



**MS KAT**  
İNŞAAT



**Company** Profile

C|Energy was established in October 2012 and operates in the field of Energy. It is a subsidiary of **Entrade S.A.**, a company fully oriented in Renewable & Alternative Energy Sources Systems & Technologies.

C|Energy deals with the study, design, installation, commissioning, monitoring and maintenance of energy projects, as well as the procurement of electrical and mechanical equipment, providing integrated high quality services.



### Vision

At C|Energy, we have the vision of the sustainable development and we foresee in the environmental contribution that green energy can provide. Thus, we believe that energy is crucial for our society and we are aiming to create a sustainable energy future by increasing the use of green energy and simultaneously exploiting the business opportunities.



### Strategic Targets

- Study, development and construction of RES (Renewable Energy Sources) Power plants
- Study, development and manufacturing of Power plants from waste heat recovery
- Consulting and engineering services on the RES sector
- Representation of international manufacturing firms of electrical equipment
- Development of specialized software related to RES issues .

### Current and under development Actions

- EPC services for the realization of PV plants.
- Penetration in the Photovoltaic market of Turkey & Cyprus
- Penetration in the Wind Energy market of Romania
- Design and installation of ORC units in autonomous plants in islands
- Promote the low-power heat recovery in industrial units
- Development of the Energy Saving Business sector by standardizing processes

## PRODUCTS & SERVICES

- Photovoltaic Systems
- Heating Systems
- Energy Efficiency Systems
- Biomass Power Plants
- Hydrogen Technologies (Fuel Cells)
- Small Wind Turbines

### Differentiation

The objective of C|Energy is to differentiate in the Renewable Energy Sources and Energy Efficiency market for the scientific character of the solutions proposed.

Competitive advantages of C|Energy are:

- high scientific added value of its staff
- expertise and experience
- reliability
- A nationwide partners network
- The valid investment proposals for energy projects



MSKAT İNŞAAT main activity is the Management and Construction of technical projects of civil works, in the Public and Private sector, covering projects of the kind of Buildings, Industrial, Energy, Roads, Harbor and Offshore works, Environment and Repair and Revamp works.

MSKAT İNŞAAT's executive personnel has the capacity, experience and ability to manage and execute technical projects with complicate nature and magnitude volume, as well as EPC projects.

Specifically MSKAT İNŞAAT undertakes:

- Engineering Management and Execution.
- Permits and Licenses management and follow up.
- Application designs execution.
- Project Management, Supervision and Technical support.
- Projects construction in parts or a whole.
- Health, Safety and Environmental Management [HSEM] and follow up.
- Quality Assurance/Quality Control Management [QA/QC] and follow up.
- International Standards and Works, Technical Specifications' good knowledge and follow up.



### 50 kWp PV POWER PLANT IN HERACLION CRETE

The station has an installed power of 50.16 kWp. Produced **1.465 kWh/kWp/year**.

Consists of 228 panels of 220 Wp each and three string inverters of 15 kW each whereas the mounting system was made of aluminium.



### 100 kWp PV POWER PLANT IN KORINTHOS

The installed power of the station is 99.875 kWp installed on two shelters and is expanded internally within the site of SPORTCAMP S.A.

Produced **1.487 kWh/kWp/year**.

The photovoltaic plant consists of 425 PV panels of 235 Wp each, 6 string inverters 17 kW and aluminium mounting system.



### 400 kWp PV POWER PLANT IN THESSALONIKI

The station has an installed power of 400 kWp, installed on the two roofs of the warehouse.

Consists of 1702 panels of 235 Wp and 21 string inverters of 17kW.



### 1 MWp PV POWER PLANT IN DOMOKOS FTHIOTIDA

The installed power of the station is 1 MWp installed in six shelters of the factory.

The equipment used consists of 4.164 panels and 62 string inverters.

### 83 kWp PV POWER PLANT IN KOLONOS ATTICA

The station has an installed power of 82.80 kWp. Produced **1.490 kWh/kWp/year**. Consists of 360 PV panels of 230 Wp each and 5 string inverters of 17 kW each whereas the mounting system was made of aluminium.

### 87 kWp PV POWER PLANT IN "AGIOS KONSTANTINOS" FTHIOTIDA

The station has an installed power of 87.22 kWp, installed on an industrial building roof.

There were used 356 PV panels of 245 Wp each, 4 string inverters of 15 kW each, 2 string inverters of 8 kW each & aluminium mounting system .

### 170 kWp PV POWER PLANT IN VOLOS

The station has an installed power of 170 kWp, installed on a gable roof of a warehouse.

The equipment used consists of 705 PV panels of 240Wp each & 10 string inverters of 15kW each.

### 1 MWp PV POWER PLANT IN MAGOULA ATTICA

This project relied on the experience and scientific approach of **C|Energy**. It is a 1 MWp project in Magoula, and our company was responsible for the low-voltage electrical installation.





### 100 kWp PV POWER PLANT IN LOUSIKA ACHAIA

The station has an installed power of 99.875 kWp. Consists of 425 PV panels of 235 Wp each, 6 string inverters of 15 kW each and aluminium mounting system.

### 100 kWp PV POWER PLANT IN MEGARA ATTICA

The station has an installed power of 99.76 kWp each. Consists of 344 PV panels of 290 Wp each, 6 string inverters of 17 kW and aluminium mounting system.

### 100 kWp PV POWER PLANT IN DAVLIA VIOTIA

The installed power of the station is 99.36 kWp. Produced **155.760 kWh**. Consists of 414 PV panels of 240 Wp each and 6 string inverters of 15 kW each whereas the mounting system was made of aluminium.



### 100 kWp PV POWER PLANT IN VALESTINO MAGNESIA

The station has an installed power of PV frames of 99.36 kWp . Produced **130.620 kWh**. Consists of 414 PV panels 240 Wp each and 6 string inverters 15 kW whereas the mounting system was made of aluminium.

### 150 kWp PV POWER PLANT IN KALAMATA

The station has an installed power of 149.76 kWp. Consists of 625 PV panels of 240 Wp each, 9 string inverters of 15 kW and the mounting system was made of galvanized steel.

### 200 KWP PV STATION ON FIELD WITH TRACKING SYSTEM IN DAVLIA VIOTIA.

The station consists of 850 PV panels of 235 Wp each and 16 string inverters of 12.5 kW each.



### 400 kWp PV POWER PLANTS (4x100 kWp) IN DISTOMO VIOTIA.

Each station has an installed power of 99.36 kWp. Each station has produced until 11 March 2013 **115.050 kWp**.

Each photovoltaic plant constructed with 414 PV panels 240 Wp each, 6 string inverters of 15 kW and aluminium mounting system.

### 100 kWp PV POWER PLANT TRACKING SYSTEM IN ALIARTOOS VIOTIA.

The station consists of 416 PV panels of 240 Wp each, 4 + 4 string inverters of 11 and 15 kW correspondingly.



### 2x500 kWp PV POWER PLANTS IN DOMOKOS, FTHIOTIDA

Each station has an installed power of 500 kWp. Each photovoltaic plant constructed with 2000 PV panels of 250 Wp each, 17 string inverters of 27 kW each and galvanized steel mounting system.

### 6x500 kWp PV POWER PLANTS IN LIVADIA, VIOTIA.

Each station has an installed power of 500 kWp. Each photovoltaic plant constructed with 2000 PV panels of 250 Wp each, 17 string inverters of 27kW each & galvanized steel mounting system.





## PV POWER STATIONS ON DOMESTIC ROOFTOPS

C|Energy worked actively in the field of household photovoltaic systems.

Our work will be found in almost every part of the country such as: Chalkida, Distomo, Davlia, Amfissa, Karditsa, Astros, Rafina, Attica, Gytheion, Loutraki, Aliartos,, Preveza, Aspra Spitia, Patras, Peristeri Attikis and on islands like Crete and Kos.

A variety of photovoltaic panels were installed from the following manufacturers: Conergy, Silcio, Solarwatt, Suntech, Sanyo, Sunpower,

The inverters have been selected according to the requirements of each system. As regards to the manufacturers these were: SMA, SolarEdge, Kaco, Kostal, Conergy and Danfoss.

## INFORMATION

**C|ENERGY LTD  
HAS CONSTRUCTED  
A TOTAL OF 15 MWp PV  
POWER PLANTS,  
COMPRISED OF  
DOMESTIC & INDUSTRIAL ROOFTOPS  
AND GROUND INSTALLATIONS**

Especially for Photovoltaic projects, our company can contribute in the following fields:

- ◆ **Experience provider on PV projects.** We have realized more than 6 MWp on EPC turn-key condition (projects of 1 MWp maximum power capacity) and engineered more than 50 MWp in all power scale projects (from 100 kWp up to 5 MWp power capacity).
- ◆ **Engineering and Design for PV projects.** As mentioned, we can undertake the full design of any PV project in terms of: Constructional Drawings, Bill of Materials, Bill of Quantities, Time schedules, Substation & Electrical Tables design, CCTV design, Technical specifications, Energy Production Studies on simulation programs (PVSyst - Homer).
- ◆ **Project Management.** We can undertake the project management for the full EPC including the logistics management for all the Bill of Materials & the main hardware (PV modules, inverters, mounting system, substation, cables etc).

- ◆ **Supervision and Technical Guidance for all activities of a PV project.** Our team of engineers and technicians can manage all manpower and time schedule on the constructional field. We are specialized in all activities involved in a PV such us: mounting system installation, DC & AC electrical installation, CCTV installation, Landfill works, Substation & Electrical Tables installation, PV modules Sorting, etc.
- ◆ **Technical Advising Services.** We can deliver technical specifications and design documents for any PV project tender (private or public sector's). We can also deliver feasibility studies or/and data models for a PV project.
- ◆ **Technical Training Provider.** We can deliver special courses to your staff which will take place in a PV constructional field in Greece. The perspective goal is a full understanding of various details on all PV constructional conditions (rooftops, tracker, Medium Voltage Power Plant).



## PROJECTS CONSTRUCTION CC POWER PLANTS

### SAMSUN – TURKEY

Site Organization and Supervision for the Cooling Water Intake and Outfall Piping System for the SAMSUN CCPP (Combined Cycle Power Plant) 860MW of OMV (Austrian Investor Company) in Samsun, with 200m onshore part and 650m offshore parts, with GRP pipelines, 3 intake lines of 2,40m diameter and 2 lines of 3,20m diameter as outfall.



### DENIZLI - TURKEY

Site Organization and Supervision of all Civil Works of the DENIZLI CCPP 775MW POWER PLANT of RWE (German Investor Company). A project consisting mainly of Power Station building, Boiler with chimney, Cooling Water System, Water Desalination Plant, Warehouses, Workshop building, Administration building, Steel Water Tanks, Main Entrance building, Perimeter Fence and Gate, Drainage and other infrastructure works, Internal Roads network and other.

Projects' Management, Supervision and Technical Support

Projects construction in parts or a whole

Renovation of structures, buildings and apartments

Testing of existing structures and structural reinforcement

Construction of commercial projects

Buildings, Industrial, Energy, Roads, Harbor and Offshore works, Environment and Repair and Revamp works.

## COMPANIES' EXECUTIVE PERSONNEL

### Dr. Panagiotis Zervas

Ph.D. in Chemical Engineering, National Technical University of Athens. His area of interest and specialization refers to Renewable Energy Sources Systems, Hydrogen Technologies, Process and Systems Optimization, Control Systems and Computational Fluid Dynamics as well as combination of the above in military applications. He has written many articles in scientific journals and in press. Until today he remains as General Director in Cardel S.A. and CEO in Econois Ind., Comm. & Techn. S.A.

### Kostas Terzis

Diploma in Electrical and Computer Engineering, University of Patras, MSc in Energy Production & Management NTUA, Graduate of the Department of Industrial Management, University of Piraeus. He has held administrator of Energy Trading Ltd, consultant of WIND7 AG and ISOLUX CORSAN, while he has completed study of SRF combustion power plants of 600 MW for ENGAL SA. Areas of Expertise: Photovoltaics, Organic Rankine Circle, Biomass, Feasibility studies

### Panagiotis Lagouranis

Diploma in Electrical & Computer Engineering NTUA, MSc in Energy Production & Management NTUA, Ph.D. student of Electrical Engineering. He has served as technical consultant of ZEFYROS Ltd. for the development of wind farms, technical consultant of BI-OZEPHIROS Srl in the developing of 600 MW wind farm based in Romania. Areas of expertise: Project management and studies of wind power plants, Photovoltaics, Biomass

### Georgios Markou

Diploma in Electrical & Computer Engineering NTUA, and also in Civil Engineering NTUA, MSc in Energy Production & Management NTUA. He has served as: technical consultant of TECOM SA for the development of a photovoltaic plant 2MWp and Head of Solar Energy Department of PPC Renewables SA, managing a portfolio of more than 300MW of pv plants. He has completed studies and supervising construction of wind farms (60MW). Areas of Expertise: Photovoltaics, Wind, project management and electrical interconnections of RES-based power plants, Biomass

### Michalis Liolousis

Diploma in Electrical Engineering, University of Patras. 15 MWp PV field experience. Member of the Institute of Electrical and Electronics Engineers (IEEE)

### Antonios Katsamagkos

Electrical Engineer. Work experience in the technical and maintenance department for Photovoltaic Stations of total power 5 MWp

### Anastasios Mastrapas

Diploma in Electrical Engineering, University of Patras. MSc in Applied Economics and Finance for Executives, AUEB. He has served as Sales Manager at Cardel Energy from 2010 to 2012. Member of the Institute of Energy for South East Europe (IENE)

### Alexandra Peppas

Diploma in Electrical & Computer Engineer NTUA, M.Sc. Production & Energy Management NTUA. Working experience in the Regulator Authority for Energy.

### Chara Arvaniti

Diploma in Architecture Engineering, NTUA. Civil Engineer T.E. and Degree holder in Construction Engineering Designer using computer.

### Antonios Kottos

Electronic Engineer. He has also work experience in the design and implementation of security systems as well as in construction of 5 MWp PV Plants

### Nikolaos Lalis

Electrical Engineer, T.E. He has worked as a technician in the realization of PV Power Plants and their security systems.

### Eirini Rouchota

Graduate of the University of the Aegean. She worked for INTRACOM Group of Companies, as a Personal Secretary and Administration Assistant. Since April 2012 she has been appointed by C|Energy, as Personal Secretary & Administration Assistant

### Mardas Vassilis

Diploma Civil Engineer NTUA, MSc NTUA Analysis & Design of Earthquake Resistant Structures

### Synodinos Nikos

Diploma Civil Engineer NTUA

### Katostaras Ilias

Diploma Civil Engineer NTUA, MSc NTUA Analysis & Design of Earthquake Resistant Structures



*“We design scientifically;*

*We implement responsibly”*



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