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PannErgy Plc

QUARTERLY PRODUCTION REPORT

for the period of Q1 of 2019

15. April 2019

Introduction:

PannErgy Plc publishes quarterly production reports in order to present its operations in green energy generation and utilization in Hungary. In this report, PannErgy gives a description of the conditions of its geothermal energy production systems, functioning and operating experience, as well as information in relation to the realized green heat sales.

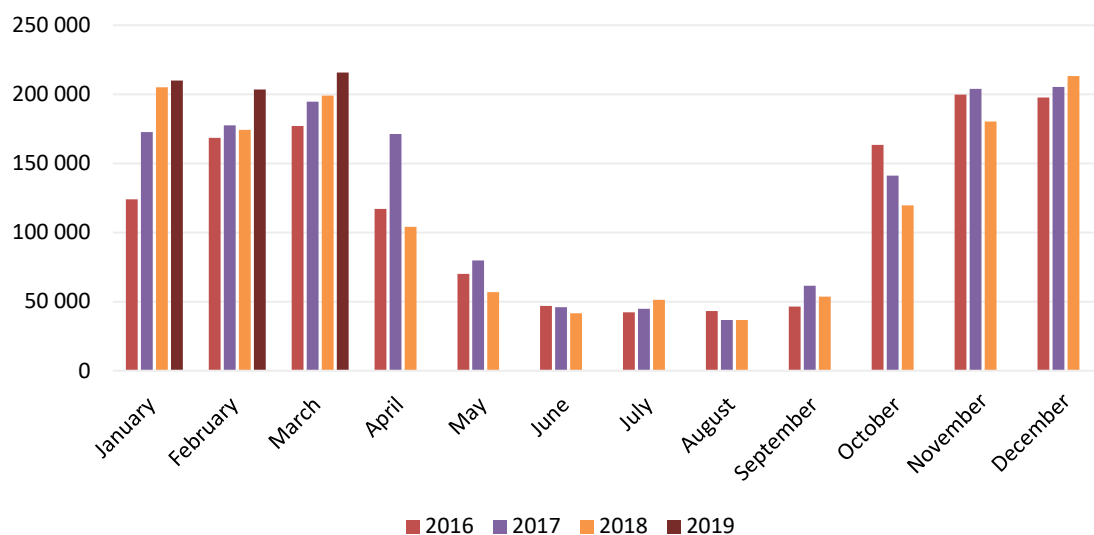


Figure 1

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.

	2016	2017	2018	2019	2019 plan*	2020 plan*
January	124 060	172 758	205 199	209 999		
February	168 574	177 533	174 300	203 484		
March	177 177	194 634	199 090	215 693		
Q1	469 812	544 925	578 589	629 176	627 988	633 308
April	117 075	171 294	104 033			
May	69 990	79 700	56 758			
June	46 866	45 936	41 641			
Q2	233 931	296 930	202 432	0	266 304	270 980
July	42 193	44 865	51 247			
August	43 294	36 709	36 794			
September	46 429	61 502	53 650			
Q3	131 916	143 076	141 691	0	145 550	150 541
October	163 409	141 270	119 652			
November	199 716	204 045	180 263			
December	197 650	205 251	213 267			
Q4	560 775	550 566	513 182	0	590 266	603 237
TOTAL	1 396 434	1 535 497	1 435 894	629 176	1 630 108	1 658 066

Figure 2

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

* According to the 2018 Consolidated Financial statements and Annual Report of PannErgy Nyrt. and its subsidiaries

A comparison of the 2019 Q1 heat sales figures to those of the corresponding period of the preceding year shows a considerable improvement year-on-year, as a result of an increase in the overall effectiveness of the Győr Geothermal Project and the rates of utilization of its capacities, as well as the weather conditions during the periods concerned.

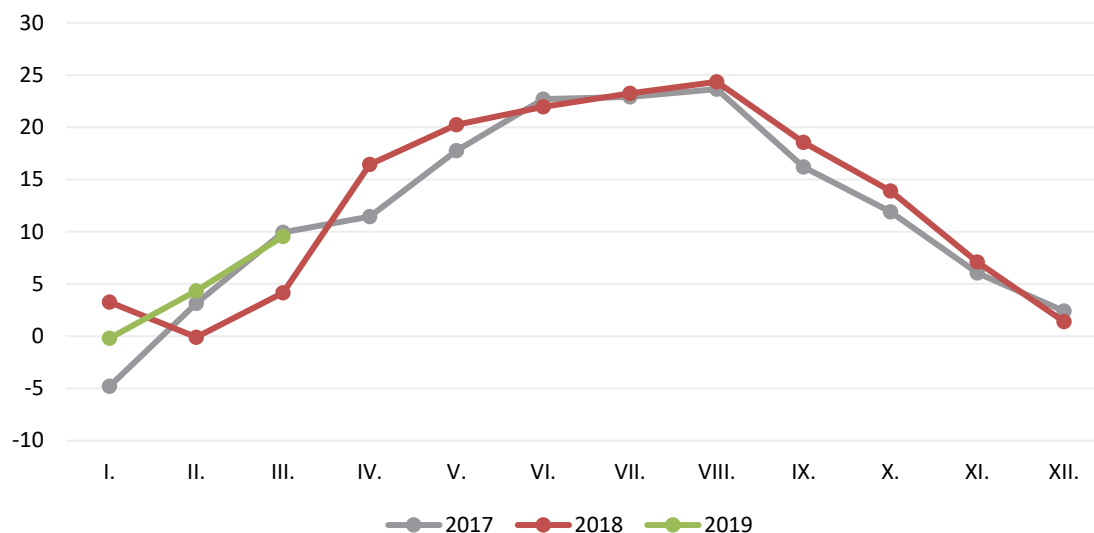


Figure 3

Average temperatures in 2017-2019

The 2 – 8 °C ambient temperature range is ideal for the day-to-day geothermal heat sales during the heating season: the smaller the difference between the daily minimum and maximum temperature, the better for this industry. Figure 3 illustrates the considerable differences between the average temperatures in 2019 Q1 and 2018 Q1. While January was much colder this year, February and March were characterized by milder wintery temperatures, closer to the ideal range for the utilization of geothermal energy. No service failure having a material impact on the sale of thermal energy occurred during the first quarter of this year at any of the projects under review.

The amount of heat sold in 2019 Q1 was 8.7% up on the corresponding figure recorded for 2018 Q1, as base period.

Miskolc Geothermal Project

(Miskolci Geotermia Zrt., Kuala Kft.)

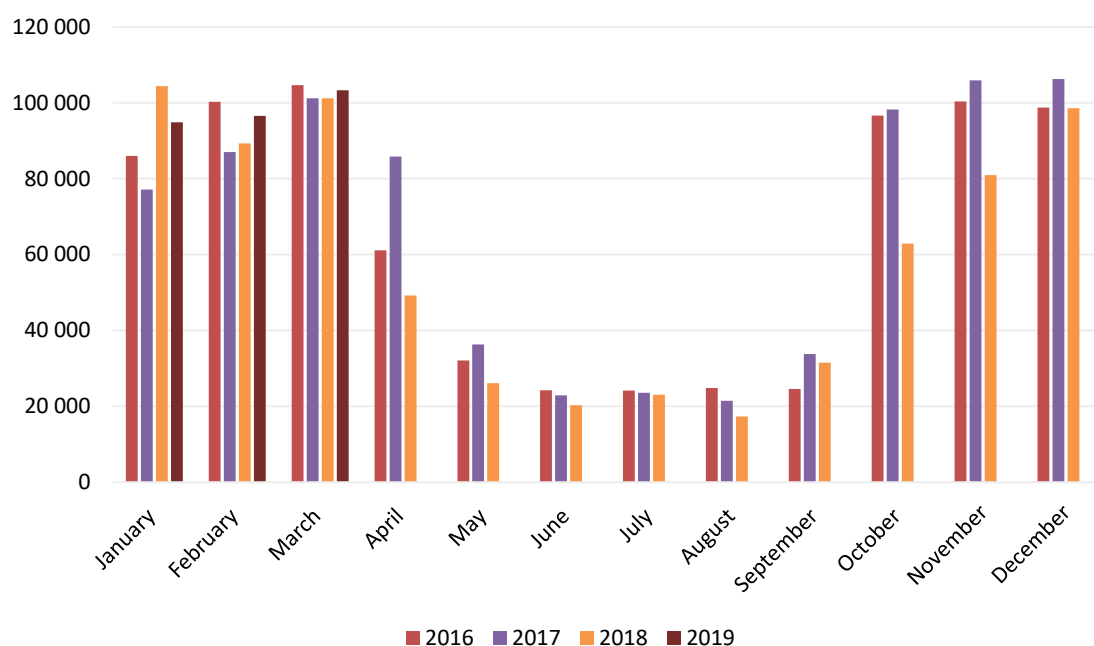


Figure 4
The amount of heat sold at Miskolc, in GJ

The Geothermal System of Miskolc sold a total of 294,930 GJ thermal energy in 2019 Q1, almost precisely as much as in the corresponding period of 2018. The weather conditions could have enabled the sale of an additional 15-20,000 GJ a month but the town's district heating system was supplied with a higher ratio of heat generated from fossil fuels during the months of January and February than in the corresponding periods of earlier years. The parties concerned wish to optimize arrangements for increasing the input of green energy. The 2019 summer maintenance and inspection schedule was worked out during the period under review. The reduced loads outside the heating system make it possible to carry out comprehensive checks and maintenance on the wells, operated in an alternating scheme. The geothermal production wells and the geothermal reservoir are under continuous monitoring. No material change has been observed in comparison to earlier periods. The Company lays particular emphasis on the maintenance and preservation of the wells and the geothermal systems to maximize the length of their useful life.

Győr Geothermal Project

(DD Energy Kft., Arrabona Geotermia Kft. and PannErgy Koncessziós Kft.)

The Geothermal System of Győr sold a total of 325,050 GJ thermal energy during 2019 Q1, up 19% year-on-year, as a result of improvements in the efficiency of capacity utilization, as well as favorable weather conditions for the sale of heat. The increased sales figures were also driven by improved alignment of the characteristics of geothermal heat generation to the operation of Győr-Szol Zrt's boiler capacities as a result of continuous facility developments making it more efficient in supporting the switches of between the operation of the 50 MW and the 100 MW boilers.

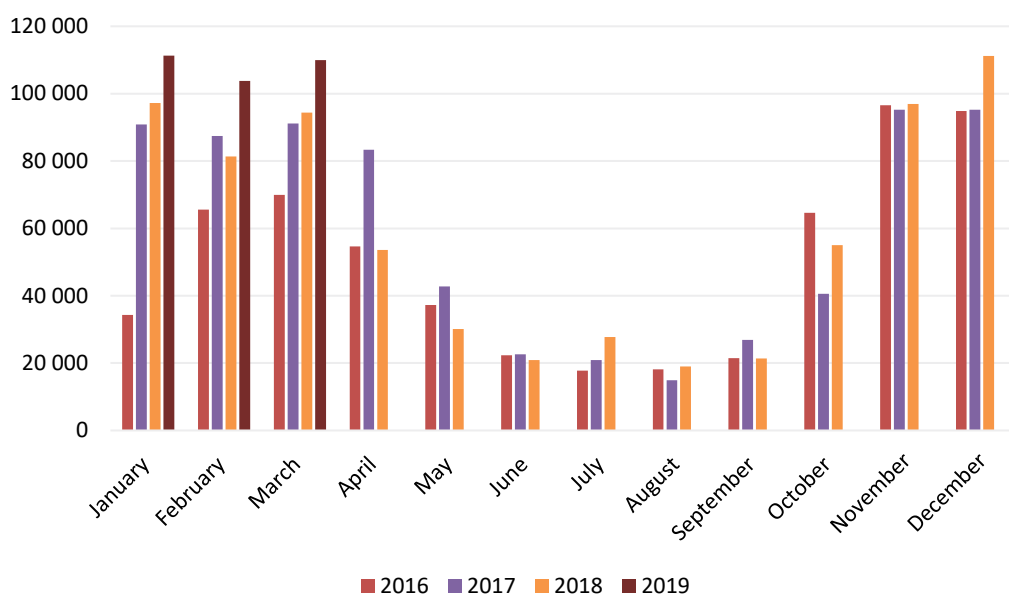


Figure 5 Amount of heat sold in Győr (GJ)

Geothermal Heating Facility of Szentlőrinc

(Szentlőrinci Geotermia Zrt.)

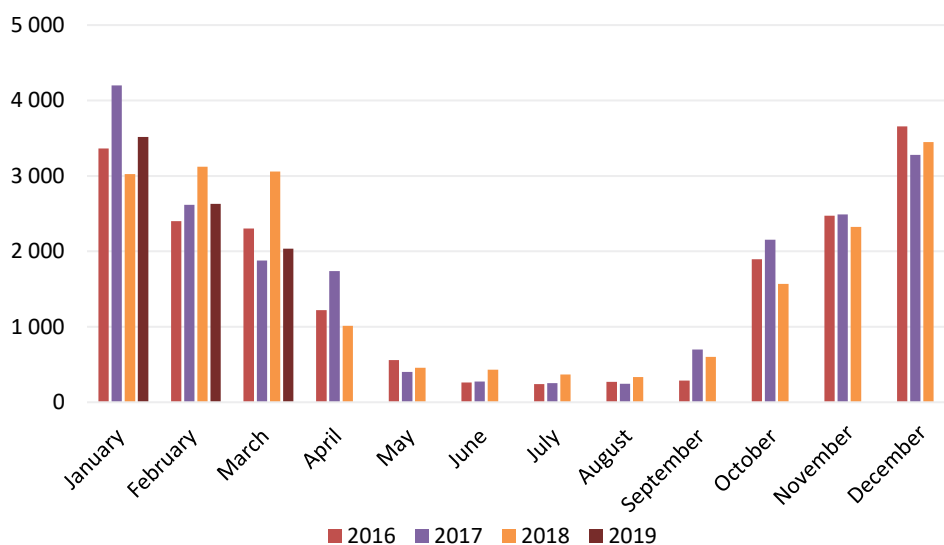


Figure 6 Amount of heat sold in Szentlőrinc (GJ)

The Geothermal Facility of Szentlőrinc continued to operate without failures in 2019 Q1. The mild weather had a less favorable effect on the Szentlőrinc project than on the other two, larger ones, because in Szentlőrinc there is only a geothermally supplied district heating system which was directly affected by the decrease in the demand for heat. The higher average temperatures resulted in a 11% drop – to 8,184 GJ – in the amount of heat sold, year-on-year. Thanks to the pump replacement and the resulting optimized operating conditions the specific energy consumption of the system continued to be significantly lower (by approx. 54%).

Geothermal Methane Utilization Facility of Berekfürdő

(Berekfürdő Energia Kft.)

The Geothermal Methane Utilization Facility of Berekfürdő sold a total of 440,022 kWh electricity during the period under review. The gas engines' availability rate improved, sales volumes were restored to previous levels particularly in February and March. The January sales figures were still negatively affected by the refurbishment of the larger gas engine.

A total of 1,130 GJ worth of heat was sold during the reporting period, down nearly 200 GJ from the planned amount as a consequence of the outage of one of the gas engines.

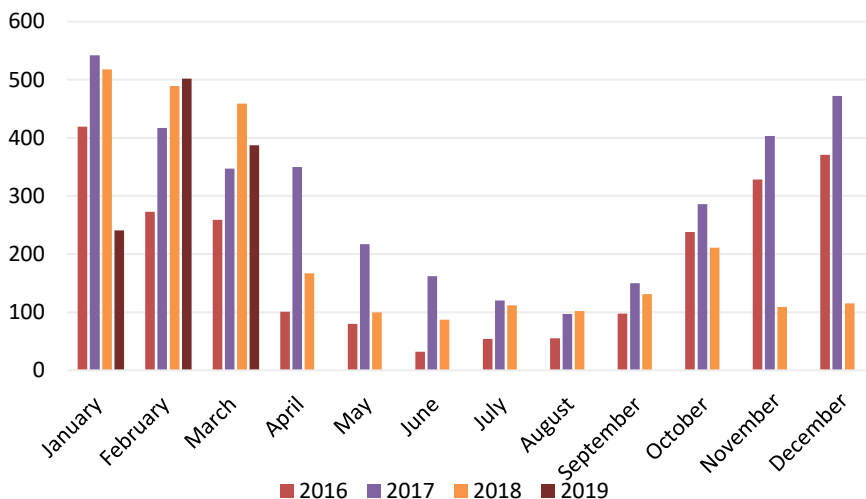


Figure 7 Amount of heat sold in Berekfürdő (GJ)

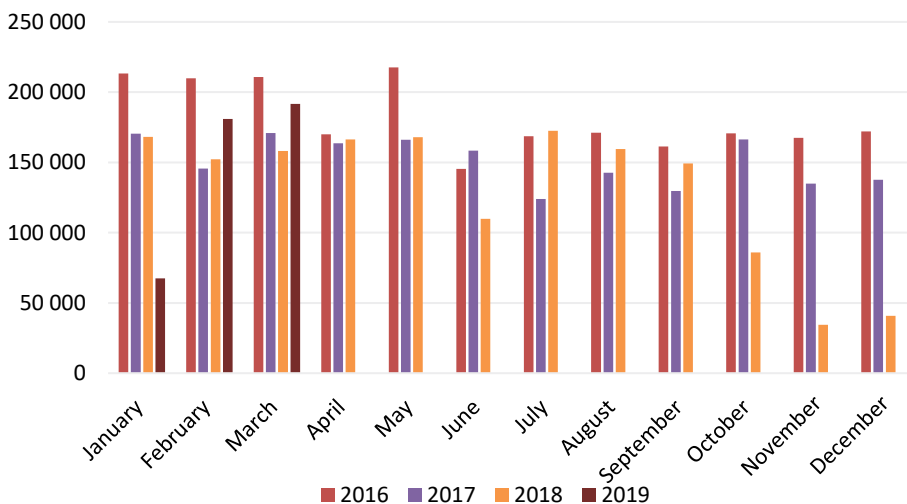


Figure 8 Electric power sold in Berekfürdő (kWh)

Climate change

Adaptation to the negative consequences of the ongoing climate change is a national interest, given the fact that the phenomenon can now be proven by measurements in day-to-day life. In view of the existing atmospheric concentration of greenhouse gases, expected future emissions and authoritative scientific projections climate change is a persistent process. With its geothermal projects the PannErgy Group wishes to promote Hungary's climate policy by contributing to sustainability, supporting the objectives laid down in the National Energy Strategy 2030 document.

The utilization of the green thermal energy generated by the projects operated by the PannErgy Group contributed to climate protection during the period under review by cutting Hungary's CO₂ emission by 36,496 tons. The PannErgy Group's projects contributed to the efforts made to preserve a more livable environment by the CO₂ emission cuts shown in Figure 9. The reduction amounted to 36,496 tons, while the total aggregate amount of greenhouse gas emission saved by the PannErgy Group so far amounts to 387,294 tons.

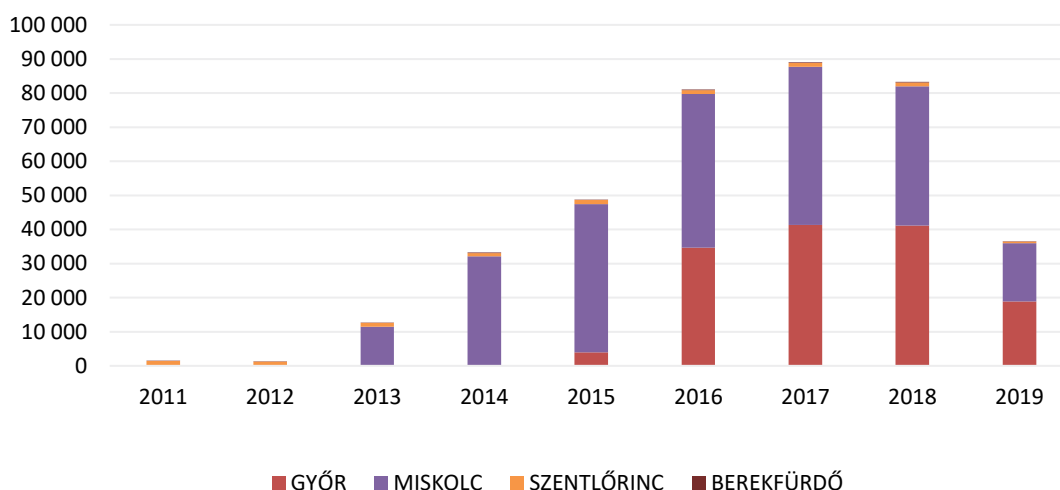


Figure 9 The amount of greenhouse CO₂ not released into atmosphere thanks to the PannErgy Group's projects

One of the evident effects of climate change in Hungary appears in the form of frequent hectic 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 favorable 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 demand stemming from the climate change for heat in the district heating systems have had, and are not expected by the company to have in the future as a trend, any perceptible effect on the PannErgy Group.

PannErgy aims to utilize its substantial uncommitted available thermal capacities – in addition to the capacities being utilized now – which is expected to further reduce sensitiveness to ambient temperature changes. The most important possible areas for utilizing the available uncommitted thermal capacities include:

- Implementation of energy efficiency and optimizing projects with existing customers;
- Cold energy projects – for the utilization 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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