GEOTHERMAL ENERGY IN SZENTES SMALL AREA

- Presentation by Mr. Imre Szirbik mayor, member of parliament

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HUNGARY


Norrbottens Län
White Sea
Faroe Islands
Sweden
Länsi-Suomi
Norway
Scotland
Estonia
Ireland
Isle of Man
North Sea
Denmark
Latvia
Baltic Sea
Moskva (Moscow)
United Kingdom
Lithuania
Netherlands
Belarus
Jersey
Belgium
Germany
Poland
Luxembourg
Czech Republic
Bayern
Ukraine
France
Slovakia
Liechtenstein
Austria
Moldova
Hungary
Castilla y León
Slovenia
Portugal
Croatia
Romania
Spain
Andorra
Monaco
Caspian Sea
San Marino
Georgia
T'bilisi
Baku)
Baky
Castilla-La Mancha
Bosnia and Herzegovina
Black Sea
Italy
Azerbaijan
Armenia
Andalucia
Montenegro
Bulgaria
Yerevan
Holy See (Vatican)
Gibraltar
(Tangier)
Macedonia (FYROM)
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Tehran
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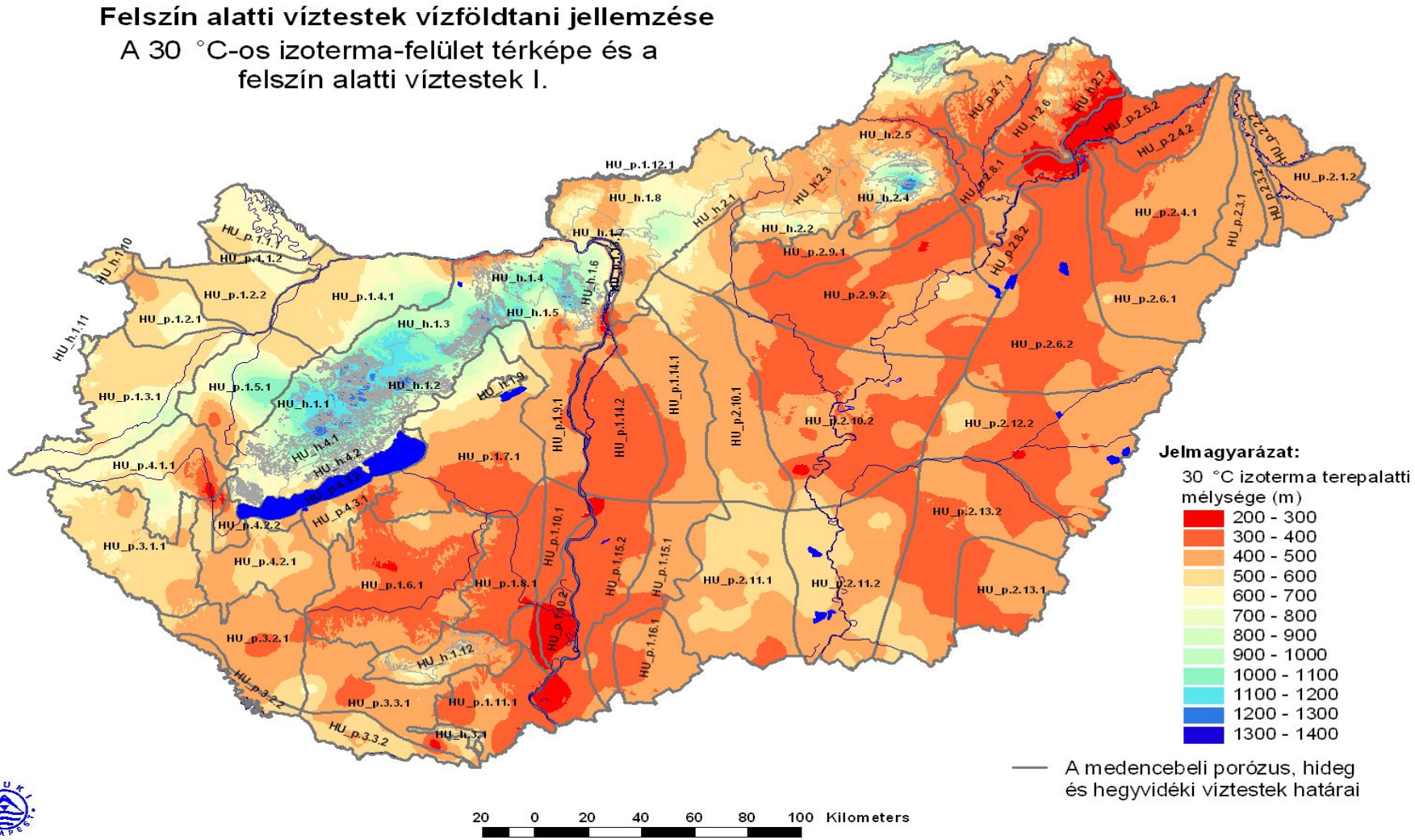
Geothermal capability

G21

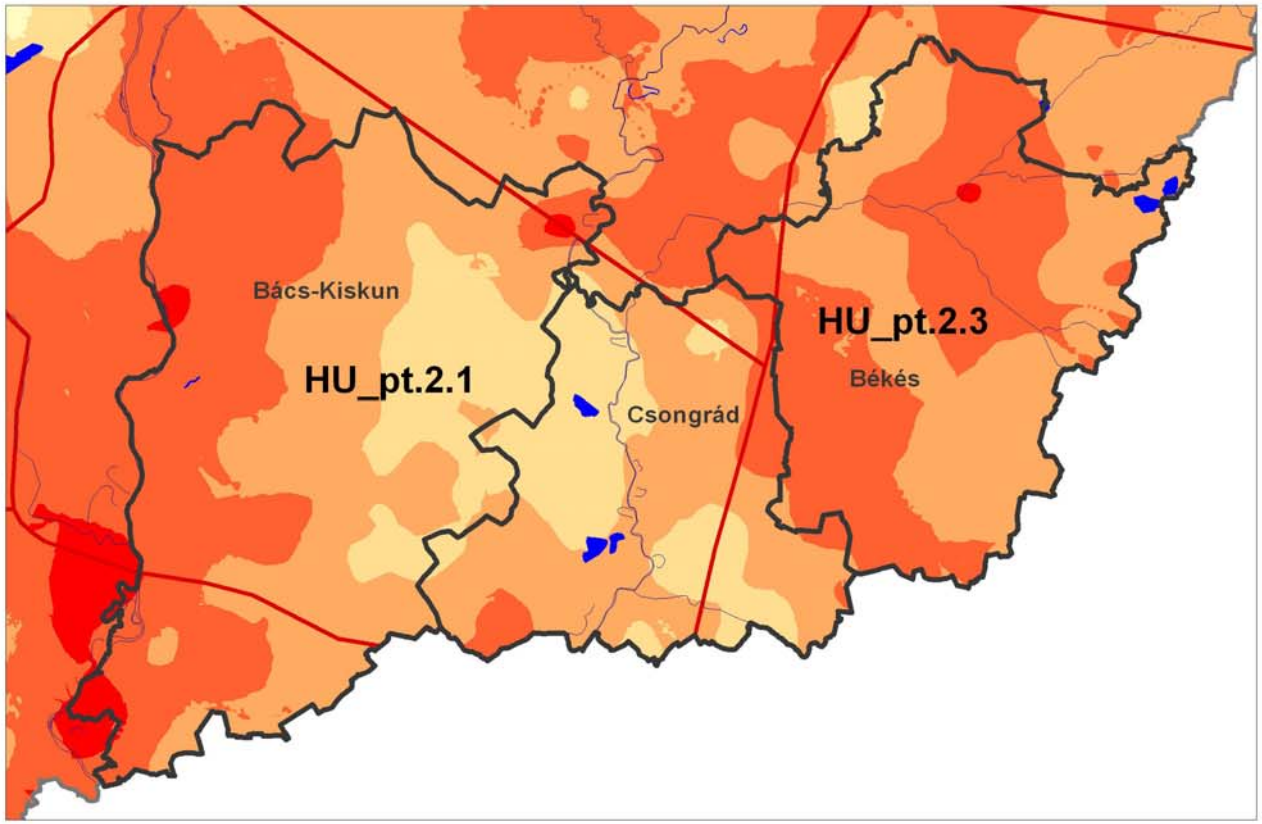


South-Great Plain Region

Felszín alatti víztestek vízföldtani jellemzése

A 30 °C-os izoterma-felület térképe és a felszín alatti víztestek III.

Dél - Alföldi Régió (az országos térkép részlete)



4. ábra

Thermal wells of Szentes

In our days in **Szentes** and its area have the most thermal wells, **altogether 32**, in Hungary.

The temperature of all wells are above 60 °C, 12 of these are between **90-99 °C.**

Thermal water of Szentes

In **1958** searching for crude oil, thermal water was found in the area of Szentes Hospital.

The depth of it is **1735 m** and provide **1700 l 71 °C medicinal water / minute** even today.

Thermal water utilization in Szentes

In Szentes Township there are 32 thermal wells. It means that the city is the greatest thermal water extraction area and the densest geothermal field in Europe. 5 of the wells are located in the urban area. The water from a further 16 wells - after secondary use - will go into man-made ponds that are located in the urban area, or 1 or 2 kms away from the edge of the town.

Thermal water of Szentes

The thermal water contains alkali bicarbonates and in some cases it has significant amounts of fluoride and metasilicic acid dissolved in it. The Spa, which uses water from this specific well, received the Thermal Medicinal Baths title in 1987.

Complex utilization of the thermal water in Szentes

Primary circle:

- Agricultural utilisation
- District-heating
- Industrial utilisation
- Thermal bath and day-hospital

Secondary circle:

- Therapeutic utilisation
- Tourism, Sports and Recreation
- Agricultural utilisation – plastic greenhouses

Agricultural utilisation (Primary circle)

In the case of agriculture, the thermal water has made new ways of development possible, mainly in the field of horticulture and animal husbandry .

The horticulture that is based on thermal energy can be separated into two main branches: the vegetable and flower growing in greenhouses, and plastic tunnels.

Agricultural utilisation (Primary circle)

- In addition to the biggest and most important company is the Árpád Agrár ZRt. Nearly one third of families living in Szentes are involved in this business; they grow diverse plants such as green pepper, tomato, cucumber and different type of cabbages.

Agricultural utilisation (Secundary circle)

- There are plenty of smaller growers who produce in smaller plastic tunnels during the period from February to November.

District-heating (Primary circle)

The building of the thermal district heating system started around the city in 1987 when the supplied water was taken from the Szentes I and the Szentes II wells.

In the beginning the hot water was used to heat normal fresh water through heat-exchangers and later the utilisation got more complex and the thermal water was set up as a heating energy source.

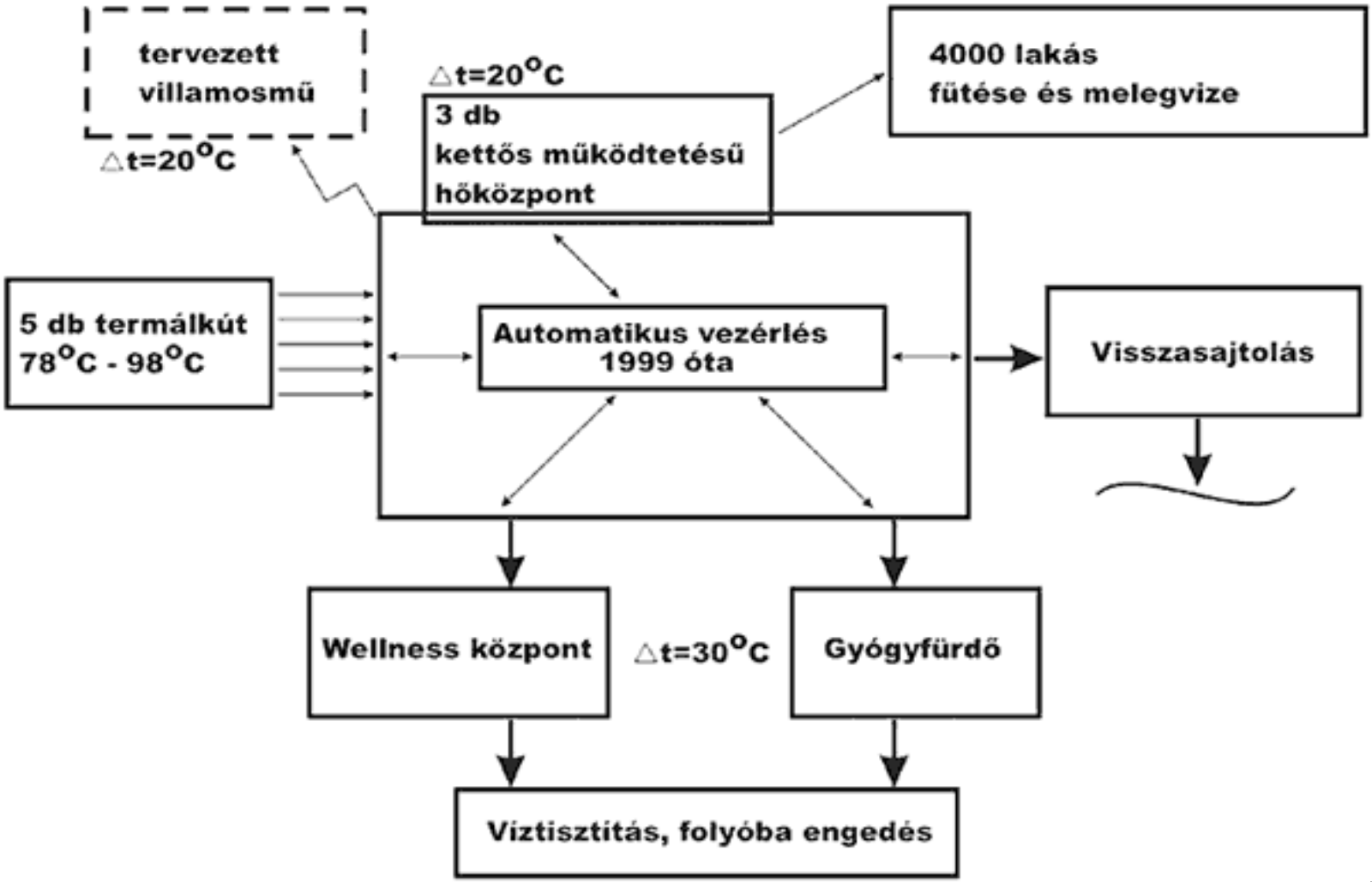
District-heating (Primary circle)

With the present system the thermal water passes its heat to the heating water via heat exchangers. Thus the running expenses of the heating centres decreased significantly and the release of fumes could also be cut down. The re-organised geothermic system of the city has become a reality. These days **1304 flats** and **1500 flat-equivalent public buildings** are heated with thermal water in wintertime.

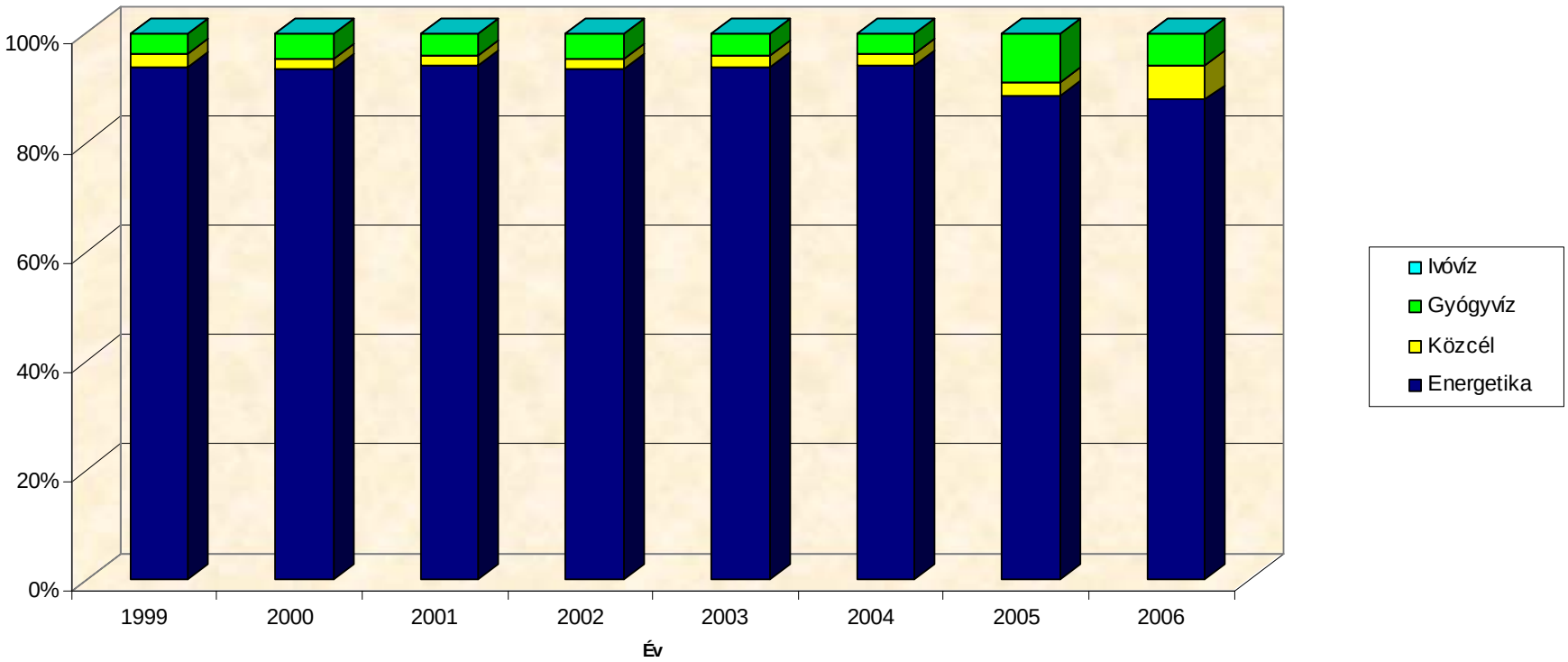
District-heating (Primary circle)

- Thermal water heating combined with external heat insulation of the block of flats.

District-heating (Primary circle)



In Szentes Township from 6,5 million m^3 to 5,7 million m^3 decreased the thermal water extraction.
Percentage distribution of thermal water in between the different utilizations.



Therapeutic utilisation (Primary circle)

For this purpose, the thermal water is used even in the Szentes hospital as well as in the Spa of Szentes, which functions as an ancillary branch of the hospital. The hospital - which is more than 100 years old - provides health care and preventive medicine for the local inhabitants using modern diagnostic equipment. The first thermal well of the city, which was drilled in 1958, supplies medicinal water.

The Spa, which uses water from this specific well, received the Thermal Medicinal Bath title in 1987.

Tourism, Sports and Recreation (Secundary circle)

- With the latest reconstruction, the water park received a direct connection to the town’s thermal system so that it has two inputs for getting the right quality and amount of thermal water.

Economic, Social and Environmental Effects

Economic

- Instead of energy import energy export
- Money stays in the area
- Further R&D projects
- Eco-tourism

Social

- New workplaces
- Labour force retention

Environmental

- Application of the environmentally friendly technology
- investment into the future

Conservation

A good example: The artificial thermal lakes near by Szentes.

The cooled down thermal water flows to artificial thermal lakes which area is a very rich fauna.

According to ornitologists observation 176 different birds live and nestle here.

Conservation – Thermal Lake

Thank You For Your Kind Attention!