



MESTNA OBČINA
VELENJE



Hydrogen future in the SAŠA region

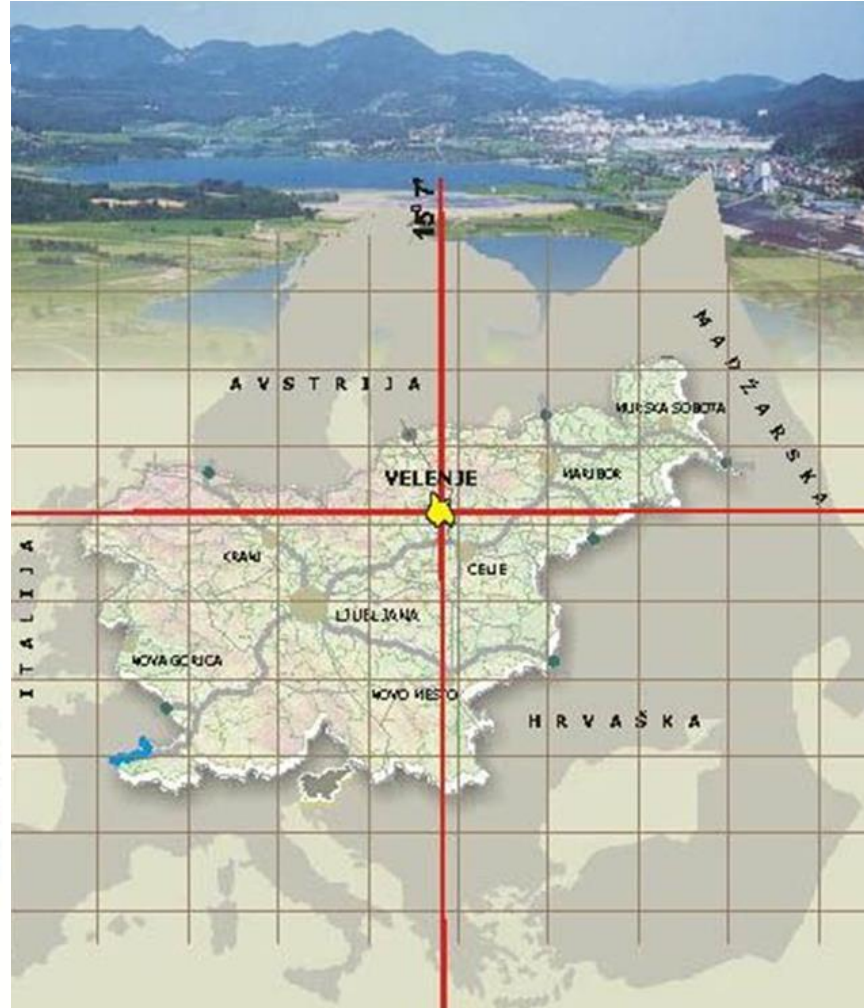
Mag. Iztok Mori,
Director of the Municipal Administration
Municipality of Velenje

Boštjan Krajnc,
Director of the Energy Agency of
Savinjska, Šaleška and Koroška region

© Aleksander Kavčnik

Hydrogen Summit
28.5.2018
Sofia, Bulgaria

I FEEL
SLOVENIA



SLOVENIA
GREEN
DESTINATION
Bronze

VELENJE

FROM THE BLACK GOLD TO THE GREEN CITY

FROM THE BLACK GOLD TO THE GREEN CITY



The city was built in the 1950's in the middle of fields and meadows in a matter of years by voluntary work.

Diligent workers made more than a million of voluntary work. In search of a better tomorrow, they came to the city from all over, and together they built a modern, multi-cultural and hospitable city.



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FROM THE BLACK GOLD TO THE GREEN CITY

Unfortunately, for a variety of reasons Velenje was for some decades one of the most polluted and ecologically devastated areas in Slovenia. In 1993 Municipality of Velenje adopted the “rehabilitation/recovery environmental program” and made tremendous efforts to recultivate ruined landscape because of coal exploitation and turn handicap into advantage.

Sustainable development in recent decades is focused on the green hinterlands and shores of the beautiful lakes, which were formed after intensive underground mining activity.



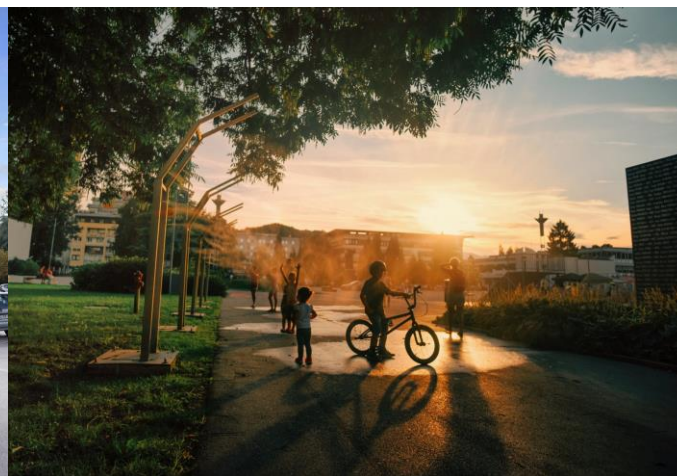
Strong economy with mayor subject "Gorenje" (domestic appliances) and "Coal mine Velenje"

PROTECTION PROGRAM OF THE MUNICIPALITY OF VELENJE 2016 -2020

Priority goals:

1. **Air** - air protection (Monitoring of air quality and improvement of public informing)
2. **Water** - improving of water management
3. **Waste** - efficient handling and waste management (Tracking initiative Zero Waste)
4. **Noise** - reduction of noise pollution
5. **Ground** – ground quality, sustainable urban development (Participation in the preparation of planning documents for highway through the valley (national project) and consequently the reduction of road traffic through the city - improvement of air quality in the city centre).
6. **Light pollution** - reducing of light pollution (Replacement of existing lamps of public lighting according to the adopted program)
7. **Nature, green system, biodiversity** - Conservation of Nature and green spaces

The care for the environment and the health of our citizens are a core priority.





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SUSTAINABLE MOBILITY

- Free system for automated rent of city bikes
- 81 bikes, 15 stations, 104 bike docks in Velenje and Šoštanj
- Free rent for users up to 14 hours (weekly); the system includes quality bike KRPAN (Slovenian manufacturer)
- Over 84,935 registered users since the beginning of operation of the system BICY;
- 104,526 times rented – weekly up to 1,500
- Annual Operational costs (maintenance, upgrades and additional purchases) of BICY: 53,214.31 € (2016)

- Free city public transport (minibus)
- 5 lines, 43 stations
- 35,000 passengers per month
- Saving 2,000,000 tons of CO2 annually.
- A specially-fitted bus runs the yellow route and is also disabled-friendly.
- Smart phone application enables up-to-date information on bus arrivals on the stations



81 Bikes, 15 stations



Free city bus

City of Velenje is 6th biggest Slovenian city and is centre of Municipality Velenje with approx. 33.000 inhabitants



MESTNA OBČINA
VELENJE

GREEN TOURISM



VELENJE IN 55 SECONDS



MESTNA OBČINA
VELENJE



Hvala, da ste z nami!



www.velenje.si / info@velenje.si



Boštjan Krajnc

AMBITION TO BECOME A HYDROGEN VALLEY

- Develop and deploy a **replicable, balanced and integrated hydrogen economy** by facilitating investment into **market-ready hydrogen technologies**.
- The goal is to **make use of available local hydrogen sources** and apply it in applications for reducing green-house gas emissions, starting with **zero-emission public transport**.
- Within the project, Municipality of Velenje wants to explore the possibility of using hydrogen technologies as part of the implementation of additional tourist contents on the lake.



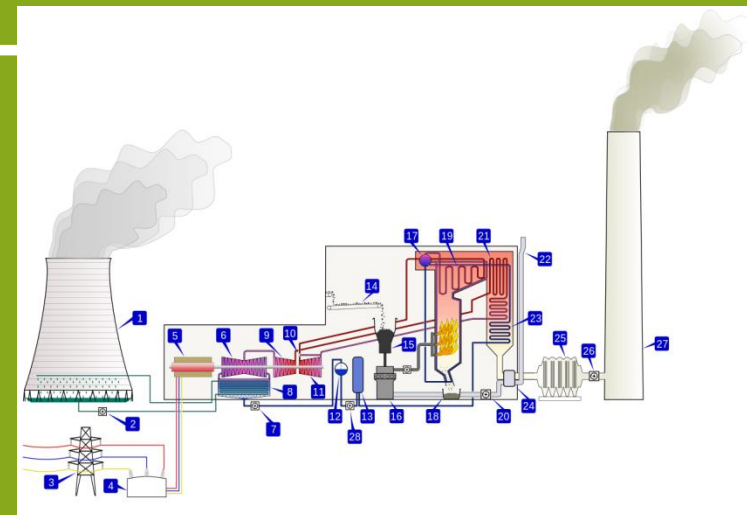
Sustainable mobility and tourism



25 bar



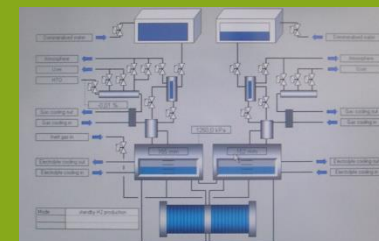
350 bar, 700 bar



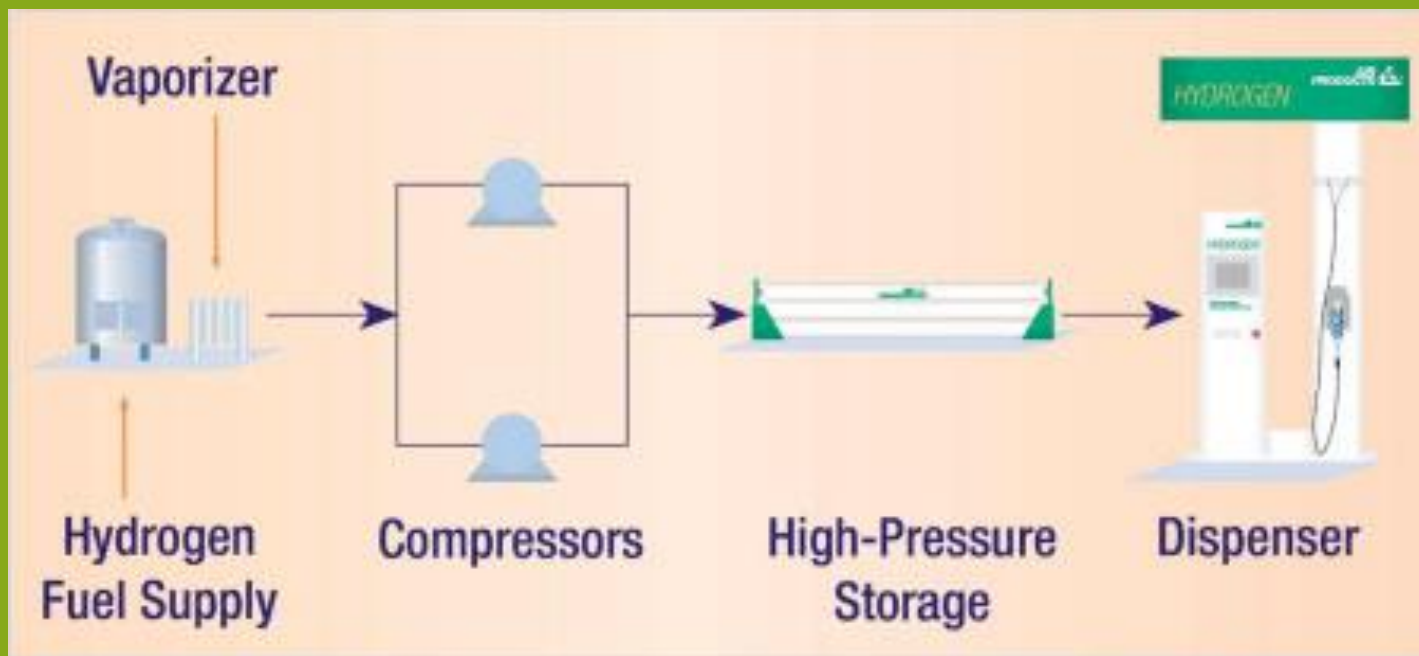
hse
Holding Slovenske elektrarne d.o.o.

TES
Skupina hse
TERMoelekTRARNA
ŠOŠTANJ

250 V, 376 A



PETROL



MAIN FOCUS

- The project will develop and deploy a **replicable, balanced and integrated hydrogen economy** by facilitating investment into **market-ready hydrogen technologies**.
- The goal is to **make use of available local hydrogen sources** and apply it in applications for reducing green-house gas emissions, starting with **zero-emission public transport**.
- Primarily, the investment project shall include the construction of a 1)**hydrogen fueling station**, 2)modernization of the current fleet of diesel powered minibuses with **fuel cell electric vehicles (FCEV)** operating within the local public transport service and the existing fleet of municipal vehicles and finally to 3)**upgrade local hydrogen production facilities**.
- The hydrogen fueling station will include re-fueling at both 350 bar and 700 bar. This will allow the operator to plan and guarantee demand for hydrogen based on regular and predictable requirements of the local public transport service, so that the operation of the station is continuous. On the other hand, the project is focused to support the European network of hydrogen fueling stations for personal vehicles, for which the 700 bar stage is required.
- The FCEV buses will be deployed in **local and inter-urban public transport**, substituting standard diesel buses in operation.

THE THIRD DEVELOPMENT AXIS - NORTH

- The northern part of the third development axis in development will connect put the City of Velenje on a strategical location between the Koroška region and the main national motorway connecting east to west.
- The strategic focus of the project is to provide hydrogen refueling capability to the Graz-Ljubljana-Zagreb corridor and expand the European network of refueling stations, by placing the station nearby the third national development axis (Fastlane on route F2-2 connecting the lower part of the Savinjska valley with Velenje and beyond to Koroška region, for which a national spatial plan has already been confirmed).



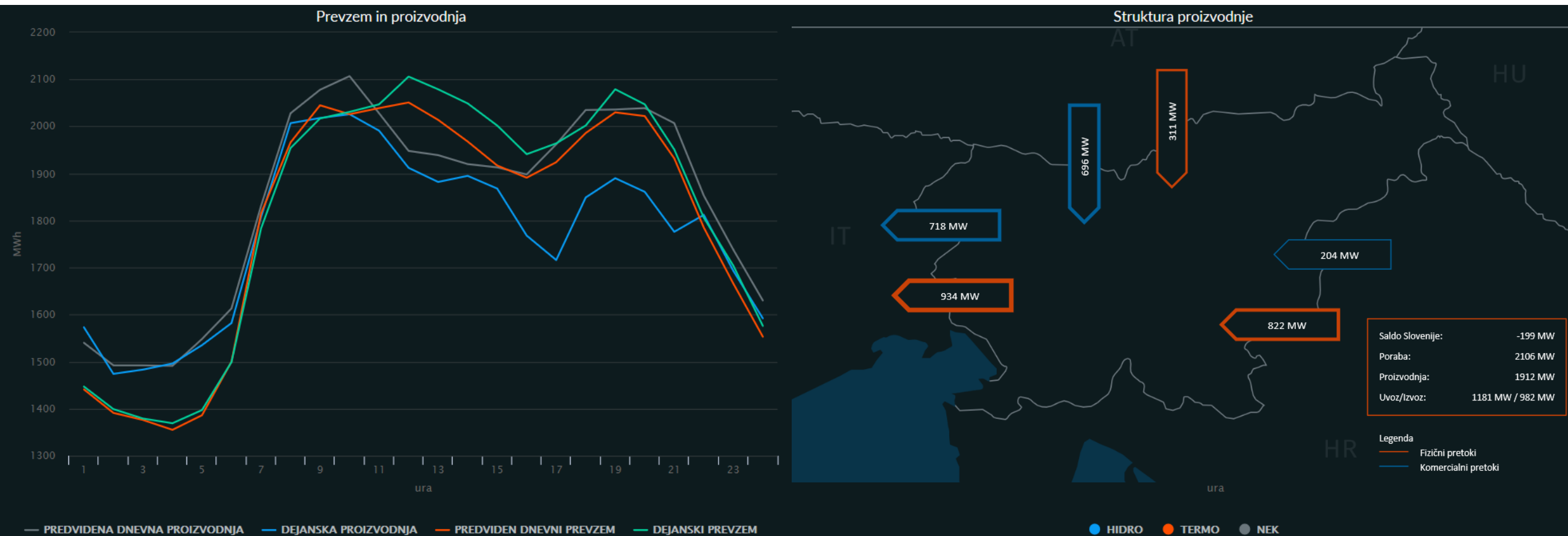


KSSENA



MESTNA OBČINA
VELENJE

ENERGY PRODUCTION AND GRID STABILITY



Wednesday,
21.2.2018

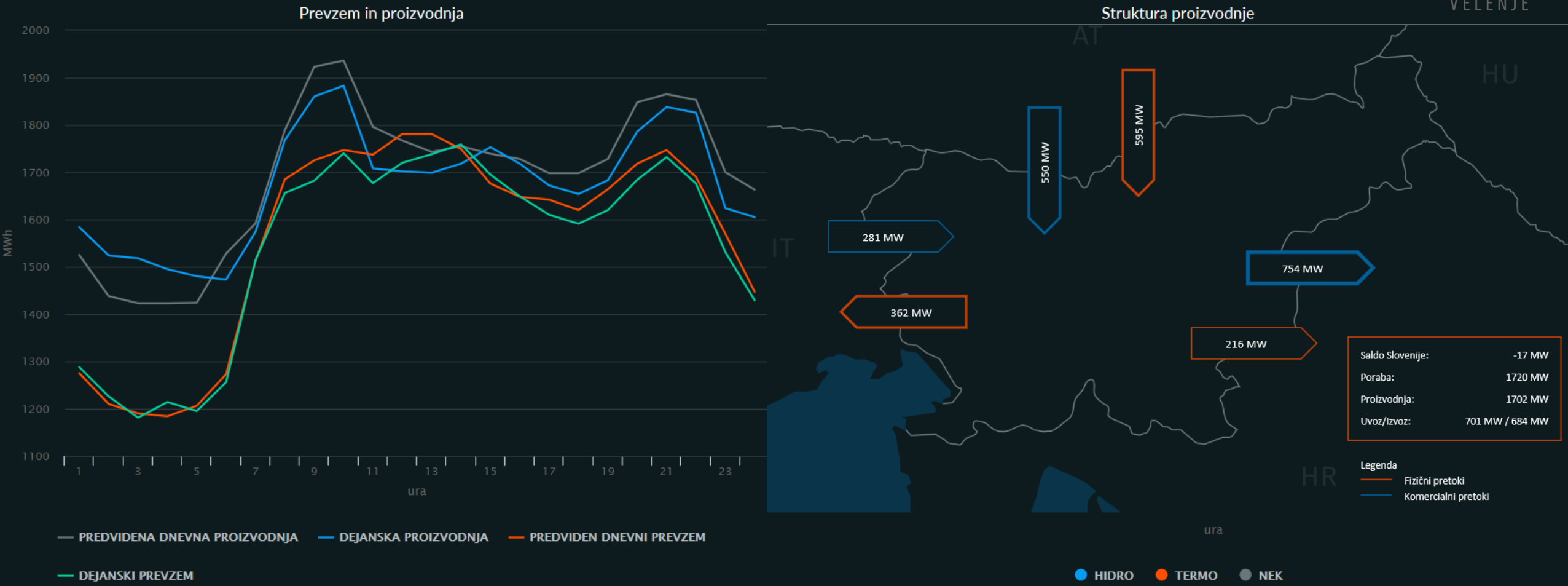


KSSENA



MESTNA OBČINA
VELENJE

ENERGY PRODUCTION AND GRID STABILITY



Wednesday,
23.5.2018

Long-term ambition

- City municipality of Velenje plans to make **substantial investment for supporting green local tourism** in the following years particularly on the Velenje Lake, where the goal is to expand the zero-emission transport to water going vessels with a demonstrational **hydrogen powered boat** that will link the touristic activities and content associated to sustainable development.
- The long-term ambition of the project is to **support further investment into hydrogen technologies**, with hydrogen as an **energy vector** being at the **cornerstone of the energy transition of the Šaleška Valley**, that aims to **substitute the gradual shut-down of the lignite thermal power plant Šoštanj** (providing from one third to one half of the national electrical energy supply) with an ever-increasing share of renewable energy sources in the energy mix.
- The long-term outlook of the project is to transform a region deeply characterized by decades of energy production by fossil fuels to a » Hydrogen valley«, utilizing vast potentials of **locally available renewable energy in a system focused on grid stability and pollution reduction**. A concept, that is relevant and directly applicable to numerous regions across Europe and beyond.

THANK YOU !

Hydrogen Summit

28.5.2018

Sofia, Bulgaria

VELENJE
PRAZNUJE!

veln 55

1264 / 1959 / 2014



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