



Research Projects & Initiatives



Clean Energy

9TH HAEE – Energy Transition Symposium

Innovation Day, 23 May 2024

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About the Company



- Clean Energy Ltd. **was founded in 2010** by researchers of CERTH/ Chemical Process & Energy Resources Institute (CPERI) , in order to support the Institute on the further development, promotion and commercialization of **innovative technology concepts related to energy and environment.**
- The company also cooperates with other companies and institutes worldwide towards the further **development and promotion of innovative technologies**, which are in the first commercialization stage and have a considerable potential to become highly competitive in the future.
- Clean Energy Ltd provides also a wide portfolio of services to potential investors in the field of **waste management and circular economy.**

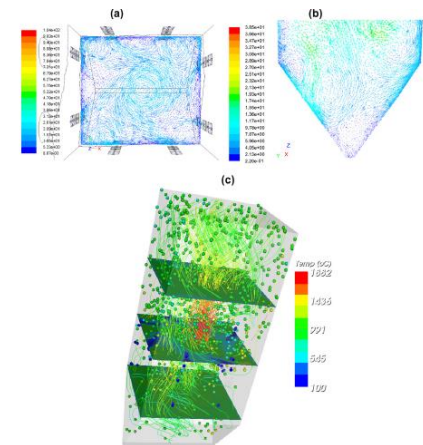
Clean Energy Ltd. is a spin-off company of CERTH/ CPERI active in the development, demonstration and marketing of low carbon technologies in the energy sector



Overview of company's expertise



- Development of projects promoting **Renewable Energy Sources (RES)**
- Thermal utilization technologies of **biomass and waste recovered fuels**
- Development, demonstration and promotion of **circular economy principles**.
- Designing and dimensions of **engineering components for energy production**





Our vision



- To become a **leading company** in the development and promotion of new and **competitive biofuel utilization technologies**
- To provide expertise for the **efficient deployment of RES** and **circular economy** aspects for the benefit of customers
- To support and promote **entrepreneurship** through **research and innovation.**
- To promote **green energy technologies and applications.**





Engineering & Consulting Services



- Studies on **alternative fuel availability** and logistics (agricultural residues, waste derived fuels, tire derived fuels etc)
- **Exploitation of alternative biofuels**
- **Project feasibility studies**
- **Engineering consulting services** dealing with plant layout and technical specifications for main parts (boiler, steam turbine) and balance of plant
- **Techno-economic evaluations** regarding the energy recovery of waste biomass
- Technical support to industry for proper **utilization of waste following circular economy principles**





Our collaborations



Collaboration with **industries, research centers and companies** abroad, such as:

- ❖ BEST (Austria),
- ❖ LNEG (Portugal),
- ❖ SEVEN ENERGY (Czech republic),
- ❖ TRACTEBEL (Italy),
- ❖ GIZ (Germany)



But also contracts with **Greek companies** such as:

- ❖ METKA, ELPEDISON, PPC RENEWABLES, PPC SA, ECOELASTIKA, TOSOH HELLAS, TERNA DESFA, DEDA, AKTOR, TUV HELLAS, Athens International Airport (AIA)



Technical support to **Municipalities and public bodies** such as:

- ❖ Municipality of Servia, Municipality of Tripoli
- ❖ Regional Development fund of Western Macedonia Region
- ❖ DH of Ptolemaida, DH of Megalopoli





Indicative projects / Circular economy



- ❖ The Cooperative Formation **CHOICE (Cooperation for & Harvesting from Open Innovation in Circular Economy)**: Cooperation for the utilization of Open Innovation in the Circular Economy **utilizes international good practices in the field of Open Innovation and focuses on the development of the Circular Economy.**
- ❖ The Collaborative Formation **aims to support 50 businesses in different sectors** of the economy (food and beverage processing, food packaging, agri-food sector, environmental technology management systems, waste collection and recycling, clean energy production (e.g. biogas)) through different development paths of their innovation capabilities.





Role of Clean Energy/Circular economy



Technical support to member companies of the Cooperative Innovation Formation (CIC)



Laboratory analyses to investigate the biogas produced from different substrates

Development of a database to record the materials driven to the residual fraction

Support of a MIS tool development through integration of prediction algorithms for biowaste generation

Assessment of environmental indicators for incorporation into standards

Methodology for transportation costs



Indicative projects / Biogas projects



PPC Renewables	<i>Technical Due Diligence Report in the framework of acquisition of a biogas plant in the area of Palaio-manina-Aitoloakarnania Region</i>
Hellenic Association of Biogas Producers (HABio)	<i>Technical support regarding production and distribution of biogas in the framework of REGATRACE project</i>
DEDA	<i>Contract directly awarded for the scientific and technical support of DEDA for the implementation of pilot projects related to the production, injection and use of biomethane in existing distribution networks</i>





Indicative projects / Energy projects



PPC SA	<i>Efficiency measurements of electric boilers to cover the needs of District Heating of Ptolemaida</i>
HELECTOR SA	<i>Technical Support for Bidding in EPC / Turn-Key Tender for the Development of Hot water production unit through Natural Gas in the premises of PPC Kardias</i>
AKTOR SA	<i>Technical Support for Bidding in EPC / Turn-Key Tender for the Development of a New Electricity and Heat Cogeneration Unit.</i>
SOLERGON SA	<i>Measurement of thermal power and efficiency of a hot water boiler-UNICAL 10MWth for District Heating of Megalopoli</i>
District Heating of Megalopoli	<i>Technical support in the licensing procedures required for a LPG boiler</i>



Indicative projects / Biofuels projects



ATHENS INTERNATIONAL AIRPORT	<i>Feasibility Study on the use of biodiesel in AIA in the framework of EU funded STARGATE project</i>
Biodiversity Protection Society of Thrace	<i>Feasibility study on the possibilities of energy utilization of the forest residues of the Dadia-Lefkimi-Soufli National Forest Park</i>
EXERGIA ENERGY	<i>Study on development of outlook for the necessary means to build industrial capacity for drop-in advanced biofuels</i>
TUV HELLAS	<i>Provision of services in the framework of the project KILKIS ELVI BIODIZEL</i>





Indicative projects / Environmental projects



DESFA SA	<i>Environmental study for air quality monitoring in the Elefsina port</i>
ECORESET SA	<i>Measurement of PM1, PM2.5, PM4, PM10, TSP as well as the number of particles per cubic centimeter, and presentation of results through the use of a Dispersion Model in Ecoreset facility at Agios Georgios in Aspropyrgos.</i>
HERAKLION PORT AUTHORITY SA	<i>Design and organization of a system for permanent recording and monitoring of the concentration of atmospheric pollutants in the port of Heraklion</i>
HERAKLION PORT AUTHORITY SA	<i>Installation of a permanent recording and monitoring system of atmospheric pollutant concentrations and sea water quality.</i>



Indicative projects /Waste management projects



ECOELASTIKA	<i>Sampling of wire produced from the tire machining process to determine wire purity (wt%) in each wire sample.</i>
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	<i>Guidance to develop by-products and end-of-waste criteria and proposals for draft legislation in Greece</i>
ECOELASTIKA	<i>Characterization of textile derived from end of life cycle tyres and study of alternative uses in the framework of circular economy</i>
ECOELASTIKA	<i>Wear resistance tests to rubber tiles according to EN5470-1, EN14836 and EN13892-4.</i>



%budget per scientific field



PRODUCTION OF BIOGAS



GEOTHERMAL ENERGY



SOLAR ENERGY



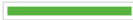
POWER GENERATOR



WASTE MANAGEMENT



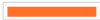
CFD SIMULATIONS



ENERGY EFFICIENCY MEASUREMENTS AND LICENSING



BUILDING AND ENERGY EFFICIENCY



ALTERNATIVE BIOFUELS AND LOGISTICS





Our future goals



increase profitability through **participation to EU and national funded projects** and through **contracts with industry** in Greece and abroad

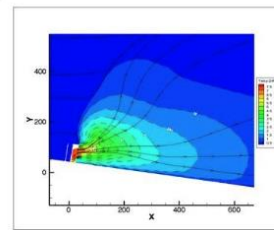
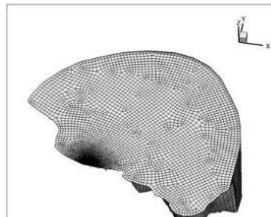


Enter new markets related to **application of circular economy models** to industrial clients

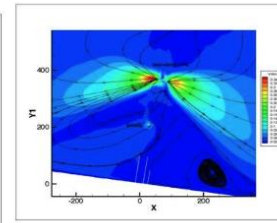


Enter new markets related to **digital transition of companies, co-working spaces and incubators** offering an extended portfolio of related consulting services

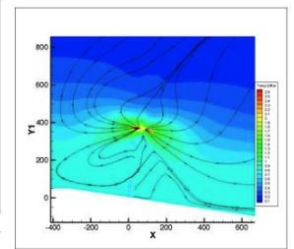
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Temperature difference spatial distribution for the case of an East wind direction in a geometry of a channel type hot water discharge system



Sea current spatial distribution for the case of a North wind direction in a geometry of a diffusers type hot water discharge system



Temperature difference spatial distribution for the case of a North wind direction in a geometry of a diffusers type hot water discharge system



Σκοπιμότητα Έργων



Τεχνικές Προδιαγραφές & Προμήθεια Εξοπλισμού



Αδειοδότηση & Άλλες Υπηρεσίες

Υπηρεσίες στο Σύστημα Εμπορίας Ενέργειας



Clean Energy

Thank you!

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