

# EnerCoRD Corporate Presentation

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# 01. Company Identity

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**EnerCoRD** – ([www.energord.com](http://www.energord.com)) - is a **Consulting, Research and Project Development** company, with a branch in Switzerland and Greece, in the field of energy systems established in **2005** as part of the **EnerCo** team of companies.

EnerCoRD is active in **Greece, South-east Europe, Central Europe, Nordic Europe, USA and South America** offering services in the following fields:

- **Consulting:** for the energy assets' **portfolio** and **risk management**, on engineering-economic energy assets **portfolio evaluation**, for the energy assets **due-diligence**, on the development and implementation of new **regulatory schemes**, for **business development, strategic** and **executive advice**, on the **integrated water resources** management optimisation and on **environmental studies** for energy systems development.
- **Research:** in **methodologies** for energy systems planning operation and expansion, in energy assets' **portfolio** and **risk management** processes and in **renewable energy sources** (Solar, Wind, Hydro, Bio-fuels and Bio-Mass).
- **Project Development:** of **IT Energy tools** (ETRM, Optimisation/Simulation, Forecasting) **renewable energy projects** (Solar, Wind, Hydroelectric, Bio-fuels, Bio-Mass and waste to energy)

Our focus in EnerCoRD is on providing **customised solutions** to the client needs, emerging from our **internal team** know how and our **international collaborations**, while keeping a **close cooperation** with the client's **technical** and **decision making** groups, complemented by intensive **follow-up** and **quality control**.

















# 01. Company Identity

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**EnerCo** – team of companies has been established in **2005** in the field of energy systems consisting of:

- **EnerCoRD** Energy **consulting, research, project development, USA, GR**  
[www.EnerCoRD.com](http://www.EnerCoRD.com)
- **EnerTop** **Computational tools** development for energy, **USA, GR**
- **EST Energy RES GR, CH** **Solar plants** engineering, procurement, construction, **GR, CH**  
[www.EST-RES.com](http://www.EST-RES.com)
- **EnerServ** Integrated **energy management** services and **energy efficiency** upgrade, **GR**  
[www.ener-serv.com](http://www.ener-serv.com)
- **EnerStruc** Steel **structures** and **foundations** design and EPC, **manufacturing** of metal **structures** and **pv mountings, aluminium** and **PVC building frames, GR**  
[www.ener-struct.com](http://www.ener-struct.com)
- **EnerMarine** **Energy efficiency upgrade** and **shipbuilding** in the **maritime** industry, **GR**  
[www.ener-marine.com](http://www.ener-marine.com)
- **EnerInC** Energy Investments Company

# 01. Company Identity – team EnerCo

EnerCo						
		 EST RES				
<a href="http://www.EnerCoRD.com">www.EnerCoRD.com</a>		<a href="http://www.est-res.com">www.est-res.com</a>		<a href="http://www.ener-serv.com">www.ener-serv.com</a>	<a href="http://www.ener-struct.com">www.ener-struct.com</a>	<a href="http://www.ener-inc.com">www.ener-inc.com</a>
		  				
<b>Energy Consulting, Research and Project Development</b>	<b>Optimisation Tools for Energy Systems</b>	<b>RES Systems Development, Financing, Engineering, Procurement and Construction, O&amp;M, Project Management</b>	<b>Integrated Energy Management Services</b>	<b>Steel Structures, Foundations and Energy Projects Construction</b>	<b>Energy Investment Company</b>	<b>Engineering, Procurement and Implementation (EPI) company in Maritime Industry</b>
<p><b>Consulting</b></p> <ul style="list-style-type: none"> <li>- Energy assets' portfolio and risk management</li> <li>- Engineering-economic energy assets portfolio evaluation</li> <li>- Energy assets due-diligence</li> <li>- On the development and implementation of new regulatory schemes</li> <li>- Business development</li> <li>- Strategic and executive advice</li> <li>- On the integrated water resources management optimisation</li> </ul> <p><b>Research</b></p> <ul style="list-style-type: none"> <li>- Methodologies for energy systems planning operation and expansion</li> <li>- Energy assets' portfolio and risk management processes</li> <li>- Renewable energy sources (Solar, Wind, Hydro, Bio-fuels and Bio-Mass)</li> </ul> <p><b>Project Development</b></p> <ul style="list-style-type: none"> <li>- IT Energy tools (ETRM, Optimisation/Simulation, Forecasting)</li> <li>- Renewable energy assets (Solar, Wind, Hydroelectric, Bio-fuels, Bio-Mass and waste to energy operation optimisation)</li> </ul>	<p><b>Consulting</b></p> <ul style="list-style-type: none"> <li>- Energy Systems optimisation algorithms</li> <li>- Energy Systems Modelling</li> </ul> <p><b>Research</b></p> <ul style="list-style-type: none"> <li>- Energy Systems optimisation algorithms</li> <li>- Energy Systems Modelling</li> </ul> <p><b>Computational Tools Development</b></p> <ul style="list-style-type: none"> <li>- Computational tools development and implementation</li> <li>- Algorithms development and implementation</li> </ul>	<p><b>Grid Connected Systems</b></p> <ul style="list-style-type: none"> <li>- Solar Photovoltaics</li> <li>- Wind Power Systems</li> <li>- Small and Large hydroelectric systems</li> <li>- Solid and liquid biomass energy systems</li> <li>- Biogas energy systems</li> <li>- Co-generation systems</li> <li>- Diesel, Petrol and Gas Generators systems</li> </ul> <p><b>Off-Grid Systems</b></p> <ul style="list-style-type: none"> <li>- Solar Photovoltaics Systems</li> <li>- Wind Power Systems</li> <li>- Hybrid systems</li> </ul> <p><b>Lighting PV Systems</b></p> <ul style="list-style-type: none"> <li>- Street light with LED and PV</li> <li>- City park lights with LED and PV</li> <li>- Factory area lights with LED and PV</li> </ul> <p><b>Solar Structures</b></p> <ul style="list-style-type: none"> <li>- Car port (EnerPort)</li> <li>- Warehouse and Solarhomes</li> <li>- PV Solarhouses</li> </ul> <p><b>Services and Equipment Supplier</b></p> <ul style="list-style-type: none"> <li>- Engineering, Financing and Due Diligence Services</li> <li>- Equipment supply: Energy Partners, Construction Companies, Banks and Funds, Large Retailers</li> </ul>	<p><b>Energy Diagnosis</b></p> <p>Measurements, Energy and Cost Balances, Energy Improvement Actions Detection, Cost - Benefit Analysis</p> <p><b>Project Development</b></p> <p>Detailed Market's survey, Offers Selection, Administrative procedures, Feasibility study</p> <p><b>Project Implementation and EPC</b></p> <p>Support and Assessment of Financial Sources, Detailed Design, Installation &amp; Commissioning of the Equipment, Training, Operation and Maintenance services, Follow-up and monitoring</p>	<p><b>Pre-Engineering</b></p> <ul style="list-style-type: none"> <li>- Wind power, solar PV, solar thermal, biomass and co-gen</li> <li>- Steel structures, concreteless foundations</li> </ul> <p><b>Detailed engineering</b></p> <ul style="list-style-type: none"> <li>- Wind power, solar PV, solar thermal, biomass and co-gen</li> <li>- Steel structures, concreteless foundations</li> </ul> <p><b>Manufacturing</b></p> <ul style="list-style-type: none"> <li>- Industrial manufacturing of pv mountings, steel structures and earth screws</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>- Solar PV, solar thermal, biomass and co-gen</li> <li>- Steel structures, concreteless foundations</li> </ul> <p><b>Project Management</b></p> <ul style="list-style-type: none"> <li>- Wind power, solar PV solar thermal, biomass and co-gen</li> </ul>	<p><b>Energy Fields</b></p> <ul style="list-style-type: none"> <li>- Solar PV</li> <li>- Small wind power</li> <li>- Solar Thermal</li> <li>- Biomass</li> <li>- Cogeneration</li> </ul> <p><b>Financing</b></p> <ul style="list-style-type: none"> <li>- Build, Own, Operate and Transfer</li> <li>- Build, Own and Transfer</li> <li>- Build and Transfer</li> </ul> <p><b>Investment Type</b></p> <ul style="list-style-type: none"> <li>- Full Ownership</li> <li>- Minority Ownership</li> </ul>	<p><b>Fields of Activity</b></p> <ul style="list-style-type: none"> <li>- Engineering and Financial advice in the field of Ship Building</li> <li>- S&amp;P, Dry Docking, Ship Building and Financing in cooperation with its partners Sumec Marine Ltd.</li> <li>- Energy efficiency Diagnosis, Auditing, Improvement and Implementation</li> </ul> <p><b>Company Highlights</b></p> <ul style="list-style-type: none"> <li>- EM Develops and Implements integrated energy service strategies that reduce and manage our clients' energy costs</li> <li>- EM is set to Achieve long term, mutually successful partnerships through energy management services, with their clients</li> <li>- EM Operates with a highly expert, academic related and self-governing oriented work environment</li> <li>- EM has several on-going partnerships with academic institutes in Greece, Europe, USA and Brazil</li> </ul>

## 02. Sectors of Activity

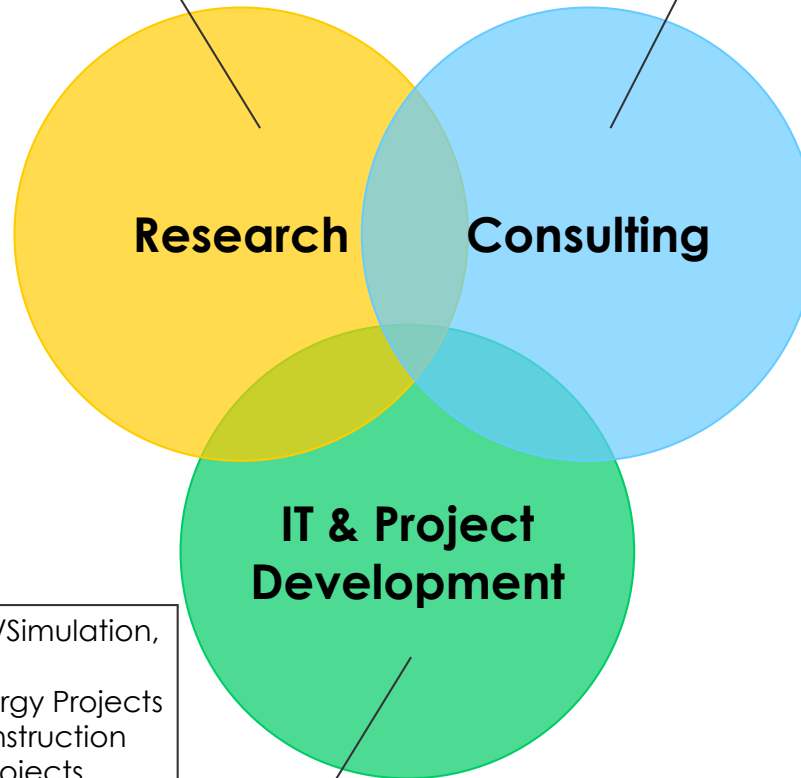
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- **Energy utilities**
- **Energy trading**
- **Hydroelectric assets**
- Wind power and photovoltaic assets
- Insurance

## 02. Fields of Activity

EnerCoRD **core fields** of activity

- Risk Control processes
- Hydrological models
- Risk Management Techniques
- Renewable Sources of Energy



- Engineering-Economic energy asset portfolio evaluation
- Investment Studies
- Regulatory studies
- Environmental Studies
- Business Development
- Strategic consulting
- Executive Consulting
- Due-diligence
- Courses design

- IT Energy tools (ETRM, Optimisation/Simulation, Forecasting, )
- Renewable and Conventional Energy Projects Engineering Procurement and Construction
- Residential and Industrial Energy Projects
- Project Financing
- Licensing procedure and Grant Submission

## 02.Fields of Activity - Consulting

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### Energy Assets Portfolio Management

- Physical and Financial **risk management**
- **Portfolio management**
- **Price** and **fundamentals forecasting**
- Engineering-economic **Due-diligence**
- Generation **assets valuation**
- **Distribution** and **Transmission asset management**

### Energy Market Strategy development

- Development and implementation of new **regulatory schemes**
- **Business Development, Strategic consulting, Executive Consulting** and **Advisory**
- **Investment banking** services on **energy**

### Courses and Seminars

- **Professional courses** on the areas of energy systems optimisation and Energy Assets Portfolio Financial Optimisation
- Seminars on the areas of risk management, portfolio management, assets valuation, price and fundamentals forecasting



## 02.Fields of Activity - Research

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### Energy Systems Optimisation

- **Risk management** of fundamental factors (fuel prices, climatic variables and hydrologic conditions)
- **Water Resources management** optimisation (multiple uses of water)
- Energy systems **integral optimisation**

### Energy Assets Portfolio Financial Optimisation

- Physical and Financial **risk management**
- **Portfolio management**

### Courses

- **Academic courses** on the areas of energy systems optimisation and Energy Assets Portfolio Financial Optimisation

## 02.Fields of Activity – Energy IT Development

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EnerCoRD specialises in the development of **large scale IT energy** projects for the implementation of:

- **ETRM** (Energy Trading and Risk Management) tools in:
  - Utilities
  - Trading floors
  - Energy funds
  - TSOs (Transmission System Operators)
  
- **Computational tools**
  - Optimisation of expansion, operation policy and scheduling
  - Simulation of large scale systems
  - “Big-data” time series analysis
  - Portfolio and product risk analysis
  
- **Forecasting tools**
  - Fundamental solution based forecasting tools
  - Statistics based forecasting tools
  - Hybrid tools
  - Real-time, short term, long term forecasting tool for market prices, demand load and inflows

# 03. Computational tools – R&D + Implementation

## Medium term Operation and Scheduling

01.Ener-MTOC	<b>Medium Term Operation / Centralised:</b> Mid-long term hydrothermal systems optimisation for both liberalised and non-liberalised markets under power transmission and gas network constraints
02.Ener-OF	<b>Optimal Flow:</b> Transmission network power flow optimisation
03.Ener-GPO	<b>Gas Portfolio Operation:</b> Gas portfolio contract and generation assets optimisation

## Short term Operation and Scheduling

04.Ener-STO	<b>Short Term Operation:</b> Short term and real-time hydrothermal systems optimisation for both liberalised and non-liberalised markets
05.Ener-ASO	<b>Ancillary Services Operation:</b> Electricity balancing and intraday market operation optimisation

## Long term Planification

06.Ener-GP	<b>Generation Planning:</b> Long term generation expansion planning optimisation
07.Ener-TP	<b>Transmission Planning:</b> Long term transmission stability and expansion planning optimisation

## Metering and Settlement

08.Ener-TT	<b>Transmission Tariff:</b> Transmission tariff calculation using various methodologies
09. Ener-MS	<b>Metering and Settlement:</b> Computational tool for the metering and settlement with exchanges and TSOs

## Risk Management and Portfolio Optimisation

10.Ener-MTOL	<b>Medium Term Operation / Liberalised:</b> Mid-long term hydrothermal systems optimisation for liberalised market using derivative markets and risk constraints
11.Ener-FPM	<b>Financial Portfolio Management:</b> Financial portfolio optimisation and risk management for energy markets
12.Ener-GAP	<b>Energy Auctions Participation:</b> Bidding and participation optimisation of the generator for energy contract auctions

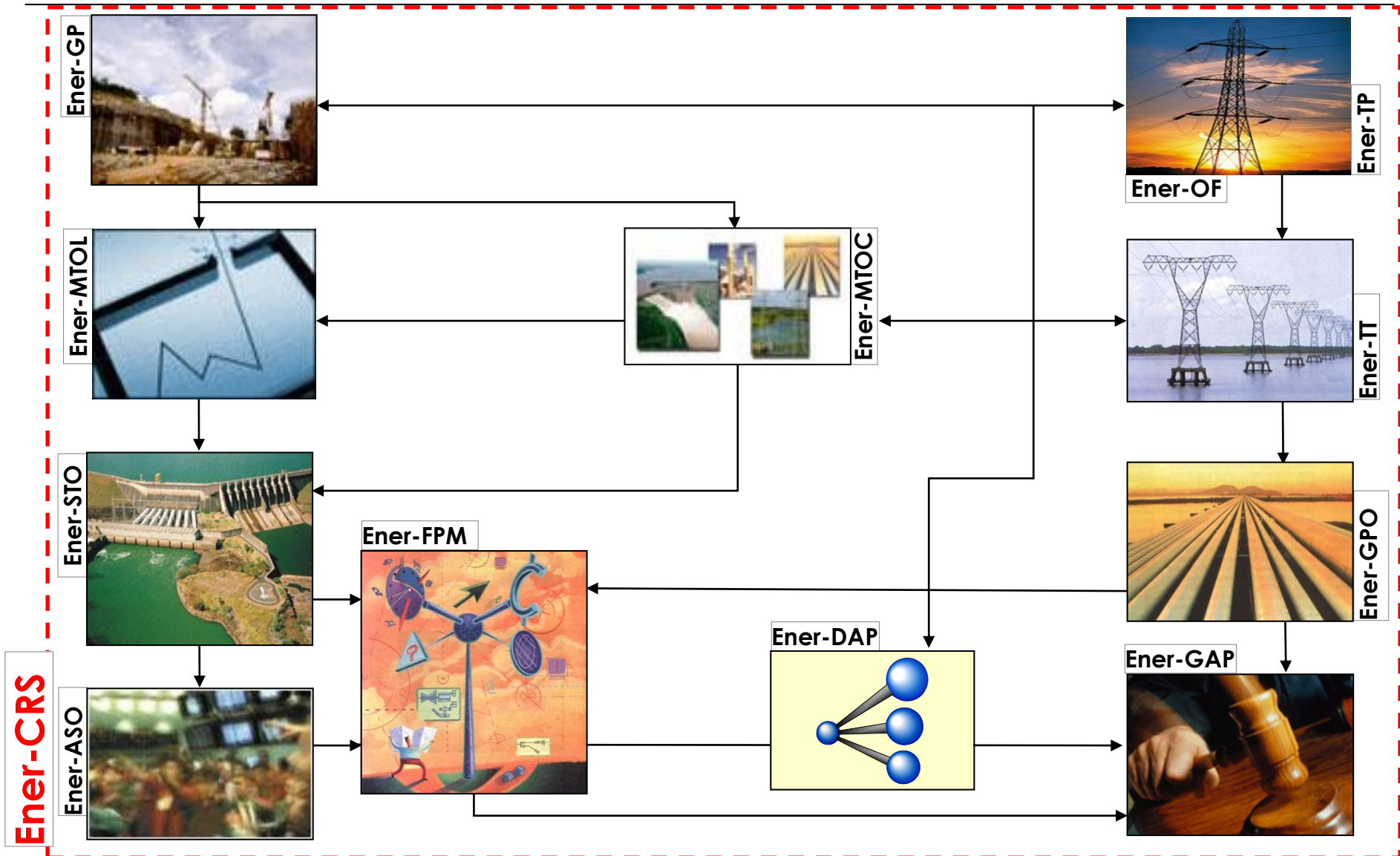
## Energy Auctions

13.Ener-DAP	<b>Distributor Auction Participation:</b> optimisation of the distributor contracting strategies in energy auctions
14.Ener-EAS	<b>Energy Auction Simulation:</b> Simulation of the market rules of energy contract auctions

## Data Base

15.Ener-CRS	<b>Client Repository Service:</b> Centralised tool and database
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# 03. Computational tools – R&D + Implementation



Ener-CRS

## 04.EnerCoRD Resources

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EnerCoRD combines its **experts** with the **international network** that has built over the years of **specialised companies, expert consultants** and **academic institutes** in order to bring the optimal result to its clients.

More Specifically these resources are structured as follows:

- **EnerCoRD experts**
- **Academia**
- **Industry**

## 04.EnerCo Resources

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EnerCoRD consists of **experts** in the fields of:

- Energy Systems Engineering
- Power Systems and Plants Engineering
- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Environmental Engineering
- Financial Analysis and Engineering
- Legal consulting
- Project financing
- Project management

## 04. EnerCoRD Resources - Academia

In order to strengthen further its technical skills, EnerCoRD collaborates in projects with **international** and **local academic** and **scientific institutes**.

### Academics

	<b>AUA</b> (Agricultural University of Athens) (GR)
	<b>AUTH</b> (Aristotle University of Thessaloniki) (GR)
	<b>EDF</b> Recherche et Development - OSIRIS (FR)
	<b>EPFL</b> (Ecole Polytechnique Fédérale de Lausanne) (CH)
	<b>MIT</b> (Massachusetts Institute of Technology) - LFEE - AGREA - (USA)
	<b>NHH</b> (Norwegian School of Economics and Business Administration) (NO)
	<b>NTNU</b> (National Technical University of Norway) (NO)
	<b>NTUA</b> (National Technical University of Athens) (GR)
	<b>UNESCO-IHE Delft</b> (NE)
	<b>UTH</b> (University of Thessaly) (GR)

## 04. EnerCoRD Resources - **Industry**

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### Collaborations

EnerCoRD has built over the years a global network of collaborations consisting of:

- **specialised companies** with important know-how in the field of energy systems
- internationally recognised experts in **decision under uncertainty, portfolio and risk management, financial engineering, hydrology, statistics, transmission networks, regulation, renewable energy systems design and engineering, gas systems operation, gas system engineering and energy project management.**



## 05. Client Categories List

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- Biomass Producers
- Development Groups
- Electricity Consulting Companies
- Electricity Utilities
- Energy Service Investment Companies
- Energy Trading and Risk Management Tools Companies
- Energy Trading Companies
- Engineering Groups
- Gas Utilities
- Investment Banks and Funds
- Management Consulting companies
- Regulators
- Renewable Energy Sources Project Development Companies
- Research Centres
- Transmission System Operators

# Contact details

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## EnerCoRD

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2nd floor  
N. Plastira Street 4  
Nea Smyrni – 171 21  
Attiki  
Hellas

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**Tel:** +30 21 0932 1700  
**Fax:** +30 21 0932 1717

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**URL:** [www.enercord.com](http://www.enercord.com)  
**Email:** [office@enercord.com](mailto:office@enercord.com)

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