



Powering Productivity in African Grids

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Loughborough University

22 May 2026



Transforming
Energy
Access



Swansea
University
Prifysgol
Abertawe

Our global network of over 300 experts is identifying and delivering on opportunities to address energy access through next-generation PV.

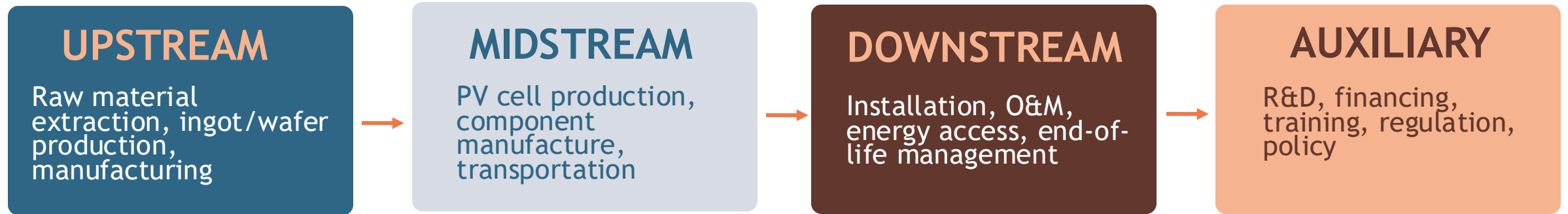


Kuala Lumpur Symposium Jan -2026



Network members

The Solar Value Chain



Critical insight:

The solar value chain can be analysed as a spatial and political geography of power - one that often mirrors historical patterns of colonial extraction, where raw materials flow from the Global South to manufacturing centres, and the most profitable segments remain concentrated among actors who inherited advantages from colonial-era industrialisation.

97%

of global solar panels may contain forced labour components

Murphy & Elimä, 2021

91%

of installation roles filled by men (Bangladesh study)

Hemson and Peek, 2017

2.8%

of multilateral climate finance supports just transitions

ActionAid, 2025

Quality, Safety, Choices



Quality, Safety, Choices



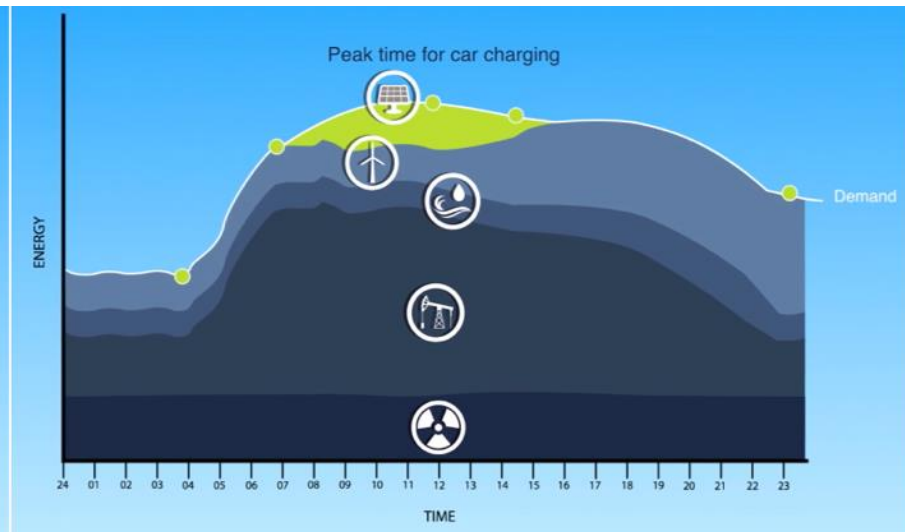
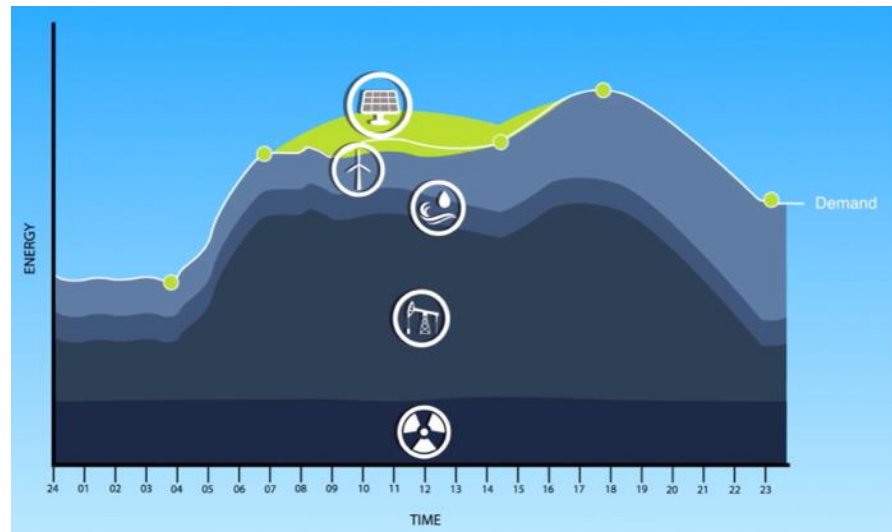
Quality, Safety, Choices



Active Buildings

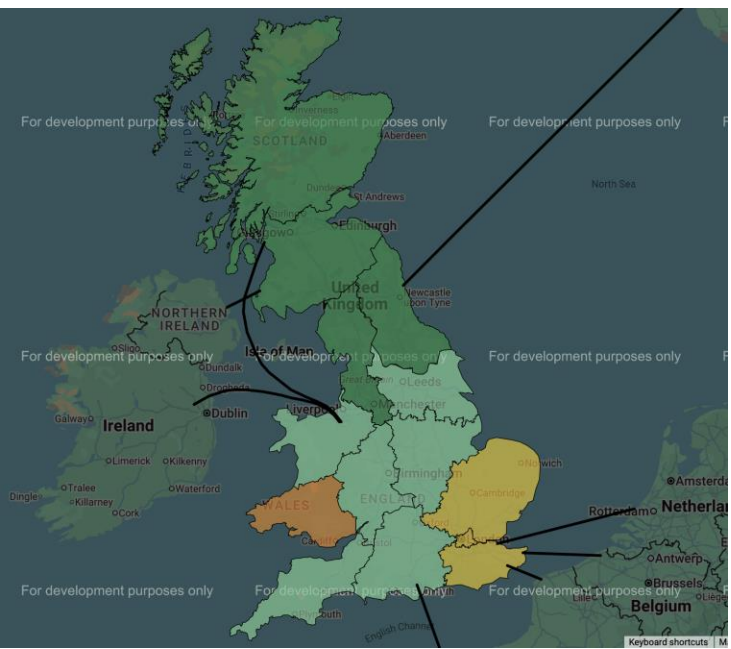
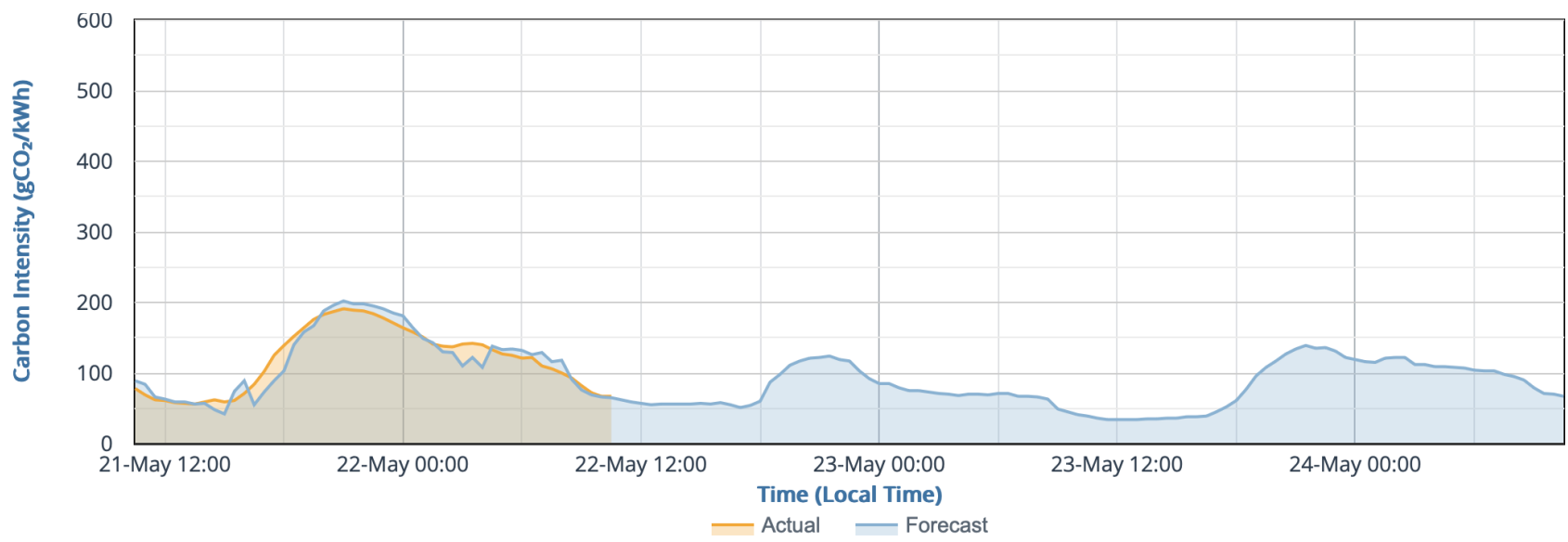
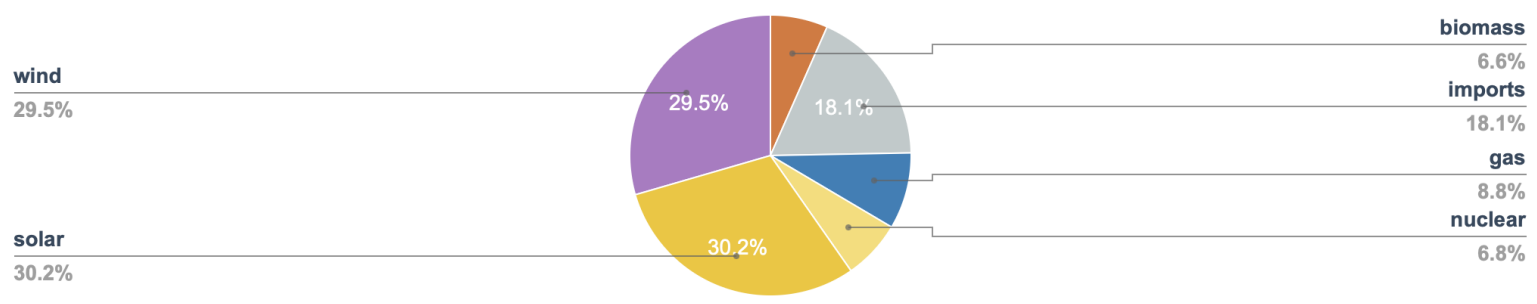


Demand Side Response



Active Buildings - Smarter Grids

Current GB Generation Mix



Solapak Systems Limited

Stand-alone solar electricity generators for industry

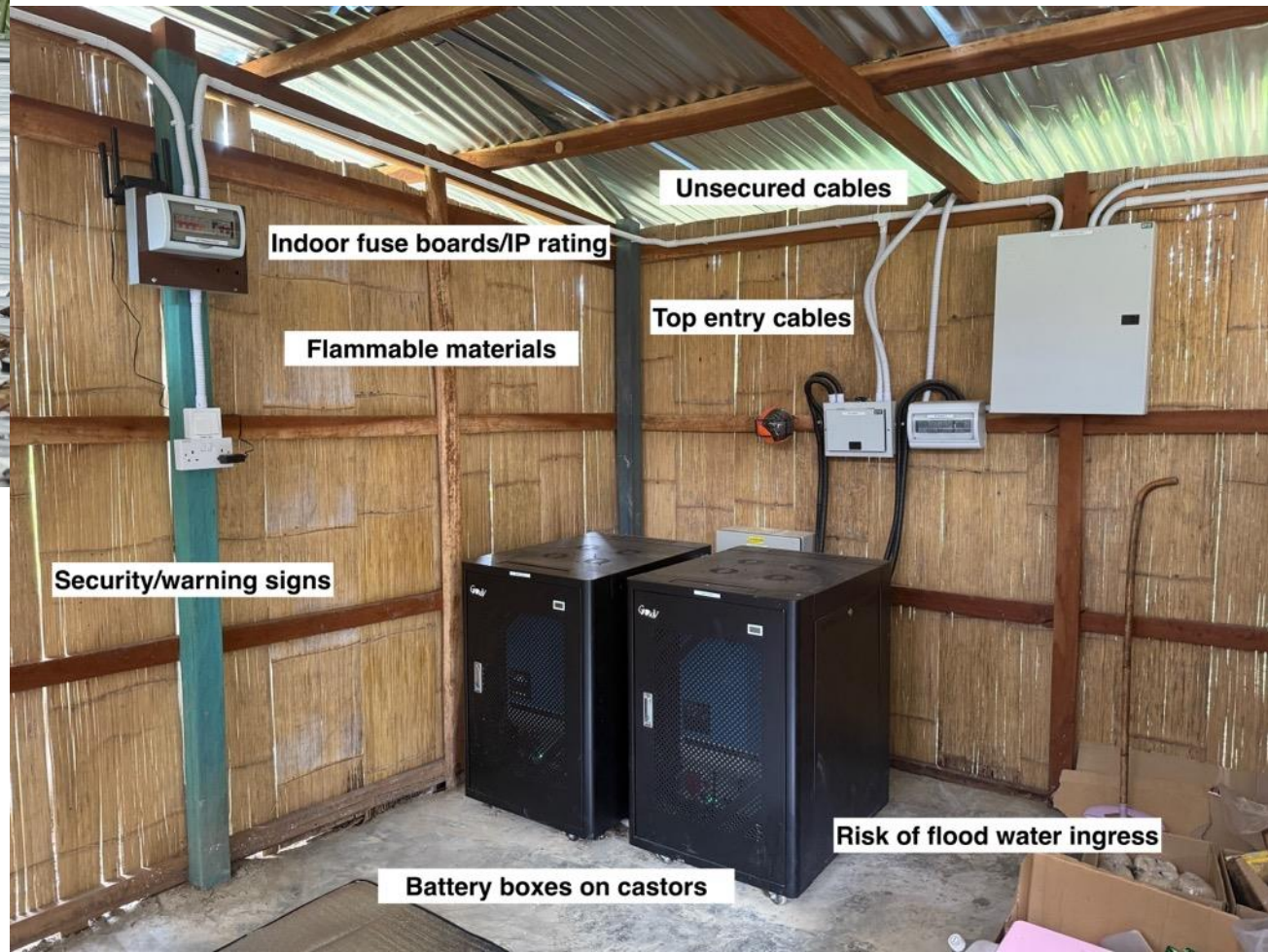


A long-established commercial company with a respected pedigree and a strong supplier network.





Dirt build up shading cells after only 9 months



Unsecured cables

Indoor fuse boards/IP rating

Flammable materials

Top entry cables

Security/warning signs

Battery boxes on castors

Risk of flood water ingress

Milk Collection Centres

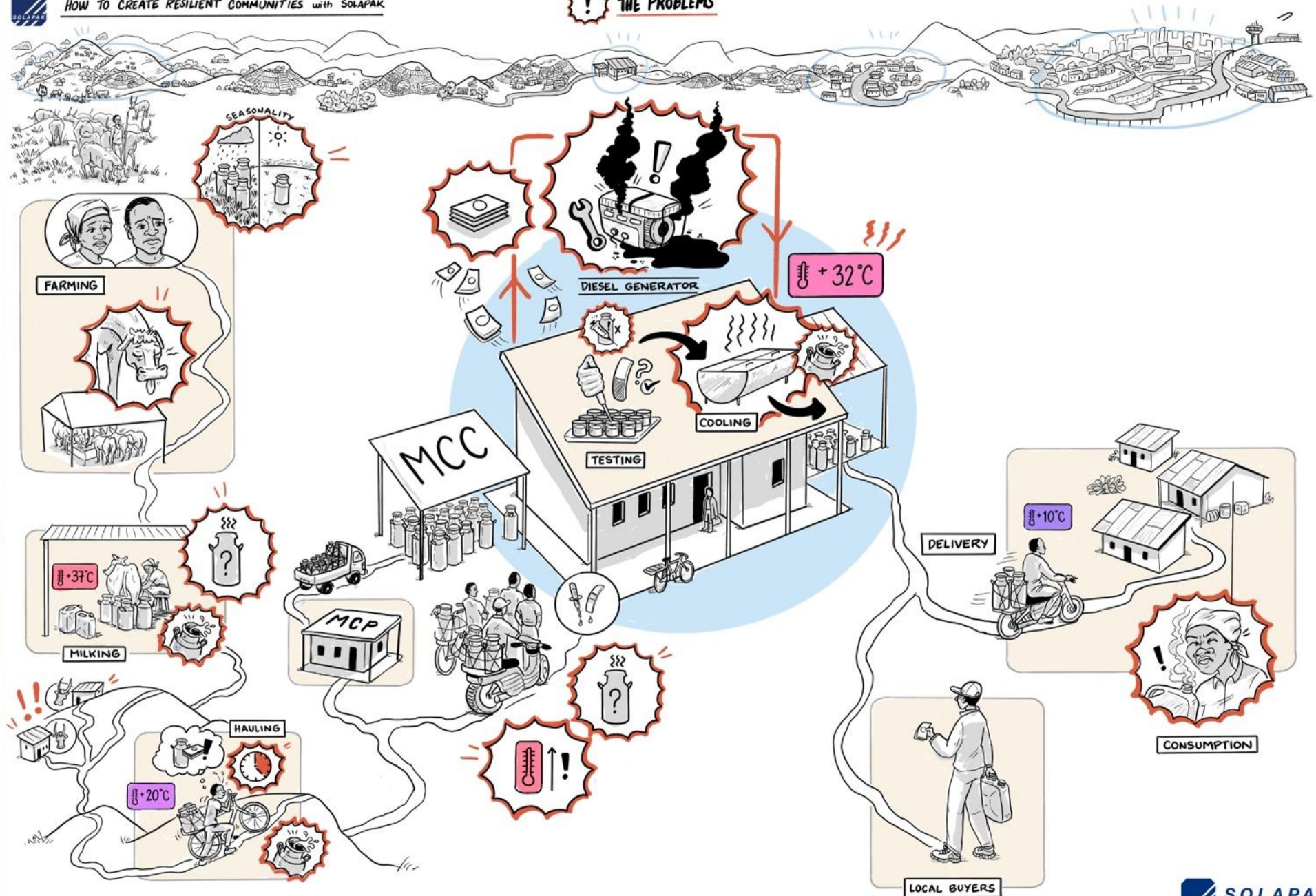


Diesel Dependence a major obstacle





THE PROBLEMS





ENERGY
CATALYST



20kWp PV, elevated to provide sheltered working and meeting space with rainwater collection



60kWh LI-Ion Battery Storage in Power Room Beneath PV Array



Additional 15000 Litres of IBC Rain Water Storage for Year Round Operation

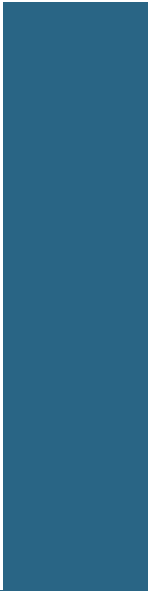


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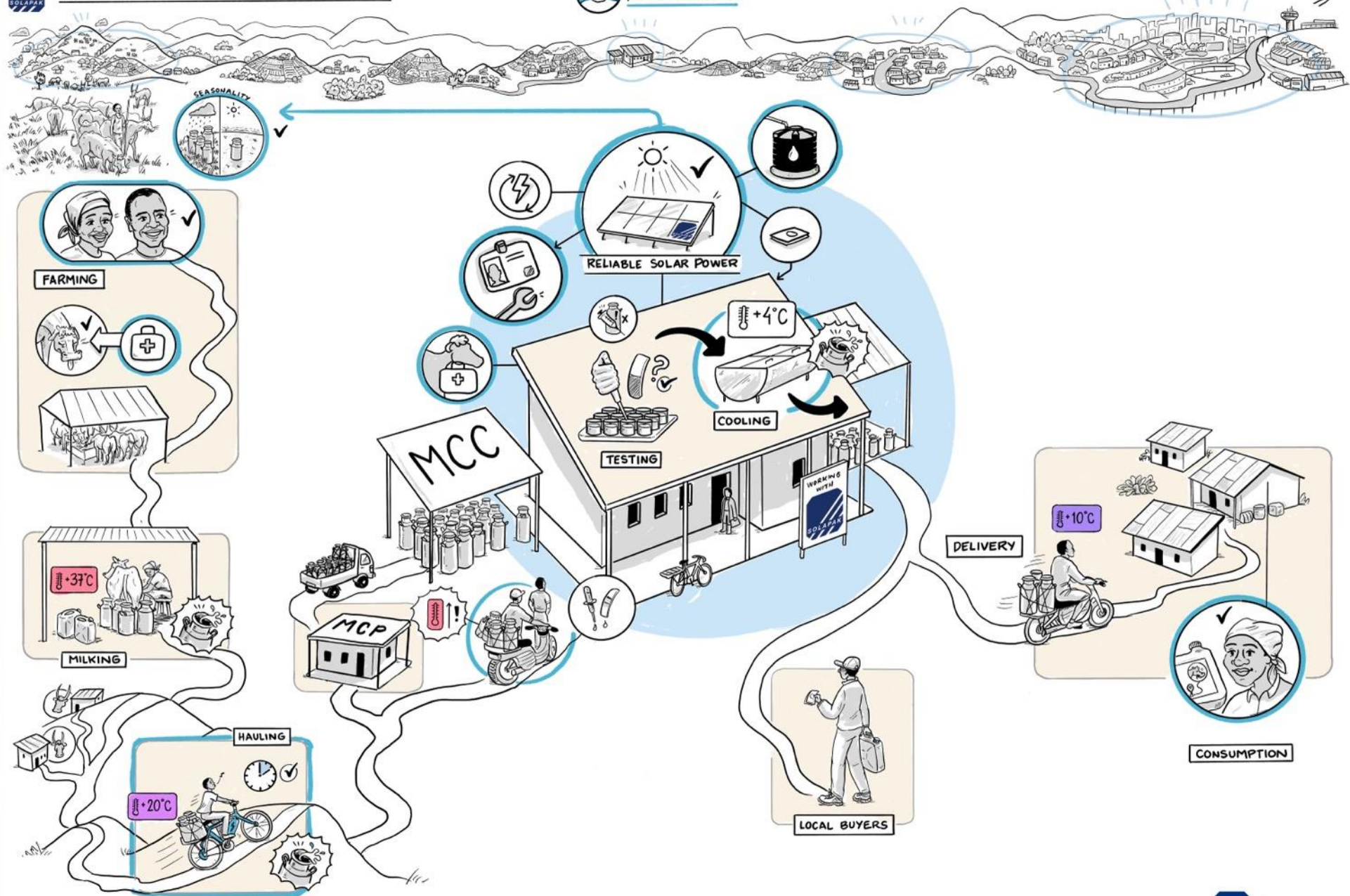


- More farmers contributing
- More milk collected
- 30T CO2 avoided
- Uninterrupted operation
- 2nd Cooling tank added

0
1800







Assessment of MCCs

 Real-Time Channel Values



Serial Number: XC1403107

Description: DENT ELITEpro XC

EPR0M Ver: ES400.257

C H	Channel Type	Channel Values						
1	POWER L1 Phase	309.339 V	9.01 A	2.331 kW	2.787 kVA	0.85 dPF	1.469 kVAR	15.15% THD
2	POWER L2 Phase	233.576 V	23.08 A	4.732 kW	5.391 kVA	0.88 dPF	2.526 kVAR	10.07% THD
3	POWER L3 Phase	172.719 V	24.10 A	2.561 kW	4.163 kVA	0.62 dPF	3.256 kVAR	9.97% THD
4	Off							
5	POWER SUM 3 Phase System Tot	238.545 V	18.73 A	9.624 kW	12.340 kVA	0.80 dPF	7.251 kVAR	
6	Off							

Nepalese Heat



 **matzeroltd**

 **matzeroltd** Welcome to Mat Zero!

There is a desperate need for safer and greener heating solutions in refugee camps during the harsh winter months. Current heating methods release toxic fumes, cause accidental fires and are harmful to the environment.

Introducing Mat Zero: a safe and sustainable heating solution for refugees and disaster relief.

Follow our exciting journey as we develop this life changing product from concept to market!

129 w

 **42 likes**
22 November 2023

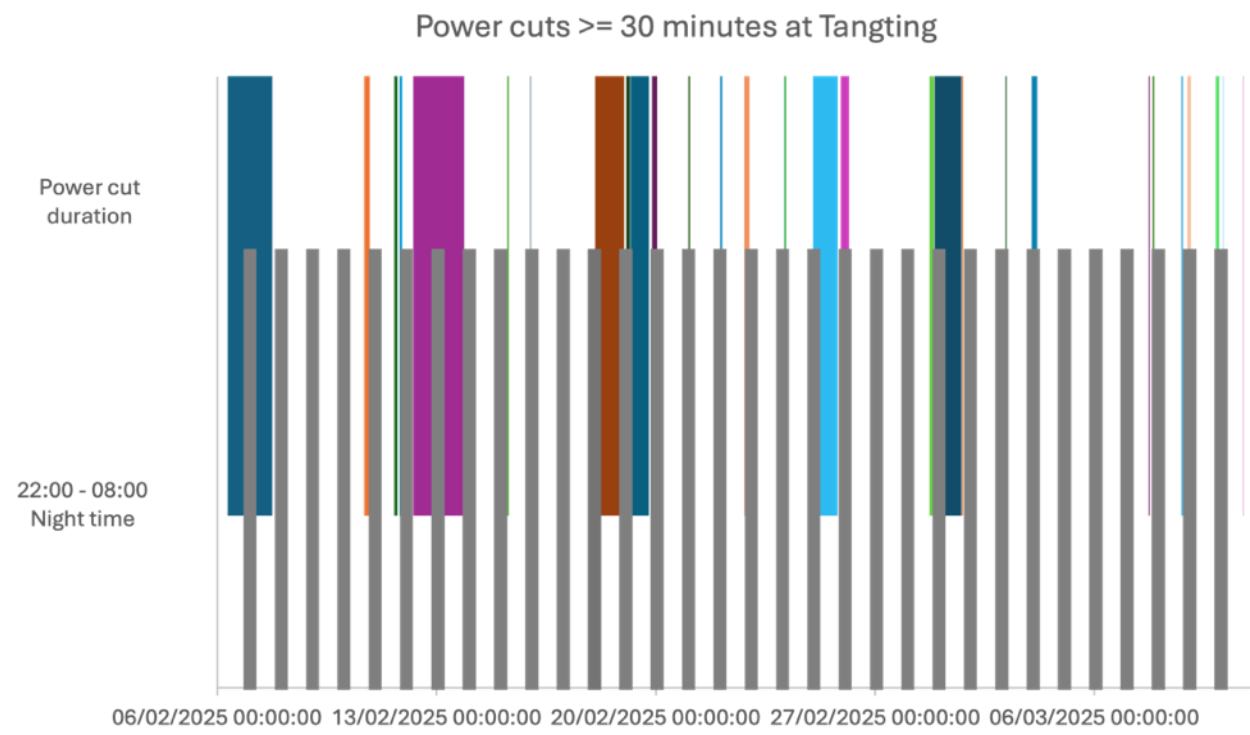
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- 210 hours of no power
- Power cuts are frequent but sometimes short in duration
- Two power cuts lasted more than 24 hours
- Six were more than 12 hours
- Longest was 39 hours
- 22 nights suffered power cuts longer than 30 minutes
- Assuming 120W Mat consumption, 1320Wh battery would have ensured night-time continuity of operation



[Data from acksen voltage change event logger](#)



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Local Markets

Kenya suspends \$1 billion Microsoft data centre as energy shortfall raises doubts over Africa's AI ambitions

SEGUN ADEYEMI | 06 May 2026 01:46 PM



Kenya's plans to host a \$1 billion data centre backed by Microsoft and UAE-based G42 have stalled, after President William Ruto said the country lacks sufficient power capacity to support the project.



Kenyan President William Ruto. [Photo by Anna Moneymaker/Getty Images]

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Local Markets

China's solar exports to Africa surge 83% as power crises deepen across the continent

AYODEJI ADEGBOYEGA | 21 May 2026 09:50 AM



Africa's worsening electricity shortages and rising energy costs are driving a massive surge in demand for Chinese solar equipment, strengthening Beijing's grip on one of the [world's fastest-growing renewable energy markets](#).



Chinese-made solar panels are becoming increasingly critical to Africa's push for cheaper and more reliable electricity.

- China's solar exports to Africa jumped 83% in April as countries accelerated efforts to tackle electricity shortages and rising energy costs.
- South Africa and Congo led the buying surge despite fears of higher prices after Beijing changed export incentives.

Thank You

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