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|  | Approved by the order of the Acting Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstandated Feb 26, 2016no. 40 |

**Methodology for calculating the average change in differentiated tariffs for certain types of utilities**

**Chapter 1. General provisions**

1. This Methodology for calculating the average change in differentiated tariffs for certain types of utilities (hereinafter - the Methodology) refers to a statistical methodology formed in accordance with international standards and approved in accordance with the Law of the Republic of Kazakhstan dated March 19, 2010 "On State Statistics".
2. The methodology is applied by the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan to calculate the average change in differentiated tariffs for electricity, central heating, cold and hot water supply, sewerage services for the purpose of their further use in the formation of the consumer price index (hereinafter - CPI) .
3. This Methodology determines the algorithm for calculating the average change in differentiated tariffs for certain types of utilities.
4. The methodology was developed taking into account the standards and recommendations of the Consumer Price Index Manual: Theory and Practice (2004) prepared by the International Labor Organization, the International Monetary Fund, the Organization for Economic Co-operation and Development, the Statistical Office of the European Communities, the United Nations Economic Commission for Europe and by the World Bank .
5. This Methodology uses the concepts defined in the Law of the Republic of Kazakhstan "On Natural Monopolies" (hereinafter - the Law) .

**Chapter 2 . Calculation of the average change in differentiated tariffs**

6. The initial data on the volume of consumption of services and the number of people by groups of consumers using the regulated public services of subjects of natural monopoly is information for a specific period (year) obtained by their official written request by the territorial divisions of state statistics.

The new level of differentiated tariffs for each group of consumers is confirmed by the orders of the territorial state bodies exercising leadership in the areas of natural monopolies.

7. The calculation of the average change in differentiated tariffs for all groups of the population is carried out according to the weighted average formula, based on the change in tariffs and the weight of the population group in the total volume of consumption of the service:



where:

 – weighted average change in tariffs for the service;

 – change of differentiated tariff for consumer group *j;*

 -number of consumer groups;

 – weight of consumer group *j* .

The change in the tariff for each population group is found as a quotient of dividing the level of the new tariff ( *t ot* ) by the level of the old tariff ( *t bases* ):

*i j = t otch / t bases \*100*

where:

*i j* – change in differentiated tariff for consumer group *j;*

*t* - tariffset in the reporting or base period.

Weight for each population *j* is determined on the basis of their cash costs in the total costs spent on paying for this type of service:



where:

 – weight of consumer group *j;*

 – monetary expenses of consumer group *j* for payment for the service;

 -number of consumer groups.

8. In the absence of information on the cost of paid services by each group of consumers, a statistical assessment of such expenses in monetary terms is carried out, on the basis of which the weights are determined.

The following formula is used to statistically estimate cash expenditures for each population group:



where:

– assessment of monetary expenses of consumer group *j* to pay for the service;

 - the number of people in the consumer group *j,* for which payment is made at the tariff ;

– average monthly volume of consumption per person in consumer group *j* (or consumption rate);

– tariff set for consumer group *j* .

9. Conventionally, the statistical assessment of cash costs for the type of service "cold water supply" is carried out in the following sequence.

The first stage is to determine the number of people living on personal accounts, paying utility bills for each group of consumers in accordance with differentiated tariffs established by subjects of natural monopoly in accordance with the Law.

For this type of service, consumers are divided into the following groups:

the first group is the population consuming up to the smallest volume of consumption of the service;

the second group is the population consuming between the lowest and the maximum volume of consumption of the service;

the third group is the population consuming more than the marginal volume of consumption of the service.

According to the tariff for the first group of the population, that is, for the smallest volume of consumption of the service, all groups of the population pay (the first group of the population plus the second group of the population and plus the third group of the population). According to the tariff for the second group of the population, that is, for the volume between the smallest and the maximum volume of consumption of the service, the first group of the population does not pay, but the second and third groups of the population pay. Only the third group of the population pays for the amount exceeding the limit.

An example of the redistribution of the initial number of residents is indicated in Appendix 1 to this Methodology.

The second stage is the determination of the volume of consumption by population groups depending on the average monthly volume of consumption per person for each population group.

An example of determining the volume of consumption by population groups depending on the average monthly volume of consumption per person for each population group is given in Appendix 2 to this Methodology.

In the absence of actual data on the average monthly volume of consumption per person by population groups, the calculation uses data derived on the basis of the rate of consumption of the service included in the differentiated tariff.

By type of service "cold water supply" for the first group of the population, the volume of consumption is set to 2 m 3 , for the second group - from 2 to 3.5 m 3 , for the third group - over 3.5 m 3 . Conventionally, a person consumes up to 5 m 3 per month . The average marginal consumption for each group is defined as:

1. for the first group of the population - 1 m 3 , that is, 2/2=1;
2. for the second group of the population - 0.75 m 3 , that is, (3.5-2) / 2 = 0.75;
3. for the third group of the population - 0.75 m 3 , that is, (5-3.5) / 2 = 0.75.

The third stage is the assessment of cash costs for each group of the population according to the current tariffs.

An example of the assessment of cash costs for each group of the population according to the current tariffs is given in Appendix 3 to this Methodology.

The fourth stage is to determine the weight of the cash costs of each group of the population in the total costs intended to pay for the service.

An example of determining the weight of the cash costs of each group of the population in the total costs intended to pay for the service is indicated in Appendix 4 to this Methodology.

10. To calculate the average change in differentiated tariffs, the change in the tariff for each group of the population is multiplied by its weight and then summed up for all groups of the population. The resulting amount, multiplied by 100 and rounded to one decimal place, is the average change in the level of differentiated tariffs that has developed during the period of introduction of the new tariff level.

An example of calculating the average change in differentiated tariffs is given in Appendix 5 to this Methodology.

The found weighted average change in differentiated tariffs for the "cold water" service is used as an elementary price index in the further calculation of CPI for the reporting month. Similarly, the average change in differentiated tariffs for other types of services is calculated depending on certain groups of consumers.

# Appendix 1

# to the Methodology for calculating the average change in differentiated tariffs for certain types of utilities

An example of the redistribution of the original number of residents

the numbers in the example are conditional

|  |  |  |  |
| --- | --- | --- | --- |
| Population group | Initial number of residents, based on consumption | *r* - redistributed number of residents, based on payment for consumption | Calculation formula *r* |
| First group ( N 1 ) | 12788 | 112509 | = N 1 + N 2 + N 3 |
| Second group ( N 2 ) | 16191 | 99721 | = N 2 + N 3 |
| Third group ( N 3 ) | 83530 | 83530 | = N 3 |

# appendix 2

# to the Methodology for calculating the average change in differentiated tariffs for certain types of utilities

An example of determining the volume of consumption by population groups depending on the average monthly volume of consumption per person for each population group

the numbers in the example are conditional

|  |  |  |  |
| --- | --- | --- | --- |
| Population group | *r* - redistributed number of residents | *n* - average consumption, m 3 per person | The volume of consumption for each group of the population , m 3*( r \* n )* |
| First group | 112509 | 0.9 | 101258 |
| Second group | 99721 | 0.85 | 84763 |
| Third group | 83530 | 3.4 | 284002 |

# Appendix 3

# to the Methodology for calculating the average change in differentiated tariffs for certain types of utilities

An example of estimating cash costs for each group of the population according to the current tariffs

the numbers in the example are conditional

|  |  |  |  |
| --- | --- | --- | --- |
| Population group | The volume of consumption for each group of the population , m 3*( r \* n )* | Tariff *( t ),*tenge with VAT | Cash expenses*( r \* n \* t ),* tenge |
| First group | 101258 | 31.25 | 3164313 |
| Second group | 84763 | 48.71 | 4128806 |
| Third group | 284002 | 86.84 | 24662734 |

# Appendix 4

# to the Methodology for calculating the average change in differentiated tariffs for certain types of utilities

An example of determining the weight of cash costs of each population group in the total costs intended to pay for the service

the numbers in the example are conditional

|  |  |  |  |
| --- | --- | --- | --- |
| Population group | Cash expenses*( r \* n \* t ),* tenge | Weight by population*( w )* | Calculation formula *w* |
| First group ( N 1 ) | 3164313 | 0.099022 | = N 1 / ( N 1 + N 2 + N 3 ) |
| Second group ( N 2 ) | 4128806 | 0.129203 | = N 2 / ( N 1 + N 2 + N 3 ) |
| Third group ( N 3 ) | 24662734 | 0.771775 | = N 3 / ( N 1 + N 2 + N 3 ) |

# Appendix 5

# to the Methodology for calculating the average change in differentiated tariffs for certain types of utilities

Example of calculating the average change in differentiated tariffs

the numbers in the example are conditional

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Population group | Weight by population*( w )* | old tariff( *t bases* ) | New tariff( *t otch* ) | Tariff change*( i )* | weightedtariff change*( i \* w )* |
|  | 1 | 2 | 3 | 4=3/2\*100 | 5=1\*4 |
| First group | 0.099022 | 31.25 | 35.66 | 114.1 | 11.299598 |
| Second group | 0.129203 | 48.71 | 53.12 | 109.1 \_ | 14.090050 |
| Third group | 0.771775 | 86.84 | 102.56 | 118.1 | 91.148369 |
| Total weighted average tariff change | 116.5 | 116.538018 |