



FEASIBILITY STUDIES

DISCOVER DIFFERENT CONSTRUCTIVE SOLUTIONS IN KENYA

FEASIBILITY STUDY NAIROBI

HIDDEN PV IN WHITE COLOR

- INTENSE GREEN
100 W/M²
- WHITE
110 W/M²
- MARBLE BROWN
115 W/M²
- DEEP BLUE
160 W/M²

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m ²)	110 Wp per m ²
Visible light transmittance	0%

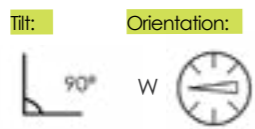
ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	2.437 KWh per m ²
Kg of CO ₂ avoided	716 Kg per m ²
Kilometres driven in an electric car	14.017 Km per m ²
Light points fed	4,8 per m ² /day

ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	92.526 KES per m ²
Return on investment	21,87 times
Internal rate of return (IRR)	34,85%
Payback time	4 years
Building's value increase**	26.183 KES per m ²

DATA CONSIDERED FOR CALCULATIONS



PV FAÇADE / BALCONY

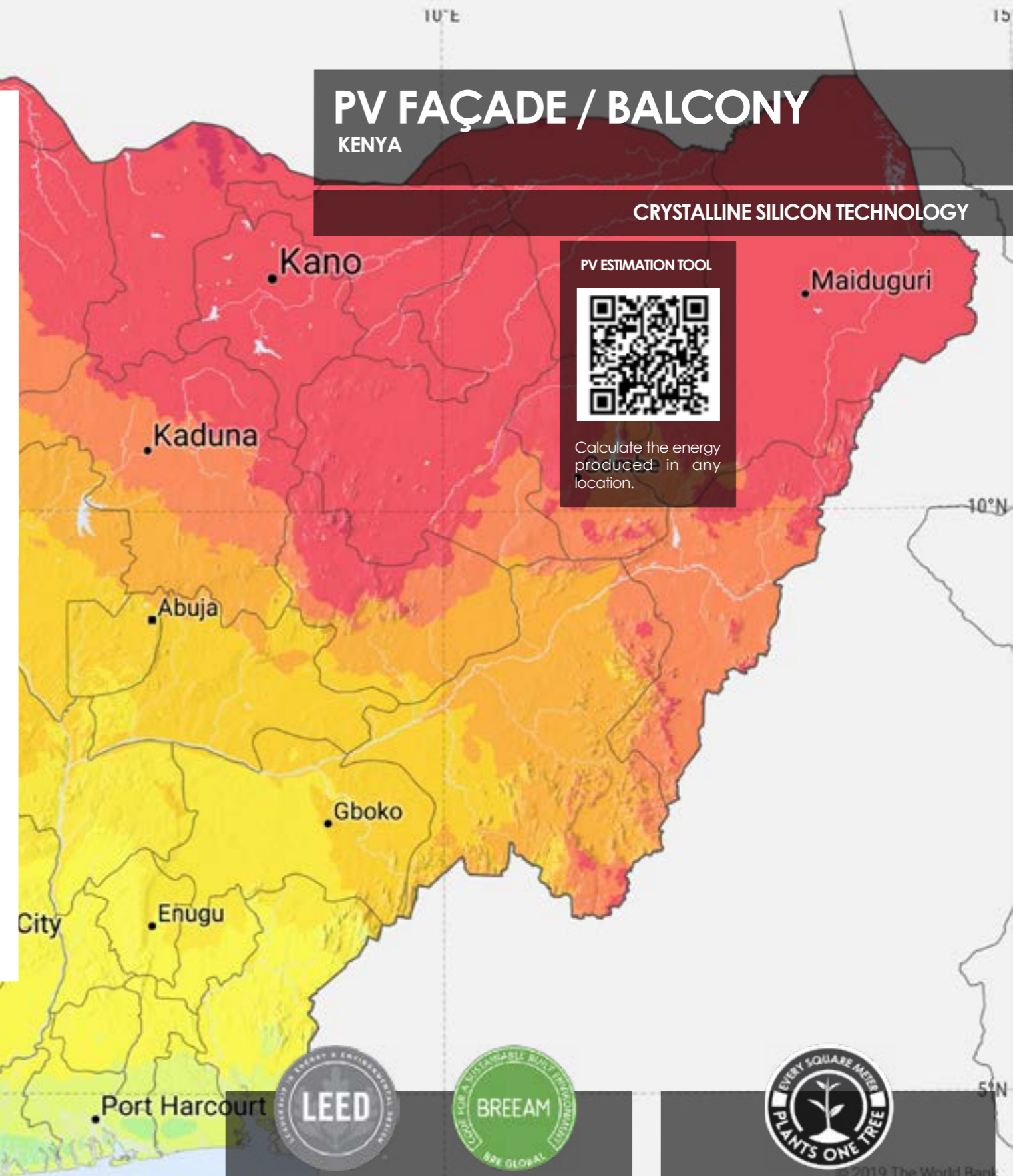
KENYA

CRYSTALLINE SILICON TECHNOLOGY

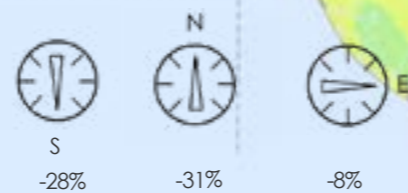
PV ESTIMATION TOOL



Calculate the energy produced in any location.



ENERGY LOSSES PER ORIENTATION



Onyx facilitates obtaining recognized sustainability certifications for buildings like LEED or BREEAM.

We plant one tree for every m² of PV glass we produce. Each tree absorbs an average of 10 Kg of CO₂ per year.

Data Calculated for a 35-year useful life.

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** According to the US Department of Energy & Environment a sustainable building will obtain an increase of value between 10 and 20 USD for every USD generated by renewable energy.



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160 W/M²

CHARACTERISTICS OF THE GLASS

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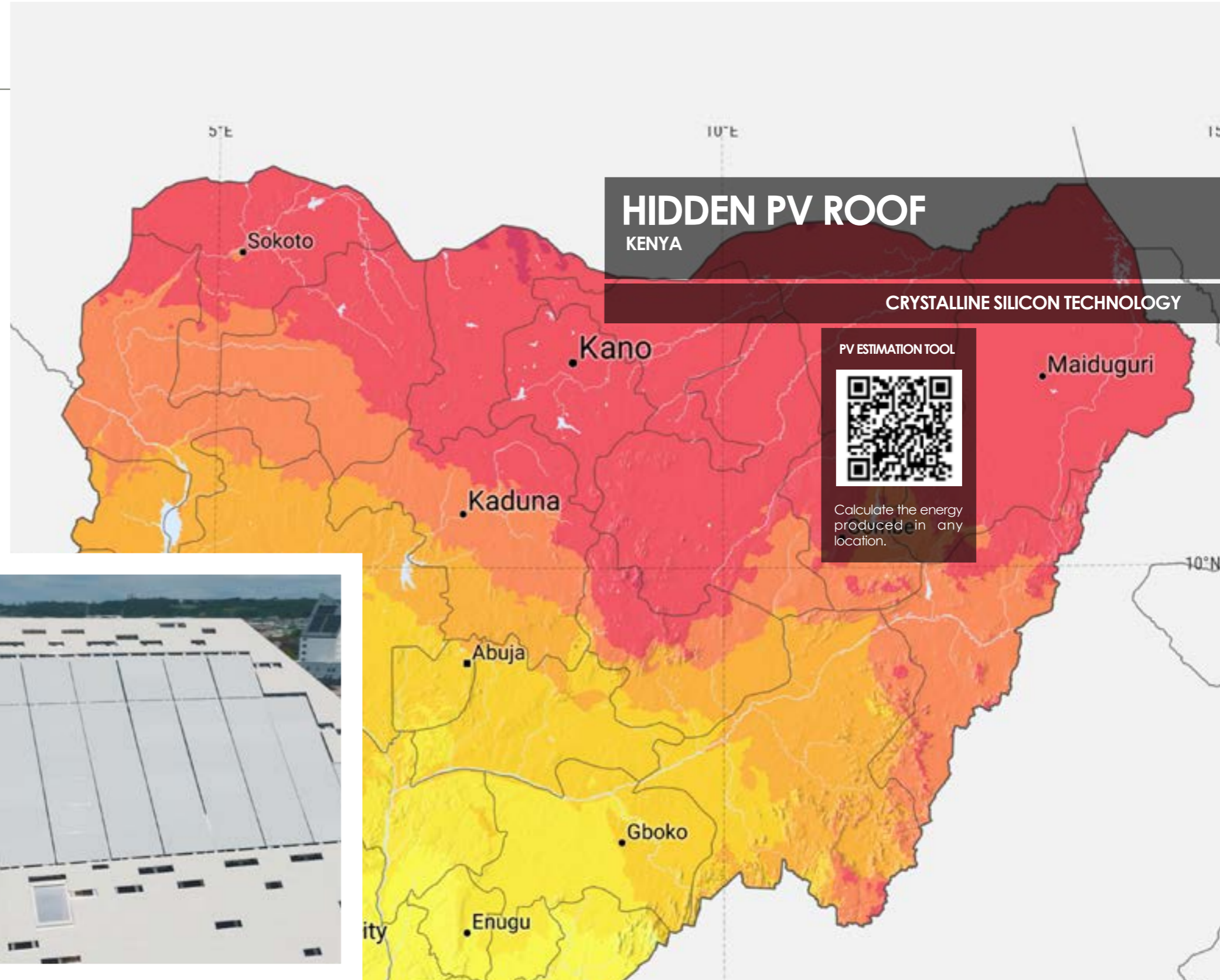
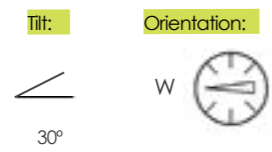
ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	4.587 KWh per m ²
Kg of CO ₂ avoided	1.348 Kg per m ²
Kilometres driven in an electric car	26.379 Km per m ²
Light points fed	9 per m ² /day

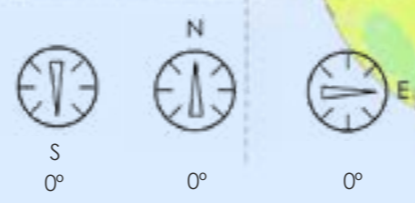
ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	174.116 KES per m ²
Return on investment	41,15 times
Internal rate of return (IRR)	62,15%
Payback time	2 years
Building's value increase**	49.272 KES per m ²

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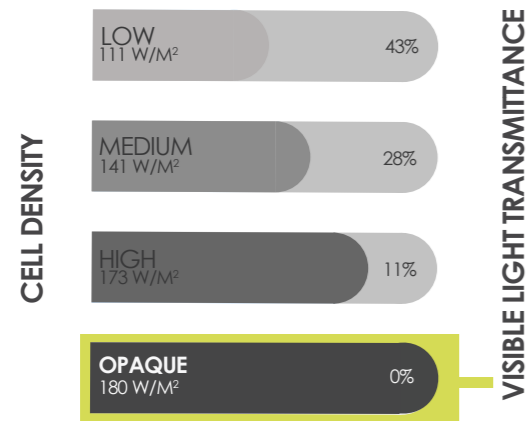
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FEASIBILITY STUDY NAIROBI

OPAQUE PV GLASS



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m ²)	180 Wp per m ²
Visible light transmittance	0%

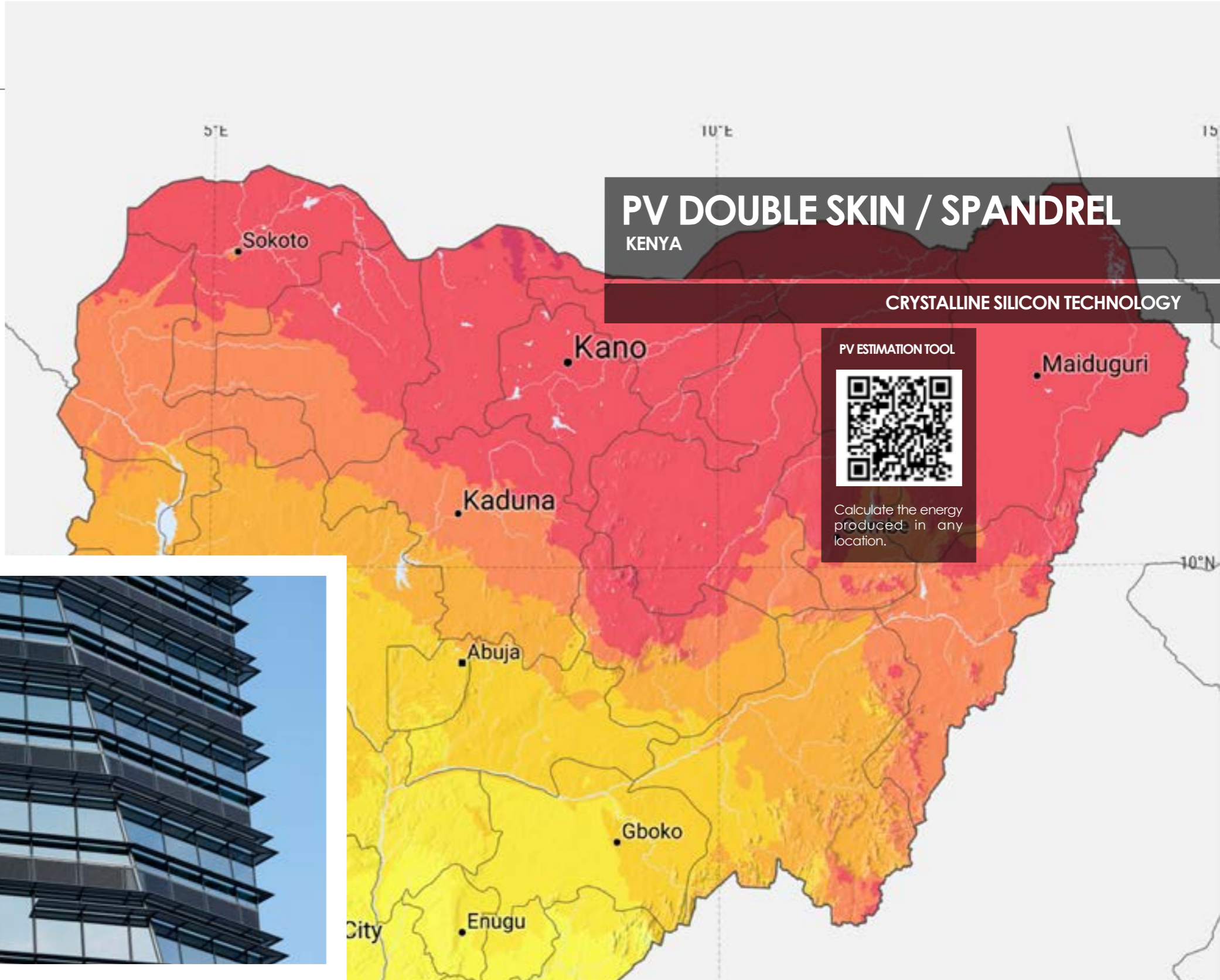
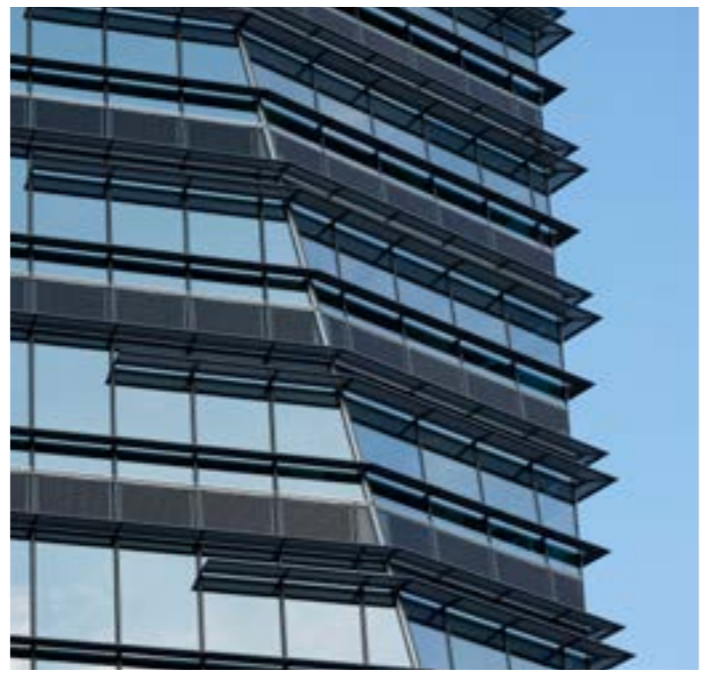
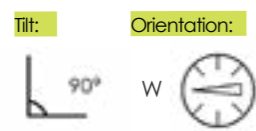
ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	3.989 KWh per m ²
Kg of CO ₂ avoided	1.172 Kg per m ²
Kilometres driven in an electric car	22.938 Km per m ²
Light points fed	7,84 per m ² /day

ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	151.406 KES per m ²
Return on investment	21,74 times
Internal rate of return (IRR)	34,66%
Payback time	4 years
Building's value increase**	42.845 KES per m ²

DATA CONSIDERED FOR CALCULATIONS



PV DOUBLE SKIN / SPANDREL

KENYA

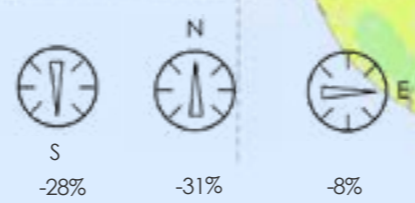
CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



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ENERGY LOSSES PER ORIENTATION



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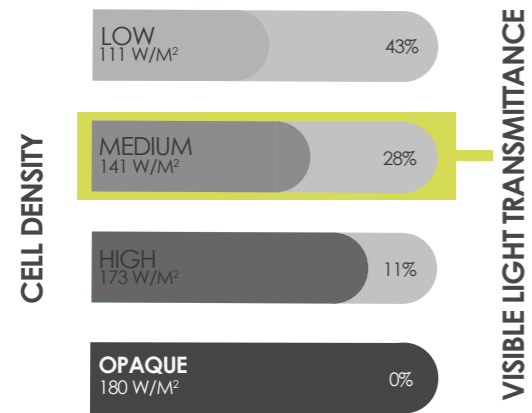
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FEASIBILITY STUDY NAIROBI

MEDIUM CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

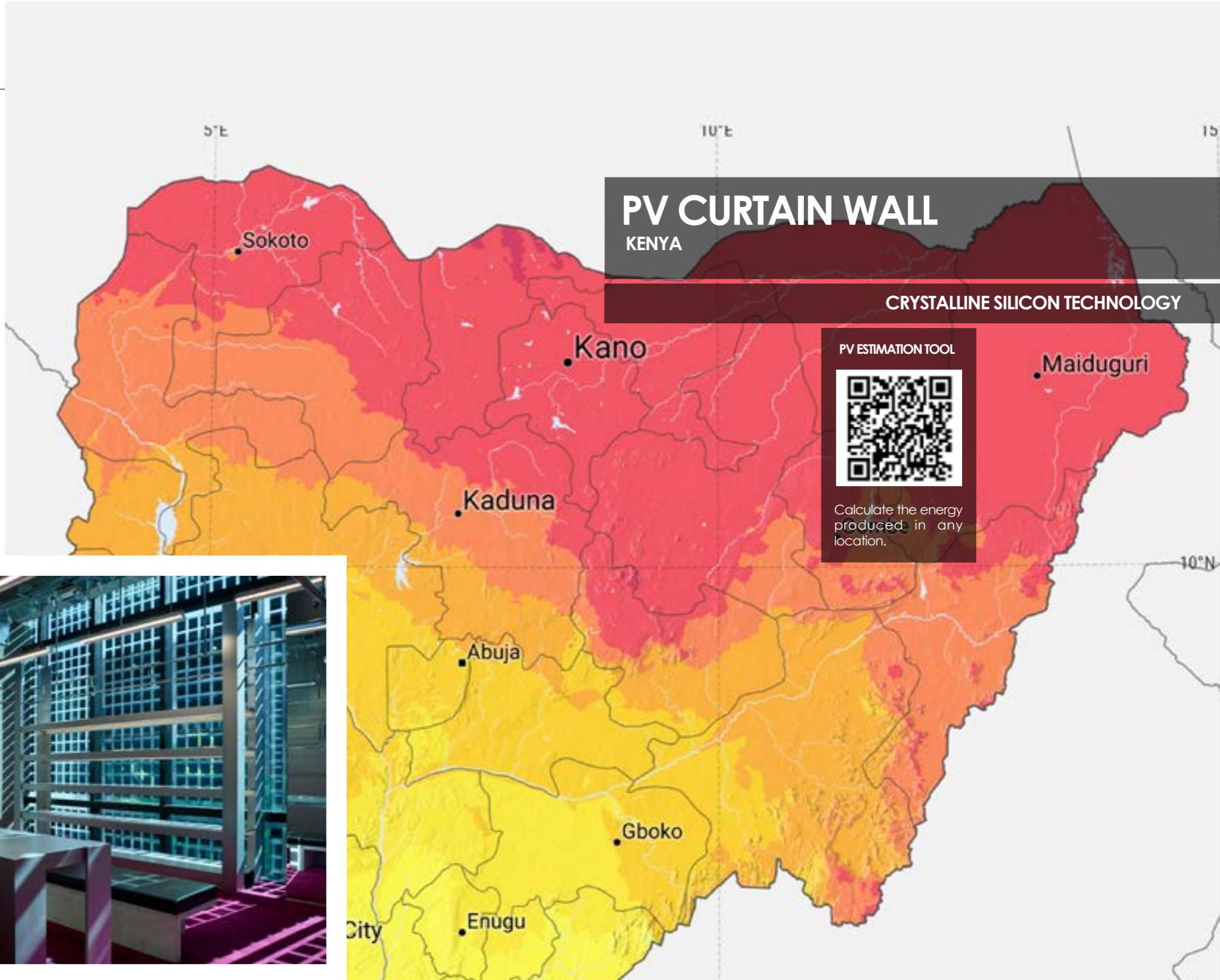
Peak Power (Wp/m ²)	141 Wp per m ²
Visible light transmittance	28%

ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	3.124 KWh per m ²
Kg of CO ₂ avoided	918 Kg per m ²
Kilometres driven in an electric car	17.968 Km per m ²
Light points fed	6,14 per m ² /day

ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	118,602 KES per m ²
Return on investment	21,43 times
Internal rate of return (IRR)	34,24%
Payback time	4 years
Building's value increase**	33,562 KES per m ²



PV CURTAIN WALL

KENYA

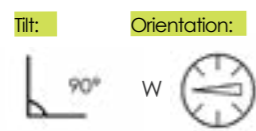
CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

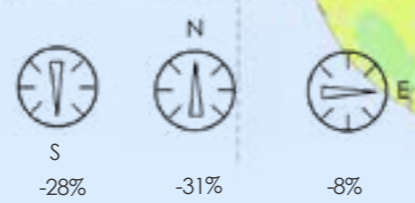


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ENERGY LOSSES PER ORIENTATION



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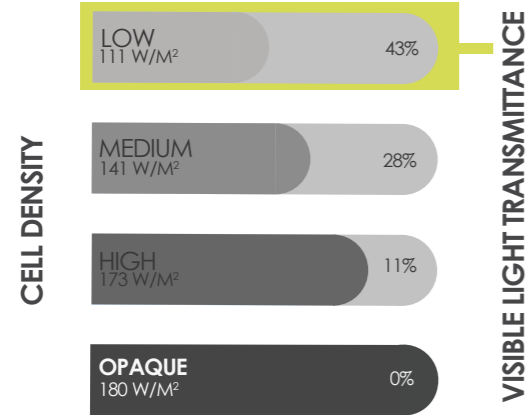
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FEASIBILITY STUDY NAIROBI

LOW CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m ²)	111 Wp per m ²
Visible light transmittance	43%

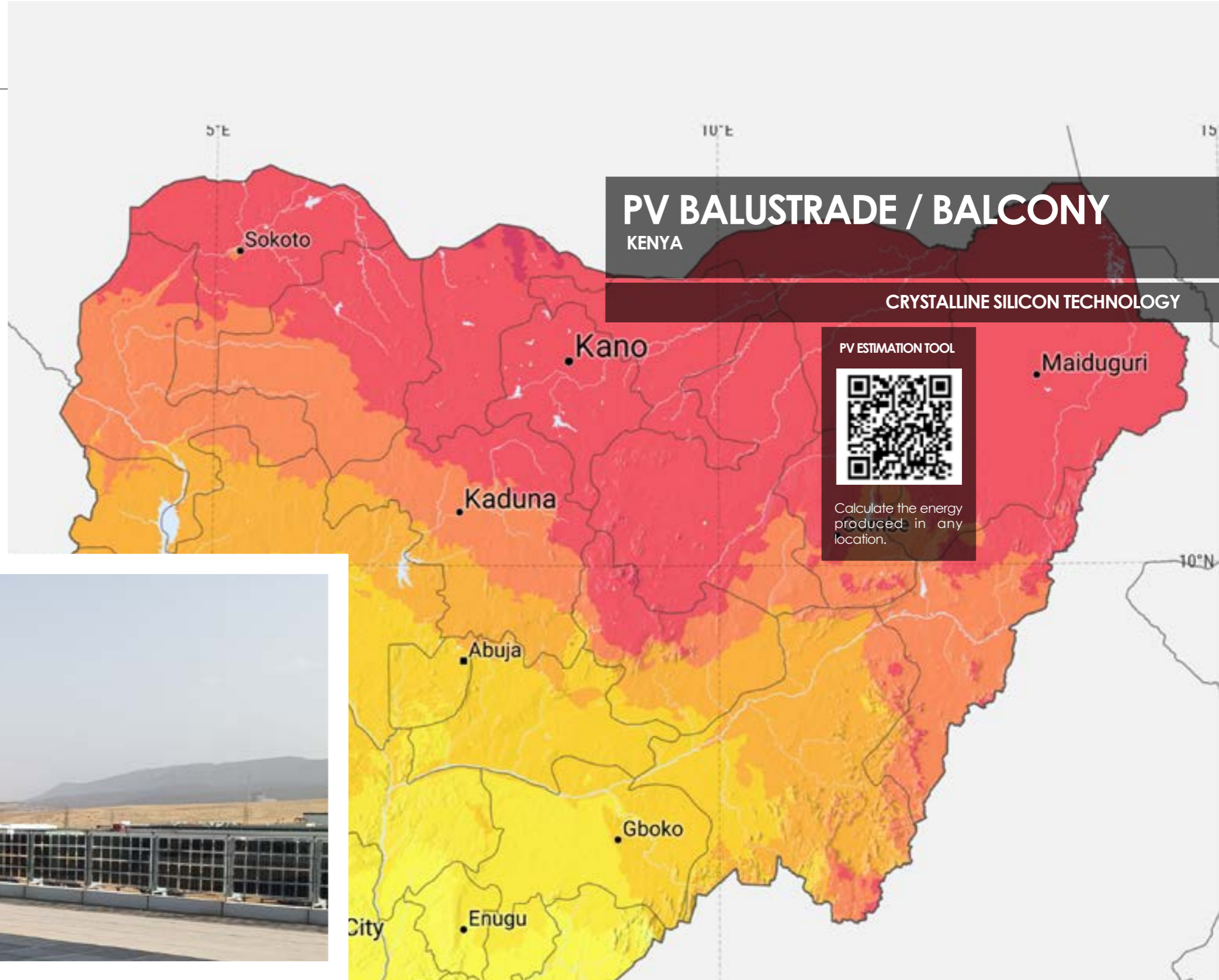
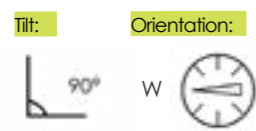
ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	2.460 KWh per m ²
Kg of CO ₂ avoided	723 Kg per m ²
Kilometres driven in an electric car	14.145 Km per m ²
Light points fed	4.83 per m ² /day

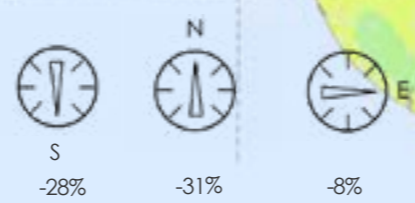
ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	93.368 KES per m ²
Return on investment	21,37 times
Internal rate of return (IRR)	34,14%
Payback time	4 years
Building's value increase**	26.421 KES per m ²

DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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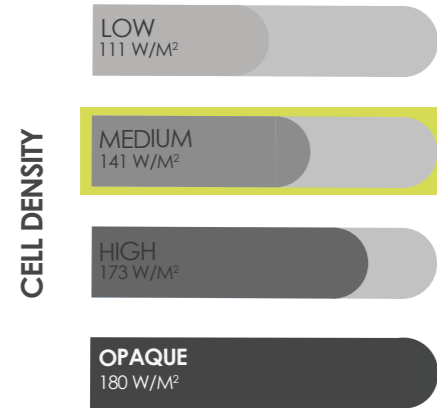
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FEASIBILITY STUDY NAIROBI

OPAQUE PV GLASS



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	140 Wp per m²
Visible light transmittance	0%

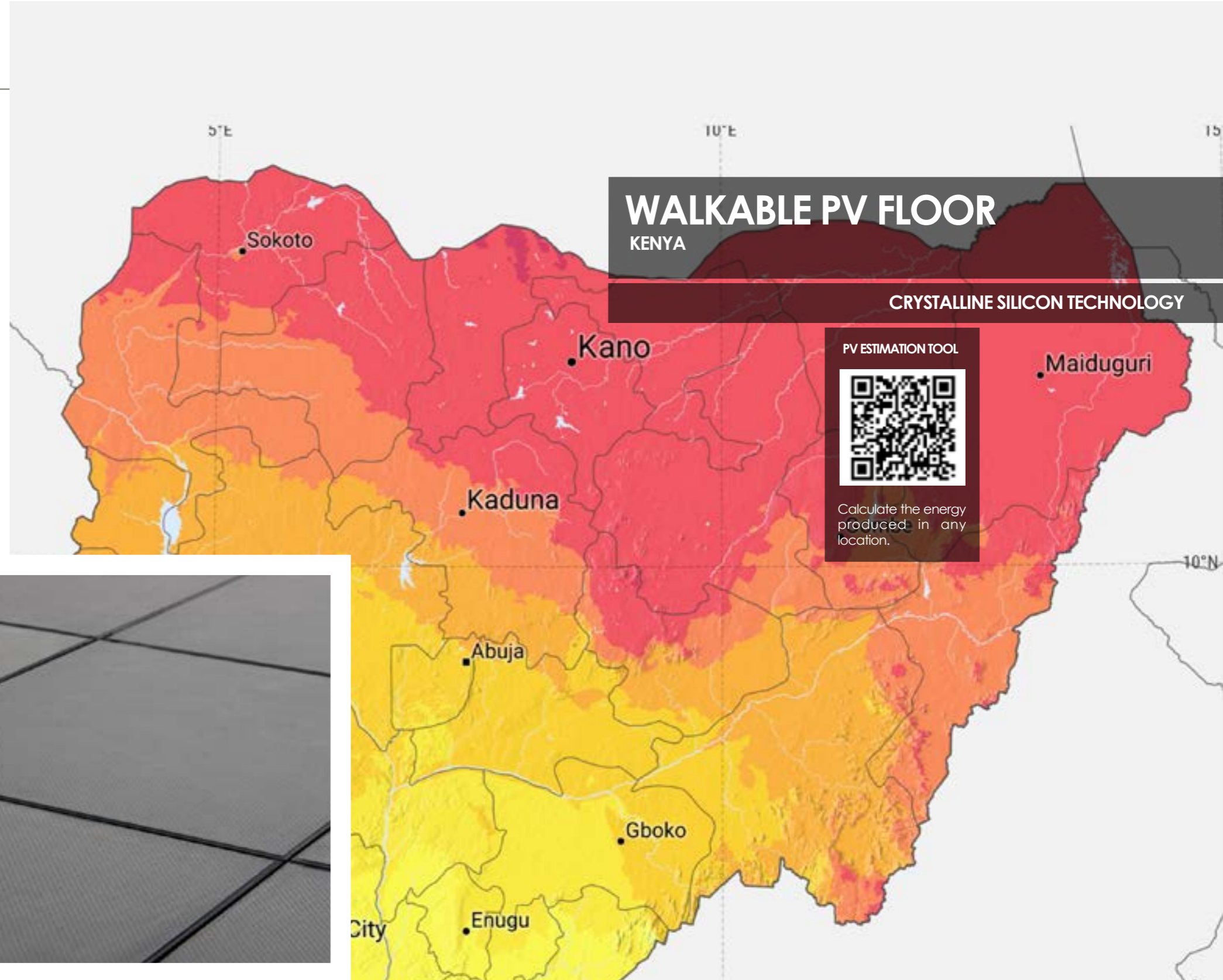
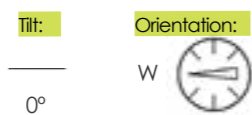
ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	5.880 KWh per m²
Kg of CO ₂ avoided	1.728 Kg per m²
Kilometres driven in an electric car	33.813 Km per m²
Light points fed	11, 55 per m²/day

ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	223,185 KES per m²
Return on investment	39,76 times
Internal rate of return (IRR)	60,19%
Payback time	2 years
Building's value increase**	63,158 KES per m²

DATA CONSIDERED FOR CALCULATIONS



WALKABLE PV FLOOR

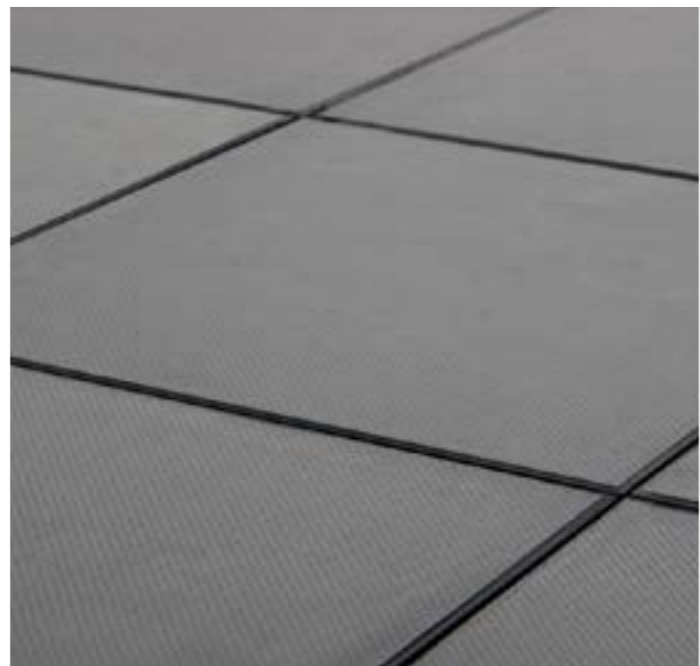
KENYA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



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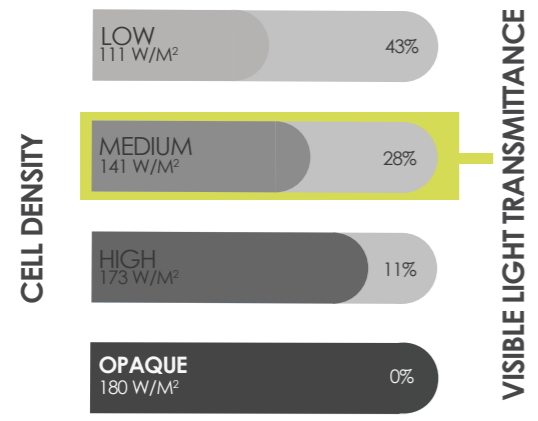
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FEASIBILITY STUDY NAIROBI

MEDIUM CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m ²)	141 Wp per m ²
Visible light transmittance	28%

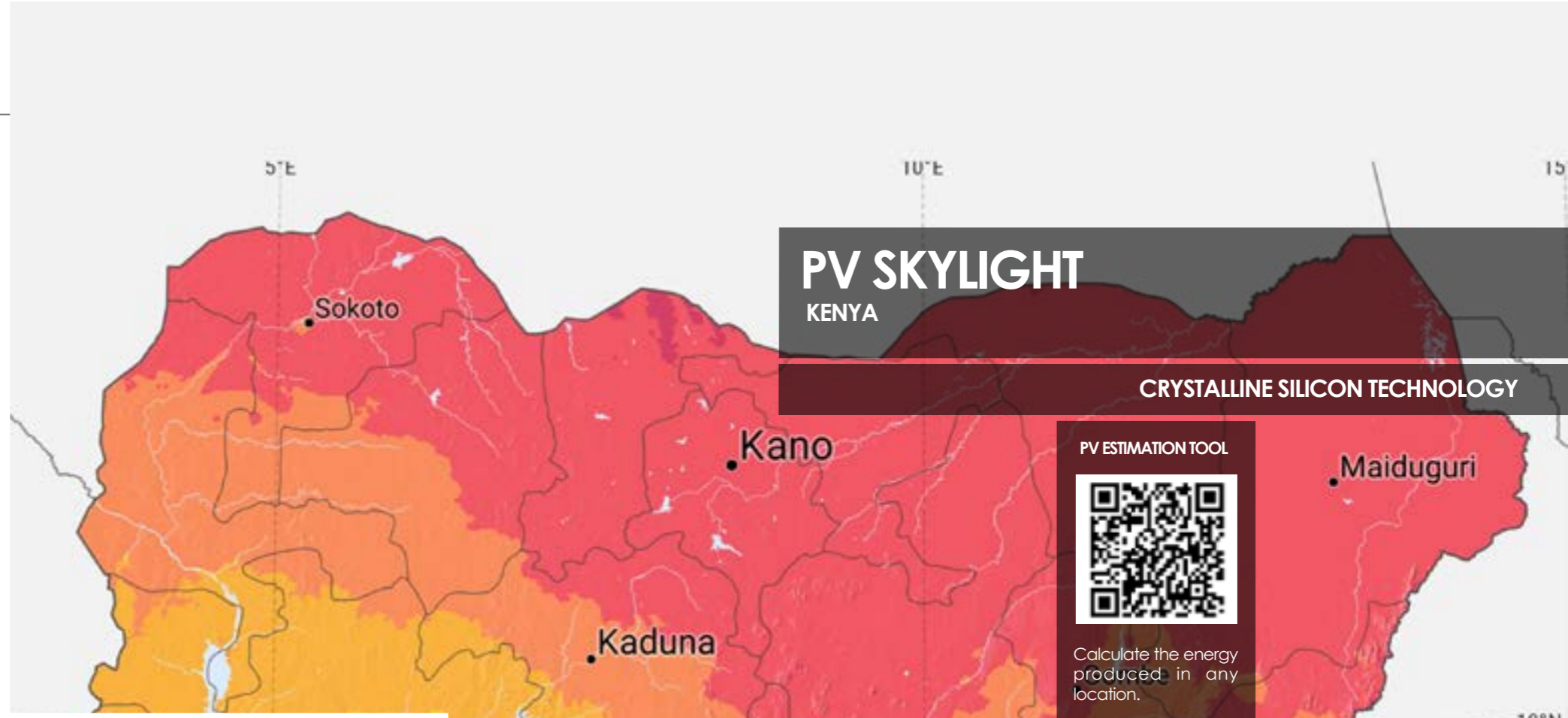
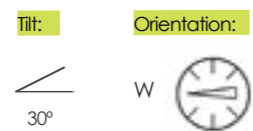
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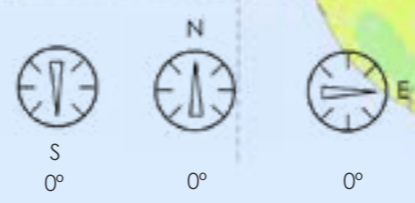
ECONOMIC BENEFITS NAIROBI*

Value of the renewable energy generated	223.185 KES per m ²
Return on investment	40,76 times
Internal rate of return (IRR)	61,61%
Payback time	2 years
Building's value increase**	63.158 KES per m ²

DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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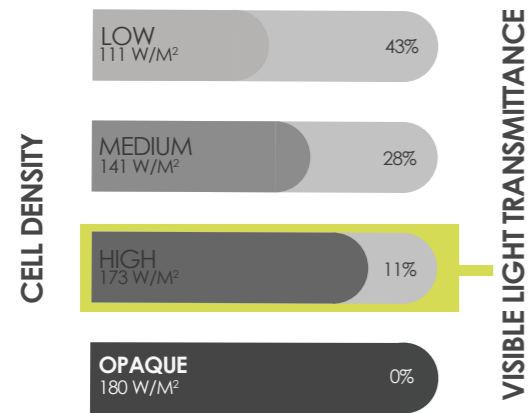
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FEASIBILITY STUDY NAIROBI

HIGH CELL DENSITY



CHARACTERISTICS OF THE GLASS

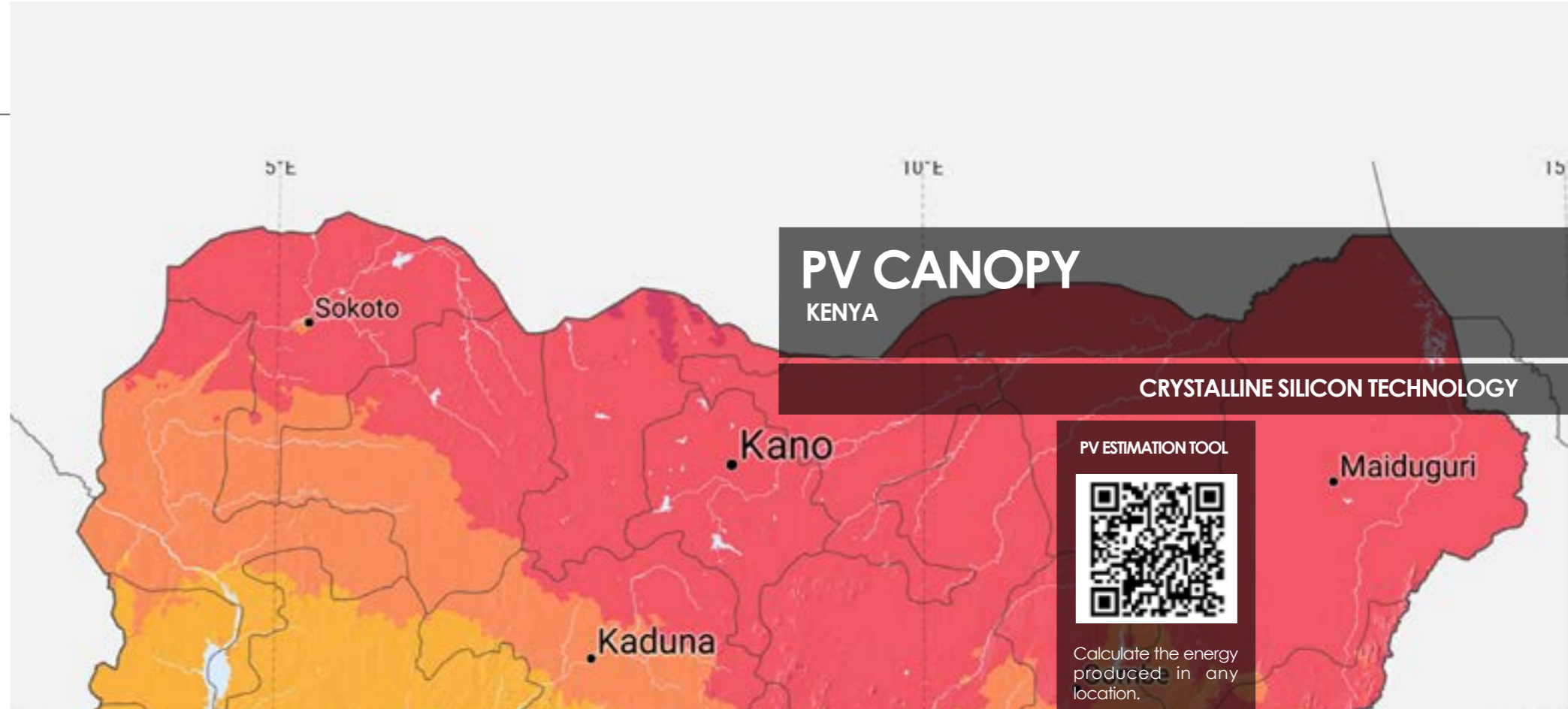
Peak Power (Wp/m ²)	173 Wp per m ²
Visible light transmittance	11%

ENVIRONMENTAL BENEFITS NAIROBI

Renewable energy generated	7.215 KWh per m ²
Kg of CO ₂ avoided	2.121 Kg per m ²
Kilometres driven in an electric car	41.487 Km per m ²
Light points fed	14,18 per m ² /day

ECONOMIC BENEFITS NAIROBI*

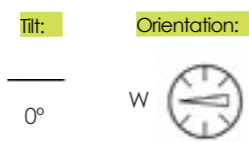
Value of the renewable energy generated	273.838 KES per m ²
Return on investment	40,89 times
Internal rate of return (IRR)	61,79%
Payback time	2 years
Building's value increase**	77.492 KES per m ²



PV ESTIMATION TOOL

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DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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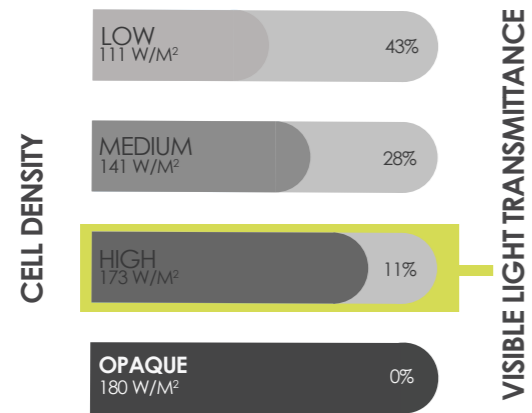
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FEASIBILITY STUDY NAIROBI

HIGH CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

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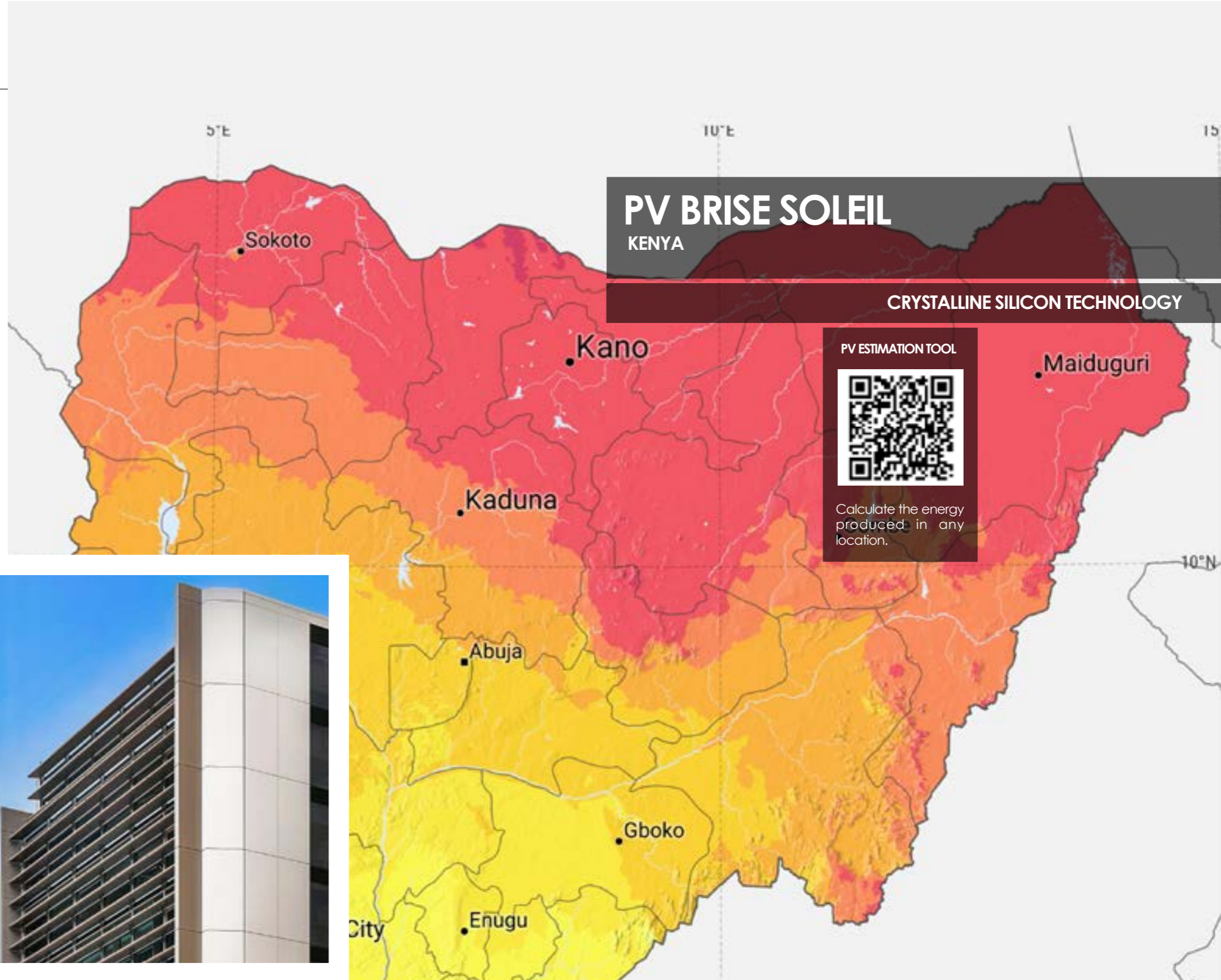
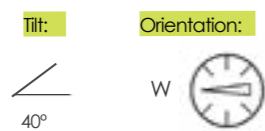
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PV BRISE SOLEIL

KENYA

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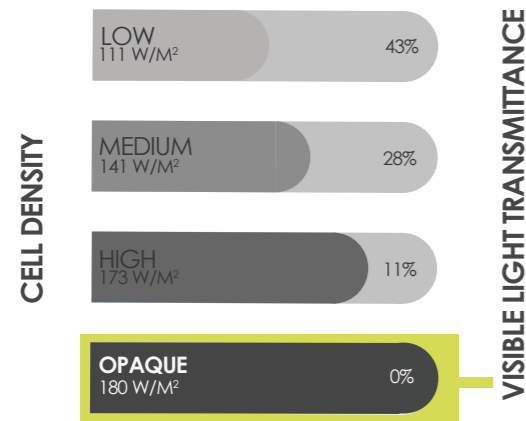
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FEASIBILITY STUDY NAIROBI

OPAQUE PV GLASS



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Visible light transmittance	0%

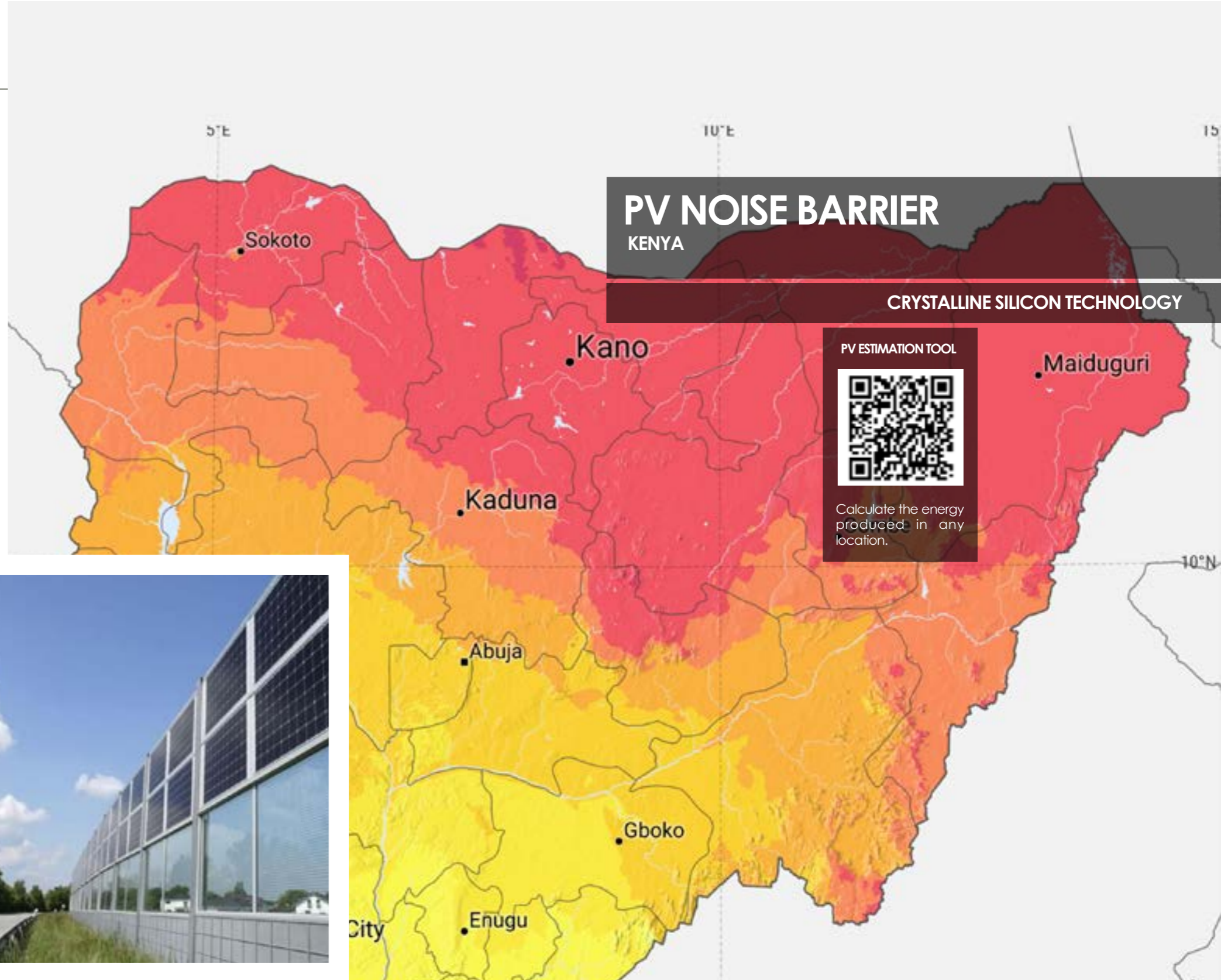
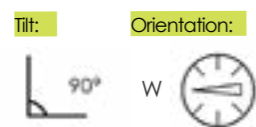
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PV NOISE BARRIER

KENYA

CRYSTALLINE SILICON TECHNOLOGY

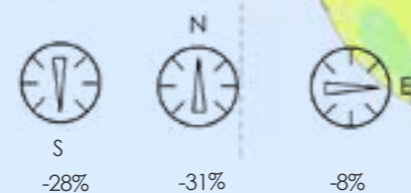
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GLOBAL EPD

SCAN THE QR TO DOWNLOAD OUR EPD



GlobalEPD
A VERIFIED ENVIRONMENTAL DECLARATION



Environmental
Product
Declaration

EN ISO 14025:2010
EN 15804:2012+A2:2019

AENOR

CRYSTALLINE PHOTOVOLTAIC
SOLAR GLASS

Gi/GM07244
 Gi/GM07211
 Gi/GM03644
 Gi/GM01688A

First publication date: 31-01-2024
 Expiry date: 30-01-2029

The declared validity is to registration and publication
 on www.aenor.com

GlobalEPD Code: GlobalEPD EN15804-063

The Environmental Product Declaration (EPD) is a certified document that provides our clients with reliable, verified, and transparent information regarding the environmental impact throughout the life cycle of a product. This information is based on a **Life Cycle Analysis (LCA)** study conducted in accordance with the Product Category Rules (PCR) developed by the Eco-labeling Program. In our specific case, the study has been carried out under the **Product Category Rule for Construction Products UNE EN 15804:2012+A2**.



ECO PLATFORM & AENOR
 ECO Platform is a European Association made up of DAP Verification Program Administrators, industrial associations, and life cycle analysis experts, which guarantees the quality and conformity of environmental declarations of construction products in accordance with ISO 14025 and EN 15084 Standards. ECO Platform represents a common pan-European framework for DAPs. The Programs commit to common quality and verification criteria, which are regularly audited.

AENOR is a founding member of ECO Platform and passed audits in 2014 to issue Environmental Declarations with the ECO Platform EPD EN 15804 VERIFIED™ logo, being one of the first four European Administrators along with International EPD System (Sweden), IBU (Germany) and BAU EPD (Austria).



» ISRAEL



» ESPAÑA



» EEUU



» DUBAI



» FRANCIA



» ESLOVAQUIA



» ESPAÑA



» ESPAÑA



» ARABIA SAUDITA



» MEXICO



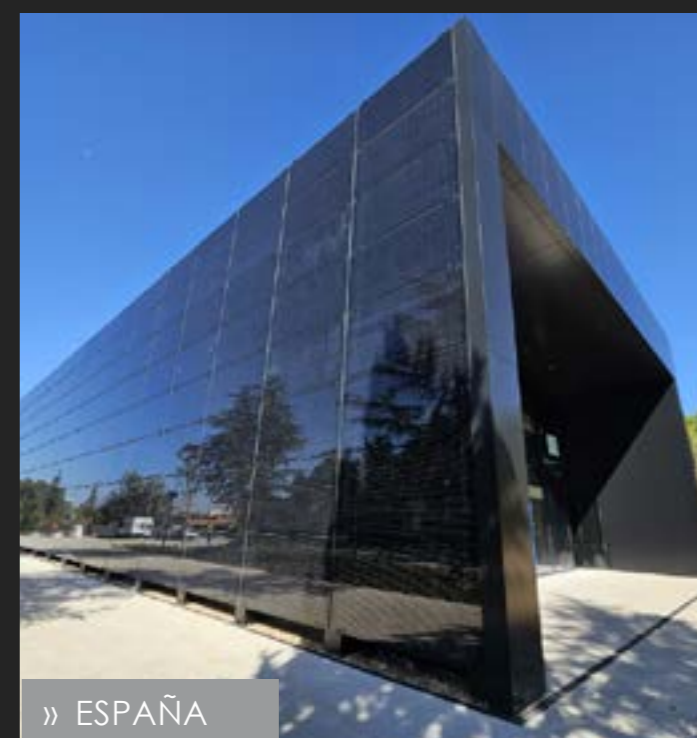
» KENYA



» PAÍSES BAJOS



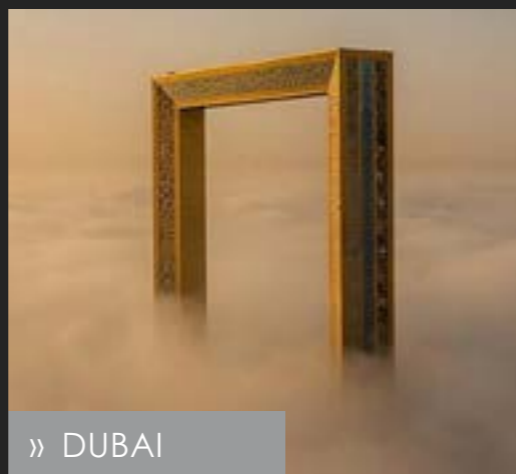
» EEUU



» ESPAÑA



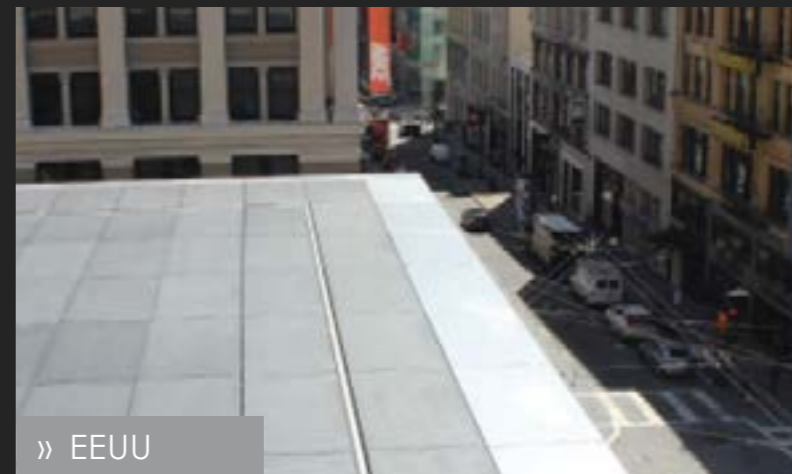
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UNLOCKING THE POWER OF PHOTOVOLTAIC GLASS:

Are you curious about the potential of photovoltaic (PV) glass for your project? Our team at Onyx Solar is here to guide you through the process and help you harness the benefits of this innovative technology.

WHAT DOES PV GLASS BRING TO YOUR PROJECT?

- ✓ **Energy Generation:** PV glass generates clean electricity from sunlight, reducing your reliance on traditional power sources.
- ✓ **Aesthetic Integration:** Say goodbye to bulky solar panels! PV glass blends seamlessly with architectural designs, enhancing the visual appeal of your building.
- ✓ **Environmental Impact:** By using PV glass, you contribute to reducing carbon emissions. Imagine the positive impact on our planet!

HOW ONYX SOLAR CAN ASSIST YOU

Our technical team offers free feasibility studies tailored to your project. Here's what we provide:

- **Product Datasheets:** Detailed information about our PV glass products, including technical specifications.
- **Shop Drawings:** Visual representations to aid in your design process.
- **Energy Estimates:** Understand the potential energy output based on your installation.
- **CO₂ Emissions Prevented:** Quantify the environmental benefits of using PV glass.
- **Cost Analysis:** Get a clear picture of the investment required.
- **Payback and ROI:** Evaluate the financial returns over time.
- **Tax Credits and Incentives:** Explore available incentives to make an informed decision.



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FACTORY
C/ Palma de Mallorca, 8
Avila · Spain · 05194
Phone: +34 920 21 00 50
info@onyxsolar.com

OFFICE
79 Madison Avenue, Suite #231
New York · USA · 10016
Phone: +1 917 261 4783
usa@onyxsolar.com

www.onyxsolar.com

The value of the renewable energy generated is just a preliminary estimate and does not imply any kind of guarantee. Factors such as surrounding shadows, self-shades, or other external aspects have not been taken into account. These factors might lead to a reduction in energy production. In addition, other potential losses due to BOS are also excluded from these calculations. The calculation has been done using PVWATTS and PVSYS in pre-design mode. Onyx Solar Energy S.L. makes no representations about the accuracy of these estimates and does not warrant, or guarantee, whether express or implied, that the content in the report is accurate, complete, or up to date.