

ENERGY IN A HEARTBEAT.



 **energetika** *ljubljana*

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 **energetika** *Ljubljana*

ENERGY IS EVERYTHING

A human is a living being with extraordinary life force. A human is a being driven by energy. It drives his thoughts, the world around him and the cosmos above him, making him aware of his smallness and replaceability.

Energy may be matter or an emotion. It may turn to light, heat, happiness or flavour. Energy is the essence that gives life the necessary beat. That is the beat from which we learn and develop our personalities. It is the beat that keeps us healthy and makes us comfortable and pleased in and out of our homes.

A home gives meaning to our lives. Throughout our life, we seek to create a lifestyle that will make us safe, satisfied and happy – a home that will fill us with energy.

One is responsible for one's own energy, while Energetika Ljubljana is happy to supply the energy ensuring the quality of living. For over a century, Energetika Ljubljana has been the energy heart of Ljubljana, the pulse of which can also be felt in the wider central Slovenian region with the supply of heat, natural gas and electricity.

Samo Lozej, Director



MISSION, VISION AND VALUES

MISSION

The mission of Energetika Ljubljana is to provide secure, safe, economically efficient and environmentally friendly energy to:

- residential and commercial customers in Ljubljana, i.e. heat and cold generated in an energy efficient way,
- residential and commercial customers in Ljubljana and neighbouring municipalities, i.e. natural gas and other energy products,
- electricity from highly efficient co-generation and renewable energy sources.

The key benefit provided by Energetika Ljubljana to the wider community is quality air in the Ljubljana Basin and, in broader terms, reduced environmental burden and enhanced quality of life and health in the capital and its surroundings.

VISION

We have the knowledge and ability. Energetika Ljubljana will ensure comprehensive energy supply to the entire urban region of Ljubljana.



“Secure and comprehensive energy supply to the urban region of Ljubljana.”

VALUES

Reliability



Environment



Flexibility



Honesty



Vision



People



OWNERSHIP STRUCTURE AND ORGANISATION

The company member of Energetika Ljubljana is Javni holding Ljubljana, the majority founder of which is the City of Ljubljana. In addition to Energetika Ljubljana, the Javni holding Ljubljana Group also includes the public undertakings Snaga, Ljubljanski potniški promet and Vodovod-Kanalizacija.

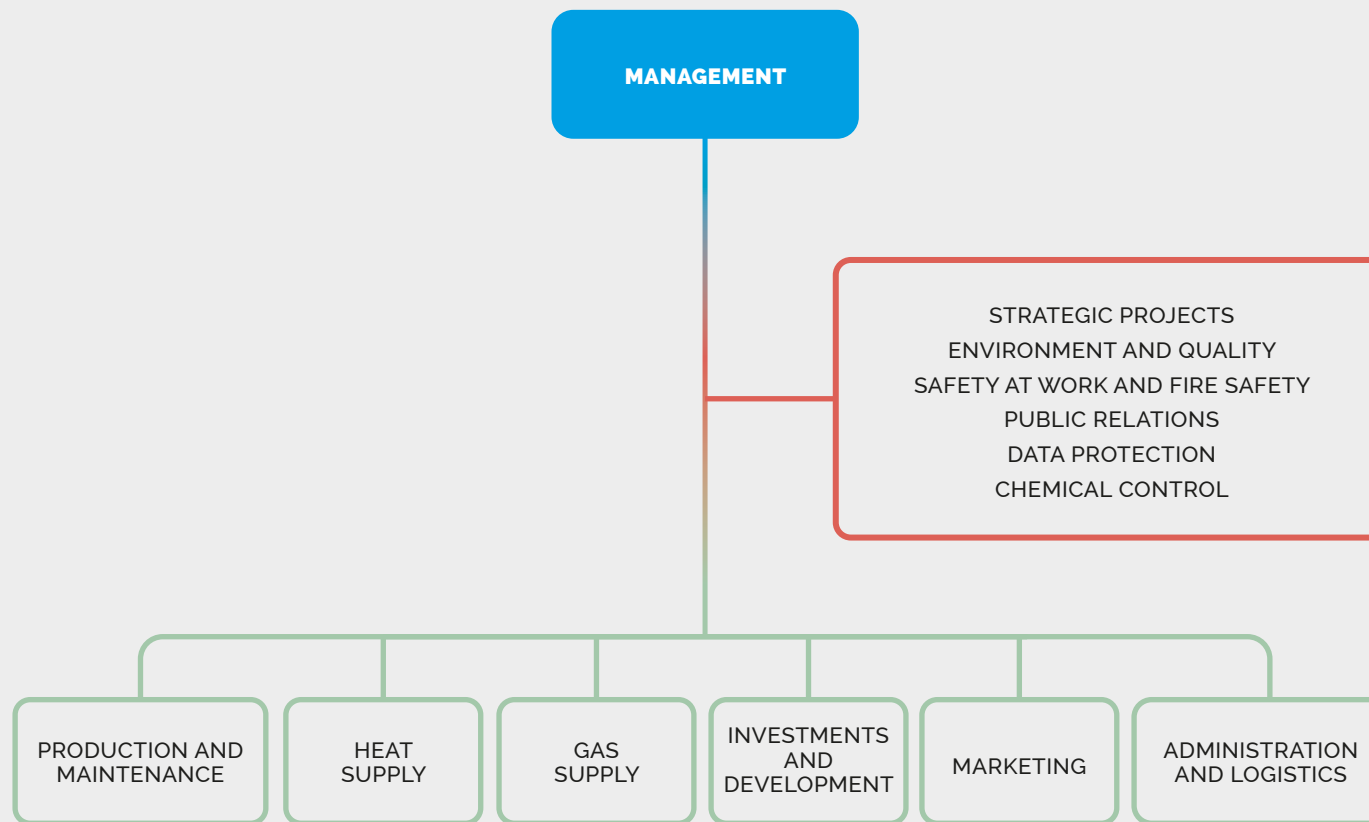
“Integration is a start; joint action is progress and cooperation is success.”



Organisational chart of the Javni holding Ljubljana Group



Organisational chart of Energetika Ljubljana



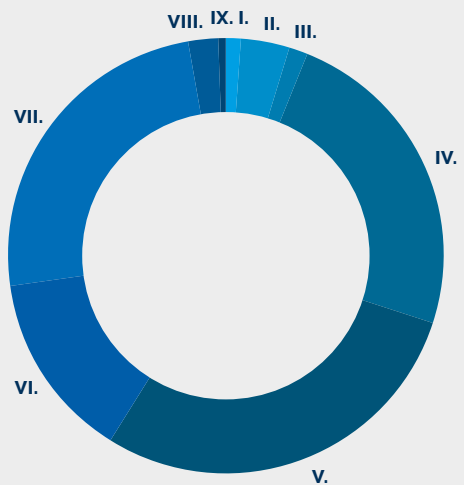
EMPLOYEES

Employees at Energetika Ljubljana start their work much sooner and end it much later than most energy suppliers. Employees are the ones preparing the infrastructure used to distribute energy to the end customer. And if anything goes wrong, employees take actions, intervene and make repairs.

Carefree energy is provided 24/7.

A photograph showing two people shaking hands over a desk. On the desk, there is a small brown teddy bear, a computer keyboard, and several colorful charts or reports. The background is a blurred office setting.

“You will never be left in the cold.”



EDUCATIONAL STRUCTURE OF EMPLOYEES

1,18 % or 7
employees with level **I.** education

3,55 % or 21
employees with level **II.** education

1,52 % or 9
employees with level **III.** education

23,99 % or 142
employees with level **IV.** education

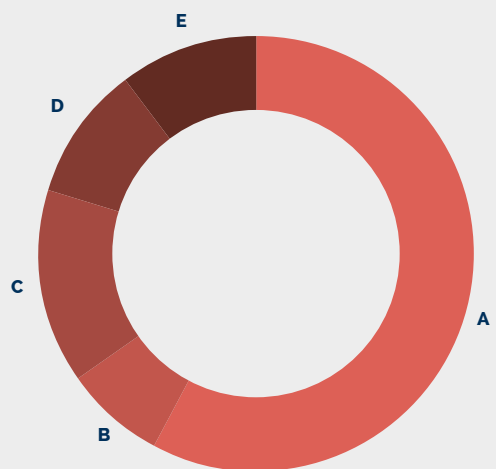
28,89 % or 171
employees with level **V.** education

13,68 % or 81
employees with level **VI.** education

24,66 % or 146
employees with level **VII.** education

2,20 % or 13
employees with level **VIII.** education

0,34 % or 2
employees with level **IX.** education



NUMBER OF EMPLOYEES IN KEY SECTORS FOR ENERGY SUPPLY

A 57,96 % or 295
employees in **Production and Maintenance**

B 7,47 % or 38
employees in **Heat Supply**

C 14,34 % or 73
employees in **Gas Supply**

D 10,02 % or 51
employees in **Investments and Development**

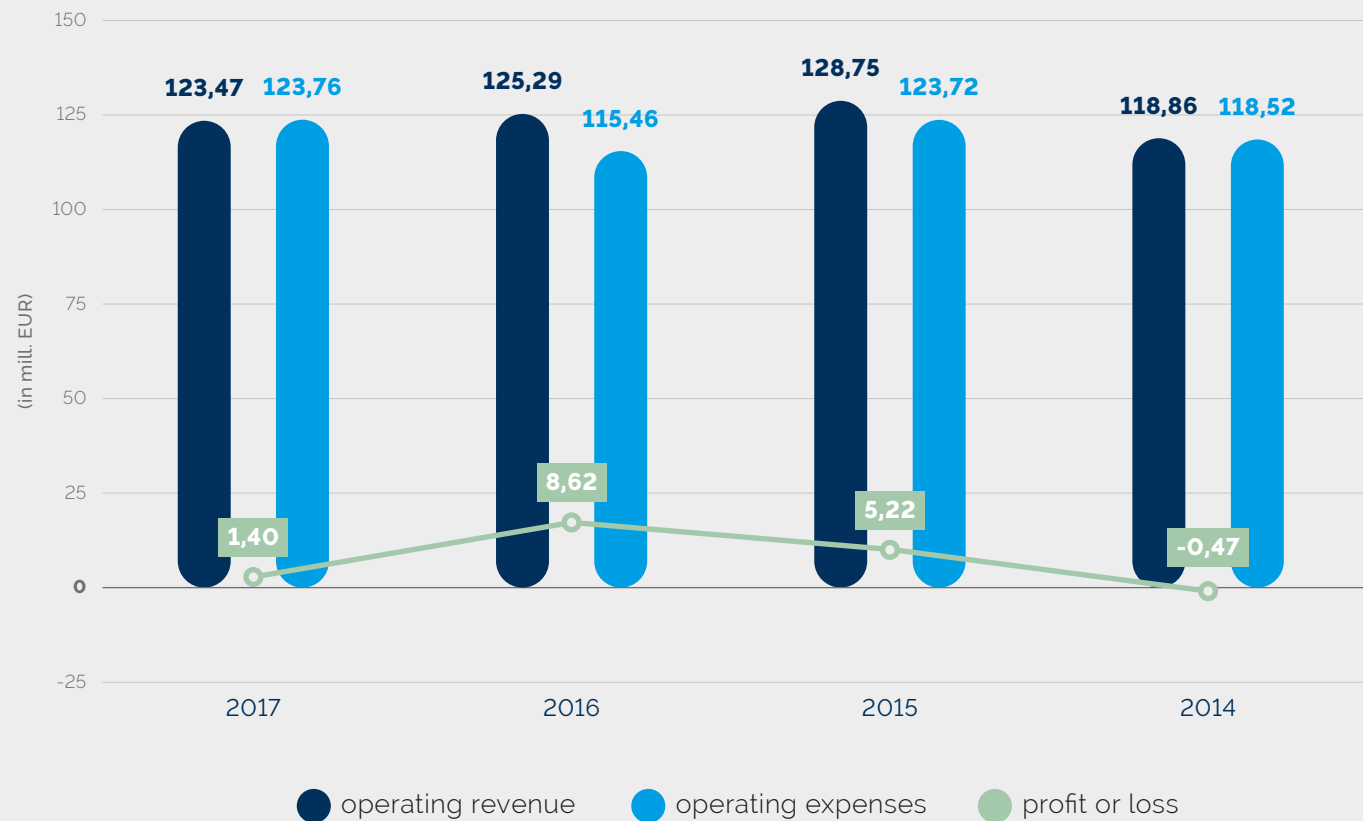
E 10,22 % or 52
employees in **Marketing**

OPERATIONS

Energetika Ljubljana is an energy company. Energy activities, primarily heat supply, depend on the regulations enforced by the Energy Agency and on the competitiveness of supply on open natural gas and electricity markets.

***“High
environmental
standards govern
investments that
will enhance the
security and safety
of operations
along with the
quality of living.”***





€ **14**
MILLION
of investments
realised in
2017

COMPREHENSIVE ENERGY SUPPLY

Energetika Ljubljana

- generates, distributes and supplies hot water, steam and cold (heat energy);
- distributes and supplies natural gas, CNG and LNG;
- generates and supplies electricity from highly efficient co-generation.

KEY SYSTEM ACTIVITIES:

- a service of general economic interest for the distribution and supply of heat in the City of Ljubljana;
- a distribution system operator for natural gas in the City of Ljubljana and the neighbouring municipalities of Medvode, Dol pri Ljubljani, Dobrova – Polhov Gradec, Škofljica, Brezovica, Ig, Log – Dragomer, Grosuplje;
- ancillary services for the Slovenian electricity system.



***“All energy
in one place.”***

SERVICES



ENERGY PRODUCTS

- District heating
- Natural gas
- Electricity
- District cooling
- CNG
- LNG
- Demineralised water



INVESTMENTS AND MAINTENANCE

- District heating – connection or renewal
- Natural gas – connection or renewal
- Natural gas heating packages
- Supply and installation of a thermal power station
- Maintenance of a thermal power station
- Connection of a gas stove



CONSULTANCY SERVICES

- Account management
- Energy efficiency
- Financial benefits



ENGINEERING AND SURVEYING SERVICES

- Production of technical and design documents
- Supervision over the execution of works
- Land surveying services
- Drones (aerial and thermal imagery, etc.)



LABORATORY SERVICES

- Services rendered by the Fuel and Chemical Water Control Laboratory
- Services rendered by the Heat Meter Laboratory (heat supply)
- Services rendered by the Metrology Laboratory (gas supply)

GREEN CITIES HAVE DISTRICT ENERGY SYSTEMS

Energetika Ljubljana provides two fundamental district systems for the supply of energy: a district heating system and a natural gas supply system.

The **district heating system** spans mostly over the central part of Ljubljana, supplying hot water for heating and preparing sanitary hot water to over 58,900 residential and over 5,700 commercial customers.

The **natural gas supply system** spans even further to the outskirts of the capital and neighbouring municipalities: Medvode, Dol pri Ljubljani, Dobrova – Polhov Gradec, Škofljica, Brezovica, Ig, Log – Dragomer, Grosuplje. Natural gas for heating, hot-water production or cooking is supplied to over 60,900 residential and over 2,900 commercial users.

Both systems together encompass over 1,600 kilometres of infrastructure and constitute one of the largest and most developed and branched energy efficient and environmentally acceptable district energy supply systems in this part of Europe.

“Heat and natural gas are supplied to 75% of apartments in the City of Ljubljana.”

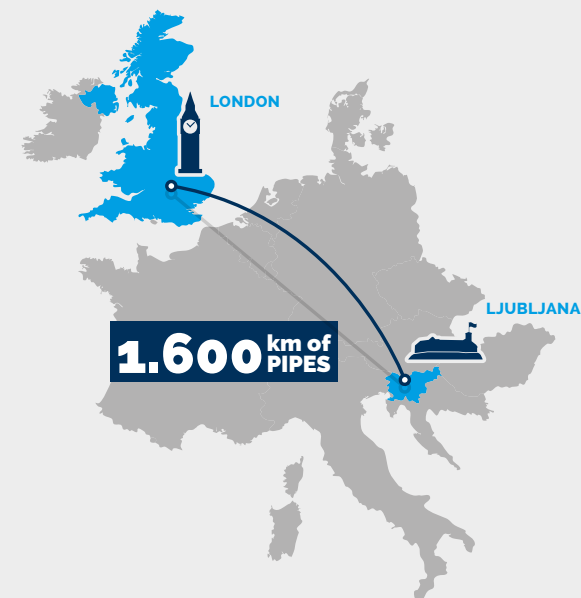


DISTRICT HEATING SYSTEM (HOT-WATER AND STEAM PIPELINE SYSTEMS)

Basic operating information		2017	2016	2015	2014
Length of the hot-water network	km	269,7	268,6	267,2	260,8
Length of the steam pipeline system	km	9,7	9,7	10	10,5
Connecting power – hot-water system	MW	1.188,6	1.189,3	1.192,2	1.190,4
Number of connected heat meters	piece	4.852	4.797	4.765	4.714
Number of connected steam meters	piece	19	19	19	21
Heat generation (hot water and steam)	GWh	1.343,6	1.304,7	1.258,1	1.149,5

GAS NETWORK

Basic operating information		2017	2016	2015	2014
Length of the main gas network	km	704,8	696,1	688	672,5
Connecting power	MW	1.647,5	1.639,1	1.646,9	1.643,2
Connected gas meters	piece	57.233	57.298	57.450	57.624
Annual distribution of natural gas	MWh	804.380	792.095	744.116	642.586



2X270 km
HOT-WATER
NETWORK



1.060 km
GAS NETWORK
(main + connecting)

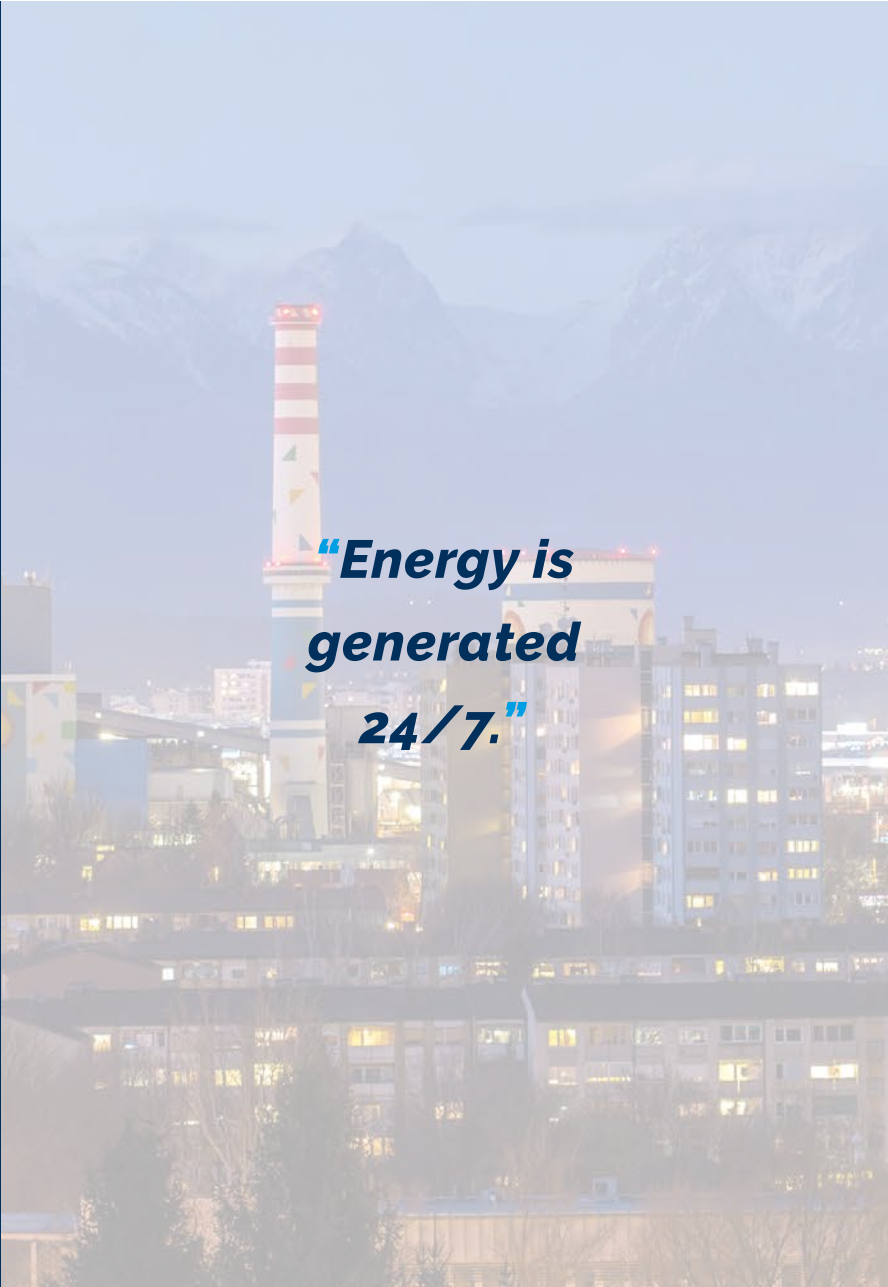


HIGHLY EFFICIENT COMBINED HEAT AND POWER (CHP)

Heat for the purposes of the district heating system in Ljubljana as provided by Energetika Ljubljana is produced at the TE-TOL unit in highly efficient cogeneration together with electricity. TE-TOL is the largest highly efficient cogeneration unit in Slovenia – the share of heat in the form of hot water that is generated for the district heating system in Ljubljana accounts for half of all heat generated in Slovenia for district heating purposes. The electricity generated accounts for 4% of total electricity demand in Slovenia. Energetika Ljubljana also supplies electricity to households and commercial users. The retail supply of electricity is a service that has been rendered by Energetika Ljubljana since 2016, currently to some 3,300 customers.

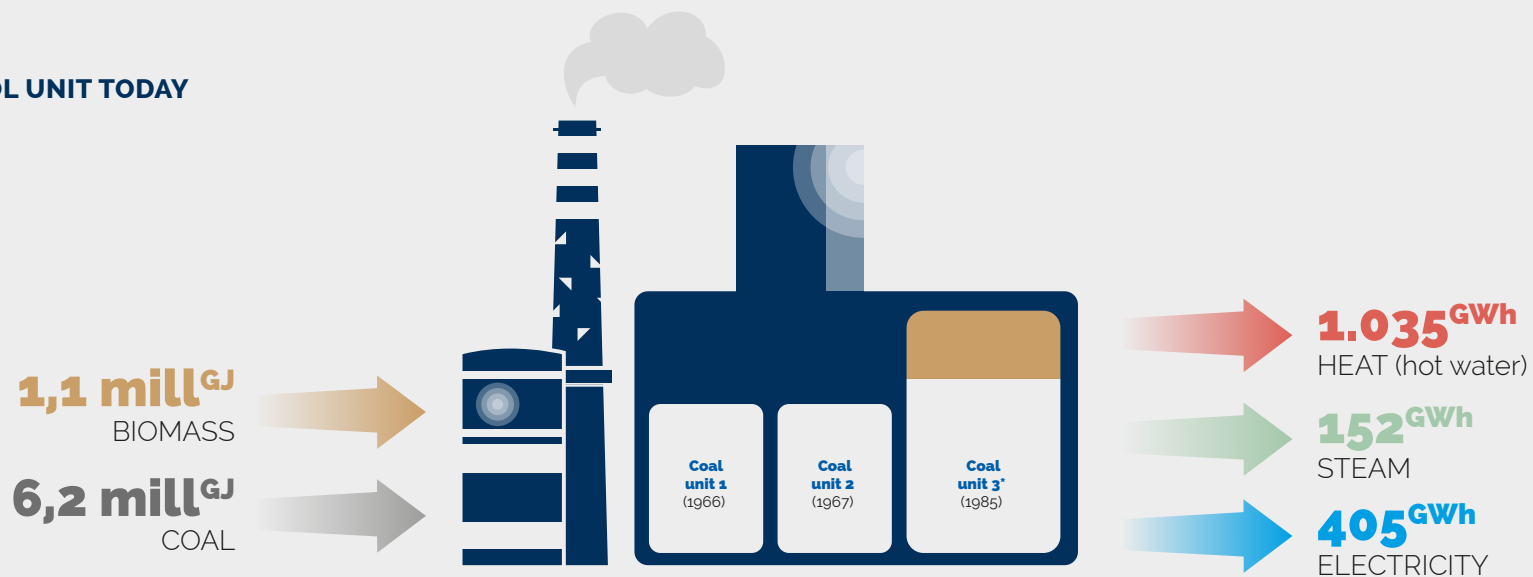
Since 2002, the TE-TOL unit has used environmentally acceptable coal with low sulphur and ash content to generate energy and, since 2008, also woody biomass or woodchips, accounting for 16% of the annual heat and power generation. Energetika Ljubljana is the largest consumer of woody biomass for energy purposes in Slovenia.

Highly efficient cogeneration at TE-TOL will be upgraded in 2021 by a combined cycle gas turbine CHP unit, that will replace a part of coal technology and further improve air quality, while providing secure heat and

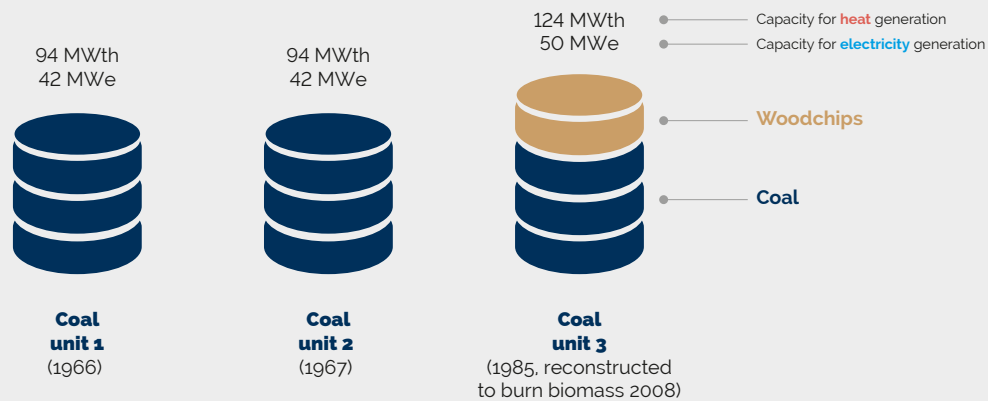


***“Energy is
generated
24/7.”***

TE-TOL UNIT TODAY



* Unit 3 was reconstructed in 2008 to co-burn coal and woody biomass.



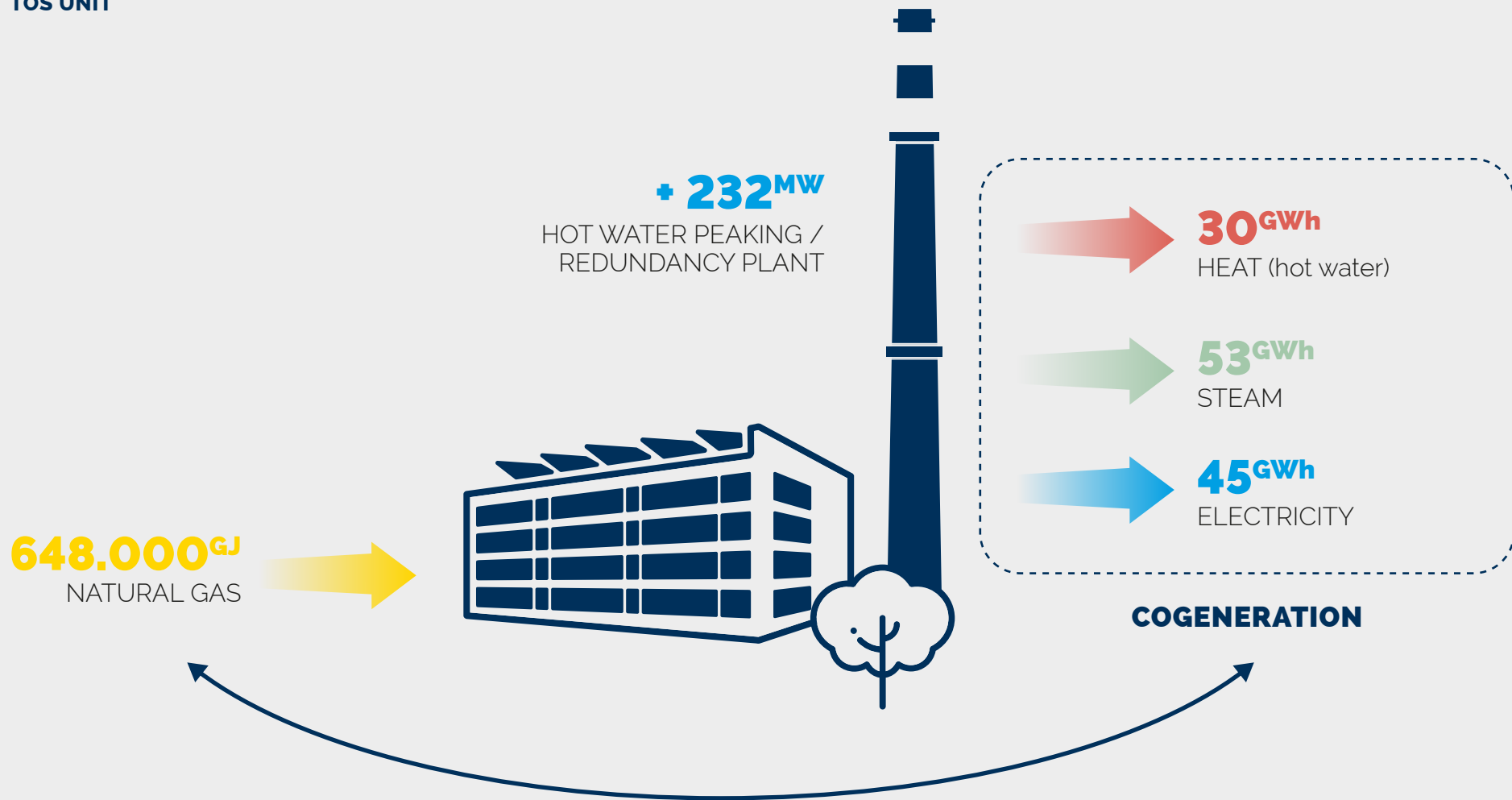
PEAKING AND REDUNDANCY PLANT

In addition to the primary generation source, i.e. highly efficient cogeneration at TE-TOL, Energetika Ljubljana also manages a peaking and redundancy plant, i.e. the TOŠ unit. Peaking and redundancy plants are used to supplement the necessary energy in cases of insufficient generation from a primary source. The TOŠ unit also includes a solar power plant and cogeneration with a gas turbine to supply technological steam to the nearby industrial customers.



“Managing a uniform energy generation and distribution system.”

TOŠ UNIT



ENVIRONMENTALLY ENGAGED

District energy supply as provided by Energetika Ljubljana contributes a great deal to air quality in the Ljubljana Basin. Before the district heating plant was built and district heating was put in place, Ljubljana was one of the most polluted cities in the world, mostly due to individual heating systems. The concentration of sulphur dioxide was 30 times higher than today. One of the key measures to improve air quality was to establish a district heating system and build a district heating plant.

Today, Energetika Ljubljana supplies district heating and natural gas to over 120,000 customers or 75% of apartments in the City of Ljubljana, aiming to increase the share to 80% by 2024.

In parallel, Energetika Ljubljana implements measures to further improve air quality by updating heat and electricity generation sources and implementing sustainable measures in traffic.

***“Over 120,000
customers take
credit for better
air quality.”***



1966

“Ljubljana used to be one of the most air polluted places in the world due to individual heating systems. The concentration of sulphur dioxide was 30 times higher than today. One of the key measures to improve air quality was to establish a district heating system and build a district heating plant.”

Photo by: Slovenian Historical Archives



2016



Photo by: Dunja Weldam,
Source: Turizem Ljubljana

STRATEGIC PLANS

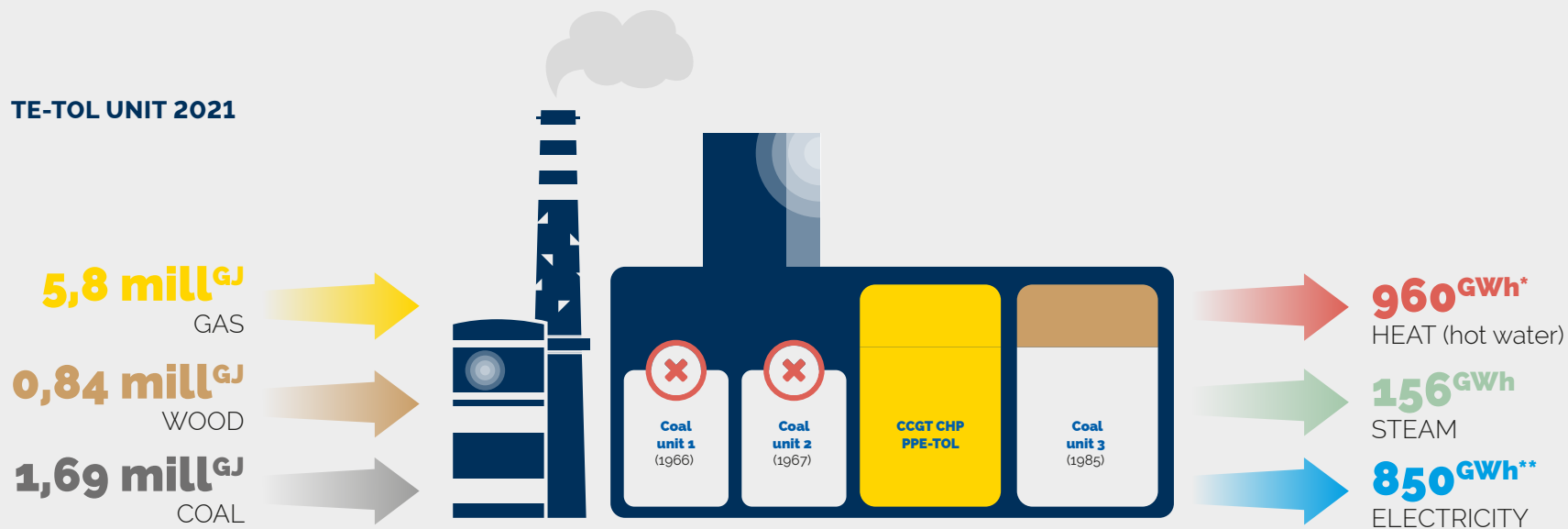
CONSTRUCTION OF A COMBINED CYCLE GAS TURBINE CHP UNIT

The key development project of Energetika Ljubljana to improve air quality in terms of generation sources is the construction of a combined cycle gas turbine CHP unit that will replace the oldest two of three coal units at TE-TOL. Coal use will hence reduce by some 70%. Coal unit 3, which was remade in 2008 to co-burn coal and woodchips, will stay in operation and provide the option of using different primary fuels and renewable energy sources at TE-TOL.

“Local actions for a regional and global impact.”



TE-TOL UNIT 2021



CONSTRUCTION TIMETABLE



NATURAL GAS – ENERGY FOR ENVIRONMENTALLY FRIENDLY VEHICLES

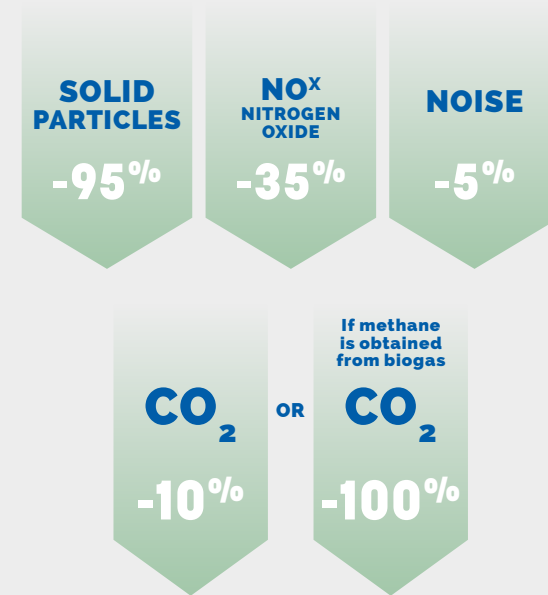
The use of vehicles powered by compressed natural gas (CNG) in passenger transport and vehicles powered by liquefied natural gas (LNG) in freight transport is an important sustainable action in transport, which is why it is promoted in a strategic manner. As the largest fuel provider for environmentally friendly natural gas vehicles in Slovenia, Energetika Ljubljana strives to expand the use and network of filling stations. Currently, there are three active filling stations for natural gas vehicles in Ljubljana, i.e. two for vehicles burning compressed natural gas (CNG) in Šiška and Dolgi most and one for cargo vehicles burning liquefied natural gas (LNG) in Koseze. Another two filling stations will be set up by 2020, one for passenger cars in Stanežiče (CNG) and one for passenger cars and freight vehicles (CNG and LNG) in Letališka cesta.

“Every step counts for clean air.”





KEY ENVIRONMENTAL ADVANTAGES OF CNG AND LNG
(compared with liquid petroleum derivatives)



MAJOR MILESTONES

- 1861** The first gas lamp is used for street lighting.
- 1961** The old city thermal power plant in Slomškova ulica is converted into a boiler room and starts supplying heat to a nearby elementary school.
- 1966** Toplarna Ljubljana starts operating in Moste and is followed by Toplarna Šiška, thus providing district heating to Ljubljana.
- 1968** Steam generation is set up at Toplarna Ljubljana and, hence, district steam supply.
- 1971** The Komunalna Energetika unit is organised within the scope of Toplarna Ljubljana, independently pursuing the development of the hot-water and steam pipeline systems in the capital, at the time on behalf of and for the account of Toplarna Ljubljana.
- 1972** Toplarna Ljubljana is restructured into two labour organisations, i.e. Termoelektrarna Toplarna Ljubljana as a co-generation unit and Komunalna energetika Ljubljana as a heat distributor.

***“Generating
the energy beat
since 1861.”***

- 1973** Steam generation is set up at Toplarna Šiška.
- 1974** Komunalna energetika Ljubljana merges with Plinarna Ljubljana.
- 1979** Ljubljana gets natural gas and starts expanding the gas network.
- 1981** Energy activities that had been organised as basic organisations of associated labour (TOZD), i.e. Komunalna Energetika, Plinarna and Butan Plin, merge into the labour organisation DO Energetika.
- 1985** Toplarna Ljubljana is renamed to Termoelektrarna Toplarna Ljubljana (TE-TOL) and becomes the largest producer of heat for district heating purposes in the Republic of Slovenia. Its company members are the Republic of Slovenia (majority) and the City of Ljubljana (minority).
- 1991** DO Energetika is restructured into the public undertaking Javno podjetje Energetika Ljubljana.
- 1994** Javno podjetje Energetika Ljubljana is included in Mestni Holding Ljubljana (today Javni Holding Ljubljana).
- 2009** The Government of the Republic of Slovenia as the majority member of TE-TOL adopts a resolution to sell the state's holding.
- 2010** Energetika Ljubljana as the minority member becomes one of the owners of TE-TOL upon the purchase of a shareholding from the City of Ljubljana.
- 2011** Energetika Ljubljana becomes the majority member of TE-TOL.
- 2011** Energetika Ljubljana sets up the first public filling station for vehicles powered by compressed natural gas (CNG) in Ljubljana.
- 2013** Energetika Ljubljana becomes the full owner of TE-TOL upon the purchase of the remaining shareholding from the Republic of Slovenia.
- 2014** Energetika Ljubljana merges with TE-TOL and becomes the largest energy system in Slovenia for district heat and natural gas supply.
- 2017** Energetika Ljubljana sets up the first public filling station for freight vehicles powered by liquefied natural gas (LNG) in Ljubljana.

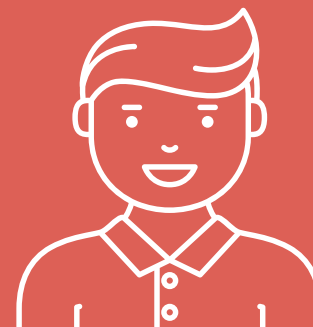
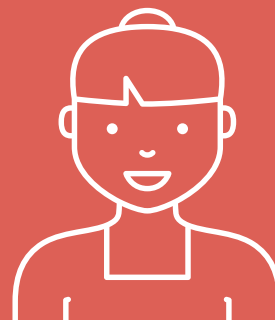
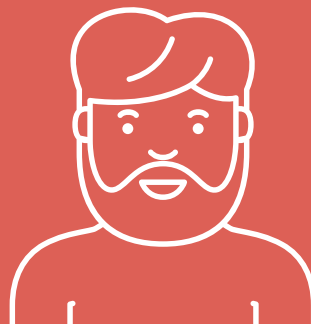
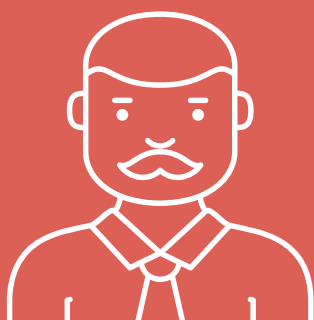
HEATED BY LOYALTY

Every step taken by the users of our services to make Ljubljana an energy efficient and environmentally and people friendly capital inspires us to search for sustainable energy solutions providing secure, efficient and environmentally friendly supply of heat, gas and electricity 24/7.

***“Home is not only
the centre of our life,
but also gives us
meaning and brings
warmth to our
hearts. It is a way
of life.”***



Our users may integrate various services in the Zvestoba ogreva (Heated by Loyalty) club, where they can increase their savings and the comfort of living as a reward for their loyalty and environmental responsibility.





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