

CONSUMPTION TRACKING REPORT 2018

KESKO OYJ

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1. Introduction

This report presents the collected building energy consumption tracking data of Kesko's stock of buildings. The purpose of the report is to afford a clear picture of the development that has taken place throughout Kesko's stock of buildings. The data contained in this report is used for Kesko's responsibility reporting and for evaluating the success of the company's energy management. The report has been prepared by EnerKey Energia Solutions.

2. Background

The stock of buildings managed by Kesko comprises real estate in Finland and abroad. Only the domestic stock of buildings managed by Kesko in 2018 has been taken into account in compiling this report. The consumption data of overseas properties is discussed in connection with their emissions calculation.

Specific consumptions have been calculated based on gross areas. This report uses the gross areas recorded for the properties in the customer's real estate management system. Where the gross area of a property was not known, it has been estimated from the property's floor area. The estimate is made by multiplying the floor area with the factor for the respective real estate category. The factors are listed in the table below.

Table 1. Factors used in defining gross areas.

| Facility type | Multiplier (Surface area * multiplier = Gross area) |
|-----------------------------------|---|
| K-citymarket | 1,06 |
| K-supermarket | 1,06 |
| K-market | 1,06 |
| K-service station | 1,06 |
| K-market, Siwa, Valintatalo (SLK) | 1 |
| K-Rauta, Rautia | 1,19 |
| Mako, Mara | 1,39 |
| Wholesale buildings | 1,06 |
| Onninen Express, Megaexpress | 1,06 |
| Office and warehouse buildings | 1 |
| Office buildings | 1 |
| Commercial centers | 1 |
| Others | 1 |
| VV-autotalot | 1 |

From the perspective of energy consumption, the most important categories of properties include K-citymarkets, K-supermarkets and large wholesale and storage buildings. For these groups in particular, maximum comprehensiveness has been aimed for in the tracking of energy consumption.

The second principle of consumption tracking has been to include properties from all real estate categories. Even though the smallest real estate categories and properties in terms of size category do not play a significant role in total consumption figures, data on their level of consumption is still required in order to calculate the total consumption of Kesko's real estate stock.

The extent and development of the stock of real estate is presented in Table 2. The stock of real estate managed by Kesko has decreased slightly (-0.7%) from 2017. This change in the stock of real estate is due primarily to divestments in the real estate stocks of hardware retail stores and offices and warehouses.

Table 2. Development of Kesko's stock of real estate, 2016 – 2018.

| Property type | 2016 | 2017 | 2018 |
|-----------------------------------|------------------|------------------|------------------|
| | Gross area | Gross area | Gross area |
| K-citymarket | 1 135 057 | 1 115 946 | 1 116 093 |
| K-supermarket | 549 752 | 583 271 | 596 707 |
| K-market | 227 222 | 230 843 | 227 598 |
| K-service station | 49 603 | 60 158 | 52 317 |
| K-market, Siwa, Valintatalo (SLK) | 309 945 | 260 483 | 236 436 |
| K-Rauta, Rautia | 422 834 | 415 702 | 408 363 |
| Mako, Mara | 23 647 | 19 912 | 17 265 |
| Wholesale buildings | 47 197 | 49 420 | 50 938 |
| Onninen Express, Megaexpress | 113 677 | 120 083 | 126 747 |
| Office and warehouse buildings | 214 136 | 216 379 | 211 937 |
| Warehouse buildings | 86 356 | 89 512 | 82 577 |
| Office buildings | 29 077 | 31 657 | 28 570 |
| Industrial buildings | 47 724 | 0 | 0 |
| Commercial center * | 364 873 | 448 744 | 453 665 |
| VV-autotalot | 73 001 | 82 896 | 85 296 |
| Others | 22 999 | 20 769 | 23 764 |
| Sotka, Asko | 185 299 | 0 | 0 |
| TOTAL | 3 902 399 | 3 745 775 | 3 718 273 |
| CHANGE | | -4,0 % | -0,7 % |

* The group includes commercial centers and various retail stores

3. Consumption data measurement and calculation methods

3.1. Consumption tracking methods

The properties' consumption tracking is centralised in the EnerKey reporting service. For consumption reporting, consumption data are collected to the service's metering database, either by reading the meters remotely or by receiving consumption measurement data from building automation systems or energy companies via data transfer. Depending on the originating system, the frequency of data collection varies from daily to weekly meter readings. Data collected in the service are available to users at any time using a device equipped with Internet access and a browser.

The largest properties have the district heating and water consumption measurements linked to either separate remote access measurement systems or property automation systems. The same systems can be utilised, when needed, to measure own production or to take sub-measurements.

Sub-measurements are crucial in a major grocery and daily consumer goods company, as they enable the tracking of the consumption of different applications. Sub-measurements also help in the identification and location of any disruptions or failures that affect energy consumption. Refrigeration devices, for example,

account for a significant proportion of total electricity consumption in grocery stores. Figures 1 and 2 present the typical breakdown of electricity consumption in the most important grocery store real estate categories.

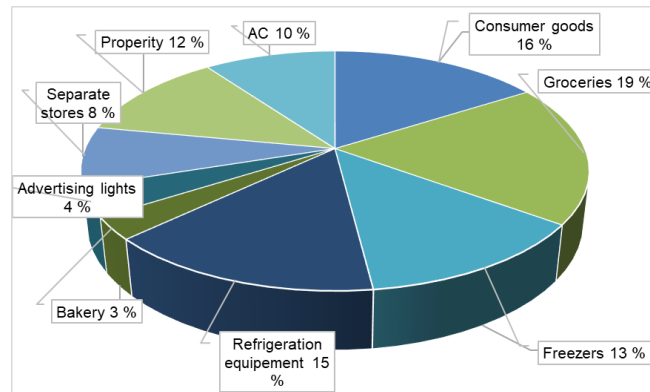


Figure 1. Distribution of electricity consumption in a K-citymarket.

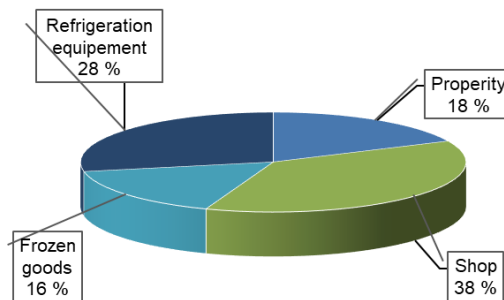


Figure 2. Distribution of electricity consumption in a K-supermarket.

In addition to remotely-read meters, the properties also include manually monitored measuring devices. Real estate management companies are responsible for collecting and recording readings from manually monitored properties and meters. As in the previous year, the recording of meter readings continued without issues in 2018.

The normalisation of heating energy aids in the tracking of energy consumption, as normalised consumption is comparable regardless of monthly and yearly fluctuations in temperature. The procedure for normalising heat consumption is to presume a fixed monthly amount of energy required by the property for producing domestic hot water. During the heating period, the proportion of consumption that exceeds this limit value is assumed to be used for heating and adjusted by the degree day. In September 2018, the limit values were updated to match the most recent consumption data, and we have used the new values in calculating normalised consumption since October.

3.2. Tracking coverage

The coverage of consumption tracking has been evaluated by comparing the gross areas of tracked properties with the total gross area of the stock of buildings managed by Kesko. There are two levels of tracking:

- The consumption of electricity, heating energy and water is monitored in properties under multi-energy surveillance.
- In properties under electricity surveillance, only electricity consumption is tracked.

Table 3 presents the coverage of consumption tracking by real estate category. The coverage percentages of tracking have been calculated by comparing the gross areas of tracked properties with the total gross area of the real estate category in question.

The coverage of multi-energy tracking has continued to increase by 1% from 2017 (77% -> 78%).

Table 3. Consumption tracking coverage.

| Property type | Multi-utility monitoring | | | Electricity monitoring | | | Total |
|--|--------------------------|------------------|-------------|------------------------|----------------|-------------|-------------|
| | Number | Gross-m2 | Scope | Number | Gross-m2 | Scope | Scope |
| K-citymarket | 73 | 1 066 277 | 96 % | 3 | 37 561 | 3 % | 99 % |
| K-supermarket | 145 | 404 534 | 68 % | 59 | 141 790 | 24 % | 92 % |
| K-market | 104 | 104 736 | 46 % | 131 | 100 203 | 44 % | 90 % |
| K-Service station | 64 | 45 238 | 86 % | 5 | 6 643 | 13 % | 99 % |
| K-market, Siwa, Valintatalo (SLK) | 184 | 113 081 | 48 % | 221 | 101 036 | 43 % | 91 % |
| K-Rauta, Rautia | 43 | 393 513 | 96 % | 1 | 9 089 | 2 % | 99 % |
| Mako, Mara | 1 | 8 945 | 52 % | 2 | 6 024 | 35 % | 87 % |
| Wholesale buildings | 12 | 47 059 | 92 % | 0 | - | 0 % | 92 % |
| Onninen Express, Megaexpress | 28 | 72 338 | 57 % | 5 | 8 733 | 7 % | 64 % |
| Office and warehouse buildings | 6 | 204 700 | 97 % | 0 | - | 0 % | 97 % |
| Warehouse buildings | 4 | 56 469 | 68 % | 1 | 4 500 | 5 % | 74 % |
| Office buildings | 3 | 7 308 | 26 % | 0 | - | 0 % | 26 % |
| Other retail stores | 27 | 328 620 | 72 % | 6 | 45 918 | 10 % | 83 % |
| W-autotalot | 5 | 60 691 | 71 % | 6 | 22 298 | 26 % | 97 % |
| Others | 0 | - | 0 % | 4 | 3 617 | 15 % | 15 % |
| | 699 | 2 913 507 | 78 % | 444 | 487 412 | 13 % | 91 % |

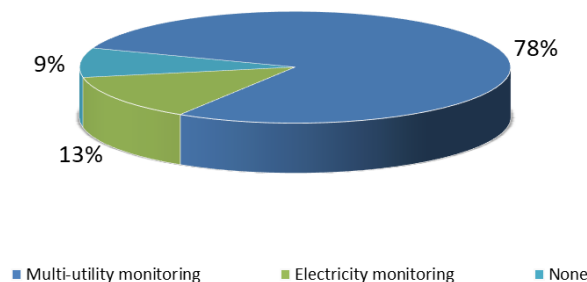


Figure 3. Tracking coverage.

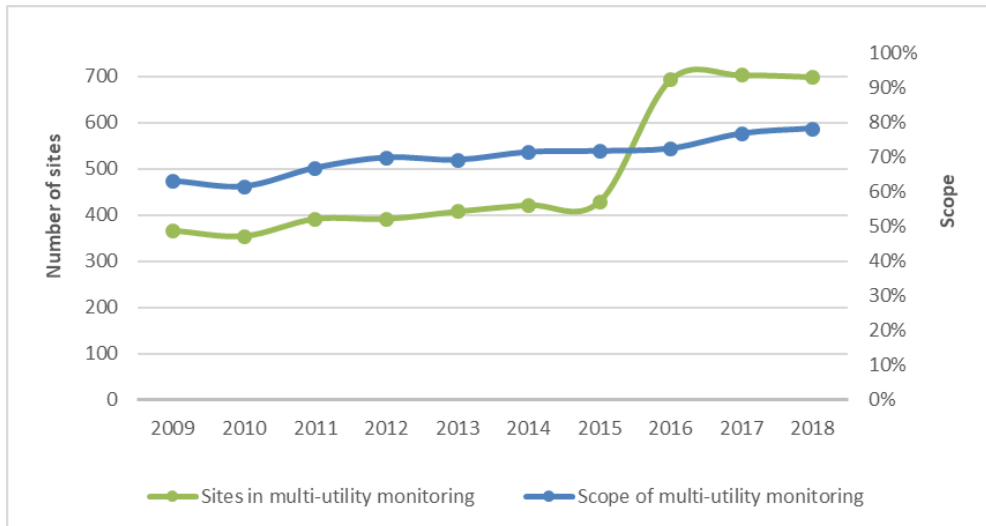


Figure 4. Development of tracking coverage, 2008 – 2018.

3.3. Overall consumption calculation method and the comparability of data

Overall consumption has been calculated by expanding the overall consumption of each real estate category by the specific consumption figures of tracked properties. In other words, we calculated specific consumption figures for tracked properties by real estate category (kWh/gr.m2 for electricity and municipal heating and l/gr.m2 for water). The resulting specific consumption figures are assumed to correspond to the average level of consumption in the real estate category, and this is multiplied with the gross area of the real estate category to obtain the overall consumption for the category in question. The specific consumption figures used as the basis for the calculations are presented in Sections 4–6 by form of energy.

The calculations for individual energy types do not include properties where more than 2% of monthly consumption data for 2018 was incomplete as of 19 January 2018.

4. Development of electricity consumption by real estate category, 2016 - 2018

The overall electricity consumption of Kesko's stock of buildings has been calculated on the basis of the tracked properties. Table 4 presents the specific consumption for each real estate category, and Table 5 presents the consumption expanded for the entire real estate mass. The properties for which the gross area and consumption were known have been included in the calculation of specific consumption.

In 2018, the overall electricity consumption calculated for the entire stock of real estate was 781 GWh, whereas the figure for 2017 was 800 GWh. Total calculated electricity consumption in 2018 decreased by -2.4% from 2017.

Specific consumptions of comparable facilities decreased in all major real estate categories with the exception of K-markets and office and warehouse properties.

Table 4. Electricity consumption of properties for which the gross area required for the calculation of specific consumption was known and consumption data was in order. The consumption of the entire stock of real estate presented in the table below has been calculated on the basis of the data contained in this table.

| Facility type | Area [br-m ²] | | | Consumption, [kWh] | | | [kWh/br-m ²] | | | Change of specific consumption | |
|-------------------------------------|---------------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------------|-------|-------|--------------------------------|-----------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016-2017 | 2017-2018 |
| K-citymarket | 1 123 196 | 1 088 566 | 1 085 907 | 226 144 789 | 212 478 449 | 210 057 354 | 201,3 | 195,2 | 193,4 | -3,1 % | -0,9 % |
| K-supermarket | 407 607 | 411 554 | 489 434 | 131 725 769 | 126 334 463 | 147 666 936 | 323,2 | 307,0 | 301,7 | -5,0 % | -1,7 % |
| K-market | 165 700 | 174 717 | 181 477 | 69 640 898 | 69 129 523 | 74 042 379 | 420,3 | 395,7 | 408,0 | -5,9 % | 3,1 % |
| K-service station | 25 637 | 43 741 | 49 949 | 15 547 518 | 21 000 199 | 25 247 999 | 606,5 | 480,1 | 505,5 | -20,8 % | 5,3 % |
| K-market, Siwa, Valintatalo (SLK) * | 271 056 | 195 716 | 189 724 | 83 569 524 | 92 902 387 | 88 668 843 | 308,3 | 474,7 | 467,4 | | -1,5 % |
| K-Rauta, Rautia | 397 477 | 388 498 | 390 186 | 29 009 077 | 27 353 823 | 26 836 451 | 73,0 | 70,4 | 68,8 | -3,5 % | -2,3 % |
| Mako, Mara | 22 040 | 6 853 | 8 945 | 1 636 461 | 421 340 | 393 466 | 74,3 | 61,5 | 44,0 | -17,2 % | -28,5 % |
| Wholesale buildings | 40 373 | 38 771 | 41 522 | 10 778 621 | 9 997 663 | 10 390 181 | 267,0 | 257,9 | 250,2 | -3,4 % | -3,0 % |
| Onninen Express, Megaexpress ** | 49 929 | 57 682 | 76 204 | 1 780 739 | 3 595 453 | 4 553 581 | 35,7 | 62,3 | 59,8 | | -4,1 % |
| Office and warehouse buildings | 252 639 | 250 025 | 265 669 | 43 562 690 | 41 091 227 | 44 581 677 | 172,4 | 164,3 | 167,8 | -4,7 % | 2,1 % |
| Office buildings | 11 764 | 12 395 | 6 811 | 2 921 916 | 1 875 311 | 1 162 633 | 248,4 | 151,3 | 170,7 | -39,1 % | 12,8 % |
| Commercial centers | 235 349 | 348 017 | 300 968 | 18 017 672 | 28 964 582 | 25 501 429 | 76,6 | 83,2 | 84,7 | 8,7 % | 1,8 % |
| Others | 2 679 | 953 | 6 560 | 583 174 | 224 037 | 547 907 | 217,7 | 235,1 | 83,5 | | -64,5 % |
| VV-autotalot | 60 691 | 60 691 | 70 679 | 8 356 447 | 8 181 917 | 9 177 553 | 137,7 | 134,8 | 129,8 | -2,1 % | -3,7 % |
| Kodin Ykkönen, Sotka, Asko*** | 87 353 | | | 5 135 290 | | | 58,8 | | | | |
| TOTAL | 3 153 489 | 3 078 178 | 3 164 033 | 648 410 585 | 643 550 373 | 668 828 387 | 206 | 209 | 211 | 1,7 % | 1,1 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

Table 5. Calculated energy consumption of the entire stock of real estate.

| Facility type | Specific electricity consumption based on consumption monitoring [kWh/gross-m2] | | | Gross area of sites in consumption monitoring [gross-m2] | | | Total area of property type [gross-m2] | | | Calculatory total consumption [MWh] | | | | |
|-------------------------------------|---|------|------|--|------------------|------------------|--|------------------|------------------|-------------------------------------|----------------|--------------|----------------|---------------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | Change | 2018 | Change |
| K-citymarket | 201 | 195 | 193 | 1 123 196 | 1 088 566 | 1 085 907 | 1 135 057 | 1 115 946 | 1 116 093 | 228 533 | 217 823 | -4,7 % | 215 897 | -0,9 % |
| K-supermarket | 323 | 307 | 302 | 407 607 | 411 554 | 489 434 | 549 752 | 583 271 | 596 707 | 177 663 | 179 046 | 0,8 % | 180 032 | 0,6 % |
| K-market | 420 | 396 | 408 | 165 700 | 174 717 | 181 477 | 227 222 | 230 843 | 227 598 | 95 497 | 91 337 | -4,4 % | 92 860 | 1,7 % |
| K-service station | 606 | 480 | 505 | 25 637 | 43 741 | 49 949 | 49 603 | 60 158 | 52 317 | 30 082 | 28 882 | -4,0 % | 26 445 | -8,4 % |
| K-market, Siwa, Valintatalo (SLK) * | 308 | 475 | 467 | 271 056 | 195 716 | 189 724 | 309 945 | 260 483 | 236 436 | 95 560 | 123 646 | | 110 500 | -10,6 % |
| K-Rauta, Rautia | 73 | 70 | 69 | 397 477 | 388 498 | 390 186 | 422 834 | 415 702 | 408 363 | 30 860 | 29 269 | -5,2 % | 28 087 | -4,0 % |
| Mako, Mara | 74 | 61 | 44 | 22 040 | 6 853 | 8 945 | 23 647 | 19 912 | 17 265 | 1 756 | 1 224 | -30,3 % | 759 | -38,0 % |
| Wholesale buildings | 267 | 258 | 250 | 40 373 | 38 771 | 41 522 | 47 197 | 49 420 | 50 938 | 12 601 | 12 744 | 1,1 % | 12 746 | 0,0 % |
| Onninen Express, Megaexpress ** | 36 | 62 | 60 | 49 929 | 57 682 | 76 204 | 113 677 | 120 083 | 126 747 | 4 054 | 7 485 | | 7 574 | 1,2 % |
| Office and warehouse buildings | 172 | 164 | 168 | 252 639 | 250 025 | 265 669 | 300 492 | 305 891 | 294 514 | 51 814 | 50 273 | -3,0 % | 49 422 | -1,7 % |
| Office buildings | 248 | 151 | 171 | 11 764 | 12 395 | 6 811 | 29 077 | 31 657 | 28 570 | 7 222 | 4 790 | -33,7 % | 4 877 | 1,8 % |
| Commercial centers | 77 | 83 | 85 | 235 349 | 348 017 | 300 968 | 364 873 | 448 744 | 453 665 | 27 934 | 37 348 | 33,7 % | 38 440 | 2,9 % |
| Others | 218 | 235 | 84 | 2 679 | 953 | 6 560 | 22 999 | 20 769 | 23 764 | 5 014 | 4 883 | -2,6 % | 1 985 | -59,3 % |
| VV-autotalot | 138 | 135 | 130 | 60 691 | 60 691 | 70 679 | 73 001 | 82 896 | 85 296 | 10 051 | 11 175 | 11,2 % | 11 076 | -0,9 % |
| Kodin Ykkönen, Sotka, Asko*** | 59 | | | 87 353 | | | 185 299 | | | 10 893 | | | - | |
| TOTAL | | | | 3 153 489 | 3 078 178 | 3 164 033 | 3 854 675 | 3 745 775 | 3 718 273 | 789 533 | 799 924 | 1,3 % | 780 700 | -2,4 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

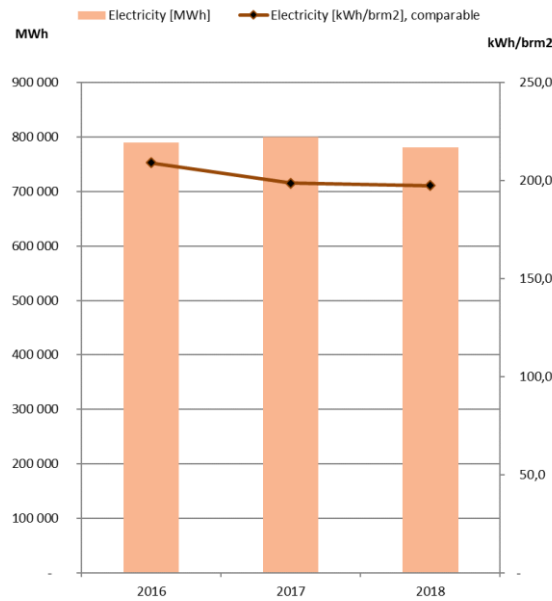


Figure 5. Development of the calculated overall consumption and specific consumption of electricity, 2016 – 2018.

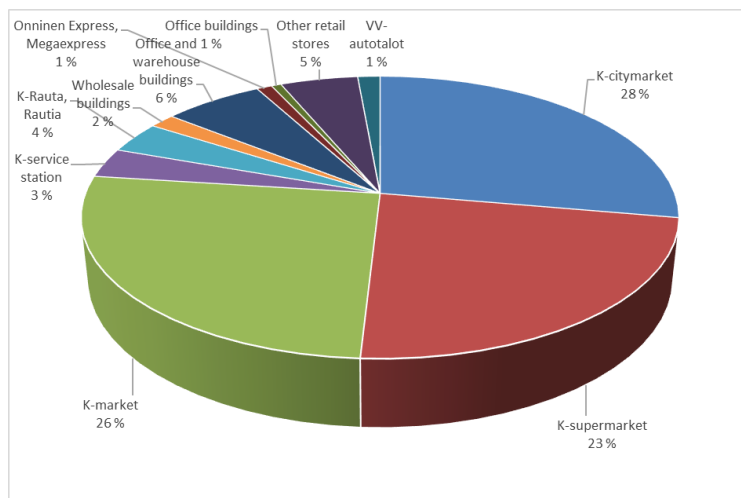


Figure 6. Distribution of overall electricity consumption by major real estate category

5. Development of heat consumption by real estate category, 2016 – 2018

As for electricity, the specific consumption of heat has been calculated by real estate category for all properties for which the calculation was possible (Table 6). The consumption for the entire mass of real estate and for the comparable mass of real estate was then calculated on the basis of these specific consumption figures (Table 7). The consumption figures presented in these tables represent measured, non-normalised consumption. Due to the limited database sample size, an estimate of specific consumption is used in the calculation for the category “other properties”.

Table 6. Heat consumption of properties, for which the gross area required for the calculation of specific consumption was known and comprehensive consumption data was available. The consumption of the entire stock of real estate presented in the table below has been calculated on the basis of the data contained in this table.

| Facility type | Area [br-m ²] | | | Consumption, [kWh] | | | [kWh/br-m ²] | | | Change of specific consumption | |
|-------------------------------------|---------------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------------|-------|-------|--------------------------------|-----------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016-2017 | 2017-2018 |
| K-citymarket | 998 813 | 975 211 | 984 614 | 71 246 129 | 66 322 673 | 71 346 244 | 71,3 | 68,0 | 72,5 | -4,7 % | 6,5 % |
| K-supermarket | 270 147 | 258 971 | 277 530 | 29 290 910 | 27 922 741 | 31 607 797 | 108,4 | 107,8 | 113,9 | -0,6 % | 5,6 % |
| K-market | 59 061 | 60 464 | 65 353 | 9 117 651 | 9 285 591 | 10 873 283 | 154,4 | 153,6 | 166,4 | -0,5 % | 8,3 % |
| K-service station | 11 144 | 10 704 | 20 727 | 3 887 916 | 3 342 886 | 7 118 234 | 348,9 | 312,3 | 343,4 | -10,5 % | 10,0 % |
| K-market, Siwa, Valintatalo (SLK) * | 39 696 | 32 348 | 38 506 | 3 645 657 | 6 308 807 | 7 295 599 | - | 195,0 | 189,5 | - | -2,9 % |
| K-Rauta, Rautia | 349 792 | 359 595 | 348 587 | 12 309 710 | 11 627 227 | 11 811 781 | 35,2 | 32,3 | 33,9 | -8,1 % | 4,8 % |
| Mako, Mara | 12 680 | 8 945 | 8 945 | 1 252 000 | 886 330 | 590 173 | 98,7 | 99,1 | 66,0 | 0,4 % | -33,4 % |
| Wholesale buildings | 30 046 | 34 084 | 36 835 | 2 965 000 | 2 918 727 | 3 143 962 | 98,7 | 85,6 | 85,4 | -13,2 % | -0,3 % |
| Onninen Express, Megaexpress ** | 32 909 | 42 132 | 47 085 | 1 338 000 | 3 949 880 | 3 235 295 | - | 93,8 | 68,7 | - | -26,7 % |
| Office and warehouse buildings | 233 076 | 188 361 | 189 063 | 15 064 000 | 13 001 916 | 14 102 102 | 64,6 | 69,0 | 74,6 | 6,8 % | 8,1 % |
| Office buildings | 6 671 | 6 671 | 6 671 | 399 681 | 316 204 | 297 512 | 59,9 | 47,4 | 44,6 | -20,9 % | -5,9 % |
| Commercial centers | 230 807 | 229 489 | 233 005 | 8 676 172 | 7 614 738 | 8 451 522 | 37,6 | 33,2 | 36,3 | -11,7 % | 9,3 % |
| Others | - | - | - | - | - | - | - | - | - | - | - |
| VV-autotalot | 55 594 | 60 691 | 60 691 | 6 729 000 | 7 509 098 | 7 497 076 | 121,0 | 123,7 | 123,5 | 2,2 % | -0,2 % |
| Kodin Ykkönen, Sotka, Asko *** | 30 841 | - | - | 1 905 000 | - | - | 61,8 | - | - | - | - |
| TOTAL | 2 361 276 | 2 267 665 | 2 317 611 | 167 826 826 | 161 006 818 | 177 370 579 | 71 | 71 | 77 | -0,1 % | 7,8 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

The average specific consumption rate measured for the comparable mass of real estate increased by 7.8% from 2017. In the major real estate categories, the changes in specific consumption varied between 5% and 10%. The calculated overall consumption of Kesko's entire stock of real estate increased by 1.7% (Table 7) and normalised total consumption decreased by -1.0% (Table 8).

Table 7. Calculated heat consumption and specific consumption of Kesko's entire stock of real estate.

| Facility type | Specific heat consumption based on consumption monitoring | | | Gross area of sites in consumption monitoring [gross-m2] | | | Total area of property type [gross-m2] | | | Calculatory total consumption [MWh] | | | | |
|-------------------------------------|---|------|------|--|------------------|------------------|--|------------------|------------------|-------------------------------------|----------------|--------------|----------------|--------------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | Change | 2018 | Change |
| K-citymarket | 71 | 68 | 72 | 998 813 | 975 211 | 984 614 | 1 135 057 | 1 115 946 | 1 116 093 | 80 964 | 75 894 | -6,3 % | 80 873 | 6,6 % |
| K-supermarket | 108 | 108 | 114 | 270 147 | 258 971 | 277 530 | 549 752 | 583 271 | 596 707 | 59 607 | 62 889 | 5,5 % | 67 959 | 8,1 % |
| K-market | 154 | 154 | 166 | 59 061 | 60 464 | 65 353 | 227 222 | 230 843 | 227 598 | 35 078 | 35 451 | 1,1 % | 37 867 | 6,8 % |
| K-service station | 349 | 312 | 343 | 11 144 | 10 704 | 20 727 | 49 603 | 60 158 | 52 317 | 17 306 | 18 787 | 8,6 % | 17 968 | -4,4 % |
| K-market, Siwa, Valintatalo (SLK) * | 92 | 195 | 189 | 39 696 | 32 348 | 38 506 | 309 945 | 260 483 | 236 436 | 28 515 | 50 802 | 78,2 % | 44 797 | -11,8 % |
| K-Rauta, Rautia | 35 | 32 | 34 | 349 792 | 359 595 | 348 587 | 422 834 | 415 702 | 408 363 | 14 880 | 13 441 | -9,7 % | 13 837 | 2,9 % |
| Mako, Mara | 99 | 99 | 66 | 12 680 | 8 945 | 8 945 | 23 647 | 19 912 | 17 265 | 2 335 | 1 973 | -15,5 % | 1 139 | -42,3 % |
| Wholesale buildings | 99 | 86 | 85 | 30 046 | 34 084 | 36 835 | 47 197 | 49 420 | 50 938 | 4 657 | 4 232 | -9,1 % | 4 348 | 2,7 % |
| Onninen Express, Megaexpress ** | 41 | 94 | 69 | - | 42 132 | 47 085 | 113 677 | 120 083 | 126 747 | 4 661 | 11 258 | 141,5 % | 8 709 | -22,6 % |
| Office and warehouse buildings | 65 | 69 | 75 | 233 076 | 188 361 | 189 063 | 300 492 | 305 891 | 294 514 | 19 421 | 21 115 | 8,7 % | 21 968 | 4,0 % |
| Office buildings | 60 | 47 | 45 | 6 671 | 6 671 | 6 671 | 29 077 | 31 657 | 28 570 | 1 742 | 1 501 | -13,9 % | 1 274 | -15,1 % |
| Commercial centers | 38 | 33 | 36 | 230 807 | 229 489 | 233 005 | 364 873 | 448 744 | 453 665 | 13 716 | 14 890 | 8,6 % | 16 455 | 10,5 % |
| Others | 47 | 47 | 47 | - | - | - | 22 999 | 20 769 | 23 764 | 1 075 | 971 | -9,7 % | 1 111 | 14,4 % |
| VV-autotalot | 121 | 124 | 124 | 55 594 | 60 691 | 60 691 | 73 001 | 82 896 | 85 296 | 8 836 | 10 256 | 16,1 % | 10 536 | 2,7 % |
| Kodin Ykkönen, Sotka, Asko*** | 62 | | | 30 841 | | | 185 299 | | | 11 446 | | | | |
| TOTAL | | | | 2 361 276 | 2 267 665 | 2 317 611 | 3 854 675 | 3 745 775 | 3 718 273 | 304 240 | 323 461 | 6,3 % | 328 842 | 1,7 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

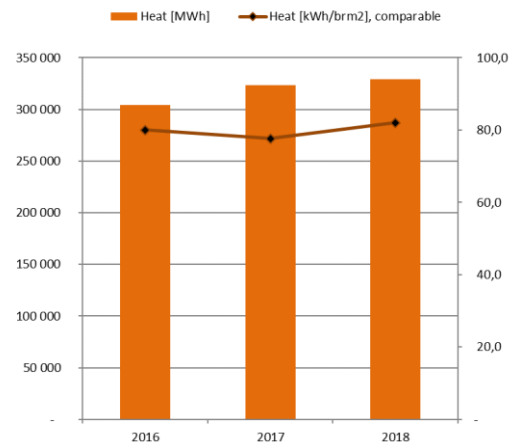


Figure 7. Development of the calculated overall consumption and specific consumption of heat, 2016 – 2018.

Figure 8. Distribution of overall heat consumption by major real estate category.

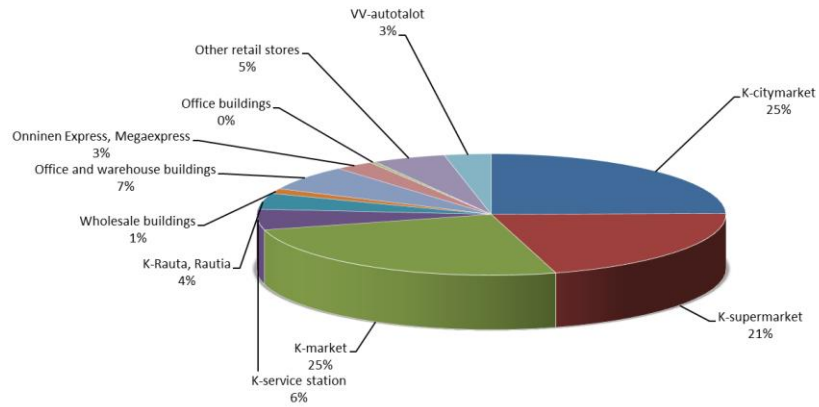


Table 8. Normalised heat consumption and specific consumption of Kesko's entire stock of real estate.

| Facility type | Temp. adj. specific heat consumption based on consumption monitoring | | | Gross area of sites in consumption monitoring [gross-m2] | | | Total area of property type [gross-m2] | | | Calculatory temp. adj. total consumption [MWh] | | | | |
|-------------------------------------|--|------|------|--|------------------|------------------|--|------------------|------------------|--|----------------|--------------|----------------|---------------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | Change | 2018 | Change |
| K-citymarket | 75 | 73 | 75 | 998 813 | 975 211 | 984 614 | 1 135 057 | 1 115 946 | 1 116 093 | 85 656 | 81 172 | -5,2 % | 83 735 | 3,2 % |
| K-supermarket | 115 | 114 | 118 | 270 147 | 258 971 | 277 530 | 549 752 | 583 271 | 596 707 | 63 244 | 66 782 | 5,6 % | 70 251 | 5,2 % |
| K-market | 166 | 163 | 173 | 59 061 | 60 464 | 65 353 | 227 222 | 230 843 | 227 598 | 37 799 | 37 642 | -0,4 % | 39 444 | 4,8 % |
| K-service station | 375 | 331 | 356 | 11 144 | 10 704 | 20 727 | 49 603 | 60 158 | 52 317 | 18 613 | 19 942 | 7,1 % | 18 607 | -6,7 % |
| K-market, Siwa, Valintatalo (SLK) * | 110 | 200 | 189 | - | 32 348 | 38 506 | 309 945 | 260 483 | 236 436 | 34 094 | 52 110 | 52,8 % | 44 797 | -14,0 % |
| K-Rauta, Rautia | 37 | 35 | 36 | 349 792 | 359 595 | 348 587 | 422 834 | 415 702 | 408 363 | 15 694 | 14 472 | -7,8 % | 14 775 | 2,1 % |
| Mako, Mara | 105 | 106 | 69 | 12 680 | 8 945 | 8 945 | 23 647 | 19 912 | 17 265 | 2 477 | 2 115 | -14,6 % | 1 185 | -44,0 % |
| Wholesale buildings | 112 | 92 | 89 | 30 046 | 34 084 | 36 835 | 47 197 | 49 420 | 50 938 | 5 272 | 4 528 | -14,1 % | 4 514 | -0,3 % |
| Onninen Express, Megaexpress ** | 43 | 100 | 72 | - | 42 132 | 47 085 | 113 677 | 120 083 | 126 747 | 4 888 | 11 969 | 144,9 % | 9 116 | -23,8 % |
| Office and warehouse buildings | 67 | 74 | 77 | 233 076 | 188 361 | 189 063 | 300 492 | 305 891 | 294 514 | 20 214 | 22 672 | 12,2 % | 22 665 | 0,0 % |
| Office buildings | 60 | 50 | 47 | 6 671 | 6 671 | 6 671 | 29 077 | 31 657 | 28 570 | 1 750 | 1 591 | -9,1 % | 1 329 | -16,5 % |
| Commercial centers | 39 | 35 | 38 | 230 807 | 229 489 | 233 005 | 364 873 | 448 744 | 453 665 | 14 382 | 15 911 | 10,6 % | 17 047 | 7,1 % |
| Others | 46 | 46 | 46 | - | - | - | 22 999 | 20 769 | 23 764 | 1 058 | 955 | -9,7 % | 1 093 | 14,4 % |
| VV-autotalot | 124 | 135 | 128 | 55 594 | 60 691 | 60 691 | 73 001 | 82 896 | 85 296 | 9 046 | 11 185 | 23,6 % | 10 948 | -2,1 % |
| Kodin Ykkönen, Sotka, Asko*** | 64 | - | - | 30 841 | - | - | 185 299 | - | - | 11 830 | - | - | - | - |
| TOTAL | | | | 2 288 671 | 2 267 665 | 2 317 611 | 3 854 675 | 3 745 775 | 3 718 273 | 326 018 | 343 046 | 5,2 % | 339 507 | -1,0 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

6. Development of water consumption by real estate category, 2016 – 2018

The consumption and specific consumption of water have been examined according to the model described in the previous sections. The following table presents the specific consumption figures of properties, for which comparable data required for the calculation of specific consumption figures existed.

Table 9. Water consumption of properties, for which the gross area required for the calculation of specific consumption was known. The consumption of the entire stock of real estate presented in the table below has been calculated on the basis of the data contained in this table.

| Facility type | Area [br-m ²] | | | Consumption, [m3] | | | [l/br-m ²] | | | Change of specific consumption | |
|-------------------------------------|---------------------------|------------------|------------------|-------------------|----------------|----------------|------------------------|--------|--------|--------------------------------|-----------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016-2017 | 2017-2018 |
| K-citymarket | 947 778 | 991 566 | 942 312 | 195 134 | 203 025 | 225 917 | 205,9 | 204,8 | 239,7 | -0,6 % | 17,1 % |
| K-supermarket | 281 735 | 269 791 | 308 367 | 81 506 | 77 533 | 98 173 | 289,3 | 287,4 | 318,4 | -0,7 % | 10,8 % |
| K-market | 87 826 | 82 681 | 81 544 | 18 642 | 18 130 | 19 770 | 212,3 | 219,3 | 242,4 | 3,3 % | 10,6 % |
| K-service station | 19 648 | 19 019 | 33 532 | 112 197 | 91 443 | 188 720 | 5710,3 | 4808,0 | 5628,2 | -15,8 % | 17,1 % |
| K-market, Siwa, Valintatalo (SLK) * | | 1 453 | 60 805 | | 781 | 12 959 | - | 537,4 | 213,1 | | -60,3 % |
| K-Rauta, Rautia | 370 849 | 384 421 | 343 271 | 19 545 | 20 768 | 19 603 | 52,7 | 54,0 | 57,1 | 2,5 % | 5,7 % |
| Mako, Mara | 12 680 | 8 945 | 8 945 | 2 043 | 1 086 | 488 | 161,1 | 121,4 | 54,6 | -24,7 % | -55,0 % |
| Wholesale buildings | 38 869 | 37 267 | 36 204 | 4 313 | 4 108 | 4 364 | 111,0 | 110,2 | 120,5 | -0,7 % | 9,3 % |
| Onninen Express, Megaexpress ** | 34 716 | 43 939 | 39 173 | 1 270 | 3 210 | 2 498 | - | 73,0 | 63,8 | | -12,7 % |
| Office and warehouse buildings | 224 165 | 242 554 | 186 381 | 22 305 | 26 520 | 28 746 | 99,5 | 109,3 | 154,2 | 9,9 % | 41,1 % |
| Office buildings | 6 671 | 1 300 | 1 300 | 1 286 | 177 | 176 | 192,8 | 136,0 | 135,4 | -29,4 % | -0,4 % |
| Commercial centers | 230 208 | 230 384 | 234 522 | 25 796 | 28 168 | 31 127 | 112,1 | 122,3 | 132,7 | 9,1 % | 8,6 % |
| Others | | | | | | | 100,0 | 100,0 | 100,0 | 0,0 % | 0,0 % |
| VV-autotalot | 46 742 | 46 742 | 46 742 | 23 624 | 24 308 | 26 014 | 505,4 | 520,0 | 556,5 | 2,9 % | 7,0 % |
| Kodin Ykkönen, Sotka, Asko *** | 28 652 | | | 692 | | | 24,2 | | | | |
| TOTAL | 2 330 537 | 2 360 062 | 2 323 098 | 508 353 | 499 256 | 658 555 | 218 | 212 | 283 | -3,0 % | 34,0 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

Specific consumptions increased in all real estate categories with significant water consumption, with comparable average specific consumption increasing by 34% in comparable real estate stock. The calculated overall consumption of Kesko's entire stock of real estate increased by 7.9% (Table 10).

Table 10. Water consumption and specific consumption figures calculated for Kesko's entire stock of real estate.

| Facility type | Specific water consumption based on consumption monitoring | | | Gross area of sites in consumption monitoring [gross-m2] | | | Total area of property type [gross-m2] | | | Calculatory total consumption [m3] | | | | |
|-------------------------------------|--|------|------|--|------------------|------------------|--|------------------|------------------|------------------------------------|----------------|--------------|------------------|--------------|
| | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | 2018 | 2016 | 2017 | Change | 2018 | Change |
| K-citymarket | 206 | 205 | 240 | 947 778 | 991 566 | 942 312 | 1 135 057 | 1 115 946 | 1 116 093 | 233 692 | 228 492 | -2,2 % | 267 580 | 17,1 % |
| K-supermarket | 289 | 287 | 318 | 281 735 | 269 791 | 308 367 | 549 752 | 583 271 | 596 707 | 159 043 | 167 622 | 5,4 % | 189 970 | 13,3 % |
| K-market | 212 | 219 | 242 | 87 826 | 82 681 | 81 544 | 227 222 | 230 843 | 227 598 | 48 231 | 50 618 | 5,0 % | 55 179 | 9,0 % |
| K-service station | 5710 | 4808 | 5628 | 19 648 | 19 019 | 33 532 | 49 603 | 60 158 | 52 317 | 283 249 | 289 238 | 2,1 % | 294 448 | 1,8 % |
| K-market, Siwa, Valintatalo (SLK) * | 167 | 250 | 213 | | 1 453 | 60 805 | 309 945 | 260 483 | 236 436 | 51 761 | 65 121 | 25,8 % | 50 389 | -22,6 % |
| K-Rauta, Rautia | 53 | 54 | 57 | 370 849 | 384 421 | 343 271 | 422 834 | 415 702 | 408 363 | 22 285 | 22 457 | 0,8 % | 23 320 | 3,8 % |
| Mako, Mara | 161 | 121 | 55 | 12 680 | 8 945 | 8 945 | 23 647 | 19 912 | 17 265 | 3 810 | 2 417 | -36,6 % | 943 | -61,0 % |
| Wholesale buildings | 111 | 110 | 121 | 38 869 | 37 267 | 36 204 | 47 197 | 49 420 | 50 938 | 5 237 | 5 448 | 4,0 % | 6 139 | 12,7 % |
| Onninen Express, Megaexpress ** | 37 | 73 | 64 | 34 716 | 43 939 | 39 173 | 113 677 | 120 083 | 126 747 | 4 206 | 8 772 | 108,5 % | 8 082 | -7,9 % |
| Office and warehouse buildings | 100 | 109 | 154 | 224 165 | 242 554 | 186 381 | 300 492 | 305 891 | 294 514 | 29 900 | 33 445 | 11,9 % | 45 424 | 35,8 % |
| Office buildings | 193 | 136 | 135 | 6 671 | 1 300 | 1 300 | 29 077 | 31 657 | 28 570 | 5 607 | 4 307 | -23,2 % | 3 870 | -10,1 % |
| Commercial centers | 112 | 122 | 133 | 230 208 | 230 384 | 234 522 | 364 873 | 448 744 | 453 665 | 40 886 | 54 866 | 34,2 % | 60 213 | 9,7 % |
| Others | 100 | 100 | 100 | | | | 22 999 | 20 769 | 23 764 | 2 300 | 2 077 | -9,7 % | 2 376 | 14,4 % |
| VV-autotalot | 505 | 520 | 557 | 46 742 | 46 742 | 46 742 | 73 001 | 82 896 | 85 296 | 36 896 | 43 110 | 16,8 % | 47 471 | 10,1 % |
| Kodin Ykkönen, Sotka, Asko*** | 24 | | | 28 652 | | | 185 299 | | | 4 475 | | | | |
| TOTAL | | | | 2 330 537 | 2 360 062 | 2 323 098 | 3 854 675 | 3 745 775 | 3 718 273 | 931 577 | 977 989 | 5,0 % | 1 055 406 | 7,9 % |

* 5-12/2016 consumptions

** 6-12/2016 consumptions

*** Business unit sold 2017

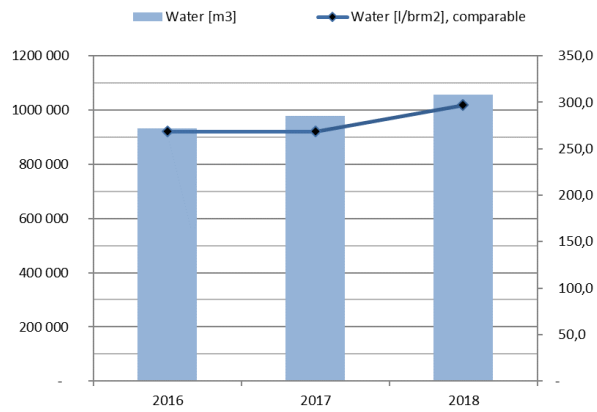


Figure 9. Development of the calculated overall consumption of water, 2016 – 2018.

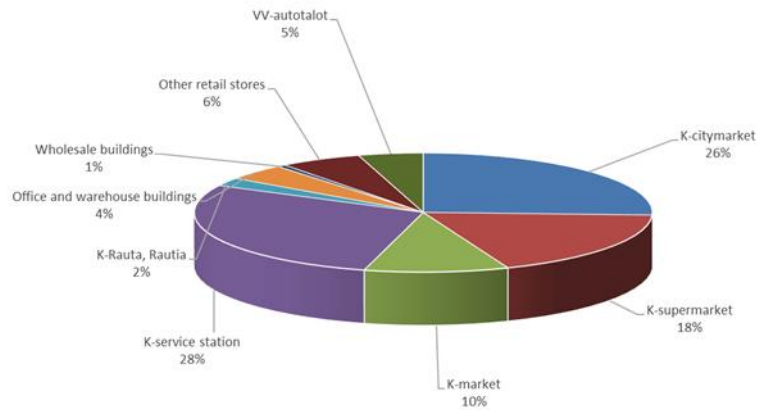


Figure 10. Distribution of overall water consumption by major real estate category.

7. Summary of consumption

The overall consumption and specific consumption figures of Kesko's stock of real estate are presented in Table 11.

Table 11. Development of the consumption and specific consumption of Kesko's stock of real estate, 2016 – 2018.

| Consumption | 2016 | 2017 | 2018 |
|------------------------------------|------------------|------------------|------------------|
| Electricity [MWh] | 789 533 | 799 924 | 780 700 |
| Heat [MWh] | 304 240 | 323 461 | 328 842 |
| Heat, temp.adj. [MWh] | 326 018 | 343 046 | 339 507 |
| Water [m3] | 931 577 | 977 989 | 1 055 406 |
| Specific consumption | | | |
| Electricity [kWh/brm2] | 204,8 | 213,6 | 210,0 |
| Heat [kWh/brm2] | 78,9 | 86,4 | 88,4 |
| Heat, temp.adj. [kWh/brm2] | 84,6 | 91,6 | 91,3 |
| Water [l/brm2] | 241,7 | 261,1 | 283,8 |
| Total area [brm2] | 3 854 675 | 3 745 775 | 3 718 273 |
| Changes in consumption | 2016-2017 | 2017-2018 | |
| Electricity | 1,3 % | -2,4 % | |
| Heat | 6,3 % | 1,7 % | |
| Heat, temp.adj. | 5,2 % | -1,0 % | |
| Water | 5,0 % | 7,9 % | |
| Changes in spec.consumption | 2016-2017 | 2017-2018 | |
| Electricity | 4,3 % | -1,7 % | |
| Heat | 9,4 % | 2,4 % | |
| Heat, temp.adj. | 8,3 % | -0,3 % | |
| Water | 8,0 % | 8,7 % | |
| Changes in total area | 2016-2017 | 2017-2018 | |
| | -2,8 % | -0,7 % | |

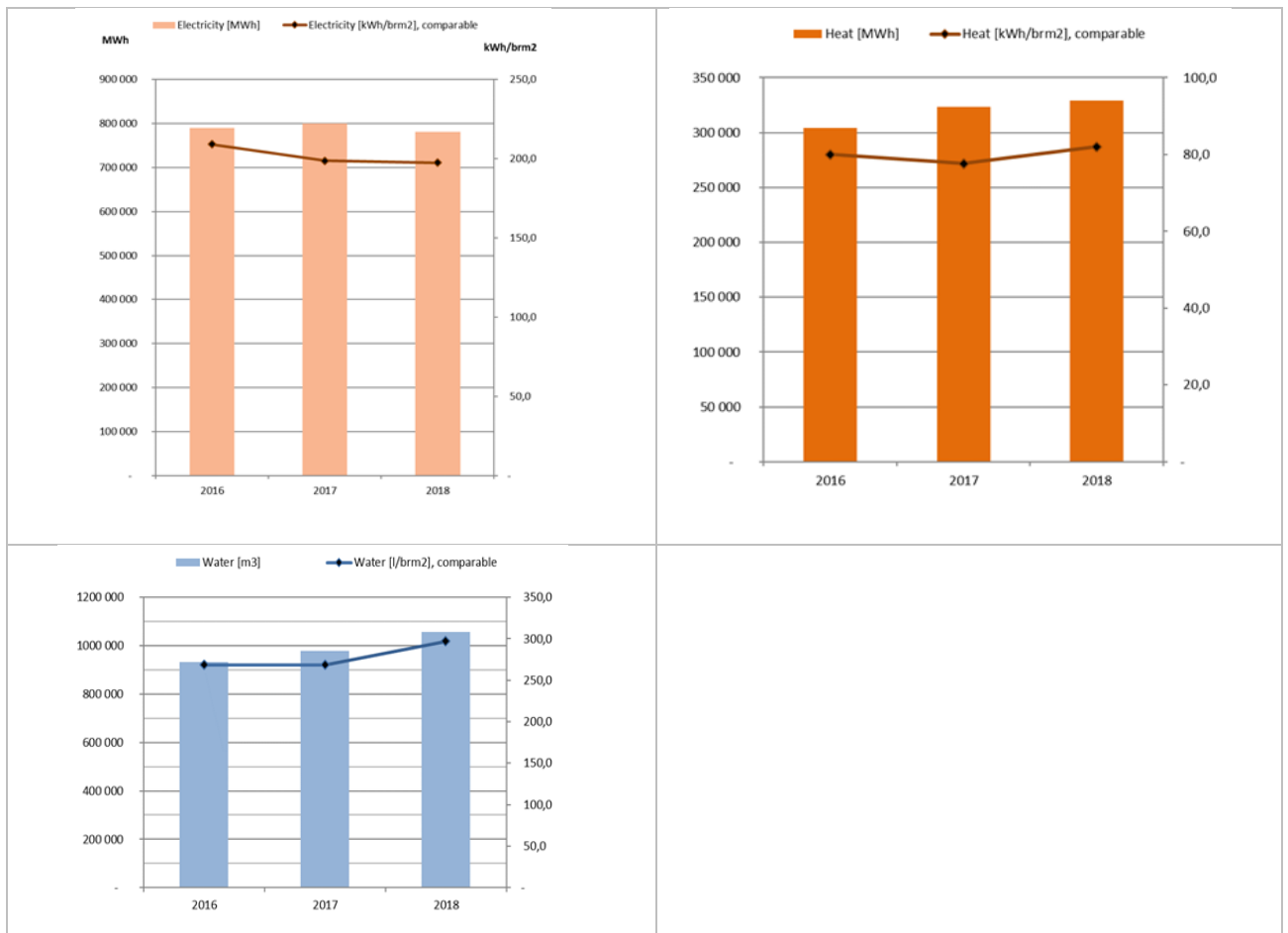


Figure 11. Kesko's overall energy and water consumption, 2016 - 2018.