FEASIBILITY STUDIES

DISCOVER DIFFERENT CONSTRUCTIVE SOLUTIONS IN NIGERIA

FEASIBILITY STUDY LAGOS

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/m²)	110 Wp per m²
Visible light transmittance	0%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	2.200 KWh per m²
Kg of CO_2 avoided	952 Kg per m²
Kilometres driven in an electric car	12.650 Km per m²
Light points fed	4,32 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	444.694 NGN per m²
Return on investment	34,87 times
Internal rate of return (IRR)	25,95%
Payback time	5 years
Building's value increase**	43.925 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 90°

Orientation: W

PV FAÇADE / BALCONY

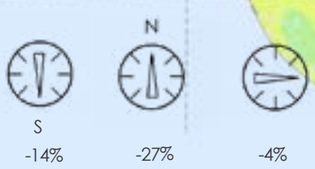
NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

ENERGY LOSSES PER ORIENTATION



-14% -27% -4%

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.

* The prices considered are merely indicative and may vary depending on the installed glass surface. The data provided in this feasibility study in no case involves a contractual obligation.

** 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.

FEASIBILITY STUDY LAGOS

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/m²)	110 Wp per m²
Visible light transmittance	0%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	4.591 KWh per m²
Kg of CO_2 avoided	1.988 Kg per m²
Kilometres driven in an electric car	26.400,53 Km per m²
Light points fed	

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	928.059 NGN per m²
Return on investment	72,78 times
Internal rate of return (IRR)	44,81%
Payback time	3 years
Building's value increase**	91.670 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 30°

Orientation: W

HIDDEN PV ROOF

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

ENERGY LOSSES PER ORIENTATION

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Data Calculated for a 35-year useful life.

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FEASIBILITY STUDY LAGOS

OPAQUE PV GLASS

CELL DENSITY

LOW	111 W/M²	43%
MEDIUM	141 W/M²	28%
HIGH	173 W/M²	11%
OPAQUE	180 W/M²	0%

VISIBLE LIGHT TRANSMITTANCE

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	180 Wp per m²
Visible light transmittance	0%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	3.600 KWh per m²
Kg of CO_2 avoided	1.558 Kg per m²
Kilometres driven in an electric car	20.700 Km per m²
Light points fed	7 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	727.681 NGN per m²
Return on investment	34,97 times
Internal rate of return (IRR)	26%
Payback time	5 years
Building's value increase**	71.877 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 90°

Orientation: W

PV DOUBLE SKIN / SPANDREL

NIGERIA

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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FEASIBILITY STUDY LAGOS

MEDIUM CELL DENSITY PV GLASS

CELL DENSITY

LOW 111 W/M²	43%	
MEDIUM 141 W/M²	28%	← VISIBLE LIGHT TRANSMITTANCE
HIGH 173 W/M²	11%	
OPAQUE 180 W/M²	0%	

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	141 Wp per m²
Visible light transmittance	28%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	2.820 KWh per m²
Kg of CO_2 avoided	1.221 Kg per m²
Kilometres driven in an electric car	16.215 Km per m²
Light points fed	5,54 per m²/day

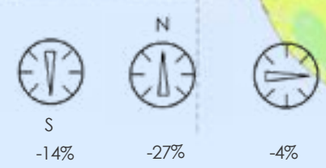
ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	570.015 NGN per m²
Return on investment	35 times
Internal rate of return (IRR)	25,91%
Payback time	5 years
Building's value increase**	56.304 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 90° Orientation: W

ENERGY LOSSES PER ORIENTATION



PV CURTAIN WALL

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

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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.

FEASIBILITY STUDY LAGOS

LOW CELL DENSITY PV GLASS

CELL DENSITY

LOW	111 W/M²	43%
MEDIUM	141 W/M²	28%
HIGH	173 W/M²	11%
OPAQUE	180 W/M²	0%

VISIBLE LIGHT TRANSMITTANCE

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	111 Wp per m²
Visible light transmittance	43%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	2.220 KWh per m²
Kg of CO_2 avoided	961 Kg per m²
Kilometres driven in an electric car	12.765 Km per m²
Light points fed	4,36 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	448.737 NGN per m²
Return on investment	34,77 times
Internal rate of return (IRR)	25,89%
Payback time	5 years
Building's value increase**	44.324 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 90°

Orientation: W

ENERGY LOSSES PER ORIENTATION

S	N	E
-14%	-27%	-4%

PV BALUSTRADE / BALCONY

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

LEED BREEAM

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

EVERY SQUARE METER PLANTS ONE TREE

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.

* The prices considered are merely indicative and may vary depending on the installed glass surface. The data provided in this feasibility study in no case involves a contractual obligation.

** 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.

FEASIBILITY STUDY LAGOS

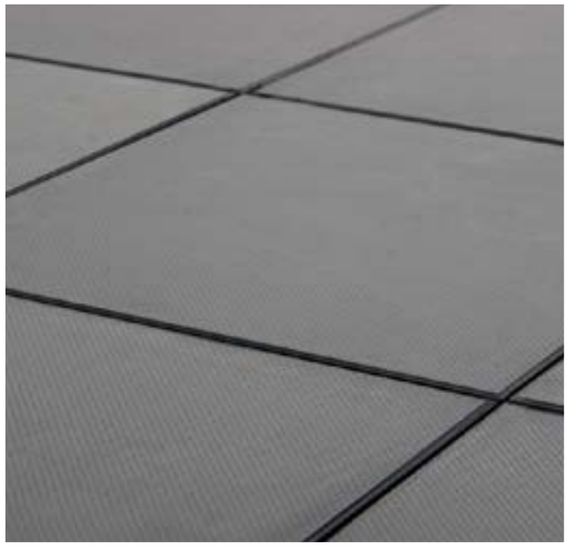
OPAQUE PV GLASS

CELL DENSITY

- LOW 111 W/M²
- MEDIUM 141 W/M²
- HIGH 173 W/M²
- **OPAQUE** 180 W/M²

CHARACTERISTICS OF THE GLASS

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



ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	5.843 KWh per m²
Kg of CO_2 avoided	2.530 Kg per m²
Kilometres driven in an electric car	33.600 Km per m²
Light points fed	11,48 per m²/day

ECONOMIC BENEFITS LAGOS*

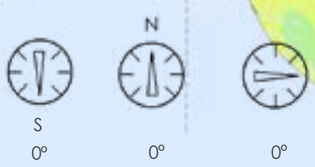
Value of the renewable energy generated	1.181.166 NGN per m²
Return on investment	72,28 times
Internal rate of return (IRR)	44,56%
Payback time	3 years
Building's value increase**	116.671 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 0°

Orientation: W

ENERGY LOSSES PER ORIENTATION



WALKABLE PV FLOOR

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

LEED BREEAM

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

EVERY SQUARE METER PLANTS ONE TREE

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.

* The prices considered are merely indicative and may vary depending on the installed glass surface. The data provided in this feasibility study in no case involves a contractual obligation.

** 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.

FEASIBILITY STUDY LAGOS

MEDIUM CELL DENSITY PV GLASS

CELL DENSITY

LOW 111 W/M²	43%	
MEDIUM 141 W/M²	28%	← VISIBLE LIGHT TRANSMITTANCE
HIGH 173 W/M²	11%	
OPAQUE 180 W/M²	0%	

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	141 Wp per m²
Visible light transmittance	28%

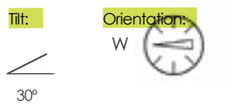
ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	5.885 KWh per m²
Kg of CO_2 avoided	2.548 Kg per m²
Kilometres driven in an electric car	33.840 Km per m²
Light points fed	11,56 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	1.189.603NGN per m²
Return on investment	72,89 times
Internal rate of return (IRR)	44,86%
Payback time	3 years
Building's value increase**	117.504 NGN per m²

DATA CONSIDERED FOR CALCULATIONS



PV SKYLIGHT

NIGERIA

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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FEASIBILITY STUDY LAGOS

HIGH CELL DENSITY

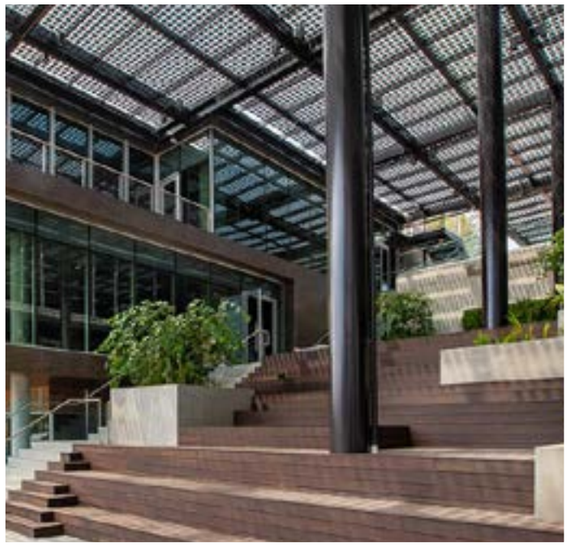
CELL DENSITY

LOW	111 W/M²	43%
MEDIUM	141 W/M²	28%
HIGH	173 W/M²	11%
OPAQUE	180 W/M²	0%

VISIBLE LIGHT TRANSMITTANCE

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	173 Wp per m²
Visible light transmittance	11%



ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	7.220 KWh per m²
Kg of CO_2 avoided	3.126 Kg per m²
Kilometres driven in an electric car	41.520 Km per m²
Light points fed	14,19 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	1.459.579 NGN per m²
Return on investment	72,97 times
Internal rate of return (IRR)	44,90%
Payback time	3 years
Building's value increase**	144.171 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 0°

Orientation: W

ENERGY LOSSES PER ORIENTATION

S 0° | N 0° | E 0°

PV CANOPY

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

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

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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.

FEASIBILITY STUDY LAGOS

HIGH CELL DENSITY PV GLASS

CELL DENSITY

LOW	111 W/M²	43%
MEDIUM	141 W/M²	28%
HIGH	173 W/M²	11%
OPAQUE	180 W/M²	0%

VISIBLE LIGHT TRANSMITTANCE

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	173 Wp per m²
Visible light transmittance	11%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	7.220 KWh per m²
Kg of CO_2 avoided	3.126 Kg per m²
Kilometres driven in an electric car	41.520 Km per m²
Light points fed	14,19 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	1.459.579 NGN per m²
Return on investment	72,97 times
Internal rate of return (IRR)	44,90%
Payback time	3 years
Building's value increase**	144.171 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 40°

Orientation: W

ENERGY LOSSES PER ORIENTATION

S 0° | N 0° | E 0°

PV BRISE SOLEIL

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

Calculate the energy produced in any location.

Sokoto · Kano · Maiduguri · Kaduna · Abuja · Gboko · Enugu · Port Harcourt

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.

FEASIBILITY STUDY LAGOS

OPAQUE PV GLASS

CELL DENSITY

LOW 111 W/M²	43%	
MEDIUM 141 W/M²	28%	
HIGH 173 W/M²	11%	
OPAQUE 180 W/M²	0%	VISIBLE LIGHT TRANSMITTANCE

CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	180 Wp per m²
Visible light transmittance	0%

ENVIRONMENTAL BENEFITS LAGOS

Renewable energy generated	3.600 KWh per m²
Kg of CO_2 avoided	1.558 Kg per m²
Kilometres driven in an electric car	20.700 Km per m²
Light points fed	7,07 per m²/day

ECONOMIC BENEFITS LAGOS*

Value of the renewable energy generated	727.681 NGN per m²
Return on investment	34,94 times
Internal rate of return (IRR)	25,98%
Payback time	5 years
Building's value increase**	71.877 NGN per m²

DATA CONSIDERED FOR CALCULATIONS

Tilt: 90°

Orientation: W

ENERGY LOSSES PER ORIENTATION

S -14% | -27% | -4%

PV NOISE BARRIER

NIGERIA

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL

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GLOBAL EPD

SCAN THE QR TO DOWNLOAD OUR EPD

GlobalEPD
A VERIFIED ENVIRONMENTAL DECLARATION

ECO PLATFORM EPD VERIFIED

Environmental Product Declaration

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

AENOR

CRYSTALLINE PHOTOVOLTAIC SOLAR GLASS

G/GM07244
G/GM07211
G/GM03644
G/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

» NIGERIA

» PAÍSES BAJOS

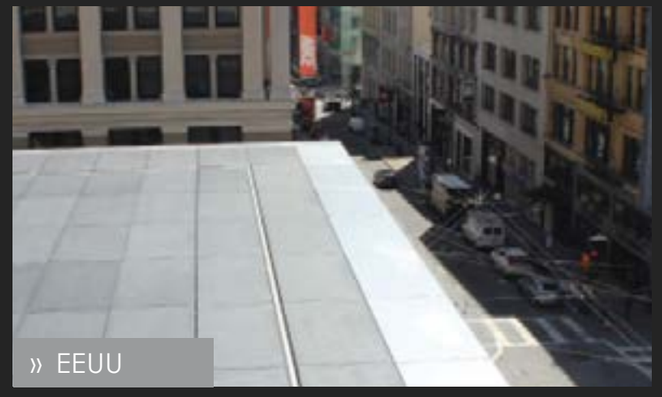
» EEUU

» ESPAÑA

» EEUU

» DUBAI

» DINAMARCA



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Scan this QR code to acces our catalog.

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.

·**CO_2 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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