



# **PannErgy Plc**

QUARTERLY PRODUCTION REPORT for the period of Q2 of 2020

15 July 2020

This announcement is published in Hungarian and English languages. In case of any contradiction between these two versions, the Hungarian version shall prevail.

#### Introduction:

PannErgy Nyrt. publishes a production report on a quarterly basis describing green energy production and use. The Company's report gives account of the condition of its key geothermal energy production systems, the experience related to their operation, and the data on green heat sold in the reporting period.

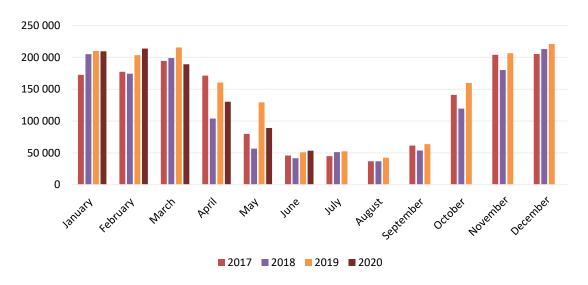


Figure 1
Consolidated quantity of heat sold (GJ)
The chart illustrates the aggregate amount of heat sold by the Miskolc, Győr, Szentlőrinc and Berekfürdő projects, in

The chart illustrates the aggregate amount of heat sold by the Miskolc, Gyor, Szentlorinc and Berekfurdo projects, in a monthly breakdown.

	2017	2018	2019	2020	2020 PLAN
January	172 758	205 199	209 999	209 715	
February	177 533	174 300	203 484	213 878	
March	194 634	199 090	215 693	189 214	
Q1	544 925	578 589	629 176	612 807	621 403
April	171 294	104 033	160 548	130 410	
May	79 700	56 758	129 300	89 190	
June	45 936	41 641	50 780	53 394	
Q2	296 930	202 432	340 628	272 994	247 988
July	44 865	51 247	52 406	0	
August	36 709	36 794	42 415	0	
September	61 502	53 650	63 731	0	
Q3	143 076	141 691	158 552	0	164 526
October	141 270	119 652	159 888	0	
November	204 045	180 263	206 686	0	
December	205 251	213 267	221 248	0	
Q4	550 566	513 182	587 822	0	612 739
TOTAL	1 535 497	1 435 894	1 716 178	885 801	1 646 656

Figure 2

Consolidated quantity of heat sold, in GJ, in a table.

A comparison of the 2020 Q2 heat sales figures with the data of the same period in historical years indicates that the Company realised average heat sales in the review period, while it outperformed the heat sales target by 10%. The Company maintains its planned, updated cumulative heat sales target for 2020 (see Figure 2 above) published as part of the proposals of the Annual General Meeting closing the business year of 2019, and confirms its published annual EBITDA plan of HUF 2,530–2,600 million.

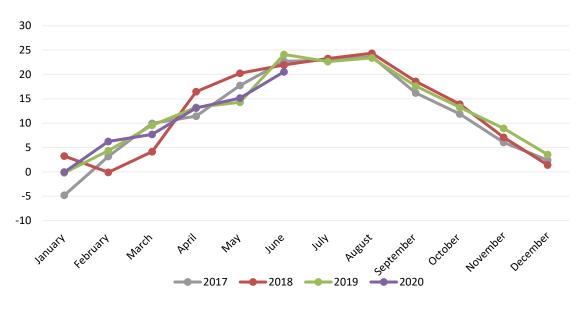


Figure 3
Average temperatures in 2017-2020

The 2–8 °C ambient temperature range is ideal for day-to-day geothermal heat sales during the heating season, especially when the difference between the daily minimum and maximum temperatures is as small as possible. The monthly averages of the average daily temperatures were practically as favourable in the period under review as in the corresponding period of 2019.

#### **Miskolc Geothermal Project**

(Miskolci Geotermia Zrt., Kuala Kft.)

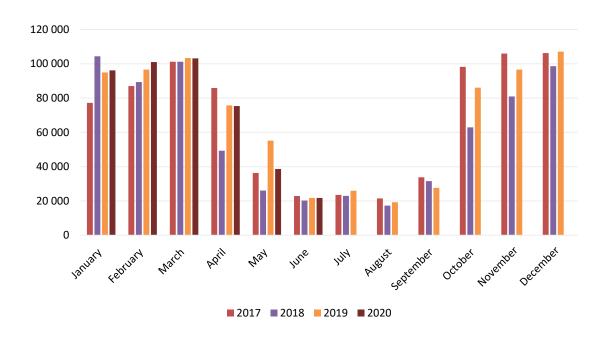


Figure 4
The amount of heat sold at Miskolc, in GJ

The Geothermal System of Miskolc sold a total of 135,753 GJ thermal energy in 2020 Q2, down 11% compared to the thermal energy sales of the same period in 2019. The decline can be attributed to slightly higher temperatures throughout the month of May.

#### **Győr Geothermal Project**

(DD Energy Kft., Arrabona Koncessziós Kft.)

The Geothermal System of Győr sold a total of 134,389 GJ thermal energy during 2020 Q2, down 27% year-on-year. The shortfall can be partly attributed to warmer weather compared to the base period, and partly to the earlier-than-usual seasonal operating mode switch described in the production report of the first quarter, as a result of which the production wells operate in a self-flow system with reduced yields. At the same time, however, the electricity need of extraction all but diminishes. The Company can meet the decreasing consumer heat demand implied by the gradually warming weather more and more cost-effectively without impairing profitability and, at the same time, at a higher level of operational safety.

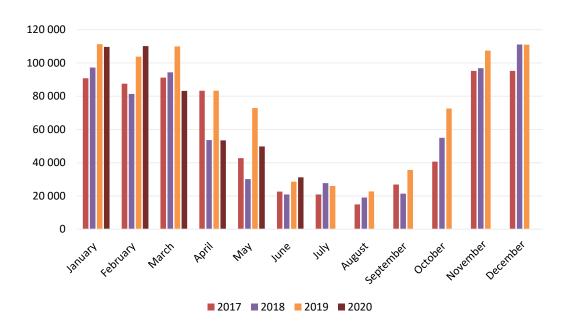


Figure 5 Amount of heat sold in Győr (GJ)

## **Geothermal Heating Facility of Szentlőrinc**

(Szentlőrinci Geotermia Zrt.)

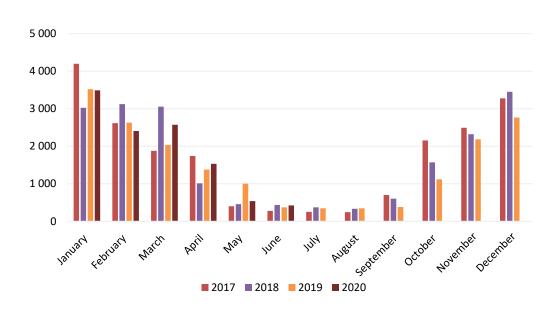


Figure 6 Amount of heat sold in Szentlőrinc (GJ)

In Szentlőrinc, the amount of heat sold was 2,492 GJ, 10% less than in the base period. The Geothermal Facility of Szentlőrinc can fully meet the heat demand of the local heating system on its own, thus the weather sensitivity of the geothermal heat input is significantly higher than that of district heating systems with complex heat resources.

### **Climate change**

Hungary has set the objective of reducing its greenhouse gas emissions by at least 40% below 1990 levels by 2030, while the rate of renewable energy in gross final energy consumption will be at least 21%. PannErgy Group runs its renewable energy projects in strict accordance with the national ambition to make the district heating sector greener and more competitive. Through its geothermal projects, the Company supports Hungary's climate policy and the objectives laid down in the National Energy Strategy 2030 document by promoting sustainability.

The PannErgy Group's projects contributed to the efforts made to preserve a more liveable environment by the  $CO_2$  emission cuts shown in Figure 7. The reduction amounted to 15,835 tons, while the total aggregate amount of greenhouse gas emission saved by the PannErgy Group so far amounts to 501,791 tons.

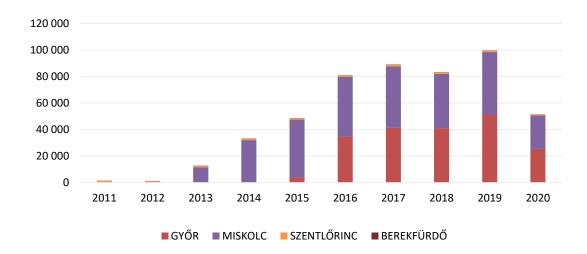


Figure 7 The amount of greenhouse CO<sub>2</sub> not released into atmosphere thanks to the PannErgy Group's projects

One of the evident effects of climate change in Hungary appears in the form of frequent volatile and extreme changes in weather conditions, including ambient temperatures, and a rise of the average temperature of the winter months from the historically cold, stable sub-zero range to markedly over the freezing point. These changes are not expected to have an adverse impact on the output of geothermal heat generation; indeed, perspectives of input into district heating systems are favourable as an average over multiple years. The reason for this is—as is noted in this report—the fact that daily geothermal heat sales are ideal in the 2-8 C temperature range during the heating season. At the same time, the potential decrease in the demand for heat during the transitional seasons may be compensated, indeed, overcompensated by the growth in the potential of the increasingly mild winter months.

The demand for energy in the large district heating systems supplied by the PannErgy Group is far greater than the amount of geothermal energy that can be fed into those systems. Accordingly, any change in the demand for heat in those heating systems stemming from the climate change has no perceivable effect on PannErgy Group, and the Company does not expect any trend-like effects in the future either.

PannErgy primary aims to utilise its substantial uncommitted available thermal capacities — in addition to the capacities being utilised now —, which is expected to further reduce sensitivity to ambient temperature changes. The most important possible areas for utilising the available uncommitted thermal capacities include:

- Implementation of energy efficiency and optimisation projects with existing customers;
- Cold energy projects for the utilisation of the so-called "summer" heat;
- Connection of new customers indirectly through district heating systems or directly to the geothermal systems on the primary or the secondary (return) sides.

# PannErgy Plc

This announcement is published in Hungarian and English languages. In case of any contradiction between these two versions, the Hungarian version shall prevail.