Bialystok, 09.08.2022 r.

Customer:
Blue Boson Tech S.A.
Wincentego Rzymowskiego 53rd st.,
02-697 Warsaw
NIP: 5213793033

Object of the order:

Analysis of heat consumption for heating AG Centrum at Chorzowska 11th st. in Radom

1. Description of the facilities heated from the heat substation No. 00442, located at 11 Chorzowska Street in Radom

The following facilities are heated from the heating substation at 11A Chorzowska Street, number 00442:

1. social and office building,

2. warehouse building,

3. dyno building,

4. court pavilion,

5. steel courts.

2. Heating of facilities

From the room where the substation is located, heat is distributed to individual buildings. In the substation, the heat has been divided into two circuits - central heating heat (150 kW) and process heat (150 kW) - Annex on page 71. The total ordered power is 0.3 MW. The node is metered with one heat meter.

3. Use of Blue Boson technology

Blue Boson technology was used in the heat substation at 11 Chorzowska Street and in Radom. The devices were installed on two heating circuits. The devices were installed on March 30, 2021.

4. Assessment of the impact of Blue Boson technology on heat saving

The impact on savings in heating buildings, which is achieved by the assembly of Effector Blue Boson devices in the substation, was determined by using the calculations of "degree days of the heating season". This method uses the daily meteorological data provided by the Institute of Meteorology and Water Management. The substation No. 00442 is equipped with weather regulation - Appendix page 71. Warsaw-Okęcie is the meteorological station used to prepare energy audits covering the city of Radom.

The number of degree days determined each month makes it possible to assess changes in heat consumption due to changing weather conditions. A higher number of degree days indicates a greater temperature difference between the outside temperature (ti) and the design temperature of heated rooms (test). The greater the temperature difference - the greater the heat consumption. The average temperature of objects heated in the substation is 16.95 ° C

Table no.1. Heat consumption for central heating in individual months

Month	2020/21	Degree days	Use/degree days	2021/22	Degree days	Use/degree days
	Use [GJ]			Use [GJ]		
October	87,9	153	0,5745098	101,9	211	0,48293839
Nobember	192	333	0,57657658	189,1	350	0,54028571
December	271,8	465	0,58451613	282,8	555	0,50954955
January	313,6	568	0,55211268	286,7	492	0,58272358
February	295	538	0,54832714	209,7	379	0,55329815
March	226,6	424	0,53443396	185,2	414	0,447343
April	126,8	277	0,45776173	129,2	292	0,44246575
TOTAL	**1513,7**	**2758**	**(average) 0,54883974**	**1384,6**	**2694**	**(average) 0,51395694**

The average heat consumption in relation to the value of degree days in the period October 2020 - March 2021 is 0.561746. The average heat consumption in relation to the value of degree days in the period April 2021 - April 2022 is 0.5020457.

By the end of April 2022, after installing two Effector Blue Boson devices on March 30, 2021, the average heat consumption in relation to degree days decreased by **10.6%.**

5. Final conclusions

The comparison of heat consumption from the two heating seasons 2020/21 and 2021/22, based on the method using the degree days of the heating season, showed that since the use of Effector Blue Boson devices in the heat node, heat consumption has decreased. In the analyzed period, the calculated value of the savings obtained in heating buildings was 10.6%.

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