



PRESS
release

INAUGURATION OF THE NEW RENEDO FURNACE IN SPAIN

SAINT-GOBAIN REINFORCES ITS COMMITMENT TO THE SOLAR MARKET

On April 5, 2011, Pierre-André de Chalendar, Chairman and CEO of the Compagnie de Saint-Gobain, inaugurated the new solar glass furnace at the Saint-Gobain Glass Renedo plant in Spain, 15 kilometers from Santander.

This €35million investment gives the Renedo site one of the most state of the art rolled glass lines in Saint-Gobain Glass and doubles its output.

Specialized in the manufacture of patterned glass for the solar power and interior design markets, the plant now has an annual capacity of 60,000 tons of SGG ALBARINO glass. This extra clear glass delivers light transmission and power performances capable of increasing the efficiency of PV cells.

Thanks to its favorable sunny climate, the Iberian Peninsula is already the 4th European market for the PV industry. "In this country, we're getting to the grid parity point where PV power will be produced at a cost comparable with that of classic electricity", indicates Jean-Pierre Floris, senior vice-president of the Compagnie de Saint-Gobain and president of the Innovative Materials Sector.

With this investment, Saint-Gobain completes its patterned glass production network and takes its commitment to solar power and the PV market in particular another step further. In this niche alone, the Group is aiming to achieve €2billion in sales in 2015, compared to €300million in 2010. It considers that PV must become a standard component of new buildings, as it is already the case for double glazing.

In Spain, Saint-Gobain Glass has two other manufacturing hubs, in Aviles (Asturias) and Arbos (Catalonia). In Portugal, on the outskirts of Lisbon, Saint-Gobain owns the largest parabolic mirrors plant in the world. The Saint-Gobain General Delegation for Spain, Portugal and Morocco, which coordinates Saint-Gobain activities in the three countries and employs 9,000 people spread over 50 manufacturing facilities and 200 building material distribution centers, achieved a turnover of €2billion in 2010.

Press contacts:

- Flat Glass Business: Sandrine Douilhet + 33 1 47 62 41 41 – sandrine.douilhet@saint-gobain.com
- Compagnie de Saint-Gobain: Sophie Chevallon + 33 1 47 62 30 48 – Ingrid Fey + 33 1 47 62 43 25

1/ A NEW LINE AT RENEDO

Started in March 2011, the Renedo installations complete Saint-Gobain's glass manufacturing network for the PV market.

The most recent and most modern plant in Saint-Gobain Glass

- The construction of leading-edge technology installations to replace old machinery and boost the site's production capabilities.
- A 134 m² furnace and a production capacity of 200 tons/day of extra clear SGG ALBARINO glass, or 225 tons/day of SGG DECORGLASS or SGG MASTERGLASS.
- A €35million investment.

A dual purpose

- Specialized in the production of patterned glass, the Renedo plant continues as ever to supply its two traditional markets:
 - PV panels with SGG ALBARINO glass;
 - furniture and interior design, with SGG DECORGLASS and SGG MASTERGLASS.
- Production is alternated by campaign.

The Spanish market, and beyond

To meet the needs of a growing number of players located in southern Europe, Saint-Gobain completes its network of PV glass production facilities, until now located in the North of Europe, in Germany (Mannheim) and Poland (Jaroszowiec), and in China (Nanjing).

- The Renedo site supplies a quarter of Saint-Gobain's global capacity in SGG ALBARINO glass, mainly destined for the domestic Spanish market and beyond, for Europe.
- The production of interior design glass is for the Spanish, French and Italian markets.

A strong commitment to training teams

- Total plant workforce: 73 employees
- 9,400 hours of training delivered to the operators (10,500 including temps and subcontractors).

SGG ALBARINO glass

➤ *Created in 2002 as a result of R&D work conducted in Germany, this glass dedicated to PV applications protects the cells and improves their energy efficiency.*

➤ *Its specificities: a surface roughness which increases its capacity to transmit light; a chemical composition (very little iron oxide) which reduces absorption - hence a maximum light penetration.*

➤ *Its light and energy transmission performances can be improved even more by depositing an anti-reflective coating on the exterior face of the glass.*

➤ *The product range includes four different textures to cover all the needs of the solar power industry, highly demanding when it comes to technology.*

2/ A NEW STEP IN SAINT-GOBAIN'S COMMITMENT

With its Renedo line, Saint-Gobain takes its commitment to solar power and the PV market in particular another step further.

A major player

- Saint-Gobain PV sales:
 - ⇒ €300million in 2010.
 - ⇒ a €2billion goal for 2015.
- R&D investments related to PV energy: €25million per year.
- Saint-Gobain projected PV investments by 2015: €1billion.

A player present along the whole chain

Through its subsidiary Saint-Gobain Solar, the Group has chosen to be present along the whole PV value chain:

- It makes and sells high-performance components for modules.
- It produces CIGS-based (Copper, Indium, Gallium and Selenium) thin-film panels, for distributors and integrators.
- It designs and markets building-integrated PV solutions.

A player investing in PV

With solar growth up 50% in 2010, Saint-Gobain is banking on developing this sector in the mid and long term.

- Beginning of 2011: acquisition of CruSIN, a start-up specialized in the manufacture of reusable ceramic crucibles for the PV industry.
- During 2011:
 - Construction of new tempered furnaces with anti-reflective treatment in China, Germany and Malaysia.
 - Development of new extra-clear SGG ALBARINO glass capacities in India.
 - Continuous development in the field of plastic films.
 - Additional capacities of silicon wafer cutting powders in China.
- End of 2011: opening of a new Avancis facility in Torgau, close to the first plant, with a capacity of 100MW.
- Mid 2012: startup of a new Avancis site in Korea, with Hyundai Heavy Industries.

The PV planet of Saint-Gobain

Production of components for PV modules

Saint-Gobain Solar Glass

- Special glass with high energy transmission.

Saint-Gobain Performance Plastics

- Fluoropolymer films, coated fabrics used to laminate modules, and adhesive foams to seal the frames or glue the electrical connections to the rear of the panels.

*Saint-Gobain Ceramic Materials
(Silicon Carbide department)*

- Grains for cutting silicon wafers.

*Saint-Gobain Ceramic Materials
(Saint-Gobain Quartz)*

- Fused-cast quartz crucibles to grow crystalline silicon ingots.

Saint-Gobain Coating Solutions

- Magnetron targets to deposit thin layers of electrodes on float glass.

Manufacture of PV panels

Avancis

- CIGS-based thin film modules.

Design and marketing of PV solutions

Saint-Gobain Solar Systems

- Building-integrated solutions for roofs, façades, glass roofs.

3/ ON AN EVER-PROMISING MARKET

Saint-Gobain believes in the growth potential of the PV sector, especially given its strong ability to reduce the cost of electricity produced.

A lead market, more than ever

- Compound annual growth rate of over 40% over the last decade. The market more than doubled in 2010, rising from 7 to 16.5GW of installed capacity.
- Vitality unaffected by the crisis.
- An aggregate electricity production capacity, worldwide, of approx. 40GW (equivalent of 7 traditional power plants, corresponding to the electricity supply for 15 million households in the world) compared to barely 5GW in 2007.
- New 30 to 40GW capacities forecast every year over the next 5 years.
- PV glass which today represents 3% of the world's glass production. At this rate, it should weigh up to 15% in 2020, i.e. the same level as automotive glass.

An industry on the road to competitiveness

Tax incentives and the high feed-in rates different governments fixed for electricity produced provided a major boost to the market for some time. Such policies have been thrown into question, especially in Spain (as of 2008/2009), Germany (2010), France (2011) and Italy (2011). The sector's future now hangs on its capacity to produce energy at costs comparable to those of classic electricity.

This is a priority for Saint-Gobain which works along several axes:

- Help bring down sales prices by increasing the capacities and volumes produced.
- Improve production yields and enhance module performance. The Avancis technology is proving itself to be one of the most promising: the efficiency of the business's 30 x 30 modules (15.5% in the laboratory) is a world record for thin films.
- Extend the useful life of installations by making progress in terms of glass/plastic encapsulation and module sealing. Saint-Gobain, specialist in glass/plastic encapsulation, is in the forefront when it comes to bringing down the cost of modules.

A market on which Europe exercises all its influence

- In 2010, with 70% of the installed base, Europe weighs heavily, headed by Germany (40%).
- Although it makes just 18% of the world's polysilicon, it holds pole position (31%) in the production of thin film modules.
- With its favorable sunny climate (2,000 hours per year in the south), Spain became in 2010 the 4th European market, after Germany, Italy and France: with installed PV power of 3.5GW, i.e. $\frac{3}{4}$ of a nuclear power plant.

Saint-Gobain is banking on Spain:

- In such a sunny country, the question of grid parity should be resolved by 2015, invariably making Spain a solar power by 2020.
- The PV sector has proven its ability to reduce costs significantly, at a faster rate than anticipated by the world's public authorities.
- Here, as elsewhere, Saint-Gobain is in favour of a standards policy requiring new energy-plus buildings to be equipped with PV, in a similar way to double-glazing.