Solar Cluster-TR Catalogue 2016















Solar Cluster-TR Catalogue 2016















UNDER, founded in 1991, was appointed to represent International Solar Energy Society – Turkey Section (ISES-TR) by resolve of the Council of Ministers with date of 10th February 1992 and with number of 92/2752, depending on the 1. article of the law about the establisment of international institutions with number of 3335. The charter members of GÜNDER are Ministry of Energy and Natural Resources (MENR), General Directorate of Renewable Energy (before Electric Power Resources Survey and Development Administration) (GDRE), General Directorate of State Meteorology (DMI) and The Scientific and Technological Research Council of Turkey (TUBITAK) and academicians studying related areas and companies making production and commerce in the field of solar energy.

GÜNDER is not only appointed to represent Republic of Turkey in International Energy Agency Solar Heating Cooling Program (IEA SHC) and International Energy Agency Photovoltaic Power Systems Program (IEA PVPS), but also working actively in cooperation with SolarPower Europe (the new EPIA, European Photovoltaic Industry Association), European Solar Thermal Industry Federation (ESTIF), International Solar Energy Society (ISES), Global Solar Council (GSC), Association of Turkish Construction Material Producers (Türkive IMSAD). Danish Green Growth Network (DGGN). Middle East Solar Industry Association (MESIA), German Solar Association (BSW), Turkish HVAC-R Exporters (ISIB), The Union of Chambers and Commodity Exchanges of Turkey (TOBB), Asian Photovoltaic Industry Association (APVIA) through its memberships, GÜNDER designs integrated works both to raise the awareness effectively in all parts of the society and to popularize making use of solar energy, and to have a role in solar energy industry in a way to prevent unfair competition and to increase the quality in all processes from manufacture to application by also setting up the auto-control mechanisms for the healthy development of the industry, and also it puts these works into practice in coordination with all parties of our solar energy industry. GÜNDER was ascended itself by incorporating National Photovoltaic Technology Platform (UFTP) in 2013. It was aimed at carrying on photovoltaic studies of GÜNDER with the brand name of UFTP.

GÜNDER conducts studies of popularizing the manufacture and applications of solar energy systems and creates value by participating in national and international projects. By organizing industry development and information meetings, various trainings, seminars, workshops, conferences and similar activities or by participating in or making contribution to the activities organized by the other organizations (ICCI, INTERSOLAR, ISK-SODEX. RENSEF, SOLAREX, TESKON), it tries to increase the solar energy awareness and to make the efforts in this regard effective, and it tries to provide a healthy development of the industry with its contributions to the legislation development. It also conducts the international promotional activities of Turkish Solar Energy Industry and it develops export-focused international collaborations. (SOLAR CLUSTER-TR)

Aim

GÜNDER, the voice of solar energy by representing the entire value chain, is an unique non-governmental organization of Turkey that consists of administrators and civil servants of public bodies, academic members and industry representatives of Solar Thermal and Photovoltaics with the contributions to low carbon economy and the leverage functions in high growth. Work items of GÜNDER are given below:

- Supporting the local manufacturers of solar industry to enhance the production competence in the field of materials technology, development of new production techniques and processes, fundamental researches, studies on whole process components, technologies and applications including R&D activities, guiding the education of the people and the entities in this sector, cveeontributing in determination of product/ service standards and supportive regulations.
- Facilitating the communication of international sectoral organizations especially International Solar Energy Society (ISES), Programs of International Energy Agency (IEA PVPS, IEA SHC), SolarPower Europe (the new EPIA, European Photovoltaic Industry Association), European Solar Thermal Industry Federation (ESTIF), Global Solar Council (GSC) with local sector stakeholders and establishing co-operations,



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Performing and contributing to the activities related with energy efficiency, renewable energy technologies (wind, biomass, geothermal, wave, etc.) and renewable/ sustainable energy, low carbon economy.

Providing coalition and solidarity among producers, vendors, practicians and members throughout the entire value chain of solar energy sector,

Launching initiatives in care of related establisments, constituting conclusions and representing this sector in the platforms in order to increase awareness and disseminating solar energy applications throughout the country.

Creating an environment for business-to-business cooperation by constituting effective communication among scientific corporations, e.g. universities, R&D centers.

Raising awareness to increase the usage of solar energy in all segments.

Organizing training programmes in the field of solar energy,

Collecting, editing, publishing and distributing information on solar energy and the market.



Activities

GÜNDER performs activities for the public weal; standardization and test services; cooperates with public & private enterprises, non-governmental organizations, universities and similar science institutes, R&D centers; organizes education, publication and elucidating activities and activities for members which are as follows:

- Organizing and performing supportive and leading ٠ activities in solar energy sector for R&D and production techniques development.
- Contributing to identification and adoption of standards • and regulations of solar energy sector,
- Performing or contributing to activities (e.g. test, exam, training, certification) about product, service and professional competence accreditation,
- Developing projects on solar energy or taking part as partner in these projects and benefiting from (inter) national donation.
- Preparing capacity reports and sectoral inventory in order to prevent repetitive studies among people and corporations and provide efficient use of the sources (e.g. person, equipment, facility, etc.),
- Launching initiatives to increase the potential of production and export of manufacturers, leading, analyzing common needs, research on all kind of opportunities including donation and applying, benefiting all sources,
- Organizing seminar, workshop, conference, congress, fair, technical tour, exhibition, show, competition and similar activities which gather local and/or international stakeholders.

- Arranging thematic training programmes with/without (inter)national enterprises for sector stakeholders,
- Constituting units such as laboratories, training centers, commercial undertakes to perform the activities in accordance with GÜNDER aim and area,
- Being facilitative for technical, financial and bureaucratic legislation.
- Organizing informative activities which aim raising awareness for public participation.
- Reporting and publishing (inter)national scientific development and innovative approaches,
- Informing local governments and sector stakeholders about (inter)national donations and funds.
- Encouraging solar energy applications and other energy efficiency/renewability/sustainability concepts usage in strategy and action plans of central and local governments, public and private bodies, contributing to the process.
- Being in a close contact with all kinds of constitutions related with the study area of the association GÜNDER including (inter)national assocations, foundations, platforms, unions, clusters,
- Improving communication among members.

The information on GÜNDER's activities are being disseminated via GÜNDER's website www.gunder.org.tr, SOLARTR Conference website solartr.org.tr, the periodical GUNDERGI gundergi@ gunder.org.tr and the solar portal solar.ist

GUNDER is not only representing Turkish Solar Industry succesfully with all aspects in national and international level through its memberships, but also playing important role by participating actively in developing ideas, sharing information and shaping the solar future.

- International Solar Energy Society, ISES
- International Energy Agency Photovoltaic Power Systems Program, IEA PVPS
- International Energy Agency Solar Heating Cooling Program, IEA SHC
- The Union of Chambers and Commodity Exchanges of Turkey, TOBB
- Asian Photovoltaic Industry Association APVIA
- Turkish HVAC-R Exporters, ISIB
- Global Solar Council, GSC
- European Solar Thermal Industry Federation, ESTIF
- European Photovoltaic Industry Association, SolarPower Europe
- German Solar Association, BSW
- Middle East Solar Industry Association, MESIA
- Danish Green Growth Network, DGGN
- Association of Turkish Construction Material Producers, Türkiye IMSAD



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Signature LAR cluster - TR (Solar Energy Sector Cluster Program)

Our members which operates in the sector of solar energy devices production and consultancy will be supported by Republic of Turkey Ministry of Economy within the context of International Competitiveness Development Supports(UR-GE). As a result of the project, our association will contribute to the development of the solar energy sector and our objective is the preparation of the strategical roadmap for the sector. The financial supports will enable the cooperation between the companies operating in the same sector or complementary sectors. The supports of the Cluster Program will finance consultancy, training, exhibitions, and other development operations. Furthermore, the participatory firms will be supported in order to gain and develop export skills by increasing their productions' quality and competitive power.

30 member companies of our association have been registered to the Solar Cluster-TR project.

Training programs are organized to compensate for the deficiencies which have been identified after needs analysis which was conducted by a professional company.

The roadmap of the program has also been drawn according to the results of the analysis. ³/₄ of the expenses including the trainings and consultancies as well as abroad exhibition participations are covered by the Republic of Turkey Ministry of Economy. The main objective of the project is to increase the export volumes of these 30 companies by 40%.

MEMBERS

ALÇİN ALÜMİNYUM ÇİNKO HADDECİLİK TİC. ALFA SOLAR ENERJİ A.Ş. CW ENERJİ MÜHENDİSLİK TİC VE SAN, ITD. ÇEPAŞ GALVANİZ DEMİR ÇELİK MAD. İNŞ. NA DALKIRAN SOLAR YENİLENEBİLİR EN, ELK, TA DELTA ENERJÍ ENDÜSTRİYEL ELEKTRİK ELEKTRONİK SAN. ENSO ELEKTRİK MÜH. MÜŞ. LTD. ŞTİ..... EUROPOWER ENERJİ VE OTOMASYON TEK. EVANERGY INC. GAZIOĞLU SOLAR ENERJI SAN. VE TIC. A.Ş.. GESTENERGY-GÜNTIR ULUS. TAŞ. İNŞ. TUR. GTC SOLAR IDECO ENERGY..... ÖDÜL ENERJİ TAAH. İNŞ. SAN. VE TİC. LTD. Ş PROERK MÜHENDİSLİK YAZILIM LTD. ŞTİ..... SCHMID PEKİNTAŞ GÜNEŞ ENERJİ SİST. SAN SEBAT ALÜMİNYUM SAN. VE TİC. A.Ş. SOLARTÜRK ENERJİ A.Ş..... SOLIMPEKS SOLAR ENERGY CORP..... ULUSOY ELEKTRİK İMALAT TAAH. TİC. A.Ş..... ZAHİT ENERJİ SAN. VE TİC. LTD. ŞTİ..... ZENİT ENERJİ VE ÇEVRE TEK. SAN. TİC. LTD



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ALÇİN ALÜMİNYUM ÇİNKO HADDECILIK TICARET VE SANAYI A.Ş.

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Alçin Alüminyum founded in 1972 as a family company. First industrial work was production of aluminium and zinc sheets. At the late 1974's, family decided to make aluminium extrusion and in 1976 started to produce aluminium profiles by the 1800 tonnes full automatic UBE – Japan Press. The other peripherals of the aluminium extrusion business were established at the same time, such as die-shop, electrostatic powder coating plant.

In 1992 the need of increasing capacity aroused and in 1993 the second press, 2500 T UBE -Japan with full automatic double puller system started to work. With this investment, the total capacity reached an amount of 15.000 tpa.

Alçin Alüminyum has two extruders in Çayırova - Gebze Plant. One is 2500T UBE-Japan press with Co-metal double puller system installed in 1993. The other one is again UBE- Japan 1800T press with one puller, installed in 1976. The two presses total annual capacity is 15.000 tons.

Our in-house die-shop, have CAD/CAM systems and CNC Machinery. We produce high quality dies, not only for our needs, but also for the extruders abroad. We also have an ULVAC Vacuum Heat treatment plant to obtain high precision hardness fort he dies we produce.

Our Trevisan - Vertical Powder coating Plant was the one only in Turkey. With two painting booths and 24 guns in each booth, we produce 10.000 pieces / shift, up to 7 meters long profiles. In our Kartal-İstanbul plant, we have 48.000 Amps. capacity Anodising Plant. Thanks to the computerized technology, we guarantee high quality products and precise coating thicknesses. In our Kartal-Istanbul plant we are making billet casting. By the help of two spectrometers, we produce aluminium billets in world standards.

In our both Gebze – Çayırova and Kartal-Istanbul plants, we have contemporary technology chemical treatment facility. When we make production, we don't ignore to respect to the nature. Thanks to our modern treatment facility, nothing goes outside of the factory. We are even feeding fishes on our treated waters.



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Alfa Solar Energi Inc. produces Photovoltaic solar energy panels which is a renewable energy source is one of the leading producer companies of Turkey.

Company start construction of the Photovoltaic Module production factory in KIRIKKALE industrial zone in 6000m² closed area and 10 000m² open area. In this factory plan is to achieve 220 Mw module production capacities.

Alfa Solar Energi Co.Ltd. with, international market experienced technical staff, manufactures the most accurate, high-quality,



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ALFA SOLAR ENERJİ A.Ş.

TUV certified, licensed products, and offers customers system solutions for European standards, thus customer satisfaction is the top priority around the world ensures the stability and reliability. Alfa Solar Energi Co.Ltd. Recently formed the Renewable Energy Law, offered to investors who wish to contribute their own investment use the right way of the state creates incentives, with the slogan "generate your own power" to create a profitable market, so domestic and foreign investors to provide products and solutions that will satisfy is the main purposes.



CW 🚟 Enerji

CW ENERJİ MÜHENDİSI İK TİC VE SAN LTD ŞTİ.

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The company had the following object of activity: construction of solar power plans and on-grid and off-grid hybrid renewable installations, in terms of performance of assigned projects including a turnkey servicing in the field of design, engineering, procurement, assembly and completion of PV systems, installation and putting into operation. The company is a member of Telefunken Semiconductors group doing business in the field of photovoltaic systems in Europe, Turkey and the Far East.

The company is represented and managed by Tarik SARVAN and Volkan YILMAZ. The team consists of highly gualified professionals with extensive experience in various branches of industry, finance, marketing and international relations. In 2016 were initiated and as at the time of the assessment are completed on-grid solar

plant projects of a total capacity of 30 MW (Turkey Total capacity from 2013-2016 is 300 MW). Projects are customized for various corporate and private clients and represent irrigation systems powered by solar energy, solar systems networks located on the ground or on the roof of buildings. For this purpose, the company works with many suppliers and dealers of components such as PV modules, grid inverters, solar sensors, cables and connectors, power panels, relays, solar batteries, LED systems, as well as subcontractors for the projects. The Company is developing intensively at rates higher than normal for the industry, driven by an effective management approach and development of projects in areas particularly suitable as climate conditions for their products and services.

CEPAS Gonvarri Group

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CEPAS was founded in 2003 in order to provide service in galvanization and manufacturing of various steel products. It proceeds on its way more powerfully after becoming partners with Gonvarri in 2013, one of the pioneers in steel industry in the world.

CEPAS's area of activity can be lined as follows:

- Solar Energy Steel Construction
- Hot Dip Galvanizing Coating
- Transmission Line Towers
- Manufacturing and Installing Highway Guardrail Systems
- Lightning Poles
- Steel Construction
- Manufacturing and Installing Steel Pedestrian Overpass and Steel Bridge
- Traffic Sign Boards

CEPAS is adopting the quality policies thereby keep customers satisfaction ahead and being a customer oriented. In our day, service quality occupies an important place along with product quality. CEPAS continues to provide customers with quality service by combining these two.

customers.



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ÇEPAŞ GALVANİZ DEMİR ÇELİK MAD. İNŞ. NAK. TİC. VE SAN A.Ş.

CEPAS assures to it's customers with the following subjects: Manufacturing World Standarts Products

- Giving High Quality Service
- Presenting Suitable Commercial Options
- Stability Service
- After Sale Service
- Unconditional Customer Satisfaction

ÇEPAŞ increasingly continues its marketing activities for national and international markets. With its wide product range and high capacity, CEPAS aims to give better service to its current

CEPAS picks its employees carefully believing that skilled and highly motivated workforce will make a difference and supports them for their professional and personal development.

A systematic development is aimed with different models and implementations which will enable its employees to reach high performance. CEPAS intensively continues its works by combining the local values with the values of the international structure it adheres. Beyond being an important player in both national and international markets with its explosive investments and developing organization, CEPAS aims to be a leader that can control and change the whole industry.





DALKIRAN SOLAR YENİLENEBİLİR ENERJİ ELK.TAH.SAN.TİC.A.Ş.

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Established in 1975 as a family business, DALKIRANLAR INC. Has preserved advantages of profession for almost 41 years, adding family members and leading industry specialists to its corporate structure and positioning as one of the leading contracting companies of Turkey.

Headquarters located in Istanbul, our company succesfully completed nearly 300 projects from Edirne to the west and Ardahan to the east of Turkey, of which can be listed as city electric networks, energy transmission lines, transformer and distribution substations, factory electrifications, energy automation and scada systems, industrial zone infrastructure projects and solar energy systems.

Our company produces epoxy parts under the brand name of "EDE INTRA" targeting to reduce costs, providing better services with lower prices and contributing to Turkey's economy by creating more job opportunities.

"DALKIRAN SOLAR" is established in 2014 with the aim of making

Turkey clean and a more liveable place as well as to contribute our share for global environment; as DALKIRAN SOLAR, we are providing solar energy Project developments, EPC solar power plant installations, operation and maintenance of solar power plants and systems.

Our company heads forward with the consciousness of growing with growing with small but determined steps. We are well aware of how important it is stay at the level reached and we target to achieve the same success in the international markets.

First step of our objective; has been taken in 2010, with DALKIRANLAR NIGERIA SERVICES LTD. which provides contracting services at Nigeria energy market and trading transformers and electrical materials made in Turkey. In 2015, "NOVA TRANSFORMER SERVICES LTD." one of the biggest demands of Nigeria Energy Sector, that provides maintenance and repair service fort he distribution and power transformer, has been established.



Delta Enerji is a subsidiary of Delta Group of Companies. Delta Group has been established in Hatay-TURKEY with the aim of combining all of its national and international investments under one umbrella.

Delta Group operates in;

- Telecommunication and Networking Equipment and Service Supply 1. Industry
- Solar Energy Engineering, Equipment and Service Supply Industry 2.
- 3. Food & Beverage Industry

With its over 500 educated, professional, experienced and dynamic human resources, in 8 different countries with 12 companies.

In the new period of business world, Delta Group is persistently following the developments and improvements in its related sectors and going on with its investments with the target of increasing its success benchmark continuously.

Delta Enerji is a 22 years engineering company and has defined its vision to be a leading company in energy sector by its professional staff, experienced management, innovative solutions; and easily adapting to the innovations with the knowledge of its social responsibility.

In this way, Delta Enerji supplies turnkey Solar Energy projects including; feasibility reports, Technical, Administrative, Financial Documentation proceedings, the most feasible equipment supply, installations with the highest quality and efficiency and 2 years free of charge Operation And Maintenance activities.



Apart from Licensed and Unlicensed Solar Energy projects, Delta Energi focuses on Research and Development projects with its well qualified and ambitious Engineering Team with following Delta Enerji's own design and own production products;

Chargers)





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DELTA ENERJİ

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> Additionally, Delta Enerji benefits its long lived and popularity advantages through strong cooperation with all Solar Panel, construction, inverter, cable and other solar equipment producers in order to submit the most efficient and feasible projects to its customers.

SOROSIS-6 (6kW Mobile Solar Energy System)

SOROSIS-1, SOROSIS-2, SOROSIS-3 (1kW, 2.25kW, 3kW Mobile, 2 wheels Solar Energy Systems)

Solar Lighting Systems (Between 4meters to 12 meters, Street and Garden Lighting Systems)

DEGES Systems (Hybrid (Solar + Battery + Grid) Systems Between 100watt to 3000watt)

Intelligent Stations (Bus Stops With Solar Lighting, Solar Boards and Solar Chargers)

Intelligent Park Bench (Park Bench With Solar Lighting and Solar

In this way, as a successful result of hardworking R&D studies on Solar Energy sector, Delta Energi's SOROSIS-6 project has been awarded in one of the most popular Electric-Electronic event Middle East Electricity as The Innovation or Technology of the Year on 2nd of March 2016.







ENDÜSTRİYEL ELEKTRİK ELEKTRONIK SAN. VE TİC. LTD. ŞTİ.

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Our company started its operations in 1988, it continues to grow renewing itself according to market demand. Using constant current technology our growth strategy, innovation, improve the skills of workers, to respond optimally to market demand; Our company, which owes its customers value -added approach, which also has come into effect after that date "values" institutionalized. will make milestones in shaping the future.

Endüstrivel R & D and customer-oriented guality that can consider the design. It is regularly inspected by the independent inspection agencies in the chain of international accreditation.

TSE, CE, ISO 9001, OHSAS 18001, ISO 14001, Ghost and Tip Test testing standards implementation within our company which contiues an investment in the planned international cooperation in the construction according to ISO 16949 standard.

Our services are the following:

- Production of PV solar panel with differents models
- (Annual production capacity: 35 MW per year)
- Turn-Key of Solar Energy System plants
- Plants of OFF-GRID systems (With Battery)
- Micro inverter works
- Solar street lighting systems
- Solar irrigation systems

At the moment, in our company, TUBITAK project is being conducted to start research of technology and Solar energy systems in priority with support of TEYDEP.

Our target is to keep customer satisfaction up with our suitable cost of our quality local production and with our experts and engineers. We are always striving for the best.

ENSO ELEKTRİK

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The company was founded in 1991 and carries on its activities in "Renewable Energy Sector" since 2014 as ENSO Energy Solutions. Seated in Ankara, our company has become one of the most reliable and prestigious companies in the energy sector in Turkey, thanks to the projects successfully completed and a strong list of references.

ENSO provides service on Electricity Distribution Network and Power Grid Projects with high guality standards. Also completed many Solar Power Plant Projects. With its result oriented and customer satisfaction approach, ENSO keeps working with innovative and technically experienced and qualified staff.

Our Main Activity Fields; Solar Power Plant Project Design and Installation, Contracting Works, Energy Distribution Lines, Consultancy Services. Maintenance and Operation. Compact and Individual Renewable Solutions such as Smartflower

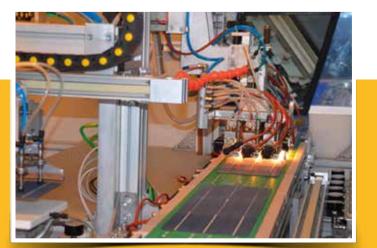
Solar Power Plants Project Design and Installation; With its young, dynamic, gualified and expert staff, ENSO provides solution partnership in Solar Power sector to its clients in advanced engineering applications with Turkish Electricity Distribution Corporation (TEDAS) approved 200 MW project, 3.5 MW site application already completed and ongoing installation of 8 MW across Turkey.

Contracting Works: Design and application of all our projects are conducted by our gualified and expert technical staff. Contracting works realized by our company: Solar Power Plants, Wind Power Plants, Power Distribution Lines, Switchyard Facilities, Pump Stations, Compressor Stations, System Analyses.

Consultancy Services; Services are provided for project application

studies.

Applications.



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ENSO ELEKTRİK MÜH. MÜŞ. LTD. ŞTİ.

period, minimum investment cost, preliminary feasibility and feasibility

Maintenance and Operations; We offer assembly, maintenance and support services to our clients with our technical knowledge and experience in the branch of electrical engineering, industrial electrical assemblies and installations, specialized and experienced engineers and technicians and ensure that your plants, facilities, machineries and other equipment operate in the most productive, efficient way with lowest cost.

Compact and Individual Solutions, Smartflower; ENSO is proud to announce to bring individual and compact renewable energy solutions to the sector. ENSO is the first and exclusively authorized distributor of Smartflower, a next generation high-tech product that will be implemented in Turkey for the first time. Smartflower is a portable device featuring sun tracking mechanism with GPS integration, and enables solar power generation, storage/use without need for any additional product. Smartflower automatically activates itself with the first sun rays of the morning. Unique sun tracking yields productivity increases efficiency up to 40 percent. Smart cooling and smart self-cleaning reduce heat and loss induced losses as low as 15 percent. It's quite easy to use and maintain. Smartflower is a system that having it is own inverter and accumulator. It takes nearly one hour to make the user-friendly system ready to operate thanks to its plug-and-operate feature.

ENSO is proud to be your Key Partner in any Renewable Energy and Engineering Project. Design. Management. Consultancy and





Girisim Elektrik group company. We, as Girisim Elektrik group,

with our main group companies Europower Enerji A.S. and

Girisim Elektrik A.S., are one of the leading engineering, sales

and marketing groups in Turkish electricity and energy industry.

We offer a very wide range of products and services to a large

number of key customers in many different industries both in

Turkey and abroad, and have been working successfully in

hundreds of projects in over 35 different countries all around the

world as a group. With our gualified and customer-focused team

consisting of 400+ people and 50+ engineers - which are mostly

electrical engineers - we offer a fast and unlimited supply chain

for our customers' needs about all kinds of LV, MV, HV electrical

Metallic and concrete kiosks and compact/package substations,

Medium voltage air-insulated metal enclosed and metalclad

All kinds of DC/AC low voltage panels - distribution panels, relay,

Automation & SCADA systems for solar power plants, tailor-made

control and protection panels, combiner/array boxes and more,

and ready for performance monitoring with web access/Android.

Metallic and concrete type central inverter stations.

Medium voltage SF6 gas-insulated RMU switchgear,

products and systems.

switchgear.

Products for Solar Systems:

EUROPOWER ENERJİ VE OTOMASYON TEKNOLOJILERİ SAN. TİC. A.Ş.

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Europower Solar is a division of Europower Energi, which is a Services for Solar Systems:

Turn-key contracting / EPC and subcontracting for solar power plants.

- Project development and complete design,
- Materials selection, evaluation, approval, supply and installation of solar panels, inverters, mounting systems and all kinds of LV-MV-HV electrical equipment.
- Supply, installation and commissioning of substations,
- Earthing of the power plant cabling and earthing of the solar panels and all other components,
- Supply and installation of the transmission line to grid,
- Field tests, laboratory tests, supervision and commissioning services.
- Performance monitoring and analysis,
- Operations, maintenance, and repair services,
- Cleaning products and services,

Europower Enerji and our group companies are also specialized on electrical and electromechanical EPC projects as a contractor and subcontractor in Turkey and abroad for projects like AIS and GIS substations, thermal and renewable power plants, overhead lines, electrification of airports, railway systems, industrial facilities, hospitals, residential and commercial building complexes, and more... We consistently deliver high guality turnkey projects for high-profile clients in a wide variety of industries.

Evanergy Solar Film Plastic Manufacturing Chemicals Industry and External Trade Inc., Taskent Limited Company started in 1999, 17 years of experiences in the plastics industry, in order to contribute to the reduction of the energy deficit in our country to transfer the solar energy field in our country to invest in an area of non-production, and in this area the most strategic component after the solar cell PV module decide to enter the project with local manufacturing facilities of EVA solar film with headquarters in Istanbul, the factory was established in Düzce to the local short run to and workforce.

EVANERGY

Dočaua Yerli Yahrıml

Evanergy Inc. entering in advance for an emerging sector in our country, businesses with faces in profit for its natural purpose, pre-cutting of imports in this area of the country, adding local value-added sector, it aims to keep capital in our country.

European quality.



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EVANERGY INC.

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Therefore, we named our product "EvaTürk" which is produced in

Evanergy Inc. The quality of the films we produce solar EVA tested by TÜV Rheinland according to IEC standards, is approved.

Solar energy in our country to be more advantageous to investors "Domestic Manufacturing Status Certificate" as well, adding to the side of the other documents showing our quality, we have provided a customer-oriented production.

The guarantee of success and continuity in production, evanergy working with integrity and guality-oriented principles in trade Inc. commitment to the same principles, first of its kind in Turkey, takes pride in 100% of domestic production.

Evanergy Inc. "nature of domestic investment!"







GAZIOĞI U SOLAR ENERJİ SAN, VE TİC. A.Ş.

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Gazioğlu Solar Enerji was founded in 2011 in order to produce photovoltaic solar modules in Turkey. Gazioğlu family is also involved in galvanized steel business and aluminum extrusion. By the end of 2012 solar PV module production has started in Cerkezköy, Tekirdağ factory. Our main goal is to supply high quality PV modules to our customers with competitive prices. We see a great potential and how important alternative energy sources are, especially solar energy sources globally.

Our company is located in Cerkezköy Industrial Zone and is built on 100.000 sqm. The production line is built by a German company and was formed by machines from all over the Europe and USA. Each of these machines are one of the leading company in their business field. Most important ones are as follows; Benteler for glass washing, Minitec for conveyor transportation, Komax/Xcell Automation for cell stringing, Böhm AG for laminator and Endeas for sun simulation.

In the production process, we keep our guality standards very high. Each glass is washed previously to entering production line.

Every cell, string and module is check for micro cracks. So, we can supply our customers with 100% Electroluminescence test reports. This gives us the assurance that the cells of our modules are micro crack free.

We test our modules according to internationally recognized accredited companies. The components chosen in our modules are mainly from Turkey and European zone. These materials are from well-known brands with high guality standards. We supply the most important component solar cells from German Solarworld AG for mono crystalline and Taiwanese TSEC for poly crystalline.

Since the solar energy investment is a long-term business with performance warranties consisting of 25 years, we would like our customers to feel safe while investing. Therefore we provide them positive power tolerance and we supply them with digital copies of micro crack test reports of the solar modules. We are a customeroriented company. It is our duty to make our customers satisfied before and after sales.

GESTENERGY

GESTENERGY-GÜNTIR ULUS.TAŞ. İNŞ. TRZ. TİC. A.Ş.

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GESTENERGY one of the leading PV module manufacturer in Turkey. We have multinational engineers and managers working with us with their international experience in the field of photovoltaic.

GESTENERGY has fully automated production lines of 150 MW capacity with advanced robotics for higher yields. We also undertake turnkey projects for high capacity power plants. One of our prime objective is to be up to date with the latest Technologies available in the market and offer our services to our customers with best feasible solutions available in the renewable energy . sector.

GESTENERGY being capable of designing and producing Project specified photovoltaic modules and systems. Thanks to its production, capabilites offers reliability, quality and efficiency with cost effective approach in respect of turnkey projects it undertakes.

Our experties:

modules) EPC Projects

Our Mision and Vision;







GESTENERGY produces high efficient mono and poly-crystalline modules. The performance is guaranteed to 25 year with 80% yield and 90% at the end of 10 years.

All photovoltaic modules are produced in conformity to the followings certificates: TUV; IEC61215, IEC 61730, KIWA; IEC 61701, ISO 9001, ISO 14001, ISO 18001.

Manufacturing Photovoltaic Panels (Mono and Polycrystalline PV

Lighting Solutions with Energy Saving

Power Solutions for On-Grid and Off-Grid Systems.

As GEST ENERGY, our mission is to use renewable energy sources in the most productive way and contribute to our nation economy within our principles of energy independency and clean world. Our vision is to be one of the key player in renewable energy sector in the global market.





GTC SOLAR

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GTC Solar is photovoltaic panel producer from Adiyaman, Turkey. The 30MWp semi-automated line has been designed to produce double glass or glass-ceramic frameless modules with a wide range of cell design. Soldering settings can be guickly modified to customize for different technologies and projects.

- Cell 6", mono or poly, 3, 4 or 5 busbars (coming soon)
- Strings designs with custom spacing between the cells;
- Half cells:
- Bi-facial cells
- Lamination up to 12 mm thickness, max dimensions 2 x 3 m.
- 3 electro-luminescence tests before stringing (EL cell tester) before and after lamination. Our products are free of defected cells or micro cracks.

Our standard ultra-slim, frameless, light and extreme conditions resistant double glass modules encapsulating high efficiency MONO-crystalline PERC cells with average 20.50% efficiency, within thin ultra clear low iron 2mm ARC glasses and advanced EVA.

The double glass panel has been certified 1500Vdc by TUV InterCert and is classified Fire Safe AA. The panel vield has an average of 6% more electrical production than standard polycrystalline panels. Easy to carry and to install, the panel does not need any grounding. The high power safes on manpower and BOS costs, which makes the high quality GTC PV modules attractive from a CAPEX and LCOE point of view. Less maintenance, less breakdown, all panels are classified according to current, then to power, in order to reduce any mounting system mismatch. It has been now proved in the industry that glass-glass encapsulation is the right way to go, no PID and less aging rate, with better self-cleaning, excellent for dusty area or low raining environment.

GTC Solar is technically structured to be flexible and multidimensional. We are custom tailors and engineers of modules or any special need for any specific project, OEM or BIPV. Please feel free to reach to us. We would be happy to accommodate your own designs or requirements as with same care and efficiency as our own.



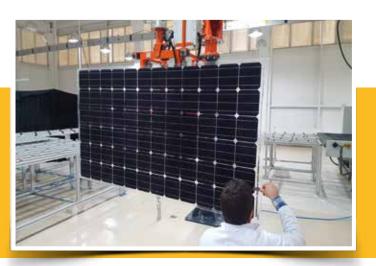
IDECO provides smart engineering solutions and business development activities for power plants in the energy and electricity market with the light of experience in the market for many years.

Thanks to the knowledge that is obtained by many successful projects in domestic and abroad, IDECO creates unique, special and innovative solutions in the energy and electricity market.

IDECO provides professional project management and consulting services especially in the renewable energy field. IDECO offers market researches, country reports, investment feasibility, plant design for investors and EPC companies.

IDECO prepares electrical and mechanical projects which are requested by TEDAS according to international standards. IDECO Energy that provides smart engineering solutions for the field of energy and electricity executes design, manufacture, install and commission for LV and MV with expert staff.

market.



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IDECO ENERGY



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> Serves up all the engineering solutions with its dedicated employees who are experienced at DC,LV,MV. IDECO continues its support to investors and EPC companies in the maintenance and operation for high quality products that produced.

> IDECO provides all the electrical infrastructure that will be required for renewable energy power plants with experts. In the light of improved project management techniques IDECO finalizes the power plant installations guick and safe.

> IDECO offers consulting and project management services in the field of energy and electricity with experience gained from many successful projects which are completed in local and international

> IDECO creates dynamic, sustainable and cost affordable solutions. Aims to prepare investments with the optimum parameters at the very beginning of the design stage. It also intends for deriving a profit before the construction phase.





ÖDÜL ENERJİ TAAH. İNŞ. SAN. VE TİC. LTD. ŞTİ.

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LTD. ŞTİ.

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ÖDÜL Solar Enerji; was established in Mimarsinan Industrial Zone in 2013 in order to manufacture photo voltaic (PV) modules that are used to generate electricity from the sun.

Ödül group; who completed many projects in construction field before is now in action in renewable Energy sector with Ödül Solar Enerji.

Our factory has shifted to work on full capacity in 2015 and now renewing its production lines in order to produce modules by using cells with 4 & 5BB.

Ödül Solar Enerji warrants its panels for 10 years of product durability, 10 years of 90% output power and 25 years of 80% output power and the production capacity is aimed to be increased up to 200MW.

Ödül Solar Enerji has 55% local production certificate and is cooperating with TUBITAK and University of Nigde in order to produce 100% local solar cell.

Ödül Solar Enerji modules are tested and approved according to IEC standarts by TUV Rheinland.

Our firm's, biggest aim to become one of the global players in this field and proudly represent our country abroad and stands out with the projects that are completed with its hi-tech infrastructure and experienced staff.

Ödül Solar Enerji, who gets its power from the sun will carry on enriching it's country and employees with its economic and quality products which are produced in a nature and human friendly way. PROERK is a technology development focused engineering company. We are based in Middle East Technical University Teknokent campus the center of Turkish research industry. Our main activities are land radar systems, photovoltaic plant project development plant inspection services, software development, electronic design solutions.

PROERK is focused on customer satisfaction and make process

services with trust.







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PROERK MÜHENDİSLİK YAZILIM

through this principle. From 2014 we have finished with success more than 100 MW PV plant project development and more than 10 MW inspection services. Also our plant design software PVINTEL is a frontier in Turkey at its area. PROERK has expert employees in their field and a frontier company in engineering





SCHMID PEKİNTAŞ GÜNEŞ ENERJİ SİSTEMLERİ SAN. VE TİC. A.Ş.

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Pekintaş Energy is a Turkish-German joint venture, as your solution provider for the photovoltaic module manufacturing, specialising in high tech production, technology, project design, evaluation, production and mounting applications.

SCHMID Group is a leading equipment manufacturer and innovator for the solar industry with a history of over 150 years. Pekintas Group of companies, since 1959, is specialised in infrastructure project and industrial building.

As Pekintas Energy, combining SCHMID Group's high technology and know-how in Photovoltaic industry and Pekintaş Group's experience in construction sector, in excess of 55 years, we took our position in Turkey and the surrounding geographies, in 2013. In our integrated Düzce factory, with 70 MWp yearly capacity, using the latest technology, we produce PV modules from 240Wp to 280Wp power output.

As well as our high guality products, we are ready to help you using our industry network, if you need further service and support and/or want to improve your profitability by using energy storage systems.

Additionally, we are with you as your EPC solution provider, in each step from project development to commissioning, in your solar power plant investments.

In detail, we are your best solution partner at the following steps: site selection, project development, feasibility report, design and system engineering, production & material supply, site installation, System Commissioning & Start-up, Operation & Maintenance Services.

Products; polycrystalline and monocrystalline PV modules, multibusbar technology, energy storage, EPC Contractor for ground installation, roof installation, off-grid residential packages. Brands: SUNSOLAR®SPExxx, INTERSOLAR®SMExxx

Certificates: TÜV Rheinland (IEC 61215:2005, EN 61215:2005, IEC 61730-1:2004, IEC 61730-2:2004, EN 61730-1:2007. EN 61730-2:2007), SWISS TS (ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2004), TÜV SUD, TSE-HYB.



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Sebat Alüminyum San. ve Tic. A.S. being in Aluminum Sector since 1963, offers wide range of Aluminum Extrusion Profiles for Industrial and also architectural requirements.

It is located in middle Anatolia Kayseri on 18000 m² land and 8500 m² closed area. We are producing with two Extrusion Presses (1100 UStons, 1460 UStons) and have also electrostatic powder coating line, anodizing line, mechanical treatment (CNC and punching units) in one House. Costumers can require everything about Aluminum from one Hand. Sebat is selling its products mainly in Turkey and makes export to West European countries. (Austria, Germany are our main part of export)

different countries.

SEBAT

IN EVERY



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SEBAT ALÜMİNYUM SAN. VE TİC. A.Ş.

Sebat Aluminum belongs to Ezinc Group which is leader in Solar Energy Sector. Ezinc is one of the leaders also on the world in Solar Heater Systems and does also EPC projects in many

In all their Projects, they are using Sebat Aluminum construction parts that we are producing in our own fabric. All construction solutions are provided by Sebat Aluminum.

We are doing analyzing and also giving 3.1B Certificate for all Aluminum products. We also have CE Certificate for construction materials. We can produce all 6000 series Alloys. (6005, 6060, 6063, 6082) Our R&D Department can do every solution for construction in open land and also for roofs.







SOLARTÜRK ENERJİ A.Ş.

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We are solar energy company in Turkey; if you contact with us, have you a think about in solar Energy Turkey.

Established in 2009 Solarturk Energy, at the end of two years of research has been make a decision to set a 60MW solar module production capacity, has completed the installation in 2013 and began the production. The plant has 15.000m² open and 10.000 m² closed area avaliable with totally completed infrastructure. The company has decided to make an investment to produce PV module for Turkey and international markets after 3 years of market research. In this context, Solarturk Energy Company established in Gaziantep and started the first solar panel production in Turkey.

The investment decision has been taken under the supervision and Know-How of SCHMID, ABB and some of the Energy Faculties of some universities in accordance to European standards of quality and producing solar panels with TUV certification, has taken an important place in the sector. As Solarturk Company,

which has awarded by The European Bank for Reconstruction and Development (EBDR) about the "Sustainable Energy and PV Module Investment in Europe" in "EXCELLENCE", our goal is to produce high quality and domestic product in our company. Our company. TÜV certification proses completed, deserved TÜV certificate, the company in this sector in Turkey in the first TSE. CE, IQNet and TS EN ISO 9001, 14001, 18001, 27001 and TSEHYB 12690- won the 13 381 sheets. In addition, organized by TÜMSİAD «25 GOLD STAR» in the framework of award in this sector, "Gold Star" award and has been appreciated by The European Union to Turkey by EUROSOLAR Solar Renewable Energy Achievement Award was appreciated by 2013. Solarturk Company is the market leader in the supply of domestic solar panels Kind about the Solar investment, who are proud to export to Middle East and African Countries and we a firm registered its quality.



SOLIMPEKS SOLAR ENERGY CORP.

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Solimpeks' beginnings as solar manufacturer date back to 1977. R&D and quality oriented company members accelerated the growth in a short time and carried the competition all over the world in renewable energy field. Now the company has presences as the world's leader manufacturer of high-guality solar energy products in almost everywhere under the sun. Solimpeks employs over 300 members in its locations in Turkey, Germany and Spain. Solimpeks products are based on defined technology platforms that are produced at a coordinated industrialisation rate. From robotised production systems with a high level of automation to custom-made, project-specific products: all our products are manufactured in line with industry quality standards. At Solimpeks outdoor test bench, the solar products are subject to extreme climate conditions and endurance tests. More than enough tests of the overall system's compound of collector are strictly applied at the end.

Quality assurance is a top priority at Solimpeks as only the best products bring long-term success to our customers. Solimpeks has been certified in accordance with ISO 9001. To make sure change era.



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that only products of the highest quality leave our plant, quality assurance begins with semi-finished materials and ends with packaged products. During production, each solar products passes through a multi-stage guality assurance programme with strict monitoring and guality control. The same holds true for our production processes and technologies.

Solar power is as ancient as the world we live in so under the sun nothing new. However, converting the sunlight into more useful energy forms is constant research and development subject from the first man to today. Solimpeks understands and knows very well R&D importance to convert the solar power into heat and electricity power eciently and low cost especially during climate

At Solimpeks we are variety of educational opportunities and resources for engineers, designers, contractors, technicians, installers and students. We have developed a wealth of print, video and software resources that provide in-depth information and training on a numerous topics from basic solar design and operation, to detailed technical papers.





UI USOY FI FKTRİK İMALAT TAAH. TİC.A.Ş.

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Founded in 1985 as an engineering company, Ulusoy Electric proves Turkey's dynamic power to the world and has become one of the leading and innovative company guiding its sector. Offering ideal solutions for the medium voltage electricity distribution networks and industrial facilities has made Ulusoy Electric one of the significant player of the Turkish electromechanical industry. Ulusoy Electric has completed its structure within national market and begun to serve the international market. Presently, Ulusov Electric has signature in engineering projects all over the world in consequence of big success in national and international platform, large and high guality product range, sectoral innovation and qualified service mentality. Since 2009, for great projects, production capacity and industrial success. Ulusoy Electric has got its place in the list of "The First 500 Biggest Industrial Companies" which is announced annually by İstanbul Chamber of Industry. Company carries out its activities in its main factory located in Ankara Organized Industrial Zone equipped with state-of-art machineries and equipment with 26.000 m² indoor workplaces on 30.000 m² open space. New factory investment has been accelerated in

Ankara Temelli Organized Industrial Zone by targeting with total area of 53.000 m², where 30.000 m² consists indoor workplaces. Ulusoy Electric is performing launch of medium voltage electricity distribution network production worldwide successfully, by exporting more than 50 countries. By the year 2014, Ulusoy Electric ranked 205 in the list of "Top 1000 Exporting Companies in Turkey" announced by Turkish Exporters Assembly.

Domestic Design and Production with Developed R&D Substructure;

- Ulusoy Electric keeps its R&D departments dynamic and active. Company follows sectoral developments globally and integrates them to its system. Ulusoy Electric also works on innovation for its own sector. IEC and local certificated, advanced technology products are controlled and calibrated before, during and after the proiects.
- With its successful R&D activities, Ulusoy Electric ranked 104 in the list of "Turkishtime R&D 250", the one and only research which evaluates the innovation and R&D facilities in Turkish business world.



ZAHİT ENERJİ SAN. VE TİC. LTD. ŞTİ.

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Zahit Energy Industry and Trade Limited Company was founded by Zahit Aluminium to fulfill the ever increasing demand and create appropriate projects for energy need in Turkey and around the world. With over 30 years of experience, Zahit Aluminium is one of the sector leaders in Aluminium industry in Turkey manufacturing composite panels and extrusion profiles.

Zahit Aluminium started the solar module production in 2012 with the support of an expert R&D team using high and German Technology in Adana Hacı Sabancı Industrial Zone at 65 MW module production capacity per year.

Technical Audit Services services for solar energy plant is carried







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out with objectivity under full support to investor. The aim of technical inspection services is to ensure the achievement of the highest yields with right installations, with right products and to resume the sustainability of the system with maintenance services. Technical Audit Services consist of following stages; EPC Management, Yield Report, Expert Opinion, Technical Due Diligence, Construction Commissioning Audit, Operation and Maintenance Audit. Under the technical Inspection services; visual inspection, random measurements of DC parameters, Thermal Analysis etc. are being carried out and reported.





ZENİT ENERJİ VE ÇEVRE TEKNOLOJILERİ SAN. TİC. LTD. ŞTİ.

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Zenit Energy provides sales and service of solar energy plant equipment and technical audit services.

Zenit is a business partner that provides procurement services for the low-cost and the best products without compromising on guality. Within the framework of high standards, it provides solar solutions to both customers and the world of business for renewable energy and a sustainable future. Zenit works with PV module and inverter manufacturer companies and Installation/ Connection, Measuring and Test Systems that are in leading position in the energy market and offers its customers a wide range of choice between the new generations of technological products. It also supports you to choose most suitable products

such as DC cable, connectors, monitoring and test systems to your project investment.

Investment management and audit services for solar energy plant is carried out with objectivity under full support to investor. The aim of technical inspection services is to ensure the achievement of the highest yields with right installations, with right products and to resume the sustainability of the system with maintenance services. Technical Audit Services consist of following stages; EPC Management, Yield Report, Expert Opinion, Technical Due Diligence, Construction Commissioning Audit, Operation and Maintenance Audit. Under the technical Inspection services; visual inspection, random measurements of DC parameters, Thermal Analysis are being carried out and reported.



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BDR GAL.DEM. ÇEL. EN. VE İNŞ. SAN. LTD. ŞTİ.

TERA FOTOVOLTAİK ENERJİ TEKNOLOJİLERİ



Sectar 2016

SOLAR CONFERENCE & EXHIBITION 6 - 8 DECEMBER 2016 Istanbul, Turkey

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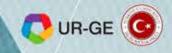




GAPYENEV







WORLD CLASS SOLAR EQUIPMENT









GÜNDER

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