



SOLAR SHARING

A UKRAINIAN PERSPECTIVE

This is not just about energy; it is about a strategy for the sustainable development of the agricultural sector in the context of climate change and the implementation of EU member states' legislation

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UKRAINIAN LEGISLATION CREATES SIGNIFICANT REGULATORY BARRIERS



Lack of classification

The Ukrainian legal framework completely lacks the concept of 'dual-use items' for APV systems

Unnecessary bureaucracy

Investors are required to change the designated use of the land, which contradicts the very essence of agrivoltaics (where the land continues to be cultivated)

LEGAL RISKS



Permit documentation

Inability to legally obtain planning permission for the construction of permanent structures without first changing the status of agricultural land



Loss of benefits

Critical risk of losing the status of an agricultural producer and the associated special tax preferences (Group 4 of the Single Tax)



Financial risks

Long bureaucratic development times tie up capital and deter investors

THE EUROPEAN UNION'S APPROACH

Step 1

Legal recognition of dual land use at the legislative level.



Step 2

Adaptation of Ukrainian norms to European quality standards (in particular, the introduction of an analog to the German DIN SPEC 91434).



Step 3

Prevention of 'greenwashing' through clear criteria for maintaining agri-production.



THE EUROPEAN APPROACH

The DIN SPEC 91434 standard regulates the preservation of land's agricultural status



Priority to the agricultural sector

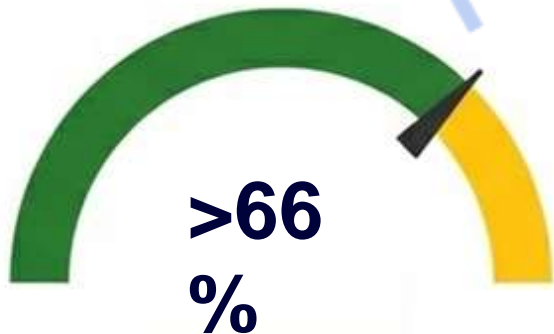
The land must remain agricultural without exception; photovoltaics is only a secondary function

85%
Agricultural

15% PV

Loss of area: 10–15%

Only 15% of the total plot area may be allocated for solar power plant structures



Yield

Application of the standard requires maintaining yield at a level of at least 66% of the reference yield

COMPARATIVE ANALYSIS OF SES OPTIONS



Option A

APV design

Classic integration, which ensures maximum synergy between plant cultivation and electricity generation

**~ €0.05/W
excluding VAT**



Option B

Roof-mounted SES

Use of existing roofs to power the internal needs of processing facilities and cold storage complexes. Focus on offsetting internal consumption

**~ €0.02/W
excluding VAT**



Option C

Fence-mounted solar power plant

A vertical system optimised in terms of construction and capital expenditure, which does not require planning permission

**~ €0.04–0.06/W
excl. VAT**

OPTION A

Gable-roofed shed type

APV-112EW



APV-213EW.FC



A flexible system that can be adapted to any type of crop and the machinery used for cultivation and harvesting

OPTION A

Gable-roofed SES

APV-112EW



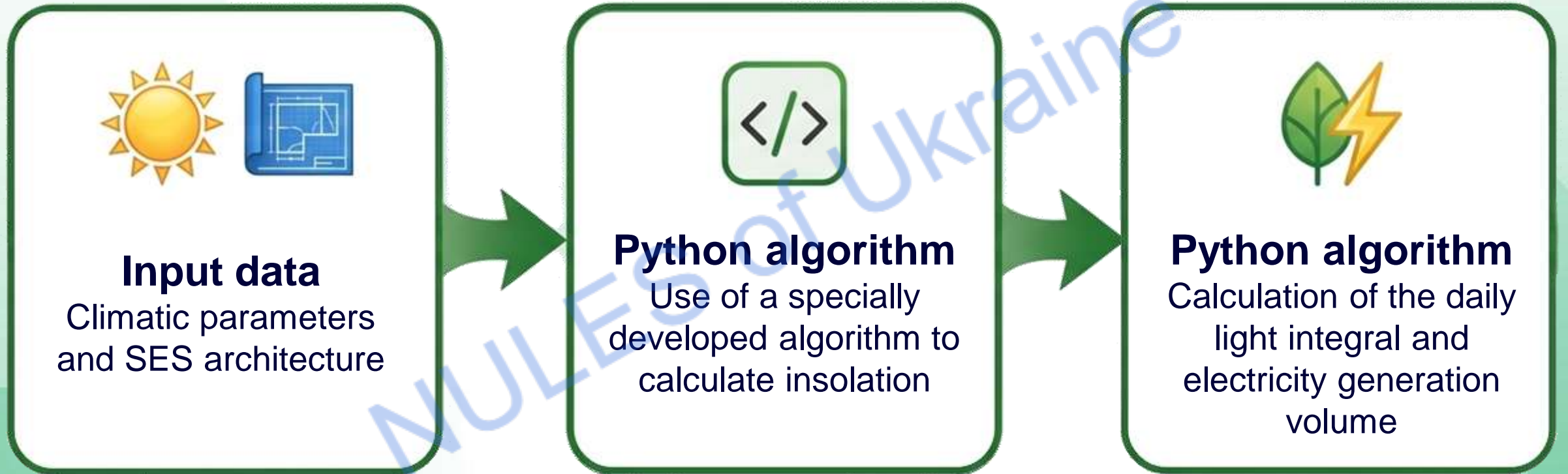
An example of forced
greenwashing, Slovenia

APV-213EW.FC



Moldagrotech 2025 Exhibition,
Moldova

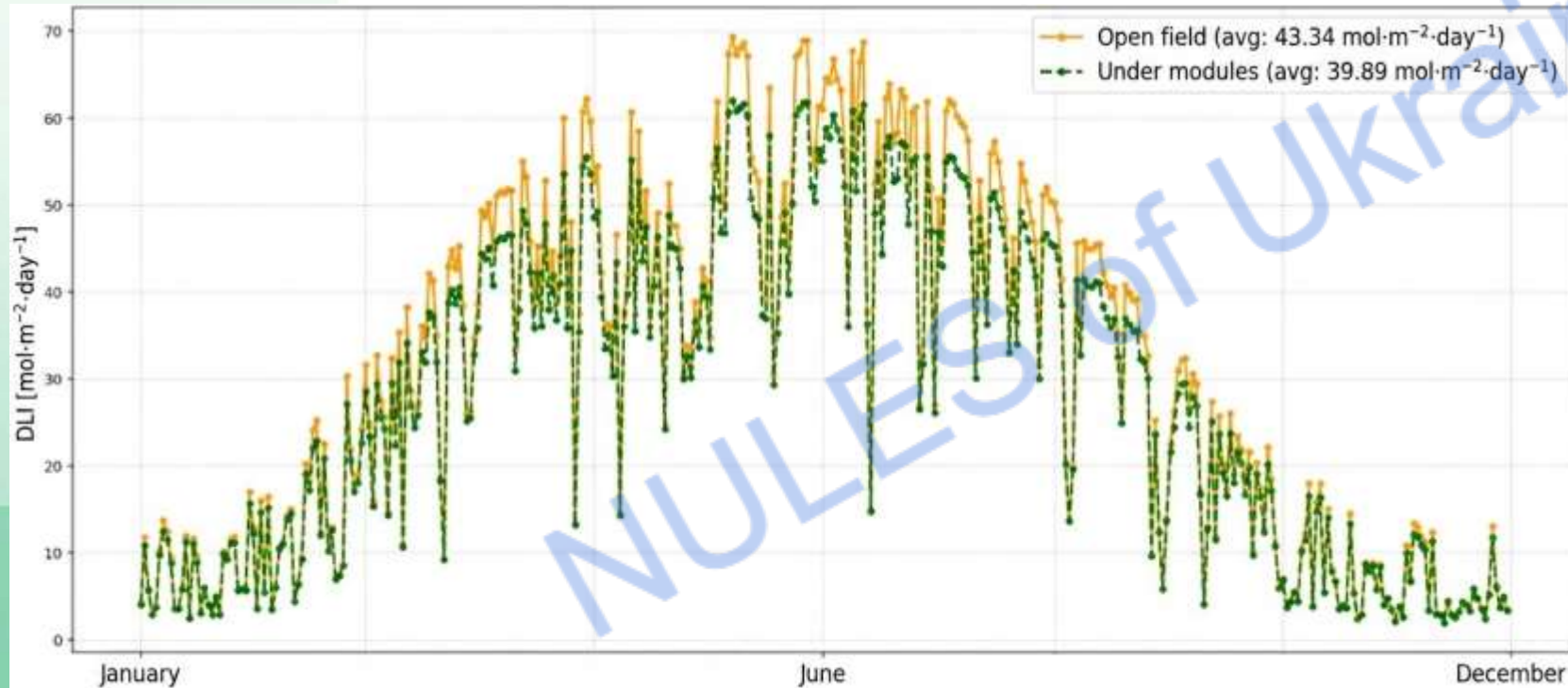
ALGORITHMIC MODELLING OF PHOTOSYNTHETICALLY ACTIVE RADIATION (PAR)



We calculate photosynthetically active radiation and the daily light integral to assess future crop yields

SCENARIO 1:

APV structure with a gap between the photovoltaic modules and no other structures nearby



8%

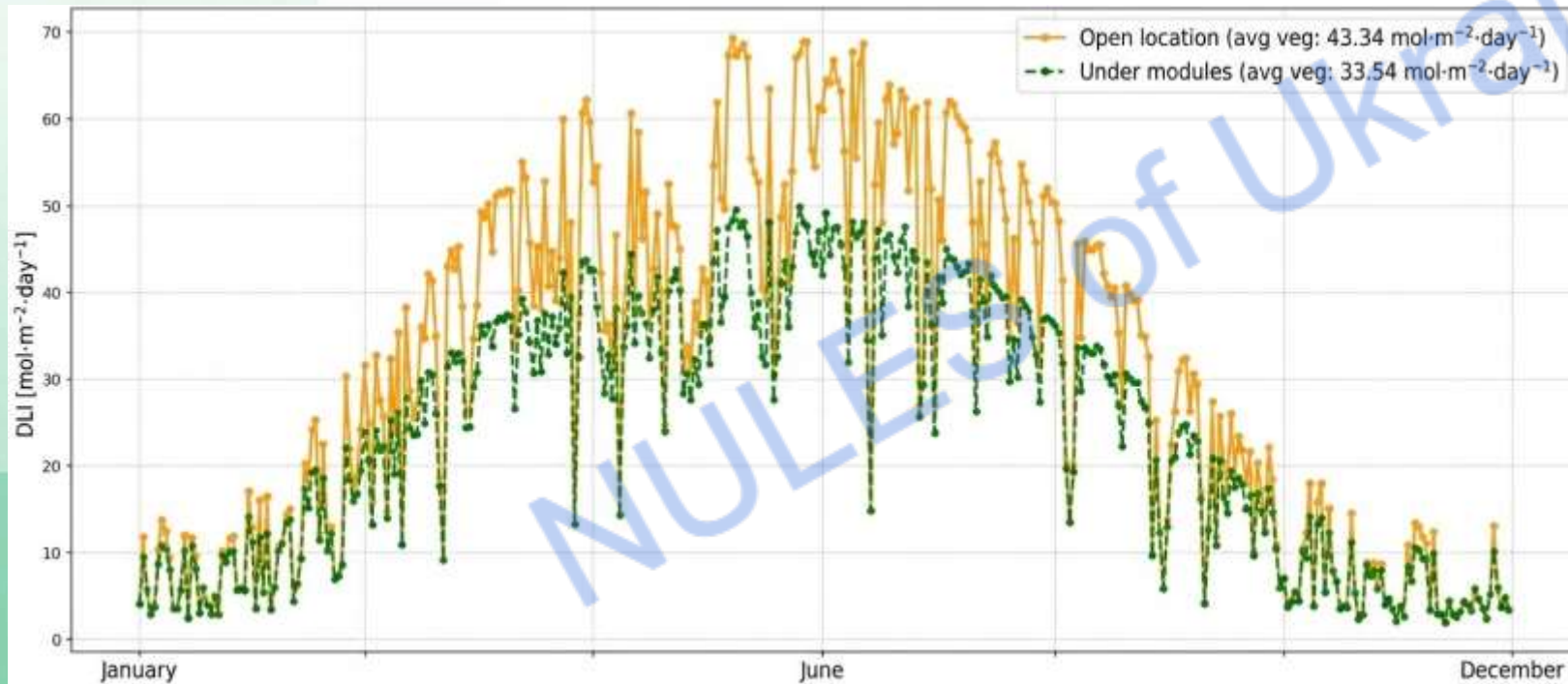
Reduction in daily light integral

- Open terrain $43.34 \text{ mol}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$
- Under the modules $39.89 \text{ mol}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$

This level of shading is entirely non-critical and does not inhibit biological development

SCENARIO 2:

APV structure with a gap in the line between the photovoltaic modules and the presence of other structures nearby



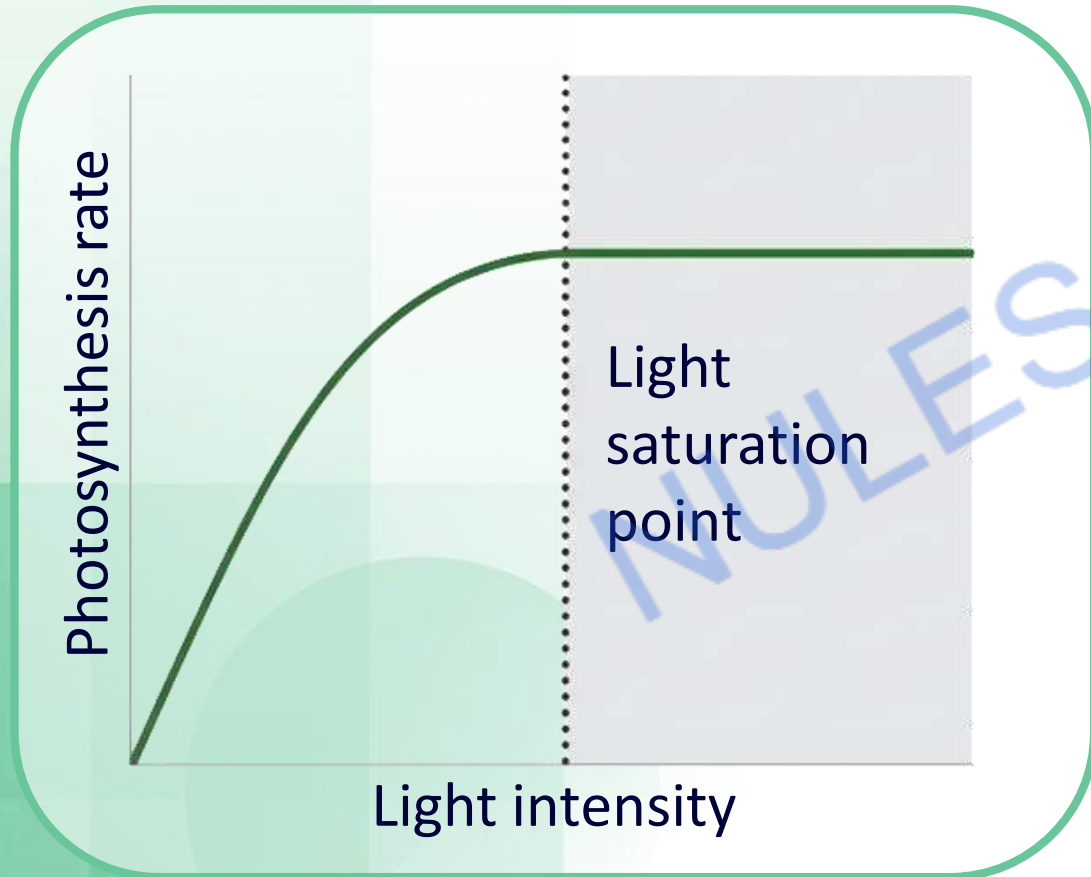
23%

Reduction in daily light integral

- Open terrain 43.34 mol·m⁻²·day⁻¹
- Under the modules 33.54 mol·m⁻²·day⁻¹

Conditions of moderate shading are created. Thermal stress is reduced during the summer period

THE LIGHT SATURATION POINT NEUTRALISES THE NEGATIVE EFFECTS OF SHADING



Biological barrier

Once a certain light intensity is reached, the rate of photosynthesis stabilises. Excess light is blocked by the panels without any loss to the plants

Protection against depression

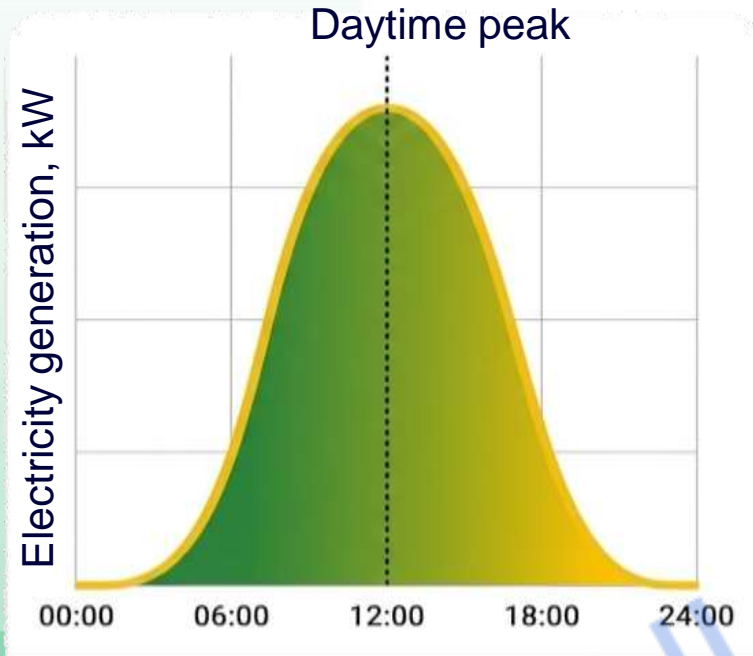
APV mitigates the 'midday depression' in photosynthesis characteristic of hot climates, preventing the plant from suffering temperature shock.

Water use efficiency

Reduced insolation lowers potential evaporation and reduces critical water demand

OPTION B

Roof-mounted solar power station



Perfect match

The consumption profile of refrigeration and processing facilities matches the peak generation of the solar power plant

No land loss

No land acquisition; existing rooftops are utilised

Grid substitution


A low LCOE ensures reduced electricity costs and CO₂ neutrality

OPTION C

Fence-type SES – a legal and effective alternative

Ukraine's urban planning legislation strictly prohibits the construction of conventional solar power plants on agricultural land

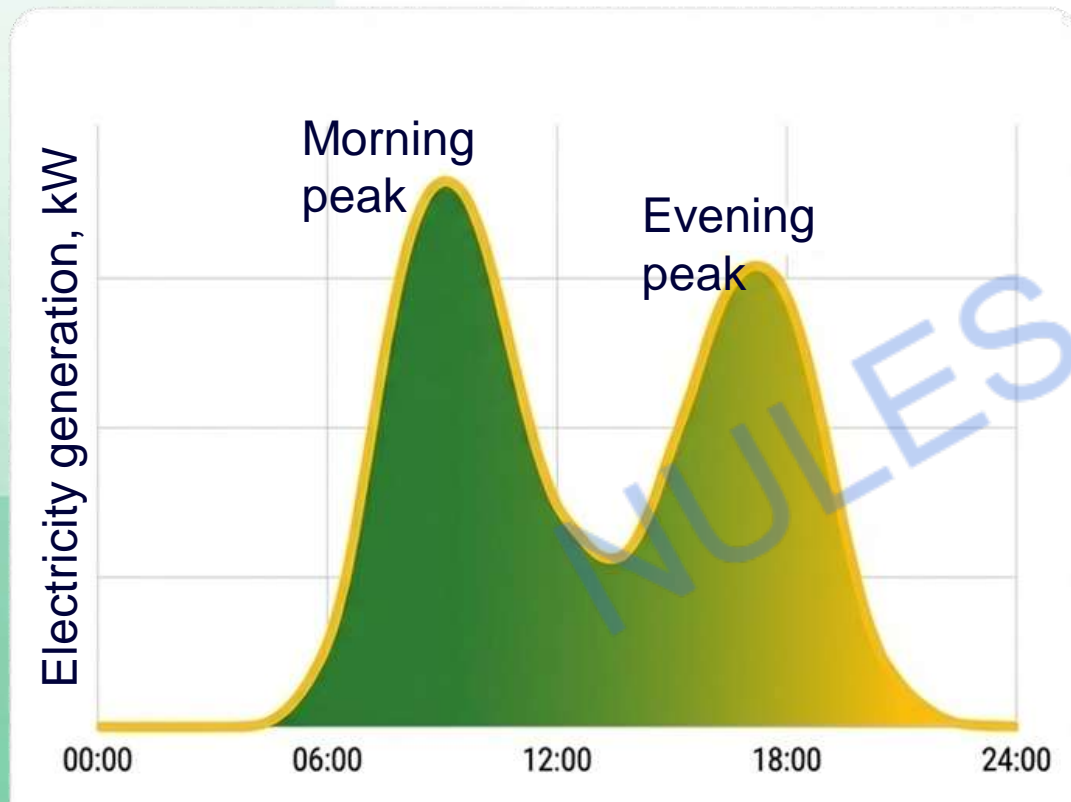
Bifacial or monofacial photovoltaic modules depending on orientation, dual function as a fence and a solar power plant



Requires no complex building permits, provides physical protection for the site and generates energy on both sides with minimal capital expenditure

OPTION C

Fence PV



Generation profile

Two peaks (morning and evening) allow for covering own consumption outside of off-peak hours

CAPEX optimisation

Minimal land and installation costs, dual-purpose use

Speed of construction

No requirements for obtaining planning permission

STRATEGIC CONCLUSIONS: THE PATH TO IMPLEMENTATION IN UKRAINE

The secret to profitability

APV systems become highly profitable provided that self-consumption of the generated electricity is maximised

A temporary solution for farmers

Until Ukrainian legislation is fully amended, solar fences are the quickest way to build ground-mounted solar power plants

Recommendations for the government

There is a critical need for the immediate adoption of the European standard DIN SPEC 91434 and the introduction of dual-use status

Experience and Leadership

2012

14 years of
experience

700+

employees in
Ukraine and
Europe

650 MW

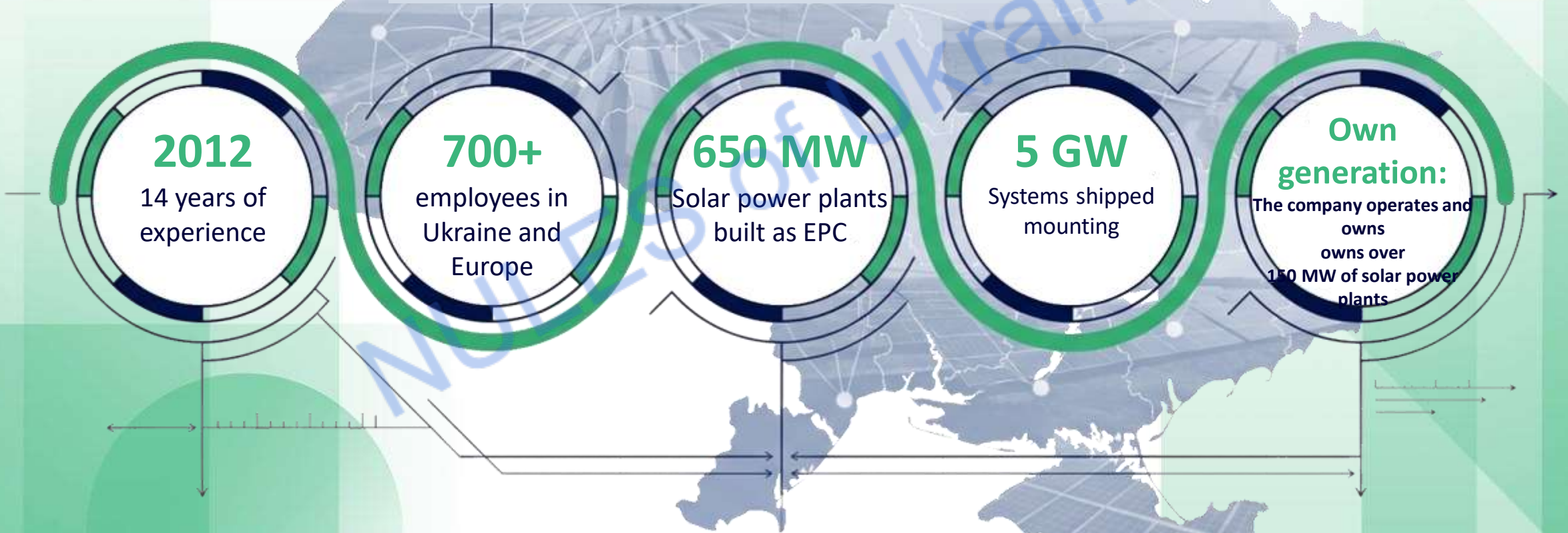
Solar power plants
built as EPC

5 GW

Systems shipped
mounting

**Own
generation:**

The company operates and
owns
owns over
150 MW of solar power
plants



FULL CYCLE FROM CONCEPT TO PRODUCTION



LET'S BROADEN YOUR HORIZONS TOGETHER

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