Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Austria

WP 4 – Task 4.2 / D 4.2

November 2016



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CoolHeating website: www.coolheating.eu



Company name: Güssing Energy Technologies GmbH (GET)



Fields of our activities for small district heating:

- Concepts and planning of district heating plants and grids
- Investing and operating district heating systems
- Quality management for district heating systems
- Research and development in the field of district heating, biomass and biogas

References:

50% subsidiary company "Pomurske Elektrarne" in Slovenia to build and operate district heating systems and power plants; Several measurements and quality optimizations at DH systems in Austria; Innovative concepts for DH systems

General fields of our activities:

- Research and development in the field of district heating, biomass, biogas, biomethane, biomass gasifier, solar heat, heat pumps, building technologies, hydraulics
- Energy concepts and optimization for industry, municipality, buildings
- Drying (wood, food,...)

General description of our company:

The Güssing Energy Technologies is a fully independent Austrian non-profit research institute in the field of renewable energy and the development of innovative system combinations, new processes and procedures.

The Güssing Energy Technologies was founded in 2003. Due to the high experience in the field of district heating systems, energy concepts for industry, municipality and buildings the Güssing Energy Technologies offers its products and services at an unbeatable price and performance ratio. GET is determined to find the best economic and ecological solutions in a short time.

Coolleating





GET is located in Güssing (Austria)



Arnold Schwarzenegger visited Güssing and said: Everybody should do what Güssing did!



Innovative energy concepts for urban areas

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Company name: Hoval Gesellschaft mbH

Hoval

Fields of our activities for small district heating:

- Heat exchanger units (substations) ready to use heating stations for small and large buildings
- Domestic hot water stations
- Special controllers for DH networks
- SCADA systems

References:

Our control units for heating stations and our heating stations are installed in more than 500 cities in Austria, Germany, Switzerland, Italy, Poland, Netherlands, ...

General fields of our activities:

- Producing heating substations
- Producing domestic hot water substations
- Producing control units for heating and district heating
- Producing boilers, heat pumps, solar ...

General description of our company:

The Hoval Group designs and manufactures domestic and commercial heating systems like biomass boilers, heat pumps, solar thermal systems, oil-and gas boilers, calorifiers, district heating substations, as well as a wide range of diverse ventilation and air heat recovery technologies. The Group is recognised as a leading European pioneer and innovator in environmentally friendly heating, cooling and ventilation systems with headquarters in Vaduz, Principality of Liechtenstein.

The Company can rely on more than 70 years of experience and a close-knit team culture to offer intelligent solutions and technically advanced developments. The business has around 1650 employees spread over 16 subsidiaries which act and think together as a large global family

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Contact: Contact person: Peter Schatte Address: Holzinnovationszentrum 1a, 8740 Zeltweg Country: Austria E-Mail: <u>peter.schatte@hoval.at</u> Phone: 0043 664 600 555 311 Website: <u>www.hoval.com</u>





Company name: Regelungs-Verteilerbau GmbH (RVB GmbH)



Fields of our activities for small district heating:

- Concepts and planning of district heating stations
- Production of district heating stations
- Dimensioning of heat exchanger units

References:

- Experience since 35 years in the field of district heating systems
- sold over 5.000 heating stations with capacity from 15kW to 6,5MW
- controlling over 70 heating centers

General fields of our activities:

- Research and development in the field of district heating, building technologies, hydraulics
- Research and development in the field of bidirectional Systems
- Advice of planning companies and district heating operators

General description of our company:

RVB GmbH was founded in 1973.

At the beginning we built controlling systems and cabinets for house technic.

In 1989 we sold our first district heating station.

We are up to 10 employees and we produce everything in our company in Graz including also welding, testing and supply. The start up of the station controlling is executed by ourself.

CooHeating



3,5MW station for MedCampus in Graz



Company and production-center in Graz

Contact: Regelungs-Verteilerbau GmbH Contact person: Ing. Michael Moll Address: Anton-Kleinoschegstrasse 31, 8051 Graz Country: Austria E-Mail: <u>office@rvb.co.at</u> Phone: +43 / 316 / 67 67 65-0 Website: <u>www.rvb.co.at</u>





Company name: HERZ Armaturen d.o.o.

(CROATIA – ZAGREB)



Fields of our activities for small district heating:

 leading European manufacturers of biomass boilers, combination systems, transport systems, extraction systems and manufacturers of heat pumps, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves for domestic installations for heating, air conditioning, sanitary and gas appliances.

References:

Regional energy agency (town of Karlovac), 180 kW Factory Bernarada (town of Nedelišće), 299 kW Elementary school (town of Švarča), 499 kW District of Pokupsko , 1000 kW Castle of Lipa (town of Duga Resa), 100 kW Aqua park (Adamovec), 600 kW Town Zoo (town of Zagreb), 45 kW Water Supply Company (town of Buzet), 80 kW Company Ecos (town of Vitez), 350 kW Nursery (town of Udbina) , 20 kW Commercial business building (town of Novi Travnik), 201 kW (And many other......)

General fields of our activities:

Research and development in the field of district heating, biomass, biomass gasifier, solar heat, heat pumps, building, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves, installations for heating, air conditioning, sanitary and gas appliances, technologies, hydraulics, energy concepts and optimization for industry, municipality, buildings, drying (wood, food,...)

General description of our company:

HERZ-Armaturen

HERZ is an Austrian company, which is recognized internationally, at present, with approximately 2.400 employees in 24 production facilities worldwide, HERZ-Armaturen is one of the leading European manufacturers of biomass boilers and manufacturers of heat pumps, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves for domestic installations for heating, air conditioning, sanitary and gas appliances. Over the years HERZ has become the established specialist for renewable energy systems.

The HERZ product range is a one-stop shop for: wood gasification boilers up to 40 kW, pellet plants and wood chip plants up to 1,500 kW (with cascade switching up to 4,500

Cool-Heating

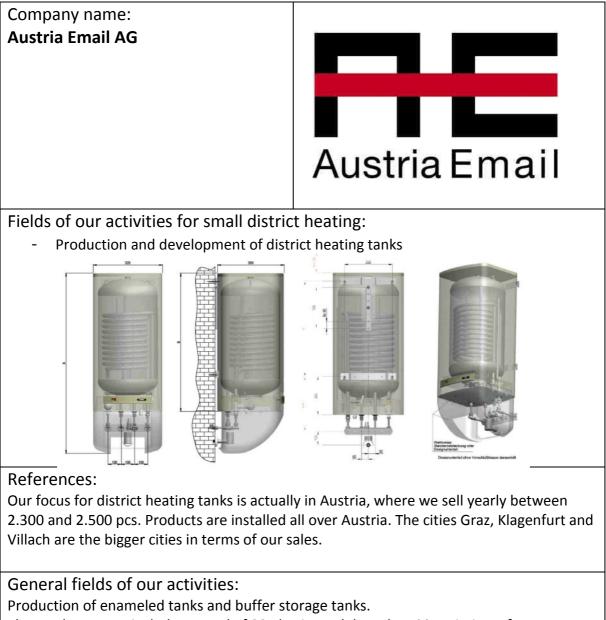
kW), heat pumps up to 110 kW and buffer and hot water tanks. New member of Herz grupation is company Binder with the most modern biomass boilers up to 20.000 kW whit a use of cogeneration and steam. Its principal focus is on modern, cost-effective and environmentally friendly heating systems offering maximum comfort and user-friendliness.. We deal with resource-friendly energy supply and ensure an energy-efficient creation of economic and convenient systems.

Founded in 1896 the company, known today as HERZ Armaturen GmbH, was set up through the establishment of the valve factory Gebauer & Lehrner. At present, HERZ trades internationally in over 75 countries from its headquarters in Vienna/Austria. The company offers stability, reliability and continuity with a clearly defined company concept, a thoroughly integrated quality management, competent and motivated co-workers and regular personal contact on all levels.

Contact: Herz Armaturen d.o.o. (Croatia – Zagreb) Contact person: Mr. Petar Jelić (regional manager for Croatia and Bosnia and Herzegovina) Address: Hrelička 62, 10 000 Zagreb Country: Croatia E-Mail: <u>petar.jelic@herzarmaturen.hr</u>, <u>ured@herzarmaturen.hr</u> Phone: 00385 91 31 10 991, 00385 1 6607 365 Website: <u>www.herz-hr.com</u>, <u>www.herz.eu</u>, <u>www.herz-energie.at</u>, <u>www.binder-gmbh.at</u>







The product range includes a total of 385 basic models and 1,700 variations: from electrical water heaters and indirectly heated hot water cylinders for use with gas and oil through to systems using alternative energy sources. Among other areas, our product range also focuses on buffer tanks, solar energy systems, domestic water heat pumps, central heating cylinders and central heating thermal systems. The centrepiece and core competence of our entire product range is the enamelled internal boiler.

General description of our company:

The Austrian company AUSTRIA EMAIL is one of the leading European manufacturers of high-quality water heaters. They have the most state-of-the-art buffer cylinder factory in Europe (with an in-house fleece fabrication plant since 2010) and an in-house heating

technology laboratory with high quality test equipment.

AUSTRIA EMAIL is also a quality partner for wholesalers and industrial customers, offering sales support in the form of training, factory tours, partner programmes and targeted marketing campaigns.

AUSTRIA EMAIL is the market leader in Austria and the oldest listed company in Austria.

75 years of experience in enamelling technology speaks for itself:

- 25 export markets
- 350 highly motivated employees
- Annual turnover of 65 million euros

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Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Bosnia and Herzegovina

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CoolHeating website: www.coolheating.eu



Company name:

ALFA THERM D.O.O. MOSTAR

ALFA THERM OPTIMAL HVAC SOLUTIONS

Fields of our activities for small district heating:

- Heating, ventilation and air conditioning (HVAC) design
- HVAC design of automated regulation and building management systems (BMS)
- Installation of equipment for air conditioning and system start-up
- Production of air ducts and steel part components
- Service of installed equipment
- Preventive maintenance
- Energy efficiency projects

References:

Over 5000 facilities of different purposes in Bosnia and Herzegovina and Croatia, where we have done heating, cooling, ventilation and automated regulation. Some of these facilities are:

- Small district heating facilities: "SIPA", Sarajevo; Campus Mostar; Institution for social and health care for people with disabilities, Stolac; Heating system "Slavinovići", Tuzla..
- Business facilities and public institutions (Mostar Unicredit bank, Mostar; Raifeisen bank, Tuzla; Croatia osiguranje, Ljubuški, The University Hospital Mostar; Faculty of Medicine Mostar; Oncology department, Mostar; Croatian Hall of Herceg Stjepan Kosača, Mostar; City hall of Mostar..)
- Shopping Malls and Hotels (Mepas mall, Mostar; Importanne galerija, Zagreb; Importanne centar, Zagreb, BIngo, Mostar, Međugorje, Bijeljina, Bosanska Krupa; "SPC Rondo" i "Orca", Mostar; Grand Hotel NEUM; Hotel Sheraton, Dubrovnik, Hotel Neptun, Dubrovnik,...)
- Hydro power plants (BMS)(HE CHE Svitava; HE Jajce I i Jajce II; HE Mostar; HE Mostarsko blato; HE Peć Mlini)

General fields of our activities:

Alfa Therm d.o.o. offers a complete range of services in the field of heating, ventilation, air conditioning, technical gases, precision cooling, automation, building management systems (BMS) and other related activities for these of installations

General description of our company:

Alfa Therm was founded in 1987. Expansion began in 1996 and today Alfa Therm operates through two companies: Alfa Therm d.o.o. Mostar (Bosnia and Herzegovina) and Alfa Therm d.o.o. Metković (Croatia), with over 130 employees. For all types of facilities we offer a complete range of services and a lifelong maintenance to ensure the comprehensiveness of solutions - from the concept, design and execution, to the service and maintenance. Constant technical education is the foundation of successful



business and the company invests in the organization using the software for managing and controlling processes and projects. Energy efficiency and ecology are the principles that are taken into account through all domains of the company. Our concept is a top quality customer service through optimal solutions with high quality, reasonable price and short deadlines.

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Company name:

Bioenergi d.o.o.



Fields of our activities for small district heating:

- Installing a heating system
- Reliable supplier of heating energy
- Installing pellet stoves
- Pellet stoves service and pellet supply service
- Stoves monitoring and reparation

References:

Our customers in 99% cases are Companies and Institutional Subject for which we providing heat energy

General fields of our activities:

- Provides heating energy services, improvement of energy efficiency, pellet stoves install and pellet trading
- We taking on ourselves all obligations and transport logistic, and providing full service of "heating per square meter"

General description of our company:

- Company is established 2008 year and primary mission in the beginning was improvement of perception for Bioenergi as the Company which is reliable supplier of heating energy, pellet supplier and pellet stoves supplier.
- Company right now has seven employees.
- Core business of the company Bioenergi from Vitez is heating service per square meter, installing the stoves on the bio-fuel (pellet) and pellet supply service. According to those activities we providing service of "heating per square meter" in 99% for Companies and Institutional Subject.

Contact: Bioenergi d.o.o. Vitez Contact person: Marko Mišković Address: PC-96-II, 72250 Vitez Country: Bosnia and Herzegovina E-Mail: info@bioenergy.ba Phone: 030/712-316, 063/334-735 Website: www.bioenergy.ba





Company name:

Centre for economic, technological and environmental development – CETEOR Ltd Sarajevo



Fields of our activities for small district heating:

- Development of concept/design solutions of rehabilitation, expansion, modernization or construction of new district heating systems
- Conducting feasibly studies (proposing optimal technological application)
- Drafting Business plans
- Calculation of GHG emission reduction
- Environmental consultation

References:

- District heating system powered by biomass with cogeneration (CHP), in the municipality of Sokolac (2015);
- Expansion, rehabilitation and modernization of the district heating system in municipality of Pale, Bosnia and Herzegovina, Feasibility Study (2013);
- Reduction of specific consumption of primary energy by increasing cogeneration in TPP Kakanj by expansion of district heating system in city Kakanj, BiH Feasibility study, Conceptual and Preliminary Design (2012)

General fields of our activities:

CETEOR is divided into five (5) business units:

- 1. Environmental department (Environmental Impact Assessment Study, Waste management plans, environmental supervision, environmental due diligence)
- 2. Energy department (carrying out energy audits in buildings and industry, feasibility studies, concept/design solutions for DHS, consultation related to RES projects)
- 3. Educational department (carrying out variety of seminars, conferences, round tables in the field of environmental protection and energy)
- 4. Laboratory (Measurement of ambient noise, emission into air, thermal imaging and other accompanying parematers) – accredited according to BAS ISO/IEC 17025
- 5. EKO CET (representation of market leaders in the field of work safety, environmental protection and measurement such as DENIOS AG, Madur, Svantek and MLU)

General description of our company:

CETEOR was founded in 1992 and since than it has been developing its business spans towards environmental and energy related issues. Since 2006 main shareholder of CETEOR became the IPSA Institute which is one of the leading design companies in the region. Its vision is to become the leading company in the area of environmentally sustainable development in BiH and one of three leading companies in the region of South-Eastern Europe.

CETEOR has 15 permanent employees with different backgrounds (mechanical engineers, architects, economists, chemical engineers etc.) which enable a comprehensive approach in each project. In the previous period CETEOR was engaged in preparation of studies for key infrastructure projects (Highway on Corridor Vc, TPP Kakanj and Stanari, HPP Vranduk and Ustikolina etc.), participated in drafting environmental and energy related legislation, prepared studies and strategies at different administrative levels, and provided consultation for many well know companies (Shell, VW, Coca Cola etc.).

During the time CETEOR has become a recognized bridge between local communities, international organizations, investors and local authorities. This role has enabled initiating significant projects in several local communities, including DH projects (Pale, Kakanj, Sokolac etc.).

Contact: CETEOR Ltd Sarajevo Contact person: Samra Prašović (Head of Energy Department) Address: Topal Osman Paše 32B, 71000 Sarajevo Country: Bosnia and Herzegovina E-Mail: info@ceteor.ba Phone: +387 33 563 586 or +387 33 563 580 Website: www.ceteor.ba

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Company name:

ELEKTRO TEST doo SARAJEVO



Fields of our activities for small district heating:

- We can do with copper, Al-pex, plastic,inox
- Heat pump for heating and cooling
- Solar collectors for domestic hot water and assistance heating

References:

Our heating and cooling systems have been installed throughout the country, and they also worked in Bar (Montenegro), as well as in the municipality Struge (Macedonia).

General fields of our activities:

- development of software for monitoring
- product electrical control cabinet

General description of our company:

Company Elektro test doo Sarajevo is establish 2002. Year. Number of employees is seven. Company engaged in the design, installation and control of electric power and mechanical systems.

Contact: ELEKTRO TEST doo	
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Country: Bosnia and Herzegovina	YOUR
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Phone: +38761211683	
Website: www.elektro-test.ba	

Company name:

Energoinvest d.d. Sarajevo



Fields of our activities for small district heating:

Energoinvest is engineering company, executing projects on turn-key basis as EPC contractor Energoinvest's Department for thermal and process plants is mainly involved in the designing, engineering, construction and commissioning of following systems:

- Cooling water systems
- District heating systems
- Water treatment plants
- HVAC systems
- Gas systems

Activities which Energoinvest can offer and render in district heating Projects as EPC contractor:

- Preliminary studies
- Consulting services
- Basic, Main and As-built design (mechanical, civil, electrical and I&C)
- SCADA and control program
- Notification and validation of foreign/domestic designs
- Engineering, procurement and construction of complete systems
- Supervision of works, Commissioning, Trial run
- Training of End User staff, Operation and maintenance manuals
- Environmental assessment and impact studies

For project realization Energoinvest prepares following documents:

- 1. Plan for quality, environment, safety and health management
- 2. Program for precaution of environment
- 3. Health and Safety Plan
- 4. Inspection and Test Plans in factories and at site

References in the field of district and local heating systems:

- Design documentation for new heating station in Unit 5, TPP Tuzla for city Tuzla Heat capacity 300 MW
- Reconstruction of low and high pressure heat exchangers for district heating of town Kakanj from TPP Kakanj - Heat capacity 50 MW
- Development of technical and economical study for possibilities of heat supply of city Sarajevo from TPP Kakanj - Heat capacity 600MW
- District heating of city Lukavac from TPP Tuzla Heat capacity 30 MW, "turnkey"
- Reconstruction of heating station in Unit 4, TPP Tuzla for city Tuzla Heat capacity 300 MW
- Rehabilitation of main gas pipeline Sarajevo Zvornik and Measuring-control gas station in Kladanj
- Reconstruction of boiler and heating system in JKP Toplana Doboj Heat capacity 30 MW
- Reconstruction of boiler house for company Energoinvest IRCA, Sarajevo
- A number of basic and main designs of HVAC systems for different projects (switchgear stations, industry complex, public buildings, museums, hospitals, courts,...)
- Reconstruction of boiler house in Hrasno Sarajevo- Heat capacity 30 MW

General fields of our activities:

Energoinvest is engineering company, executing projects on turn-key basis as EPC contractor in following fields:

• Transmission and distribution

- Generation plants (TPP, HPP, WPP)
- Information and Communication technologies
- Civil Engineering and Architecture (Industrial objects, Civil structures for Electric power projects, Public buildings and objects)
- Environment protection and Water utilities

General description of our company:

Energoinvest is an export-oriented multidisciplinary engineering company established on 1951 in Sarajevo, Bosnia and Herzegovina. Energoinvest, through the 65 years in the business has developed into a leading engineering company in Bosnia and Herzegovina, which provides services in design and construction of new facilities and also reconstruction, modernization and refurbishment of complex facilities within the country and abroad. Energoinvest has 430 employees of highly professional staff like Mechanical Engineers, Civil Engineers, Architectural Engineers, Electrical Engineers, Control and Automation Engineers, Geological Engineers, Geodetic Engineers, etc with all necessary local permissions and licenses to performs any design and construction works. As company Energoinvest is certified to:

- ISO 9001:2000 for quality
- ISO 14001:2004 for environment
- BS OHSAS 18001:2007 for occupational health and safety

Energoinvest is recognized as a reliable partner for its business excellence and quality of services.

Our customers are mainly power and water management companies of various countries. In the realization of complex projects in the domain of its activities the company operates in cooperation and partnership with reputable international companies and manufacturers.

Our Clients: JP ELEKTROPRIVREDA BiH - B&H JP ELEKTROPRENOS - BIH, GRTE- SONELGAZ Algeria, TANESCOTANZANIA, MOE KURDISTAN - Iraq, ELEM - Macedonia, JP EP RS- Serbia, JP EP -Montenegro, BROWN COAL MINES "RMU Banovici" - B&H, FEDERAL STORAGE OF LIQUID FUELS -B&H, BH TELECOM - B&H, KEK – Kosovo, JKP Toplane Sarajevo,...

Our Partners: STEAG-Germany, RWE-Germany, AFC Swiss, SKODA-Czech Republic, EWB-Hungary, CLAUDIUS PETERS-Germany, FERROSTALL-Germany,...

Our Main Suppliers: SIEMENS - Germany, EFASEC - Spain, ABB – Sweden, OSI - U.S.A., WIER MINERALS - UK, ATLAS COPCO – Sweden, IBAU – Germany, ALFA LAVAL – Sweden, KSB – Germany, ERHARD – Germany, SCHNEIDER – Germany, AERZNER – Germany, KOPAR – Norway, WILO -Germany, LG - Korea, YORK- US, VIESSMANN – Germany, GRUNDFOSS – Denmark, DANFOSS – Denmark, LINDAB IMP KLIMA – Slovenia, SYSTEMAIR – Sweden, SABIANA – Italy, FLAKTWOODS – Sweden, SCHENK – Germany.



Contact: Energoinvest d.d. Sarajevo Contact person: Ervin Ramusović Address: Hamdije Čemerlića 2, 71000 Sarajevo Country: Bosnia and Herzegovina E-Mail: <u>ervin.ramusovic@energoinvest.ba</u> Phone: +387 33 703 315 Website: www.energoinvest.com

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Company name:

Enova d.o.o. - Consultants & Engineers



Fields of our activities for small district heating:

- District heating design documentation (e.g. from idea to documentation of implementation)
- Project management during project implementation
- Project implementation supervision
- Creation of feasibility study
- Creation of environmental protection study
- Creation of energy efficiency audits

References:

- Feasibility study of district heating supply for city of Sarajevo from Kakanj thermal power plant
- City of Prijedor feasibility study of district heating
- REELIH project Energy efficiency audit of collective housing buildings with least four units in entire Canton of Tuzla. For following cities: Banovići, Kladanj, Gradačac and partially city of Gračanica a fisibility study was completed for district heating and impletmentation solution was given
- Energy efficiency audit and certification of business complex Marijin Dvor
- Energy efficiency certification of residential and business complex "Izvor" in Sarajevo
- Energy efficiency study of main office of Central Bank of Bosnia and Herzegovina and energy certification of the building
- Energy efficiency study and planning for Canton Goražde for period 2015-2020

General fields of our activities:

- Consulting services and documentation development for energy efficiency and environmental protection
- Building permits documentation development

General description of our company:

ENOVA, established in 2008, is a leading multi-disciplinary development consulting company in Bosnia and Herzegovina, with a staff of 35 full-time professionals. The company's staff was previously part of the Bosnia-S Consulting Department founded in Sarajevo in 1990, from which the new company emerged as a result of the growing need for consulting services in the areas of environment, energy and

CoolHeating

economic development. Enova headquarters are located in Sarajevo, Bosnia and Herzegovina. The largest portion of its business portfolio has been associated with projects supported by international development and finance institutions such as the World Bank (WB), EBRD, IFC, USAID, UNDP, UNEP, UNIDO, SIDA and the European Commission. Enova possesses excellent knowledge about the specific conditions in Bosnia and Herzegovina and the region and has already been dealing with a range of challenging environmental and development projects in the public and private domain.

Enova is recognized for its commitment to delivering the services required to meet current and evolving customer needs efficiently and effectively with a passionate and adaptive team. Our capabilities are varied yet linked – allowing us to put together teams with the necessary specialist skills in different areas that can tackle the complexity and interconnectedness of development projects. Therefore our services cover the whole range of thematic objectives of sustainable development for economic, social and policy cohesion through our 4 thematic divisions:

- Enviromental and climate change
- Energy and Power
- Economic and Social
- Policy and Governance

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Company name: GRIZELJ Sarajevo, BiH Fields of our activities for small district heating: - Design - Manufacture - Installation - Maintenance of thermal power - Gas equipment - Equipment for the treatment and transport of spring

- Industrial wastewater and municipal water
 thermal power equipment in all district heating and coolin
- thermal power equipment in all district heating and cooling where resources are energy all wastes, natural gas, LPG, fuel oil, biogas, electric boilers
- plant for heat and cooling energy, HPV, TPV, water conditioning systems for heating and cooling, neutralization and conditioning condensate, chimneys with bearing structure

References:

Toplane Sarajevo, Toplana Banja Luka, Pivovara Tuzla, Pivovara Zadro Grude, ArcelorMittal Zenica, KJKP Sarajevogas, KJKP Pokop Sarajevom ŽIŠ Sarajevo, OŠ Musa Ćazim Ćatić Sarajevo, JU Sedma osnovna škola, MUP Goražde, Energoinvest TDS, VI osnovna škola Sarajevo, Mješovita srednja ugostiteljko – turistička škola Sarajevo, JAW Jajce, OŠ Hadžići + naselje, OŠ Mula Mustafa Bašeskija, JU Stomatološki fakultet, Privredno društvo Poljooprema, Zavod za izgradnju KS, ANUBiH, Elktrotehnički fakultet u Lukavici, Hidrogradnja d.d., Sprind d.d., JU Narodno pozorište Sarajevo, Unioninvest d.d. Sarajevo, Kraš d.d. Sarajevo, BH Telecom, Kampus univerziteta u Sarajevu, JKP 6 mart Goražde, Proming – podružnica Sarajevo, Stomatološki fakultet Sarajevo, JU V osnovna škola Sarajevo, Zbuotehnička srednja škola Sarajevo, JU Zavod za specijalno o brazovanje I odgoj djece Mjedenica, MUP BPK Goražde, JU OŠ Saburina, Općina Stari grad Sarajevo, JU Dom zdravlja KS, Fondacija za razvoj obrazovanja, JU II osnovna škola Sarajevo, Staklenik KJKP "Park" Sarajevo, IGM Visoko, TC Cenex Sarajevo, Energoinvest Tvornica dalekovodnih stubova Sarajevo, Pivovara Osijek, Vodovod Osijek, Unis auto servis Sarajevo, Autopraonica "Slon" Sarajevo, TEMOS Sarajevo, PROFIT Sarajevo

General fields of our activities:

- hot water and steam boilers,
- expansion systems
- hydraulic switches,
- heating substation input: steam, hot water, hot water / hot water output,
- HPV, TPV,
- Split filter systems,

- drainage manholes

New equipment, Know-how inventions:

- ETUIKI eco turbo incineration and co-incineration,
- BioVIFIL Bio incineration in eddy fluidized integral combustion chamber
- recuperators, utilizators, regenerators, containers for liquid and powdered fluids, equipment for using energy of wood waste ...

General description of our company:

For more than 40 years of providing quality services is a synergy of knowledge, skills, experience and successful tradition. GRIZELJ is a company that in 1998 introduced and demonstrated integrated application of EN ISO 9001 - Quality Management System and ISO 14001 - Environmental Management System, by leading certification company TUV CERT (TUV NORD), from 2012 years. and EN ISO 50001 -Energy Management System, an now and ISO 29001 - quality management system for product and service supply organizations for the petroleum, petrochemical and natural gas industries. We are a company that has acquired the right to use CE mark - 0085, sign of security products DVGW - certification institutions from Bonn. We are authorized laboratory for measuring the emission of pollutants into the air. Also an authorized laboratory measurement of pressure and temperature, and calibration of safety valves. We design and produce electrical safety - control cabinets with signal components, PLC, PID, SCADA, functions for district heating. A new program in our company the ENERGETIS^{ITG} in the our department ZIRLEC (scientific research and development laboratory educationally center) develops burners on hot air, recuperative and regenerative burners in order to use renewable energy to achieve a high degree of energy efficiency.

Contact: GRIZELJ Contact person: Tomislav Grizelj Address: Nikole Šopa 48 Country: Sarajevo E-Mail: <u>grizelj@grizelj.com</u> Phone: 033/ 453 321 Website: <u>grizelj@grizelj.com</u>





Company name:

ITG d.o.o. Sarajevo



Fields of our activities for small district heating:

- Design
- Manufacture
- Installation
- Maintenance of thermal power
- Gas equipment
- Equipment for the treatment and transport of spring
- Industrial wastewater and municipal water
- thermal power equipment in all district heating and cooling where resources are energy all wastes, natural gas, LPG, fuel oil, biogas, electric boilers
- plant for heat and cooling energy, HPV, TPV, water conditioning systems for heating and cooling, neutralization and conditioning condensate, chimneys with bearing structure

References:

Toplane Sarajevo, Toplana Banja Luka, Pivovara Tuzla, Pivovara Zadro Grude, ArcelorMittal Zenica, KJKP Sarajevogas, KJKP Pokop Sarajevom ŽIŠ Sarajevo, OŠ Musa Ćazim Ćatić Sarajevo, JU Sedma osnovna škola, MUP Goražde, Energoinvest TDS, VI osnovna škola Sarajevo, Mješovita srednja ugostiteljko – turistička škola Sarajevo, JAW Jajce, OŠ Hadžići + naselje, OŠ Mula Mustafa Bašeskija, JU Stomatološki fakultet, Privredno društvo Poljooprema, Zavod za izgradnju KS, ANUBiH, Elktrotehnički fakultet u Lukavici, Hidrogradnja d.d., Sprind d.d., JU Narodno pozorište Sarajevo, Unioninvest d.d. Sarajevo, Kraš d.d. Sarajevo, BH Telecom, Kampus univerziteta u Sarajevu, JKP 6 mart Goražde, Proming – podružnica Sarajevo, Stomatološki fakultet Sarajevo, JU V osnovna škola Sarajevo, Zbuotehnička srednja škola Sarajevo, JU Zavod za specijalno o brazovanje I odgoj djece Mjedenica, MUP BPK Goražde, JU OŠ Saburina, Općina Stari grad Sarajevo, JU Dom zdravlja KS, Fondacija za razvoj obrazovanja, JU II osnovna škola Sarajevo, Staklenik KJKP "Park" Sarajevo, IGM Visoko, TC Cenex Sarajevo, Energoinvest Tvornica dalekovodnih stubova Sarajevo, Pivovara Osijek, Vodovod Osijek, Unis auto servis Sarajevo, Autopraonica "Slon" Sarajevo, TEMOS Sarajevo, PROFIT Sarajevo

General fields of our activities:

- hot water and steam boilers,
- expansion systems
- hydraulic switches,
- heating substation input: steam, hot water, hot water / hot water output,
- HPV, TPV,

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- Split filter systems,
- drainage manholes

General description of our company:

The ITG d.o.o. company Sarajevo is the only manufacturer in Bosnia and Herzegovina of heating boilers, expansion system, heat substations, split filter systems and systems for chemical treatment of water - water softeners. The ITG d.o.o. is authorized by Federal ministry of power, mining and industry for the following: manufacturing, contracting work, servicing, installation and overhaul of thermal power equipment, and inspection and adjustment of safety valve on boilers and other pressure vessels as well as issuing of declaration of quality and test reports.

Since 1998. the ITG d.o.o. company has introduced and have been applying the system of quality based on request of EN ISO 9001 and recertificated 2001 by EN ISO 9001:2000 (System of quality control) and 2008 by EN ISO 9001:2008. As the first company in Bosnia and Herzegovina, since July 1999. the ITG d.o.o. have had the right to setting the CE – sign on more than 50 of our products. Certification of company and products was done in cooperation and supervision of respectable Germany institutes for certification TÜV CERT and DVGW.

Contact: ITG d.o.o. Sarajevo Contact person: Teo Grizelj Address: Hifzi Bjelevca 3 Country: Sarajevo E-Mail: <u>ita@itakotao.com</u> Phone: 033/ 468 267 Website: <u>www.itakotao.com</u>





Company name:

MEB doo



Fields of our activities for small district heating:

- Sales and installation of materials for heating, plumbing and sanitary installations, all types of air conditioning devices
- Heat Pump Systems, air-to-air, water source, and geothermal
- Renewable and environmentally friendly energy sources

References:

Our installations for heating/ cooling were installed in more towns in our country, Cazin, Velika Kladuša, Bihać, Odžak, Kakanj, Kalesija, Sarajevo, Banja Luka, Mostar, and other...

General fields of our activities:

- Geothermal energy for heating and cooling from single family homes to commercial and industrial properties for our environment and your budget.
- We enable your geothermal project not at any price, but at a realistic price, because the geo technology makes geothermal anywhere.
- We have direct contact with the manufacturers of heat pumps, from the EU and can satisfy all kinds of needs for heat pumps

General description of our company:

The company was founding 2000. year, we have 10 to 50 of employees and more than 300 customers, we have cooperations with a lot of diferent producer from the world, we have exlusive contract with Slovenian producer of heat pumps, Kronoterm.





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Company name:

TERMOLUX D.O.O. Banja Luka



Fields of our activities for small district heating:

- Heat exchanger units (ready to use heating stations for small and large buildings)
- District heating pipes (steel, plastic, with insulation)
- Control units (remote control)

References:

We have installed our control units in almost every major city in Bosnia, like Banja Luka, Sarajevo, Mostar, Tuzla, Zenica, Bijeljina. Some of the references are:

http://www.nibe.ba/References/

General fields of our activities:

We provide:

- heating by heat pumps
- cooling by heat pumps
- heating domestic water by heat pumps

Type of heat pumps are:

- ground sources heat pumps
- air/water heat pumps
- exhaust air heat pumps

General description of our company:

NIBE Energy Systems is the largest manufacturer of domestic heating products in the Nordic countries and a market leader in Northern Europe in the electric water heater and heat pump segments. The mission is to supply homes and buildings with products that provide domestic hot water and ensure a comfortable indoor climate. Our company in Banja Luka has two employees in the office, however we have our own installers in every major city in Bosnia who do projects for us. We have been active for 6 years now and have a lots of very satisfied customers.





Company name:

ThermoFLUX d.o.o.



Fields of our activities for small district heating:

Producing biomass (pellets and woodchip) hot water boilers

References:

Our pellet boilers were installed in many of kindergartens, schools, hospitals, industrial and residential objects and buildings.

General fields of our activities:

- Producing pellet boilers
- Producing pellet stoves
- Producing woodchip boilers

General description of our company:

- The company was founded in the year of 2007. We began manufacturing pellet boilers and automatic pea coal fired boilers. Since 2007, the company has continually developed, investing in the latest equipment and tools, and consequently increased the number of employees. The company currently employs about 130 professionally trained workers
- Our staff have adopted the highest standards with assistance from specialist European institutes and we have now grown into a well respected, international company . Production facilities are spread over a 8000 m2 covered area, built to the highest standards. ThermoFLUX is the biggest manufacturer of biomass boilers in Bosnia and Herzegovina. Almost half of our production is exported and our products are very competitive on the international market. Currently we are exporting to Austria, Slovenia, Germany, Belgium, Denmark, Croatia, Macedonia, Serbia, Kosovo, Portugal, Italy and Spain with a commitment for further expansion.



Cool-leating





Company name: UNIONINVEST dd Sarajevo	UNIONINVEST d.d. SARAJEVO-BOSNA I HERCEGOVINA
 Fields of our activities for small district heating Design and installation of complete district heating substations, boiler rooms etc. 	ng: neating systems including pipes, heat exchanger units,
References:	
• Design and Built project "Mitrovica" Distric	t Heating System in Mitrovica; Total value EUR
general architectural reconstruction of the e (three boilers with total heating capacity of pipelines (pre insulated pipes directly burie	provica District Heating system. The project included the existing boiler house with installation of new equipment 38,7 MW), supply and installation of the hot water d in the ground) in total length of 8000 m and supply he system is executed as no manned fully automatic
• Design and Built project "Sunny Hill " Distri	ict Heating System in Pristina;Total Value EUR
separation of the district heating system of l	ostation capacity of 44 MWt (4x11MW) for hydraulic Prishtina and for purposes of heating Sunny Hill
insulated pipeline for direct land installation	
• The main project of the hot water network 68.216,05; Client: Zivinice Municipality	with Substations – Živinice town;Total value: EUR
The main project of the hot water network v	n, Electrical design, Measurement and control design
	al heating energy for the city of Tuzla, Lukavac and
District heating for Živinice:	
- initial thermal load of the system in 2003 -	
- extreme thermal load system 2022.godine	
The project provide an additional 10 MWt fo	r settlements and Husino and Ljubace.
District heating period: 4560 h /year	TIONS CENERAL LIOSPITAL - Drive de Abdulat Malar
	TIONS, GENERAL HOSPITAL «Prim.dr. Abdulah Nakaš) Client: Public Institution General Hospital «Prim.dr.
Within complete reconstruction of the stean Abdulah Nakas" Sarajevo, all elements of th built compact steam "Danfoss" substations i	n heat substations in the General Hospital "Prim. Dr. e old substation have been dismantled and have been made of modules, which after the connection, constitute
a single entity. Five reconstructed steam substations have c consumables and thermal disinfection of wa P 23 – O I capacity 1,100 kW	apacity to fully meet the needs for heating, hot water ter:
P 23 - O II capacity 550 kW	
P 25 – O I capacity 1,500 kW P 301 – O I capacity 500 kW	
	remote monitored and enables monitoring and
	nal composed , correctly embedded and connected in a
compact system provided conditions that an	e necessary for operation of these types of facilities.

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•	Rehabilitation and reconstruction of the central boiler room for the Building of friendship between Greece and Bosnia and Herzegovina;Total value:EUR 441.030;Client: Ministry of Finance
	and Treasury B&H
	Within the project were dismantled two of the four existing boilers. The other two existing boilers which operate with extra light oil EL (type Viessmann 2.500 Mcal / h and Viessmann 3.000mcal / h) were repaired and put into proper condition, also repaired and reconstructed all mechanical installations, including the reconstruction of the ventilation system. Two new boilers (low pressure steam boiler $p = 0.5$ bar, with $Q = 5 t / h$, the power of 3.300 kW)
	combined with new burners for operation with natural gas / extra light oil were built.
	As an additional security measure, in the boiler room has been installed a new system for gas
	detection in Ex version, as well as the connecting the new fire alarm system with the existing one.
Gener	al fields of our activities:
•	Development of real-estate projects for households and business dwellings, hotels and industrial facilities;
•	Project design (hydro, electrical and air cooling or heating project);
•	Construction works at site
	 hydro installation,
	 electrical installation and
	 mechanical installation; air cooling or heating projects;
•	Supervision in construction projects;
•	Engineering and complex engineering ;
•	Infrastructure projects
	 water and waste water projects;
	 public lighting
	O district heating
Gener	al description of our company:
•	Type of the Company : Stock company
•	Company description: Stock company specialized for engineering, mounting, designing and
	technical consulting
•	Origin of the company: Bosnia & Herzegovina
•	Experience
	- In B&H 66
_	- international 40
•	Ownership: 100% private ownership
•	Since 1949 we are designing, constructing, mounting, and maintaining industrial, administrative, sport, health, education, and power facilities;
	Today Unioninvest d.d. Sarajevo represents a leadear in engeneering projects in local markets and
	recognizable brand in region.
	Company employs 74 staff, among them 19 employees with university degree;
	Our mission is to adequately respond to projects of:
	 Construction of turnkey projects of housholds, and business dwellings;
	 Water treatment, establishment of systems of rational energy consumption;
	 Air cooling or heathing;
	 Application of automatic and centralized monitoring and control of these media and installed plants.
Conta	ct:
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	s: Grbavička 4, 71000 Sarajevo
	y: Bosnia and Herzegovina
	sanja.saf@unioninvest.net; info@unioninvest.net
	+387 33 567 431; +387 33 567 422
	fax: +387 33 208 506
	e: www.unioninvest.net
•	



Company name:

Alfa Invest Ltd. Sarajevo



Fields of our activities for small district heating:

Producing electricity and heat from cogeneration plants on biomass. As consultant company in cooperation with our partner company VPP from Hungary (<u>https://vpp.hu</u>) and Pyrox technology from Italy (<u>http://www.pyroxitalia.com/en/</u>). We have participated in construction of cogeneration plants on biomass and natural gas.

References:

Please visit their websites.

General fields of our activities:

- Equipment for industrial plants in need for electricity and heat for appliance of optimum energy efficiency.

General description of our company:

- Alfa Invest Itd. Sarajevo is a joint venture company with 80% of foreign share and 20% owned by local owners. The registered office of the company is in UNITIC Business Center, a down-town Sarajevo office building at Fra Angela Zvizdovica 1.
- Within its registered business activities, Alfa Invest Ltd. is extremely successfully in areas of international business consulting, investment and business liaison between companies in Bosnia and Herzegovina and the Balkans and is also expanding its business activities worldwide.
- The company was established by pooling together capacities and potentials of a number of founders from Sweden, Ireland, Netherlands, Canada and Hungary, each of them having an extensive international businesses experience and operations on all the continents and considerable expertise, business and political credibility. Idea to establish Alfa Invest Ltd. came from the owners of a successful pre-war company ASSIST Sarajevo, which was between 1986 and 1992 believed to be a company with the best business results of all SME's in Bosnia and Herzegovina at the time.

Contact: Alfa Invest Ltd. Sarajevo

Contact person: Zdravko Acimovic, general manager Address: Fra Andjela Zvizdovica 1, 71000 Sarajevo Country: Bosnia and Herzegovina E-Mail: <u>office@alfainvest.ba</u> Phone: + 387 66 000760 Website: <u>www.alfainvest.ba</u>



Company name:

Vatrostalac d.o.o. Tuzla



Fields of our activities for small district heating:

- construction, repairing and maintenance
- design of industrial chimneys,
- construction of industrial, chimneys
- repairing and maintenance of industrial facilities, working on high

References:

Twenty years working on design, construction and maintenance of industrial facilities. Our references:

- Design four steel chimneys for City heating company "Toplane" Sarajevo (32-64m high)
- Construction of three steel chimneys for heating company "Toplane" Sarajevo (32-64m high)
- Design and construction new concrete chimney High 31m for General hospital "Prim.dr. Abdulah Nakaš" Sarajevo
- Design, delivery and installation of three multi-layer chimney made of acidresistant stainless steel with inside diameter 800mm h=78m for "JKT Toplota Uzice i MPP Jedinstvo Uzice", Serbia

Our control units for heating stations were installed in 5 towns in our country...

General fields of our activities:

- diamond drilling
- Structural reinforcement of concrete and steel constructions
- anchoring and injection
- hydrodynamic cleaning
- testing of structures
- Equipment for working on high

General description of our company:

Vatrostalac d.o.o. is company specialized in design, construction, repairing and mainentance of industrial facilities, chimney, cooling towers, silos, towers, thermal facilities and works on heights.



Since the establishment (1996) Vatrostalac was involved in many activities, from operations on existing capital power facilities to design and build completely new objects in Bosnia and Herzegovina, Croatia, Serbia and Macedonia.

We now have 18 employer, specialized for special type of works.

Contact person: Elmir Hajdarbegović Address: Bosne Srebrene bb (SKPC Mejdan), Tuzla Country: Bosnia and Herzegovina E-Mail: <u>vatrostalac@bih.net.ba</u> Phone: +387 35 369 000 Website: <u>www.vatrostalac.com</u>



Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Croatia

WP 4 – Task 4.2 / D 4.2

November 2016



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CoolHeating website: www.coolheating.eu



Company name: Danfoss Danfoss		
Fields of our activities for small district heating:		
 Compact district heating substations 		
 Individual district heating substations 		
- Heat exchangers		
- Heat meters (calorimeters)		
 Pressure, flow and temperature controllers 		
- Motorized control valves		
- Electronic controllers		
- Balancing valves		
- Thermostatic radiator valves		
 Floor heating with hot water 		
- Electric floor heating		
- Burner components		
References:		
Republic of Croatia		
- Zagreb		
- Sisak		
- Osijek		
- Karlovac		
- Rijeka		
- Varaždin		
- Pokupsko		
Republic of Bosnia and Herzegovina:		
- Sarajevo, Tuzla, Zenica, Kakanj, Banja Luka, Doboj, Livno, Prijedor, Travnik		
General fields of our activities:		
Production of these products:		
- Compact district heating substations		
 Individual district heating substations 		

- Heat exchangers

- Heat meters (calorimeters)
- Pressure, flow and temperature controllers
- Motorized control valves
- Electronic controllers
- Balancing valves
- Thermostatic radiator valves
- Floor heating with hot water
- Electric floor heating
- Burner components

General description of our company:

Danfoss was founded in 1933 in Denmark and is presents in the following se gments: heating, cooling, frequency converters, industrial automation, heat pumps, etc. Zagreb branch of Danfoss was founded in 1996 and it celebrates 20 years of being present in Croatian market this year. It has 15 employees who are working in different segments (cooling, heating, industrial automation, administration). 7 people are employed in the heating segment. District heating components and products from Danfoss are used in every city in Croatia that has a district heating systems, which are: Zagreb, Sisak, Osijek, Rijeka, Karlovac, Varaždin, etc. We are especially proud of the first biomass district heating system in Croatia which is situated in the municipality of Pokupsko, where Danfoss provided compact district heating substations (heat exchanger, pressure, flow and temperature controllers, calorimeters, etc.). Besides Croatia, Zagreb branch of Danfoss also covers Republic of Bosnia and Herzegovina where it cooperates with suppliers of heat (Sarajevo, Tuzla, Zenica, Kakanj, Banja Luka, Doboj, Livno, Prijedor, Travnik). It has to be mentioned that besides district heating products that are used on the primary side, Danfoss produces equipment for secundary side as well (consumers) – thermostatic radiator valves and hydraulical balancing of the system. Without a well balanced secondary side, primary side can't fucntion well.

Contact:

Contact person: Bojan Jurinjak Address: Magazinska 9a, 10 000, Zagreb Country: Croatia E-Mail: bojan.jurinjak@danfoss.com Phone: +385916064202 Website: <u>http://heating.danfoss.hr</u>





Company name: Enerkon Ltd.	ENERKON			
Fields of our activities for small distric	t heating:			
- Designing district heating systems (developing the project)				
- Construction management for o				
	nstruction of district heating systems			
References:				
Pokupsko project:				
	al supervision during cosntruction			
Josipdol project:				
– developing the project				
Lovinac project:				
 developing the project 				
Žakanje project:				
 developing the project 				
Virovitica project – heat consumers from cogeneration facility:				
 developing the project 				
General fields of our activities:				
 designing and engineering of co 				
	ilities (up to 15 MW _{el}) based on turnkey			
system (for individual or combined production of heat and electricity)				
 power plants that use fossil fuels and/or renewable energy sources 				
 cogeneration power plants 				
 energy savings projects project revision and nostrificati 	on			
 designing and engineering of pi 				
 designing and engineering of poly designing facilities for heating, 	-			
hospitals, hotels and industry				
	quipment: pressure vessels, heat			
exchangers and pipelines				
	cilities for water treatment for industry			

needs

 designing and engineering of facilities for disposal of municipal, industrial and special waste

General description of our company:

Enerkon Ltd. is an abbreviation which stands for ENER –energy and KON – consulting. Enerkon was founded in 1992 by a group of experienced mechanical engineers in order to provide services in the area of project development (designing), consulting and building power plants and process plants. When building power plants, Enerkon offers professional approach and implementation of any phase of the project:

- preliminary and pre-feasibility studies
- techno-economic analyses
- selection and optimization of plants technical parameters
- conceptual design
- main and construction projects
- designing equipment
- implementing tenders for procurement of energy and process equipment
- consulting for equipment purchase
- supervision and quality assurance activities
- handover and warranty testing
- technical expertise

All Enerkon activities are performed in accordance with applicable national and international standards and regulations or according to customer requirements.

Contact:	
Contact person: Anđelko Mikulandrić	
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Phone: +38598386840	
Website: www.enerkon.hr	



Company name: Centrometal d.o.o.



Fields of our activities for small district heating:

- Boilers
- Container boiler rooms
- Accumulation tanks

References:

Large scale systems installed in over 20 European countries

General fields of our activities:

- Production of HVAC equipment
- Production of boilers (fueled by solid fuel, pellets, woodchips, etc., oil/gas, electricity) in the range 6 2500 kW
- Production of storage tanks for domestic hot water (solar + regular) made of INOX
- Production of accumulation tanks of up to 200.000 liters
- Container boiler rooms

General description of our company:

The company was founded in 1965, it has 235 employees and it develops equipment which uses renewable energy sources (wood, pellets, woodchips, solar, etc.). That way, the company contributes to environmental protection. The company is collaborating with 40 countries that are spread on all continents. We have a modern technology park and a test station and we also collaborate with University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture. The quality of products and company's operations are guaranteed by ISO 9001/2008, ISO 14001: 2004 and ISO 3834 – 2.

Contact:

Contact person: Mladen Renato Martinac Address: Babonićeva 53 , 10000 Zagreb Country: Croatia E-Mail: martinac@centrometal.hr Phone: 01/46 33 762 , 091 2338 784 Website: www.centrometal.hr





Company name: HERZ Armaturen d.o.o.

(CROATIA – ZAGREB)



Fields of our activities for small district heating:

 leading European manufacturers of biomass boilers, combination systems, transport systems, extraction systems and manufacturers of heat pumps, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves for domestic installations for heating, air conditioning, sanitary and gas appliances.

References:

Regional energy agency (town of Karlovac), 180 kW Factory Bernarada (town of Nedelišće), 299 kW Elementary school (town of Švarča), 499 kW District of Pokupsko , 1000 kW Castle of Lipa (town of Duga Resa), 100 kW Aqua park (Adamovec), 600 kW Town Zoo (town of Zagreb), 45 kW Water Supply Company (town of Buzet), 80 kW Company Ecos (town of Vitez), 350 kW Nursery (town of Udbina) , 20 kW Commercial business building (town of Novi Travnik), 201 kW

(And many other.....)

General fields of our activities:

Research and development in the field of district heating, biomass,

biomass gasifier, solar heat, heat pumps, building, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves, installations for heating, air conditioning, sanitary and gas appliances

technologies, hydraulics

- Energy concepts and optimization for industry, municipality, buildings
 - - Drying (wood, food,...)

General description of our company:

HERZ-Armaturen

HERZ is an Austrian company, which is recognized internationally, at present, with approximately 2.400 employees in 24 production facilities worldwide, HERZ-Armaturen is one of the leading European manufacturers of biomass boilers and manufacturers of heat pumps, valves, fittings, circuit regulating valves, dynamic control fittings and thermostatic valves for domestic installations for heating, air conditioning, sanitary and gas appliances. Over the years HERZ has become the established specialist for renewable energy systems. The HERZ product range is a one-stop shop for: wood gasification boilers up to 40 kW, pellet plants and wood chip plants up to 1,500 kW (with cascade switching up to 4,500 kW), heat pumps up to 110 kW and buffer and hot water tanks. New member of Herz grupation is company Binder with the most modern biomass boilers up to 20.000 kW whit a use of cogeneration and steam. Its principal

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focus is on modern, cost-effective and environmentally friendly heating systems offering maximum comfort and user-friendliness.. We deal with resource-friendly energy supply and ensure an energy-efficient creation of economic and convenient systems.

Founded in 1896 the company, known today as HERZ Armaturen GmbH, was set up through the establishment of the valve factory Gebauer & Lehrner. At present, HERZ trades internationally in over 75 countries from its headquarters in Vienna/Austria. The company offers stability, reliability and continuity with a clearly defined company concept, a thoroughly integrated quality management, competent and motivated co-workers and regular personal contact on all levels.

Contact: Herz Armaturen d.o.o. (Croatia – Zagreb) Contact person: Mr. Petar Jelić (regional manager for Croatia and Bosnia and Herzegovina) Address: Hrelička 62, 10 000 Zagreb **Country: Croatia** E-Mail: petar.jelic@herzarmaturen.hr, ured@herzarmaturen.hr Phone: 00385 91 31 10 991, 00385 1 6607 365 Website: www.herz-hr.com, www.herz.eu, www.herz-energie.at, www.binder-gmbh.at





Company name:

North-west Croatia Regional Energy Agency (REGEA)



Fields of our activities for small district heating:

- Developing guidance and analysis required for the project (conceptual design, feasibility studies, economic analyses)
- Analysis of possible sources of funding (grants, involvement of private entrepreneurs) and proposal of optimal financial structure
- Preparation of documentation for obtaining grants (The Environmental Protection and Energy Efficiency Fund, the EU structural funds)
- Supervision of the construction of the system
- Management of the entire project and coordination of all stakeholders

References:

Biomass district heating system in the municipality of Pokupsko - the first and only municipal biomass district heating plant in Croatia, construction funded by IPARD pre-accession program.

General fields of our activities:

- Encouraging the establishment and implementing innovative models of financing of projects based on the consolidation of projects and aggregation of investments, which are applicable at the national level.
- Developing regional platform of financing and implementing energy projects, which will include sharing of resources from EFSI Fund and structural funds in order to achieve greater financial performance.
- Developing projects and maximizing the use of funds from EU sources (structural, cohesion, development funding sources ITU, Horizon2020 etc.) for the founders of REGEA
- Developing financial instruments (revolving schemes etc.) as the preferred way of financing energy projects
- Conducting educational programs that will focus on specific issues of sustainable energy use in the public and private sectors in a broad collaboration with experts of all profiles
- Creating a market for the commercial sector business (consultants, designers, certifiers, contractors, etc.) and energy services (ESCO market)
- Developing small and medium enterprises through the establishment of a business incubator for young companies in the field of energy and

CooHeating

sustainable construction - primarily through energy center Bračak

- Providing comprehensive energy consulting services for the founders of REGEA
- Expanding international cooperation and networking with regions, cities, energy agencies and similar institutions of the European Union

General description of our company:

North-West Croatia Regional Energy Agency – REGEA was established by the City of Zagreb and three neighboring counties – Zagreb, Karlovac and Krapina-Zagorje county in 2008, within the framework of the Intelligent Energy Europe Programme. The main objective and role of the Agency is to promote and support regional sustainable development in the field of energy and environmental protection through the use of renewable energy sources and introducing energy efficiency measures. In addition, the Agency has a duty to introduce good practices of energy management, promote the concept of sustainable development, provide information and advice and a range of other services based on specific local energy needs. REGEA is the leading professional institution in the field of planning of energy development, professional and qualified for the application and implementation of projects co-financed by the Republic of Croatia and EU funding sources.

Contact:	
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Country: Croatia	
E-Mail: vsegon@regea.org	
Phone: +38513098315	
Website: www.regea.org	



Company name:		
Komunalno gospodarstvo Pokupsko		
Ltd.		



Fields of our activities for small district heating:

- Practical demonstration of a biomass district heating plant (wood chips) 1 MW, including distribution network

References:

- The first biomass district heating plant (wood chips) in public ownership in Croatia

General fields of our activities:

- Production of heat that is used for heating in households but also for business and public entities.
- Distribution of heat to the end-user

General description of our company:

Komunalno gospodarstvo Pokupsko Ltd. was established in November 2015 and it is based in Pokupsko, Croatia. Founder of the company is municipality of Pokupsko. Line of business of the company is: production of heat, supply of heat and distribution of heat. The company has one employee who is a director of the company, as well as the head of the district heating plant. The plant was put in operation in January 2016.

Contact:	
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Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Denmark

WP 4 – Task 4.2 / D 4.2

November 2016



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691679. The sole responsibility for the content of this report lies with the authors. It does not necessarily reflect the opinion of the European Union nor of the Innovation and Networks Executive Agency (INEA). Neither the INEA nor the European Commission are responsible for any use that may be made of the information contained therein.

CoolHeating website: www.coolheating.eu

This report provides an overview of the Danish district heating industry including profiles of companies. The Danish district heating industry is organised in different associations, two focusing on export of district heating technology; FleksEnergi and DBDH.

FleksEnergi, www.fleksenergi.dk

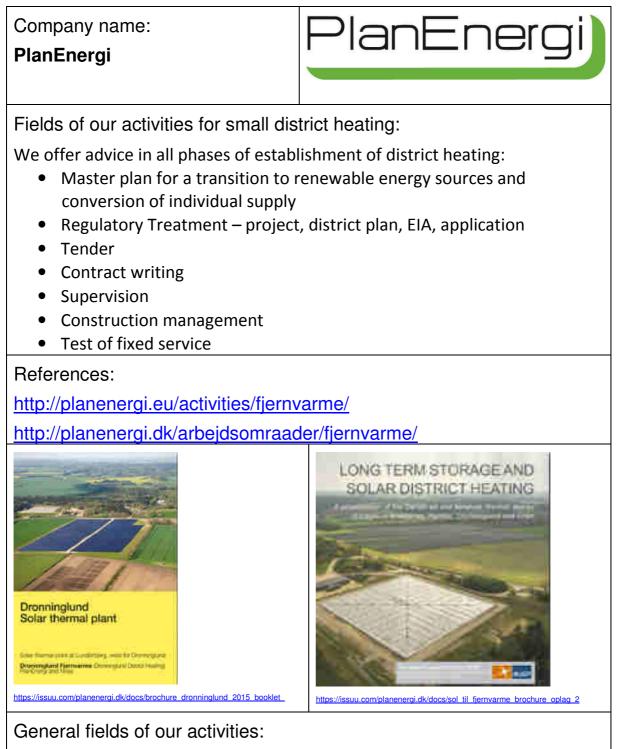
District Heating Cluster in North Denmark. FleksEnergi is a partnership between the City of Aalborg, the North Denmark Region, Aalborg University, district heating plants, and local companies within district heating. Our common objective, to phase out fossil fuels in favour of sustainable energy sources, not only accommodates the region's collective, ambitious environmental goals, but it has also sparked a green district heating industry with enormous potential.

DBDH (Danish Board of District Heating), www.dbdh.dk

DBDH's mission is to promote district energy for a sustainable city transformation. DBDH represents the leading actors of the district energy sector, and identify, inform and facilitate partnerships between its members and partners in more than 50 countries. Through cooperation, DBDH strengthens the export of Danish technology and knowledge.

Members of DBDH comprise consulting engineers, equipment and turnkey suppliers and district heating utilities.

Company profiles are available from <u>http://dbdh.dk/our-members/</u> Detailed profiles from selected companies will be included later.	The magazine Hot Cool and other publications are available from <u>http://dbdh.dk/hot-cool-magazine/</u>
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PlanEnergi offers consulting in all phases of development of renewable energy projects, including planning, design and implementation.

We offer expert advice in:

- Strategic energy planning for regions and municipalities
- District heating, including solar heating

- Wind energy
- Biogas

Design, implementation and supervision in the construction phase

Through on-going expansion and growth, PlanEnergi now has a multiskilled staff with in-depth expertise and hands-on experience concerning renewable energy and energy efficiency. Due to its impressive profile, PlanEnergi is among the leading firms which offer comprehensive advice in energy supply and energy planning.

For anyone in the private or public sector wishing to establish a sustainable energy supply in Denmark or elsewhere, PlanEnergi is the obvious partner.

General description of our company:

PlanEnergi was established in 1983 and operates as an independent consultancy, organized as non-profit. We are more than 30 employees in three offices in Denmark: Skørping, Aarhus and Copenhagen.



Solar district heating and pit thermal energy storage (seasonal) in Marstal, Denmark http://www.solarmarstal.dk/english Electrical ground water heat pump in Rye, Denmark.

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FleksEnergi

District Heating Cluster in North Denmark

North Denmark is a dynamic lab for developing new innovative solutions within district heating, and FleksEnergi is the cluster that facilitates new partnerships between members.

GET CONNECTED

Through FleksEnergi, you will be connected to not only a large number of world-class experts within district heating but you will also have access to extensive intelligence and practical experience within the field of energy systems. FleksEnergi is a unique constellation where scientists, businesses and district heating plants come together and develop the district heating systems of tomorrow.

EXPERTISE ACROSS BORDERS

To the advantage of district heating systems beyond the borders of Denmark, the members of FleksEnergi are ready to share their know-how and to implement state-of-the-art solutions abroad as well. In other words, our expertise is available to you.

A SHARED GOAL

FleksEnergi is a partnership between the City of Aalborg, the North Denmark Region, Aalborg University, district heating plants and local companies within district heating. Our common objective, to phase out fossil fuels in favour of sustainable energy sources, not only accommodates the region's collective, ambitious environmental goals, but it has also sparked a green district heating industry with enormous potential.







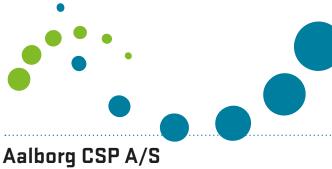
Contact FleksEnergi

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Investing in your future





District heating with concentrated solar power (CSP)



WHO IS AALBORG CSP?

With more than 25 years of thermal-engineering experience and a global leadership in concentrated solar power (CSP) systems and technologies, Aalborg CSP was the first company to bring CSP technology to Denmark. Based on the company's value-adding engineering approach to design technologies that excel in operation, Aalborg CSP has developed an innovative solar-thermal system to generate hot water for district heating purposes with the highest efficiency in the Nordic climate.

CSP FOR DISTRICT HEATING

The CSP technology applies sun-tracking, U-shaped mirrors, called parabolic troughs, to maximise the sun's energy and consequently the efficiency of heat production. The sun rays are captured and reflected onto a receiver pipe filled with water and located in the central point of the troughs. Here the concentration and a significant better utilisation of the sun's energy is obtained enabling high-temperature water generation. This simple but superior solar thermal technology has been verified by the Technical University of Denmark (DTU).

As turnkey supplier of CSP district heating systems, Aalborg CSP provides custom-designed solutions that meet individual project requirements. From engineering work to component or complete system deliveries, Aalborg CSP is a world-class thermal engineer partner in realising all types of customer inquiries.





CONTACT INFORMATION

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AALBORG CS your green thermal energy partne

Find out more at www.aalborgcsp.com

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SHORT INTRODUCTION TO ADDING

Adding is an engineering company that performs electrical-, mechanical- and process technical works. We are specialists in process engineering, energy plants and systems and production techniques. Furthermore, we work as project managers on all levels.

WHAT DOES ADDING OFFER?

We love a good challenge, but we also know what our abilities are. Our services can be divided into the following areas:

- » Project Management
- » Electrical Engineering
- » Mechanical Engineering
- » Process Engineering

Adding makes project management on sites in Jordan, Switzerland, Denmark, Singapore, Russia and many other countries. We make engineering on thermal and solar power plants, high pressure boilers, district heating systems, refineries, FPSD vessels, ships, burners, control systems, process instrumentation, electrical and mechanical systems, pumps, fans, etc. etc.





CONTACT INFORMATION

John Sloth CEO, Partner +45 21 21 46 49 js@adding.dk





Arcon Solar

We combine world-class technology with smart solutions



SHORT INTRODUCTION TO ARCON SOLAR

As marked leader we hold more than 25 years of experience building large solar thermal systems in Denmark and Europe. Our HT solar collectors are optimized for large-scale installations and have the highest yields available - an advantage for the environment and our customers. At ARCON Solar we constantly develop our product line and we strive to meet our customer's requirements by offering:

- » Profound knowledge and experience in system integration and engineering, short lead times in production and quick installation
- » High temperature solar collector fields optimized to in-line use (HT-HEATboost) as well as solar energy storage (HT-HEATstore)
- » Innovative and elegant steel foundation mounting solutions

WHAT DOES ARCON SOLAR OFFER?

With our in-house engineering capacity, we hold the expertise to configurate and design systems meeting individual requirements. We know what matters – since 15 of the world's 25 largest flat plate solar heating plants have been produced by ARCON Solar.

REFERENCE: GRENAA DISTRICT HEATING - DK

In March 2014 a solar thermal collector field totalling 12.096 m² was installed at Grenaa Varmevaerk (Grenaa Heating station) in East Jutland, as a Turnkey project from ARCON. The huge installation comprises 4 different ARCON HT collector types. The mix of collector types in the field design will ensure an optimized flow throughout the field.

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CONTACT INFORMATION Søren Elisiussen

CEO +45 98 39 14 77 se@arcon.dk



Find out more at www.arcon.dk





Dan-Iso A/S

Dan-lso is a part of the good solution.



SHORT INTRODUCTION TO DAN-ISO A/S

Dan-Iso manufactures insulation material from polyurethane (PUR and PIR). We produce quality products for technical insulation and are one of the leading manufacturers of PUR insulation shells in Europe. Dan-Iso's qualifications are based on more than 20 years of experience and a working force with considerable process knowledge.

CUSTOMER GROUPS:

- » Technical insulation
- » District heating
- » Oil and offshore industries
- » Refrigeration industry
- » Industrial insulation

COMPETENCES:

Dan-Iso offers an extensive product range and a broad customer segment. Dan-Iso takes on special cutting and gluing assignments. We have developed flexibility in connection with solving tasks and acquired positive experiences when it comes to cooperation with customers on product development. Recently, we have invested in a 5 axle CNC that has endless possibilities.

REFERENCE:

Dan-Iso is one of Europe's leading specialists in technical insulation material of polyurethane and has cooperated with most district heating pipe producers in Europe.

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CONTACT INFORMATION

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Find out more at www.Dan-Iso.dk



- Proven Technology



GLOBAL DEVELOPER OF PUMP SOLUTIONS:

DESMI is a global company specialised in the development and manufacture of pump solutions for marine, industry, oil spill combating, defence & fuel and utility both locally and globally.

WHAT DOES DESMI OFFER?

DESMI offers pumps and pumping solutions for district heating. We deliver energy efficient pump solutions with low NPSH values to match sustainable energy, and we are market leader for pump solutions for district heating transmission pipelines, distribution networks and substations. All DESMI pumps have a long life cycle and are very maintenance friendly.

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REFERENCE: DISTRICT HEATING

- » Denmark: Aalborg District Heating Co. Rærup Pumping Station NSL300-415 centrifugal pumps, each with a capacity of 2,600 m²/h.
- » Holland: Nuon Energy Company (Vattenfall) several pump supplies e.g. for WKC Almere Power plant.
- » China: Zunhua Power and Heating plant (160 km east of Beijing) -NSL300-525 pumps, each with a capacity of 1,250 m²/h at 110 mWC and 1742 rpm.
- » Norway: Lillestrøm. e.g. NSL 300-525 pumps.





CONTACT INFORMATION

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Software and consultancy

Software and consultancy



SHORT INTRODUCTION TO EMD:

EMD International is a software and consultancy company with more than 20 years of experience in the design, planning and documentation of energy projects all over the world. The software developed by EMD International is widely recognized and continuously being upgraded to ensure that the software contains the latest knowledge and experience available.

WHAT DOES EMD OFFER?

The Energy System Department at EMD International is specialized in modelling complex co- and trigeneration projects based on the energyPRO and energyTRADE software

- » energyPRD is a modelling tool for combined techno-economic analyses and optimization of energy plants
- » energyTRADE is a tool for planning of the daily operation and biddings of energy plants participating in one or more electricity markets

REFERENCE:

The energyPRO software has been used in the planning of a geothermal district heating plant at Sønderborg Fjernvarme in combination with the existing waste incineration plant and thermal storage.

The energyTRADE software is being used by Verdo to plan the complex participation of a 50 MW-el biomass fired CHP-unit in both the Nord Pool Spot Market, the Tertiary reserve and the Primary reserve.



CONTACT INFORMATION

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Find out more at www.emd.dk

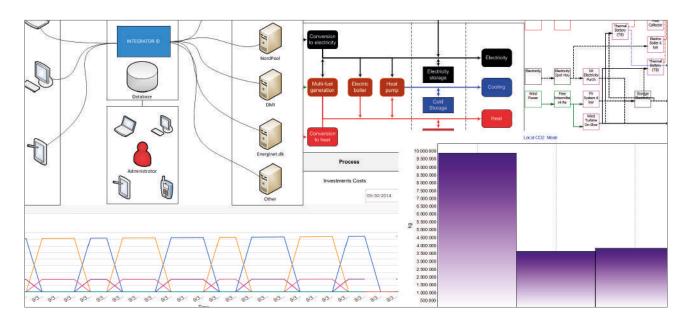
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Sustainable Energy Smarts

Sustainable Lifergy Sinarts



ENERGIANALYSE.DK creates intelligent solutions that change the way sustainable energy is produced and consumed. We create powerful and interactive energy analytics that enable businesses, utilities, aggregators, and policy makers to make feasible and cost-effective decisions.

Our software products include:

- » COMPOSE[®] is a parametric linear programming model for designing and evaluating energy options within an energyeconomy system. COMPOSE provides a rapid and powerful basis for comparative energy systems analyses that are consistent with the micro-economic reality of operational scheduling.
- » INTEGRATOR[®] is an online platform independent solution for serving users, aggregator and maintenance organizations, with powerful and interactive data analytics and optimization tools for everything related to production, operation, and consumption of energy.

Dur solutions combine knowledge within the fields of techno-economics, operational scheduling, interactive software, renewable energy, smart energy systems, district heating and district cooling, Power-To-Heat and Power-To-Cooling, Power-To-Gas technology, compression heat pumps, electric boilers, thermal storages, and distributed generation systems.

At the same time, we believe that energy modeling without capacity building is no pretty model at all. Every client is unique and we are dedicated to analyzing energy systems in context, while producing value awareness and inclusive skills driven by case-in-demand.

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Find out more at www.energianalyse.dk



Inopower

Innovative Power Automation



SHORT INTRODUCTION TO INOPOWER:

Inopower has since its establishment in 2002, been specialized in development of control systems for energy generation/distribution and district heating processes, in decentralized energy systems. Inopower's engineers are a dedicated work force with many years of experience in control systems development for energy and process control. Inopower is leading supplier of Power Grid balancing systems, dispatching and ancillary services in Denmark.

WHAT DOES INOPOWER OFFER?

- » Engineering and planning of automation system for power
- » PLC & SCADA system for a wide range of applications
- » Grid balancing, communication and remote control system for the energy sector
- » Worldwide experience

REFERENCE:

- » Control system for district heating powerplants in Denmark
- » Control system for district heating powerplants in Denmark
- » Generator protection and voltage regulation. On/Off shore; Statoil Norway
- » Gas-turbine control system (3->50MW); IER Dubai



CONTACT INFORMATION

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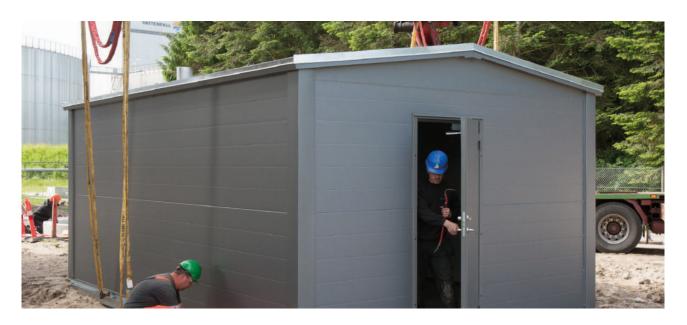
Find out more at www.inopower.dk

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Intego

Leading supplier of prefabricated technical shelters



SHORT INTRODUCTION TO INTEGO:

Intego is a leading supplier of prefabricated technical shelters manufactured from rustic, durable and modern materials. We specialise in tailored solutions that meet the individual needs of our clients. Intego Shelters represent customised solutions that are based on standard modules. On account of this approach, we are able to deliver tailored solutions quickly and efficiently, matching any financial budget.

WHAT DOES INTEGO OFFER?

Intego produces tailored technical shelters. We perform all phases of a project, from design, production and testing to delivery and on-site installation. Among other services, we provide supply companies with pumping stations, but also offer technical shelters and server rooms to a number of sectors and for a variety of purposes:

- » Rail sector
- » Telecom sector
- » Broadband sector
- » Server
- » Utility

REFERENCE:

Intego fulfilled the role of full-line supplier as we produced and delivered two Intego Shelters to TREFOR Heating. Both shelters are customised specifically to the requirements listed by TREFOR Heating, and are therefore divided into two compartments, intended to separate the machine section from the electricity. The shelters were delivered on-site, ready to 'plug & play'. "Intego provided us with a complete, high-quality solution. Should the need for additional pumping stations arise, we will most certainly turn to Intego for assistance again." Ivan Sand, Chief Engineer at TREFOR Heating.

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CONTACT INFORMATION

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Find out more at www.intego.dk





Distributing energy efficiency



THE HISTORY:

More than 50 years ago, LOGSTOR invented the pre-insulated pipe technology and is today the global leader, when it comes to these pipe systems for energy-efficient transportation of liquids and gases for district heating and cooling, marine and industrial purposes as well as oil and gas.

LOGSTOR'S VISION:

"We make the World's energy supply more efficient and reduce the global energy loss with leading insulation products, improving the environment for the populations in all continents."

FACTS:

To this date, LOGSTOR has delivered more than 170,000 km of pre-insulated pipes. LOGSTOR is a business within the energy industry providing environmentally friendly solutions and thus contributing to reductions in CO2 emissions and improved energy efficiency.





CONTACT INFORMATION

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LOGST

Find out more at www.logstor.com

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Neas Energy

- energy asset management company



SHORT INTRODUCTION TO NEAS ENERGY:

Neas Energy is an independent energy asset management company with activities on the European energy markets. We operate in power, gas and certificate markets across Europe. The company's head office is in Aalborg, Denmark and regional offices are located in London, Hamburg and Stockholm.

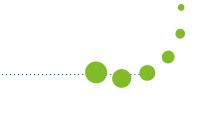
Our core business model is centred on optimising energy assets for customers operating on liberal energy markets with the value proposition of "Maximising Value by Managing Risk". Our objective is to trade physical electricity and gas on all major European markets by 2015, to ultimately provide pan-European asset optimisation to owners and operators of physical energy assets.

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WHAT DOES NEAS ENERGY OFFER?

Neas Energy's main activities are centred on the optimisation of energy assets and include:

- » 24/7 trading of asset-backed energy production and consumption
- » IT system for operation and optimisation of assets
- » IT systems and 24/7 manual control of balance responsible party services
- » Structuring of contracts for balanced risk/reward profile





CONTACT INFORMATION

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Your expert in renewable energy



NIRAS IS YOUR EXPERT IN RENEWABLE ENERGY

NIRAS has experts that can guide you in combining energy systems adapted to your specific needs and local conditions. We have an interdisciplinary and innovative approach to working with energy supply and we take pride in transforming our clients visions and challenges into efficient sustainable solutions with concern for the environment.

WE CAN LEAD YOU TO THE LATEST TECHNOLOGY IN DISTRICT HEATING

- » Low temperature district heating
- » Solar heat and Wind power
- » Seasonal heat storage
- » Cost efficient production plants
- » Heat pumps
- » Bio mass technology for both heat and power

TECHNICAL SOLUTIONS SINCE 1985

NIRAS is the leading engineering consultancy company in Denmark in heat supply planning with renewable energy. Our experience in large scale solar heating systems goes back to the introduction on the Danish market in 1985. Since then our engineers have obtained worldwide experience in international energy projects.

REFERENCE:

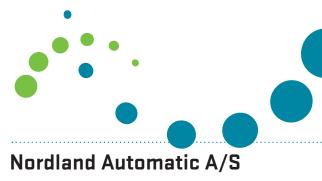
- » Dronninglund the World's largest solar heat plant with a pit storage of 62.000 m3
- » Hjørring the World's most efficient biomass plant
- » Hillerød, Biomass plant using the latest ORC technology



CONTACT INFORMATION

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Technology that works for you



SHORT INTRODUCTION TO THE COMPANY:

Nordland Automatic was established in 1995. We have a long-term experience in industrial systems from control- and failsafe solutions in the energy sector over engineering and manufacturing of control- and distribution panels to high-end robotic solutions. Nordland Automatic develops both customized solutions and many types of standard solutions.

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WHAT DOES NORDLAND AUTOMATIC OFFER?

Flexible solutions your business need:

- » PLC controllers and Process monitoring
- » SCADA Visualization Systems
- » Control and Distribution panels
- » Boiler and Burner Control- and Safety Systems
- » Robotic Solutions
- » Machine Controls
- » Vision System
- » Database development/PC programs

REFERENCE:

Developing and servicing control systems for a number of smaller local power plants Supplier of software for boiler management – and control systems for on-shore power plants Supplier of control systems for marine boilers Robotic solutions for handling and packaging



CONTACT INFORMATION

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Find out more at www.nordland.dk



PlanEnergi

- energy asset management company



SHORT INTRODUCTION TO PLANENERGI:

PlanEnergi was established in 1983 and operates as an independent consultancy company. PlanEnergi's mission is to promote the use of resource saving and environmental sustainable energy systems. The firm's objectives are continually promoted through its professional activities.

WHAT DOES PLANENERGI OFFER?

At its core, PlanEnergi specializes in the development and creation of environmental solutions for renewable energy, effective energy use and energy planning, as well as information-based services. The company works with the private and public sector. In particular, PlanEnergi covers the following 4 key areas of advice:

- » Energy planning including heat and wind energy
- » District heating with renewable energy (solar energy, heat storages, heat pumps, biomass) from design to implementation and commissioning
- » Biogas energy including planning, design and implementation
- Wind energy, from planning to mapping to visualization, and ultimately, to the precise layout of newly installed wind turbines »

REFERENCE

The World' largest solar heat plant, Dronninglund (DK). The plant consists of 2.982 solar heat panels with a total area of 37.573 m2. The solar heat is sent to the consumers of district heating in Dronninglund. During summer, however, the plant produces 7 times the consumption required when the sun shines. This surplus heat is fed into to a large water storage of 62.000 m3 and used during autumn and winter. A heat pump uses the water as its source of heat letting the temperature drop to 10 degrees C during winter.

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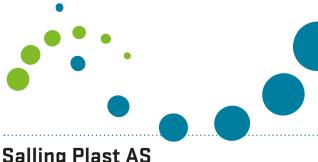


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Find out more at www.planenergi.eu





Salling Plast AS

- specialist solutions for district heating



THE HISTORY:

Salling Plast was founded in 1967 and today the company employs more than 100 people. Since the beginning our goal has been to establish long-term relationship with our customers and to meet their requirements and expectations in the projects we are involved in. Our ongoing customer survey shows that we indeed have succeeded in achieving this goal.

SPECIALIZING IN CUSTOM SOLUTIONS

Thanks to our highly flexible and efficient production apparatus we are able to handle custom solutions efficiently and on-time. Our employees are highly trained to ensure uniform quality throughout the production process. Our production complies with applicable standards and regulations under ISO 9001:2008 and the production of heating pipes comply with EN 253:2013 and underlying standards.

SUB-CONTRACTOR FOR THE OLYMPICS:

As sub-contractor for INPAL, Salling Plast produced the shrinkable casings used for building the distribution pipe network for the Summer Olympics in London 2012. For this project, as well as for many other projects, quality and on-time delivery were of the utmost importance. Recently, we were also involved in a highly specialized project for the Sochi 2014 Winter Olympics.





CONTACT INFORMATION

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Find out more at www.sallingplast.com

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WHO IS SASECO:

Saseco is a software development company specialising in solutions for personal energy management and home automation. We have developed a user friendly online application designed to combine the advantages of automated meter reading with wireless home automation. Saseco is dedicated to advancing the synergy between the new technologies in wireless automation and intelligent energy meters.

WHAT DOES SASECO OFFER?

Our main product, eButler, is an online software-as-a-service application for visualisation of energy consumption and controlling wireless home automation devices like switches, dimmers, smoke/movement sensors, thermostats etc. The consumption of water, electricity, gas and heating is registered hourly by so-called 'intelligent' meters, giving the user a unique insight into his/hers consumption patterns. Most energy management systems are developed for professional users, and as such require a high level of prior knowledge. Our products, however, are developed specifically for consumers. This means feature accessibility over feature profusion, and boiling down complicated calculations to simple charts and sophisticated analysis to plain results.

EBUTLER - EFFICIENCY IN ENERGY CONSUMPTION:

The Danish Technological Institute, Saseco, AffaldVarme Aarhus and Randers Municipality have come together in the project "eButler - efficiency in energy consumption" to uncover how data from remotely read meters in private homes and public buildings can be used to influence energy consumption and behaviour over time. Saseco has developed the visualization system called eButler to collect and visualize data from all kinds of energy usage and to facilitate intelligent home control.

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CONTACT INFORMATION

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Find out more at www.saseco.dk



World-class Green Energy Solution



WASTE & BIOMASS COMBUSTION, ENERGY & POWER PLANT SOLUTIONS:

Weiss A/S is a Green Profile company, with long experience in environmental and efficiency optimized combustion. We specialize in waste and biomass combustion solutions with company history dating back decades.

Weiss A/S has its own Development, Design, Construction and Project Management Departments. We have our own in-house boiler production facilities in Denmark and Poland. All our boiler designs benefit from more than 1000 reference installations worldwide. We are a leading producer of combustion plants in Scandinavia.

WHAT DOES WEISS OFFER?

Weiss A/S Energy Power Plants convert various kinds of Biomass or Waste into Heating, District Heating, Electricity and Process Steam. Weiss A/S also handles incineration of hazardous and medical waste, and even low level radiation waste from the nuclear industry.

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Find out more at www.weiss-envikraft.dk

Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Germany

WP 4 – Task 4.2 / D 4.2

November 2016



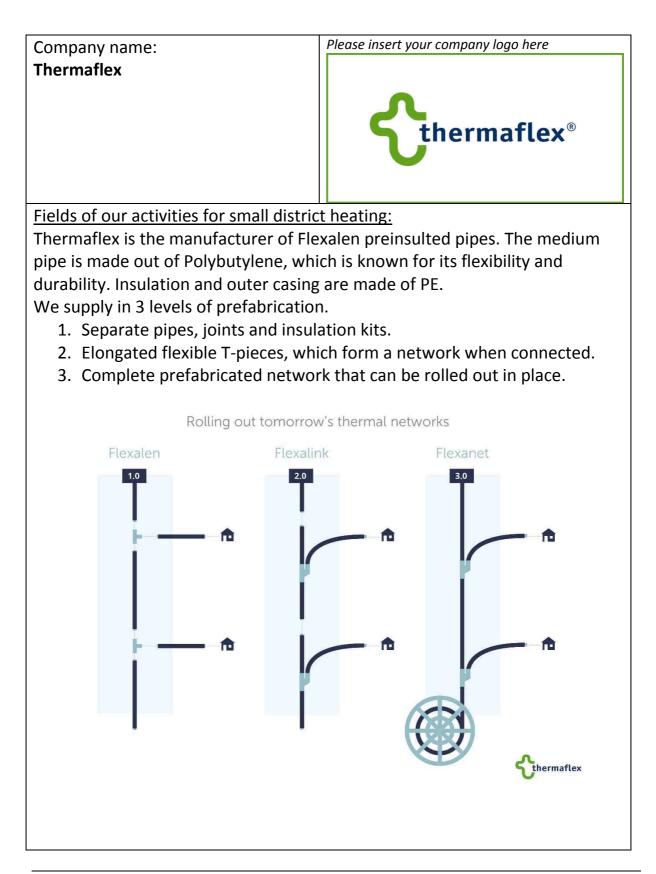
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- Contact: Güssing Energy Technologies GmbH Christian Doczekal Email: c.doczekal@get.ac.at, Tel: +43 3322 42606 331 Wiener Straße 49 7540 Güssing, Austria www.get.ac.at



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CoolHeating website: www.coolheating.eu





<u>References:</u>

Flexalen preinsulated pipes are in use all over Europe as well as in very demanding environments like the Iraqi desert and Antarctic snow. Our connected buildings can for example be found in:

- Otopeni, Romania
- Purmerend, The Netherlands
- La Capelle Marival, France
- Lyngdal, Norway
- Wörgl, Austria

General fields of our activities:

Aside pre-insulated pipes for district heating/cooling and other thermal energy projects, Thermaflex has built a solid reputation in Technical Insulation products. We proud ourselves in manufacturing truly sustainable and extremely durable insulation, awarded the number one quality/suitability certificate: Cradle to Cradle.

General description of our company:

Thermaflex is a family owned company, where taking care of future generations has been in our very nature since 1976.

With some 450 colleagues we operate 20 sales/service offices and 5 production plants from Latin America, Europe, Middle East to South-East Asia.

Contact: *Thermaflex* Contact person: Christian Engel Address: Waalwijk Country: The Netherlands E-Mail: c.engel@thermaflex.com Phone: +43 676 523 7701 Website: www.thermaflex.com





Company name: Meibes System Technik GmbH



Fields of our activities for small district heating:

- Standardized district heating stations for wall mounting or frame construction
- Customized district heating stations till 10MW
- Heat interface unit's for DHW preparation and space heating
- Cooling interface unit's
- Metering products for the metering of used energy, water, etc.
- Standardized, pre-manufactured and pre-insulated manifolds, boiler guards, pump groups, etc. for a proper heat distribution and balancing valves

References:

- Producing of thousands standardized district heating stations per year up to 100kW
- Producing of customized district heating stations
 - Wroclaw (Poland) angel wings building 3
 - Berlin (Germany) technical university 2 (1.400 and 2.800kW)
 - Lodz (Poland) 4 (total 274kW)
 - Rymanow health resort 5 (400 1.014kW)
 - Salon "BMW" Prague incl. heat distribution with manifolds, buffertank, pump groups, etc.
 - France 135 pieces with 30 2.200kW
 - Canada one station with 3.450kW

General fields of our activities:

Meibes exists more than 50 years and is located in the field of products for heat distribution. Our product range starts after the heat generation. We manufacture and supply district heating station, heat interface unit for the DHW preparation and heat distribution, cooling interface unit's, preinsulated manifolds, pumps groups, boiler guards, etc.! Furthermore manufacture and supply products for metering of used energy, water, etc. and balancing valves.

Meibes helps its customers to realize the project development with the existing products and / or some modified or customized products.

General description of our company:

- 1961 Foundation through Helmut & Alfred Meibes
- Foundation of Meibes Czech, Meibes Poland and Meibes Russia
- 2001 Get into the Aalberts Industries N.V.
- 2008 Fusion of the Company Rossweiner into the Meibes Group
- 2013 Founding Meibes China & member of Climate Control of the Aalberts Industries N.V
- 2014 Tacking of the production of Ballorex (balancing valves) to Rossweiner
- 2015 Meibes: Employees ~460 / Turnover >95Mio. EUR

Operation worldwide with different sister companies like Pegler Yorkshire, Comap, Simplex, Flamco, etc. and main customers (OEM business).

Cool-Heating



Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Macedonia

WP 4 – Task 4.2 / D 4.2

November 2016



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CoolHeating website: www.coolheating.eu



Company name: DOMINUS , dooel export import Skopje Zelezeznicka 36/13, Skopje Macedonija



Fields of our activities for small district heating:

Extensive experience in project cycle management. Activities include urban and architectural design (plan), including all the necessary phases in construction, electrical installation, mechanical installations, water systems, sewage, safety, health, energy efficiancy considerations also with financial specification analysis, written report for the bill of quantities and supervising of the work. Preparing the documentation for the Ministery of transport and communications.

References:

- The main project of energy efficient residental house in Skopje, 290m2, (with all necessary phases) -
 - Thermal pump for floor heating and fencoolers cooling, included sanitary water warming
 - Client : Petrovski, 2015-2016
- The main project of energy efficient & environmentally friendly high school Koco Racin, Skopje, 8000 m²,
 - Client : The City of Skopje,
 - Thermal pump using geotermal water for floor heating and ceiling cooling, 2012-2013
- The main project for the interior design of administrative premises of TEHNOMARK, Skopje, 144 m²,
 - Thermal pumps for floor heating, 2013

General fields of our activities:

- Experience with requirements of clients; fundraising; program design, planning and management;
- Extensive experience in project cycle management:

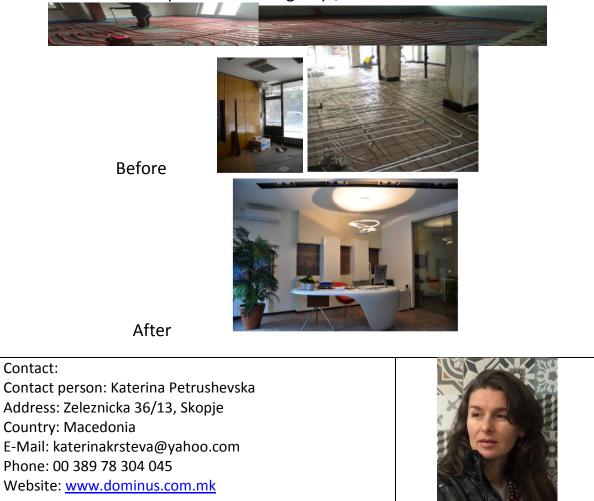
Activities include urban and architectural design (plan), including all the necessary phases in construction, electrical installation, mechanical installations, water systems, sewage, safety, health, energy efficiancy considerations also with financial specification analysis, written report for the bill of quantities and supervising of the works. Preparing the documentation for the Ministery of transport and communications.

- Supervising of activities ion the field

General description of our company:

Dominus was founded 1994 in Skopje by arch. Sonja Nakovska.

All three employees are architets. Activities include urban and architectural design (plan), collaborating with all profiles of engineers. The customers are private investitors, as well as enterprises like TEHNOMARK, GROSSPLAST, MAKOM, municipalities and the City of Skopje. In the field of mechanical constructions the cooperants are ICS group, TEMON ..



Your partner to build small district heating systems

CooHeating

Company name: ECO ENERGY SYSTEM –Skopje, Macedonia



WASTE MANAGEMENT SOLUTIONS

ECO ENERGY SYSTEM

Fields of our activities for small district heating:

- Eco Energy System was incorporated with foreign capital for a development program in the Balkans for waste management solutions.

The key points of waste management solutions involve:

- The increasing requests from both Municipalities and the EU, for sustainable solutions to the emergency of clean waste removal in urban centers

- The existence of primary institutionally guaranteed contributions for disposal (Tipping Fee) paid by the Municipality to whom the above services are provided

- The recycling of exploitable fractions such as plastics (PET - HDPE – LDPE), cans (aluminum), paper, glass, metals, etc. which have a real market

- The production of RDF (Refused Derived Fuel) also called bio-char (bio-coal)

- The real solution to the environmental problems of most landfills: with our exclusive technologies there are no emissions, no gas, no odors, no leachate and the least possible amounts of inerts discarded in the landfill : < 10% of residue.

References:

General fields of our activities:

Eco Energy System has created an important partnership to achieve exclusive distribution for the Balkans of the proprietory technology called POLISUN. Furthermore, Eco Energy System has been active in obtaining exclusive concessions relating to the management of landfills that will use the POLISUN technology.

POLISUN, the proprietary technology developed for waste management, provides the following:

- The handling of unsorted MUNICIPAL SOLID WASTE (MSW)
- The handling of waste similar to urban

- The technology for the treatment of the organic fraction of the MSW in REAL TIME

- The provision of a system of selection for the recovery of exploitable fractions such as PET - HDPE - LDPE

- The retrieval with automatic machinery of ferrous and non-ferrous materials

- The production of RDF (Refuse Derived Fuel) to be used as fuel in steel mills or cement plants or incinerators to produce electricity or heat

- The packaging of the residual fractions

- The attainement of a residue gap formed substantially by no more than 10% of inerts

- The handling and treatment of INDUSTRIAL WASTE

A comprehensive treatment cost which is more competitive than market average.

Each plant has a processing capacity of a minimum of 80,000 tons / year to a maximum of 350,000 tons / year and can be built turn-key in 6/12 months. After construction the POLISUN technology guarantees assistance O&M for 10 years. The performance of each system is monitored 24 hours 24 via a remote connection with the central station POLISUN with technicians always in a position to intervene quickly to solve every problem.

General description of our company:

The founders of Eco Energy System have been committed, full-time, in the search and selection of projects with a competitive edge in the Renewable Energy sector, backed by competitive, efficient and proprietary technology, not only in terms of environmental benefits for our planet, but also in terms of returns on investment, risk reduction, time to market and bankability.

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Your partner to build small district heating systems



Company name: ENEKS GROUP ENGINERRING DOO -Skopje



Fields of our activities for small district heating:

- Heat Exchanger units Fan coils, underfloor heating
- Heat source Geothermal heat pumps, solar systems
- Energy manager with single room temperature control

References:

Our products (heat pumps, solar systems, fan coils, underfloor heating, AHU units) are being used in hospitals, hotels, industry buildings, schools, multifamily buildings and houses in many cities across our country, and also in Kosovo.

General fields of our activities:

- Official and exclusive representative in the territory of Macedonia of the Austrian companies IDM-Energiesysteme GmbH for heat pumps and Sonnenkraft for solar systems
- Design of HVAC projects for hotels, industry buildings, houses

General description of our company:

Our company Eneks Group Engineering offers environmental and energy products and system solutions for heating, cooling and production of sanitary hot water as well as heat pumps and solar systems.

The company Eneks is an official and exclusive representative in the territory of Macedonia of the Austrian companies IDM-Energiesysteme GmbH for heat pumps and Sonnenkraft for solar systems.

Our mission is to offer our customers environmentally friendly and top quality products and system solutions for heating, cooling and production of hot water, with highly efficient use of renewable energies.

CoolHeating

Our experienced team offers high quality services, technical support and training for our clients and associates.

Cooperation with BALKAN ENERGY GROUP for preparation of project documentation for System for heating of domestic hot water with solar system and with heat from BEG for residential building with 120 residential units.

The heat pumps manufactured in Europe, with top quality and heating capacity of 3.5 kW to 500 are the perfect solution for single or multi-family homes, apartment buildings, hotels, office spaces and industrial facilities.

- Water Water heat pumps
- Air Water heat pumps
- Earth Water heat pumps
- Sanitary hot water HGL technology
- NAVIGATOR control of your heating system via your mobile phone, tablet or computer
- Active, passive and IDM cooling system
- Solar Integration

Contact:

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Company name: ENERGIJA doo

Fnergija.com.mk

Fields of our activities for small district heating:

We are offering the following HVAC equipment for small district heating project:

- Air to water and water to water heat pumps
- Fan coil units
- Under floor heating
- Sanitary hot water solutions

References:

Many projects including heat pumps for domestic households and commercial projects (offices, hotels, etc.). Solutions with air/water and water/water heat pumps with installation and start up. All projects are developed in Macedonia.

General fields of our activities:

Energija is offering delivery of equipment from world known manufacturers of chillers, fan coil units, air handling units, air conditioners, heat pumps, compressors (reciprocating and screw), condensers, heat exchangers and other equipment. We are offering services in air conditioning public and administrative buildings, sport and commercial centres, business offices, residential buildings, individual houses etc.

General description of our company:

Energija doo was established in 2005 as company for selling, designing, installation and supervision of HVAC and refrigeration systems. In compliance with the world standards and trends and implementing them in everyday work Energija continuously expands its number of clients. Today Energija is known company in Macedonia for its expertise, quality, professional work and efficiency. Energija is offering services in air conditioning public and administrative buildings, sport and commercial centers, business offices, residential buildings, individual houses etc. Refrigeration equipment for industry application: cold stores, freezing tunnels for different kind of



products, meat processing, dairies, breweries, wineries. The company employs 4 mechanical engineers and 5 technical persons for service department.

Contact:

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Company name: ENERGO SISTEM Ltd.

es) ENERGO SISTEM Ltd.

ENGINEERING, TRADING, SERVICE, CONSULTING

Fields of our activities for small district heating:

- Design engineering
- Purchase , delivery and installation (mounting) of complete District heating systems (ready to use heating stations and pipe networks)
- Energo Sistem is a representative of Herz, within group is the company FENIX BB from Serbia – producer of Compact heat substations, available as small and medium sized with heat capacity from 20kW up to 500 kW

References:

- Supply of VALVES and STRAINERS for district heating system (TERMOKOS : district heating company of Pristina Kosovo)
- Delivery of different type of pumps "GRUNDFOS " (Toplifikacija AD-Skopje)
- Preparation of infrastructural and main designs including revision: Design for infrastructure for pipeline for hot water and distribution network Main Design for construction of pipeline for hot water, primary and secondary network, primary heat pump station in Bitola, three local pump stations, Main Design for construction of Heat Station in Thermo power plant (TPP) Bitola with capacity of 200 MWt and connection with the system of TPP (ELEM -JSC "Macedonian Power plants")
 - The equipment of company FENIX BB is integral part of heat substations in major

heating districts in Serbia (installed in 30 towns in Serbia).

General fields of our activities:

EnergoSistem is dedicated to providing consultancy of high professional level, having as a future objective the expanding of its present cooperation with international consulting engineering firms. Today, the activities of the firm are organized into four inter-related departments:

 Department of Design Engineering: planning, design , detailed engineering and executing of projects for heating -cooling systems, gas supply systems, energy efficiency projects, energy saving projects, water supply and sewage distribution systems, waste water treatment plant, etc.

- The Consulting Department offers its services to a broad spectrum of clients from the EU and international organizations, to national, regional and local authorities and organizations, as well as to industrial and commercial companies in the private sector
- The Services Department is focused only on providing all the necessary maintenance of the gas equipment. Today, besides commissioning, start up and adjusting of the equipment, this department deals with the maintenance of the products which Energo Sistem represents.
- Department of Trade was established as a separate entity recently: having the 15 years experience in the industry of gas, heating and water supply systems, EnergoSistem felt competent in offering the most suitable equipment so as to offer the best solutions for any project

General description of our company:

From 1993 up to date staff number gradually grew from 3 to 32 employees, out of which: 12 are mechanical engineers; 3 are electrical engineers . The engineers are well trained, qualified and experienced experts. In addition, Energo Sistem collaborates on a permanent basis with a number of external experts from different areas.

We are exclusive Macedonian representatives for the following European companies: HERZ , CENTROMETAL, VAILLANT, CALEFFI, GRUNDFOS , GESTRA, SAACKE KROMSCHRODER, FRACCARO.

Certificates

- ISO 9001: 2008
- ISO 14001:2004
- ISO 18001:2007

Contact:

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Phone: tel.+389 2 2770790 ext.115; mob.+389 75 24 24	
37	
Website: <u>www.energosistem.com.mk</u>	



Company name: ICS group, Itd Skopje 1000, Macedonia	
sanitary hot water, using renew pumps, under floor heating, far	-
2012-2014 - Installation of heating and pumps and ventilation cooling/heating capacity 586	ng complex Olympic village 10.000m2, cooling system with geothermal heat with air handling unit and fans,
 Installation of heating and pumps, cooling/heating capa 	cooling system with geothermal heat acity 195/237kW
 General fields of our activities: Design of HVAC installation Sales and installation of HVAC e Sales and installation of split system Service and maintenance of HVAC 	stem air-conditioners
General description of our company: ICS Group is a private company from I professional staff with working experi	

CooHeating

HVAC (heating, ventilation, air conditioning) installations. Our stuff is specialized in designing and performance of HVAC installations in residential and commercial buildings.

During the designing and installation of the HVAC installations we pay attention of implementing solutions with high energy efficiency, i.e. solutions that use renewable sources of energy (air, water, ground, sun).

To increase the energy efficiency ICS Group in his installations implements automatic regulation and control and also complete BMS (Building Management Systems).

In the realization of the HVAC projects we can offer the following:

- Optimal design solutions
- Great relationships with the Macedonian and foreign suppliers
- Experience in financial and technical management with big and complex projects
- High quality of the performed installations in accordance with the applicable legislation in Macedonia and Europe
- Professional after sales approach service and maintenance

The engineers have certificates for design, construction, supervision and auditing of HVAC installations.

ICS Grup has own service for servicing and maintenance of HVAC installations. Our service technicians have certificates for servicing of air conditioning equipment.

Our company has license B for performance of buildings from the second category. Also we have implemented ISO 9001:2008 and ISO 14001:2004.

Contact:	
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Phone: +389 2 3109 949;	
Website: <u>www.icsgroup.mk</u>	



Company name: INA energy system – Skopje, MACEDONIA



Fields of our activities for small district heating:

INA energy system – Skopje is company for design, manufacture and engineering of autonomy, automatic (boiler, storage, transporting system and automation) hot water boiler dedicated for heating and steam boiler for industry, based on burning the secondary biomass and RDF (pellet from communal waste). The boilers power range of 23-2.500 kW. The part of proposal is continual (10 years) fuel supplying of our clients.

References:

Company has more than 50 automatic boiler installations in the towns in MK

General fields of our activities:

The company also is providing ESCO concept (Energy Service Company) which consider delivery of thermal energy to our clients with our investment for 70-80% of existing costs.

Company is rolling Project for energy independency of municipalities in the region of West Balkan, or covering the energy needs of municipality with own power resources, communal waste for heating and small hydro power plant installed on water supplying system for power needs of municipality public institutions, street lighting, other power needs (schools, green gardens, sport halls, municipality buildings, museums, libraries etc.)

General description of our company:

Company INA energy system – Skopje is established in 1992 as company for design, development, manufacture and engineering of computer based integrated industrial process control system. Up to 2000 the company was in industry and telecommunication branch. Starting with 2000 company was moved in energy branch working on project-system for automation of energy production and transporting processes (TPP, HPP, substation, refinery, pipeline system etc.). Starting with 2010 company start design, development

CooHeating

and manufacture of ecological and energy system based to renewable power		
sources (biomass, solar, wind), and now we are region recognizable company		
for manufacture of biomass and RDF boilers. Company employs 25 people.		
Contact:		
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Country: MACEDONIA		
E-Mail: s.popducev@t.mk		
Phone: +38970 204 362, <i>+3892 3078 806</i>		
Website: <u>www.inaconsortium.com.mk</u>		



Company name: INTERKLIMA



Fields of our activities for small district heating:

- District heating pipes (steel, plastic, with insulation)
- Heat exchange units
- Heat pumps
- Solar thermal sollutions

References:

- AD Fersped
- Brilijant DOOEL Stip
- ELEM REK Bitola
- FFM Football Federation of Macedonia
- TAV Airport Aleksandar Makedonski, Skopje
- Airport Sv.Apolstol Pavle, Ohrid
- Hotel Drim, Struga
- Hotel Aqualina, Ohrid
- Hotel Beograd, Struga
- Hotel Belevue, Ohrid
- Hotel Metropol, Ohrid
- Hotel Aleksandar Palas, Skopje
- Winery Skovin
- Winery Ezemit
- Winery Popova Kula
- Winery Antika
- Winery Garland
- Capital Bank
- Postenska Bank
- Stopanska Bank
- GTC Shopping Center Skopje
- Acibadem Sistina Hospital
- Surgical Clinics Skopje
- Princess Casino, Gevgelija
- Atlantik Casino, Dojran

CoolHeating

- Sports Centar Boris Trajkovski, Skopje

General fields of our activities:

Interklima specializes as a service center for installation, commissioning, maintenance and servicing of refrigeration systems, heating, cooling and ventilation systems, chillers and compressors of nearly all the top brands. Our huge reference list of companies with whom we collaborate serves as evidence of the expertise of our team, and the large number of satisfied customers.

Today, many years of experience and a selected team of experts makes Intreklima leading company in its field in Macedonia and the region.

General description of our company:

Service center for installation, commissioning, maintenance and servicing of cooling systems, heating and ventilation.

Contact: INTERKLIMA

Contact person: Mr. Ljubomir Djuteski Address:ul. Alzirska 2/2 1000 Skopje Country: Republic of Macedonia E-Mail: <u>info@interklima.mk</u> Phone: ++38970226533 Website: <u>www.interklima.mk</u>



Company name: IRD ENGINEERING Skopje	IRD ENGINEERING
 district heating system with pvo Revision of design and supervis heating lines for buildings, house 	sion of implementation of Primary c isolated pipes ion of implementation of Secondary ses, public buildings etc. ion of implementation of Heating
References: Bilidings for Kindergarten in Skopje in and Karpos Colleges in Kosovska Mitrovica, Kosov	Municipality of Aerodrom, Kiselavoda o
 General fields of our activities: Revison of design of internal here etc. Supervison of implemetation of radiators, fancoils etc. 	eating systems with radiators, fancoils f internal heating systems with
airports, building facilities, water and independent from any construction a services as design, supervision, techni & build, BOT, PPP, concession, etc.), p economic-financial studies, project m	or roads, railways, bridges and tunnels, energy infrastructures. 100% nd industrial group, IRD provides such ical assistance and procurement (design planning and technical feasibility,

private sector clients.

IRD Engineering's staff includes civil infrastructure experts, project managers, electrical and mechanical engineers, architects, urban and transport planners, design-and-build experts, economists and marketing specialists, legal and procurement experts.

IRD Engineering has developed extensive experience and a deep background especially in collaboration with the funding programmes of the European Commission, the European Bank for Reconstruction and Development, the European Investment Bank, the World Bank, the Asian Development Bank, the Islamic Development Bank, the United Nations, the NATO and other IFIs.

Contact: IRD Engineering Skopje	
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Phone: +38975390 999	
Website: <u>www.ird.eng.com</u>	



Company name: MAKOTERM DOOEL SKOPJE
Fields of our activities for small district heating:
We do projecting and supervising on:
- heating,air conditioning and ventilation
- plumbing, sanitary and sanitation
- electrics and electrical materials
- water treatment (chlorination,ozonation etc.)
References:
1. Factory sweets " EVROPA" –Skopje
 Design and construction of boiler plants from 5 t / h Product of
VIESSMANN -
Germany complet with gas burners.
 Replacing elements of condensate system energy-efficient steam
condensing system
2. Kargomaxs – Skopje
 Complet system for heating, cooling and ventilation
3. ADORA INZINERING-Skopje
- performance radiator heating - 4310 cl
4. NASTEL Skopje
- performance radiator heating - 6118 cl
5. State University Goce Delcev Stip
- Perform fenkojlersko cooling and heating, ventilation kit with chiller, air
handling, diesel agrgat- New Rector Novo Selo
and e.t.c.
General fields of our activities:
Since 1988 until today the company deals with buying and selling materials.
Also we do projecting and supervising on:
 heating,air conditioning and ventilation
 plumbing, sanitary and sanitation

- electrics and electrical materials
- water treatment (chlorination,ozonation etc.)

General description of our company:

Makoterm Skopje is a company established in 1988. The company is situated on Mito Hadzivasilev street, number 52 in Skopje .

Contact: MAKOTERM DOOEL SKOPJE R.MAcedonia Contact person: Zoran Pop Petrovski Address: Mito Hadzivasilev street,number 52 in Skopje . Country: R.Macedonia E-Mail: info@makoterm.com.mk Phone: ++38923117733 Website: makoterm.com.mk



Company name: REHAU DOOEL Skopje	C REHAU® Unlimited Polymer Solutions
Fields of our activities for small distric	t heating:
Pre-insulated PE-Xa pipes and system biogas and heat pump application as v	solutions for district heating, biomass,
References: Our Pre-insulated pipes were installed - Procredit Academy in Veles - Arena Filip II in Skopje - Production hall company Tritek - Municipality Karposh - Skopje - Private object Mr.Coleski in Stru - Private object Mr.Gestakovski in - Private object Mr.Ilu in Skopje - Private Villas in Albania etc.	s in Prilep Jga
water, radiator heating, fan coil ceiling) heating/cooling, geothe	tem solutions for: drinking water, waste heating/cooling, surface (floor, wall,
General description of our company: Rehau sales office in Skopje is involved building and construction industry in t Albania. To our B2B customers/partne provide continuous theoretical and pr	he region of Macedonia, Kosovo and



technical support. Our ARPs (Authorized Rehau Partners) are certified for implementation of our system solutions.

Contact:

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Company name:

SIMT DOOEL Export-Import - Skopje

A Company for production,



engineering, commerce and services

Fields of our activities for small district heating:

- Computer-based distributed control system installed in buildings building management (BMS) and building automation system (BAS) for mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems
- Our Building management systems are commonly implemented in large projects with extensive mechanical, HVAC, electrical systems, and in intelligent - smart buildings
- Digital Data Control (DDC) systems for:
 - Heating, ventilation and air-conditioning (HVAC)
 - $\circ~$ Security observation and Automation
 - Access control
 - Fire alarm system
 - o Alarm Monitor
- Energy Management Systems (EMS)

References:

- Steel industry
 - o MAKSTIL
 - ARCELORMITTAL
 - FENI INDUSTRY Computerized supervisory control water treatment project
- Cement industry
 - TITAN Cementarnica USJE –Skopje , Design and Implementation of an integrated SCADA system for computerized supervisory control of mils
- Water supply
 - City of Skopje pump station reservoir system
- Various automation
 - Heating station Pristina SCADA design and realization of monitoring system

Bus station Skopje - Installation, putting into operation, service of bus

Cool-Heating

information system, main information panel, monitors, bus platform General fields of our activities:

- Automation and automatic control, for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, and other applications with minimal or reduced human intervention.
- Energy Management Software (EMS) providing utility bill tracking, realtime metering, building HVAC and lighting control systems, building simulation and modeling, carbon and sustainability reporting, IT equipment management
- Design of Energy Saving Measures and Control System Design for economical operation of the building
- Design, construction and maintenance of information systems
- Design, construction and maintenance of telecommunication solutions
- Design, construction, maintenance and sales of energy solutions
- Design of a real time irrigation system based on wireless sensors for agro industry

General description of our company:

SIMT DOOEL Export-Import – Skopje, Partizanski odredi 149, mez 2, 1000 Skopje Macedonia

Established in 1994; Number of employees: 24

Customers:

- MEPSO (Electricity Transmission System Operator of Macedonia);
- Ministry of Defence Republic of Macedonia,
- Ministry of Foreign Affairs Republic of Macedonia;
- Ministry of Environment and Physical Planning Republic of Macedonia;
- National Hydrological and Meterorological Services R. Macedonia;
- Republic of Macedonia Bureau of metrology ;
- City of Skopje;
- JSP SKOPJE Skopje Public transportation company

Cooperation with partners such as: Cassel, Campbell Scientific, Esis Power, IBM, ORACLE, MySQL, Xerox, Schneider Electric, Siemens and many others.

Contact:

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Phone: Tel/Fax: +389 2 3069591 mob: +389 70 231 128

Website: <u>http://www.simt.com.mk</u>



Company name:	
Temon DOOEL Skopje	



Fields of our activities for small district heating:

- Primary district heating system with pvc isolated pipes
- Secondary heating lines for buildings, houses etc.
- Heating station with pumps, valves, heat exchanger.

References:

In Skopje more than 6000m primary lines with F100, 500, 350mm. More than 50 heating stations

General fields of our activities:

- Installation of internal heating systems with radiators, fancoils etc.
- Installation of VRV systems

General description of our company:

Temon dooel Skopje is a company for design and engineering of power plants, established 1990.

Throughout this period the company exclusively deals with the execution of projects of nominal activity, that takes things that are related to energy (termoenergetikata and Thermotechnology), environment and beyond. As an engineering firm, Temon has carried out work both in industry and in other economic spheres, and classified it looks like this:

- Stations pouring fuel ("gas stations")
- Plants for heating in schools, individual and collective (buildings) residential buildings,
- Ventilation and air conditioning in individual and commercial facilities (hotels, restaurants, cafes ...)
- Energy installations in commercial buildings,
- Construction work, construction of major administrative and individual objects, interventions and rehabilitation of sanitation facilities in schools and other commercial buildings.

Coolleating

The company comprises a team of experts from the MA in Mechanical Sciences, 5 BA. Info. engineers and administrative staff, and implemented projects include experts from other profiles (the highest rank). For the implementation of the agreed projects of machine use resources of equipment and labor, and include other subcontracting companies... The prospects of the company are aimed at improving the system for engineering services and production elements of the energy sector and perform larger facilities with complete civil engineering.

Contact: *TEMON dooel Skopje* Contact person: Milan Temelkoski Address: ul. Kozara 38 Country: Macedonia E-Mail: temon@temon.com.mk Phone: +38975219881 Website: www.temon.com.mk



Company name: ТОПЛИФИКАЦИЈА-ИНЖЕНЕРИНГ ДООЕЛ Скопје **TOPLIFIKACIJA-INZENERING** dooel Fields of our activities for small district heating: Complete project documentation for district heating distribution network (steel and pre-insulated pipes) district heating substations district heating production plant heating, ventilation and air conditioning systems Additional services heat cost allocation metering and billing distant monitoring and regulation construction and installation of distribution network (turn key) district heating substations(heat meters, heat exchangers, all necessary equipment and accessories) **References:** 1. Feasibility studies, complete design documentation for district heating in Skopie 2. Feasibility studies, complete design documentation for district heating in Bitola 3. Feasibility study for district heating of Kicevo, Oslomej, Zajas from TEC Oslomei 4. Feasibility study for district heating of Strumica 5. Feasibility study for district heating of Kavadarci 6. Feasibility study for district heating of Kocani 7. Analysis for optimization of the district heating of Cair, Gorce Petrov, Vlae, Vodno, Cento 8. Feasibility study and preliminary design for water supply system of Gevgelija 9. Detailed design documentation for gas pipeline of Strumica 10. Feasibility study for gas distribution network in Municipality Karpos 11. Feasibility study for gas distribution network in Municipality Cair 12. Detailed design for gasification of district heating plants in Skopje 13. Detailed design for reconstruction of heating plants in many buildings and industry plants 14. Detailed design documentation for district heating pipeline network in Skopje (200 km)

This is only a short list of the references correlated to the project, for a full list we are staying at a complete disposal.

General fields of our activities:

Toplifikacija – Inzenering dooel offers exceptional know-how for specific needs of its customers and partners, which results in consulting services, studies, project designs, energy audits, implementation of the projects with subcontractors and mother company resources, and other services suited to the customer needs. The core activities of the company are

- Energy efficiency
- Projects HVAC
- BMS projects
- District heating network, heating plants and substations
- Energy saving for district heating costumers
- Regulation, metering and billing

General description of our company:

Toplifikacija – Inzenering dooel is specialized company in energy efficiency field, as well in the heating, ventilation and air-conditioning (HVAC) and gas market. Being created as a founder of the first ESCO company in Macedonia, it has great experience especially in the area of energy auditing and implementation of energy efficiency projects. The founder of the company is Toplifikacija AD – Skopje, meaning that one of its goals is to improve and diversify the relations and services to its customers. The company operates on market - based principles and offers comprehensive energy projects to: government, municipalities, private sector and industry. Toplifikacija AD as a district heating company in Skopje was founded 1964. It had 400 employees and was divided into six daughter companies Since then, Toplifikacija – Inzenering dooel has diversified its activities in many sustainable energy related fields, EE and ESCO projects, gasification projects, but has always kept district heating plants, network and substations as a core business.

Contact:

contact.	
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Website:	

Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Serbia

WP 4 – Task 4.2 / D 4.2

November 2016



- Authors: Ilija Batas-Bjelic, School of Electrical Engineering at University of Belgrade, Serbia Christian Doczekal, Güssing Energy Technologies, Austria
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- Contact: Güssing Energy Technologies GmbH Christian Doczekal Email: c.doczekal@get.ac.at, Tel: +43 3322 42606 331 Wiener Straße 49 7540 Güssing, Austria www.get.ac.at

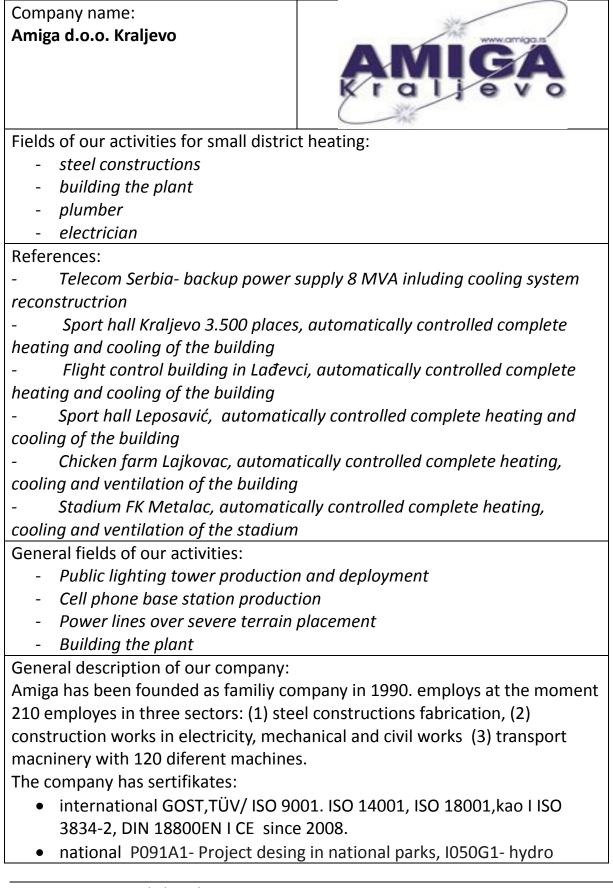


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CoolHeating website: www.coolheating.eu











power plants 10 MW and more, - I051G1- hydro power plants 10 MW and more with dams, I061E1- power lines 110 kW and more ; I062E1power substations 110 kW and more; I111E3- telecomunication systems at airports; I141E1- railway supply network construction; I120G1 – ports and docks; I2031G1- facilities 50m and above

Contact:

Contact person: Aleksandar Tošković Address: Bokeljska 7, Beograd Country: Serbia E-Mail: a.toskovic@amiga.rs Phone: +381648636001 Website: www.amiga.rs





Company name: "EKOTERM" DOO			
	EKO	TERM	
	Kuća pravil	h vrednosti	
	Nuca pravi	r vicunosa	
Fields of our activities for small distric	t heating:		
- pipes			
- heat exchanger			
- gas peak load boilers			
- biomass boiler			
 various heating/cooling equipment 	t		
References:			
- more than 5 substations for house	holds and business		
- repair of the community heating piping system (DN125- 150m)			
- 5 heat pumps water-water			
- 2 heat pumps water-air	- 2 heat pumps water-air		
 solar heating system for pupils dormitory 			
- more than 5 sanitary hot water on solar and other sources			
- 2 solar panel equipped boats			
- more than 5 gas and electric building heating systems			
- more than 25 pellet heating systems			
- more than 1,000 household gas, electricity and fossil fuel heating systems			
- more than 100 household and services heating/cooling systems designed.			
General fields of our activities:			
- heat pumps			
- solar thermal systems			
- natural and liquefied gas systems			
- fossil peak load boilers			
- small combined heat and power plants			
- climatization, ventilation			
General description of our company:			
The company has been founded in 20	03 in Sremska Mitrov	vica currently	
employs 17 employees.			
Contact:			
Contact person: Miroslav Mićić			





Address: Branka Ćopića 38, Sremska Mitrovica Country: Serbia E-Mail: ekoterm.ing@mts.rs Phone: 022/631-041 Website: www.ekoterm.co.rs





Company name: Euro Heat DOO	euro heat
 Fields of our activities for small district heating: Plate heat exchangers (gasketed, brazed, shell) heating stations for small and large buildings 	
References: District heating systems: Belgrade, Kragujevac, Užice, Niš, Lazarevac, Pancevo, Negotin, Sombor, Banja Luka Pools: spa Janukovic, Ribarska spa, Kragujevac Hotels: Prague, Majestic, Putnik, Splendid Becici Fiat cars Kragujevac, Gazprom Serbia (ex NIS) Residential and Business complex VIVALDI - Minsk More than 50 facilites in Ulaanbaatar Mongolia	
General fields of our activities: - heating and cooling systems - petrohemical industry - pharmaceutical industry - oil and gas industry - food industry - districts systems	
Continued investment in improvement employees, professionalism in dealing enlargement of product range. The quality and dedication to work wat Development, which funded the devel Today, EURO HEAT in addition to its con heat exchanger produces and heating and regulation sets and heat meters. Production takes place in modern prod	with our customers has led to the as recognized by the European Bank for opment of our products. ore business of manufacturing of plate substations, individual measurement duction facility of 1500 m2. Has 20 considered as very important resource ing from year to year, and currently





Belarus, and countries of former Yugoslavia.	
Standard:	
ISO 9001, ISO 14001, ISO 18001, GOST-R, CE- PED 97-23/EC	
Contact: Euro Heat Doo	
Contact person: Stevan Petković	
Address: Industrijska bb, Kragujevac	
Country: Srbija	
E-Mail: office@euroheat.co.rs	
Phone: +38134345055	
Website: www.euroheat.co.rs	





Company name: HIDROTERMA DOO



Fields of our activities for small district heating:

- construction of heating systems
- planner of heating plants and district heating grids

References:

Heating installation :

- Households in Serbia
- Business up to 10.000m2 more than 10 cities

General fields of our activities:

- construction of heating systems
- planner of heating plants and district heating grids

General description of our company:

HIDROTERMA D.O.O. is a company for design, building and engineering of heating systems and machines, water and sewerage systems located in Sremska Mitrovica, near Ruma and Sabac, founded in 1990. It employs an experienced mechanical engineer with licenses and 8 technicians, and other non technical staff. It poses three vehicles and all needed tools for heating, gasification, climatisation, ventilation, mechanical constructions, water system, sewerage system and more.



Contact:

Contact person: Aleksandar Perović dipl.maš.ing Address: Marka Aurelija BB Sremska Mitrovica Country: Serbia E-Mail: aca@hidroterma.com Phone: +38163350929 Website: www.hidroterma.com







Company name: A.D. IZOLIR Predizolovane cevi i cevna tehnika

Fields of our activities for small district heating:

Fluid transport pipelines (transports of hot water, transports of heat, oil transports...); installed in channels, with thermal insulation of polyurethane rigid foam and PE cover pipe, or combination of mineral or glassy wool and rigid PU foam and PE cover pipe. Pipes produced in previously explained way could be covered by concrete plates in concrete channels or covered by send and narrow material of surrounding soil. We produce pipes in length of 6 or 12m, all fittings (elbows, tees, valves, reducers and so on) for pipeline and muffs for insulation field welded connections of the steel pipes.

Hydro pre-insulated steel pipe for transport of the natural gas, crude oil, heating oil or water in length of 6 or 12m. The system of this kind of hydro insulation is well known as 3LPE - Three Layers of Polyethylene. This system is much better than classic system of hydro insulation using the PE tapes directly at the site, saves the time and money too. All pipes are tested during production to the electric resistant (Holliday testing). The thickness of the PE is min. 1,8mm and more depends of the steel pipe diameter.

PE gas and water pipes OD110 up to 280mm, SDR11 and SDR17 in length of 6 up to 12m.

Steel pipe supports produced of rigid PU foam and protected with HDPE outside. Steel pipe diameters from 21,3 up to 273mm. The length of the pipe supports could be from 50mm up to 1m.

References:

In 2008. year, Program: "The reconstruction of the local district heating system in Serbia - Phase III", cofunded by the Federal Republic of Germany, the German KfW and financial institutions of the Republic of Serbia for which implementation was responsible the Ministry of Mining and Energy of the Republic of Serbia.

With the program were included:

- "Energetika"DOO, Kragujevac, pipeline with diameter from Ø 33,7 to Ø 273,0
- JKP "Toplana"Kraljevo, pipeline with diameter from Ø33,7 to Ø 273,0
- DP "Grejanje"Zrenjanin, pipeline with diameter from Ø 42,4 to Ø 406,4
- JKP "Energana" Sombor, pipeline with diameter from Ø 33,7 to Ø 355,6
- JKP "Gradska Toplana"Pirot, pipeline with diameter from Ø 33,7 to Ø 168,3

Other district heating systems are equipped by Izolir pre insulated pipes and pipe elements are:

Bor, Požarevac, Sremska Mitrovica, Smederevo, Bečej, Lazarevac, Subotica, Čačak, Kraljevo, Beograd, Bačka Palanka, Valjevo, Gornji Milanovac, Kikinda, Kovin, Kragujevac, Loznica, Majdanpek, Niš, Novi Sad, Novi Kneževac, Paraćin, Podgorica, Priština, Sombor, Soko Banja, Šid, Kruševac, Zaječar, Vranje, Novi Pazar, Nova Varoš, Pirot, Banja Luka...

General fields of our activities:



Thermoinsulation - IZOPEN - pre insulation of steel pipes and pipe elements with polyurethane for transportation of hot and cold fluids. With this technology is mostly use to perform: heating pipelines, pipelines, oil pipelines, industrial installations for transport of fluids, home installation, gas stations, ...

Hydroinsulation - IZOPOL - pre insulation of the steel pipes with polyethylene, for transportation of gas, water, oil and other fluids where is not required the preservation of the thermal properties of the flowed fluid.

Product - range IZOPEN

- *x* pre-insulated pipes IZOPEN PC130
- *x* pre-insulated pipes IZOPEN PC200
- *x* pre-insulated piping elbow IZOPEN PCL
- **x** pre-insulated fixed point IZOPEN PFT
- **x** pre-insulated spur-line IZOPEN PEO
- *x* pre-insulated reduction parts IZOPEN PRK
- **x** pass through wall IZOPEN PKZ
- **x** polyethylene or thermo shrinkable joints IZOPEN PSE
- **x** pre-insulated packaged valve

pre-insulated dilation parts IZOPEN PDL (customer demand)

General description of our company:

The development path of AD "IZOLIR" begins on April 17, 1984 year, when Mr. Miroslav Matic with his 7 closest associates founded the Contracting organization of associated labor.

Today the company operates under the name "IZOLIR" as a joint stock company and it is privately owned. The company A.D. "IZOLIR" is run by Mr. Miroslav Matic all these 35 years, and he still successfully running a company. AD "IZOLIR" currently employs 80 workers in permanent employment.

AD "IZOLIR" operates at two separate locations with a total business and production space of 11,000 m² and warehouse space of 30,000 m².

AD "IZOLIR" is the first domestic factory and leader in the field of pre-insulated pipes for district heating and following equipment, as well as in manufacturing pre-insulated pipes for high pressure gas pipelines. Our strategy and our advantages are always new products, where our team of experts for the past 25 years works on conquest of new technologies, improvement of old and improvement of the quality of existing programs when it comes to technology for insulation with polyurethane and polyethylene.

Contact:

Contact person: Marijana Matić Mićić Address: Novosadski put bb, 23000 Zrenjanin Country: Serbia E-Mail: marijana@izolir.rs Phone: + 381 63 516 627 Website: www.izolir.rs



PHOTO HERE





Company name: KOVAN M.I.



Fields of our activities for small district heating:

- biomass boiler production for household, industry and district heating
- solar thermal collectors

References:

- more than 8,000 boilers in household and industry sector in Bosnia and Herzegovina, region and world.

General fields of our activities:

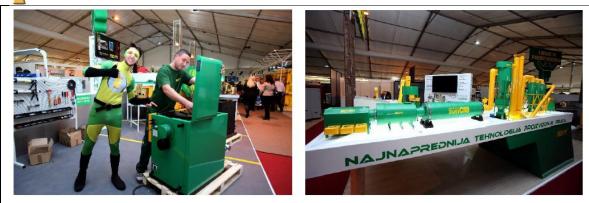
- pellet production machinery
- anticorrosion protection
- laser thin metal cut



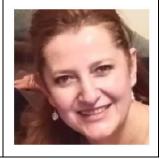
General description of our company:

The company has been founded in 1996 in Gracanica, currently employs 150 employees with yearly growth of 30% and implements ISO9001:2008 standard. Our products are exported to: Slovenia, Austria, Nederland, Poland, France, Luxembourg, Belgium, Norway, Ukraine, Russia and in the region: Serbia, Croatia and Montenegro.





Contact: Contact person: Lena Bratic Address: Bulevar kralja Aleksandra 548, Beograd Country: Serbia/Bosnia and Herzegovina E-Mail: office@kovan.rs Phone: +38163481222 Website: www.kovan.ba







Company name: Društvo za preradu obnovljivih izovra energije Bio energy Point doo	BIOENERGYPOINT	
Fields of our activities for small district heating: - wood chipper		
References: Electricity and heat plants, paper industry, pharmacy stores: -BEOGRADSKE ELEKTRANE -TOPLANA UZICE -ARABESA -APOTEKARSKA USTANOVA ZAJECAR -TITAN CEMENTARA -PREDSKOLSKE USTANOVE General fields of our activities:		
-pellet production up to 65,000t/year General description of our company: -wood chipper		
Contact:BIO ENERGY POINT DOO Contact person: Mladen Stojadinovic, Address: Francuska br. 6 11000 Beograd Country: Srbija E-Mail: <u>mladen@bioenergy-pont.rs</u> , svetlana@bioenergy-point.rs	Svetlana Bozinovic	
Phone: tel: +381 11 734 66 75 tel: +381 11 734 66 76 Website: <u>www.bioenergy-point.rs</u>		





Company name: Radijator Inženjering DOO



Fields of our activities for small district heating:

In addition to primary production activities "Radiator-Engineering Ltd Kraljevo, performs works of thermo installations (heating, ventilation-air conditioning, installation of technical gases), makes and mounts steel constructions.

References:

Our heating boilers were installed in many towns in our country, in Prijepolje, Beograd, Mokra Gora, Novi Sad, Subotica etc. (Boilers of industrial class from 100-500KW of power are installed there, some in cooperation with Austrian company Gilles).

http://www.radijator.rs/references_en.php

Our development system is described in case study "FIRING UP BIOMASS HEATING SYSTEM DEVELOPMENT WITH SOLIDWORKS SOLUTIONS" http://www.solidworks.com/sw/successes/customer-story.htm?record=Radijator-In%C5%BEenjering&id=6534

General fields of our activities:

Radijator Inženjering d.o.o. (Radiator Engineering Ltd) is a leading manufacturer of solid-fuel, biomass-pellet, and liquid-fuel heating boilers; heating systems and boilers for residential use; storage tanks for fuel oil; and boiler buffer tanks.

General description of our company:



"Radiator Engineering" Ltd in the business sense is the legal successor of craft shops "Radiator", which was founded in 1991. year, whose main activity was the installation and maintenance of central heating which today we still do. First Boiler on solid fuel we have created 1985th year.

The company is in today's form exists since 2002. year and from year to year, makes great progress steps, always trying to be first in the application of new technologies, quality products and wining new - the



European market. Main activity of company is the production of boilers to solid and liquid fuels. Other activities of the company are installation and maintenance of central heating and production of steel structures. Product quality is based on knowledge of professional people in the company, which is proof of obtaining recognitions and many awards for quality. As we expanded and perfecting the production, we came to a level that boilers are made by latest world technologies. From the field of cutting sheet metal shall be allocated: laser cutting, CNC plasma process and CNC punching. The procedure is performed robotic welding and the use of machines. The best indicator of quality products and services is the fact that every year production increases.

Today "Radiator - Engineering" employs over 350 workers of which 40 of them are graduate mechanical engineer's that work every day on improving product quality.

Sure stability of quality, both product and operations firm, was confirmed by obtaining a certificate of quality system ISO 9001:2008.

Contact:

Contact person: Nenad Radosavljević Address: Kraljevo str. Živojina Lazića Solunca no. 6 Country: Serbia E-Mail: neso@radijator.rs Phone: +381 63 689573 Website: <u>http://www.radijator.rs/</u>







Company name: REHAU d.o.o. Stražilovska 7 11272 Dobanovci	C REHAU® Unlimited Polymer Solutions
Fields of our activities for small distric	0
- pipes production (polyethylene)	INSULPEX
References:	
 Junaković spa, Apatin 	
- Kanjiža spa - Slobomir, Bijeljina	
- Viminacijum	
General fields of our activities:	
- polymers production for construction, industry and automotive sector.	
- insulation products for the heating, water and sewerage systems.	
General description of our company:	
The company has been founded in 1948 in Germany. In Serbia company	
operates since 2002	
Contact:	
Contact person: Nebojša Stanić	
Address: Stražilovska 7, 11272 Doban	ovci
Country: Serbia	
E-Mail: nebojsa.stanic@rehau.com	
Phone: +381 11 3770311	
Website: www.rehau.rs	





Company name: S.O.K. doo Kraljevo			
Fields of our activities for small distric	t heating:		
- Home and small solar heating s	- Home and small solar heating systems		
References:			
Our small home solar systems were in	stalled in many towns (over 50) in our		
country but we have not evidence of t	his persons. We have many pictures		
from installations since 2007.			
General fields of our activities:			
- Import, trade and install solar v			
- Import, project and install equipment for reactive power compensation			
- Import, project and install PV systems			
- Electric power supply for end us	sers		
General description of our company:			
The company established at 2006 and 2007 reorganized as limited liability company. S.O.K. doo is small family company with 1-2 workers. S.O.K doo first time in Serbia imported and installed compact small solar heater with evacuated tubes at 2007. S.O.K. doo first time in Serbia build 15kW PV system in Serbia at 2010. The company has made more than 50 projects of solar power plants from 2010 to 2014 and has built 15 solar plants in the same period. The company in the period from 2007 to the present time has made to more than 100 systems of reactive power compensation in Serbia and Montenegro. S.O.K. doo. The company in March 2015 was licensed, and January 2016, has started the supply of electricity to end customers. More about our work you can see (photo) on our facebook page: https://www.facebook.com/SOK-doo-197699000254120/			
Contact:			
Contact person: Srdjan Dragojlović, di Address: Mirka Lukovića 2	pi.ing.ei.		
Country: Serbia E-Mail: <u>sok@sokdoo.com</u> , info@jeftir	astruia hiz		
Phone: +38136321654	ומסנו עןמ.טוב		
Website: www.sokdoo.com			





Company name: VIESSMANN



climate of innovation

Fields of our activities for small district heating:

- biomass and fossil fuel boilers production 35 13,000kW
- heat pumps up to 1300kW
- solar thermal
- gas modular heating plant up to 900kW
- transportable energy plant 600-6,000kW

References:

- control units for heating stations in 5 cities in Serbia
- JKP Toplana Loznica, JKP ENERGETIKA Trstenik Istok, Zapad, Sever, JKP Gradska toplana - Novi Pazar, JKP BADNJEVO – Negotin, JKP Toplana Leskovac, JKP Toplana Knjaževac, JKP Toplana Loznica, JKP – ENERGETIKA – Trstenik, TO Loznica – Banja Koviljača, TO Loznica – Moda, JKP Gradska toplana – Kruševac, Energetika Kragujevac – Erdoglija, Energetika Kragujevac – KBC, Energetika Kragujevac -Centralna Radionica, Energana Sombor Nova Toplana - Sombor, Toplana Užice Aleksića most - Užice, Toplana Užice Lipa - Užice, Toplana Čačak Vinara - Čačak, Toplana Užice Senjak - Užice, Toplana Kruševac Prnjavor - Kruševac, Toplana Kruševac Centralni izvor -Kruševac, VP dom Kruševac,

General fields of our activities:

- boilers up to 20MW
- hot water storage
- air condition systems

General description of our company:

The company has been founded in 1917 in Germany and today is one of world leading in heating systems. The company operates in Serbia since 1971 and from 2001 as self owned with dedicated warehouse in Belgrade and 15 employees. The company applies German and EU standards.



CooHeating

Contact: Viessmann d.o.o. Beograd Contact person: Bojan Grujički Address: Tabanovačka 3, 11000 Beograd Country: Serbia E-Mail: <u>viessmann.srb@sbb.rs</u> Phone: +381 11 3097887 Website: <u>www.viessmann.rs</u>







Company name:		
Wilo Beograd d.o.o.		
Fields of our activities for small district heating:		
- pumps and		
- pumping systems		
References:		
- pumps in heating stations in: Šabac, Beograd, Niš, Novi Sad,		
Obrenovac, Zrenjanin, Pančevo, Valjevo, Subotica, Loznica, Leskovac,		
Novi Pazar, Bačka Palanka, Ruma, Jagodina, Kraljevo, Kruševac, Pirot,		
Negotin, Bor, Trstenik		
General fields of our activities:		
- pumps for heating, cooling, climatisation, water and sewerage systems		
General description of our company:		
The company has been founded in 1876 in Dortmund, Germany. In Serbia		
company is present from 2006 currently employs 12 employees, of which 7		
engineers in Belgrade, Novi Sad and Nis.		
Contact:		
Contact person: Stefan Čubrović		
Address: Tetovska 72, Beograd		
Country: Serbia		
E-Mail: office@wilo.rs, stefan.cubrovic@wilo.rs		
Phone: +381 112853258, 114043820, 63463858		
Website: <u>www.wilo.rs</u>		

Market uptake of small modular renewable district heating and cooling grids for communities

Project No: 691679



Cooperation with the industry

Country: Slovenia

WP 4 – Task 4.2 / D 4.2

November 2016



- Authors: Rok Sunko, Skupina Fabrika, Slovenia Christian Doczekal, Güssing Energy Technologies, Austria
- Editors: Christian Doczekal, Güssing Energy Technologies, Austria
- Contact: Güssing Energy Technologies GmbH Christian Doczekal Email: c.doczekal@get.ac.at, Tel: +43 3322 42606 331 Wiener Straße 49 7540 Güssing, Austria www.get.ac.at



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CoolHeating website: www.coolheating.eu



Company name:		
INEA d.o.o.	INE	
Fields of our activities for small distric	t heating:	
 Natural gas CHP systems Monitoring systems of er 	nergy flows	
- Management systems (Pl	01	
- Feasibility studies		
References:		
2011 SILKEM, Kidričevo A complete CHP plant Pel = 1.600 kW, district heating		
2012 SILKEM, Kidričevo A complete natural gas CHP plant Pel = 1.000 kW, district heating		
2014 GGE d.o.o. / Thermana, hotel and pool complex, district heating		
Installation of the system for the simultaneous production of heat and electricity with a gas engine Pel = 800 kW		
2014 GGE d.o.o. / Sava hoteli Radenci, hotel and swimming pool complex Installation of the system for the simultaneous production of heat and electricity with a gas engine Pel = 889 kW		
2014 TAMES / Komunala Slovenj Gradec, district heating Installation of the system for the simultaneous production of heat and electricity with a gas engine Pel = 999 kW		
General fields of our activities: - Automation of production lines		
 Process control systems for con 		

Cool-leating

- Solutions for manufacturing informatics (planning and monitoring of production)
- Systems for monitoring, analysis and optimization of energy consumption
- Systems for balancing peak electricity demand
- Conducting energy audits and energy feasibility studies for industry

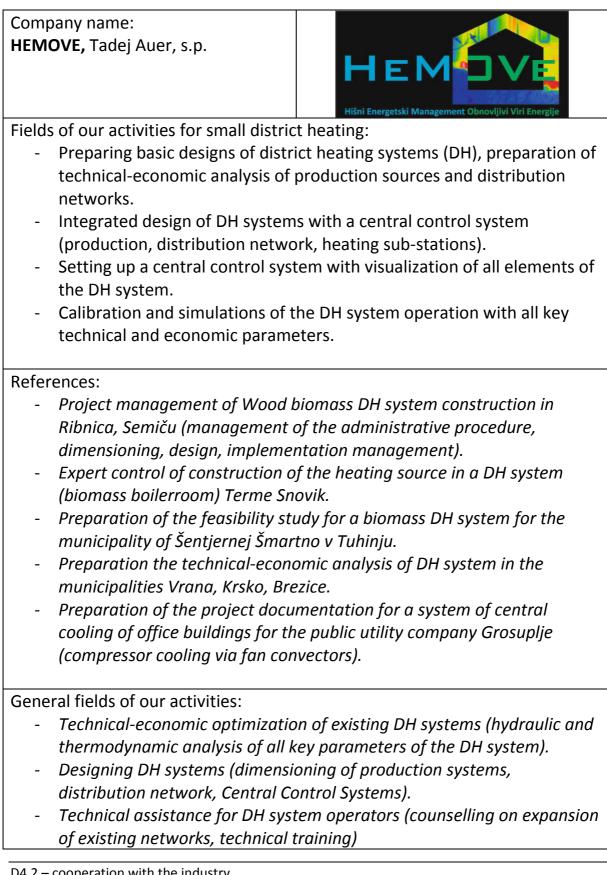
In the context of development activities in the company, using our experience in industrial energy management systems, we are developing an advanced platform of virtual power plants on the basis of management of consumption of electricity and heat.

General description of our company:

INEA Ltd., a company located in Ljubljana. Since the establishment in 1987 we are assisting numerous companies at national and international level in solving technical and business challenges in the areas of process automation and efficient energy production and energy use. Today we employ over 60 top experts, mostly masters and engineers from the technical field. The company maintains partner relationships with professional organizations and suppliers of high quality technological equipment. Group INEA has over 8 million annual turnover and has its own companies in Serbia, Macedonia and Croatia.

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• Management of administrative procedures for the purpose of plant/system erection and development for the local or urban communities.

General description of our company:

The company was founded in December 2011. The main customers of our services and partners are operators of DH systems, local and urban communities who are planning a district heating system, and large plant erection companies in the field of DH systems. With our activities we contribute to the efficient use of energy and use of renewable sources, where this is possible. Currently, we operate with 1 employee and 3 external collaborators.

HEMOVE, Tadej Auer, s.p. Puterlejeva ulica 24 1000 Ljubljana MŠ: 7022301 ID: 37490931

Contact:

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Company name:

PETROL, Slovenska energetska družba, d.d., Ljubljana Dunajska cesta 50, 1527 Ljubljana



Fields of our activities for small district heating:

We offer a complete service - from planning, construction and management of the district heating systems (DH), including the financing – based on the principle of contractual supply of heat. We provide customers with a reliable, safe, environmentally acceptable and cost-effective supply of heat and / or cold.

- We develop the basic design, based on the knowledge of the relevant technical solutions and ongoing monitoring of the state of the art technological solutions, which are thoughtfully introduced into practice. At the same time we always check the economic viability of the project. Our principle is to offer solutions that are optimal both technically and economically throughout the lifetime of the district heating system.
- We produce all the necessary documentation: documentation for obtaining the building permit, detailed design, documentation for preparation of the tenders and other documentation. At the same time we acquire the necessary documentation in administrative procedures (project conditions, consent to construction, to connect ...).
- We carry out all necessary works for erection of district heating systems, including supply of all necessary equipment. In doing so, we also cooperate with other contractors. We carry out certain works on electrical and mechanical installations, in particular in the introduction of remote monitoring and control software including equipment for optimization of the district heating systems. We carry out management of all works and supervise the works according to the Construction Act.
- Effective management of district heating systems, including servicing and maintenance is vital after system erection. Our technical and economic optimization of the district heating systems is based on the actual operation and on the calibrated models and the real time data, unlike competing companies whose operations are based on static models and design data. This allows the system operator effective monitoring and control, and easy management, and especially it allows achievement of strategic goals: lowering of costs of the operation and maintenance, reduction of primary energy use and improvement of the quality of the service for customers.

References:

At the end of 2015, the Petrol Group operated 25 district heating systems in Slovenia. Of these, 16 were organized as an optional public service - a concession contract with the municipality. The remaining nine district heating systems are operated on a commercial basis or equity distribution system, which means that the contracts are signed with the end-users.

At the same time Petrol performs services in other countries, together, we are present in 36 district

energy systems. These systems have, in recent years, supplied a total of 9100 heating substations.

Administered through our SCADA systems are 1300 installations in 23 systems with a total output of 7,500 MW and are continuously optimized.

References by type of resources and systems:

- DH systes cities: Ljubljana, Beograd, Novi Sad, Zagreb, Maribor, Celje, Ravne, Hrastnik, Sisak, Osijek, Velenje, Tuzla, Gradec, Celovec, Dunaj, Bolzano, Plovdiv, ...
- DH systes biomass, natural gas: Železniki, Preddvor, Nazarje, Luče, Mozirje, Solčava, Postojna, Ribnica, Ivančna Gorica, Mojstrana, Hrušica, Maribor Pobrežje, Metlika, ..
- Biomas boilerrooms: Besnica, Koper (2), Piran(2), Pivka, Gorje, Gorenja vas Poljane, Cerkno, Brda, …

By technical economic optimizations for example - only in Belgrade we save 1.5 million euros of costs per year.

General fields of our activities:

The primary areas of operations of the Petrol Group are the oil trade activities. The core development area is the introduction of new energy-related activities, including the marketing of gas, heat and electricity, the management of major environmental projects in the long term marketing of renewable energy sources. In Petrol Group has 2015 sold 120.9 million m3 of natural gas and 14.1 TWh of electricity. In 2015, the Petrol Group operated 30 concessions for gas supply; customers were supplied from a number of depots for liquefied petroleum gas.

An important segment of Petrol's integrated energy supply is also becoming heat supply, which is produced and distributed through the district heating systems and systems for cogeneration of heat and electricity.

General description of our company:

The company is distinguished in particular by quality of goods and its services, a high level of reputation, brand recognition, and a stable financial position. Including the franchised service stations, the Petrol Group employs 4,068 people, at the end of 2015. With 3.81 billion euros in net revenues from the sale Petrol Group is the largest economic entity in Slovenia.

From the Slovenian national oil corporation Petrol Group is developing into a comprehensive regional provider of energy and environmental services. With clear strategic orientations and development priorities we shape not only Slovenian energy market, but are becoming an important player in the energy market in Southeast Europe.

In Petrol we provide reliable, economical and environmentally friendly supply to end-consumers in Slovenia and SE Europe using a comprehensive offer energy and environmental products and services. Through the extensive network of service stations, drivers are offered everything they need for a safe and comfortable travel. We provide companies and local communities a comprehensive energy supply. We provide households all the energy they need for their home - at their home.

We want to become a leader in quality and the development of a comprehensive range of energy services and the "convenience" model of service stations in South Eastern Europe with very satisfied customers.

Cool-Heating

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Company name:

Simon d.o.o. Taborska c. 34 1290 Grosuplje EU-Slovenija Tel.: (01) 786 49 15 (01) 786 49 14 Fax.: (01) 786 49 13 web: www.simon.si



Fields of our activities for small district heating:

Manufacturing of compact heating sub-stations for heating and cooling for all types of objects. Stations can be manufactured in a direct or indirect version. They can be prepared for different temperature and pressure regimes.

References:

SITULA Ljubljana (heating sub-stations), STADION, DVORANA STOŽICE (heating sub-stations), HOTEL PLAZA Ljubljana (heating sub-stations), HOTEL CUBO Ljubljana (heating sub-stations), SALUS Ljubljana (heating substations), MOLDAVIJA Kišinjev (56 heating sub-stations), BIOMASE POSTOJNA, SEMIČ, RIBNICA, GORNJA RADGONA (heating sub-stations), ŠPORTNA DVORANA PODMEŽAKLA Jesenice (heating sub-stations), EKO SREBRNA HIŠA Ljubljana (heating sub-stations), NARODNA GALERIJA Ljubljana (heating sub-stations), FRUCTAL AJDOVŠČINA (heating sub-stations), BOLNICA SLOVENJ GRADEC (heating sub-stations), DOM STAREJŠIH OBČANOV FUŽINE Ljubljana (heating sub-stations), OŠ POLJANE (heating sub-stations), OŠ MIRANA JARCA, OŠ DANILE KUMAR (heating sub-stations), ORL KLINIKA Ljubljana, NEVROLOŠKA KLINIKA Ljubljana, PEDIATRIČNA KLINIKA Ljubljana (heating sub-stations), BOLNICA GOLNIK (heating substations), CELOVŠKI DVORI Ljubljana (heating sub-stations), RAVNE NA KOROŠKEM (65 heating sub-stations) General fields of our activities:

In addition to compact heating stations our production company manufactures also the following products:

- Heat storage or boilers for heating, cooling, domestic hot water....

- The distributors / collectors for heating, cooling, hot water....

- Hydraulic separators

- Other products (bleed vessels, calming pipe, ...) for heating sub-stations, boilers, boiler-rooms

All of the above listed products can be manufactured in stainless steel version.

General description of our company:

We are a company that was founded in 1997. The founder Simon Virant began operating as a sole entrepreneur with two employees. The number of employees increased as it gradually established itself as one of the leading manufacturers of compact heating stations in Slovenia, while also the needs and requirements of clients increased. Thus, in 2002 the status of a sole entrepreneur was converted into a new company Simon Ltd., which today has 21 employees. Our main customers respectively clients are mechanical installers, distributors of thermal energy and end-users. Business partners with whom we work are recognized European and Slovenian companies in the field of heating / cooling technologies (Swep, Danfoss, Wilo, Grundfos Pumps IMP, Sauter, Belimo, Samson, genebra, Siemens, Herz, TA, IMP Fittings,).

Picture 1: Company Simon Itd.



Picture 2: Compact heating sub-station in the cabinet.





Picture 3: Compact heating sub-station for preparation of sanitary hot water



Picture 4: Distributor / collector for heating

CooHeating



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Company name:

CT Cevna tehnika d.o.o.



Fields of our activities for small district heating:

The supply of pre-insulated pipe systems:

- Flexible PEX and stainless steel pre-insulated pipes
- Rigid steel and stainless steel pre-insulated pipes
- Manufactured by Brugg Rohrsystem Ag

References:

Some of the major references

2000 Terme 3000 Moravske Toplice total of 1200m of laid pipes (Calpex and Premant)

2003 Dobrovnik total 2.400m of laid pipes (Calpex in Casaflex) 2009 Terme Olimje Podčetrtek 1550 m pre-insulated flexible pipes Calpex 2010 Toplifikacija v KS Lokovica 7125m pre-insulated flexible pipes Casaflex 2012 Apartmajsko naselje Golte 629m pre-insulated flexible pipes Calpex 2013 Kidričevo dvorec Sternthal 747m pre-insulated flexible pipes Casaflex Boiler room Brezje at Dobova, 744m pre-insulated rigid pipes Premant 2014 Boiler room Paloma Sladki Vrh 4.530m pre-insulated rigid pipes Premant

References published on our website: http://cevna-tehnika.si/index.php/reference/references/C16

General fields of our activities:

Sales, technical consulting, installation, pre-insulated pipes for district



heating

General description of our company:

CT Cevna tehnika is a company with eleven employees.

Our aim is to monitor the needs of the market, to address our clients' requirements and offer support in the selection of the desired products. The main strengths of the company are qualified staff, flexibility, quick responsiveness, and quality, which is always given priority.

CT Cevna tehnika d.o.o. as a general representative of the company Brugg Rohrsystem Ag aims at:

- Ensure the Slovenian market the highest quality of district heating

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