



THE INTEGRATED PHOTOVOLTAIC ROOF BY SWISS TECHNOLOGY



TECHNOLOGY



BUSINESS OVERVIEW

Unique FULLY SOLAR INTEGRATED ROOF

BY SWISS TECHNOLOGY MADE IN UKRAINE



REFERENCES OF 2,5 MW
35 projects realised



SUPERMODULE

INNOVATION
AWARD



MAIN ASSETS - TEAM

CHRISTIAN
SCHOENWIESNER

INTERNATIONAL
RELATIONS

20 YEARS SOLAR
GENERAL
MANAGEMENT
SAMSUNG
WORLDBANK
1st Geothermal
project



DANIEL LEPORI

R&D,
SUPERVISORY

INVENTOR OF
TECHNOLOGY

SWISS, signing of exclusive partnership for Ukraine



Matvij-Solar expert Ukraine,
Aleksander- energy efficiency, Stella

BUSINESS IDEA

WAS

Exclusive license for Ukraine and CIS

Production in Swiss (extremely expensive even for Swiss +logistic)

Existing references, education, acquisition

WE ARE

Restructuring of Swiss company

NO more PRODUCTION in Swiss (license sale)

Chance to get used machine for assembly of product in Ukraine

WE NEED

Used Machine from Swiss
≈36 000 \$

License or JV portion on
PATENT (IP)16 900 \$

Additional 150 000 \$
(administrative, OPEX) via KfW

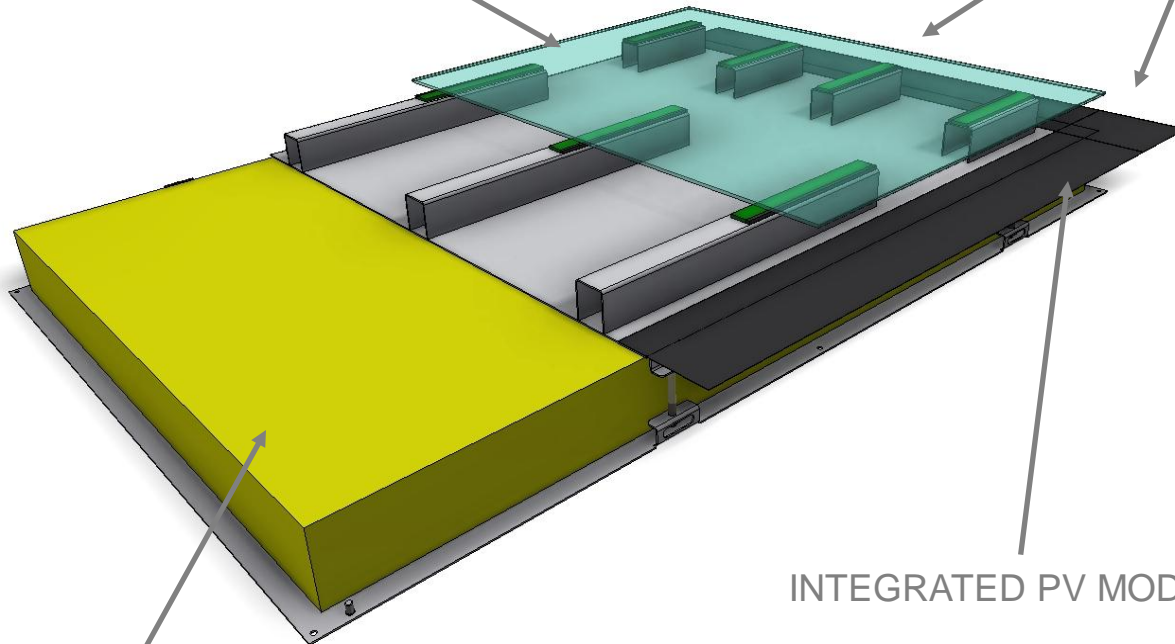
PRODUCT

ROOF+SOLAR=PRODUCT

ENERGY PRODUCTION
WITH PV **KNESS**

DOUBLE WATER
PROTECTION ->

SIKA

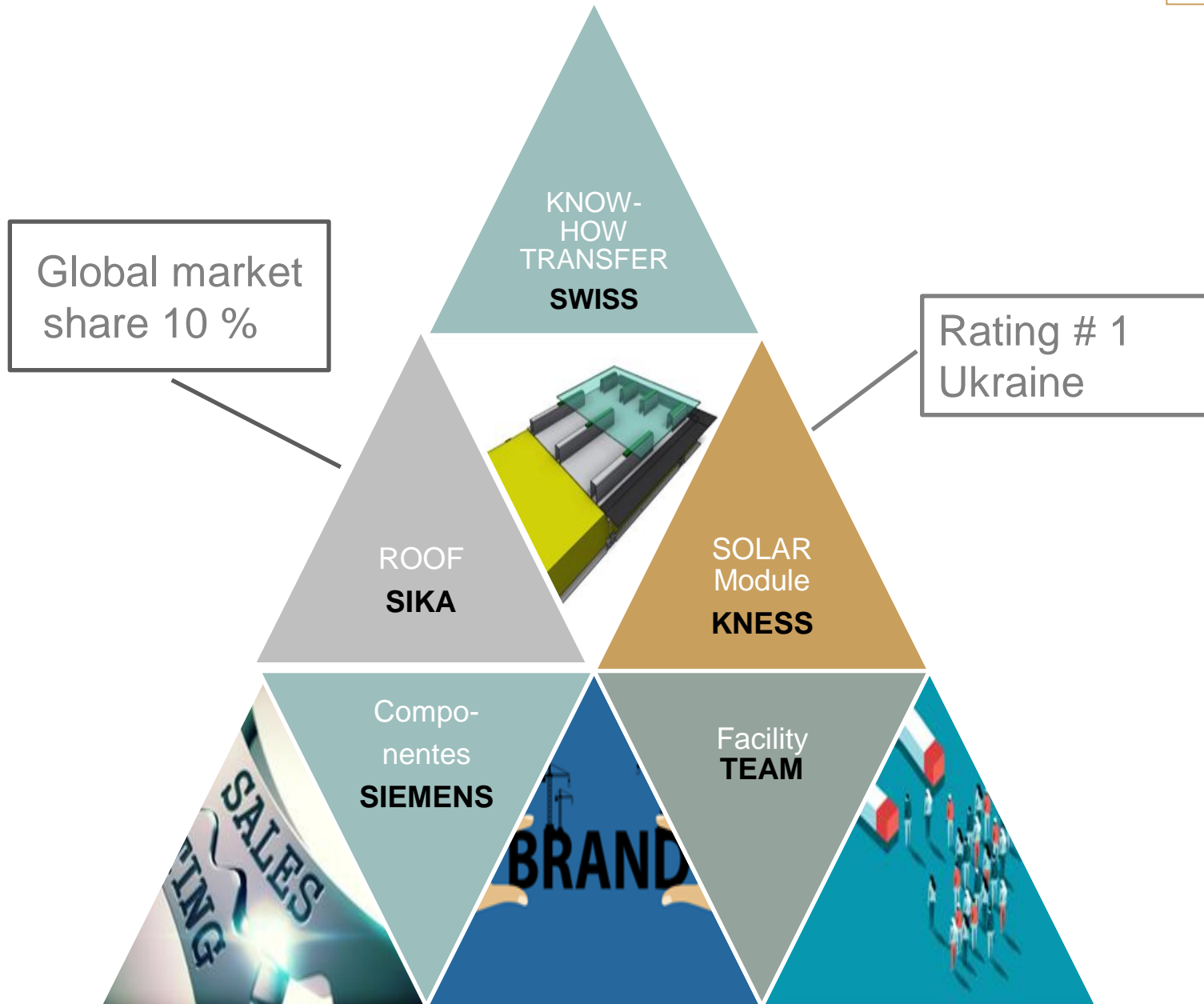


INTEGRATED PV MODULES

THERMAL INSULATION IN ROCKWOOL
or another material-customer wish
FIRE-PROOF AND NON HYGROSCOPIC
SIKA



MARKET ENTRY STRATEGY



PAINS & CUSTOMER IDENTIFICATION



MY BILLS
FOR
ELECTRICIT
Y!!!

OLD
ROOF

I NEED
MONEY

NO TIME
TO THINK
OF
OTHER
INCOME
SOURCE

INDUSTRIAL AND
COMMERCIAL

WAREHOUSES
(AGRAR)

(LOGISTIC)

(PRODUCTION)



BUSINESS OWNER
ROOF SQUARE from 2000
SQM

COMPETATIVE ADVANTAGES

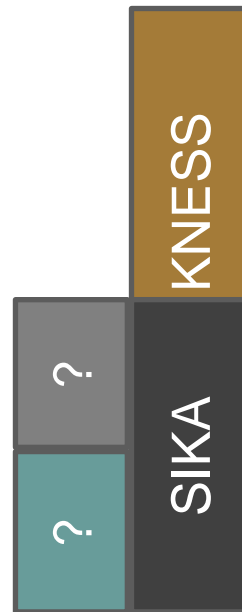
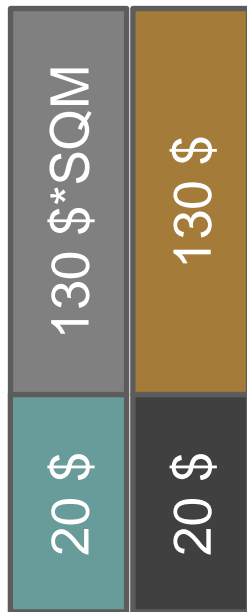
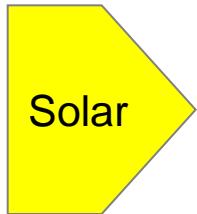
PRICE

QUALITY &
SUSTAINABILITY

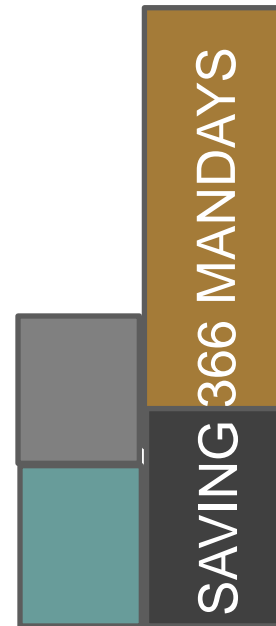
TIME



Roof



Life-time roof & solar station;
2000 tons per annual by 50 000
SQM



By 7000 SQM roof



BENCHMARK

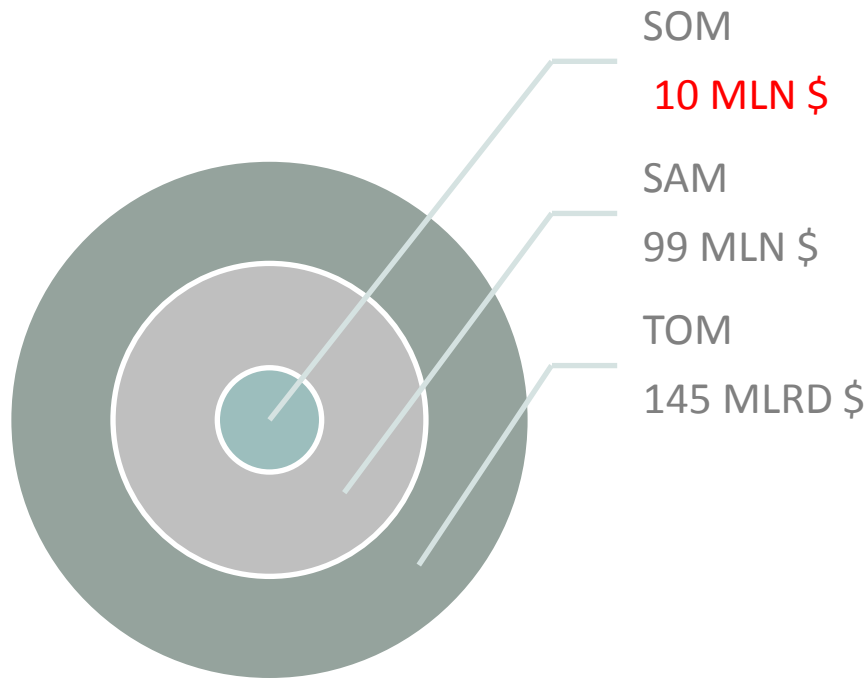


STELLA SOLAR

PAINS & SOLUTIONS

PAIN	SOLUTION
	<p style="text-align: center;">PRICE</p> <p>Price COMPETITIVE 120 \$ - 150 \$ per SQM = BENCHMARK</p>
	<p style="text-align: center;">QUALITY & SUSTAINABILITY</p> <p>SUSTAINABILITY (ROOF > 20 Y+SOLAR LIFE TIME 30 Y) REDUCE OF ENERGY LOSSES >IMAGE >EXPORT (ECOLOGY PRODUCT POSITIONING)</p>
	<p style="text-align: center;">INTEGRITY/TIME</p> <p>TURN KEY SOLUTION ROOF+SOLAR+MANAGEMENT SAVING 366 MANDAYS (by 7000 m2)</p>
	<p style="text-align: center;">INCOME</p> <p>SOURCE (GREEN TARIF 0,13 \$ + 10% LOCAL) Income 80 000 \$ per year (3 000 M2=500 kWp) Costs 360 000 PP (Pay-Back period) 4,5 years</p>

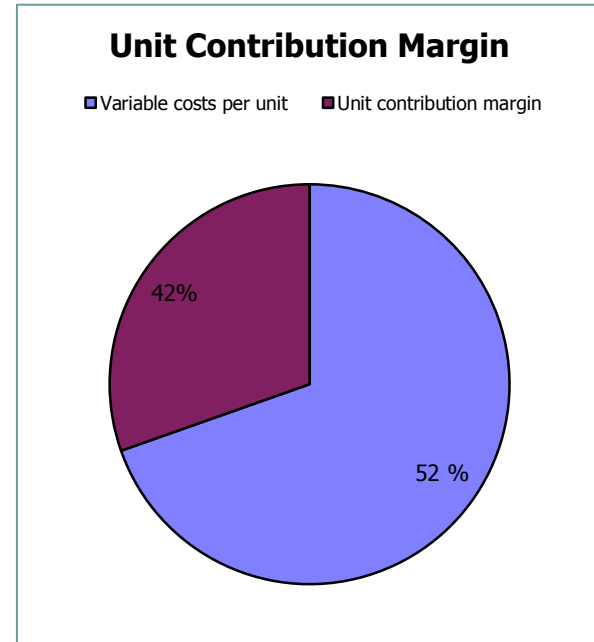
MARKET & FINANCING



MARKET SEGMENT

Solar Industry
Growth rate **137 %**

Business attractiveness



Marging from 30 – 45 %
Breakeven Point (Units): 2225 SQM
COCA: RATIO 4:1

CRITICAL MILESTONES



THANK YOU FOR YOUR
ATTENTION



www.stellasolar.com.ua
Stella.s@stellasolar.com.ua

Swiss Project “On-side 2018”

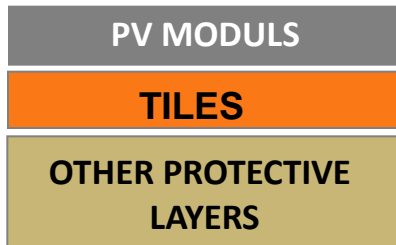
BACKUP



BUSINESS IDEA & TECHNOLOGY

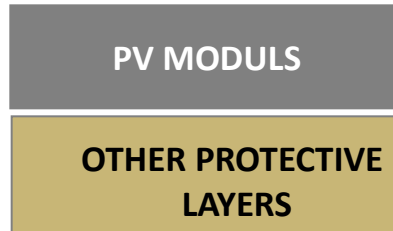
TRADITIONAL SOLUTION

PV SYSTEM
ON THE ROOF



NEWER SOLUTION

BIPV REPLACES ONLY
THE TILES



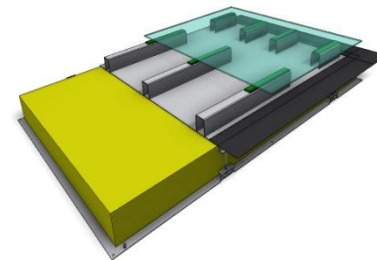
ENGINEERING AND PRODUCTION OF PRE-ASSEMBLED MODULES

- EASIER TRANSPORT
- QUICK INSTALLATION
- LESS OPERATIONS ON BUILDING SITE

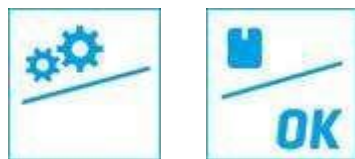
LESS PROBLEMS = PROFIT

DESIGNERGY SOLUTION

T.C.R.
FULL INTEGRATION



TECHNOLOGY



	<p>Фотоелектричні елементи «Скло/скло»: колір чорний Смужки між елементами: колір чорний</p>
	<p>Конструкція, по якій можна ходити, завдяки комбінації систем з'єднання і модулів «Скло/скло»</p>
	<p>Вогнетривка та стійка до граду конструкція, яка простоїть без розшарування не один десяток років</p>
	<p>Швидка і проста установка а також, в разі необхідності, реверсивний демонтаж</p>
	<p>Високоєфективні модулі Опорна конструкція з нержавіючої сталі і сплаву алюмінію з цинком</p>
	<p>Змінні фотоелектричні модулі, придатні для повторного використання, завдяки унікальному механічному кріпленню (не впливає на герметичність та теплоізоляцію даху)</p>
	<p>Готовність до використання оптимізатора та мікро інвертора</p>
	<p>Роботизоване/ автоматизоване виробництво</p>
	<p>Мінімальний кут нахилу (близько 0-5 °)</p>
	<p>Оптимальне вентильовання фотоелектричних модулів з тильного боку (не менше 60 мм)</p>
	<p>Мінімум техобслуговування</p>
	<p>Естетика та архітектура вищого класу</p>
	<p>Відсутнє скопчення бруду по краю модуля, отже, відсутнє зниження продуктивності модуля сонячної енергії/ при виробництві електроенергії</p>

PRODUCT

QUALITY



STEP-PROOF ROOF
O&M
IN 3 MINUTES FROM
TRUCK TO ROOF (12 SQM)



- WATER PROTECTION
- VENTILATION
- AESTHETICS

PRODUCT & VALUE-ADDED PROPOSITION

3 in 1 TURN KEY SOLUTION

TAILORED METAL SHEET PARTS:

- WATER PROTECTION
- VENTILATION
- AESTHETICS

TIME AND COSTS SAVING

- EASIER TRANSPORT
- QUICK INSTALLATION
- LESS OPERATIONS ON BUILDING SITE
- STEP-PROOF ROOF (!)

INCOME RESOURCE AND COMPETATIVE ADVANTAGE

TURN-KEY= SOLAR+ROOF +MANAGEMENT



MARKET SEGMENTATION & CUSTOMER PAINS



Public and Communal PAIN

Highest price 0,14 \$
subsidized by
government
Old asbestos roofs

Commercial and Industrial PAIN

AGRICULTURE Warehouses and Logistic centres

- Price 0,12 \$ *Kwh
Electricity price growth within 2019/2020: up to 45%
- Old roofs, Renovation
- Profit leaded
- Export oriented
- Time sensitive

Private PAIN

Price UP to 85%
in 2020

Customer Decision Making Process

EVALUATION

COMPETITORS

- Solar installers
- Roofing companies
- Conventional & renewable sources of energy

IDEA



EVALUATION

PARTNERS & SALES CHANNELS

- Solar installer
(Shareholder of Team, Local producer & EPC)
- Roofing company:
(Ukrainian SWISS biggest roofing company)

PURCHASE



Same Price = Solar + Roof + Management

By 1 project with 3000 SQM

4P

PRICE

Solar Partner 100 \$ *SQM

Roof Partner SIKI 20 \$*SQM

Stella Solar 30 \$*SQM

TURN KEY 150 \$ * SQM

MARGIN BY 1ST PROJECT

3000 SQM*30\$= 90 000 \$

PLACE

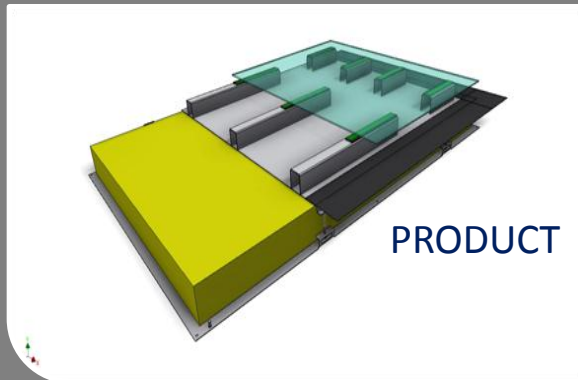
Ukraine on-side Assembly

Composites Ukraine

Via Solar partner

Via roofing Partner

USP



PRODUCT

PROMOTION

Via sales channels of strategic partners

>Solar EPC and module producer

>Roofing company

>Internet platform, PR and social networks of strategic partners

CUSTOMER PAINS

QUALITY

PROVEN
TECHNOLOGY

BANKABLE
COMPONENTS

WARRANTY

MONEY

COMPETITIVE
PRICE

TIME



TURN KEY

3 MIN 7000 M2= 340
Mandays

SUSTAINABILITY

SALES CHANNELS



•Building and architecture companies, Projecting private and governmental companies, Roofing companies, Installers solar, Complimentary goods businesses, strategic partnership

DIRECT SALES



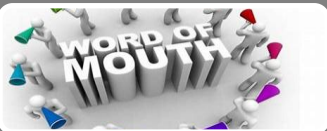
Industrial businesses, commercial businesses, agricultural businesses
Big players



•EXHIBITION; EVENTS, Professional branch associations (BTI)

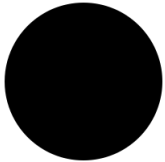

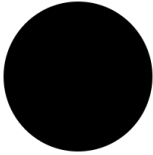
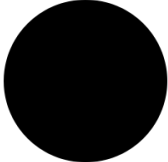
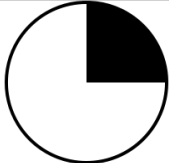





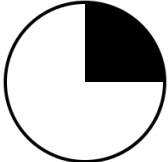



Business Networks and trade unions
•FACEBOOK; PRESENCE IN INTERNET –BE IN TIME



BEST IN CASE!

COMPETITION

	INTEGRITY	PRICE	TIME	QUALITY
Stella Solar				
Roof + Solar (only sandwich)				
Solar Power Station + Roof				

MARKET SEGMENT

(only renovation market(!))

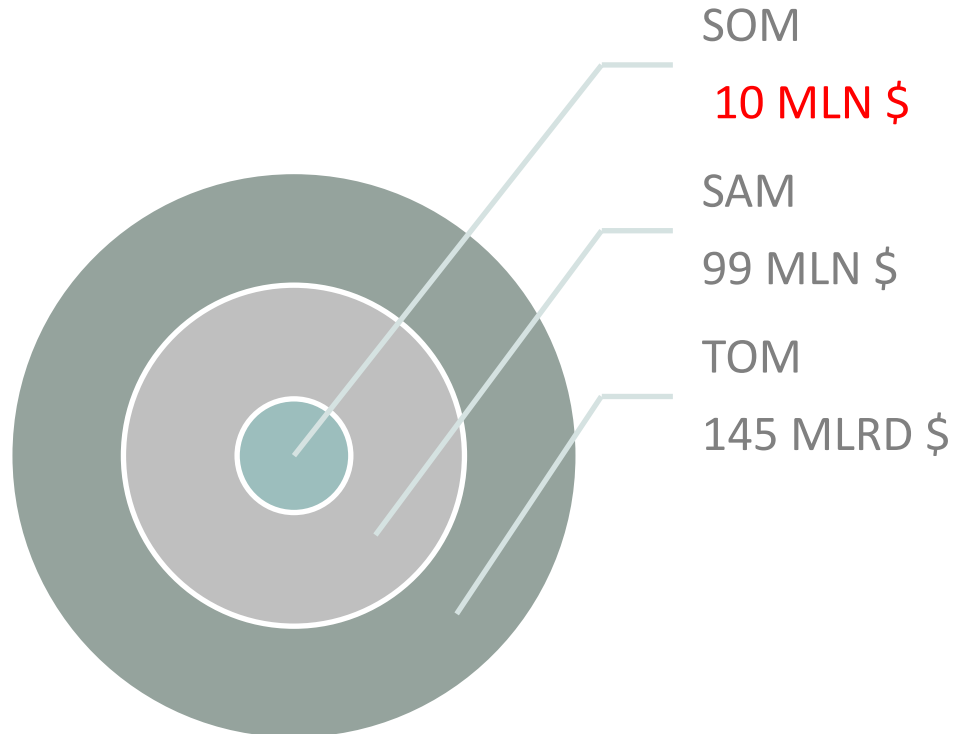
➤ **INDUSTRIAL AND
COMMERCIAL**

WAREHOUSES
(AGRAR)

(LOGISTIC)

(PRODUCTION)

Solar Industry
Growth rate **137 %**



Under sales price of 100 \$ per SQM

Going to market

4. Facing needs and wants:

Roof+solar+ value added value (! Important as it is not his core business)

- Money, Image,
- Export chances increase

Pilot Project Customer



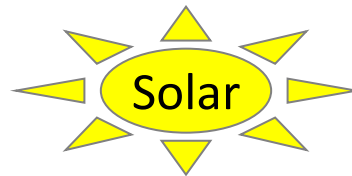
1. Identification of customer: via partners, sales channels, media

3. Pains:

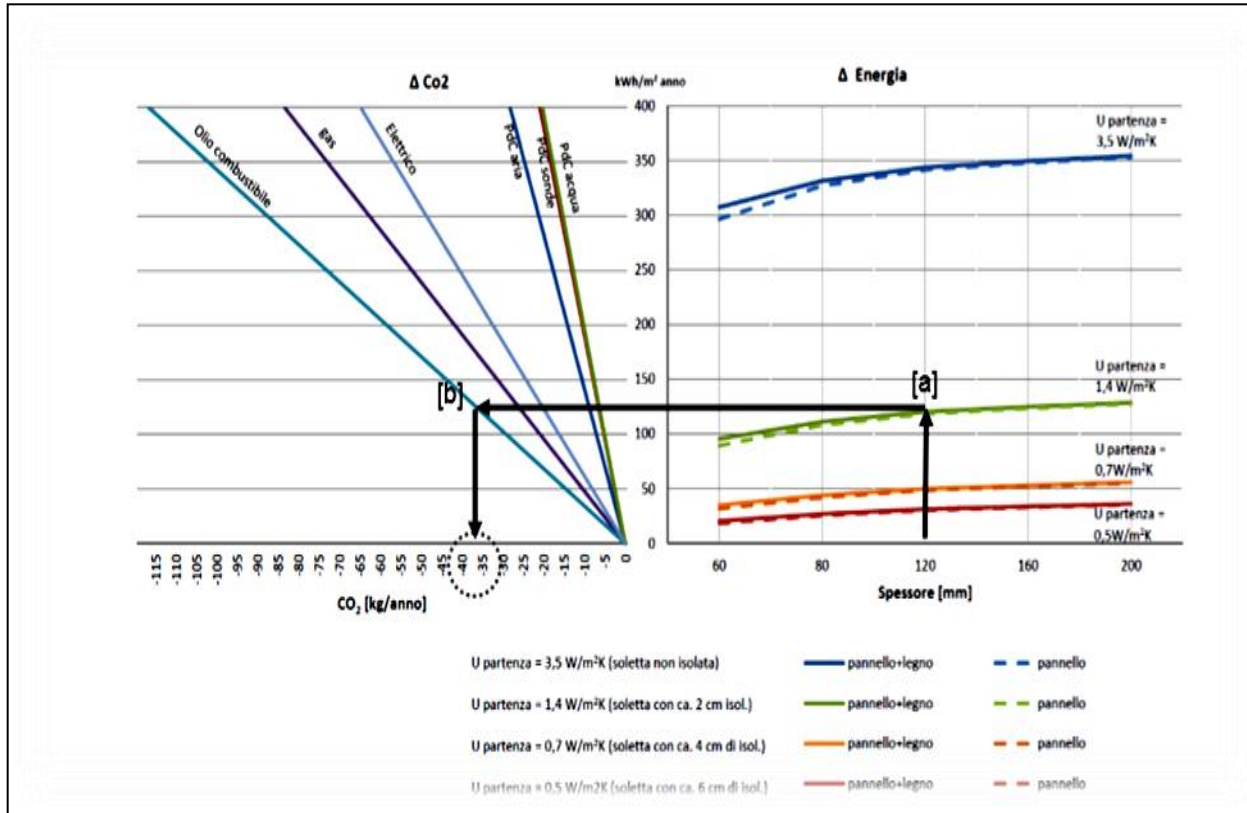
High electricity price, profit leaded, price sencitive, but ecologically oriented

2. Needs:

new warehouse in agriculture or new roof



SUSTAINABILITY



Reduce CO2 by app. 2000 tons per annual, by realization of 50 000 SQM of roof.

Technology will allow to reduce CO2 by 40 kg per SQM

FINANCE

	2020	2021	2022
Продажі (Прибуток) Sales, Income			
Загальний дохід Total income	\$2.400.000,00	\$6.000.000,00	\$12.000.000,00
Вартість реалізованої продукції COGS	\$1.400.000,00	\$3.500.000,00	\$7.000.000,00
Валовий дохід Gross sales	\$1.000.000,00	\$2.500.000,00	\$5.000.000,00
Маржа, Margin	42%	42%	42%

In our case 1 customer is owner of 3 000 m² roof. By defining of COCA we stay by 1 customer with 3000 m².

LTV is based on margin per m² = 3000 m²*30 €/m²=90 000€

CAC based on year 2018 is 20 000 €.

COCA = 90 000 € / 20 000€ = 4,5 €. It means that we need 1 € costs to acquire 1 m² and it brings us 4,5 €.

RATIO 4:1 is the best ratio of business model, but that's mean that we are under investing and could be growing faster by starting more aggressive campaigns to acquire customers and bring our ratio closer to 3:1

FINANCE & INVESTMENT

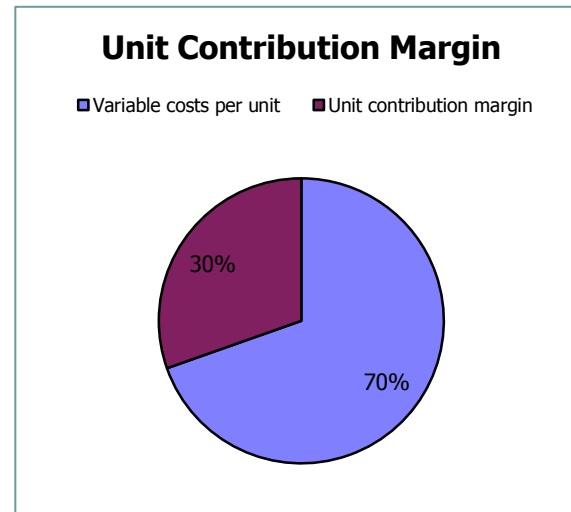
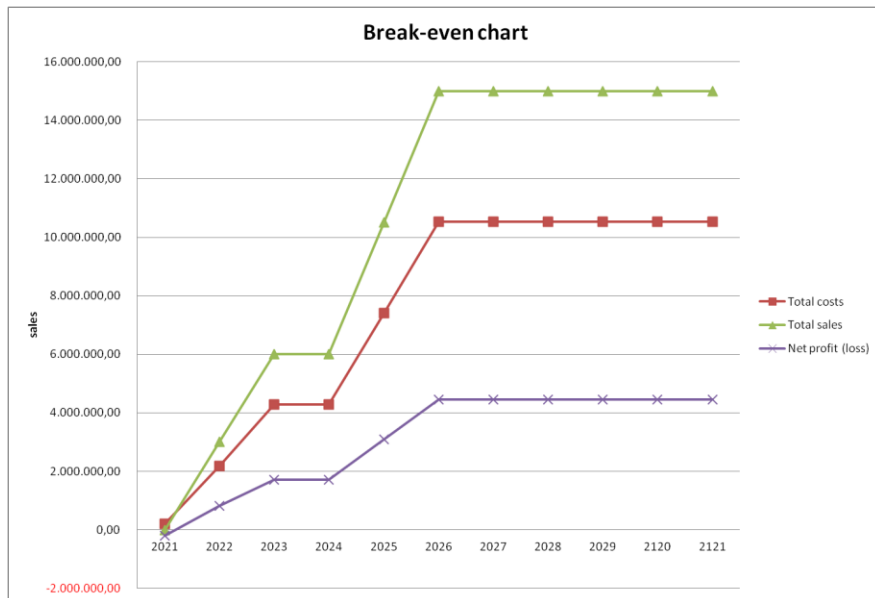
Breakeven Point (units):

2.225

Sales volume analysis:

Sales volume per period (units)
Sales price per unit
Fixed costs per period
Variable costs
Total costs
Total sales
Net profit (loss)

	0	20.000	40.000	40.000	70.000	100.000	100.000	100.000
Sales price per unit	150,00	150,00	150,00	150,00	150,00	150,00	150,00	150,00
Fixed costs per period	200.000,00	101.450,00	101.450,00	101.450,00	101.450,00	101.450,00	101.450,00	101.450,00
Variable costs	0,00	2.088.000,00	4.176.000,00	4.176.000,00	7.308.000,00	10.440.000,00	10.440.000,00	10.440.000,00
Total costs	200.000,00	2.189.450,00	4.277.450,00	4.277.450,00	7.409.450,00	10.541.450,00	10.541.450,00	10.541.450,00
Total sales	0,00	3.000.000,00	6.000.000,00	6.000.000,00	10.500.000,00	15.000.000,00	15.000.000,00	15.000.000,00
Net profit (loss)	-200.000,00	810.550,00	1.722.550,00	1.722.550,00	3.090.550,00	4.458.550,00	4.458.550,00	4.458.550,00



Breakeven Point (Units): 2225 SQM
COCA: RATIO 4:1

MARKET SIZE

TOM

Sector	Buildings, Total Demand	Square meters average	Total square meters
Residential	6500000,00	100	650.000.000,00
Commercial	100000,00	3000	300.000.000,00
Public	100000,00	5000	500.000.000,00
Total Market in square meters			1.450.000.000,00
Total Market in KW			241.666.666,67
Total Market in MW			241.666,67
Total market in Euro			145.000.000.000,00

SOM

Installed capacity residential 2017, MW	51
Installed capacity residential 2018 MW	121
Growth rate, %	137
Forecast 2019, MW	165
Forecast 2019, Kwt	165.000,00
Kw*6 M2	990.000,00 €
Target Market in Euro	99.000.000,00 €

SAM

Production capacity, m2	100000
Market volume	10.000.000,00 €