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PannErgy Plc

QUARTERLY PRODUCTION REPORT

for the period of Q1 of 2018

16 April 2018

**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.

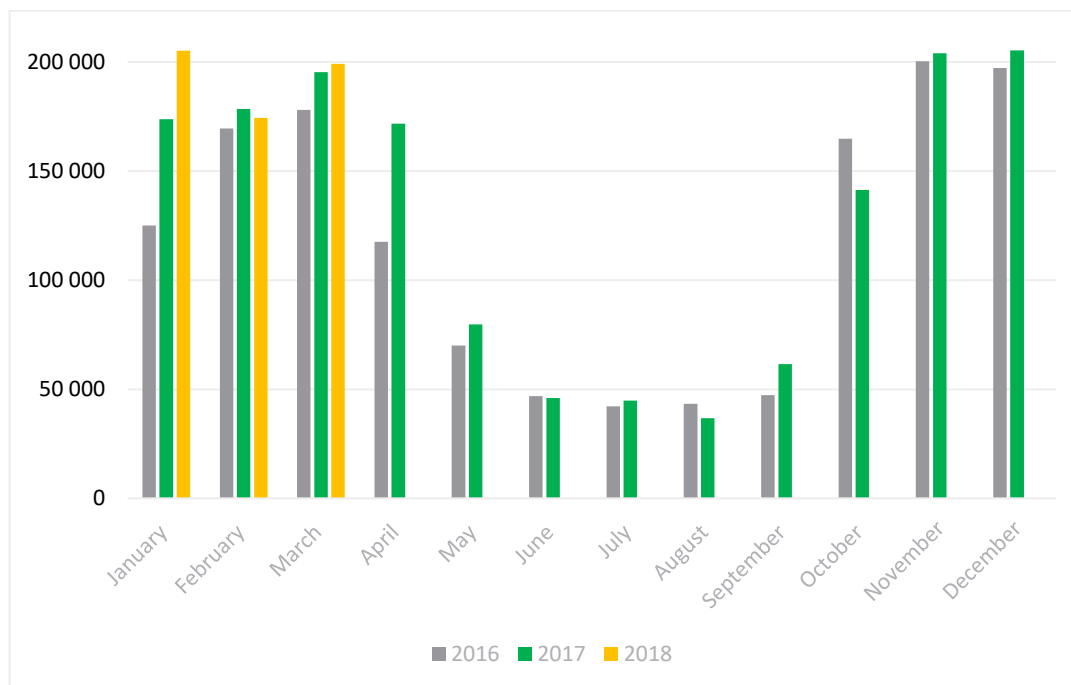


Figure 1  
Consolidated quantities of sold heat, expressed in GJ

The graph shows the aggregated heat quantity sold in the Miskolc, Győr, Szentlőrinc and Berekfürdő projects, in a monthly breakdown.

Figure 2  
Consolidated heat quantity sold, in a tabular format, expressed in GJ

	2016	2017	2018
Január	125 117	173 765	205 199
Február	169 471	178 442	174 300
Március	177 950	195 387	199 090
Április	117 526	171 685	
Május	69 990	79 700	
Június	46 815	45 936	
Július	42 193	44 865	
Augusztus	43 294	36 709	
Szeptember	47 347	61 502	
Október	164 818	141 270	
November	200 396	204 045	
December	197 237	205 251	

When the heat sales figures for the first quarter of the year are compared to the data of the same period in 2017, it is primarily the effects of the differing weather conditions that can be observed.

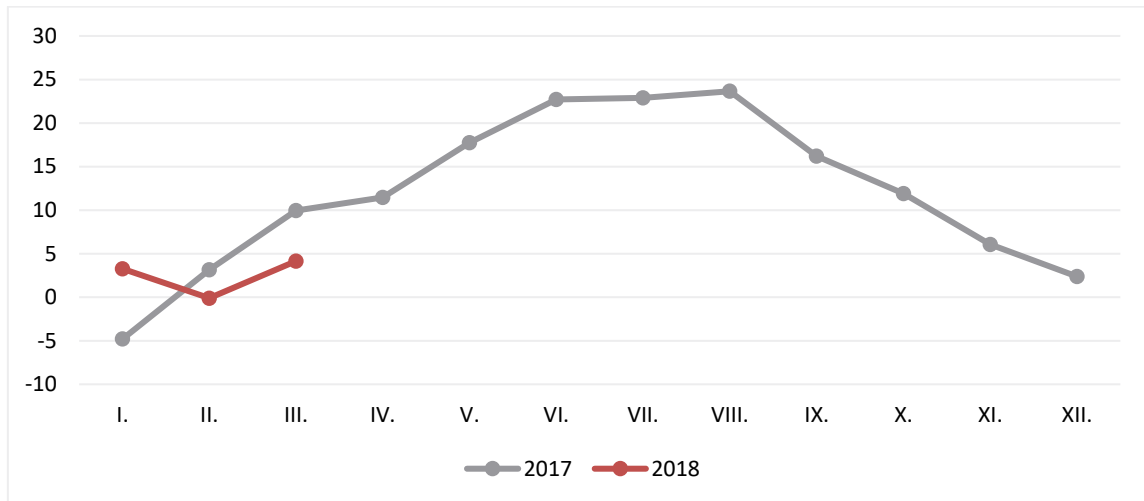


Figure 3 Trends in average temperature data in 2017–2018

During the heating season, geothermal heat sales reach the ideal range when outdoor temperature is at 2–8 °C, and more specifically when daily minimum and maximum temperatures show minimum differences. Figure 3 reflects that the average temperature in January 2018 was more favourable than a year before, whereas in February the average temperature value was colder than in the second month of 2017, and therefore came to be farther from the ideal temperature range. In March this year, the average temperature was lower than in 2017, when on certain days only periodic heating needed to be provided. On the whole, as a result of the more favourable weather conditions, heat sales in the first quarter of 2018 showed a slight increase after the base period.

The availability of the heating facilities was nearly 100%.

**Geothermal Project of Miskolc**

*(Miskolci Geotermia Ltd, Kuala Ltd)*

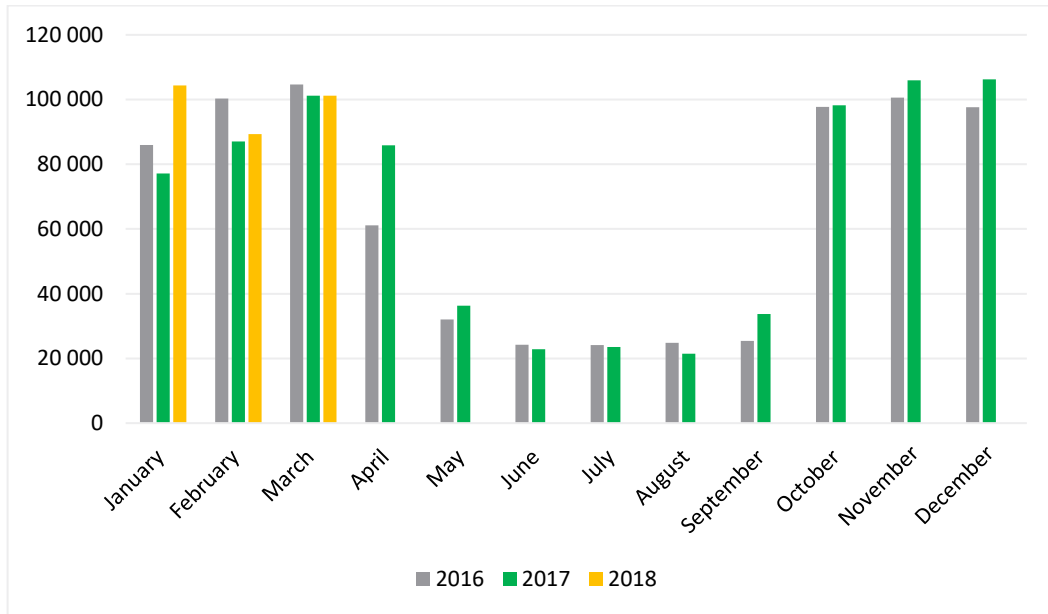


Figure 4  
Quantities of sold heat in Miskolc, expressed in GJ

In the first quarter of 2018, the Geothermal System of Miskolc sold 294,930 GJ heat energy in total, which exceeded the value achieved in the corresponding period of 2017 by 11%.

**Geothermal projects of Győr**

*(DD Energy Ltd, Arrabona Geothermal Ltd, PannErgy Concession Ltd)*

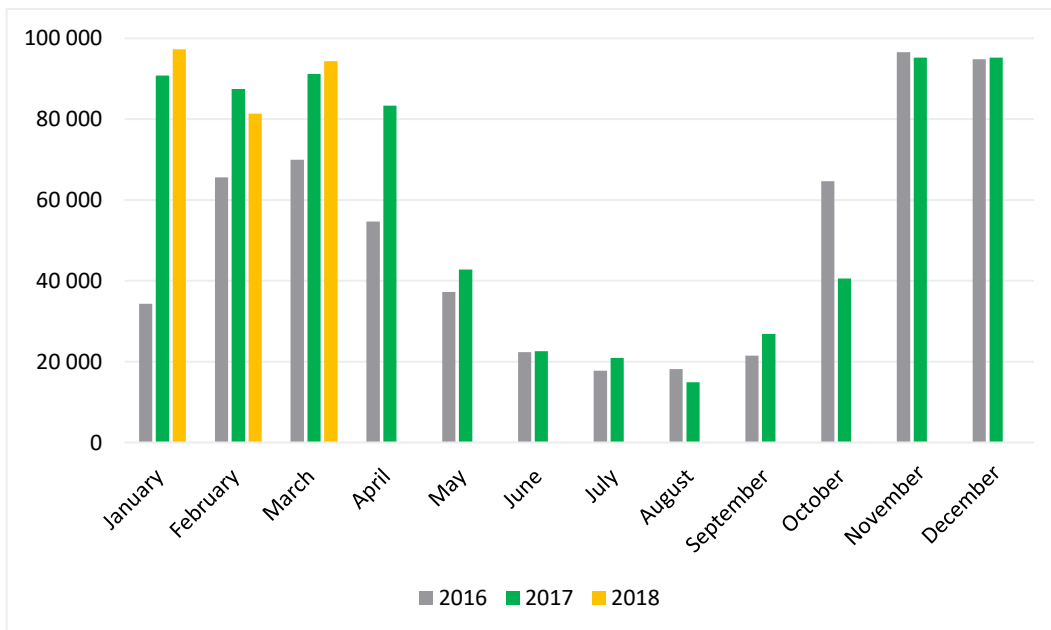


Figure 5  
Quantities of sold heat in Győr, expressed in GJ

In the period under review, actual heat sales corresponded to the plans.

In the first quarter of 2018, the Geothermal System of Győr sold altogether 272,986 GJ heat energy, which represented 1.3% increase after Q1 of 2017.

On 26 January 2018, the Company received the effective building permit for well drilling, based on which operations to deepen the BON-PE-03 production well are commencing in the third week of April.

#### Geothermal heating facility of Szentlőrinc

*(Szentlőrinc Geothermal Ltd)*

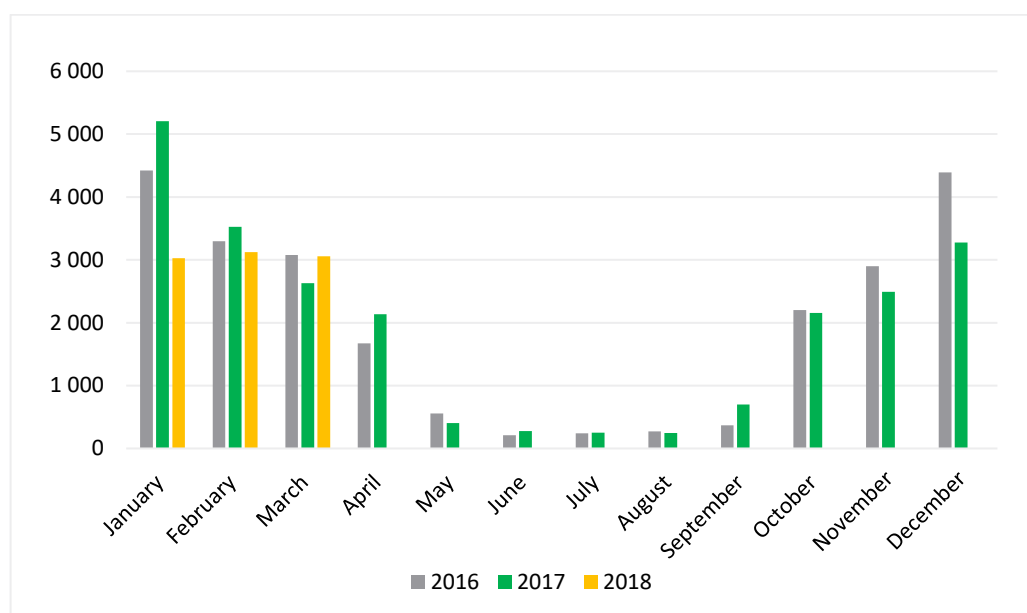


Figure 6  
Quantities of sold heat in Szentlőrinc, expressed in GJ

Heat sales from the geothermal heating facility of Szentlőrinc were in line with the plans. Following the heating season, the well pump will be replaced, and it will not involve any significant investment expenditure. In the period under review, the Company sold 9207 GJ heat.

#### Geothermal methane utilization facility of Berekfürdő

*(Berekfürdő Energy Ltd)*

In the given period, the geothermal methane utilization facility of Berekfürdő produced 518,618 kWh electric power, while the volume actually sold was 482,522 kWh. Calculated on a calendar basis, the availability of the gas engines was 97.3%. 1466 GJ heat was sold during the period under review.

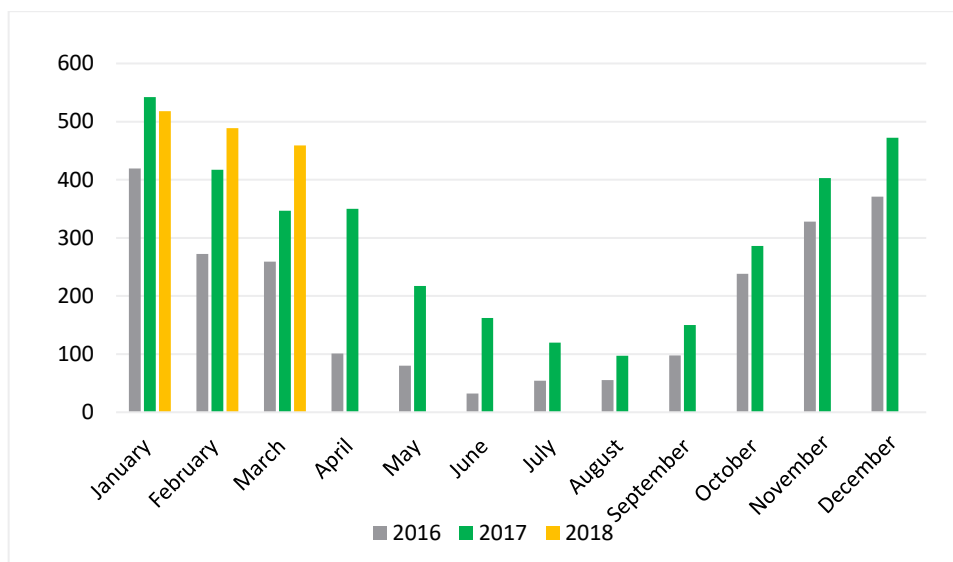


Figure 7  
Quantities of sold heat in Berekfürdő, expressed in GJ

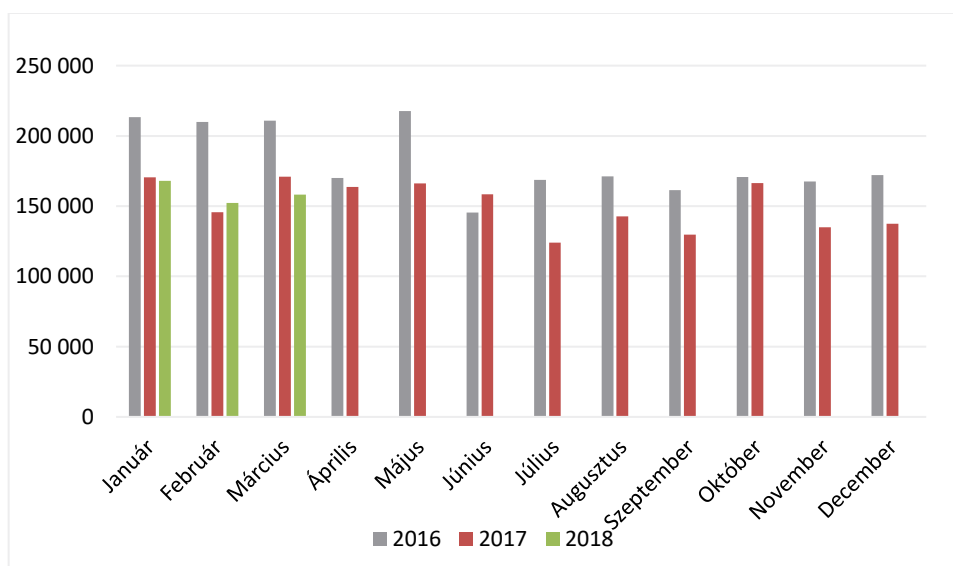


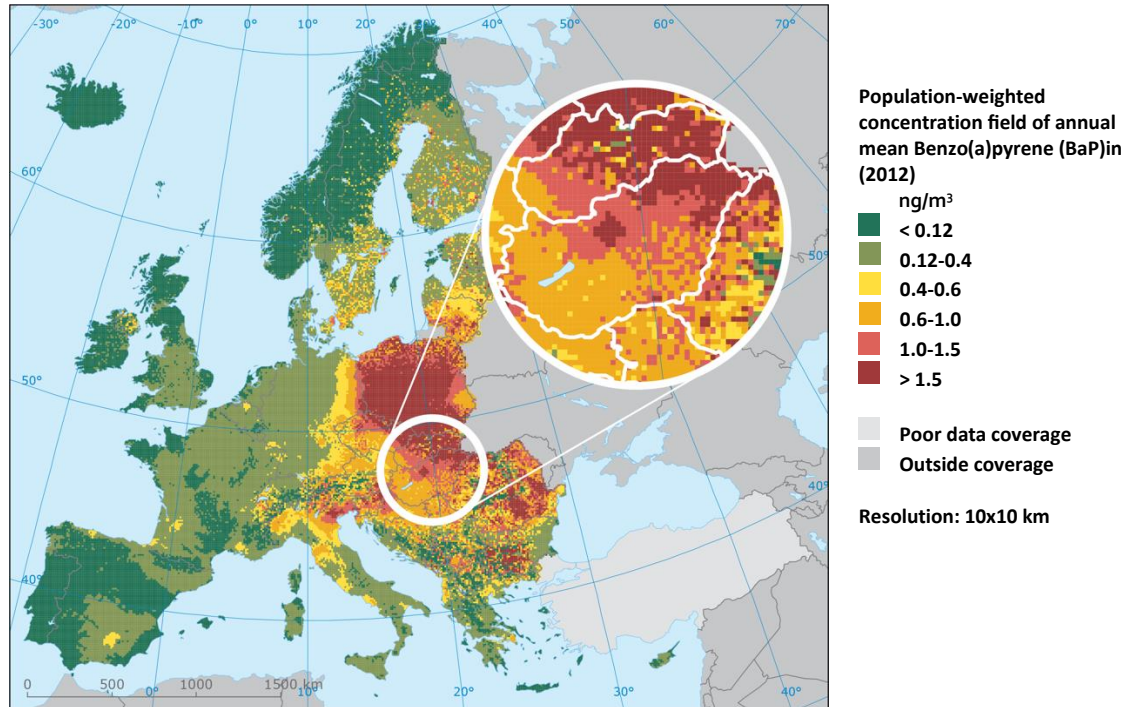
Figure 8  
Quantities of electric power sold in Berekfürdő, expressed in kWh

### Environmental protection

During the discussed period, the utilization of green heat energy generated by PannErgy Group's projects contributed to the Hungary's climate protection efforts by reducing the emission of CO<sub>2</sub> as a greenhouse gas by 33562 tons.

One of the benefits of geothermal power is that it involves the emission of neither greenhouse gases, primarily CO<sub>2</sub>, nor other compounds having considerable environmental and health-related effects (carcinogens, mutagens, etc.). With respect to the fact that certain conventional fuels release very dangerous benzo[a]pyrene and other PAH compounds to the atmosphere, geothermal energy carriers do not contain such hazardous materials. In cities with larger

exposures, the utilization of geothermal energy can contribute to the moderation of the emission of carcinogenic compounds, the reduction of the occurrence of tumorous diseases. From this perspective, the associated hazards that are present in Hungary are shown in the figure below:



Source: Air quality in Europe - 2015 report, EEA 2015

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