

LAREF 2009 – Latin America Renewable Energy Fair
17th–19th March 2009, Othon Palace, Rio de Janeiro, Brazil

[Exhibitor Catalogue *LAREF 2009*](#)



Latin America Renewable Energy Fair

Location

Rio Othon Palace Hotel
Av. Atlântica, 3264, Copacabana
Rio de Janeiro, Brazil

Edited by: Elena Kempf, Dr. Norma Rodriguez Blandon,
Coverdesign by: Peter Bühler, Energydesign

Chairman's Greetings

Welcome to Latin America and the wonderful city of Rio de Janeiro!

For the fifth time since 2002 the RIO - World Climate & Energy Event together with the LAREF – Latin America Renewable Energy Fair takes place, encouraging the global use of renewable energies and supporting the substitution of fossil-based fuels, such as coal, oil and gas, with their immanent pollution, climate-harming effects, unfair distribution and their limited reserves.

Renewable energies derived from solar, wind, and biomass resources offer a sustainable energy supply, allow the reduction of poverty, eliminate conflicts, build new economies, and provide a long-term perspective.

The focus of RIO 9 is photovoltaic electrical energy generation which made remarkable progress during the last years: Photovoltaics changed from an idealistic endeavor to a multi-billion Euro business with a world market of 5 GW per year with a worldwide turnaround of 22 billion € for PV systems in 2008. LAREF 2009 will show the latest development in products and services in the field.

We received more than 60 publications from 15 countries, 47 made it into the program, and representatives from 7 countries confirmed their attendance, covering all areas from solar, wind and biomass power generation plus water supply, architecture, transportation, carbon trading, legislation and education. The program contains also examples for effective financing, which make renewable energies affordable for everyone, encouraging an independent, responsible and sustainable living - also viable for future generations. Several side events, forums, workshops and special sessions are accompanying the event.

We thank all authorities, scientists, sponsors, NGOs, exhibitors and participants for their valuable contributions to make this event possible. We hope you will attend interesting lectures, get motivating contacts, and find some time to enjoy one of the most beautiful cities of the world.



Prof. Dr.-Ing. habil. Stefan Krauter



Preface note for LAREF 2009

Markets for Photovoltaics in Brazil

Opposite to most PV markets (e.g. in Europe), which are entirely reliant on governmental support for PV grid-feed tariffs, the spectrum of opportunities in Brazil – and other Latin American countries as well – is considerably broader and much less dependent.

1. off-grid PV within governmental programs

36% of the rural population does not have access to electricity – a huge governmental rural electrification program (“Luz para todos” – Electricity for all) including PV systems –provides excellent opportunities for traders, investors and system integrators.

2. off-grid PV with private financing

Most global and local hotel chains that operate resorts in Brazil have autonomous power supplies, mainly based on diesel generators – to fulfill the need for an eco-friendly, “green” CI of the company, PV (and other RE) is the correct measure to enable a reliable, sustainable and clean power supply. For remote farms, health posts and indigenous villages PV is very often the cheaper option – considering elevated fuel prices and increased maintenance costs.

3. grid-connected PV: “grid-parity” reached.

Brazil is one of the first countries where “grid-parity” of PV becomes a reality.

Elevated electricity prices for many households in the vicinity of 0.20 €/kWh in combination with high irradiance levels (1,600–2,200 kWh/m²a) allow “grid-parity”, this means that PV electricity is already cheaper¹⁾ than electricity purchased from the electrical grid. This enables a gigantic market for cost-effective PV

1) considering an average irradiance of 1,900 kWh/m²a and a PV performance ratio of 0.85, 1,600 kWh/kWp are possible; for an average PV system cost of 4.4 €/Wp and a system lifetime of 25 years, PV net costs reach 0.11 €/kWh (without financing costs).

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LAREF 2009

Rio Othon Palace Hotel - Rio de Janeiro
17 a 19 de março de 2009



PLANTA ALTERADA EM 10/MARÇO/2009

PROJETO E MONTAGEM

PRO FORMA
Stands Promocionais

e-mail: proformastands@proformastands.com.br

Aquecedor Solar
de Baixo Custo



ASBC (Aquecedor Solar de Baixo Custo)

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LAREF 2009: Booth No. 5

The ASBC (Aquecedor Solar de Baixo Custo) is a low cost solar heating system, developed to give access to solar energy to the large population who cannot afford a commercial system.

The concept includes:

- cheap material (plastics collector, reservatory and tubes)
- do-it-yourself construction using popular techniques
- sustainable maintenance due to independency of specialized manpower
- free manual in internet and low priced training courses throughout Brazil
- voluntary monitors

A familiar ASBC can be built for about € 100 (material cost), reduces the energy account by 30 to 40%. and pays back in about seven months. The ASBC permits neighborhood workpeople, the common manpower in Brazilian construction, to capture a new market. The spreading of this knowledge may expand the ambiental gains in a faster way than by commercial or governmental projects.

On national level, the ASBC reduces the energy demand peak at late afternoon, caused by popular electric showers, and thus avoids the need for new energy plants.

BRASIL ENERGIA

Brasil Energia

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LAREF 2009: Booth No. 7 & 8

About Brasil Energia:

Specialized after 27 years in the Brazilian Energy Sector, focusing in business technology and trends of the oil, gas, electric power and biofuels industries. Keeping its commitment of being the most valuable source of information in the Brazilian Energy Industry, it provides a wide range of information services.

Services: BRASIL ENERGIA - Monthly magazine with nationwide circulation. It is the most influential magazine in the Brazilian Energy Sector. BRASIL ENERGIA - Bimonthly magazine in English directed to a foreign audience. Distributed in the principal Latin American and International events of oil, gas and biofuels. GUIA DE NEGÓCIOS PETRÓLEO E GÁS - National directory with companies in the oil & gas business. It has also available a online database continuously updated.

CONCESSION MAPS - Maps of all Brazilian Oil Concession as well as maps of Concession of generation, transmission and distribution of Electric Energy. ENERGIA HOJE - breaking stories in a daily basis, complemented with a clipping of the most important newspapers in the country.

GLOBAL ENERGY - Fortnightly electronic newsletters in English with a summary of the most important news of the period.

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Breyer GmbH Maschinenfabrik

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LAREF 2009: Booth No. 24

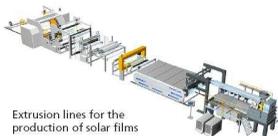


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solutions of tomorrow



Extrusion lines for the
production of solar films

BREYER GmbH Maschinenfabrik
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solarfilm@breyer-extr.com

Quality made in Germany · www.breyer-extr.com

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About Canadian Solar Inc. (CSI)

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LAREF 2009: Booth No. 19a

Canadian Solar Inc. (CSI) is a vertically-integrated manufacturer of photovoltaic cells, modules and custom-designed solar power applications. CSI delivers solar power products of uncompromising quality to customers worldwide. CSI's world class team of professionals works closely with our customers to provide them with solutions for all their solar needs. Canadian Solar Inc. was founded in Canada in 2001 and was successfully listed on NASDAQ (symbol: CSIQ) in November 2006. CSI has since successfully established six wholly-owned manufacturing subsidiaries in China, manufacturing ingot /wafer (planned production in mid 2008), solar cells and solar modules. With revenues of \$302.8 million dollars in 2007, a 344% growth in revenue over 2006, and projected revenues exceeding \$650 million in 2008, CSI is one of the fastest growing companies in the solar industry.

CSI will strive to develop and deliver the most reliable, efficient and cost-effective solar power solutions to people in every corner of the world.

Products and Operations

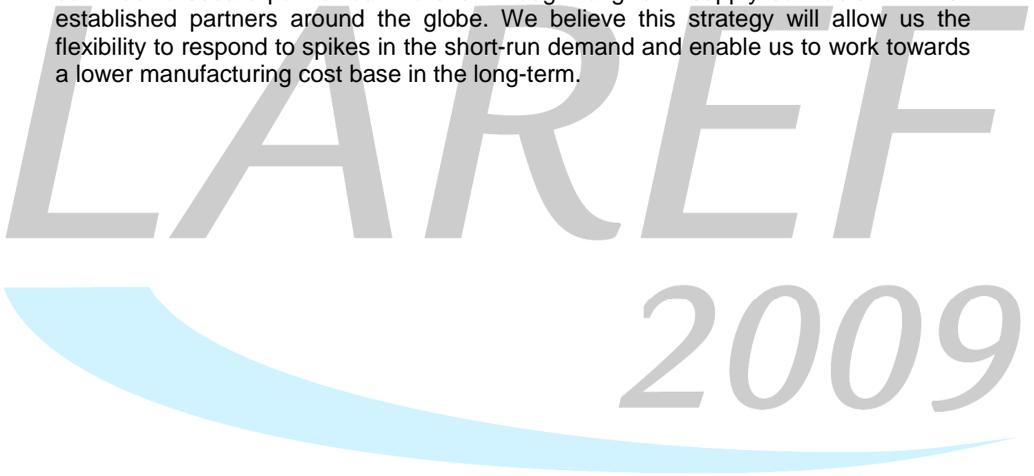
CSI's crystalline -based photovoltaic modules range from 3 W to 240 W in varying sizes. In addition to the standard PV panels and customized solar application products under CSI brand, we also provide OEM solar products for some of the leading solar companies in Europe. (More information on CSI Products) The strength of CSI's supply chain strategy and execution has allowed CSI to meet the growing demands of the industry. Module output capacity by the end of 2008 will be 400 MW.

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Vertically-integrated operations extend from silicon feedstock sourcing and reclamation, ingot and wafer production (expected by mid-2008) to cell and module production. CSI's partnership with some of the leading solar project management firms has enabled us to stay connected to the needs of our customers.

Flexible Integration Business

Canadian Solar Inc. has adopted a flexible vertical integration business model. While we are developing our own value chain operation from ingot–wafer–cell–module, we continue to secure part of our material through long-term supply contracts with well established partners around the globe. We believe this strategy will allow us the flexibility to respond to spikes in the short-run demand and enable us to work towards a lower manufacturing cost base in the long-term.



Latin America Renewable Energy Fair



Copia Energy K.K

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E-mail: brasil@copiaenergy.com; info@copiaenergy.com

LAREF 2009: Booth No. 12

About Copia Energy K.K:

Creating our "PV World" is the common mission, one single mission that unifies our PV brothers and sisters from across the globe.

We, at Copia Energy, are one of the top Japanese distributors of photovoltaic systems, constantly delivering high-end PV products to residential, commercial sites and megawatt plants worldwide.

As an international participant in this solar revolution, our expertise in planning, consulting, producing (OEM) and distributing photovoltaic systems is by far our greatest strength.

By primarily concentrating in the Asian, European and South American markets, we gained professional experience, industry know-how and a powerful network of highly awarded PV professionals. Indeed, this enables our team to approach each challenge with a sunny smile.

"Especialistas em Consultoria e Distribuição de Produtos e Aplicações FV"

- Módulos Solares
- Controladores de Carga / Inversores
- Sistemas de Montagem
- Produtos e Aplicações Especiais
- Representante das melhores marcas da industria FV



Developing World Solar

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Web: www.developingworldsolar.org/

LAREF 2009: Booth No. 13

About Developing World Solar:

Already Developing World Solar has impacted many places around the world.

In 2000 a complete water system including; a well, solar water pumps, a concrete storage tank, piping and three Sol*Saver units were installed in Bagio, Philippines. An additional 30 Family Sol*Savers were donated to surrounding communities as well.

The most recent endeavor occurred in 2002 in Chiapas, Mexico where 10 community systems and 30 Family Sol*Savers have been installed. Due to the tremendous efforts and cooperation of the Provincial Department of Health in Chiapas, Mexico, Developing World Solar has now completed thousands of hours of field trials on family sized units. The impact of these pasteurizers is evident in the significant drop in cases of cholera and gastrointestinal diseases among both adults and children.

Other donations of the Family Sol*Saver have been made to other organizations doing work in Africa.

As funds are made available additional installations in Peru, Kenya and India will begin.



ENERGO SOLAR

Sales and Management Offices/Manufacturing and Engineering

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LAREF 2009: Booth No. 10 & 11

About EnergSolar:

EnergSolar is registered in Geneva, Switzerland and has manufacturing facilities in Budapest, Hungary, operating according to TÜV approved ISO 9001 standards.

The company employs close to 200 people with prior professional experience in semiconductor-related research institutes and industrial companies. With them and with the already delivered production lines makes EnergSolar one of the most experienced turn-key solution provider in the thin-film sector.

EnergSolar closely monitors the evolution of solar technology on a global basis in order to identify the most productive and cost effective solar module production methods and develop technological and production capabilities in the PV technologies that have the best chance to dominate the market for solar power systems in the long run. Currently EnergSolar manufactures sells and implements turn-key factories for the production of amorphous silicon (a-Si) thin-film solar modules. The company's PV production lines enable production costs of less than 1 Euro per watt.

Turn-key Solar Factory:

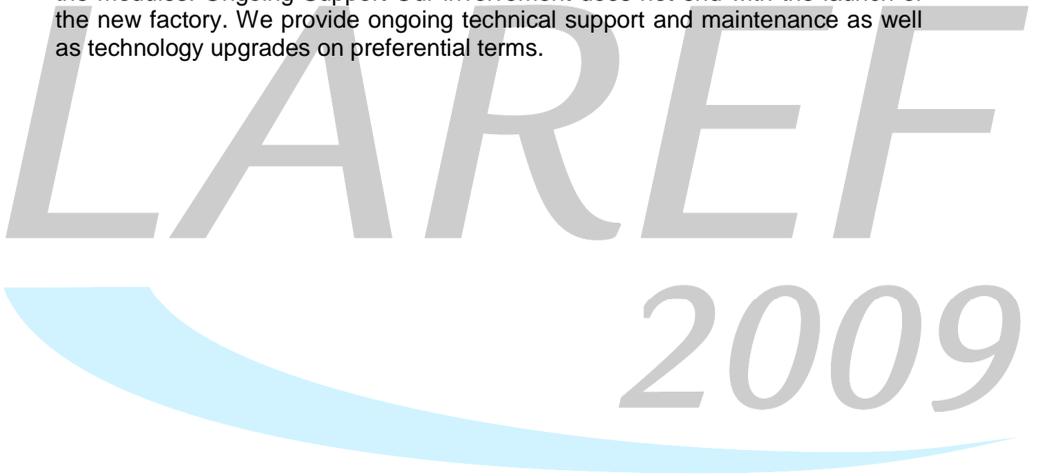
EnergSolar develops and manufactures complete, turn-key factories for production of thin film PV modules. The company's technology offers high-yield production and guarantees stabilized plate performance.

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A Complete Solution: We provide not only the complete production line, but also technological and process know-how that have been proven in a number of industrial-scale applications; market channels to acquire the necessary supplies

and raw-materials; consulting on factory layout and materials-handling; and personnel training to operate the production.

Three Level Warranty: Our three-level warranty guarantees not only the production equipment, but also the yield of the installation and the performance of the modules. Ongoing Support Our involvement does not end with the launch of the new factory. We provide ongoing technical support and maintenance as well as technology upgrades on preferential terms.



Latin America Renewable Energy Fair



FUNDACIÓN HEINRICH BÖLL
AMÉRICA LATINA

Fundação Heinrich Böll

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Web: <http://www.boell-latinoamerica.org>

LAREF 2009: Booth No. 2

The Heinrich Böll Foundation is a non-profit organization striving to promote democracy, civil society, human rights, international understanding and a healthy environment internationally.

Who are we?

We are affiliated with the German Green Party. Headquartered in Berlin, we have 25 offices worldwide. The Washington D.C. office of the Böll Foundation was created in 1998 to support our international efforts. Today, the Heinrich Böll Foundation cooperates worldwide, with over 200 partner organizations in more than 60 countries.

What do we do?

As a think-tank, we provide expertise on issues related to our mission and in promoting transatlantic exchange in our program areas through. The Foundation's primary objective is to support political education both within Germany and abroad, thus promoting democratic involvement, socio-political activism, and cross-cultural understanding. The Foundation also provides support for art and culture, science and research, and developmental co-operation. Its activities are guided by the fundamental political values of ecology, democracy, solidarity, and non-violence.

- * Informational programs, study tours and cultural exchange programs
- * Special events, specialized meetings, workshops, & conferences
- * Public seminars and training programs
- * Monitor the work of other NGO's and International organizations



The International Solar Energy Society (ISES)

Address: Universidade Federal de Santa Catarina (UFSC); Depto. Eng. Mecânica Bloco A2; LABSOLAR - Laboratório de Energia Solar, 88040-900 Florianópolis SC; Brazil
Fax: +55 48 3721 7615
Web: www.fotovoltaica.ufsc.br/ises

LAREF 2009: Booth No. 29

About ISES:

The International Solar Energy Society (ISES) has been actively engaged in advancing science, technology, policy and education needed for the efficient use of renewable energy and its practical applications since 1954. A multi-faceted, global membership organization individual and corporate members in more than 110 countries, the Society is a modern, future-oriented non-governmental organization (NGO) recognized by the United Nations. The mission of ISES is simple and urgent: "Rapid transition to a renewable energy world."

Deutsch

Seit 1954 unterstützt ISES die Wissenschaft, Technologie, Forschung und Anwendung zur Förderung erneuerbarer Energien. Eine globale und vielfältige UN-akkreditierte Organisation mit Mitglieder in mehr als 110 Länder mit der Vision: „Rapid Transition to a Renewable Energy World“.

English

Since 1954, ISES supports science, technology, policy and education to advance renewable energy. A UN-accredited multi-faceted global organization with members in more than 110 countries, ISES' vision is the "Rapid transition to a renewable energy world."



juwi Holding AG

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LAREF 2009: Booth No. 14

About juwi:

Juwi is one of the leading companies in the renewable energy sector, with an annual turnover of more than 400 million Euro (600 million US-\$). Since 1996 juwi has planned, developed, financed and operated renewable energy installations using renewable energy systems. With about 400 staff juwi is involved in the segments of photovoltaics, wind power and bioenergy. So far juwi has implemented projects amounting to more than 300 wind turbines – altogether 450 MW – at about 50 locations in Germany, France and Costa Rica. The company is also developing wind farms in the Czech Republic, Poland, the United States and Argentina. In the solar segment, juwi had implemented approximately 800 PV installations (about 200 MW total capacity) by the end of 2008.

In August 2008, the juwi group and its European and American project partners have launched construction work on what will be the biggest wind farm in Central America. Upon completion, the project known as "Proyecto Eólico Guanacaste" in Costa Rica will comprise 55 wind energy turbines – altogether 49.5 megawatts of production capacity. It is juwi's biggest wind power project to date. The turbines – 55 E-44 models – are being shipped across the Atlantic by German manufacturer Enercon. Juwi and Enercon will later oversee operation of the machines jointly. The wind farm is scheduled to begin operating in 2008 and 2009. Juwi is the project developer and responsible primarily for project management. The projected annual yield of Proyecto Eólico Guanacaste is sensational. Its 45 meter high towers will generate about 240 million kilowatt-hours of electricity yearly.



Kyocera Solar do Brasil Ltda

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LAREF 2009: Booth No. 25

About Kyocera:

Kyocera is one of the world's largest vertically-integrated producers and suppliers of solar energy products. Kyocera Solar do Brasil our South American solar division located in Rio de Janeiro, Brazil serves thousands of customers in all regions.

Around the globe people are enjoying a better lifestyle because of solar electric systems provided by Kyocera. These systems make it possible for families to light their homes and utilize a telephone or experience a broadcast program for the first time. Solar electric solutions provided by Kyocera enable people to drink clean, uncontaminated water where sources were unsanitary, hard to access, or nonexistent. Systems designed and integrated by Kyocera allow industry to expand their capabilities beyond the constraints of the traditional electric grid.

Kyocera Solar do Brasil serves the widely varying needs of customers for distributed solar electricity through two major market channels. Industrial customers, such as original equipment manufacturers, government organizations, utilities, corporate clients and institutions, are served directly with fully integrated system packages. Kyocera Solar do Brasil is staffed by the most experienced and talented engineers, technical support, and sales personnel within the solar electric industry. The Company's expertise is based upon designing, manufacturing, and installing the most technologically advanced solar electric power systems available today. With thousands of successful installations worldwide, Kyocera continues to be the leader in the solar electric industry.



Rio Solar Ltda

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LAREF 2009: Booth No. 21

About the Rio Solar Ltd:

Rio Solar has been found as a spin-off of UFRJ-COPPE in Rio de Janeiro in 1998.

Rio Solar Ltd. provides proper planning, installation and operation services for PV systems, thus enabling a reliable and cost-effective power supply even in remote locations. It proved its capabilities at several projects in Rio de Janeiro, Penedo, Duque de Caxias, Ilha Grande and in Ceará.

Rio Solar Ltd. is offering the full range of services necessary for the sustainable implementation of renewable energies: planning, installation, operation, monitoring and maintenance – but also related tasks such as site-selection, consulting, financing, importation, testing, marketing and promotion. The focus of the company is photovoltaic solar energy supply.

Rio Solar provides education and training on renewable energy systems – from university level to practical workshops.

Rio Solar features the organization of related events such as the *Latin America Renewable Energy Fair – LAREF* to promote sustainable energy supply and cooperation with national and international companies and institutions and with NGOs thus enabling system tests, on-site yield certifications and integration into broader energy projects.

Cooperation with national and international manufacturers of RE-equipment is carried out to secure quick and reliable supply of equipment – additional cooperations are very welcome.



Photovoltaik-Institut Berlin AG

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LAREF 2009: Booth No. 21

About Photovoltaik-Institut Berlin AG

The Photovoltaik-Institut Berlin AG (PI-Berlin) was found in October 2006 by the photovoltaic experts Dr. Paul Grunow, Prof. Dr. Stefan Krauter, Dr. Jürgen Arp and Sven Lehmann from the industrial and scientific PV scene in Berlin. The privately financed institute is situated on the campus of the Technical University of Berlin, which explicitly supports the initiative. As the first German Institute of this kind, PI-Berlin deals exclusively with photovoltaic modules consisting thin and thick film solar cell technology. PI Berlin offers characterization and qualification according to the latest international standards. Our services include the measurement of all relevant parameters of PV modules.

The core of the Institute is a testing laboratory in which performance and reliability assessment and essential tests according to the IEC and UL- guidelines can be realized. Three climate chambers allowing to run different IEC cycles in parallel and providing space for 180 modules along with a pilot module production line for prototypes (up to 1.4 m x 2 m laminations) complete the set.

RESEARCH

With the effective reduction of costs in the area of semiconductors, particularly via thin film cells, the potential in cost reduction in the area of cell containment becomes more relevant.

Together with module producers and suppliers of production lines we are searching for and developing new concepts of thin film and thick film containment.

SYSTEM ENGINEERING

PI-Systems is a joint venture of PI Berlin and offers PV system engineering and consulting as well as project support for international PV energy projects.

CONSULTING in module technology

Background of this service is the long-term experience and F&E »know-how« of our senior consultants in

CONSULTING for PV investments

PICON is a joint venture of PI Berlin and provides access to profound and long-term expert knowledge in PV for business development, technology and production consulting - thin film PV in particular.

TESTING

PI is testing reliability and energy yield of PV modules (standard and prototypes). We offer characterization and qualification according to the latest international standards such as IEC 61215 and IEC 61646 (IEC 61730 and UL 1703 will be covered in the second quarter of 2009). PI Berlin is accredited as an official testing laboratory according to DIN EN ISO 17025.

Our services include the measurement of all relevant parameters of PV modules such as power output at STC, degradation, spectral effects, temperature-, weak-light and non-perpendicular performance. PI is capable to deliver results within a few working days.

Testing services available according EN/ISO/IEC 61215, 61646, 61730:

STC Max power determination
(1000W/m², AM 1.5, T_c = 25 °C)

Performance low irradiance (100, 200
W/m²)

Determination NOCT (T_c at 800 W/m²,
T_a = 20°C, v = 1 m/s)

Temperature coefficients of I_{sc} and V_{oc}

Spectral response measurement

Outdoor performance tests

Climate chamber damp heat test (DH) at
85 °C and 85% rel. humidity (RH)

Climate chamber thermal cycles test
(TC) from -40°C to +85°C

Climate chamber humidity freeze test
(HF) from -40°C to 85°C at 85% RH

Hot-Spot endurance Tests

Bypass diode thermal test

Reverse current overload

Light soaking for x48 h at 800–1000
W/m²

UV resistance, preconditioning test (≥15
kWh/m² UVA, 5–7.5 kWh/m² UVB,
60°C)

Electrical isolation test

Wet leakage current test

Impulse voltage test

Dielectric withstand test

Visual inspection

Mechanical load test at 2400 Pa

Module breakage test

Hail impact test (25 mm diameter at 23
m/s)

Robustness of termination test

Strain relief, push and cut tests

Back-sheet pull off strength and
breaking resistance

Testing beyond ISO/IEC tests:

Benchmarking

Hot-Spot risk assessment

EVA gel content test

Several TCO-corrosion tests

Electroluminescence image (analysis of
shunts and micro-cracks)



Santon International BV South Europe & South America

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Web: www.santonswitchgear.com

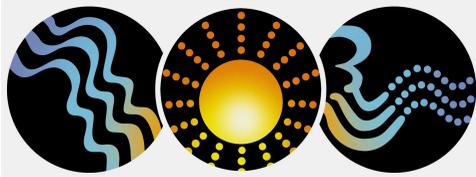
LAREF 2009: Booth No. 9

About Santon International:

Santon is specialized in switch technology and supplies many customer-specific solutions in the field of electro-mechanical switchgear. The solutions often concern situations where standard switches are not satisfactory or where standard switches must be adapted to meet customer requirements. Santon has its own Development department for the development of switches. This department has competence in both electrical and mechanics, as well as a combination of both. The developments are manufactured by ourselves, often by the fitting shop. By manufacturing the products ourselves, we have a unique combination of theory and practice.

Santon's main markets are the Netherlands, Great Britain, Germany and Spain. Santon has a branch in each of these countries, namely Santon Holland bv, Santon Switchgear Ltd, Santon GmbH and Santon International bv. All these branches are part of Santon Group bv. The development, manufacturing, and purchasing of materials takes place in the head office of Santon which is located in Rotterdam, The Netherlands. The activities in Great Britain, Germany and Spain concern sales and service. The Latin American market is supported by Spanish subsidiary.

In the recent year Santon has made a special emphasis in the renewable energy market, especially in the solar photovoltaic, where the switching conditions in the DC side are critical, with high voltages that must be supported and switched in a safe way. Santon manufactures, also the junction DC boxes according to the specifications of each project based in Santon DC switch, and with many other components under request, such as IP65 enclosures, terminals, overvoltage protection, etc, according to high quality international standard, we can also supply standard isolator such as the Silios range. Today Santon is the world market leader in supplying DC switches to the PV inverter manufacturers.



Solar Energy International (SEI)

Address: PO Box 715 Carbondale, CO 81623
Fon: (970) 963-8855
Fax: (970) 963-8866
Web: www.solarenergy.org

LAREF 2009: Booth No. 4

About Solar Energy International (SEI)

Solar Energy International (SEI) is an US-based NGO whose mission is to help others to use renewable energy and environmental building technologies through education and technical assistance. SEI works cooperatively with individuals and organizations to meet energy and resource efficiency goals. SEI provides education and training to decision-makers, technicians, and end-users of renewable energy. SEI also provides the expertise to plan, engineer, and implement sustainable development projects.

SEI believes that people learn by doing. Our instructors are leaders in their fields, bringing participants the most up-to-date information in renewable energy technologies. Classroom and laboratory work is enhanced by case studies, tours, and practical hands-on field work. SEI professionals have project and training experience in the Americas, Asia, Africa, Europe, the Middle East, and the Caribbean. For over two decades, SEI staff have delivered services to the Pan American Health Organization, non-governmental organizations, foreign, national and state governments, utilities, universities, and individuals seeking the benefits of renewable energy.

SEI has set a high standard when choosing instructors. Our instructors have extensive field experience, and are passionate about teaching. All SEI instructors are currently in the field and bring their personal knowledge of design and installation experience into the classroom. Many of our PV instructors hold NABCEP Installer Certification and/or ISPQ Certified Trainer Certification.



Trina Solar Limited

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LAREF 2009: Booth No. 28

About Trina Solar:

Trina Solar Limited (TSL) is an internationally recognized manufacturer of mono and multicrystalline photovoltaic (PV) modules and has a long history as a solar PV pioneer since it was founded in 1997 as a system installation company in China. Our high-quality PV modules provide clean and reliable solar electric power to on-grid and off-grid residential, commercial, industrial and utility scale applications around the world. With local sales and marketing offices as well as installation partners throughout Asia, Europe and North-America, Trina Solar is committed to improving the competitiveness and efficiency of solar energy and developing a sustainable PV industry.

Trina Solar celebrated its 10th year Anniversary on April 22, 2008 in China with more than 800 guests from all over the world. The achievements of the last decade have laid a solid foundation for Trina's accelerated growth, and the global alternative energy development potential ensures Trina Solar an even brighter future. The company will continue to be dedicated to innovation, quality and improved efficiencies as it pursues grid parity to expand the global solar PV industry.

Trina Solar produces and commercializes a wide variety of photovoltaics (PV) modules, both monocrystalline and multicrystalline, with power outputs ranging from 165W to 230W. Adapting our product range to meet market demands allow us to provide our customers with a broader range of solutions.

LAREF, 17–19 March 2009, Rio de Janeiro, Brazil

Trina Solar research, development and manufacturing of ingots, wafers, cells and solar modules are conducted at its facilities in Changzhou, China, where Trina Solar occupies a site of approximately 152,526 square meters.

Trina Solar's ongoing expansion plans include adding approximately 161,475 square meters to its existing facilities to increase its production capacity. With this phase of expansion, expected to be complete by 2010, Trina Solar expects to increase our total annual production capacity from ingots to solar modules to 350 MW by the end of 2008 to 700 MW by the end of 2009.

LAREF 2009



Latin America Renewable Energy Fair



Valentin Energy Software

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LAREF 2009: Booth No. 3

About Valentin Energy Software:

Valentin Energy Software, based in Berlin's high-tech Energy Forum, is a dynamic software development company serving the international energy sector, building professionals, and research and educational institutions. Building on over 17 years of experience, the company specializes in turning the latest developments, in particular in solar technology, into user-friendly software programs for solar simulation, system design, yield calculation and economic efficiency calculation. Our business covers two main areas, the development of standard software for solar thermal, photovoltaics and energy consultancy and the development of business solutions software for company-specific applications.

Our standard software for the design and simulation of solar thermal and photovoltaic systems undergoes a process of constant development. Customers also have the option of receiving the latest updates automatically with our software service agreement. T*SOL and PV*SOL are available in English, French, German, Italian and Spanish. All of our programs are Windows-based.

In our second business area, the company-specific applications, we convert our extensive know-how into new products specifically designed to support the activities of our business customers. We provide services to industry, trade and educational institutions in Germany, Europe and around the world. The business solutions software is used for the planning of technical systems, in particular in the areas of heating energy supply, solar thermal and photovoltaics. Joint projects have been successfully completed for many leading companies.



Wind Sun & Biomass

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LAREF 2009: Booth No. 22 & 23

About Wind Sun & Biomass

The Wind Sun & Biomass is an organization that operates several activities included in the strategic sustainable development and the process of globalization of products and services.

The positioning of the Wind Sun & Biomass is made by the experience of its professionals in the areas of technological development, environmental management, and strategic Energy, and the main areas of focus: Renewable Energy, Energy Efficiency and Clean Development. The WSB also provides services of installation and assembly for implementation of various projects. On sustainable development, the Wind Sun & Biomass develops and applies advanced studies in use and allocation of Urban waste. In addition to the optimized use of natural resources.

Systems Development Project Electrical Power Supply from the capture of wind energy (wind) combined with storage systems (small units), conversion, transmission and distribution.

The systems developed, designed and installed have different characteristics for each type of plant, considering the following applications:

- * Wind farms to generate energy
- * Small rural central to wind
- * Small central wind-solar
- * Wind generation for homes, Hotels and hostels



XL TELECOM & ENERGY LIMITED

XL Telecom & Energy Ltd

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LAREF 2009: Booth No. 27

About the XL Telecom & Energy Ltd:

XL Telecom & Energy Ltd, one of leading Indian manufacturing companies located in Hyderabad in the State of Andhra Pradesh has diversified businesses in the area of Energy in particular Solar Energy and Telecom Sectors. XL has over two decades of rich manufacturing experience since its establishment in 1985. Over the years, XL has developed expertise and skill that encompass innovation and technology for its products, and processes and has set new benchmark of quality standards for its products. With a wide range of products both in telecom and energy sectors, XL plays vital role to meet the diverse needs of today's global market. The Company has demonstrated superior performance and growth and is continuing with the mission to keep the wheels of progress turning. XL has focus in Solar Energy segment for over 14 years and is one of the few companies who have embarked on large expansion program recently in the field of solar energy. XL is establishing one of the largest Solar Cell Manufacturing facility with 120 MW capacity in FAB CITY SEZ at Hyderabad, India along with 40 MW semi automated solar module manufacturing plant which is in addition to the existing 100% EOU that it has currently with annual capacity of 160 MW of solar module manufacturing. XL solar photovoltaic modules ranges from 10Wp to 280Wp and are manufactured as per ISO 9001:2000 international quality standards and are German TUV certified for IEC61215 and IEC 61730.

In telecom sector, XL has over 21 years of rich experience in manufacturing of telecom equipments and is engaged in end to end process of sales and marketing, manufacturing, network engineering, assembly, testing and comprehensive after sales support for CDMA and GSM network based voice and data mobiles and fixed wireless terminals and phones, EVDO router, WiFi etc and Switch Mode Power Solutions for powering telecom networks.

Contact:

RIO 9 – LAREF – Organization

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