




# Comprehensive energy solutions

**PETROL**

Energy for life





## Together we are creating a low carbon future



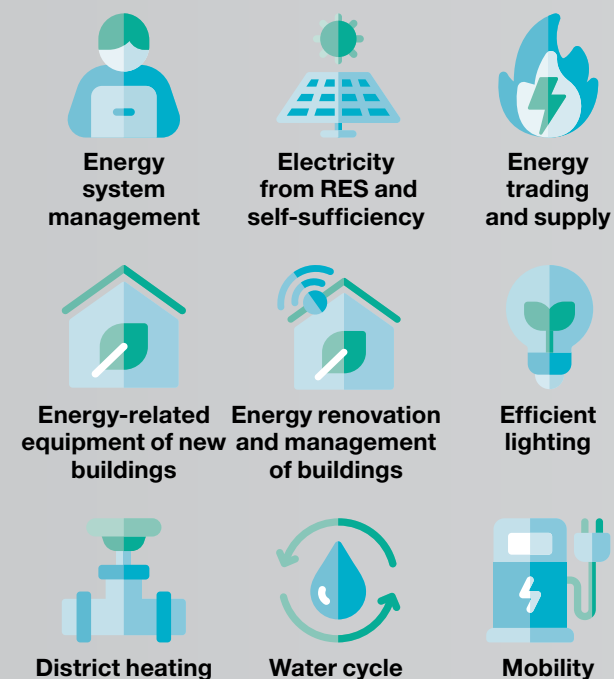
## User-tailored business models

The Petrol Group is Slovenia's largest energy company and one of the largest Slovenian retail companies, with a significant role in the wider region. At Petrol, we co-create the development of cities and local communities, the public sector, industry and small and large businesses all in one spot. We are **partner-focused**, offering comprehensive and demand-driven individual energy solutions.

**Our comprehensive energy solutions** include everything from production, distribution and supply of energy to implementing energy efficiency improvement measures by decreasing resource use and enabling low-carbon mobility.

The sustainable cycle is completed by **reusing residual materials** as new energy sources and strengthened by convincing results from the already completed projects.

### What we do



## Effective and reliable network of partners

The only way to effectively meet the challenges to come and the challenges we already face today is through expert knowledge and innovative business approaches. At Petrol, we are fully aware of this, which is why we invest in partnerships at home and in the region, in the development of pilot projects and in cooperation between different sectors and the scientific sphere with an emphasis on multidisciplinary solutions.

We only work with established equipment manufacturers. Our tested and reliable supplier network has been carefully selected to ensure the high quality of individual products and a sustainable business policy.

Our solutions help the public and private sectors as well as cities and local communities as a whole, with a primary focus on the individual.

### Areas where we offer solutions



We search for and provide optimum customer-tailored business models that offer a competitive edge and added value. The most common of these are public-private partnerships, such as energy contracting, turnkey models and third-party financing.

- **Energy contracting** is a partnership between an infrastructure owner and a private partner investing in the renovation and carrying out of measures to improve energy efficiency. It pays off by way of the savings achieved.
- **Turnkey model** is a comprehensive energy solution "ready for use", which also comes with an option to pay off the investment in instalments. We also provide assistance in acquiring financial incentives and grants.
- **Third Party Financing** is an investment we make in the customer, and the customer pays off the investment only by purchasing energy products from our company. These are not only more environmentally friendly but also cheaper for the user.
- **Other partner-tailored models** created based on the type of collaboration.







# Energy is all around us



# Energy supply

At Petrol, we adopted responsible resource management as part of our strategy. Because we want to contribute our share in realising the binding European goals in the field of energy from renewable energy sources, we are heavily **investing in the generation of electricity from renewable energy sources** and their management throughout the region.

We are helping partners with a stable supply of **solar power** by installing small solar plants or solar panels that can be linked in smaller networks (mini-grids) or by building large solar power plants. With a **Petrol solar power plant** you get your own source of energy for heating and cooling, for production and other electrical appliances, lighting and even charging stations for electric vehicles.

✓ *As part of the Luče Energy Community, we installed 9 solar power plants, which will produce 106 MWh of clean energy per year. We installed a system battery and five home batteries that allow for circular operation in the community and improve voltage conditions in facilities.*



We are planning, building and managing **wind parks**. In locations where it is possible to utilise the potential of water in an economically efficient and environmentally friendly way, Petrol can help you achieve energy independence by building and managing **small hydropower plants**.

✓ *Wind farms Glunča and Ljubač in Croatia have a total of 18 wind turbines with a total installed capacity of 50.7 MW and an expected yearly production of 150 GWh, which can supply 35,000 average households.*



Petrol is a **reliable supplier of energy products with a wide portfolio**, providing excellent energy at home, on the road and for businesses.

**Electricity** and **natural gas** are the key energy products on the path to a low carbon society. Due to our reliability and competitive terms and conditions, our portfolio of small and big electricity and natural gas clients is steadily increasing. Large business clients receive **tailored offers** that suit their needs for an affordable and reliable supply of electricity and natural gas.



Our electricity and natural gas clients can choose between various fixed-priced products and structured portfolio management products that allow them to be **less exposed to price fluctuations** and manage the costs of purchasing electricity and natural gas.

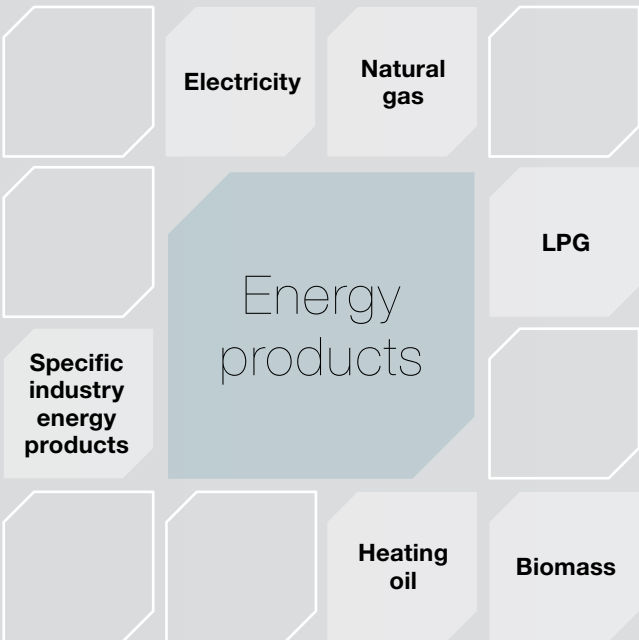
The added value in our comprehensive offer comprises the **technical solar system and energy storage solutions**. Large business clients and smaller

producers can **enter the ancillary services market** for the provision of reserve power needed to implement tertiary regulation.

**Natural gas, the cleanest fossil fuel**, is a good replacement for the industry and other large users until renewable energy sources can fully meet their energy needs. In areas without a natural gas network, we can build natural gas stations with **liquefied petroleum gas**, which is an environmentally and financially excellent alternative to heating oil.

At Petrol, we also monitor the development of **hydrogen** and **synthetic gas** and study various possibilities for their integration and use. The key point here is to know that the chain needs to be linked, from production to use, where our distribution systems will play an important role.

Petrol is also a **reliable and competitive supplier** of other energy products.





## Energy efficient systems for heating, cooling, and industrial processes

Heating and cooling use half of the energy produced in the European Union, and a large chunk of that energy is lost. That is why Petrol is developing heating and cooling solutions that **decrease the costs of energy supply and the environmental burden**.

Heating and cooling supply is provided via a **centralised** system (distribution, district heating, concession model) or via a **decentralised** system.

### Projects for transitioning from heavy fossil fuels to alternative energy products

We are the largest supplier of heating oil in Slovenia, however we are also focused on the future and already offer the **option to replace energy products**, which can generate environmental as well as financial savings. In the last few years, Petrol has implemented **numerous boiler room upgrades** to ease the transition to other energy products. These projects include the setting up of the right infrastructure, replacing the burner or furnace in accordance with the customer's needs and the reconstruction of boiler rooms.

When **selecting solutions** for heating, cooling and ventilation, most of the partners choose gas condensation boilers and heat pumps.

Gas condensing boilers



### NG and LPG gas condensing boilers

Natural gas or liquefied petroleum gas condensing boilers are some of the **most efficient heating systems**, especially for large users, such as the industry and centralised boiler rooms for district heating. They provide **exceptional heat transfer** and **maximum savings**, in addition to simple operation. Their output ranges from a few to several hundred kilowatts, and they are also distinguished by a wide modulation range, which adapts the operation of the devices to the current heat demand.

### Heat pumps

In addition to **heating**, heat pumps also provide **cooling**, are used for heating pool water and can also be used for utilising waste heat in industrial and other processes. Cascading connection of heat pumps is possible for larger users.

It is also convenient to **connect a heat pump to own solar power plant**, which further decreases heating costs.

Heat pump

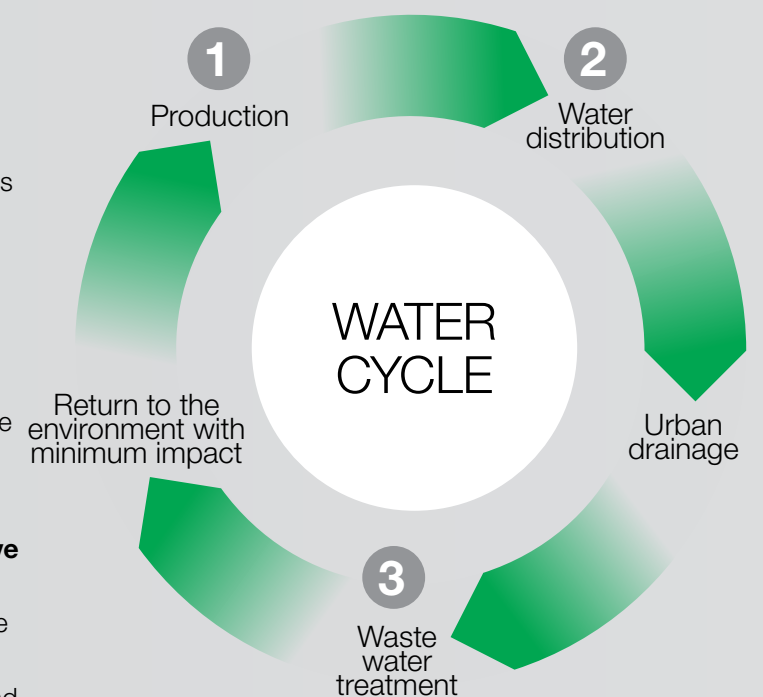
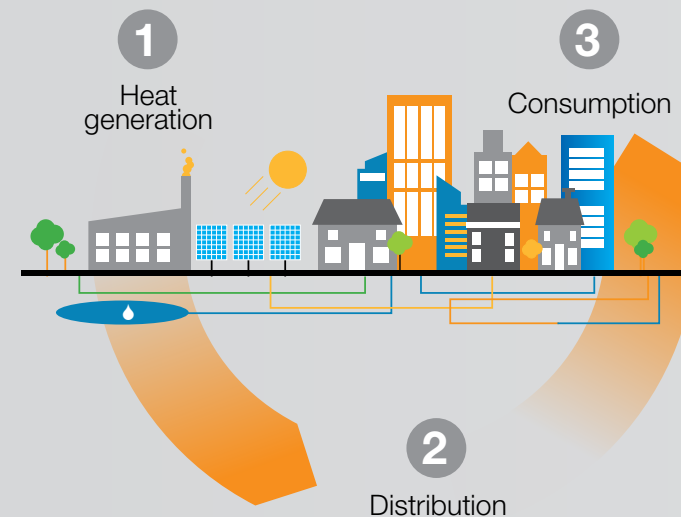


## Optimisation of district heating systems and drinking water supply systems

With the development of new technologies, the growing number of connected devices and the needs of residents in urban centres for accessible and clean heating, the **trend towards the development of digital and smart district heating networks** is significantly increasing. A similar digitalisation trend can also be observed in drinking water supply systems management. That is why Petrol **is committed to efficient energy management**.

For **district heating and cooling**, we offer a **comprehensive solution for optimising district heating systems** DISSy ('Digital Intelligent Smart Systems') that generates **significant savings** and the development of district heating systems as part of the smart city infrastructure.

Using optimal solutions, we provide a **comprehensive district heating process**: heat generation, distribution and consumption as well as more effective services. On your behalf, we **optimise measurable data using near real-time advanced analytics** and **provide reliable information** all in one spot. This can help you make **timely** business decisions.



We strive to ensure **high-quality water resources in cities** as well as **diligent and efficient water management**. By providing comprehensive DISNet - WS ('Digital Intelligent Smart Networks – Water Systems') services, we offer **comprehensive support** in improving the efficiency of operations of the water system, help **recognise water losses** and offer advice on how to minimise them. This provides higher reliability to operators, improves their efficiency and minimises risks.

We operate water supply systems and provide you with a **sustainable and efficient development of drinking water supply services, modernisation of services** and infrastructure and a **high-quality drinking water supply** at the lowest still manageable operating costs.





## Energy renovation of buildings and energy solutions for new buildings



## Energy efficient lighting

Petrol can help you achieve a more efficient and environmentally friendly energy profile of your building. Our considerable experience in the public and private sector make us **the right partner for modern energy efficiency concepts**. Our solutions, perfectly tailored to your needs, offer a comprehensive approach.

When it comes to investment in **new buildings** and in **energy renovations** our goal is a sustainable energy supply with an emphasis on renewable energy sources, provided via an individual approach.

We will find the **optimal investment solutions for energy renovation** for your needs, either total or partial renovation, and take care of the whole energy renovation process, which can save our partners **time and money**.

Implemented measures are **constantly monitored**, and our **advanced software tools** for comprehensive management of energy consumption in buildings enable you to systematically approach energy efficiency of your building.

*Squashland, Ljubljana*



Our solutions **ensure the optimal use of energy and water** in all types of buildings, while meeting the relevant user standards. In almost 20 years, Petrol has undertaken energy renovation of over 550 buildings, of which over 330 were in public ownership, and over 220 business premises, including offices, production, warehousing, tourist, retail and sports buildings, as well as farms, churches and multi-apartment buildings, totalling over a million square metres of renovated surfaces.

For **new buildings** we provide a wide range of energy solutions in line with the needs and wishes of our clients. An example of a new building is **Squashland Ljubljana**, the first squash centre in the world built from massive wood that is also highly energy efficient, thanks to Petrol. It serves as an example not only for the local community but also for the wider area.

Petrol prioritises **modern technologically advanced lighting** with an extremely long lifespan and lower maintenance costs. We have replaced more than **250,000 lights and lamps throughout our numerous projects**. Energy savings range from 60 to 80 percent, which considerably contributes to reducing the carbon footprint.

### Public lighting

By choosing suitable, modern lighting, we can significantly **reduce the costs of electricity and operation** through energy efficient public lighting upgrades while significantly **reducing light pollution**. Cities and local communities are thinking more and more about introducing **smart lighting systems**. In addition to energy efficiency and the added possibility of actively adjusting light intensity to present needs, some of the luminaires can also serve as part of smart city infrastructure.

*Public lighting, Koper*



### Industry lighting

Industry lighting represents an important part of **operating costs and can affect labour productivity**. It is important for lighting to match the use of the building and space. That is how we provide

suitable standardised lighting levels, introduce control and automation systems and optimise the use of electricity. We can **generate significant savings and improve working conditions** and safety as well as labour productivity and well-being.

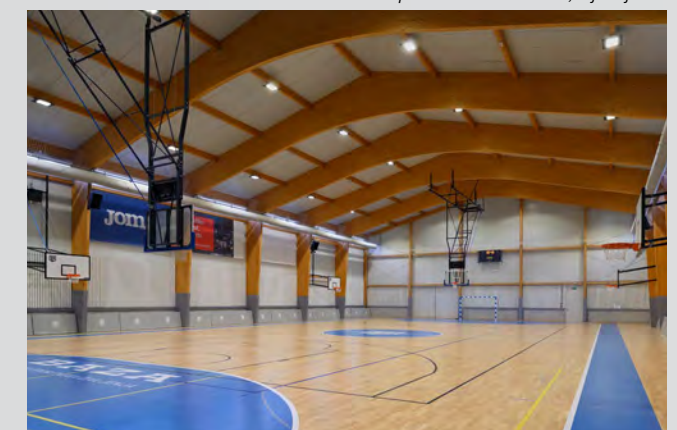
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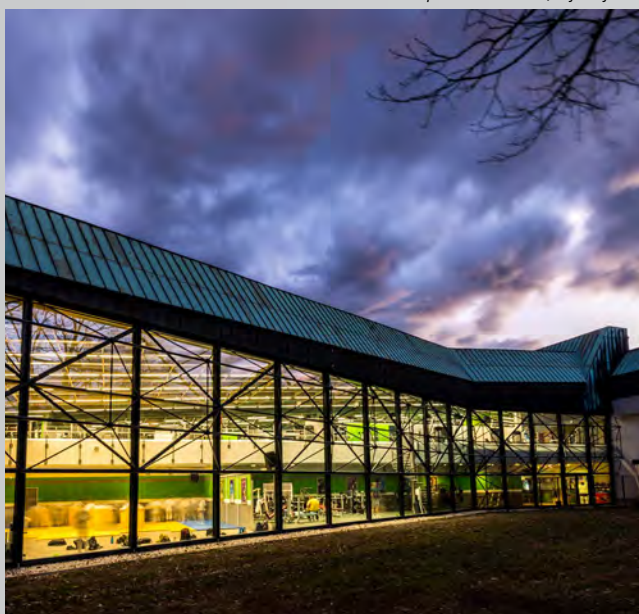
### Internal and external lighting of business premises

For business premises, we offer **effective dedicated lighting solutions** for internal and external premises with efficient LED lights. Appropriate lighting can **help save energy costs** while increasing **living well-being, productivity, aesthetics** and the value of your building.

*Sports centre Baza, Ljubljana*



*Kopališče Tivoli, Ljubljana*





# Comprehensive mobility services

By **introducing sustainable mobility models**, Petrol is decreasing traffic pollution. Slovenia's strategy in the area of developing suitable traffic infrastructure lists five alternative engine fuels, all provided by Petrol: electricity, hydrogen, liquefied petroleum gas, natural gas and biofuels.



## Mobility services: vehicles

### Long-term vehicle lease

- Entering sustainable mobility without high investment costs
- Gradual electrification of your car fleet
- Decreasing the maintenance burden for your vehicles, which we handle
- Fixed and predictable costs for the entire lease period
- Providing charging infrastructure, if needed

### Short-term vehicle lease

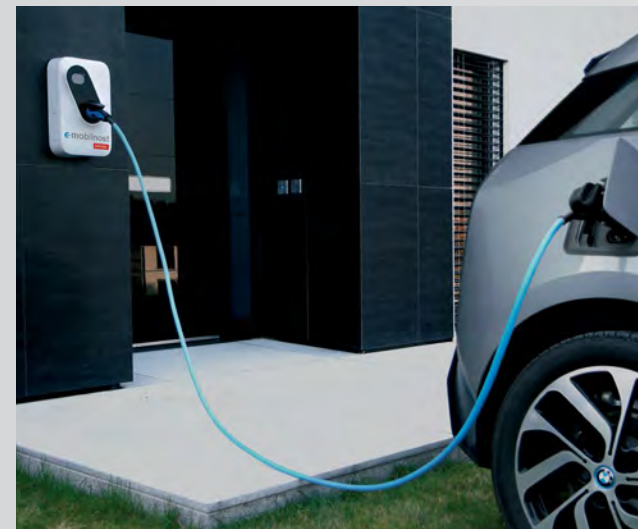
- Adaptable and attractive ownership-free fleet
- Vehicle lease for additional mobility needs or special events (higher business class vehicles, combined vehicle for the transport of people or goods)
- Car rental of different durations (rent-a-car)
- Wide availability of various vehicles based on your needs and requirements
- Newer vehicles available, which can be delivered to requested locations

## Charging infrastructure: from public to private

Petrol's public charging infrastructure is comprised of the most advanced electric charging stations located across the whole of Slovenia and in the wider region. They are located on highways, in tourist towns, by shopping centres, in city centres and elsewhere where infrastructure could benefit users of electric vehicles. Petrol's public charging infrastructure for electric vehicles will have 1,575 charging stations by 2025.



For the most carefree travel across Europe, we also provide hosting on other providers' charging infrastructure. There, you can charge your electric vehicle with the Petrol Electric Mobility Card and the **OneCharge** app, which allows you to check the location, availability and operation of individual charging station in real time.



Petrol also offers turnkey installation of charging stations **for home and business use**. The installation includes certified safety checks and measurements. You can also rely on Petrol's management and maintenance of charging stations. Home charging stations enable splitting of costs related to charging.

The charging station smart system allows you to plug in multiple vehicles to the station, which will then be charged in order. During charging, the stations adapt to the available electric current with no failures in supply.

Private charging infrastructure is also provided as part of energy solutions for new buildings or energy renovations, thus offering comprehensive energy solutions to our partners.

## Management and maintenance of a vehicle fleet

Company vehicles require effective maintenance and operation. You can leave vehicle fleet management to our experienced team, which provides comprehensive company fleet management using our wide range of mobility services.

### 'Door to door' services

- Always available to operate your fleet
- We can always provide a replacement or additional vehicle
- Organisation and implementation of regular and exceptional vehicle maintenance, prevention and care

### Car fleet management

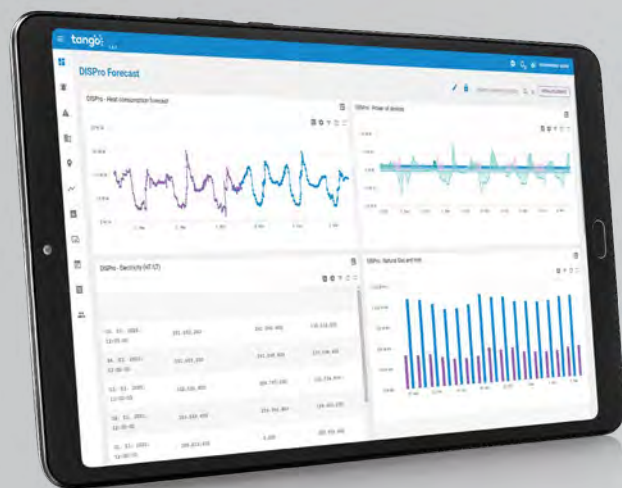
- We take care of your company fleet with comprehensive management and maintenance solutions
- We ensure complete control over vehicle costs
- Our systematic approach optimises your car fleet while decreasing costs per kilometre
- We can aid you in gradual car fleet electrification
- We provide uninterrupted mobility





## Efficient management of systems with advanced tools

We meet modern business challenges **with Tango**, a modern IT solution that provides cost-effective planning and efficient control and management of systems in smart cities, in industry and for business users. Tango **solves modern business challenges** through digital transformation, as it constantly monitors the situation and changes in the physical system and **helps you** respond to the current situation with **timely and smart decisions**.



With the advanced IIoT Tango platform ('Industrial Internet of Things'), **we manage your systems** and **combine diverse know-how and experience** from our various projects to achieve convincing results.

Tango is based on **state-of-the-art technologies**, which assist you in collecting, verifying and processing large amounts of data for advanced data analytics and machine learning. This allows you to monitor and keep an eye on your heating and cooling system, lighting, building operation and electrical systems as well as other infrastructure. A key advantage of smart digital solutions is also the provision of **remote control and management of systems**.



### We use Tango to manage the infrastructure used in our own projects

Tango already operates in more than 20 systems for district heating, efficient lighting, drinking water management, building management and more.

### We set new business standards with advanced analytics

By optimising processes and understanding the user, we maximise business results and can reduce energy use **without additional infrastructure investments**.



## New business models for flexible energy management

In **data management**, we are successful when we convert data into information, based on which we can effectively control and manage processes and thus reduce costs and environmental impacts. With the help of Tango, new technologies, pilot projects and digitalisation, **we are developing new business models** that are resistant to unpredictable conditions.

### Flexibly energy management

A stable energy system requires a balance of production and consumption, which can only be achieved by **managing flexibility**: by **producing enough electricity** and **adapting production and consumption** of electricity.

Your economic community can also **connect your adaptable units to our aggregator platform**. Flexibility can be ensured by batteries, diesel aggregates, SPTe units, electroboilers and other production units and larger electricity consumers.

Various technological solutions provide a more responsive and more flexible network. One of the key elements for a successful green transition of the electricity network are also **the consumers, which need to become active stakeholders**.



✓ *Petrol participates in the **X-Flex** project with 11 partners from the European Union. One objective of the project is to develop tools that will enable and facilitate the use of flexibility in the electricity system with an aim to increase stability and reliability of supply under normal working conditions and in extreme weather conditions.*

### Business models for energy communities

At Petrol, we see great potential in projects of self-sufficient, smart energy communities. Together with our partners, we built the first such community in Slovenia in Luče as part of the COMPILE project.

The COMPILE project enabled the transition from a centralised system to a flexible, yet stable and decentralised network. This includes and supports renewable energy sources and allows for optimal integration and control of all energy factors, energy storage and electro mobility for increased decarbonisation and energy savings. The project has great potential for further replication of developed solutions and concepts in the Slovenian countryside, especially in areas with a weak distribution network and where the integration of renewable energy sources is currently impossible.

Luče, COMPILE project





# Why choose Petrol?

One partner for comprehensive energy solutions

400+ energy experts

Competencies and technological equipment

Diverse know-how and rich experience

Long-term market presence and numerous reference projects

The latest software

Guaranteeing effects through contractual and financial instruments

All the necessary investments for risk-free project implementation

## Ravne na Koroškem: waste heat supply and comprehensive management

- An example of circular economy
- Synergy between the industry and the local community
- Upgrading the CHP system
- Waste heat from production used for district heating of the town and the entire industrial area
- Heating domestic hot water of the industrial area
- Waste heat meets 41% of the needs to heat the town of Ravne
- CO<sub>2</sub> emission savings in 2019 were 1,741 tonnes

## Public lighting renovation projects in the region

We have implemented numerous energy-efficient public lighting systems in the region. This generates significant savings in electricity and costs while reducing CO<sub>2</sub> emissions by over 7000 tonnes per year.

An example of the largest such project thus far is the Koper municipality:

- Renovation and management of over 10,000 lamps
- Electricity savings by at least 75% per year
- Electricity savings by over 2,800 MWh per year
- Lower CO<sub>2</sub> footprint by over 1,300 tonnes per year
- Compliance with the regulation on limiting light pollution
- Automatic technology for decreasing light current
- Visual specificities to retain the architectural integrity of the city

## Mlekarna Planika

- Transition to a new energy product – LPG
- Decrease in heating costs by 8.2%
- Energy savings of 140 MWh per year
- Practically nullified sulphur compound emissions
- Total costs savings of around 15%
- Wider positive effects – less pollution of the local environment

## Energy renovation of Ljubljana

- 59 buildings renovated (32 comprehensively)
- Savings of € 1.3 million per year
- Savings of 9,282 MWh per year
- CO<sub>2</sub> decreased by 3,500 tonnes per year
- Increasing the share of energy from renewable sources to 51% (EOL-1) and to 56% (EOL-2)
- 'European Energy Service Award 2019' in the projects category
- Most energy efficient project award in the 'Energetsko učinkovit projekt' at the 2019 Dnevi energetikov conference

## Energetika Maribor

- Implementation of the advanced Tango IIoT platform
- Digital Intelligent Smart Systems (DISSy)
- Integral control over 13 production devices in two locations and 266 heat exchange stations via the Tango platform
- Annual savings of 1% of the costs of natural gas and 100 tonnes of CO<sub>2</sub> emissions
- Automatic generation of business and regulatory reports

## Mobi Tour

- Car fleet electrification
- 46 electric bicycles
- 5 electric cars
- 7 electric charging stations
- International project

## Squashland

- Story of sustainable success for the most densely populated city quarter in Ljubljana
- Comprehensive energy solutions for new buildings
- Comprehensive HVAC solution using renewable energy sources
- Solar power plant for partial self-sufficiency
- Electric vehicle charging stations – with the solar plant as energy source
- Internal and external designer lighting

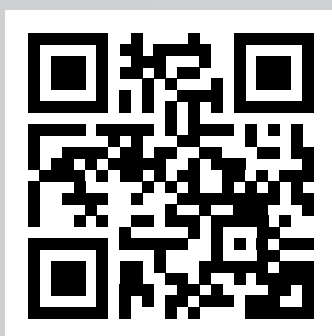
## Mega M

- Comprehensive solution for solar power plant energy self-supply
- HVAC – comprehensive solution for heating and cooling
- Cascade-connected heat pumps
- Electric vehicle charging stations

## Unior

- 9 joint (Petrol-Unior) projects as part of energy contracting
- Increasing the reliability of district heating supply and ensuring efficiency in energy use
- Upgrading production sources of heat and placing high-efficiency combined heat and power systems
- Decreasing greenhouse gas emissions
- Ensured long-term, reliable, safe and competitive district heating supply





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