

3.5 Specific consumption of fuels and energy according to purpose of use

The survey results do not permit to directly break down the average energy consumption of dwelling by purpose of use, (i.e. for lighting and operation of home electrical appliances, so-called incommutable electricity, cooking, preparation/production of DHW and space heating). As already stated earlier, for the whole survey there was used EUROSTAT methodology from ENERGO 1997 survey which do not permit direct segmentation of the energy consumption according to purpose of use, since it was not possible to include needed parameters into direct survey. The main coordinator of ENERGO 1997 Mr. T. Simmons pointed out to this problem:

"Consumption of individual kinds of fuels and energy according to their way of use (for heating, DHW preparation, cooking and other) in dwellings can be checked on the basis of special studies. These needed data is not possible to obtain from the survey. Nevertheless 7 countries (including the Czech Republic - cooperating consultant company VUPEK, a.s. Prague) performed these estimates and their results are presented in final reports of individual countries."

As cooperating and consulting company in this area there was chosen company Koneko marketing, s.r.o, Prague.

Course of the project (brief description):

It is possible to obtain only informational notion of energies structure, at DHW preparation and cooking, used for these processes. Household's equipment can be informational guideline for incommutable electricity consumption, for exact calculation, of course, there is lack of appliances figures, their power input and duration of their use. There is a suitable method enabling to determine, from the incomplete data, consumption of partial energy processes in households - to take advantage of final work specific consumption values. These exogenous parameters are obtained by measurement, from literature and, in our case, primarily from energy consumption models verified empirically.

Calculation of specific consumption according to purpose of use is there carried out for subset of urban dwellings, subset of rural dwellings and for the whole set of surveyed dwellings. At model calculation of structure of energy consumption in households there we use, as point of departure, specific consumptions of final work (final consumption of "clean" heat energy in GJ/dwelling) for DHW preparation and cooking and specific consumption of incommutable electricity, as well. Energy consumption structure for DHW preparation and for cooking was derived from number of dwellings using surveyed kinds of fuels and energy for these processes. Energy consumptions for DHW preparation, for cooking and incommutable electricity consumption were calculated by means of surveyed energy carriers efficiency and with utilization of final work specific consumptions, modified pursuant to partial microcensus data. Then, by subtraction of thus calculated consumptions from total dwellings energy consumption, there was specified consumption for heating and derived corresponding specific consumption.

Based on microcensus results, the model calculations made it possible to differentiate between specific consumptions for cooking and domestic hot water production (DHW preparation) according to basic groups of energy carriers (energy carriers basic categories), too. These values show considerable differences in efficiency of their uses in the processes mentioned. In the case of solid fuels for space heating, the calculated specific consumptions are that extreme that they cannot be explained only by the low efficiency of the combustion process or non-economy resulting from relatively low prices of solid fuels. The overestimated total consumption of solid fuels in the measured sample will have a key influence. Unlike the

other energy carriers, whose consumption can be measured objectively to a certain degree, the consumption of solid fuels can only be estimated from deliveries. This overestimation of the consumption of solid fuels then affects the total specific consumption of the sample under measurement.

Calculated specific energy consumptions for individual purposes of use for urban and rural dwellings and for whole sample of surveyed dwellings are presented in table 3.5.1.

Specific consumption of energy according to purpose of use (GJ/dwelling)

Table 3.5.1

Purpose of energy use (GJ/dwelling)	Locality		Total in the Czech Republic
	Urban	Rural	
Space Heating	49,7	91	59,4
Solid fuels	168,1	228,7	-
Liquid and Gaseous Fuels	69,3	89,9	-
Heat	32,8	37,9	-
Electricity	40	50,7	-
Water heating Equipment	8,3	8,6	8,4
Solid fuels	20	20	-
Liquid and Gaseous Fuels	12,2	13,3	-
district HW	6,7	6,7	-
Electricity	8,1	7,1	-
Cooking	5,4	5,9	5,6
Other electricity	4,9	4,9	4,9
Total energy consumption	68,3	110,5	78,2