



# **PannErgy Plc**

QUARTERLY PRODUCTION REPORT for the period of Q1 of 2020

15 April 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.

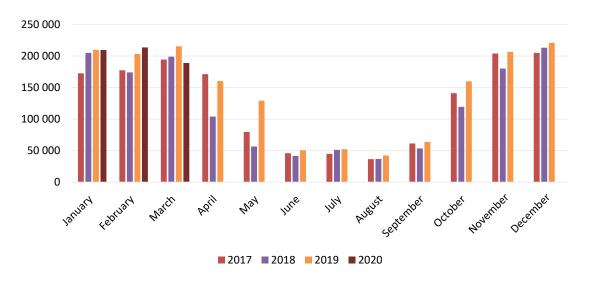


Figure 1 Consolidated quantity of heat sold (GJ)

The chart illustrates the aggregate amount of heat sold by the Miskolc, Győr, Szentlőrinc and Berekfürdő projects, in 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	0	
May	79 700	56 758	129 300	0	
June	45 936	41 641	50 780	0	
Q2	296 930	202 432	340 628	0	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	612 807	1 646 656

Figure 2

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

A comparison of the 2020 Q1 heat sales figures with the data of the same period in historical years shows that the Company's profits have significantly exceeded that of previous years but showed a slight decrease of 2.6% compared to the previous year. The Company continues to sustain the planned cumulative heat sales target for 2020 (see Figure 2 above) published as part of the proposals of the Annual General Meeting of 2019, and confirms its annual EBITDA plan of HUF 2,530-2,600 million, also having been published.

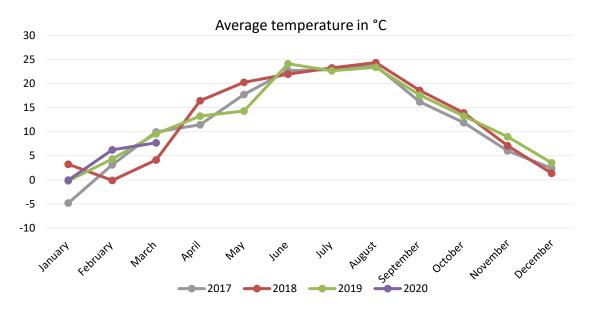


Figure 3
Average temperatures in 2017-2020

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 low as possible. The monthly averages of the average daily temperatures in the period under review were practically equally favourable as in the corresponding period of 2019, but temperature swings within any of the days in the reporting period were less expedient and presented greater operational challenges.

#### **Miskolc Geothermal Project**

(Miskolci Geotermia Zrt., Kuala Kft.)

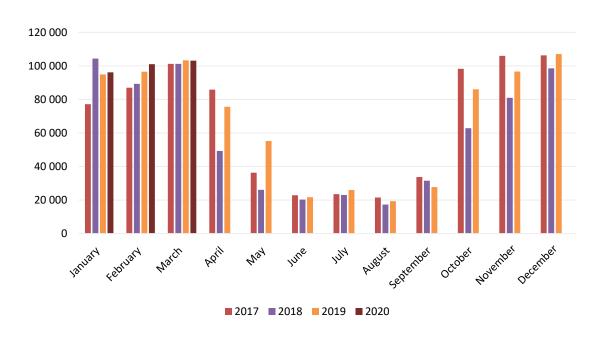


Figure 4 The amount of heat sold at Miskolc, in GJ

The Geothermal System of Miskolc sold a total of 300,312 GJ thermal energy in 2020 Q1, up 2% compared to the thermal energy sales of the same period in 2019.

## **Győr Geothermal Project**

(DD Energy Kft., Arrabona Koncessziós Kft.)

The Geothermal System of Győr sold a total of 303,061 GJ thermal energy in 2020 Q1, down 7% compared to Q1 of 2019. Due to the high ambient temperatures that arrived in March, the Company embarked on the process of shifting into a temporary out-of-heating-season operating mode during which the Company is turning the production wells into a self-flow state. Consequently, the yield of production wells is decreasing, however, the electricity needs of the production are being reduced to almost zero and, as the weather is getting warmer, the Company can meet the decreasing consumer heat demand more cost-effectively, without impairing the profitability and, at the same time, at a higher level of operational safety. During the period of shifting into a new operating mode, some measurement, control and maintenance procedures planned for autumn could be carried out earlier.

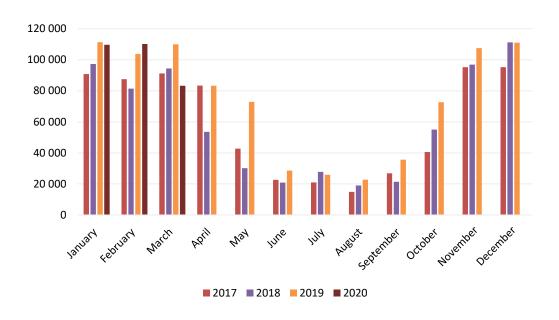


Figure 5 Amount of heat sold in Győr (GJ)

## **Geothermal Heating Facility of Szentlőrinc**

(Szentlőrinci Geotermia Zrt.)

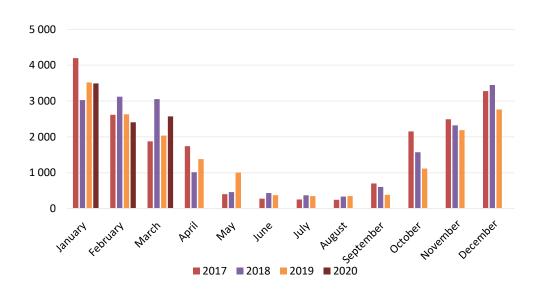


Figure 6 Amount of heat sold in Szentlőrinc (GJ)

In Szentlőrinc, the amount of heat sold was 8,476 GJ, 4% higher 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 35,547 tons, while the total aggregate amount of greenhouse gas emission saved by the PannErgy Group so far amounts to 451,858 tons.

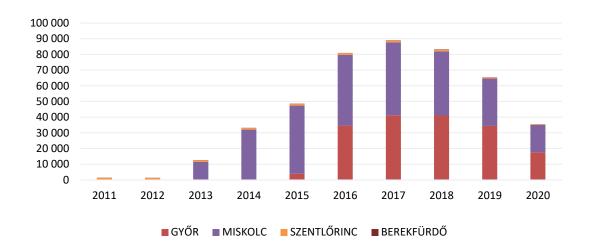


Figure 7 The amount of greenhouse CO<sub>2</sub> not released into atmosphere thanks to the PannErgy Group's projects

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.

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