asola
Advanced and Automotive Solar Systems

PRESS KIT

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Made in Germany

*with the **spirit** of the **sun***

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asola – Facts and Figures

asola represents -

- …highest quality „Made in Germany“ at saleable prices
- …a performance guarantee for 25 years based on 20 years experience
- …a product range from standard solar modules to customized solutions
- …one of the market leader for automotive solar engineering
- …a future-oriented entrepreneur in Thuringia

asola – Facts and Figures

asola – The company

asola is a globally operating developer and manufacturer of standard solar modules and “automotive” solar systems with its head office in Erfurt / Thuringia. The company was founded in 2002 as ASS Automotive Solar Systems GmbH. From the beginning the director and founder of the company, Reinhard Wecker, focused on the sun as an inexhaustible, free and above all ecologically friendly source of energy. Not only the activation of the solar power but also the utilization of the solar power to all areas of life, is the main area of **asola**´s entrepreneurship. The Company is ranked among the pioneers. Here **asola** is almost unrivaled.

The solar module manufacture from Erfurt began its production in 2002 with leased machinery and a production capacity of about 3 megawatt. Today a brand new production facility is operating with a capacity of 45 megawatt on the highest technical level and innovative technologies - which is looking for the likes of him on the world wide market. The result is highest quality at an excellent price.

asola cooperates closely with the Quantum Technologies Inc. in California. Quantum holds 24 percent on the **asola** GmbH.

asola – The History

9th March 2001 – Company Foundation:

The company was founded on March 9th, 2001 as **ASS** Automotive Solar Systems GmbH in Munich. At this time the company founder and CEO, Mr. Reinhard Wecker, has already had 15 years of experience in R&D and manufacturing of spherically curved sunroof solar modules, such as for the Audi A8 Solar.

2002:

In 2002 the start-up company began with the production of samples and prototypes at the new Technology and Media Centre in Erfurt. **ASS** developed and manufactured customized solutions for the automotive industry.

2003:

ASS starts the production of standard modules for rooftops and outdoor constructions.

2006:

The first 230W solar module leaves the production. After only 3 years the Thuringian company plays also in this watt-league.

2007:

Already in the 6th year after the company's foundation, **ASS** Automotive Solar Systems GmbH was able to establish oneself on the Italian market. Due to the high demand the rooms in the new Technology and Media Centre became too small and consequently the company relocated to Isseroda (near Erfurt) on 1st of July. The new premises contained a production hall with 3,500 m² and a capacity of 15 megawatt. In the first place this production facility was intended as a temporary solution, at the same time a bigger production facility was projected.

At the same time as the company relocated the **ASS** Automotive Solar Systems GmbH was also renamed in **asola** Advanced and Automotive Solar Systems GmbH.

2008:

In May 2008 **asola** engaged in a strategic cooperation with the American company Quantum Technologies, Inc. (NASDAQ: QTWW) and in the course of this agreement **asola** delivered the know-how for a 30 megawatt production facility in the USA.

Furthermore **asola** founded a joint venture with the Moroccan industrialist El Bied. In Casablanca, a 30 megawatt production plant for photovoltaic modules will be erected. The production is planned to be launched in the near future. 51 percent of this joint venture are held by **asola**. The Moroccan ambassador, his Excellency Rachad Bouhlal was also attending the signing of the contract. From Casablanca, where about 100 new jobs will be provided, the whole North African area shall be supplied. With this project **asola** pursues its strategy "purchase central – manufacture decentral". Already at the beginning of September a joint venture was founded with the South Korean Q&Tech Jongsan. In the Asian country a 30 megawatt production plant is also scheduled to be built.

asola – The History

2009:
At the automotive exhibition in Detroit, the Fisker Automotive, Inc. from Irvine, California represented the luxury hybrid roadster Karma. The whole roof is equipped with solar technology of **asola** and consequently it is the biggest as well as the most powerful spherical arched solar module in the world.

Asola expanded continuously and reached its limits of production capacity. Therefore in June the company relocated to Erfurt, where the whole story of success has its roots. The Technology and Media Centre is just a few meters away from the new factory. This new factory extends over 6,000 m² and has a capacity of 45 megawatt. This corresponds to a triplication of the previous capacity. **Asola** climbs to the leading supplier within the volume business of the PV industry.

asola – The Products

asola solar modules are made of solar cells, which are manufactured out of crystalline silicium in wafer form. After oxygen, silicium is the second most common element on earth and hence nearly unlimited available. It does not exist in its pure form but only as a chemical compound out of oxygen in form of quartz and sand. It is purified through several chemical processes until polycrystalline silicium batons emerge in the end. Those provide the base material for monocrystalline and polycrystalline solar cells, which **asola** purchases all over the world.

The front side of the modules consists out of thermally pre-stressed solar glass. This way a maximum of light transmission and an ideal protection from climatic conditions are guaranteed. The warp resistant frame is made out of a non-corroding aluminum alloy; it is very stable and can hold a snow load up to 5,400 pascal. Being recyclable the frames meet the effective environmental standards. Nearly all **asola** quality modules are TÜV-approved and certified according to international requirements IEC 61215, 61730 and UL 1703.

Polycrystalline Solar Modules

Polycrystalline solar modules from **asola** are blue to silver gray. On the surface of the solar cells single silicium crystals are noticeable, which show a “frost pattern”. So the module seems to be “frosted”. To get polycrystalline cells, liquid silicium is cast into an ingot mold. After it is cooled off, the produced silicium block is cut into panels. Thereby square solar cells are formed. These solar cells are converted into various modules by **asola**. Depending from the number of solar cells 40, 48, 60 or even 72 cell modules with different outputs are obtained.

Monocrystalline Solar Modules

Monocrystalline solar modules from **asola** are recognized by their dark blue to black color and by the rounded corners of the solar cells. The modules have a homogeneous, meaning single colored, structure. This structure is developed through a several-day pultrusion, where a single silicium crystal is cylindrically drawn to a diameter of 20 cm. This cylinder also consists out of only one single crystal, for this reason it is called monocrystalline. A block with rounded corners is cut out of the cylinder. It is rounded so that not too material is wasted. By the cutting into panels, monocrystalline solar cells are produced. These solar cells are converted by **asola** into various modules just like the polycrystalline cells. According to the quantity of solar cells here too we get out 40, 48, 60 or even 72 cell modules with different watt outputs. Monocrystalline modules have a slightly higher degree of efficiency compared to the polycrystalline modules.

Customized Solutions & Automobile Solar Technology

In **asola**´s ultra-modern industrial facilities innovative, customized solutions are also developed.
Here in close cooperation a wide variety of solar systems is designed especially for the customer. In terms of development and manufacture ready for serial application of automobile solar technology the absolute market leader is **asola**. These “automotive” systems are among other things spherically curved modules, which were developed especially for the use in automobiles, such as “sunroof solar modules” and modules for roof systems of automobiles. The use of “automotive” solar modules is obvious. Consumption reduction through generators, which can be switched of, preconditioning and parking air conditioning with an electric air conditioning, clearing of the “silent” consumers… the list can be continued. With the “automotive” solar modules from **asola** the battery of hybrid vehicles can also be charged. Driving without fossil fuels – no utopia here at **asola**! In this area **asola** is virtually unrivaled.

asola – Online

In the world wide web you can find **asola** under www.asola-power.com. With a modern design, clear arrangement and the renewed layout, **asola** mirrors “the technology with future guarantee”. Here merchants and private customers find information about the company and the range of products. Under “products” we provide you the data specifications with all technical details, which can be downloaded.

asola operates worldwide and is linked optimally in the global solar world.