



FEASIBILITY STUDIES

DISCOVER DIFFERENT CONSTRUCTIVE SOLUTIONS IN ITALY

FEASIBILITY STUDY ROME

HIDDEN PV IN WHITE COLOR

	INTENSE GREEN 100 W/M ²
	WHITE 110 W/M ²
	MARBLE BROWN 115 W/M ²
	DEEP BLUE 160 W/M ²

CHARACTERISTICS OF THE GLASS

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

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	2.1348 KWh per m ²
Kg of CO ₂ avoided	546 Kg per m ²
Kilometres driven in an electric car	12.276 Km per m ²
Light points fed	4.1 per m ² /day

ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	803 € per m ²
Return on investment	5.3 times
Internal rate of return (IRR)	12.25 %
Payback time	7,5 years
Building's value increase**	331 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	1.822 KWh per m ²
Payback time (Milan)	8,2 years
Electricity generated (Naples)	2.422 KWh per m ²
Payback time (Naples)	6,5 years
Electricity generated (Palermo)	2.626 KWh per m ²
Payback time (Palermo)	6,3 years

DATA CONSIDERED FOR CALCULATIONS

Tilt: Orientation:



PV FAÇADE / BALCONY

ITALY

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.

* 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 ROME

HIDDEN PV IN WHITE COLOR



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)	110 Wp per m²
Visible light transmittance	0%

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	2.729 KWh per m²
Kg of CO ₂ avoided	698 Kg per m²
Kilometres driven in an electric car	15.694 Km per m²
Light points fed	5.4 per m²/day

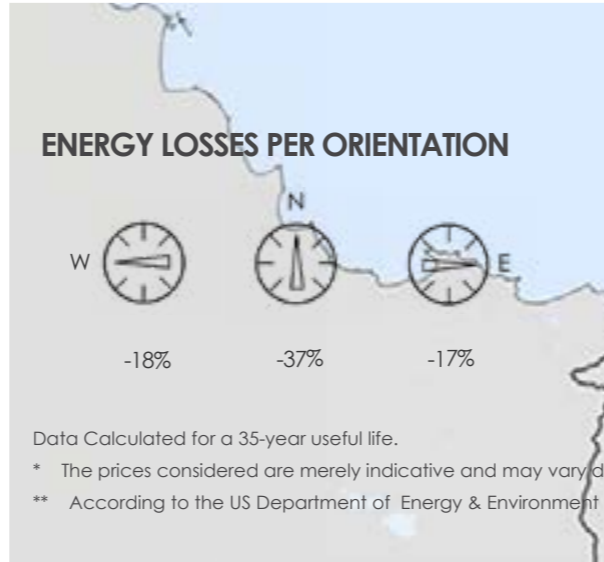
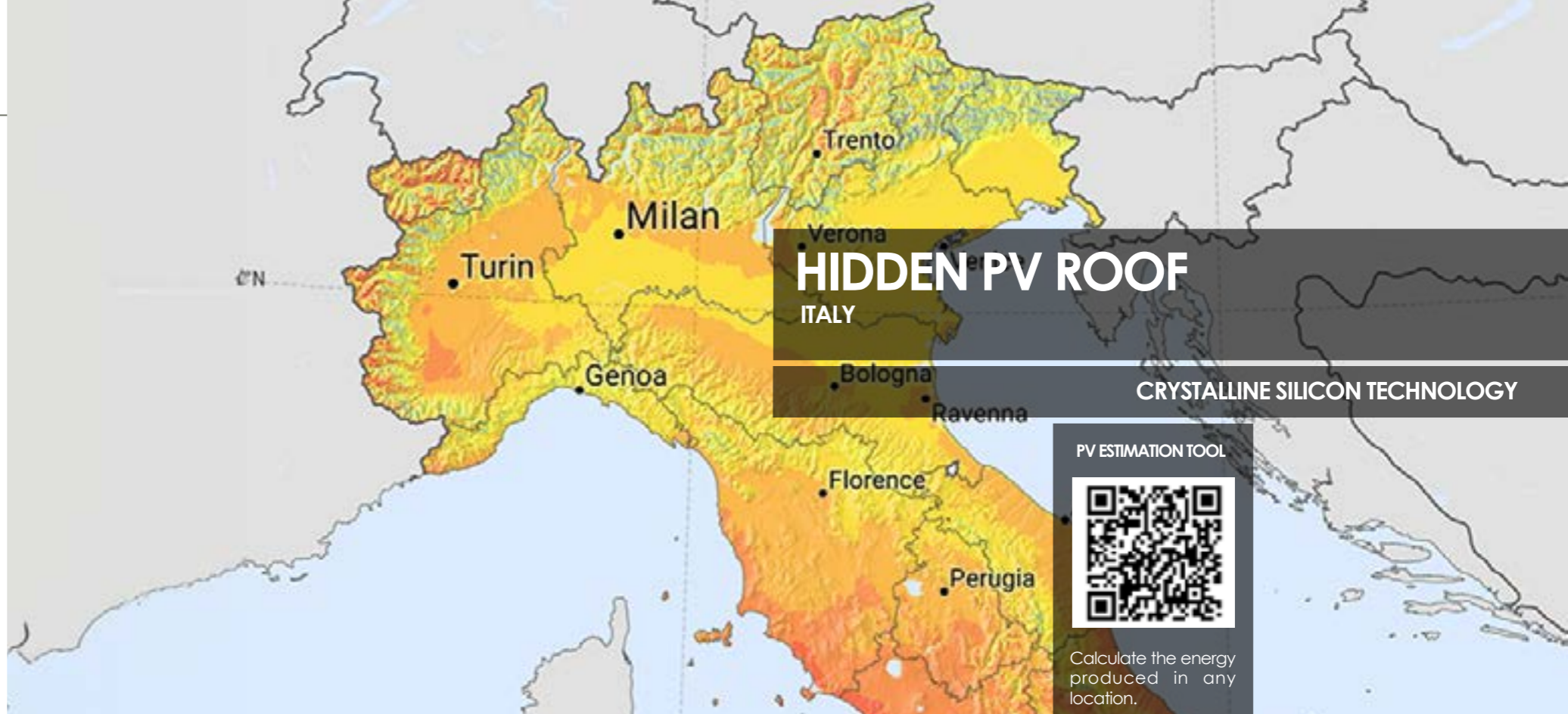
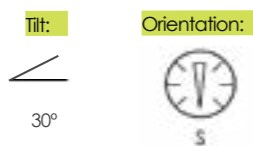
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.027 € per m²
Return on investment	7.5 times
Internal rate of return (IRR)	16.8 %
Payback time	5 years
Building's value increase**	424 € per m²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	2.319 KWh per m²
Payback time (Milan)	5 years
Electricity generated (Naples)	3.084 KWh per m²
Payback time (Naples)	2,3 years
Electricity generated (Palermo)	3.357 KWh per m²
Payback time (Palermo)	2,2 years

DATA CONSIDERED FOR CALCULATIONS



HIDDEN PV ROOF ITALY

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



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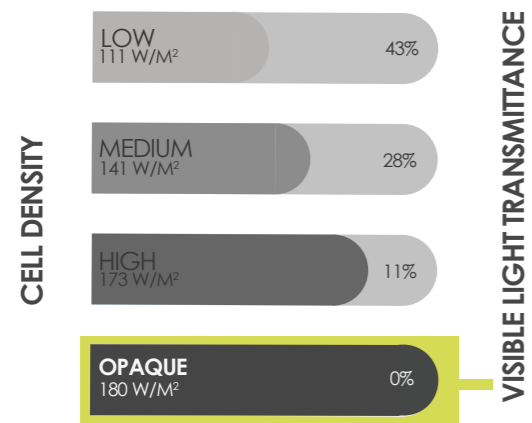
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FEASIBILITY STUDY ROME

OPAQUE PV GLASS



CHARACTERISTICS OF THE GLASS

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

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	3.558 KWh per m ²
Kg of CO ₂ avoided	910 Kg per m ²
Kilometres driven in an electric car	20.460 Km per m ²
Light points fed	6,99 per m ² /day

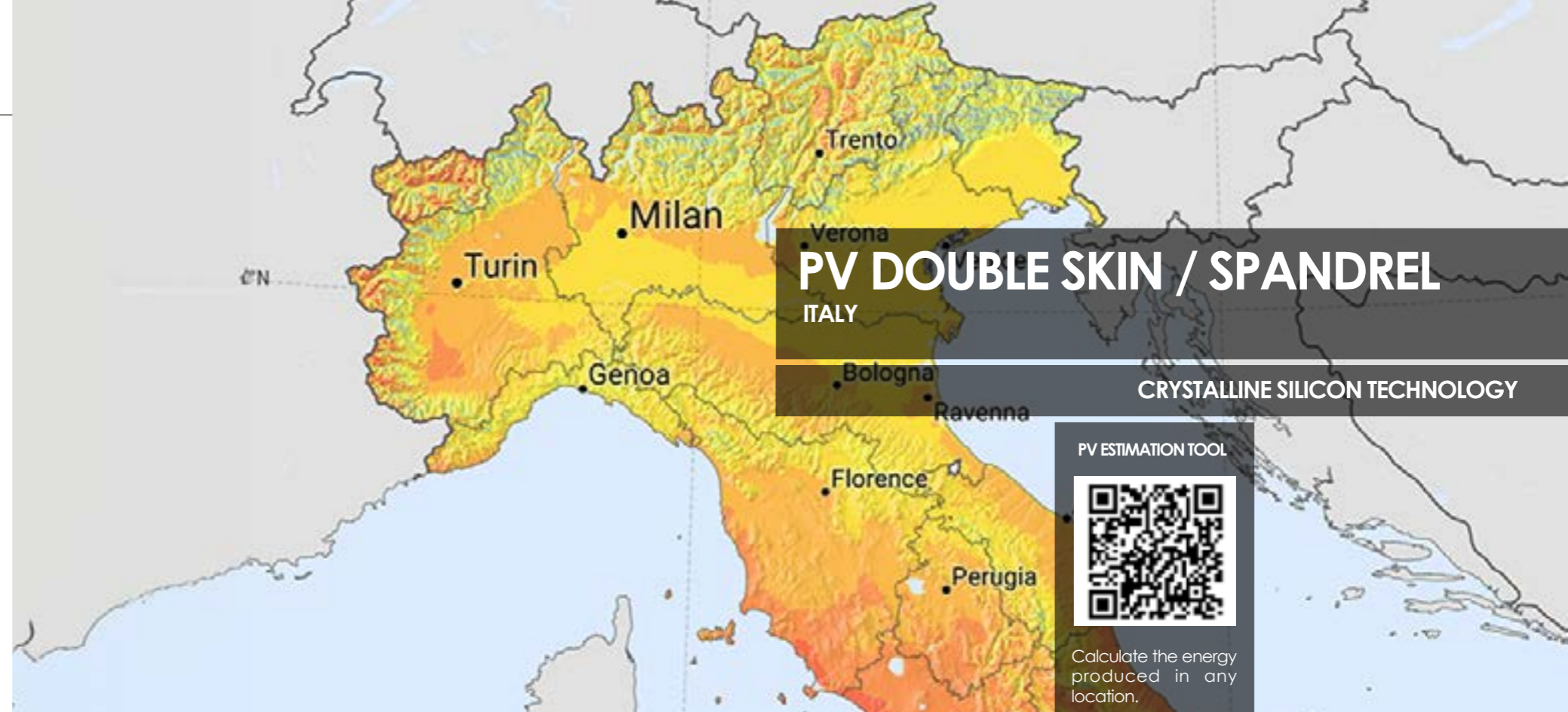
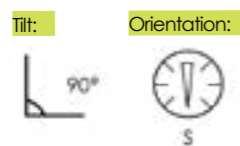
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.339 € per m ²
Return on investment	8,9 times
Internal rate of return (IRR)	20,43 %
Payback time	6 years
Building's value increase**	553 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	3.038 KWh per m ²
Payback time (Milan)	7,02 years
Electricity generated (Naples)	4.038 KWh per m ²
Payback time (Naples)	5,3 years
Electricity generated (Palermo)	4.377 KWh per m ²
Payback time (Palermo)	4,87 years

DATA CONSIDERED FOR CALCULATIONS



PV DOUBLE SKIN / SPANDREL

ITALY

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



Calculate the energy produced in any location.



ENERGY LOSSES PER ORIENTATION



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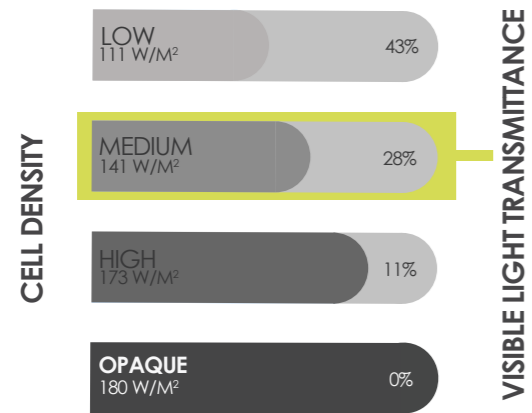
Onyx facilitates obtaining recognized sustainability certifications for buildings like LEED or BREEAM.

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



FEASIBILITY STUDY ROME

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 ROME

Renewable energy generated	2.787 KWh per m ²
Kg of CO ₂ avoided	713 Kg per m ²
Kilometres driven in an electric car	16.027 Km per m ²
Light points fed	5,48 per m ² /day

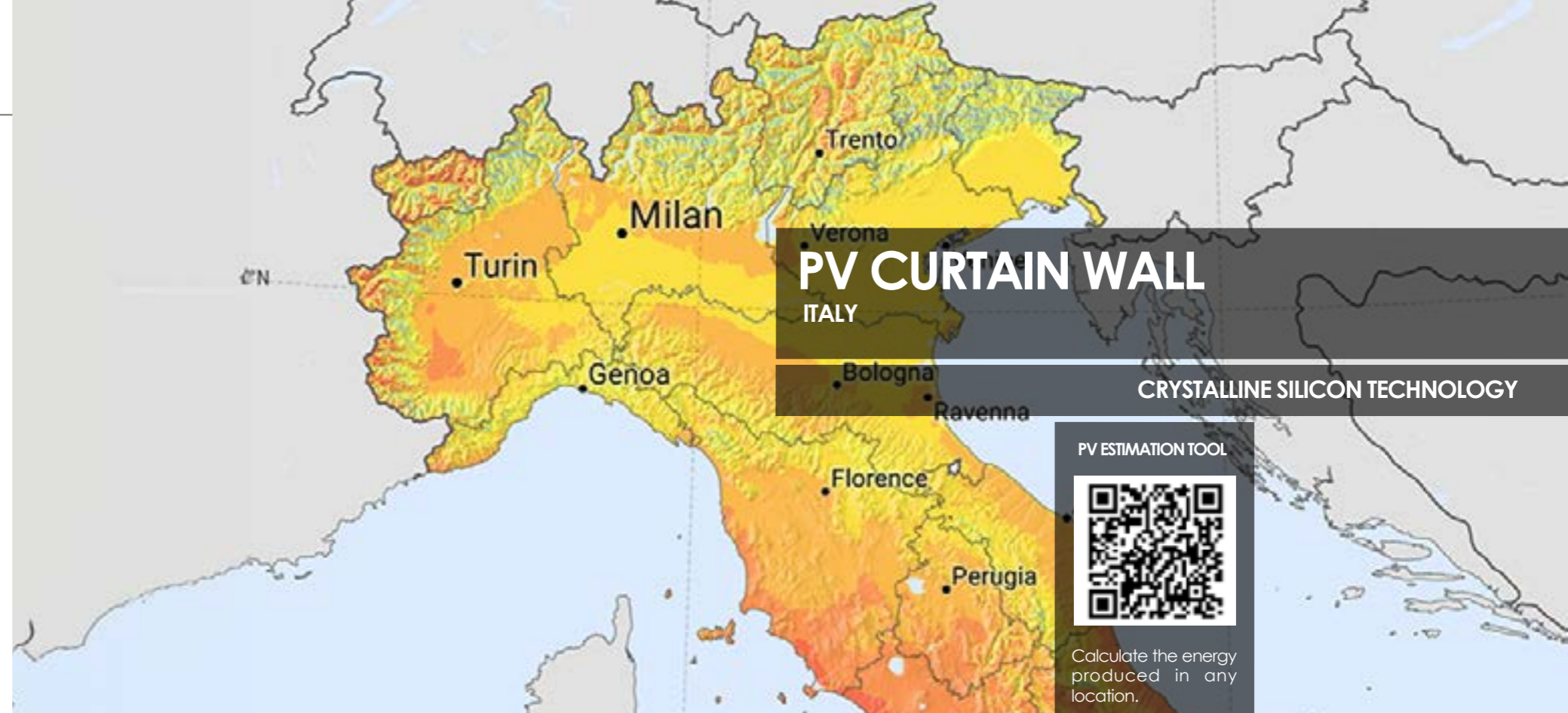
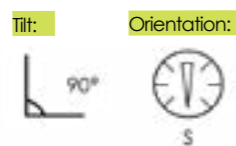
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.049 € per m ²
Return on investment	5,42 times
Internal rate of return (IRR)	12,76 %
Payback time	9 years
Building's value increase**	434 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	2.380 KWh per m ²
Payback time (Milan)	10,53 years
Electricity generated (Naples)	3.163 KWh per m ²
Payback time (Naples)	7,9 years
Electricity generated (Palermo)	3.428 KWh per m ²
Payback time (Palermo)	7,31 years

DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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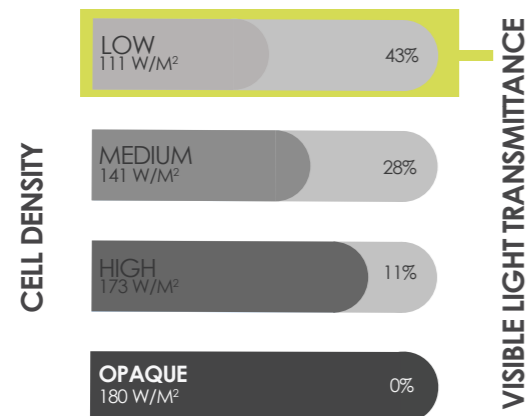
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FEASIBILITY STUDY ROME

LOW CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

Peak Power (Wp/m²)
Visible light transmittance

111 Wp per m²
43%

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated
Kg of CO₂ avoided
Kilometres driven in an electric car
Light points fed

2.194 KWh per m²
561 Kg per m²
12.617 Km per m²
4,31 per m²/day

ECONOMIC BENEFITS ROME*

Value of the renewable energy generated
Return on investment
Internal rate of return (IRR)
Payback time
Building's value increase**

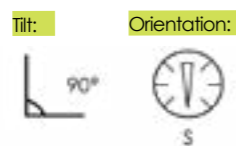
826 € per m²
5 times
11,71 %
10 years
341 € per m²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)
Payback time (Milan)
Electricity generated (Naples)
Payback time (Naples)
Electricity generated (Palermo)
Payback time (Palermo)

1.873 KWh per m²
11,7 years
2.490 KWh per m²
8,8 years
2.700 KWh per m²
8,12 years

DATA CONSIDERED FOR CALCULATIONS



PV BALUSTRADE / BALCONY

ITALY

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



Calculate the energy produced in any location.



ENERGY LOSSES PER ORIENTATION



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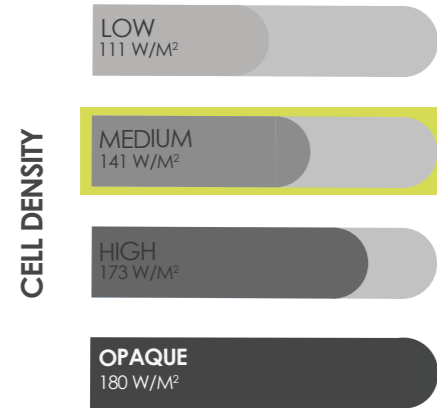


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We plant one tree for every m² of PV glass we produce. Each tree absorbs an average of 10 Kg of CO₂ per year.

FEASIBILITY STUDY ROME

OPAQUE PV GLASS



CHARACTERISTICS OF THE GLASS

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

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	4.094 KWh per m²
Kg of CO ₂ avoided	1.048 Kg per m²
Kilometres driven in an electric car	23.541 Km per m²
Light points fed	8 per m²/day

ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.571 € per m²
Return on investment	5,63 times
Internal rate of return (IRR)	13,23%
Payback time	9 years
Building's value increase**	637 € per m²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	3.496 KWh per m²
Payback time (Milan)	10,53 years
Electricity generated (Naples)	4.646 KWh per m²
Payback time (Naples)	7,9 years
Electricity generated (Palermo)	5.038 KWh per m²
Payback time (Palermo)	7,3 years

DATA CONSIDERED FOR CALCULATIONS



WALKABLE PV FLOOR

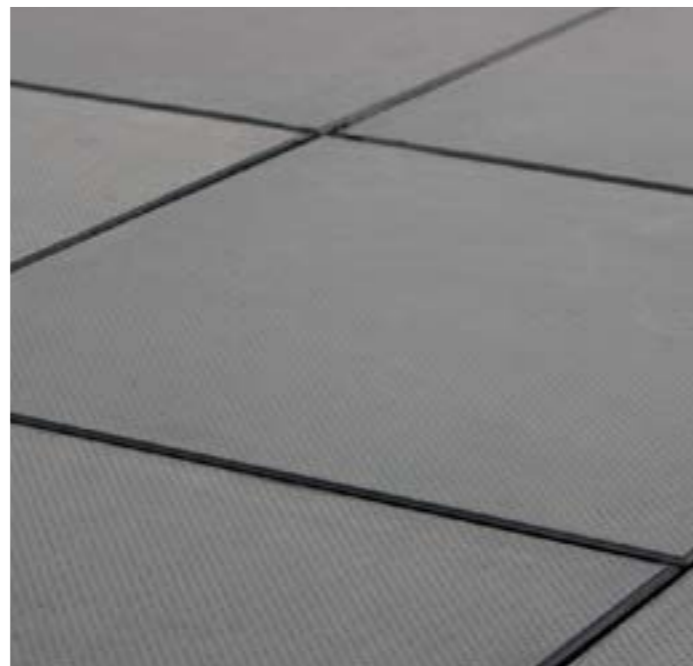
ITALY

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.

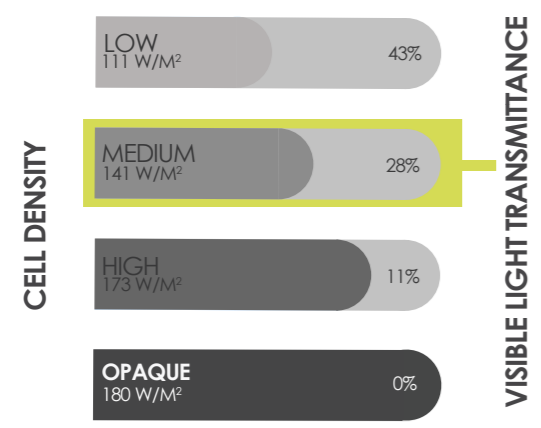
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FEASIBILITY STUDY ROME

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 ROME

Renewable energy generated	4.549 KWh per m ²
Kg of CO ₂ avoided	1.164 Kg per m ²
Kilometres driven in an electric car	26.158 Km per m ²
Light points fed	9 per m ² /day

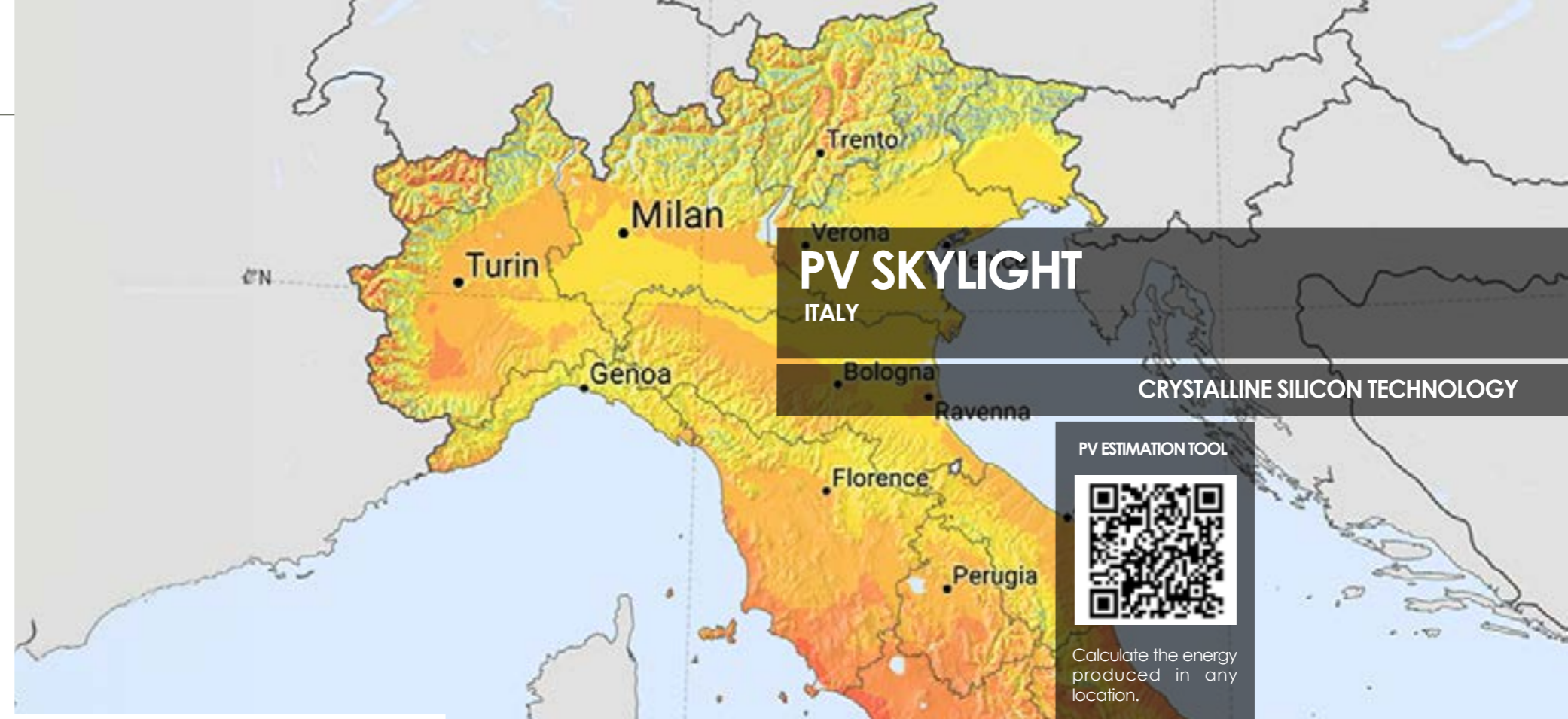
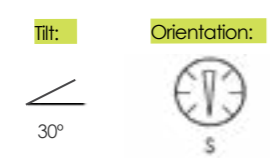
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.712 € per m ²
Return on investment	12,62 times
Internal rate of return (IRR)	28 %
Payback time	4 years
Building's value increase**	708 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	3.866 KWh per m ²
Payback time (Milan)	4,5 years
Electricity generated (Naples)	5.140 KWh per m ²
Payback time (Naples)	3 years
Electricity generated (Palermo)	5.595 KWh per m ²
Payback time (Palermo)	2,8 years

DATA CONSIDERED FOR CALCULATIONS



PV SKYLIGHT
ITALY

CRYSTALLINE SILICON TECHNOLOGY

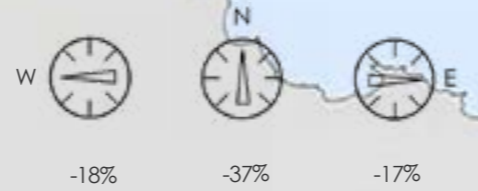
PV ESTIMATION TOOL



Calculate the energy produced in any location.



ENERGY LOSSES PER ORIENTATION



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Data Calculated for a 35-year useful life.

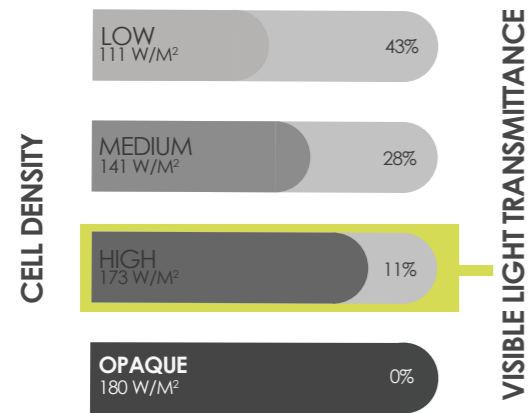
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FEASIBILITY STUDY ROME

HIGH CELL DENSITY



CHARACTERISTICS OF THE GLASS

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

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	5.023 KWh per m ²
Kg of CO ₂ avoided	1.285 Kg per m ²
Kilometres driven in an electric car	37.068 Km per m ²
Light points fed	12,67 per m ² /day

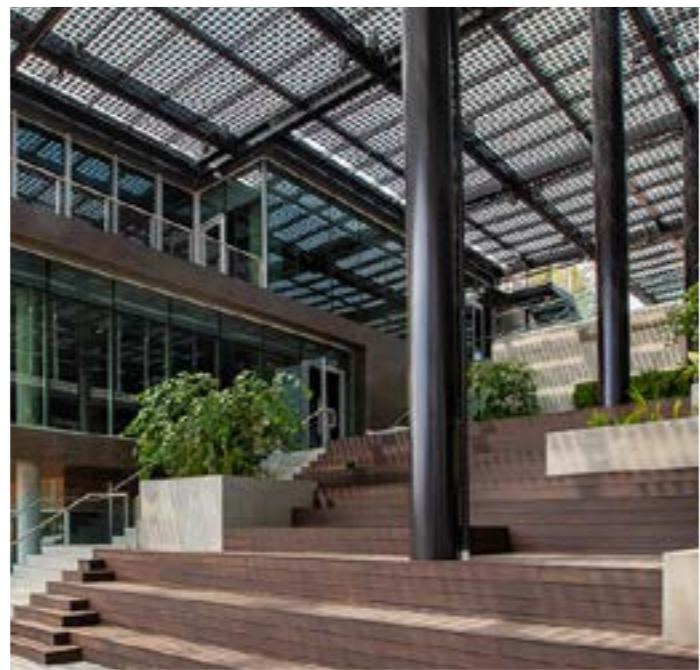
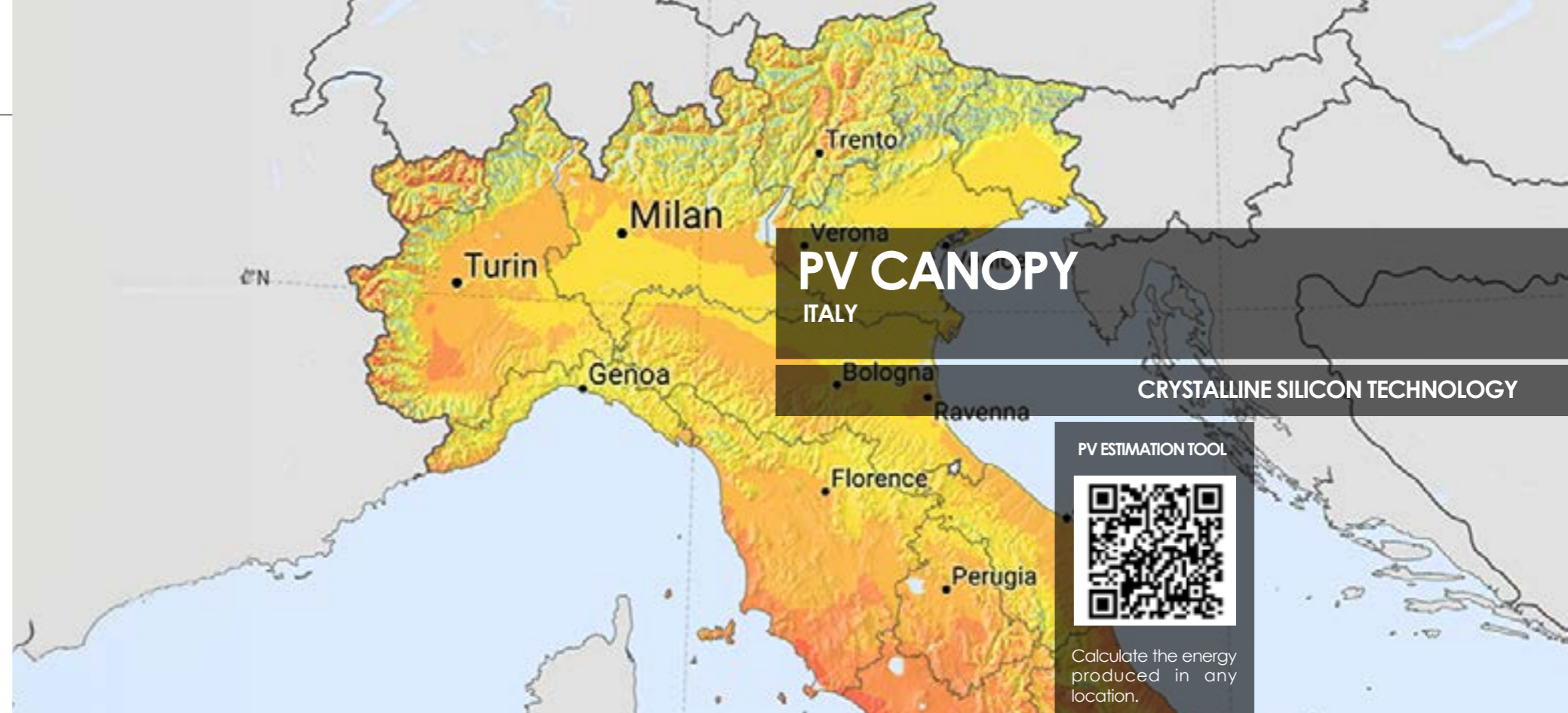
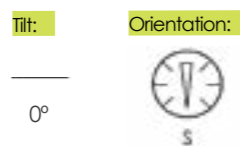
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	1.510 € per m ²
Return on investment	13,7 times
Internal rate of return (IRR)	28,9 %
Payback time	4 years
Building's value increase**	781 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	4.269 KWh per m ²
Payback time (Milan)	4,5 years
Electricity generated (Naples)	5.675 KWh per m ²
Payback time (Naples)	3 years
Electricity generated (Palermo)	6.178 KWh per m ²
Payback time (Palermo)	2,8 years

DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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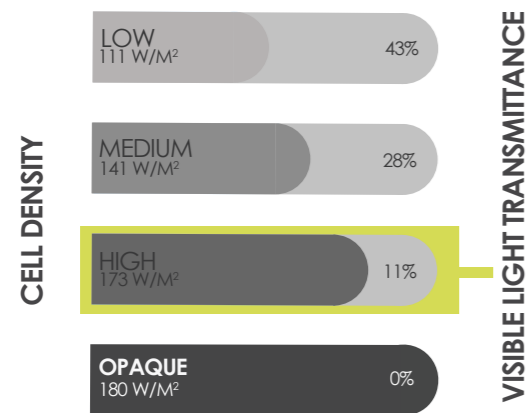
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FEASIBILITY STUDY ROME

HIGH CELL DENSITY PV GLASS



CHARACTERISTICS OF THE GLASS

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

ENVIRONMENTAL BENEFITS ROME

Renewable energy generated	5.581 KWh per m ²
Kg of CO ₂ avoided	1.428 Kg per m ²
Kilometres driven in an electric car	32.094 Km per m ²
Light points fed	10,97 per m ² /day

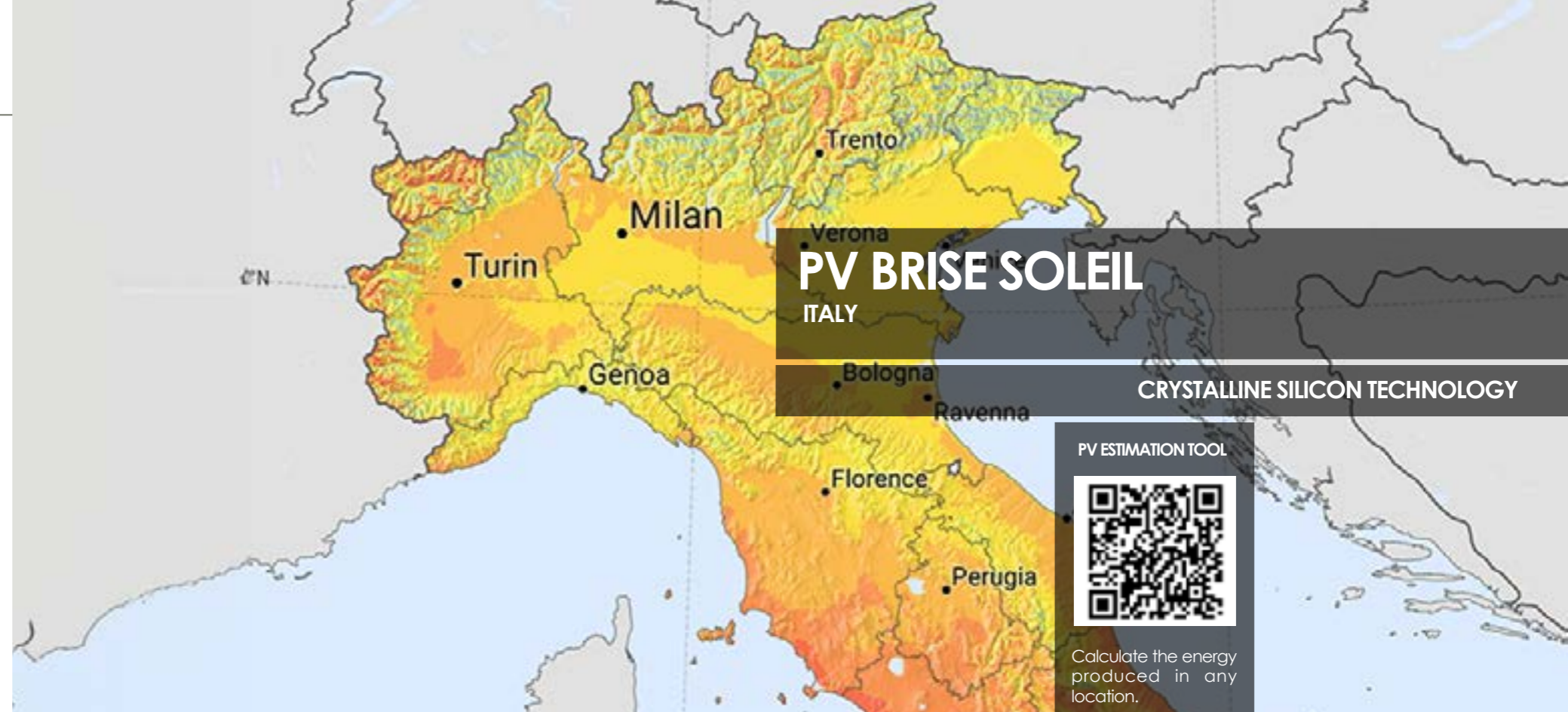
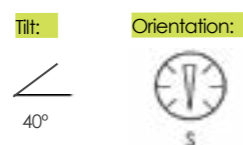
ECONOMIC BENEFITS ROME*

Value of the renewable energy generated	2.100€ per m ²
Return on investment	14,5 times
Internal rate of return (IRR)	31,9 %
Payback time	4 years
Building's value increase**	868 € per m ²

RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	4.743 KWh per m ²
Payback time (Milan)	4,5 years
Electricity generated (Naples)	6.306 KWh per m ²
Payback time (Naples)	3 years
Electricity generated (Palermo)	6.864 KWh per m ²
Payback time (Palermo)	2,8 years

DATA CONSIDERED FOR CALCULATIONS



PV BRISE SOLEIL

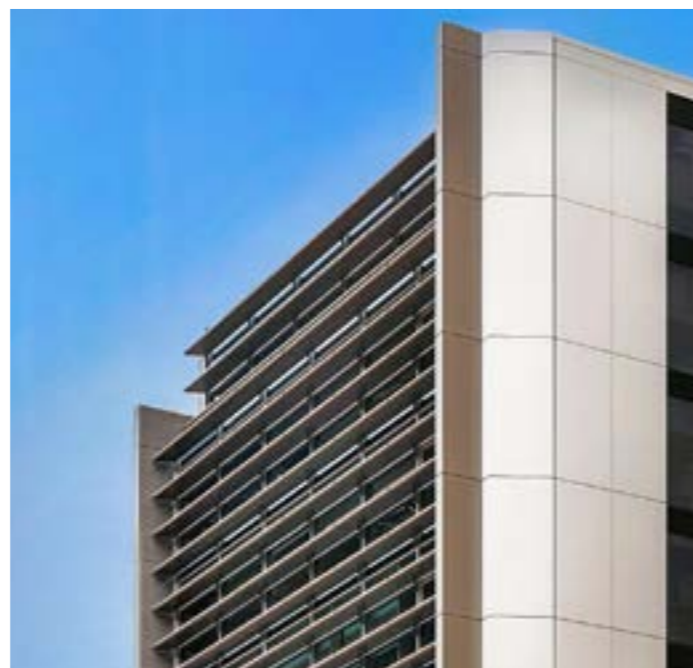
ITALY

CRYSTALLINE SILICON TECHNOLOGY

PV ESTIMATION TOOL



Calculate the energy produced in any location.



ENERGY LOSSES PER ORIENTATION



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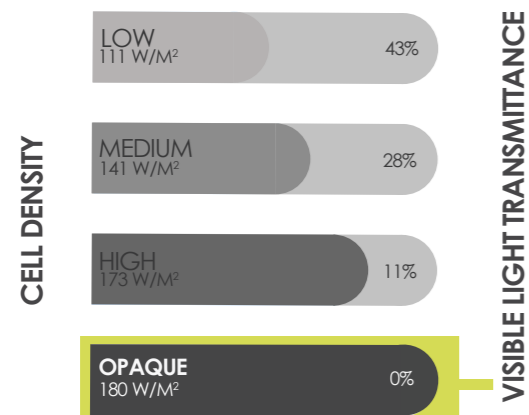


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FEASIBILITY STUDY ROME

OPAQUE PV GLASS



CHARACTERISTICS OF THE GLASS

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

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Renewable energy generated	3.558 KWh per m ²
Kg of CO ₂ avoided	910 Kg per m ²
Kilometres driven in an electric car	20.460 Km per m ²
Light points fed	7 per m ² /day

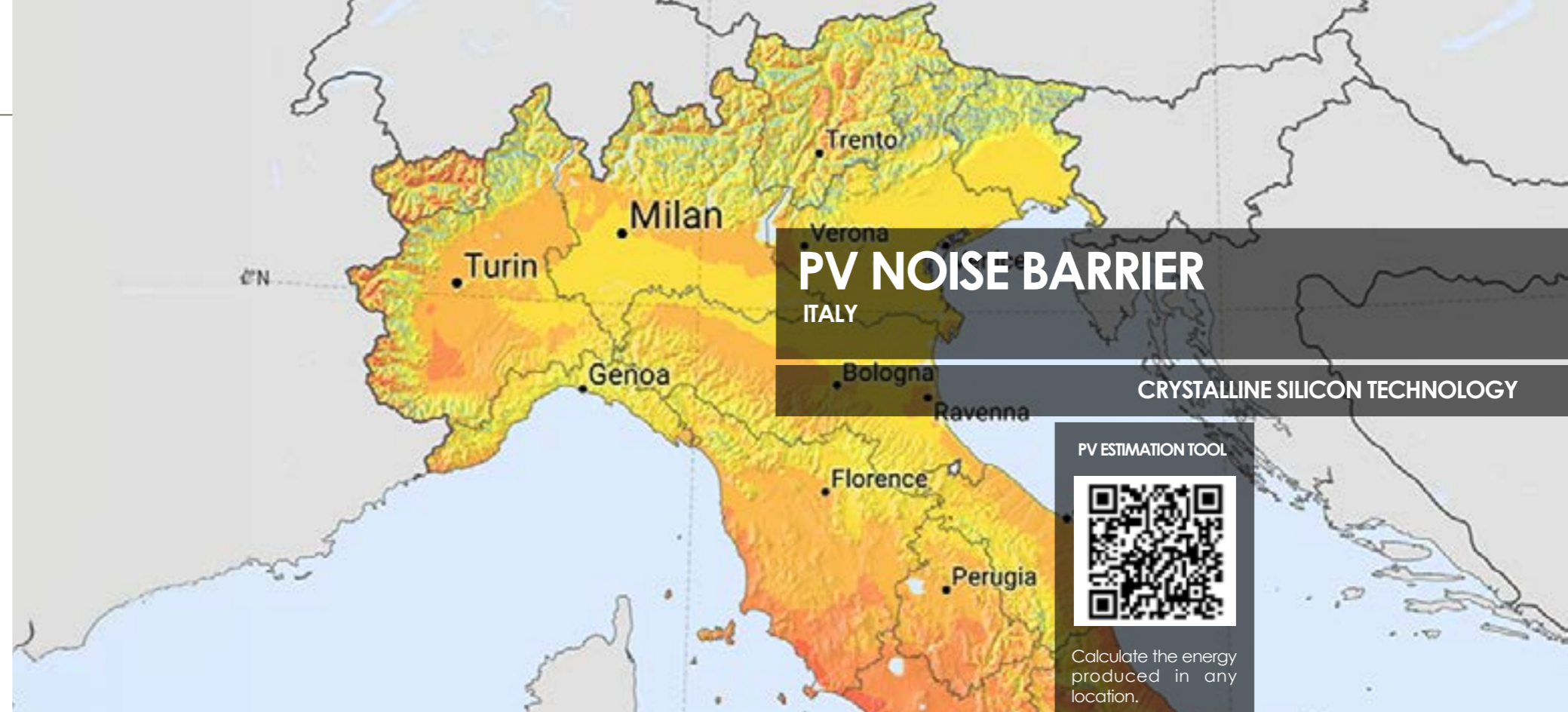
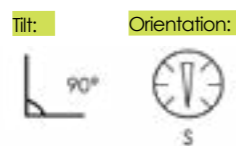
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Return on investment	8,07 times
Internal rate of return (IRR)	18,49 %
Payback time	6 years
Building's value increase**	553 € per m ²

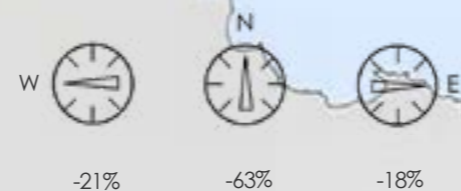
RESULTS IN OTHER LOCATIONS OF ITALY

Electricity generated (Milan)	3.024 KWh per m ²
Payback time (Milan)	7 years
Electricity generated (Naples)	4.020 KWh per m ²
Payback time (Naples)	5,3 years
Electricity generated (Palermo)	4.376 KWh per m ²
Payback time (Palermo)	4,87 years

DATA CONSIDERED FOR CALCULATIONS



ENERGY LOSSES PER ORIENTATION



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GLOBAL EPD

SCAN THE QR TO DOWNLOAD OUR EPD



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**.



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.epd.org

GlobalEPD Code: GlobalEPD EN15804-063

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).



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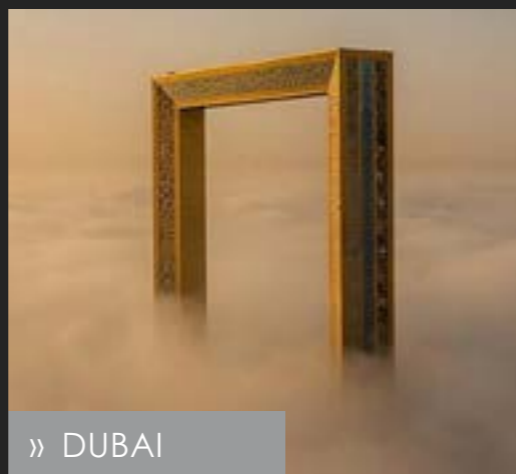
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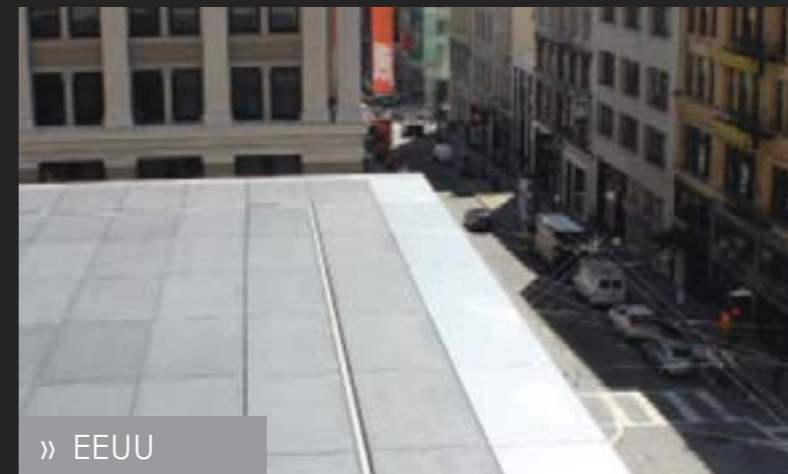
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UNLOCKING THE POWER OF PHOTOVOLTAIC GLASS:

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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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.