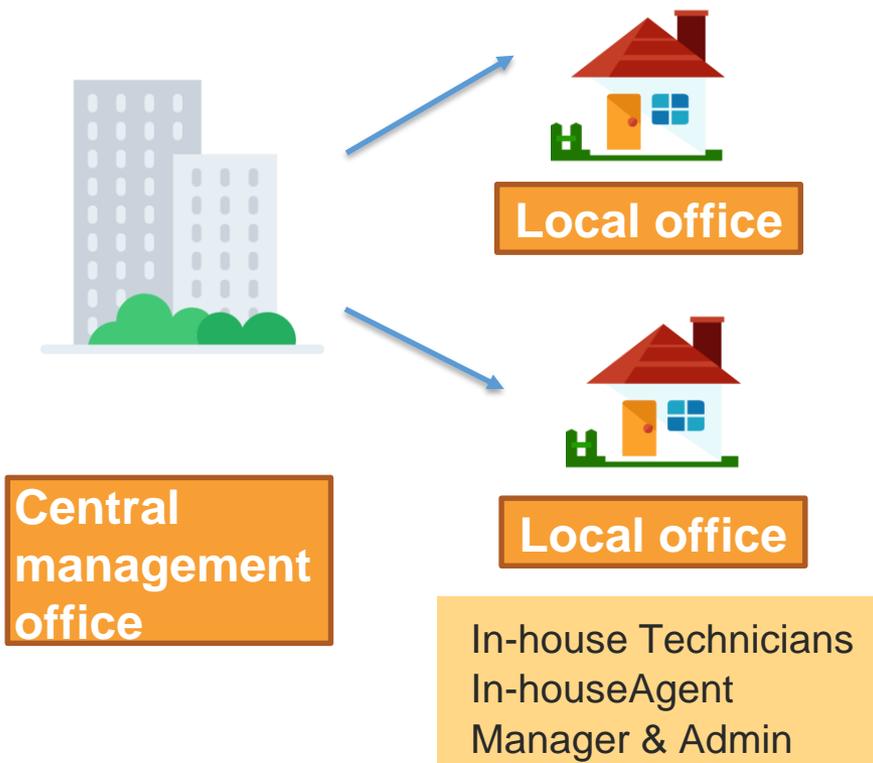
- Properly sized systems
- High-quality components
- Ultra-efficient appliances



Low Energy DC Appliances

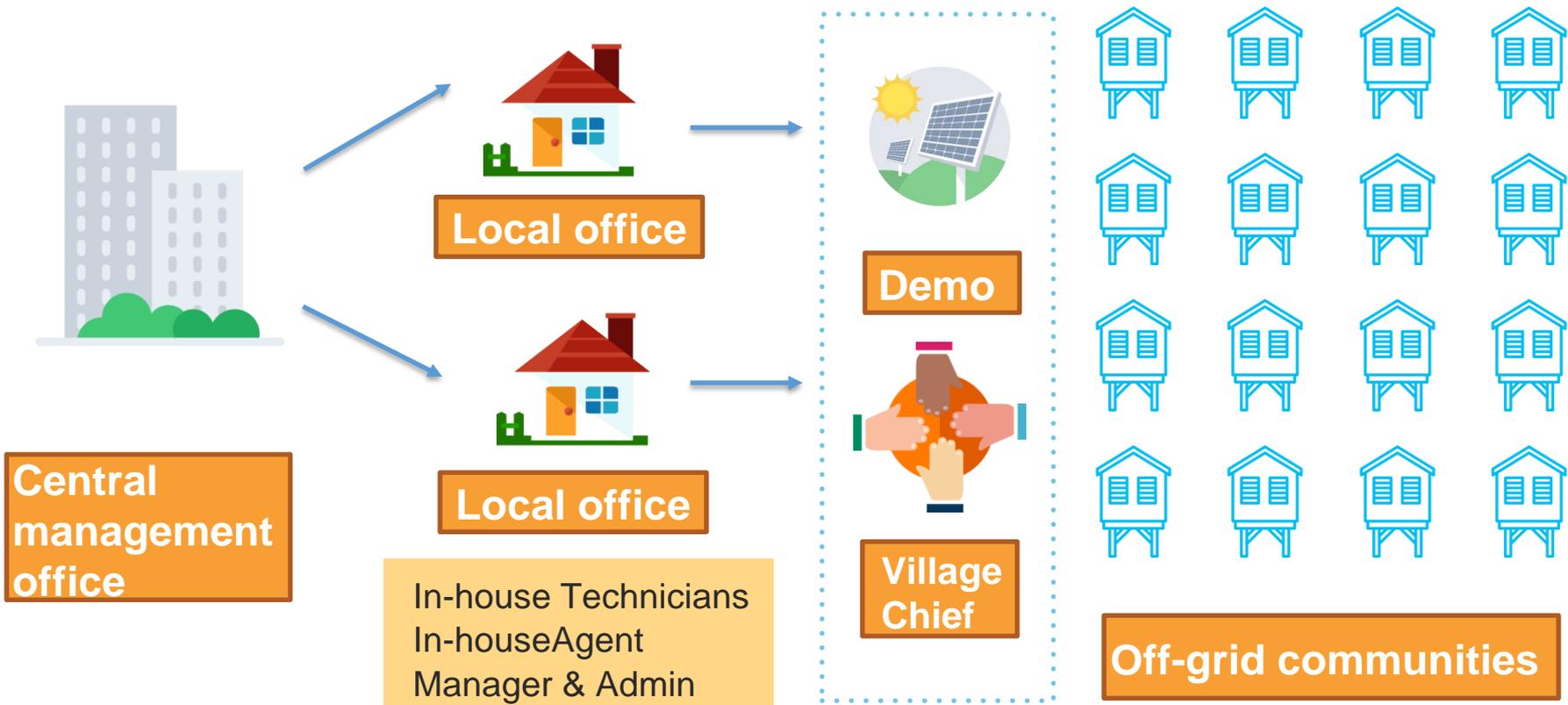
# HOW do we build trust?

*By effective distribution*



# HOW do we build trust?

*By effective distribution*



# HOW do we build trust?

*By timely after sales support*

- Structured after-sales plan
- 24hr service hotline
- 48hr issue resolution



# HOW do we make it affordable?

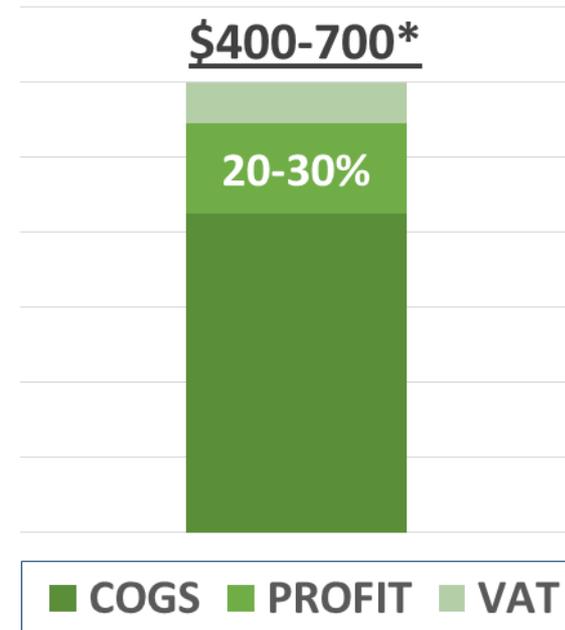
*By offering end-user financing*

- MFI Partnerships
- Customer pays over 12-24 months
- We get paid < 30 days after installation



# BUSINESS MODEL

*Selling Solar  
Home systems  
direct to end-users*



# BUSINESS MODEL

## *3 revenue streams*



**Cash**



**MFI  
Loans**



**Partnerships**



# MANAGEMENT TEAM

## *Strategy, Logistics & Finance*



**Daniel Pacheco,**  
Founder / CEO



**Jack Pegler,**  
Operations Manager

## *Field Operations*



**Pha Sovananra,**  
Distribution Manager



**Pin Phalla,**  
Technical Manager

8yr

4yr

10yr

6yr



# WHAT HAVE WE ACHIEVED SO FAR?



Sold over **2,000** products



Accredited for quality and service



សុទ្ធករណ៍  
GOOD SOLAR INITIATIVE

af  
AGENCE FRANÇAISE  
DE DÉVELOPPEMENT

SNV



Founding/active member of Solar energy association of Cambodia



Successful pilot of PAYGO:

- **75%** uptake
- **zero** defaults



# WHAT COMES NEXT?

## Expansion

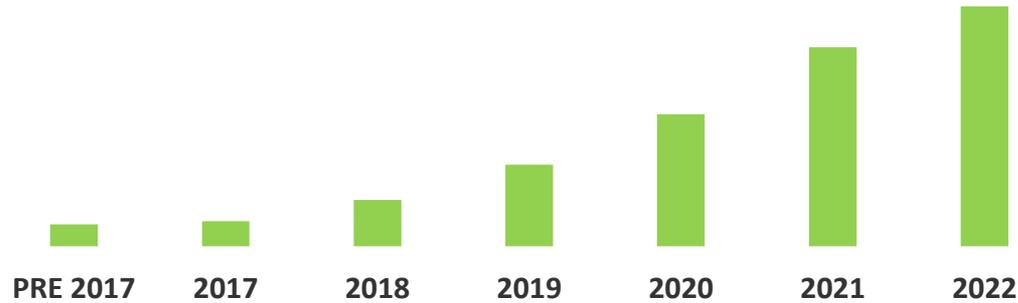
- **3 new offices / year**
- *19 branches by 2022*
- Invest in strengthening network
- Product diversification

## Internal Financing

- Build on pilot project
- Internal financing
- **Avoid challenging MFI partnerships**



# IMPACT



<b>BRANCHES</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>10</b>	<b>13</b>	<b>16</b>	<b>19</b>
<b>UNITS SOLD</b>	<b>2,258</b>	<b>2,558</b>	<b>4,637</b>	<b>8,067</b>	<b>12,979</b>	<b>19,511</b>	<b>23,482</b>

## CUMULATIVE IMPACT IN 2021

PEOPLE IMPACTED	GHG kgCO2e	EXTRA HOURS OF LIGHT	EXTRA HOURS OF STUDY	ENERGY SAVINGS
127,977	2,254,272	21,442,001	4,288,400	\$4,461,580

Model by:

shujog  
**ACTS**  
Assistance for Capacity-building and Technical Services



# MAKING IT HAPPEN

We're asking for **\$500k** in **equity / debt** to:

- **Strengthen** and **expand** our **network** to increase reach
- Offer **internal** end-user **financing** to bypass MFI





# Commercial and Industrial Solar Solutions



# WHO is Our Customer?



**No Power /  
blackouts**



**20¢/kWh on grid,  
more for diesel**



**No access to  
financing**

**Individuals & Organizations**

*Looking for secure  
energy supply*



# Providing a SOLUTION

## Custom-designed systems

- *On-Grid*
- *Off-grid*
- *Hybrid*

**5-100kW**

## Focused On

- *Understanding needs*
- *Quality components & installation*
- *Excellent service and support*

Consultancy



Engineering



Installation



Monitoring



Maintenance



Training



# BUSINESS MODEL



**EPC  
PROJECTS**

**28**

**COMPLETED  
TO DATE**



**100% CASH  
PAYMENT**

# ENGINEERING TEAM



**Daniel Pacheco,**  
Founder / CEO



**Quentin Boch,**  
Project Manager



**Bastien Adamo,**  
Project Manager



**Artur Vila,**  
Technical Manager



**Col Williams,**  
Site Manager



**Engineering  
experience**

# WHAT HAVE WE ACHIEVED SO FAR?



Authorized distributor for  CanadianSolar



Won contract with Total Cambodia in Siem Reap Airport



Partnership with 



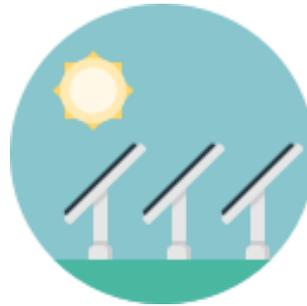
Sold first project with **customer financing**



# WHAT COMES NEXT?



PROJECTS



5kW – 5MW



CUSTOMER  
FINANCING



# MAKING IT HAPPEN

We're looking for **partners** to provide  
**project financing**

## PILOT:

80kW on grid

**High-profile factory in Phnom Penh**  
**Business case for Clients & finance**



# EXCITING OPPORTUNITIES



**New Partnership** to  
serve both markets

- ***First SHS Shipment***
- ***Large on/off-grid projects under study***



# THANK YOU!



Rural distribution network  
providing solar home systems  
to *off-grid households*

**\$500K EQUITY/DEBT**



Engineering and consultancy  
servicing *residential, commercial  
and industrial customers*

**PROJECT FINANCING**

[jack@nrg-renewables.com](mailto:jack@nrg-renewables.com)



# APPENDIX

# Competition

- Existing solutions (Kerosene & Car Batteries) } Expensive & dangerous

- Local (mobile) Sellers
- Local markets and hardware/electrical shops
- Non-accredited solar companies

Cheap but low quality, no financing & poor design and service.

- Other “Good Solar” Accredited Companies



# Competitive Advantages

## ADVANTAGE

## BENEFIT TO CUSTOMERS

Engineering & Design



Longer lasting systems

Unique DC Appliances



Higher quality, more efficient

Simplified PAYG technology



Easier, cheaper financing

Strong Focus on After-Sales



Fewer problems, solved faster



# Risks & Mitigation

Grid Expansion

Extensive Market research

Subsidized Products

Product Malfunction / Misuse

User training and maintenance plan

(Lack of) Regulatory Policy

HR / Recruitment

