	Information on apartment building		
	Total annual consumption (CH + DHW)		
1)	2012 (presumption)	215 000	kWh
2)	2011 (real)	341 839	kWh
3)	2010 (real)	476 610	kWh
4)	EJC on disconnection	10 421	€

	Information on own boiler house		
5)	Price incl. VAT	52 000	€
6)	Lifespan	15	years

	Information on credit		
7)	Credit amount	52 000	€
8)	Payback period	14	years
9)	Interest	3.40	%
10)	Other fees	1 518	€
11)	Paid-up capital	52 000	€
12)	Paid-up interest	13 426	€
13)	Total for credit	66 945	€

	Information on NG		
14)	Consumption category	M4	
15)	Annual average standardized degree	1.045	
16)	Annual average heating value of NG	9.607	kWh/m^3
17)	Consumption of NG	21 416	m^3
18)	Heat of combustion	10.65	kWh/m^3
19)	Volume conversion factor	0.985	
20)	Consumed energy from NG	224 657	kWh
21)	Variable component excl. taxes	0.0514	€/kWh
22)	Discount	0.0041	€/kWh
23)	Excise tax	0.00132	€/kWh
24)	VAT	0.0097	€/kWh
25)	Variable component incl. taxes	0.0583	€/kWh
26)	Fixed monthly rate excl. VAT	29.96	€
27)	Fixed monthly rate incl. VAT	35.95	€
28)	Purchase of NG → VC + FR incl. VAT	13 539	€

	Average annual costs with own boiler		
29)	Water	0	€
30)	Electricity	650	€
31)	Technological materials	33	€
32)	Purchase of NG	13 539	€
	Variable component incl. VAT - total	**14 222**	€
33)	Credit incl. interest and fees	4 463	€
34)	Property insurance	290	€
35)	Service and operation	0	€
36)	Repair, service and maintanance	1 000	€
37)	Costs on disconnection	695	€
38)	Revisions, legal inspections and fees	0	€
	Fixed component incl. VAT - total	**6 448**	€

39)	**Total costs on heat incl. VAT**	**20 670**	**€**
	Total unit price of heat incl. VAT	0.0961	€/kWh

48)	**Difference in annual costs on heat from CHS and on heat from own boiler**	**-385 €**

	Average annual costs on heat supplied from CHS		
	Prices valid in given year		
40)	Variable component excl. VAT	0.0381	€/kWh
41)	Fixed component excl. VAT	191.6865	€/kW
42)	**Variable component incl. VAT – total**	**9 830**	**€**
43)	Fixed component incl. VAT - paid	9 331	€
44)	Total difference in regulatory input power	73.29	kW
45)	Difference in regulatory input power/year	1124	€

46)	**Fixed component incl. VAT – total**	**10 455**	**€**

47)	**Total costs on heat incl. VAT**	**20 285**	**€**
	Total unit price of heat incl. VAT	0.0943	€/kWh

Attachment No. 1 Comparison of average annual costs on heat production

Essential information on heat consumption, investments and consumption of natural gas of the disconnecting apartment building

	Information on apartment building		
	Total annual consumption (CH + DHW)		
1)	2012 (presumption)	215 000	kWh
2)	2011 (real)	341 839	kWh
3)	2010 (real)	476 610	kWh
4)	EJC on disconnection	10 421	€

Tab. 1: Information on disconnecting subject

1) – 3) *Total annual consumption (CH + DHW) [kWh]* – total annual heat consumption of central heating (CH) and domestic hot water (DHW) of the apartment building during the three consecutive years. The same heat consumption of the apartment building will be taken also in calculation of heat production with individual boiler and for calculation of costs in the matter of heat consumption from the central heating system (CHS).

Setting the presumed consumption it is necessary to consider the effect of possible revitalisation measures (for example external insulation, window exchange, purchase of solar panels) if they were realized. These influence reduction in heat consumption volume of the object considered regardless the fact whether the heat is produced in boiler house or whether it is supplied from CHS. Heat consumption of apartment building depends also on revitalisation measures or on individual behaviour of particular residenst (for example temperature adjustment in apartment).

4) *EJC on disconnection [€]* – economically justified costs (EJC), which the apartment building must pay to central heat supplier pursuant to the *Regulation of the Regulatory Office for Network Industries No. 283/2010 Coll.* (hereinafter only the "Regulation No. 283/2010") after disconnection to the given date. EJC are the costs caused by disconnection which objectively have to be added the costs on individual boiler house building, thus the Office takes these costs in its calculations into account.

	Information on own boiler house		
5)	Price with VAT	52 000	€
6)	Lifespan	15	years

Tab. 2: Information on boiler house of apartment building

5) *Price incl. VAT [€]* – total costs on boiler and the boiler house cosntruction incl. VAT stated by the disconnecting subject.

6) *Lifespan [years]* – presumed lifespan of a boiler. According to the generally available information, most of the boiler producers provide ususally a 5 year guarantee period on their boilers. Based on regular maintenance the boiler lifespan could be prolonged up to 10-15 years. In this case the Office took a longer boiler lifespan - **15 years** into account. However, it is possible to observe that a total boiler´s lifespan is not guaranteed and the new boilers might be necessary earlier than in 15 years period. Since the Office calculated all costs on boiler house construction according to the lifespan of boilers, any shortening of

lifespan would result in increase of average annual costs on the individual boiler house construction. Thus the disconnecting apartment building benefits from the presumption of 15-years lifespan of boilers.

	Information on credit		
7)	Credit amount	52 000	€
8)	Payback period	14	years
9)	Interest	3.40	%
10)	Other fees	1 518	€
11)	Paid-up capital	52 000	€
12)	Paid-up interest	13 346	€
13)	Total for credit	66 551	€

Tab. 3: Information on (planned) credit

7) *Credit amount [€]* – credit provided by bank or other financial institution for buying the boilers and boiler house construction and additional services connected with the mentioned construction. If there were more revistalisation measures in apartment building at a time covered by one credit, we enumerate in this column only that part of credit that refers to the financing of those equipments and measures directly connected with building of individual boiler house.

8) *Payback period [years]* – payback period of credit state in documents provided by the disconnecting subject. This data should be not confused with the period of boiler house lifespan which might be, and it often really is, other that the payback period of credit.

9) *Interest [%]* – interest provided from the financial institution for the given credit.

10) *Other fees [€]* – other fees directly elicited by the credit from the financial institution (for example fee for credit provision, pledge fee, fees for administration of credit account during the payment of credit etc.) or the fees elicited by disconnection from CHS system (for example price of technical and project documentation for boiler construction, administration fees of building permission etc.). If some of these fees are included in item 7), they are not included into this item due to the duplicity. Setting the fees the Office considers the values according to the data provided and available.

11) *Paid-up capital [€]* – amount of capital which the apartment building would pay by the monthly annuities, it means sum of loan in item 7).

12) *Paid-up interests [€]* – total amount of interests which the apartment building would pay by the monthly annuities at the end of credit payment period based on interest stated in item 9). This value could be changed depending on development of interested rates at financial markets.

13) *Total for credit [€]* – sum of all paid items connected with the credit to build the boiler house during the payment period of credit (*Other fees + Paid-up capital + Paid-up interests).*

	Information on NG		
14)	Consumption category	M4	
15)	Annual average standardized degree	1.045	
16)	Annual average heating value of NG	9.607	kWh/m^3
17)	Consumption of NG	21 416	m^3
18)	Heat of combustion	10.65	kWh/m^3
19)	Volume conversion factor	0.985	
20)	Consumed energy from NG	224 657	kWh
21)	Variable component excl. taxes	0.0514	€/kWh
22)	Discount	0.0041	€/kWh
23)	Excise tax	0.00132	€/kWh
24)	VAT	0.0097	€/kWh
25)	Variable component incl. taxes	0.0583	€/kWh
26)	Fixed monthly rate excl. VAT	29.96	€
27)	Fixed monthly rate incl. VAT	35.95	€
28)	Purchase of NG → VC + FR incl. VAT	13 539	€

Tab. 4: Information on natural gas used in own boiler house in apartment building

14) *Consumption category* – the consumption group determined by a gas supplier which the apartment building belongs to for gas consumption.

15) *Annual average standardized degree* – Standardized efficiency degree is appraising parameter of all-year operation of condensation and low-temperature boilers with variable temperature of boiler water.

This data comes out from the expert estimation provided by the Slovak Innovation and Energy Agency (SIEA). Boiler efficiency directly influences the consumption of natural gas (item 17). In this case the stated value harmonized with the presumptions of apartment building representatives; the office considered the stated standardized efficiency of boiler as appropriate. Generally the chosen value is above standard, thus it is to the benefit of disconnecting apartment building. It is also necessary to note that the efficiency of boiler is decreasing by its age. Even this fact is not considered in the Office´s calculations and it is to the benefit of disconnecting apartment building.

16) *Annual average heating value of NG [kWh/m^3]* – the Office acquired the figures of average heating value for natural gas from the generally available data at the website of the SPP-distribúcia, a.s. company[1].

17) *Consumption GP [m^3]* – measured consumption of natural gas in apartment building needed to produce necessary amount of heat stated in item 1). It is calculated as *Total annual heat consumption* / (*Annual average standardized degree x Annual average heating value*)[2]. The consumption of natural gas calculated in this manner was in harmony with the data provided by the apartment building.

18) *Heat of combustion [kWh/m^3]* – amount of energy in kWh, acquired by the complete combustion of 1 m^3 gas. Its value is determined by the distribution network operator at the entry points to this network[3]. For the invoicing the average value of heat volume of combustion is being used, which is defined as arithmetic average of daily average values of volume heat of combustion for the billing cycle. In this case the Office used the average of values from the first 11 months a year.

[1] http://www.spp-distribucia.sk/sk_distribucna-siet/sk_zlozenie-zemneho-plynu-a-emisny-faktor
[2] *item 1) / [item 15) x item 16)]*
[3] http://www.spp-distribucia.sk/sk_distribucna-siet/sk_zlozenie-zemneho-plynu-a-emisny-faktor

19) *Volume conversion factor* – factor through which we can calculate the gas consumption from the measured gas consumption. This factor is independently determined for each municipality depending on altitude and is published in *Regulation of the Ministry of Economy of the Slovak Republic No. 269/2012 Coll.*

20) *Consumed energy from NG [kWh]* – supplied amount of energy in gas calculated as

(*Consumption of NG* x *Volume conversion factor*) x *Heat of combustion*[4] .

Consumer pays for this amount of energy produced from natural gas.

21) *Variable component excl. taxes [€/kWh]* – variable component of gas price from SPP, a.s.pricelists[5] excl. VAT and excise tax.

22) *Discount [€/kWh]* – discount from list price of gas stated in documents of apartment building.

23) *Excise tax [€/kWh]* – excise tax applied on supplies of natural gas pursuant to the Act No. 609/2007 Coll. on Excise Tax from Electricity, Coal and Natural Gas in the amount of 1,32 €/MWh.[6]

24) *VAT [€/kWh]* – value added tax in the amount of 20%. Tax base is made by list price (item 21) decreased by the potential discounts from list price (item 22) and excise tax (item 23).

25) *Variable component incl. taxes [€/kWh]* – final price of variable component incl. VAT and excise tax.

26) *Fixed monthly rate excl. VAT [€]* – fixed part of natural gas price according to the SPP pricelist valid in given year.[7]

27) *Fixed monthly rate incl. VAT [€]* - fixed part of natural gas price including 20% VAT.

28) *Purchase of NG → VC + FR incl. VAT* – total annual sum incl. VAT for purchase of natural gas for the production of heat in own boilers. Item is calculated as

[*Consumed energy from NG* x *Variable component incl. taxes*] + [12 x *Fixed monthly rate incl. VAT*] [8].

This item expresses total annual costs of apartment building on purchase of natural gas for production of heat for CH and DHW.

[4] *[item 17) x item19)] x item18)*
[5] http://www.spp.sk/plyn/male-podnikanie-a-organizacie/mpo-ceny/cenniky-male-podnikanie/
[6] http://www.spp.sk/plyn/velki-zakaznici/vz-ceny/spotrebna-dan-zakaznici/
[7] http://www.spp.sk/plyn/male-podnikanie-a-organizacie/mpo-ceny/cenniky-male-podnikanie/
[8] [item 20) x item 25)] + [12 x item 27)]

Comparison of average annual costs on production of heat in own boiler house and costs on heat supply from CHS

	Average annual costs with own boiler		
29)	Water	0	€
30)	Electricity	650	€
31)	Technological materials	33	€
32)	Purchase of NG	13 539	€
	Variable component incl. VAT - total	**14 222**	€
33)	Credit incl. interest and fees	4 463	€
34)	Property insurance	290	€
35)	Service and operation	0	€
36)	Repair, service and maintanance	1 000	€
37)	Costs on disconnection	695	€
38)	Revisions, legal inspections and fees	0	€
	Fixed component incl. VAT - total	**6 448**	**€**
39)	**Total costs on heat incl. VAT**	**20 670**	**€**
	Total unit price of heat incl. VAT	0.0961	€/kWh

	Average annual costs on heat supplied from CHS		
	Prices valid in given year		
40)	Variable component excl. VAT	0.0381	€/kWh
41)	Fixed component excl. VAT	191.6865	€/kW
42)	**Variable component incl. VAT – total**	**9 830**	**€**
43)	Fixed component incl. VAT - paid	9 331	€
44)	Total difference in regulatory input power	73.29	kW
45)	Difference in regulatory input power/year	1124	€
46)	**Fixed component incl. VAT – total**	**10 455**	**€**
47)	**Total costs on heat incl. VAT**	**20 285**	**€**
	Total unit price of heat incl. VAT	0.0943	€/kWh

48)	**Difference in annual costs on heat from CHS and on heat from own boiler**	**-385 €**

Tab. 5: Comparison of costs on production of heat in own boiler house (left) and in CHS system (right)

Average annual costs with own boiler

29) *Water [€]* – price of consumed water incl. VAT per year used for refilling the heating system (failures, repairs etc.).

Documents submitted to the Office did not include this item to the calculation of costs on heat production in boiler house, thus the Office calculated the costs on water in the amount 0 €. This presumption is to the benefit of disconnecting apartment building, hence the Office knows that this item is usually 20 € per year. Thus, if the Office included higher than zero costs into this item the total costs of apartment building on disconnection would increase and it would result in higher costs on building own boiler house.

30) *Electricity [€]* – presumed price of consumed energy incl. VAT during the year-long operation of boilers.

31) *Technological materials [€]* – estimated annual costs on technological materials served to remove the water hardness.

32) *Purchase of NG [€]* – total annual costs of apartment building on purchase of natural gas for heating (item 28).

33) *Credit incl. interest and fees [€]* – annual costs on credit incl. fees. In this item the total sum of credit and fees (item 13) is calculated on lifespan of boiler (item 6).

34) *Property insurance [€]* – annual insurance for boilers and their accessories based on submitted documents.

35) *Service and operation [€]* – wage and overhead costs per year on service and operation of boilers and their accessories.

In this case the Office calculated zero costs on service and operation of boilers as sumbmitted by the apartment building represenatives. However, it should be noted that normally this item is calculated in several hundreds of EUR per year. Thus the zero costs were in this case significantly to the benefit disconnecting apartment building. Any increase of this item means increase of annual costs on the individual boiler house construction.

36) *Repair, service and maintanance [€]* – estimated fees on regular service and maintenance of boilers and their accessories.

37) *Costs on disconnection [€]* – economically justified costs paid to the central heat supplier (item 4) calculated for lifespan of boiler (item 6).

38) *Revisions, legal inspections and fees [€]* – fees for regular revisions and inspections of boilers, chimneys and their accessories based on relevant legislation provisions.

In this case the Office calculated zero costs on fees for legal revisions and inspections as sumbmitted by the apartment building representatives. However, it should be noted that normally this item is calculated in several hundreds of EUR per year. Thus the zero costs were in this case significantly to the benefit disconnecting apartment building. Any increase of this item means increase of annual costs on building own boiler house.

39) *Total costs on heat incl. VAT [€]* – total costs on heat production if all apartment building would produce heat in its own boilers. It regards all costs directly connected with the building and operation of own boiler house or would be elicited by building of own boiler house. This item represents the sum of items 29) to 38).

Total unit price of heat incl. VAT [€/kWh] – total costs on production of heat in own boiler house calculated for unit of total heat consumption of apartment building (item 1).

Average annual costs on heat supplied from CHS

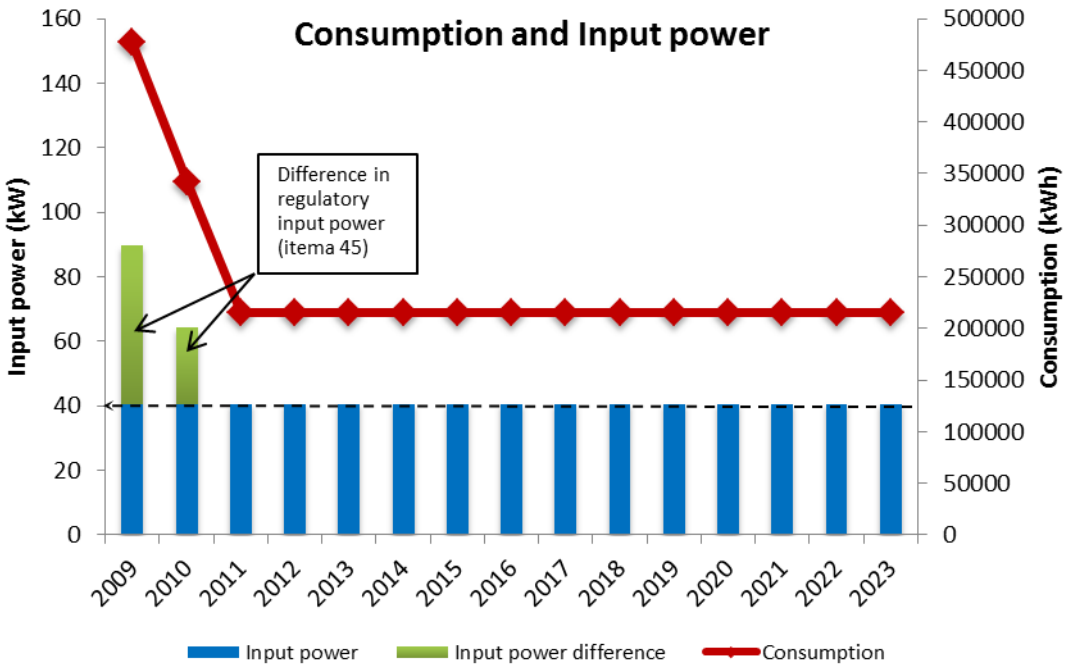
40) *Variable component excl. VAT [€/kWh]* – regulated unit price of variable component of heat price excl. VAT from central heat supplier according to the decision of RONI for the assessed year.

41) *Fixed component excl. VAT [€/kW]* – regulated unit price of fixed component of heat price excl. VAT from central heat supplier according to the decision of RONI for the assessed year.

42) *Variable component incl. VAT – total [€]* – sum of pyments which the apartment building would pay in total for variable component of heat price incl. VAT based on presumed consumption in current year (item 1).

43) *Fixed component incl. VAT – paid [€]* – sum of paymenst which the apartment building would pay in total for fixed component incl. VAT based on regulatory input power calculated according to the presumed consumption in current year (*item 1) / 5300*) [9].

44) *Total difference in regulatory input power [kW]* – based on *Regulation of RONI No. 219/2011 Coll. setting the price regulation in heat-power engineering* (hereinafter only "Regulation No. 219/2011") the apartment building would pay for fixed part of heat price in current year *t* based on real consumption in year *t-2*. This fact causes that the regulatory input power for current year is different than it would come out from the consumption in current year. If the apartment building has stabilized consumption this difference is negligible. But if apartment building made any revitalisation measures thanks to which the heat consumption decreased, the calculation of heat price according to the Regulation No. 219/2011 would result in fact that the regulatory input power of apartment building is higher than it really is according to the current consumption. Such issue would not occur if the apartment building is disconnected and the apartment building would bear the costs on heat production in own boiler house according to its current consumption. From these reasons the Office included difference between regulatory input power and "real" input power in the last two years (based on presumed consumption) as costs which the apartment building would have to pay if it continued to consume the heat from CHS.



Picture 1: Difference between regulatory input power and "real" input power of apartment building

Item is calculated as sum of differences between the regulatory input power and "real" input power in last two years:

$$(Consumption_{t-2} - Consumption_{t}) / 5300 + (Consumption_{t-1} - Consumption_{t}) / 5300$$ [10]

[9] The Office calculated the regulatory input power according to the point 7 of the Regulation No. 219/2011.

[10] (*[item 3) - item 1)] / 5300) + ([item 2) - item 1)] / 5300)*

45) *Difference in regulatory input power/year [€]* – the Office consequently calculated this difference in regulatory input power as a sum in EUR based on current price of fixed component (item 40) and it added 20% VAT. Since the apartment building would pay this sum only during the first two years from rationalizing measures and afterwards the regulatory input power would stabilize, the Office calculated this sum of differences in regulatory input power for the lifespan of boiler (item 6). This calculation increases the costs on consumed heat from CHS and thus could be considered as a factor to the benefit of disconnecting apartment building.

46) *Fixed component incl.– total [€]* – sum of items 43) and 0 means the sum of totally paid sum for fixed part of heat price per year and the average annual difference in regulatory input power during first two years.

47) *Total costs on heat incl. VAT [€]* – total costs on heat production if the apartment building is connected to CHS. This item represents the sum of items 42) and 0.

Total unit price of heat incl. VAT [€/kWh] – total costs on heat production from CHS system calculated on unit of heat consumption of apartment building (item 1).

48) *Difference in annual costs on heat from CHS and on heat from own boiler [€]* – difference between the total costs on heat production if the apartment building would consume heat from CHS system and total costs on heat production from own boiler house. Positive figure means savings for the apartment building if disconnected. Negative figure means that it would be more advantageous for the apartment building to remain connected to CHS.

Attachment No. 2

Impact of disconnection on other heat consumers within CHS in respective municipality

	Price of heat from CHS for other consumers		
49)	Total consumption in CHS	126 072 273	kWh
50)	Consumption of disconnecting apartment building	476 610	kWh
		0.38%	
	Price prior to disconnection		
51)	Variable component excl. VAT	0.0381	€/kWh
52)	Fixed component excl. VAT	191.6865	€/kW

	Price after disconnection			Price after disconnection		
	a) SIEA estimation			**b) Original supplier estimation**		
53)	Total consumption in CHS	125 595 663	kWh	Total consumption in CHS	125 595 663	kWh
54)	Variable component excl. VAT	0.0381	€/kWh	Variable component excl. VAT	0.0381	€/kWh
55)	Fixed component excl. VAT	192.0140	€/kW	Fixed component excl. VAT	192.2841	€/kW
56)	Increase of payments for VC	0	€/kWh	Increase of payments for VC	0	€/kWh
57)	Total increase of VC excl. VAT	0	€	Total increase of VC excl. VAT	0	€
58)	Increase of payments for FC	0.3275	€/kW	Increase of payments for FC	0.5976	€/kW
		0.17%			0.31%	
59)	Total increase of FC excl. VAT	7 761	€	Total increase of FC excl. VAT	14 162	€
60)	**Total increase of payment incl. VAT**	**9 313**	**€**	**Total increase of payment incl. VAT**	**16 994**	**€**

	Total impact on consumers after disconnection			
	Impact on apartment building (item 48)	-385 €	Impact on apartment building (item 48)	-385 €
	Impact on consumers still connected to CHS (according to the SIEA estimation) (item 60a)	-9 313 €	Impact on consumers still connected to CHS (according to the estimation of original supplier) (item 60b)	-16 994 €
61)	**Total impact on consumers**	**-9 698 €**	**Total impact on consumers**	**-17 378 €**

Tab. 6: Impact of disconnection on still connected consumers in CHS system in assessed municipality

49) *Total consumption in CHS [kWh]* – total heat consumption in CHS within the assessed year, including disconnecting object.

For completeness we need to state that within submitting the price proposal for the particular year the original heat supplier came out from the presumption that the assessed apartment building would be still connected to CHS. For this reason also the presumed heat consumption of this object is included into calculations.

50) *Consumption of disconnecting apartment building [kWh]* – total annual heat consumption of disconnecting apartment building calculated by the central heat supplier. Based on Regulation No.

219/2011 this data represents the consumption of apartment building in year *t-2* (item 3). At the same time also the percentage share of consumption of disconnecting apartment building compared to the whole CHS is calculated.

51) *Variable component excl. VAT [€]* – variable component of regulated unit price of heat excl. VAT in CHS according to the decision of RONI within the assessed year.

52) *Fixed component excl. VAT [€]* – fixed component of regulated unit price of heat excl. VAT in CHS according to the decision of RONI within the assessed year.

53) *Total consumption in CHS [kWh]* – total heat consumption in CHS after disconnection of the apartment building (difference between the items 48) and 0).

54) *Variable component excl. VAT [€]* – variable component of regulated price of heat in CHS after disconnection of apartment building. Estimation of this item was calculated by the former heat supplier and also SIEA provided its expert estimation of price development after disconnection. The Office calculated the impacts on remaining consumers still connected to CHS in given municipality based on both estimations, thus the table is divided into two parts. Both estimations presume that after disconnection of the apartment building the value of variable component of heat would not increase. Both original supplier and SIEA however stated in their estimations that it might happen that after disconnection also the variable component of heat price would really increase for non-disconnected consumpers. In its calculations the Office used the presumption on unchanged variable component of heat price. It is necessary to note, though, that this presumption is to the benefit of disconnecting apartment building and if also the variable component of heat price for non-disconnected consumers increased, the negative impact would be even higher.

55) *Fixed component excl. VAT [€]* – fixed component of regulated price of heat in CHS after disconnection of apartment building. Estimation of this item was provided by former supplier and SIEA.

56) *Increase of payments for VC [€/kWh]* – increase of regulated unit price within the variable heat component excl. VAT for consumers remaining in CHS if the particular apartment building is disconnected (*difference between items 0 and 0*).

57) *Total increase of VC excl. VAT [€]* – total increase of payments for variable component of heat excl. VAT for consumers remaining in CHS if the particular apartment building is disconnected *(item 0 x item 0*.

58) *Increase of payments for FC [€/kWh]* – increase of regulated unit price within the fixed component of heat excl. VAT for consumers remaining in CHS system if the particular apartment building is disconnected (*difference between items 0 and 0*).

59) *Increase of FC excl. VAT [€]* – total increase of payments for the fixed heat component excl. VAT from consumers remaining in CHS if the particular apartment building is disconnected *(item 0 / 5300 x item 0)*.

60) *Total increase of payment incl. VAT [€]* – sum of increased payments from consumers remaining in CHS within the fixed component of price (otem 58) and in variable component of heat price (item 55). 20% VAT was added consequently. Remaining consumers would have to pay more for heat by this amount due to the decision of the particular apartment building to disconnect from CHS.

61) *Total impact on consumers [€]* – diffence between the benefit of disconnection for the apartment building (item 47) and increased payments of other consumers (item 59). If the increase of payment for

other consumers exceeds the benefit for disconnecting apartment building, then generally the negative impact on consumers occurs (total value is negative).