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

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CoolHeating website: www.coolheating.eu



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.

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Company name: 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:
<u>Republic of Croatia</u>
- 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:

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Company name: Enerkon Ltd.	ENERKON	
Fields of our activities for small distric	t heating:	
- Designing district heating systems (developing the project)		
- Construction management for		
	instruction of district heating systems	
References:		
Pokupsko project:		
 developing the project, technical 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 contract of		
	cilities (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	is and/or renewable energy sources	
 energy savings projects 		
 project revision and nostrificati 	on	
 designing and engineering of pump stations 		
	cooling and air conditioning for	
hospitals, hotels and industry	5 0	
	quipment: pressure vessels, heat	
exchangers and pipelines		
 designing and engineering of fa 	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.

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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:		
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.

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Website:	



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

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sustainable construction - primarily through energy center Bračak

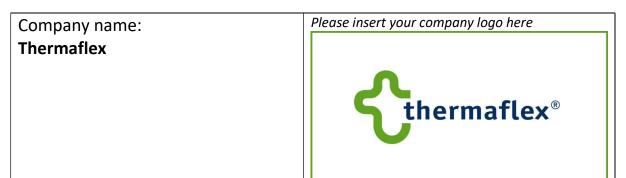
- Providing comprehensive energy consulting services for the founders of REGEA
- Expanding international cooperation and networking with regions, cities, energy agencies and similar institutions of the European Union

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.

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Phone: +38513098315	
Website: www.regea.org	





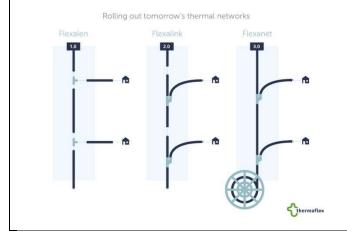
Fields of our activities for small district heating:

Thermaflex is the manufacturer of Flexalen pre-insulated pipes – diameter range d16-d225. The medium pipe is made out of Polybutylene, which is known for its flexibility and durability. Insulation and outer casing are made of PE. We strive for cost efficiency, fast installation and durability.



We supply in 3 levels of prefabrication.

- 1. Separate pipes, joints and insulation kits.
- 2. Elongated flexible T-pieces, which form a network when connected.
- 3. Complete prefabricated network that can be rolled out in place.



References:

Flexalen pre-insulated pipes are in use all over Europe as well as in very demanding environments like Caribbean islands and Antarctic snow. Our solutions can for example be found in:

- Energie Steiermark, Austria
- Heiligenkreuz, Austria
- Otopeni, Romania
- Lucenec, Slovakia
- Novo Mesto, Slovenia
- Purmerend, The Netherlands-
- La Capelle Marival, France
- Lyngdal, Norway
- Wörgl, Austria
- Maldives
- Cancun, Mexico
- Rotorua, New Zealand

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 manufacture truly sustainable and extremely durable insulation, awarded the number one quality/suitability certificate: Cradle to Cradle.

General description of our group:

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

We are active in 45 countries and operate 5 production plants in Europe, Middle East, Russia and Thailand.

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Vaš partner

zaizgradnjumalihcentraliziranihtoplinskihsustava

intervitice.	Nodoskok
Vodoskok d.d.	VOGOSKOK
učinkovitosti u toplinskim mrež polibutenskih (PB) cijevi Therm hidrauličkih gubitaka, rješavanje inkrustacijom, minimiziranje troškova priključi cjevovoda) - tehnička podrška pri planiranju sustava (naglasak na zaštitu ok plinova, korištenje alternativnih geotermalna voda, solar)	toplinskesustave: čkih rješenja za povećanje energetske ama – sustav predizoliranih plastičnih naflex Flexalen (optimizacija toplinskih i e problema uzrokovanih korozijom i vanja potrošača, ubrzanje izgradnje i projektiranju energetski održivih oliša, smanjenje emisije stakleničkih i izvora energije – biomasa, bioplin, ostava (aparati za zavarivanje, alati)
Reference:	

Toplovodni cijevni sustavi Thermaflex Flexalen su u posljednjih 20 godina instalirani u brojnim projektima izvedenim u Republici Hrvatskoj. Navodimo razvode iz kotlovnica, razvode geotermalne vode, toplinske mreže na postrojenjima s bioplinom i biomasom, sekundarne distributivne cjevovode od toplinskih stanica, razvode u sustavima s toplinskim pumpama). Dodatno možemo navesti projekte s predizoliranim cijevnim podzemnim sustavima za distribuciju rashladne vode u hotelsko-apartmanskim objektima i kampovima u priobalnim područjim te projekte za distribuciju vruće sanitarne vode.

Općenitapodručjanašegdjelovanja:

- proizvodnja tlačnih PEHD cijevi za distribuciju vode i plina
- proizvodnja PP cijevi i okana za gravitacijsku odvodnju
- prodaja kompletnih cijevnih sustava za niskogradnju i visokogradnju
- savjetovanje i inovativna tehnička rješenja za održivi razvoj i izgradnju

Imoturtko

CooHeating



Vodoskok d.d. je tvrtka osnovana u 2003. godine. Trenutno su u sastavu Vodoskok grupacije Heplast-pipe Prelog, Vodoskok Tomislavgrad BiH i Vodoskok Skopje Makedonija sa sveukupno 180 zaposlenika. Uz sustave iz vlastite proizvodnje Vodoskok d.d. distribuira vrhunske proizvode etabliranih svjetskih (Thermaflex, Simona, Plastitalia, Ostendorf plastics, Electrosteel, F.I.V.) i domaćih proizvođača (MIV).

Kontakt: *Vodoskok d.d.* Kontaktosoba: Tomislav Martinčić, ing.stroj. Adresa: Čulinečka cesta 221c, 10040 Zagreb Država: Hrvatska E-Mail: tomislav.martincic@vodoskok.hr Telefon: + 385 1 2959 952 Webstranica: <u>www.vodoskok.hr</u>

