



**ENERGY CONSERVATION  
via ENERGY EFFICIENCY & RENEWABLES**

[www.enerkon-energy.com](http://www.enerkon-energy.com)

- ✓ Energy audits & energy surveys in industries, infrastructures & buildings, technical due diligence
- ✓ Energy certificates for energy savings and CO2 reduction
- ✓ Certification in ISO 50001 (Energy efficiency), ISO 14001 (Environment)
- ✓ Practical reduction of energy consumption for el.power, thermal energy, fuels, compressed air, etc. in industries & buildings
- ✓ Feasibility studies & engineering for biomass, biogas, waste heat recovery, cogeneration by internal-combustion-engines & turbines, synthetic gas via pyrolysis & gasification, PV & thermal solar plants, evaporative (adiabatic) cooling, HVAC, Rankine-organic-cycle, heat pumps, etc.
- ✓ Industrial wastes utilization, municipal solid waste, chemical cleaning of equipment & pipes, water conditioning, waste water
- ✓ Energy monitoring, automation incl. frequency inverters, power converters, soft starters/stoppers, harmonics filters, etc.
- ✓ Energy efficiency, renewables & alternative energies subsidized by euro programs
- ✓ Manufacture of energy equipment & metal constructions

Office № 01

Bulgaria, City Plovdiv – 4000, Central reg.  
Bul. Maritsa № 42

Office № 02

Bulgaria, City Sofia, Vitosha reg.  
Str. XXI Century № 34, office 19-2

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*Company ENERKON Ltd is:*

- *Member of Bulgarian Installation Chamber*
- *Member of Geothermal Society for Thermal Energy*
- *Co-founder & member of Industrial cluster GREEN SYNERGY*
- *Certified energy auditor at EBRD (European Bank for Reconstruction & Development) for BEECIFF program – GREEN ECONOMY – for subsidizing in industries*

Expertise of ENERKON:

- Thermal engineering (HVAC incl. solar energy, heat pumps, waste heat recovery)
- Electrical engineering (low & high voltage, reactive energy control, electronic frequency controllers/inverters for el.motors, etc.)
- Industrial & building automation (incl. PLC, power control, etc.) )
- Industrial management (manufacturing, transfer of industrial production technology from Western companies to Bulgaria)
- Architecture & civil engineering
- Technical design, engineering and construction supervision - industrial processing plants and factories, water distribution, biogas plants, synthetic gas plants, water purification, water chemical treatment, solar thermal plants, solar PV installations, etc.
- Argon and electrical welding and fitting of metal constructions
- Manufacture of metal constructions, reservoirs, silos, conveyors, etc.
- Installation of various thermal, chemical, etc. equipment and machinery



***Breakdown of ENERKON activities:***

<i>Activity</i>	<i>% from total</i>
Energy audits, feasibility & pre-investment studies, technical due diligence audits, project development and project management in industries and civil engineering	30 %
Technical design of new factories, industrial plants, installations, facilities, infrastructures incl. cogeneration, water treatment, supply and sewage	20 %
Practical improvement of energy efficiency in industries and civil engineering, alternative energies, renewables, process automation for optimization of energy consumption	30 %
Construction of new plants, retrofit of workshops and facilities in industries and civil sites	20 %

**ENERKON is nationally licensed for executing audits on energy efficiency per Bulgarian law for energy efficiency and possesses the following certificates:**

- Certificate per public national register № 00026 / 23-12-2020 for audits on energy efficiency *in factories and industrial sites and infrastructures (warehouses, logistic centers, etc.)*
- Certificate per public national register № № 00120 / 07-11-2021 for audits on energy efficiency *in buildings – public, industrial, residential, governmental, etc. (e.g. supermarkets, hotels, schools, hospitals, kindergartens, workshops, etc.)*

 <p>РЕПУБЛИКА БЪЛГАРИЯ Агенция за устойчиво енергийно развитие</p> <p><b>УДОСТОВЕРЕНИЕ</b> ЗА ВПИСВАНЕ В ПУБЛИЧЕН РЕГИСТЪР</p> <p>Идентификационен № 00026 София, 2020 г.</p> <p>Настоящото удостоверение се издава на:</p> <p><b>„ЕНЕРКОН“ ЕООД</b></p> <p>око-седалище и адрес на управление: гр. Пловдив, бул. „Маршия“ № 42, ет. 4, ап. 10</p> <p>представявано от Георги Атанасов Атанасов</p> <p>ЕИК: 160067104</p> <p>Имена на персонала-консультанти по енергийна ефективност:</p> <p>Георги Атанасов Атанасов Любомир Христов Сервуджия Константин Петров Стояков Ангел Георгиев Козев Митко Стоев Давитров</p> <p>в уверение на това, че със Заповед № 26-ВНР-02 на изпълнителния директор на АУЕР от 25.11.2020 г. е вписан(о) в публичния регистър на лицата, извършващи обследване за енергийна ефективност и изготвяне на оценки за енергийна ефективност на предприятия, промишлени системи и системи за общинско-индивидуално осветление, съгласно чл. 59, ал. 1 от Закона за енергийна ефективност.</p> <p>Дата на издаване: 23.12.2020 г. Срок на валидност: от 23.12.2020 г. – до 23.12.2025 г.</p> <p>ИЗПЪЛНИТЕЛЕН ДИРЕКТОР</p> 	 <p>РЕПУБЛИКА БЪЛГАРИЯ Агенция за устойчиво енергийно развитие</p>  <p><b>УДОСТОВЕРЕНИЕ</b> ЗА ВПИСВАНЕ В ПУБЛИЧЕН РЕГИСТЪР</p> <p>Идентификационен № 00120 гр. София</p> <p>Настоящото удостоверение се издава на:</p> <p><b>„ЕНЕРКОН“ ЕООД</b></p> <p>око-седалище и адрес на управление: гр. Пловдив, бул. „Маршия“ № 42, ет. 4, ап. 10</p> <p>представявано от Георги Атанасов Атанасов</p> <p>ЕИК: 160067104</p> <p>Имена на персонала-консультанти по енергийна ефективност:</p> <p>Георги Атанасов Атанасов Георги Николов Георгиев Мартина Делскиев Дакс Христо Николов Лиско</p> <p>в уверение на това, че със Заповед № 120-ВНР-01 на изпълнителния директор на АУЕР от 4.11.2021 г. е вписан(а) в публичния регистър на лицата, извършващи обследване за енергийна ефективност и сертифициране на сгради, проверка за енергийна ефективност на отоплителни инсталации с водогрейни котли и на климатични инсталации в сгради, оценка за съответствие на инвестиционните проекти на сгради по отношение на изискванията за енергийна ефективност и изготвяне на оценка на енергийните спестявания в сгради, съгласно чл. 43, ал. 1 и чл. 54, ал. 1 от Закона за енергийна ефективност.</p> <p>Дата на издаване: 4.11.2021 г. Срок на валидност: от 7.11.2021 г. до 7.11.2026 г.</p> <p><b>ИВАЙЛО АЛЕКСИЕВ</b> ИЗПЪЛНИТЕЛЕН ДИРЕКТОР</p> <p>Digitally signed by Ivaylo Vazlev Aleksiev Date: 2021.11.04 16:24:41 +02:00</p>
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**ENERKON possesses a large number of measuring devices & instruments** for thermal, ventilation, solar, electrical, etc. processes incl. gas analyzers, air humidity and velocity meters, thermometers, flow meters, el.power meters, etc.

### ***ENERKON* has experience in:**

- installation of electronic soft starters/soft stoppers combined with power controllers for electrical motors of various sizes and applications
- installation of electronic appliances for reduction of electrical losses of electrical networks in factories and buildings
- ENERKON is a partner of KESECO HELLAS (Greek branch of [KESECO – South Korea](#))
- Member of KOTRA – [Industrial-Commercial Chamber of South Korea](#)

## ***Activities of ENERKON:***

### **I Energy efficiency in industries, buildings and infrastructures**

#### **Reduction consumption of water, thermal energy and electrical energy in factories, buildings and infrastructures**

- Improving performance of utility equipment – steam generation plants, air & cooling compressors, heat distribution networks, electrical distribution, natural gas supply, water treatment, sewage, oxygen/nitrogen generation plants, CO<sub>2</sub> and other gases, etc.
- Energy efficiency audits, recommendations and guaranteed measures for improving energy status, scheduled planning for achieving targets, alternative financing (EU, Energy efficiency agency, etc)
- Optimizing expenses for technical maintenance
- Utilization of waste heat, co-generation, water treatment

#### **Alternative & renewable energies**

- Solar plants (flat solar collectors, vacuum collectors, PV, etc.) – water heating, air heating, space heating, el.generation
- Heat pumps (air-air, air-water, water-air, geothermal, etc.) for industrial and residential use
- Biomass – wood chips, industrial waste (sunflower shells, maize stalks, etc.)
- Biogas – from WWTP (waste water treatment plants), from cattle farms, from human food waste, etc.
- Synthetic gas - wood chips, agriculture waste, industrial waste
- Solar architecture & passive buildings – overall design of buildings, balance between energy efficiency and living comfort, connections and interfaces with other building systems (ventilation, heating, visual comfort)



## II Construction of new factories, reconstruction/retrofit/modernization of existing/running factories

- Feasibility studies – selection of industrial site (geology, ecology, infrastructure connections)
- Concept design and administrative permission for construction – cooperation with state and municipality authorities for obtaining legal papers and permits
- Architectural and technical design for all parts of the project – architecture, technology, civil engineering, el.engineering, HVAC, water & drainage, etc. – all design engineers are with experience in construction of multinational factories – see reference list further)
- Physical construction of factories incl. civil & installation works
- Technical due diligence for industrial facilities
- Transfer of industrial production processes from W.Europe to E.Europe
- Recruiting and training management teams and work power
- Extensions of production facilities (new production workshops, warehouses and storages, logistic centers, etc.)

### Company teams



Auditing on building energy efficiency



Project management



Technical design, feasibility studies, technical due diligence



Auditing on industrial energy efficiency

## Reference list for executed projects

### Improving energy efficiency in factories

#### Food stuff industries and agriculture



**Brewery ZAGORKA** (subsidiary of HEINEKEN B.V), city Stara Zagora (incl. brewery Ariana – city Sofia and Maltery – town Chirpan) – improving performance of utilities (steam generators, air and cooling compressors, distribution of heat, electricity and natural gas, water treatment, sewage, oxygen and nitrogen plants, steam condensation traps, etc.), optimizing expenses for technical maintenance, energy audit on steam traps in cooperation with JAICA Japan Association.

**Factory for production sweets & candies LACHITA** – city V.Tirnov, waste heat recovery from flue gases from production furnaces and dryers firing natural gas.



**Factory for production sweets & candies PRESTIGE 96** – city V.Tirnov, audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2006).

## Chemical industry and machine building

- **Factory for paints and varnishes ORGACHIM, city Rousse** – utilization of waste heat from flue gases exiting steam generators firing diesel oil; the heated water is used in production.
- **Factory for manufacture mechanical manometers & thermometers WATTS INDUSTRIES, city Plovdiv (subsidiary of WATTS INDUSTRIES – USA)** – improving utilities performance (air compressors, distribution of heat, electricity, gases, etc.), optimizing expenses for technical maintenance, consultancy on design and installation of 3 heat pumps air-air for workshops heating and cooling, feasibility study for optimization of el.consumption by installing el.energy saver brand KESECO.
- **Printing factory IDEAL, city Plovdiv** – concept design for heating/cooling facility (heat pump air-air) and supervision on execution; utilization waste heat from production machinery for heating warehouses.



- **Factory for manufacture electrical breakers SCHNEIDER ELECTRIC, town Perushtitsa, Plovdiv reg. (subsidiary of SCHNEIDER ELECTRIC – France)** – improving utilities performance (air compressors, distribution of heat, electricity and gases), optimizing expenses for technical maintenance, utilization waste heat from air compressors for heating workshops, repairs of water heating boilers and heat distribution network.

- **Factory for manufacture paints & varnishes ARABADJIYSKY, city Rousse** - solar plant for air heating of production building via thermal accumulation in stone blocks, solar architecture (roofs, facades).



- **Factory for manufacture metal constructions HRAMAR, town Krichim, Plovdiv reg.** – heating workshops via biomass firing (wood waste).





- **Factory SPARKY ELTOS for manufacture electrical tools (boring machines, angle grinders, etc.), city Lovetch (the factory is German ownership)** - audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2007); the energy audit was a part of subsidizing program from European Union for purchase by the factory of highly energy efficient multi-functional production machines and installation of cooling facility for production water, feasibility study for optimization of el.consumption by installing el.energy saver brand KESECO.



- **Factory for manufacture aluminium profiles STEELMET, city Sofia (subsidiary of VIOHALKO - Greece)** - audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2007); the energy audit was a part of subsidizing program from European Union for purchase by the factory of highly energy efficient production machines, feasibility study for optimization of el.consumption by installing el.energy saver brand KESECO.





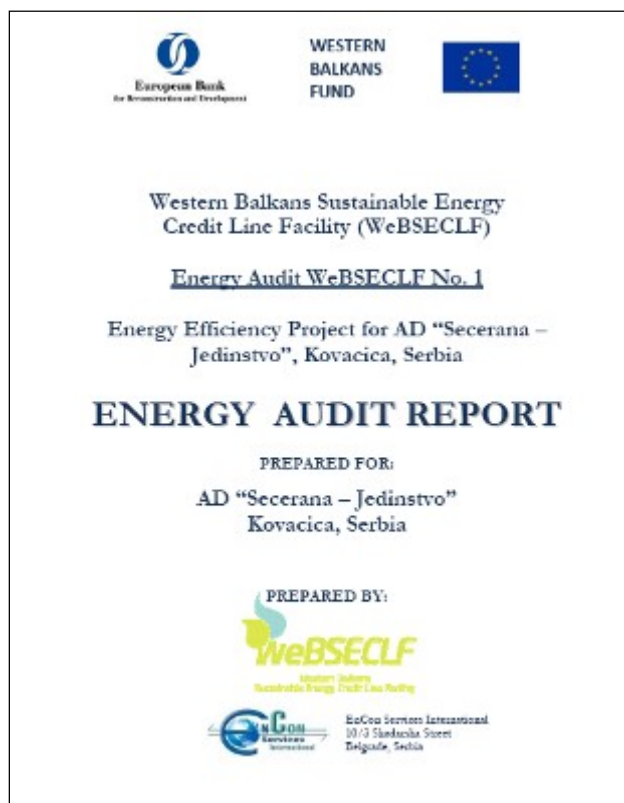
- **Factory for manufacture automobile electrical cable sets YAZAKI BULGARIA (subsidiary of YAZAKI JAPAN), city Yambol** – audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2009) and energy audit on production building (27 400 sq.m) and issue of energy passport for the building.

- **Factory for production of automobile lubricants and anti-freezers PRISTA OIL, city Rousse** – audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2009) and feasibility study for building a local steam generation plant, feasibility study for optimization of el.consumption by installing el.energy saver brand KESECO.

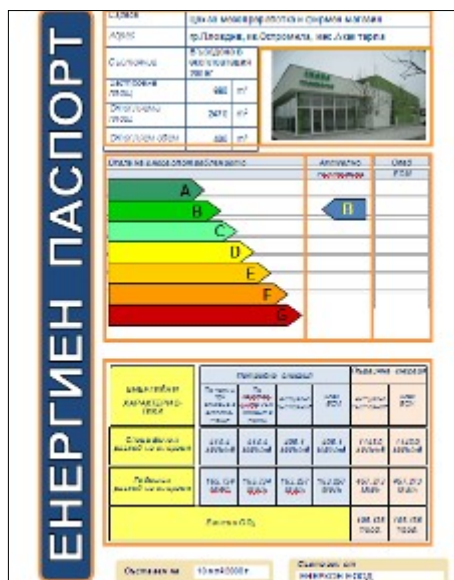




- **Factory for manufacture furniture and metal constructions NIKROM, city Lovetch** – audit on energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2009) and feasibility study for implementing an energy consumption monitoring and controlling system. The energy audit was executed in accordance with BAS subsidizing program of European Union.



- **Factoring for production of sugar & sweets SECERANA JEDINSTVO – town Kovacica, Republic of Serbia (subsidiary of NORDZUCKER GmbH – Germany)** - audit on energy efficiency for reduction of consumption of thermal & electrical energies. The energy audit was executed in accordance with subsidizing program of European Union through EBRD (European Bank for Reconstruction & Development) and the credit line Western Balkans Sustainable Energy Credit Line Facility. Feasibility study was executed for possibility of cogeneration by biogas from sugar waste.



- **Factory for processing of meat and meat products SYANA, city Plovdiv** - audit on energy efficiency for reduction of consumption of thermal & electrical energies and issue of energy passport of the production building.

- **Factory for production of polyethylene and other plastic packaging materials ASENOVA KREPOST, town Assenovgrad, Plovdiv reg.** - audit on

energy efficiency for reduction of consumption of thermal & electrical energies (the factory is a large-scale consumer of energy with consumption more than 3000 MWh/Y2009); the audit report contains a feasibility study for implementing infra-red local ceiling heating for the factory workshops.

- **Shoe production factory NEMATEX, city Plovdiv** – audit on energy efficiency and energy certification of production building (3 500 sq. m) and issue of building energy passport.



- **Dress production factory VILLY STYLE, town Stamboliysky, Plovdiv reg.** - audit on energy efficiency and energy certification of production building (3 200 sq. m) and issue of building energy passport.





### Improving energy efficiency of residential and public buildings

- **Private residential house, village Marten, Rousse reg.** – concept and technical design and execution of solar plant (mechanical circulation) for water heating; concept and technical design and installation of heat pump using deep underground water for space heating, laying wall, floor and roof thermal insulation, floor heating
- **Private residential house, town Olsberg-Bigge, Germany** – concept design and consultancy for heat pump water-water for space heating using underground water, thermal insulations, solar plant for water heating



design and execution of water heating solar plant ICS (Integrated Collector Storage)

- **Private house, Olsberg-Bigge, Germany** – concept design for solar plant for water heating, PV solar generation 20 kW roof and façade integrated

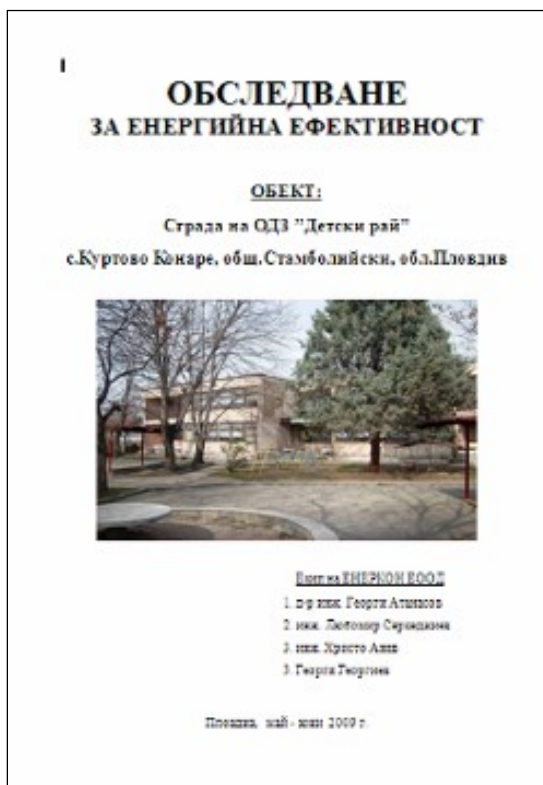


- **Municipality buildings, town Devnya, Varna reg.** – audits on energy efficiency of 11 buildings (schools, kindergartens, etc.) per subsidizing program of European Union for improving energy status of the buildings.
- **Secondary school HRISTO BOTEV, village Vetren, Varna reg.** - audit on energy efficiency per subsidizing program of European Union for improving energy status of the building.
- **College for tourism IVAN PAVLOV, city Rousse** - audit on energy efficiency per subsidizing program of European Union for improving energy status of the building.

- **Technical university Rousse** – concept and technical design and execution of solar plant (thermo-syphon) for water heating
- **Solar laboratory TNO (Research Applied Institute), Delft, Holland** – testing thermal solar collectors per European standards
- **Multi-family residential house, Rousse** – concept and technical design and execution of water heating solar plant ICS (Integrated Collector Storage)
- **Residential house, Plovdiv** – concept and technical design and execution of water heating solar plant ICS (Integrated Collector Storage)







- **Kindergarten DETSKY RAY, village Kurtovo konare, Plovdiv reg.** - audit on energy efficiency per subsidizing program of European Union for improving energy status of the building.

- **Agricultural college, city Plovdiv** – feasibility study on building energy efficiency.



- **Residential building – Beli Liliy Str., city Varna** - audit on energy efficiency and issue of building energy passport.



- **Residential building – Sinchetz Str., city Varna** - audit on energy efficiency and issue of building energy passport.

- **Residential buildings, city Skopje, Republic of Macedonia** – in partnership with company FONKO, implementation of heating/cooling heat pumps ground-coupled with vertical serpentine heat-exchangers with circulating anti-freeze agent.



- **Secondary school VASIL LEVSKY, town Novi Pazar, Shoumen reg. – 3 school buildings** – audit on energy efficiency per subsidizing program of European Union for improving energy status of the buildings (Photo № 26).

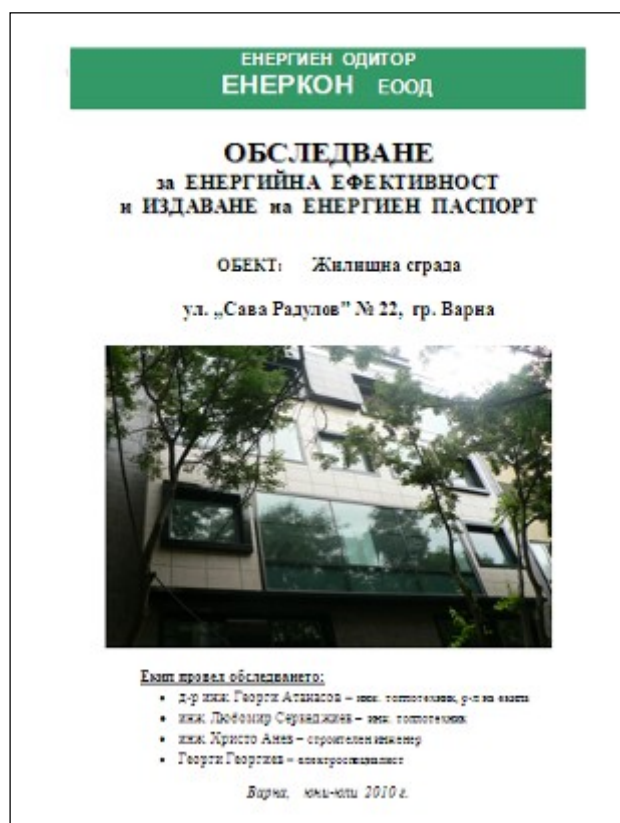
- **Residential building, village Zlati Trap, Plovdiv reg.** – solar water heating system with vacuum tube solar collectors and storage tank 160 liters.





- **Residential apartment, city Sofia** — solar water heating system with vacuum tube solar collectors and storage tank 160 liters.

- **Residential building – Sava Radulov Str., city Varna** - audit on energy efficiency and issue of building energy passport (Photo № 29).



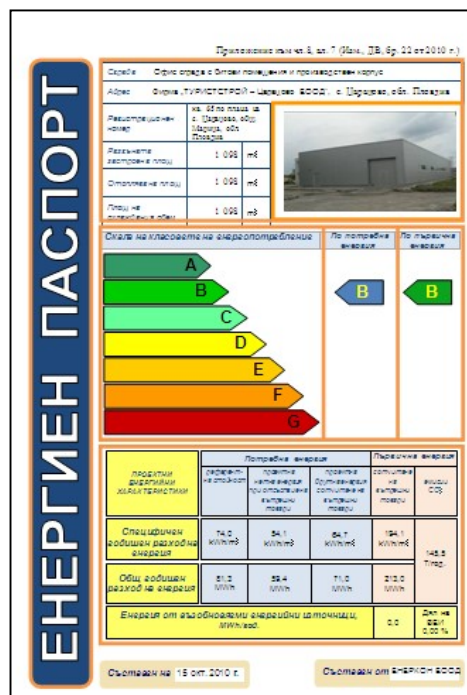
- **Supermarkets CBA, city Gabrovo** – audit on energy efficiency and optimization of energy consumption of HVAC equipment.
- **Production building of MONTAGE ENGINEERING, city Stara Zagora** – design of part “Energy efficiency” of the technical documentation, and issue of building energy passport.





- **Supermarkets CBA, town Provadia, Varna reg.** - audit on energy efficiency and optimization of energy consumption of HVAC equipment .

- **Secondary school VASIL LEVSKY, town Novi Pazar, Shoumen reg.** – overhaul of heating distribution system in 2 school buildings.



- **Factory for manufacture of metal products TOURIST STROY, village Tzaratzovo, Plovdiv reg.** – audit on energy efficiency of production building and issue of building energy passport.



- **Public hospital, town Asenovgrad, Plovdiv reg.** – 2 buildings - audit on energy efficiency per subsidizing program of European Union and issue of building energy passport.



## Energy audits & energy feasibility studies in industries

**ЕНЕРКОН оод**

**ЕНЕРГИЙНО ОБСЛЕДВАНЕ**  
на индустриални системи  
на КУЛА РИНГ АД,  
гр. Кула, обл. Видин



Обследването е проведено с цел оптимизиране консумацията на топлинна и електрическа енергия на фабриката

Обследване проведено в периода  
февр. - юни 2007 г.

Factory KULA RING –  
production of rubber  
industrial products

**ЕНЕРКОН оод**

**ЕНЕРГИЙНО ОБСЛЕДВАНЕ**  
на индустриални системи  
на ЛАЧИТА АД,  
гр. В.Търново



Обследването е проведено с цел проектиране и изграждане на система за рекулпация на отпадна топлинна енергия от технологични печи и сушилни на фабриката

Обследване проведено в периода  
март – септ. 2008 г.

Factory LACHITA – production  
of chocolate and candies

**ЕНЕРГИЕН ОДИТОР  
ЕНЕРКОН ЕООД**

**ОБСЛЕДВАНЕ И ОДИТ**  
по енергийна ефективност  
на индустриални системи,  
производствени и  
и административни сгради  
на НОВА ТРЕЙД АД,  
гр. Съединение, обл. Пловдивска



Обследване и одит проведени в периода юни - юли 2011 г.

Factory NOVA TRADE I –  
production of non-alcoholic  
drinks

**ЕНЕРГИЕН ОДИТОР  
ЕНЕРКОН ЕООД**

**ОБСЛЕДВАНЕ И ОДИТ**  
по енергийна ефективност  
на индустриални системи,  
производствени и  
и административни сгради  
на НОВА ТРЕЙД АД,  
гр. Пазарджик



Обследване и одит проведени в периода  
юни - юли 2011 г.

Factory NOVA TRADE II –  
production of non-alcoholic  
drinks

**ЕНЕРГИЕН ОДИТОР  
ЕНЕРКОН ЕООД**

**ОБСЛЕДВАНЕ И ОДИТ**  
по енергийна ефективност  
на индустриални системи, производствени  
и административни сгради на  
КОРАБОСТРОИТЕЛНИЦА РУСЕ АД  
гр. Русе



Обследване и одит проведени в периода авг.-септ. 2011 г.

Ship building factory ROUSSE  
– production and technical  
maintenance of ships

**ЕНЕРГИЕН ОДИТОР  
ЕНЕРКОН ЕООД**

**ОБСЛЕДВАНЕ И ОДИТ**  
по енергийна ефективност  
на индустриални системи,  
производствени и  
и административни сгради  
на ЮРИЙ ГАГАРИН АД,  
гр. Пловдив



Обследване и одит проведени в периода юли-септ. 2011 г.

Factory YURI GAGARIN –  
production of printed products  
and packaging



Factory SPARKY ELTOS –  
production of electrical tools



Water supply system of  
district DOBRITCH



Factory DEVIN– bottling of  
mineral water



Factory STEINER  
ELECTRONIC  
TECHNOLOGY – production  
of electronic circuit boards



Mining company  
RUDMETAL – underground  
production of zinc ores



Water supply system of district  
VARNA



Factory BULSAFIL –  
production of knit ware



Factory MAXCOM - production  
of bicycles



Factory ENERSYS –  
production of heavy duty  
electrical batteries



Factory YURI GAGARIN II  
– production of printed and  
packaging materials



Factory NIKROM MEBEL –  
production of metal furniture

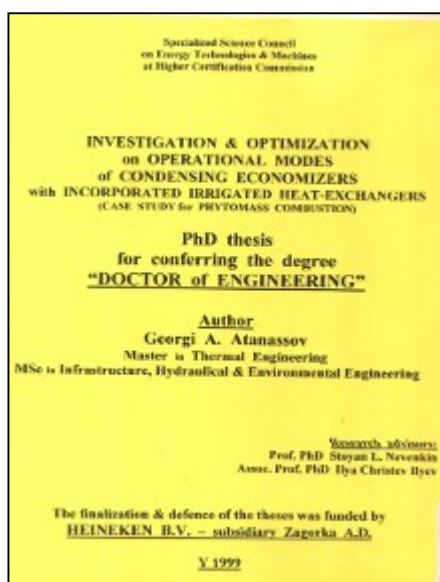


## New factories, industrial extensions and reconstructions, project management



Feasibility studies, technical design & project management for several research and innovation projects:

- Solid particles wet scrubbing & waste heat recovery for flue gases generated from solid biomass firing boilers at production factory KAMBANA, city Bourgas – feasibility study, technical design, manufacture and installation of a plant for utilization waste heat from steam generators firing biomass (sunflower shells); the waste heat is recovered through condensation of flue gases with parallel cleaning of dust (solid particles) from the flue gases; the utilized heat is used for heating incoming fresh cold water for production needs; the technical design, manufacture and construction of the waste heat recovery scrubber was a part of the PhD study of Dr. Georgi Atanasov – managing director of ENERKON; the study was partly funded by HEINEKEN B.V.
- Solar water heating facility for DUNAVSKI DRAGAJEN FLOT company, city of Rousse.
- Waste heat recovery from flue gases of ORGAHIM company, city of Rousse.
- Feasibility study for Rousse Municipality ref. collection system for biogas from municipality waste depot of Eastern city zone.
- CHIMSNAB, city Rousse – chemical treatment with waste heat recovery of stock of 500 disused pressurized containers full with different chemical gases and fluids.
- CHIMSNAB, city Gorna Oryahovitsa – chemical treatment with waste heat recovery of stock of 220 disused pressurized containers full with different chemical gases and fluids.







**Factory for manufacture of metal constructions *METALLBAU KOERNER GmbH*, town Olsberg-Bigge, Nordrhein-Westfalen, Germany, Jan 1992 – Oct 1994:**

- manufacture metal constructions, argon welding (aluminum, copper, bronze, inox, etc.), thermal insulations
- manufacture and installation solar roofs and other elements of solar architecture
- project management of manufacturing & installation activities



**UNESCO Institute for Infrastructure, Hydraulics & Environmental Engineering (IHE), Delft, Holland, Jun 1995 – Jul 1997:**

- project management in:
  - solar water heating facilities
  - optimization of co-generation process of firing biomass and biogas
  - environmental projects



**Thermal power station *MARITZA IZTOK 2*, region Stara Zagora, May 2004 – Sept 2006:**

- Feasibility study and technical design for facility with vertical heat pipes for utilization of waste heat in flue gases with temperature 185°C exiting steam generator with thermal capacity 250 tons steam/hour; the recovered heat is used for heating primary air for the steam generator; the facility was installed on 3 steam generator units; implementing the facility results avrg. in 3,4 % effective annual savings on each steam generator with equivalent of 16 000 tons of lignite coal
- Project management of all engineering activities incl. sub-contraction for installing the facility.



**Company *Belgian-Bulgarian Projects (BBP)*, based in city Plovdiv, Sept. 2006 – Nov 2008:**

- manufacture and installation of metal constructions, argon welding, construction of new factories and extensions of workshops in Belgium (cities and regions in Belgium - Antwerpen, Mechelen, Brugge, etc.)
- recruitment and training of Bulgarian work power (mechanical fitters, welders, installation workers and engineers)
- project management of manufacturing & installation activities



**Brewery *ASTIKA*, city Haskovo (subsidiary of INTERBREW b.v. – Belgium), Dec 2009 – Mar 2010 :**

- Feasibility study of chemical water purification plant and water distribution network
- Functional optimization of the plant
- Technical design for relocation of the plant in a new building (incl. dismantling, transportation, assembly and commissioning)
- Feasibility study for optimization of el.consumption by installing el.energy saver brand KESECO
- Project management of all engineering processes



**Factory for production of bread *DOBRUDJANSKI HLYAB*, city Dobritch, Jan-Mar 2010 :**

- Feasibility study for cogeneration unit 1,6 MW for technology heating, electricity generation and cooling by absorption ammonia heat pump
- Project management of engineering activities





**Waste water treatment plant (WWTP) of city Gorna Oryahovitsa, Feb - Sept 2010:**

- Feasibility study for optimization of 2 cogeneration unit total 1,2 MW for technology heating & electricity generation
- Technical diagnostics and optimization of sludge pipe transportation and recirculation
- Project management of engineering activities



**Tennis center MALEEV, city Sofia – solar water heating plant with ISC (Integrated Collector Storage) SOLIOR solar collectors, May - Sept 2010:**

- Feasibility study for water heating for showers and restaurant
- Technical design of all engineering parts (civil and metal construction, electrical, HVAC, water & drainage)
- Project management of engineering activities



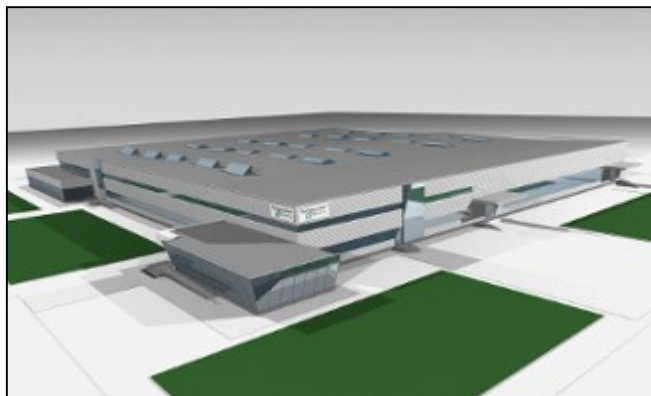
**Pyrolysis facility for recycling of disused automobile tires by means of vacuum thermal destruction, city Stara Zagora, Mar - Nov 2011:**

- Feasibility study for energy optimization of the facility.
- Technical design of waste recovery unit from flue gases for electricity generation 300 kW by means of heat pipes heat-exchangers and ORC facility.
- Feasibility study for extension of the pyrolysis facility and waste heat recovery for electricity generation 3 MW by means of heat pipes heat-exchangers and ORC facility.
- Project management of all engineering activities



***Thermal generation plant firing wood chips, town Bansko, Blagoevgrad reg., Dec 2006- Oct 2009:***

- Project management for commissioning of water heating boiler 5 MW (made by Polytechnik – Austria) for central heating of administration buildings, schools and kindergartens.
- Project management for commissioning of 2-nd boiler 5 MW and improving overall plant efficiency.
- Feasibility study for cogeneration by steam turbine cycle



***New factory of SCHNEIDER ELECTRIC Bulgaria (subsidiary of SCHNEIDER ELECTRIC France) at Industrial zone Radinovo, Plovdiv reg. - production of electrical breakers & automation relays, May 2004- Dec 2006:***

- Feasibility study incl. selection of factory site 35 000 m<sup>2</sup>
- Technical design of all parts of the factory
- Project management of all engineering activities
- Finance due diligence by KPMG







**New factory of *MONTUPET Bulgaria* (subsidiary of MONTUPET France) in city Rousse - production of aluminum components for motor vehicles, Dec 2007- Nov 2008:**

- Feasibility study incl. selection of factory site 48 000 m<sup>2</sup>
- Technical design of all parts of the factory
- Project management of all engineering activities



**New factory of *TOURISTSTROY*, city Plovdiv – manufacture of metal components for civil construction industry, Dec 2008 – Jul 2009:**

- Feasibility study incl. selection of factory site
- Technical design of all parts of the factory
- Project management of all engineering activities



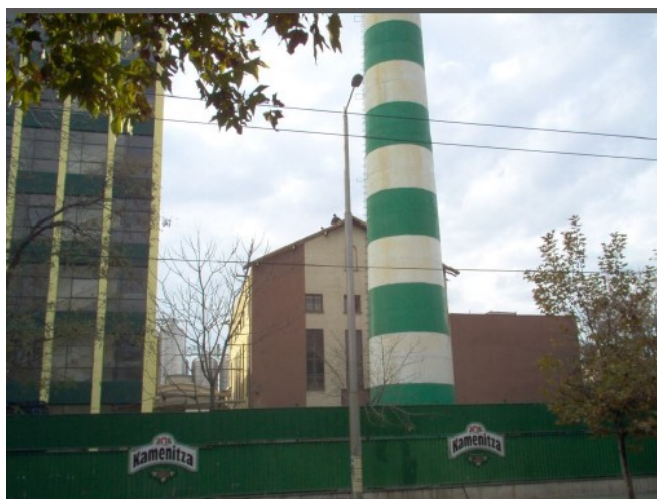




**New printing factory of *BAGRA*, city Plovdiv – printing and manufacturing packaging materials, Sept 2009 – May 2010:**



- Feasibility study incl. selection of factory site
- Technical design of all parts of the factory
- Project management of all engineering activities



**KAMENTZA BREWERY, city Plovdiv  
& ASTIKA BREWERY, city Haskovo**

Reconstruction of workshops, service areas and logistic centers (warehouses, engineering buildings), Nov 2009 – Aug 2010:



- Feasibility study for retrofit possibilities
- Technical design for reconstruction
- Project management of all engineering activities



***KAMENTZA BREWERY*, city Plovdiv, reconstruction and retrofit of emergency ventilation of ammonia cooling compressor plant, Mar – Jun 2012:**

- Feasibility study incl. study of administrative norms and safety regulations
- Technical design of all parts of the system (architecture, civil engineering, HVAC, electrical, etc.)
- Project management of all engineering and installation activities



***Waste water treatment plant (WWTP) of city Varna*, Feb 2010 – Jun 2011:**

- Feasibility study for optimization of energy efficiency of 2 water heating boilers and 2 cogeneration units total 2,8 MW for technology heating & electricity generation
- Technical diagnostics and optimization of sludge pipe transportation and recirculation
- Project management of engineering activities



## **.Project for utilization of biogas**

### **I Phase - combustion in water heating boilers**

### **II phase – cogeneration of el.energy & thermal energy**

**Waste water treatment plant (WWTP) of factory KARNOBATSKA GROZDOVA (production of alcoholic drinks) in reg. Yambol, Bulgaria, construction of system for utilization of waste biogas by combustion in water heating boilers and cogenerators for generation of heat and electricity, Feb 2010 – Oct 2012:**

- Feasibility study
- Technical design of all parts of the system (architecture, civil engineering, HVAC, electrical, water & drainage, fire protection, etc.)
- Supply of machinery, civil construction and installation works, commissioning
- Project management of all engineering activities



*The buffer tank 600 m<sup>3</sup>*



*The fermentation reactor 1000 m<sup>3</sup>*



*The main safety relief valve  
on top of fermentation reactor*



*The boiler house with 2 water heating boilers  
total 550 kWth*



*General view of project site*



*The technical design and management team  
at the construction site*



***Gasification facility in North-East BG for thermal destruction of municipal waste and firing waste generated city gas in 5 co-generator units each 1,2 MWel., Aug 2013 – ongoing (planned total plant commissioning May 2016) - ref.*** Разрешение № 3-Д-13/11.03.2011г. за изработване на ПУП от Кмета на Община Търговище, скица № Ф00852/14.02.2011г. от Общинска служба по земеделие – Търговище с виза за проектиране № СК-ТСУ-199/11.03.2011 г. на основание чл.124, ал.3 от ЗУТ и във връзка с чл. 59, ал.1 и чл.12, ал. 2 от ЗУТ от Гл.архитект на Община Търговище и Задание от Възложителя.

- Feasibility study for optimized construction of the facility and ORC facility
- Technical design of all engineering parts (architecture, civil constructions, HVAC, electricity, gasification, water supply & canalization, fire protection, labor safety, etc.)
- Project management of civil engineering activities



### **Project for utilization of waste dry straw and wet animal manure by gasification and cogeneration processes**

**Construction of power station with electric capacity 10,0 MWel in the region of city Plovdiv, Bulgaria, for gasification of dry waste straw and wet animal manure and cogeneration, Jan 2014-May 2016**

- Project management of all engineering activities incl.:
  - Technical design
  - Civil works
  - Erection of metal constructions
  - Mounting of reaction vessels
  - Mounting of el.traffos & connecting to electricity grid
  - Assembly of pipings, valves, thermal insulation, control on welding & pressure vessels
  - Mounting of auxiliary equipment - underground pumps, water tanks, air compressors and air blowers, water pump, fans, cooling towers, fire safety systems, sewage treatment facility, etc.
  - El. works and automation
  - Commissioning into operation
  - Finance due diligence by KPMG



*Pelletization facility*



*Mounting of cogeneration engines*



*General view of construction site*



*Gasification facility with cleaning equipment  
of synthetic gas*



*Cogeneration department*



*Auxiliary equipment*



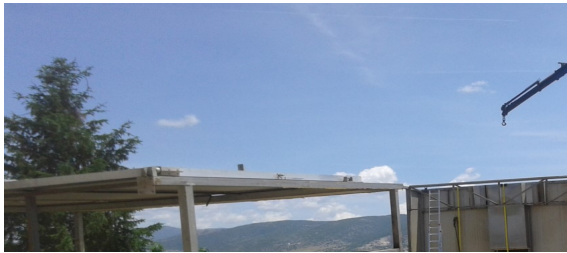
**Construction materials factory - relocation & process optimization of 2 wood kiln dryers  
at Company EAGLE SA - DRY MORTARS & ADHESIVES PLANT**

**INDUSTRIAL PARK OF PROSOTSANI, city DRAMA, GREECE, May-Nov Y2018**

- el.supply, waste heat utilization & automation for biomass drying & conditioning,  
total thermal power 3,2 MWth

Activities included:

- 2 wood kiln dryers were stopped from operation, disassembled and relocated to a new site.
- Full check and repair of propane gas system, propane tanks and gas lines, air delivery system, electrical lines, electrical cabinets and electronic controls of automation.
- Commissioning into operation & optimization of performance parameters.



*Disassembly of 1-st wood kiln dryer*



*Disassembly of 2-nd wood kiln dryer*



*General view of construction site*



*Loading on truck*



*Assembly of 1-st wood kiln dryer*



*Ready 1-st wood kiln dryer and assembly of 2-nd wood kiln dryer*



*Commissioning into operation*



*The commissioning team*



**Power plant OSLOMEJ 110 MW – Republic of North Macedonia, Apr 2021 - Technical due diligence for electrical generation capacity, in partnership with KPMG**



**Power plant NEGOTINO 240 MW – Republic of North Macedonia, Nov 2021 - Technical due diligence for electrical generation capacity, in partnership with KPMG**



**Technical Due Diligence on Pyrolysis plant based on Waste-to-Energy technology for treatment of Municipal Solid Waste at Garbage depot of Sozopol, Bourgas municipality, Bulgaria, May-Sept Y2022, in partnership with KPMG. Optimization of treatment processes.**

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[www.enerkon-energy.com](http://www.enerkon-energy.com)

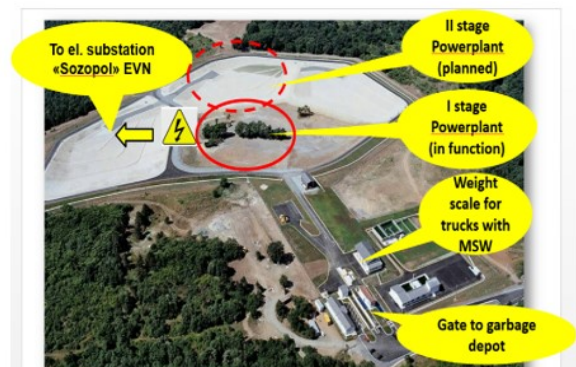
**Confidential!!!** For use only by ZETTA International Group Pte Ltd

## TECHNICAL DUE DILIGENCE REPORT

on feasibility of a proprietary pyrolysis-based technology  
 Waste-to-Energy plant in Bulgaria, European union

### Parties Involved:

- **Assignor:** Zetta Group Ltd., Singapore, 14 ROBINSON ROAD #08-01A FAR EAST FINANCE BUILDING SINGAPORE (048545) – Investor
- **Assignee:** ENERKON Ltd., Bulgaria, Plovdiv-4000, bul. Maritsa 42 (see licenses and track record in Annex # 1) – Technical and Technological Licensed Auditor
- **Target company:** Eco-Garb Ltd., Bulgaria, Burgas, Serdika 2 – Owner of Proprietary Technology Pyrolysis WTE Plant.



## Energy audit projects in factories and industrial enterprises for European subsidiary program BEECIFF in the period YY2012-2013

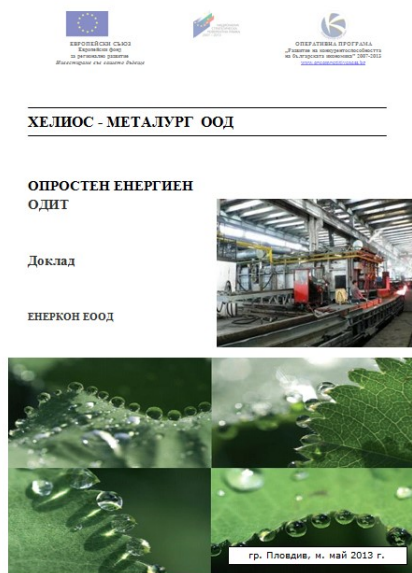
Total number of projects 472.

ENERKON has participated in European training and acquired licenses/certificates for several company specialists for executing industrial audits:



Below are given some examples of executed energy audits and feasibility energy studies:





Company HELIOS-METALURG, city Plovdiv, BG - manufacture of metal construction materials



Company BART, city Plovdiv, BG - trading and merchandising activities



Company METAL, city Varna, BG - manufacture of metal keys and lock systems



Company KITTNER, reg. Plovdiv - manufacture of metal construction products for food industries



Company MILCO, reg. Plovdiv - manufacture of metal processing machines



Company ROSTRADE, city Plovdiv - manufacture of injection molded plastic products





#### ПЛАСТ-60 ЕООД

ОПРОСТЕН ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Асеновград, ка. Долин воден, м. март 2013 г.

Company PLAST 60,  
reg. Plovdiv, BG - manufacture  
of extruded plastic products

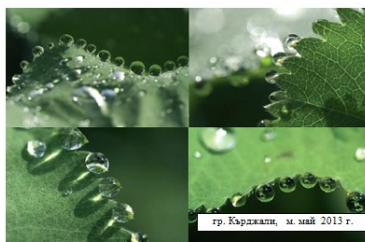


#### АЗАР ТРЕЙД ЕООД

ОПРОСТЕН ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Карджали, м. май 2013 г.

Company AZAR,  
reg. Kurdjali, BG - manufacture  
of coats and trousers



#### „Геотон бетонови изделия“ ООД

ОПРОСТЕН ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Бургас, м. юни 2013 г.

Company GEOTON,  
City Bourgas, BG -  
manufacture of concrete  
products



#### КОПРИВЛЕН-МРАМОР ЕООД

ОПРОСТЕН ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



с. Копревлен, м. април 2013 г.

Company KOPRIVLEN  
MRAMOR,  
reg. Blagoevgrad, BG -  
manufacture of stone and rock  
products



#### „БИСТРИЦА 2002“ ЕООД

ОПРОСТЕН  
ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Голямо Делчево, м. март 2013 г.

Company BISTRITSA 2000,  
reg. Blagoevgrad, BG -  
manufacture of pebble products



#### „ТИЛЛ ИНДУСТРИАЛ ГАБРОВО“ ЕООД

ОПРОСТЕН  
ЕНЕРГИЕН  
ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Габрово, м. май 2013 г.

Company TILL INDUSTRIAL,  
City Gabrovo, BG -  
manufacture of electric powered  
industrial cranes



#### „МКД-69“ ЕООД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад  
ЕНЕРКОН ЕООД



гр. София, м. юни 2013 г.

Company MKD 69,  
City Sofia, BG - recycling of  
plastic materials

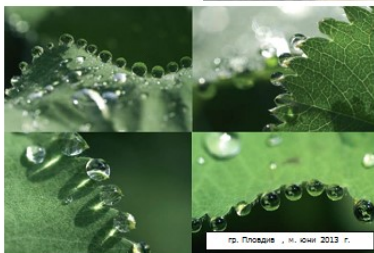


#### „Метимпекс“ ЕООД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Пловдив, м. юни 2013 г.

Company METIMPEX,  
city Plovdiv, BG - manufacture  
of steel construction materials



#### Иноетроник АД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Пловдив, м. юни 2013 г.

Company INOTRONIC,  
city Plovdiv, BG - recycling of  
domestic garbage



#### „ВИТАВЕЛ“ АД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад

ЕНЕРКОН ЕООД



гр. Луковит, фев.-м. юни 2013 г.

Company VITAVEL,  
Reg. Plevn, BG - manufacture  
of packaging paper



#### „АГРИЯ“ АД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад

Енергиен одитор  
ЕНЕРКОН ЕООД



гр. Пловдив, м. апр. 2013 г.

Company AGRIA,  
city Plovdiv, BG - manufacture  
of chemical agriculture  
fertilizers

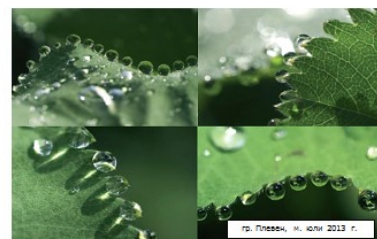


#### „МЕТАКОМ-СЛЗ ИНВЕСТ“ АД

##### ОПРОСТЕН ЕНЕРГИЕН ОДИТ

Доклад

Енергиен одитор  
ЕНЕРКОН ЕООД



гр. Плевен, м. юни 2013 г.

Company METACOM,  
city Plevn, BG - manufacture  
of steel casted heavy duty  
products





Company ASTRA BIOPLANT,  
Reg. Ruse, BG - manufacture  
of biodiesel



Company KREPEJI,  
city Plovdiv, BG - manufacture  
of steel heavy duty fasteners  
(bolts, nuts, etc.)



Company THERMOLUX  
RADIATORS,  
reg. Bourgas, BG - manufacture  
of steel heating radiators



Company PILOT ECO  
ENERGY,  
reg. Plevna, BG - manufacture  
of wood combustible pellets



Company MONI MG,  
reg. Plovdiv, BG - manufacture  
of steel construction materials  
and injection molded plastic  
products



Company TECHNOPRESS,  
reg. Plovdiv, BG - manufacture  
of paper printed products





Other projects on Energy balance, Technical due diligence, Production profitability, Resources efficiency:

1. Pyrolysis plant – city Stara Zagora, Y2010 - thermal destruction of disused automobile tires and other rubber waste for generation of synthetic gas, liquid fuel and carbon black and energy recovery of hot flue gases by means of ORC plant 300 kW - *Technical due diligence for production capacity*
2. Rodopi energy – city Plovdiv Y2015 – Power plant 1,5 MW for utilization of biomass - *Technical due diligence for el.generation capacity*
3. Espace – city Botevgrad, Y2017 – Production facility for utilization of PVC waste - *Technical due diligence for production capacity*
4. Central Balkan Recycling – town Sevlievo, Y2018 - recycling disused electrical and electronic equipment - *Technical due diligence for resource efficiency*
5. Unitrade – city Blagoevgrad, Y2018 – utilization of paper and plastic waste - *Technical due diligence for resource efficiency*
6. Water utilities – city Varna, Y2010 – biogas plant incl. gas combustion in cogeneration engines and water heating boilers - *Technical due diligence for energy generation capacity*
7. Gasification plant - city Turgovishte, Y2013 – Thermal destruction of MSW (Municipal solid waste) and combustion of generated synthetic gas in 5 cogeneration engines with total capacity 7,2 MW - *Technical due diligence for energy generation capacity*
8. Plant for treatment of industrial waste for RDF generation and gasification – city Siheung, South Korea - *Technical due diligence for production capacity*








9. Gasification plant EKOMPAKT for industrial waste treatment with cogeneration capacity 800 kW, city Poznan, Poland - *Technical due diligence for energy generation capacity*

10. SIS Industries – reg. Tserkovski, distr. Karnobat, Y2009 - *Technical due diligence for thermal energy generation*





11. WELDE factory (Austrian subsidiary) for cardboard production, town Troyan, Y2021 – combustion of sludge in steam boilers - *Technical due diligence incl. energy balance*

## Energy projects incl. energy efficiency & renewables






### Y2018

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 29. СПАРКИ_Ловеч	28.3.2019 г. 22:54 ч.	File folder
 30. НОВА КНИЖНА ФАБРИКА-Сф_2018	28.3.2019 г. 22:54 ч.	File folder
 31. БАРИТ МАЙНИНГ-Сф	6.2.2018 г. 18:09 ч.	File folder
 32. СПАРКИ_@АЛТРН	13.2.2019 г. 09:10 ч.	File folder
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### Y2019

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### Y2020

 34. КОМПАС_Монтана
 35. КАЛЦИТ_февр 2020
 36. Вила ЯМБОЛ
 37. НЕОХИМ_май 2020
 38. АС КРЕП_ноем 2020

### Y2021

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 44. ШИШЕ ДЖАМ_Търговище	26.3.2021 г. 16:28 ч.	File folder
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 48. САНИТЕКС	1.4.2021 г. 13:23 ч.	File folder
 49. ЕКОВИТА	27.3.2021 г. 08:44 ч.	File folder
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 50. ЧУГУНЕНА АРМАТУРА_Попово	14.5.2021 г. 13:27 ч.	File folder

**and many other projects on European programs .....**

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*www.enerkon-energy.com*