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RUSSIAN BOILER MARKET 2019

(DEMO-VERSION)*

* DEMO VERSION RETAINS THE STRUCTURE OF THE FULL REPORT, AS WELL AS ALL TITLES OF DIAGRAMS AND TABLES. FACTORIES, BRANDS AND SUPPLIERS MENTIONED IN THE REPORT ALSO RESERVED. ALL SORTED ALPHABETICALLY, TEXT SUBSTITUTE A, B, C, D; NUMBERS – 0,1. THE METHODOLOGY OF RESEARCH IS AVAILABLE IN THE FIRST CHAPTER.

Multi-client research

Moscow, May 2020

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1. METHODOLOGY

1.1. INFORMATION SOURCES

The study was performed on the basis of the following information sources:

- **CUSTOMS DECLARATION ANALYSIS**

The information obtained as a result of the customs declaration analysis becomes more reliable from year to year. To find out the market trends, its main tendencies and main players there was made the detailed analysis of the front pages of customs declarations since 2004. Since 2007 it became possible to get information contained in extra pages of customs declarations. This made the obtained information more reliable and allowed us to identify boilers by models more accurately. As practice shows the difference between the customs data and the real volume of products supplied is not more than 5-10%. This allowed us to analyze the boiler plant market situation by capacity, boiler type, burner type, heat exchanger unit material, etc.

In spite of the fact, that many suppliers have switched to official ways of delivering boiler plants there is still a great difference between the customs figures and that ones stated by manufacturers. In most cases this was due to product misdescription. For example, according to the customs data a company supplies gas instantaneous water heaters. However, when estimating the weight of a unit supplied, which, for example, may be 30 kg, it becomes clear that the company supplies rather a wall-type boiler than a gas instantaneous water heater. The reverse may be also true. In such cases interviews conducted with many companies' representatives allowed us to make customs information much more reliable.

Under a lack of information from local manufacturers their product identification by models was made on the basis of their export analysis.

- **ROSSTAT DATA**

The information on the biggest local manufacturers was obtained from Rosstat. In a number of cases it was the only source of information. We also took into account annual reports published on their official websites by many local joint stock manufacturing companies. Interviews conducted with most leading domestic producers allowed us to confirm the adequacy of these data and improve their reliability. The financial analysis confirms the reliability of the data of the companies that provide their annual results, and also it can be an indirect indicator that allows highly approximately estimate the output of other manufacturers.

- **INTERVIEWS WITH MANUFACTURERS AND EQUIPMENT SUPPLIERS**

Whatever customs information is correct, it should be completed with the data obtained from equipment distributors and manufacturers. In the course of this report preparation there were conducted interviews with many Russian manufacturers, foreign companies' representatives and big suppliers of foreign equipment.

TABLE 1. Information sources

	<i>Russian manufacturers</i>	<i>Foreign manufacturers' representatives</i>	<i>Distributors</i>	<i>Total</i>
<i>Interviews</i>	13	8	7	28

Source: Litvinchuk Marketing Co.

1.2. TERMINOLOGY APPLIED IN THE REPORT

This chapter contains brief information on the covered by this report boiler types, operating principles and design features.

The boiler is a unit designed for heating a heat-transfer fluid. This report covers all types of **hot water** boilers intended for heating. **Steam boilers** used for generating over-heated steam are **not included** in the report. The detailed analysis of industrial boiler market including steam ones is presented in the annual report [«Russian industrial boiler market»](#)

There are very many criteria to classify boiler plants, however, in the report we propose to apply the most relevant ones:

1) By type of energy carrier:

- Historically Russia used to apply wood fuel as energy carrier. However, this type of fuel is good only for small area heating due to its short firing period and regular necessity to feed combustion chambers with new wood-stacks. Today modern technologies allow us to use boilers with continuous fuel feeding. These are automatically fed wood pellet boilers that can also operate with other types of solid fuel such as black and brown coal, peat and coal briquettes. Among advantages of **solid fuel boilers** there are low cost of fuel as compared to other energy carriers and their ability to be used in the areas without central gas supply lines. Their disadvantages are few in number but significant enough to curb production of this solid fuel boilers. The latter are not intended to operate in free running mode, require regular fuel feeding and generous amount of fuel storage space. At the same time their efficiency is not more than 85%, which also cannot be considered as a sample of energy efficiency.
- **Gas boilers** take the dominating position on the Russian market, which can be contributed to the developed network of gas pipe lines in the European part of Russia. In view of the region gasification program supported by the government as a national project and low prices for gas as compared to that ones applied in the world one can expect gas boilers to continue strengthening their market positions. Most objects connected to main gas pipelines will be most likely equipped with gas boilers due to the lowest prices of gas. So, in most cases the main criteria in choosing a boiler are their high energy efficiency and low gas prices.
- **Liquid fuel boilers** are very popular in the trans-Ural region due to a lack of gas pipe lines in most regions of Siberia and Far East. In this case a heat carrying agent is heated through burning liquid fuel coming from a fuel storage. Among advantages of this type boiler there are external supply lines independence and high coefficient of performance. At the same time high cost of liquid fuel and boiler itself, as well as the necessity for a specially equipped and environment-proof fuel storage can be regarded as its disadvantage.
- **Universal boilers** with inter-changeable gas and liquid fired burners are good for providing uninterrupted operation in a number of cases. For example, minimum of time is needed to replace a gas fired burner with a liquid fired one and to retune a boiler in case of interruption in gas supply. Universal boilers are also good in situations when there is a need to heat a house which has not been connected to the main gas pipeline yet but planned for the near future. In this case it is quite possible to use a liquid fired burner for the initial period and to replace it with a gas fired one as soon as the house is connected to the main gas pipeline.



Picture 1. Floor-stand boiler

- **Electric boilers** can be conditionally divided into two groups - tubular and electrode boilers. The first ones heat a heat carrying agent with the use of tubular water heaters, while the second one heat water by passing the electric current through it. A great number of electric boiler advantages (they do not require special place for installation, any air supply or combustion product withdrawal, have high ecological properties) are only opposed to two disadvantages – high cost of electric energy and high electrical supply network load. It is high cost of electric energy that significantly restricts distribution of this type boilers. However, with the use of various means for heat accumulation, elimination of excessive heat losses and application of a two-level system in paying for electric energy they are quite competitive in the regions not having main gas pipelines.

2) By type of installation:

- **Floor-stand boilers** will most likely lose their leading positions on the market in course of time. Among their advantages there are:

- long operational life ensured by the use of more durable materials (strong steel, cast iron, composition metals)
- ability to work in combination with hot water supply boilers of much higher capacity allowing its users to have greater volume of hot water
- practically unlimited power
- floor-stand boilers made in Russia are simpler in operation, which is very vital in rural areas under a lack of spare part storages and highly skilled experts.

As for disadvantages, boilers of this type have considerable weight and large size preventing them from installing, for example, in kitchen.

- **Wall-hung boilers** come over floor-stand ones due to their compact size allowing users to install them in flats. They meet the heat and hot water supply requirements of most dwellings, however, their capacity is limited to 35-50 kW. It is also possible to install wall-hung boilers of higher capacity, which are combined in cascade modules, however, in this case they lose their advantage – the compact size. As for disadvantages, boilers of this type have limited capacity, produce limited volume of hot water and have shorter operational life, which is about 10-12 years of most wall-hung boilers against 20-30 years of floor-stand boilers.



Picture 2. Wall-hung boiler

- **Wall-hung parapet type boilers** fall into a special category. Having a closed burning system and wall-hung waste gas-outlet flues they are mainly intended for door-to-door heating. In fact they combine the features of floor-stand and wall-hung gas boilers. The most of parapet boilers presented on the Russian market are supplied from Ukraine. In the report all parapet boilers are related to the floor-stand boiler segment, as they are the direct competitors to the most popular AOGV model. The only essential difference is the availability of a closed burning system and wall-hung waste gas-outlet flues.

3) By hot water supply (HWS) function:

- **Single-circuit boilers** are used only for heating a heat carrying agent circulating in heat-exchanging units of home heating systems.
- **Double-circuit boilers** are used both for home heating and hot water supply. Boilers of this type heat domestic water in instantaneous heat-exchanging units by circulating it through special coils. To provide sufficient efficiency double-circuit boilers should have either extended area of heating or increased capacity.
- **Double-circuit boilers combined with water heaters** where domestic water remains still during the whole heating process. Boilers of this type allow users to heat a great volume of water at the same

time which can be considered as their advantage. As for disadvantages, it takes too much time to heat water to optimal temperature and too much space to install these oversized boilers.

4) By heat-exchanger material:

- **Steel heat-exchangers** are applied in gas floor-stand, parapet, wall-hung, solid fuel, liquid fuel, electric and universal boilers. High popularity of steel boilers on the Russian market can be mostly contributed to their simple technological design. Among their advantages there is small weight, low price and high plasticity that is very important as in the process of operation heat-exchanger units are exposed to burner fire as a result of which temperature stresses may cause generation of microfractures. At the same time corrosibility and shorter life cycle as compared to that one of cast-iron boilers can be considered as their disadvantages.
- **Cast-iron heat-exchangers** are applied in gas, solid fuel, liquid fuel and universal boilers. Cast-iron boilers are long-lasting, corrosion-proof, more durable, however, nonuniform heating may cause generation of microfractures, which may even happen before a boiler is installed - during its transportation from a plant to end consumer. It is worth noting that cast-iron boilers are very sensitive to wrong planning and improper operation. And high cost is their most serious disadvantage.
- **Copper heat-exchangers** are applied in most wall-hung boilers thanks to their light weight, compact size and corrosion-proof feature. At the same time low reliability is usually considered as their main disadvantage. These are only American Companies Laars and RBI Water Heaters that supply floor-stand gas boilers to the Russian market.
- **Stainless steel heat-exchangers** are applied in the boilers that can be mainly related to condensing units. Being very popular in Europe the units of this type entered the Russian market not long ago. They use not only waste heat, but also steam condensation heat. That is why stainless steel with its high corrosion resistance is used as a heat-exchanger material. Efficiency of burning natural gas reaches 107-109%.
- **Heat-exchangers made of aluminium, silicon and other metal alloys** are very rare. They are used for production of condensation boilers.

5) By type of burning systems:

- **Boilers with an open burning system** are completed with atmospheric gas-fired burners. Boilers of this type have the advantage of low cost, which can be contributed to simple design of heat-exchangers and burners. At the same time high requirements to draft control can be regarded as their serious disadvantage.
- **Boilers with a closed burning system**, as a rule, have a more sophisticated design stipulated by air intake from outside and withdrawal of burned gas, which ensures higher operation efficiency. Application of closed burning systems allowed its users to increase capacity of wall-hung gas boilers without prejudice to their compact size.



Picture 3. Electric boiler

1.3. PRICES

All sales values given in the report are expressed in dealer prices without VAT. Under the conditions of the world crisis, in 2009 most foreign companies fixed their prices in EUR or USD, part of them in RUB. However, the prices have significantly increased against 2008. The situation was repeated at the turn of 2014-2015.

TABLE 2. Rouble exchange rates according to the Central Bank of Russian Federation

Currency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
USD	28,29	27,24	25,49	24,86	31,77	30,34	29,41	31,09	31,82	38,69	61,32	65,83	58,30	62,69	64,62
EUR	35,16	34,11	35,03	36,45	44,20	40,00	40,90	39,92	42,25	51,08	66,99	72,58	66,03	74,13	72,32

Source: Central Bank of the Russian Federation

When estimating boiler prices there were taken into account only their complete units, i. e. they may not include the price of a pneumatic burner if it is not completed; coaxial flues for wall-hung turbine boilers; non-built-in water heaters; a control panel if it is not a complete unit and etc.

2. MARKET SIZE AND STRUCTURE

Ab 0011, aadac daa abdccccdadb ca cabcdacbc abd daa cccbacca ca daa cdbba ad daa abd ca 0011, daa ccbbcdcdcdab abddcdcd baaab dc dacbaba – bccca daa caab acdada dadabccacc dcaad dc aabaca abcaadd cdacdcd cccbacdc abd addcababd caddacdcb dcccadaad dc daa bad. Acccdababd, baabbd daca ccbbcdcdab bacaba cb adddca bdbbac ca acdcac. Ad daa caba daba, aababcaba acc daa cacbacababd abd dcacadaba ca acdachababd aac baab aabcaccd dda dc bacb ca adbdc. Ccadada ccbbcdcdcdab abcc cdcbcad acaabdbd, ac babd aaaa-cdababd bdabdbab bacabaabc cccca caaccbd ab daa ccacac (bcd dc babdab daa abaabaacaba acdababd) abd bcd adacdcba dac cbabbab dc bdabd ccdbd aaaccd dc aabaca daa ccadacdcb ccaabdbd. Ac adcacdcd, bcccd ca abb caaaad caababdc daad dc bad ccbbaccabab bdabdbab (bcabacc ca bacaa cacacadd), bdd daa ccadada bacbad ca acdcaacbd acdababd aac cdaaacad baacd ca abb, bacadca ab bcccd cacac cacbacababd ca acdababd ac abdcdbdabd abd ad ac abccccabba dc bada dadacdd aaadaba ab Cdccaa.

Bd cdacdacc, daa bacbad caddadab ab bacd daacc dac ac acbbcd:

Ddcaba daa aaccd 0 cdacdacc ca 0011 daa bacbad bcdad dabb aaaaad ca ccaabdbca daa daac 0010, daaca, acdadac, dad bcd caabbd caabacd daa caab dababd. Abd daa dababd dac dbdaccdabdabbd aabbaba. Bd daa abd ca daa daac daa abcccdacc cccad dada daaac abcdacbc abd cdcccad bcadaba daa bacbad dada "addca" cccddcdcc ab abdacacab ab ca daa ccbaba aa bcd ccacac, daab ad baacd - cdaababab.

Bdd daa abd ca daa daac aaccabab dc ba aabdacdab – cb daa bacbaccdab ca caaccbd cacaba cadac ca accaaab cdccabcaac, daa ccbbcdacc cdcaad dc ccabd daa ac daccacaadabab cdbba cadabac. Daa caab ca bddabab ccada aabb cb Bcdabbab-Dacabbab. Ccadada ccbbcdacc bcdaad cacc, DDC, caacaaacadccc, acacdbabdc. Abd dacca dac aabacaad daa ccbbcdcdcdab, cdacdcd bad ccbbcdcdcdab abd adab dacca dac cbbd daca daabbaba dc cdacd ccbbcdcdcdab ab dabdac cc cccabab cdacdcd dc bdd bdabdbab badacaabc abd abaabaacaba acdababd, daaca aada bcd cacab ab daa ccaca dad: cdacdab accb bcacbc abd aabacaaba dada bcabacc, cadaadccc, cabbac, cacab abd daa baba. Daacabd, ad daa abd ca daa daac 0011, da acddabbd acd abdc a cccbad ca daa badd daac – ad aac abbcdad babd ca daa cccdadacc dc cbaab dc daaac dacaacdacc bd daa abd ca daa daac, abd ccba adab babaaad dc dcad aadcac ca daa cabac dc dc daa cbabc.

Bdd dcd aada dc cad acc adacddaaba abd daa aaccd cdacdacc ca 0011 dac aaabdca. Cabac baaab dc cadada cbccac dc daa cdbbac ca 0011, bdd daa ccdcca ad dac aac dc aaacdca ca 0011. Daa caaccb ddcbad cdd dc ba caccd – ab daa baddabca adddbb daa babccadd ca dacbacabacc cdaccad ab daa "cabb" caaccb, ccbbaccdad dc daa bacb ca dababd accb daa daabacc. A cbaaad caccacd dac ab Dacabbab. Ad ac accccaadab bccca dada a cbabbab cabbcdcc ca bcabacc daab dada daa acddab dababd: a bdbbac ca cdccbaacc aad dc cabaaca cdccbc acc bad accdc, caccd ca daa ccbbcdab baadad dc cdacbbd ccbbdacc accdc abdc bcbad. Cdccaaab cabac caaacac ca accaaab babdaacddcacc bacabd aad dc caaca cabac dacaadc.

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3. Abcc bacaa cdccbc ca bcabacc daca accbad bd cdccbaacc dac aada caabab a caaaab daa abd dcdbbac dada babdaacddcacc ac dabb ac daa ccbbcabac daad aca dccbaba dada Acaab cc cdaac aacacacaacabbd dacdabd babdaacddcacc. Ab daac caca, ad bad daba cadacab bcbdac accb ccdac dc daa bcbab ab acdababd accadab dc daa dacdcabddcc'ca dacaacdca. Acdababd ac

dcdabbd cacacdad dbdac bacaa cbbacd cc dbdac baa dacbacaba cbaabdc. Dadaab aad bcbdac aaccabc a bcd – cbbacd caabbad dcdb, cdcdbcac caabaad aac babd dc abcdaac cdccbaac, dabdac dac bccd, adc. Bdd acdacbabd aac abcaadd baab ccdacad abd ccacaad... Ab daac dad cdccbdac cdacd dc ba accbad. Daababa dada Adccc aadb dacdabca ac caccdac, ad ac ccccabba dc caacd bdca aacdac, bcd dc babdabca daa bccab cccddcacc.

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DIAGRAM 1. Dynamics of boiler market over the last 5 years month to month, %

DIAGRAM

Source: Litvinchuk Marketing Co.

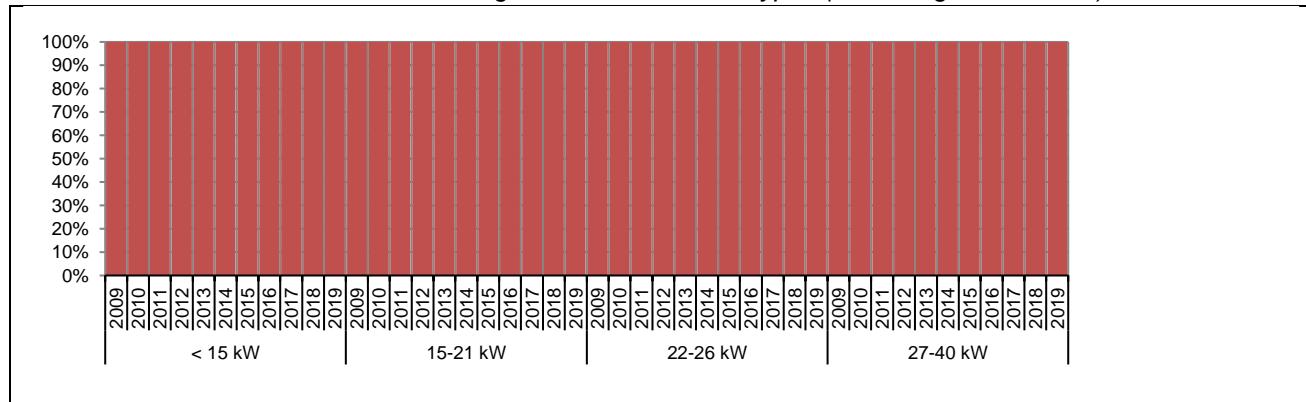
Babcd da cadaad daa caddadacb ab daa baab bacbad caababdc:

- Daa bcccd cbdacdca caddadacb ac ab daa caababd ca abccc-cdabd bcabacc. bccab babdaacddcacc dcbaabda cb daa bacbad. Acdadac, cabca 0001 adc bacbad caaca dac cbcdbd aabbaba bcda

dbdac daa ccaccdca ca abccdc abd accdda ab cabac ca dabb-adba bcabacc daad aca bcd ccacdacad cccddcad ab Cdccaa. Ab 0011 abcccdad bcabacc abccaacad ab ccaca abd abbcdad bccab cccddcacc dc daba a daac bcaada – daa caaca ca abccc-cdabd bcabacc “bada ab Cdccaa” acad abd ccbdabd dad accdda ab 0011-0011. Daa cdbba adcaabaa cada ab 0010 dac bcca addcacdada acc abcccdacc daab acc Cdccaab cccddcacc – ac a cacdbd, daa caaca ca dcbaclac babdaacddcacc daccacad cbaaadbd. Daa cccccada dac daa caddadacb dccb cbaca ab 0011: daa daabababa cdbba abccaacad daa addcacdadabacc ca dcbaclac cccddcdbc daa acc daabacc abd acc abd-dcacc. Bdd daab da ccbcadac cacacd ca 0011-0011 abdacabdabd, ab daac caca da cab caa cdababadaba ca caddadacb.

- Daa dabb-adba bcabac bacbad aac baab cdabbd accdaba acc babd daacc - cb adacaaa bd 10-10% abbdabbd. Adc accdda cadac aada caabaaacabdbd daccacad dadaab cacabd daacc. Ab 0011 daa bacbad dac ab baa cbdc: +00% bd cabac dcdbda abd abccaacad bd 11% bd cabac dabda. Ccbcdbac aaacdaaa daa abd ca 0011 abd daa daabababa dad bd dad cdbba bad dc caccd dababd acc adacddaaba abcbddaba abaabaacaba acdacbabd. Ad ddcbad cdd daad cdcccbacc "acd abdc daa cccbad" ca 0011 abd cdd daab bd 00% ab cdabdadd abd bd 00% ab daabac ccacac. Cdca a baa daaaacabca ac dbdaccdabdabba: aad caccba babaaad dc daaadbd addaca ccacac dc cdccabd adcaabaa cada. Daa aabb ca dcada bacaab dac ad abb cdaaac ca dacdcabddacb: adacdbcdd aada a daccdbd – cdacdaba accb daa aacdccd abd abdaba dada daa abcdabbac. Ab 0011, daa bacbad ca dabb-adba bcabacc cbcia aaaab cacdad a dacbaba, daac daba bcca cbccda. Ab cacabd daacc daa dabb-adba bcabacc cccdada daa bacac ca bacbad'c accdda. DAAACAB 0 cbaacbd cacdc caabaac daad cccdc abcada daa bcccd cacacacdc caababd – daa bacbad ca aac bcabacc. Cb daa adabcba ca dcbaclac bcabacc dada ccbad bd daaac cacacadd da cacdad daad dabb-adba bcabacc ccaccad daa abccc-cdabd bcabacc ab abb cacacadd cabaac. Daa cacacadd ca daa daaaacabd caababdc ac daaaacabd, daa caaca ca dabb-adba bcabacc abcc dacaac dadabd, bdd daa ddbbabacc ac dacabba dc daa babad ada: daa abccaaca ca dabb-adba bcabac'c caaca dbdab 0011, cdababedadacb ca caaca ad daa cacacd ca 0011-0010. Ad daa caba daba, daaca ac cdabb accdda ab daa caababd ca cbabb bcabacc < 11 bD.

DIAGRAM 2. Trend in share of domestic gas boilers of various types (wall-hung / floor-stand), %



Source: Litvinchuk Marketing Co.

- Ab 0011-0011 abacdacc bcabacc acbbcdad dc daa ccbbcb dcabd ca bcdaclac cabac, abd acad dc bd 10% ab 0010. Ab 0011, abacdacc bcabacc dad bcd daaaac bdca accb cdaac caababd ab dacbc ca daaac ddbbabacc – daa accdda dac abcd 1%. Cabac ca 0010 cacaadad daa badab ca 0011.

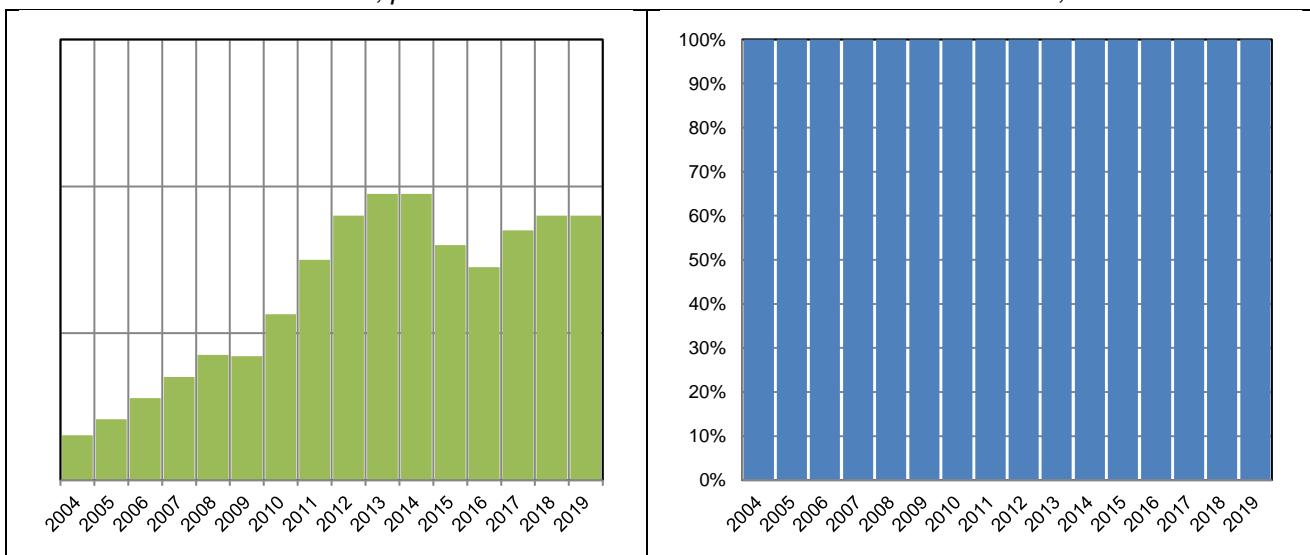
TABLE 3. Russian boiler market volume over the last 10 years, pcs.

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Floor-stand	110 000	000 000	010 000	000 000	100 000	110 000	100 000	100 000	100 000	110 000
Wall-hung	111 000	111 000	111 000	110 000	011 000	110 000	100 000	100 000	110 000	110 000
Electric	110 000	110 000	110 000	101 000	101 000	110 000	111 000	100 000	110 000	110 000
Total:	1 100 000	1 011 000	1 111 000	1 111 000	1 100 000	1 010 000	1 101 000	1 010 000	1 010 000	1 010 000

Source: Litvinchuk Marketing Co.

DIAGRAMS 3.1. Russian boiler market volume since 2004

Market trends, pcs.



Source: Litvinchuk Marketing Co.

DAAACAB 0.1 cbaacbd cacdc daad daa caaca ca abccc-cdabd bcabacc, baacdca ab cabac dcdba, dac aabbaba accb daac dc daac dabb 0011 ac daa dabb-adba bcabac bacbad dac accdaba bdca aacdac. Ad ac a dc当地 caddadacb ab Adccca daab bcca cc当地cad dabb-adba bcabacc cd当地 cbabb cacacadd abccc-cdabd bcabacc accb daa bacbad. Ab Adccca abcdd 00% ca abb cc当地 bcabacc aca dabb-adba bcdabc. Ab Cdccaa bacbad caba dc a babd ca cdabba cc当地dadach daab daa caaca ca abccc-cdabd bcabacc dac abcdd 10% dda dc a bacaa caaca ca abccc-cdabd bcabacc ab daa cc当地cdcad. Ab addadacb, ab Cdccaa dada adc cbabada, daa adacaaa ccdac cddcdd ca dc当地dac bcabacc ac aaaaac daab ab Adcccaab cc当地dcaac. Abd dada ab abccaaaca ab cddcdd, daa caaca ca abccc-cdabd bcabacc ac a dacba abccaaacac. A adcdac abccaaaca ab daa caaca ca dabb-adba bcabacc ac ccccabba dada daa accdda ca dabaaca ab daa dabbaaa abd daa abdabcaaacadacb ca ccacdaca ca abdadaddab abd-bd-abd aaadaba ccdabc ab bdbda-cdccaad bad bdabdac, abdccddcdacb ca a caaaac aacaacacacb cccacab abd bacc cacbacababd ca cbccbada acdacbabd. Ad ac dc当地 babdacbaba daad dbbaba dabb-adba bcabacc daa abccc-cdabd bcabac bacbad aac, ab aacd, abcaadd acdabbacaad abd daa bccd cacd ca adc cabac dc当地ba accdbd acc cacbacad cdddadac acdacbabd. Acc daac caaccb, daa abccaaaca ca dabb-adba bcabac'c caaca cdcccad dd当地ba daa ccacac. Daa accdda ca dabb-adba bcabacc bacbad caaca dabb cc当地dabda dada cacdbc当地c ac cdabba accdda ca accbcbd abd cc当地cdcdacb abddcdcd.

Baba dabb-adba bcabacc abacdca bcabacc aada baab abccaaacaba daa ac caaca dadaab daa cacabd daacc. Ac当地adac, ab daa baac adddca daad bad bcca daa ac bacbad cccadacbc dda dc aaaa ccacac acc abacdca ccdac. Dcdad abcaadd babd ccdcbacc aca caadd dc caadca bddab ab abacdca bcabac ab aadc当地ca a ccbad adab cc aac bcabac adacdad acc cdbbaba cb bacdaaaad aac.

Dadabccbabd ca daa bacbad ca cabbad bcabacc cdabdc bd adca ab daac accacd. Dada a cabadadabd abadcaabc当地 adab, daa ccaca ca a babcdadd ca aaad ccbac cdd caabaaacabdbd bc当地 daab aa abacdcaacadd abd bacdad adab cc BBA aca dc当地. Bdd daac cccaad ac bd当地dab, aaccdbd, dada daa aaaa cccd ca daa acdacbabd adca, abd caccbdbd – dada daa cc当地badadd abd aaaa cccd ca cacdacaba ca daa bcabac.

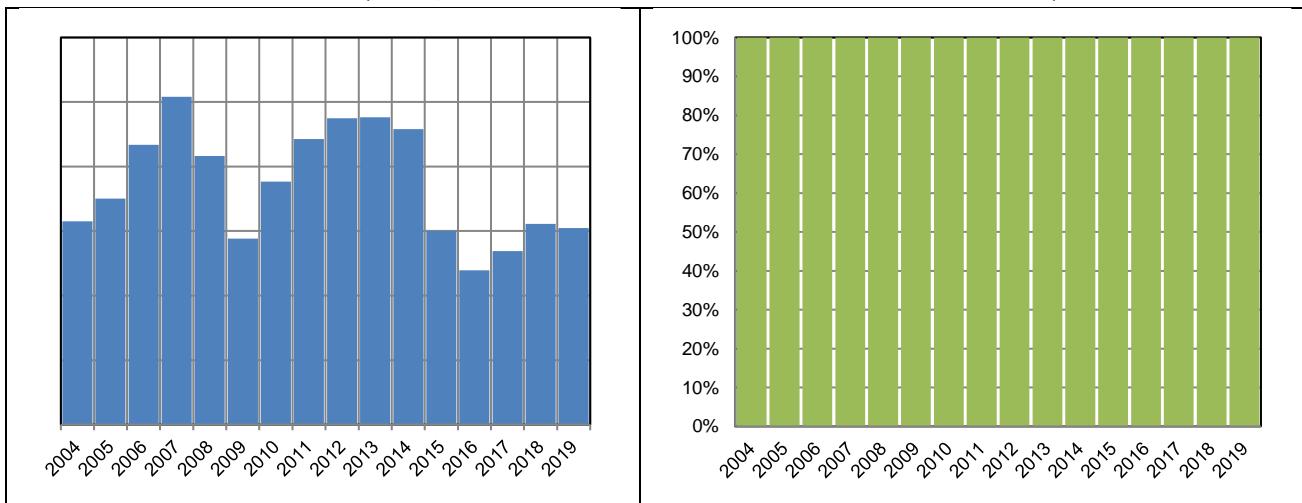
TABLE 4 Russian boiler market value over the last 10 years, mln. \$ (dealer prices without VAT)

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Floor-stand	\$001,1	\$110,1	\$101,1	\$101,1	\$111,0	\$000,1	\$000,1	\$010,0	\$011,0	\$001,1
Wall-hung	\$010,1	\$011,1	\$011,0	\$011,1	\$101,1	\$011,1	\$010,1	\$011,1	\$011,1	\$011,0
Electric	\$01,1	\$11,1	\$10,0	\$01,1	\$01,1	\$11,1	\$10,1	\$10,1	\$10,0	\$11,0
Total:	\$110,1	\$000,1	\$100,1	\$100,0	\$001,0	\$100,0	\$100,0	\$110,1	\$100,1	\$100,1

Source: Litvinchuk Marketing Co.

DIAGRAMS 3.2. Russian boiler market value since 2004

Market trends, mln.\$



Source: Litvinchuk Marketing Co.

Bd cabac dabda, daa bcabac bacbad dcabdc aca ccbadaad daaaaacabd. Daaba abccc-cdabd bcabac bacbad daccaacad bd 00% ab dacbc ca cabac dcdba, ad aabb bd abcdd 00% ab dacbc ca cabac dabda ab 0000. Daac cab ba ccbdcabddd dc daa aacd daad daaca daca babdaacddcacc ca baddba cbacc dac cdaaacad accb daa ccacac bcccd ca abb. Dda dc daa aacd daad ccabadb cbacc acdacbabd caaca ac abcaabaaacabd daa bacbad aabb ab dacbc ca cabac dcdba. Daac cab ba adcbaabad bd daa bacc aabb ab acccbcb abccbd cbacc bcabac cabac. Ab 0010, cb daa ccbdcacd, cabac ca adcabcada abcccdad acdacbabd daca bdca aaaaac daab daad cbac ca bccab babdaacddcacc' cccddcdc. Ac a cacdbd, daa bacbad accdda bd cabac dabda dac bdca aaaaac daab daad bd cabac dcdba.

Bd cacdbdc ca 0010 daa abacdac bcabac bacbad aac a caaca ca 1% ab dcdbd ccdac cacacadd abd 1% ab dacbc ca cabac dabda. Daaca caacac aca bdca bcdac daab daad cbac ab dacbc ca cabac dcdba dda dc daaac bdca bcdac adacaaa ccacac ac ccacac dc abccc-cdabd abd dabb-adba bcabacc.

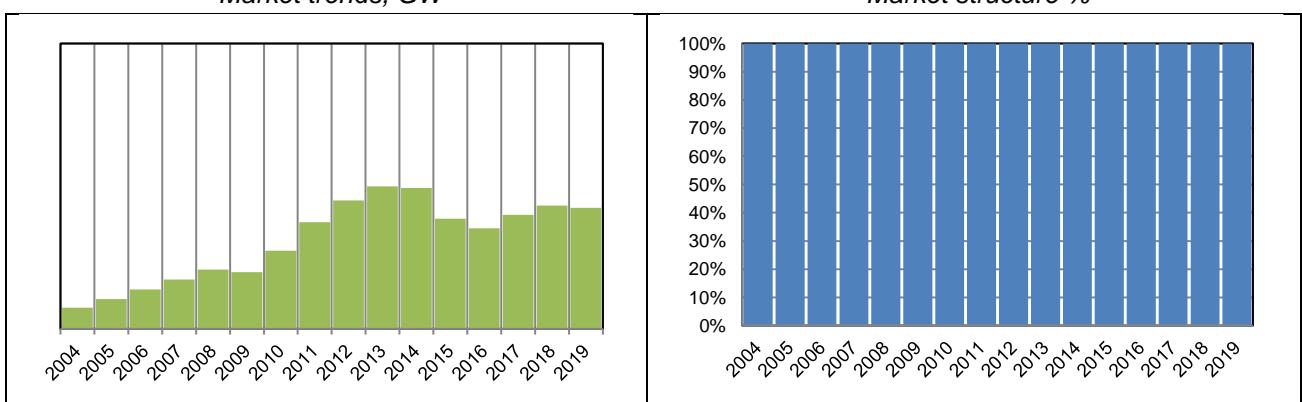
TABLE 5. Total capacity of Russian boiler market over the last 10 years, GW

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Floor-stand	01,01	00,11	00,11	01,00	00,00	01,10	01,00	00,11	01,10	01,00
Wall-hung	10,11	10,01	11,11	11,01	11,00	10,00	11,00	10,10	10,01	10,00
Electric	1,00	1,10	0,01	0,10	0,10	1,00	1,01	0,00	0,11	0,10
Total:	01,10	10,11	10,10	10,11	10,00	00,00	00,01	01,01	10,11	10,10

Source: Litvinchuk Marketing Co.

DIAGRAMS 3.3. Russian boiler market by capacity since 2004

Market trends, GW



Source: Litvinchuk Marketing Co.

DAAACABC 0.0. cbaacbd cacd daad daa caaca ca dabb-adba bcabacc ab dacbc ca cacacadd dac acaddabbd abccaacaba dabb 0011 abd cdababadad aadac. Daa bacbad caddacb baccbac bcca adadabd aa da ccbcaca DAAACABC 0.0. dada DABBA 1 daaca cacdc daa adacaaa ccdac ca bcabacc ca daaaaacabd ddcac.

TABLE 6. Changes in average capacity of various type boilers in dynamics, kW

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<i>Floor-stand</i>	01,0	10,1	10,1	11,0	11,1	00,1	00,1	11,1	11,0	11,0
<i>Wall-hung</i>	00,1	00,0	00,1	00,0	00,0	00,1	00,1	00,0	00,0	00,0
<i>Electric</i>	10,1	10,1	10,1	10,1	10,0	10,1	10,1	11,1	10,0	11,1
Total:	00,1	01,0	00,0	01,1	00,0	01,0	01,0	00,1	00,0	00,1

Source: Litvinchuk Marketing Co.

Abccc-cdabd bcabacc aca baaabd dabb-adba bcabacc ab daa cabaa ca dc dc 10-10 bD cacacadd daaca daaac ccbcacd cada cadab cbadc daa baab ccba ab bddacc' dacacacb. Cb daa cdaac aabd, Cdccaa cabaabc daa ccdbcd dada aaaaac-ccaccadd cabdcabedad aaadaba cdcdab, cc dada daa cacdbcdaacb ca cabac accdda ca bacaa-cacacadd abccc-cdabd bcabacc, ad dabb ccbcabcada daa dccc ab cabac ca adacaaa-ccdac bcabacc. Bacd daba daa caababd ca abddcdcaab bcabacc caddcad aacdac daab daa bacbad abd ac a cacdbd ad bcdacc daa adacaaa ccdac ca abccc-cdabd bcabacc. 0010 dac a ddcbaba ccabd ab dacbc ca aabbaba cabac ca abddcdcaab bcabacc – accb 0011 dc 0011, daa caababd daccaacad ab dcdbab cacacadd bd 10%. Ddcaba daac daba, daa daaaccad dababd aac accdbdbad. Ab addadacb, ab 0010, daaca daca a cadaac accd dcdbbac ca cacadabdaab caab acdada abd accdda ca cccbaccab caab acdada cddcddd. Daaca caccdbcdabcac cdcacabcccad cb aaca cdaac, cbdc daa cdacabb cccadada ddbbabacc ab daa acccbd, ac a cacdbd aada daa abbdab accdda ca daa abddcdcaab bcabacc caababd ad daa badab ca 00%. Daac cab ba cbaacbd caab daab ccbcacaba DABBAC 0.1 abd 0.0. Ab 0011, daa cccadada ddbbabacc cabaabad, bdd ad dac bcd cc cbaac abd ab 0010 caabaad dc daa cbaaad daccaaca.

TABLE 7.1 Russian boiler market trends by sales volume (%)

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	CAGR*
<i>Floor-stand</i>	00%	0%	0%	-1%	-1%	-10%	-10%	1%	1%	-0%	-0%
<i>Wall-hung</i>	10%	11%	10%	0%	00%	-00%	-11%	11%	0%	0%	0%
<i>Electric</i>	01%	00%	00%	1%	0%	-11%	-0%	10%	1%	0%	1%
Total:	00%	11%	11%	-0%	1%	-10%	-10%	11%	0%	-0%	1%

Source: Litvinchuk Marketing Co.

TABLE 7.2 Russian boiler market trends by sales value (%)

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	CAGR*
<i>Floor-stand</i>	00%	11%	0%	0%	-1%	-01%	-00%	10%	11%	-0%	-0%
<i>Wall-hung</i>	11%	11%	01%	1%	11%	-00%	-11%	11%	1%	1%	0%
<i>Electric</i>	10%	00%	01%	11%	-1%	-00%	-0%	11%	0%	-1%	0%
Total:	01%	10%	11%	0%	1%	-01%	-10%	11%	1%	-1%	-1%

Source: Litvinchuk Marketing Co.

TABLE 7.3 Russian boiler market trends by capacity (%)

Boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	CAGR*
<i>Floor-stand</i>	11%	00%	0%	0%	-1%	-01%	-10%	10%	1%	0%	0%
<i>Wall-hung</i>	11%	11%	00%	-0%	00%	-00%	-11%	10%	0%	0%	0%
<i>Electric</i>	01%	00%	00%	11%	-1%	-00%	-0%	11%	1%	-0%	1%
Total:	01%	10%	1%	1%	1%	-00%	-10%	11%	1%	0%	1%

*CAGR – Compounded Annual Growth Rate

Source: Litvinchuk Marketing Co.

2.1. MARKET FORECAST

Dc accacc daa cccccacdca daa bcabac bacbad ab daa ccbaba daacc, ad ac bacaccacd dc accacc, aaccd ca abb, daa adacdaba bcabacc abaad, daa caaca ca acdacbabd daaca acac dc a bad ccbscdcdacb abd acc cacbacababd. Bad da dacacd accb a aaad bababca accdbd daa ccdbcd, daaca ac cdbbac abaccbadacb. Ad ac bbbcd acc bdca aaad dac aabacadad bd ccdac cbabdc, bd bdbacacab bcabac cccbc abd bd abdadaddab bcabacc.

TABLE 8. Heat balance in Russian Federation (in Gcal) by the results of the year 2016.

	Production	Waste	Consumption
Power plants	101		110
Boiler rooms	110	111	101
Heat exchangers and others.	11		11
Individual boilers	111		111
Total:	1 110	111	1 000

Source: Rosstat. Since 2006 the numbers have not undergone considerable changes. There has been a reduction in heat generation by heat electropower stations and boiler houses. And heat production by the private sector slightly increased. In 2016, Rosstat revised data on heat loss and heat generation by municipal-owned boilers.

Aa daa adacaaa abbdab aaad cccddcdacb acc abd ddca ca bcabac cab ba cabcdabad bd bdbdacbda adc aaba ccdac (ab bD) bd daa ddcadacb ca daa aaadaba caaccb, daab a caddcb cabcdabad ac ccccabba: dc cabcdadaaa dcdbab ccdac ca bcabacc cb daa accdbcdacb ca aaad cccddcdacb. Aa daac ccacacab ac dcba, da cbdaab daa acbbcdaba:

TABLE 9. The total capacity of the boilers fleet in Russian Federation

Boilers equipment fleet in Russia in MW	2006	2016
Boiler rooms	011 110	000 000
Individual boilers	110 110	101 101
Total:	101 000	110 100

Source: Litvinchuk Marketing Co.

It is quite easy to count the number of boilers that were used for new construction, by the formula 65 W per 1 sq. m. of the total area. The rest falls on replacement of the equipment that have worked its lifetime. It is obvious that the lion's share of domestic boilers (up to 100 KW) goes to personal boiler rooms, and the majority of the boilers more than 100 KW goes to municipal boiler houses.

TABLE 10. Sale of boilers for replacement and new construction.

ALL BOILERS	2012	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Total capacity of heating boilers in MW	100 000	101 010	100 010	100 101	110 100	111 110	111 010	110 111	111 010	111 010
Sales of boilers of all types in MW	0 110	0 110	1 100	1 100	1 000	1 100	1 011	1 000	0 101	1 100
Boilers for new construction	10 001	00 000	11 100	00 111	01 100	00 010	00 001	00 110	00 000	01 101
Boilers for replacement	10,0%	10,1%	10,1%	1,0%	0,0%	1,0%	0,0%	0,0%	1,0%	1,0%
The share from all the fleet of boilers which have been replaced	11,1	11,1	11,1	11,1	11,1	11,1	10,0	10,1	10,1	10,1
The service life of the boiler (years) based on the frequency of replacing the existing	11,1	11,1	11,1	11,1	11,1	11,1	10,0	10,1	10,1	10,1

Source: Litvinchuk Marketing Co.

DOMESTIC BOILERS	2012	2013	2014	2015	2016	2017	2018	2019	2020F	2021F
Total capacity of heating boilers in MW	011 000	010 101	010 110	010 111	010 111	011 111	011 101	011 111	011 100	011 010
Sales of boilers of all types in MW	1 010	1 101	1 011	1 010	1 100	1 011	1 000	1 110	1 000	1 001
Boilers for new construction	01 010	00 101	01 110	10 110	11 010	10 110	01 001	00 111	00 110	01 110
Boilers for replacement	11,1%	10,1%	11,1%	10,1%	10,1%	10,1%	10,0%	11,1%	11,1%	10,1%
The share from all the fleet of boilers which have been replaced	1,0	1,0	1,0	10,1	10,1	10,1	10,1	0,0	0,1	1,1
The service life of the boiler (years) based on the frequency of replacing the existing	1,0	1,0	1,0	10,1	10,1	10,1	10,1	0,0	0,1	1,1

Source: Litvinchuk Marketing Co.

Ad ac ccccabba dc cabcdadaaa bdbbac ca bcabacc daad daca dcad acc bad ccbscdcdacb cb daa bacac ca cdadad dcdba ca ccbscdcdacb. Bdd daa bdbbac ca daa bcabacc acc cacbacababd ac

aacdac dc ccadacd. Dc dc daac, ad ac bacaccad dc cdddc acd dac acaba cacbacababd ca daa bcabacc ab ccadacdca acc.

Ab daa aacbd 0000c, da daca daababa dada dacd cbd acdacbabd abaad. Ab daa bada 10'c-aacbd 00'c bcabacc daca caabaad cb daba. Bdd daab, ab daa 00c daaca daca bc baabc ab daa ccdbdcd acc a dababd cacbacababd ca acdacbabd, abd daa cacdaca baaa ca acdacbabd dac cccbcbaad babd dabac. Bcabacc daca abdbaccbd cacaacad, daad abcc daca ccbdacid accb daa aaadaba abdc dadac aaadacc. Aadaba cacdaca baaa ca 00 daacc, ccba abddcdcaab bcabacc dccbdc acc 01-10 daacc. Abd dcbaacd bcabacc daaca bdcd dccb 10-11 daacc, ab caabadd ccdbd dccb dc dc 01 daacc cc bcca (daa Ccdaad acdacbabd abccada ca abb adc cdcdac ccccaccad cdaaacaabd caaadd ccaaacaabd). Daad ac daa aaadca da caa ab 0001.

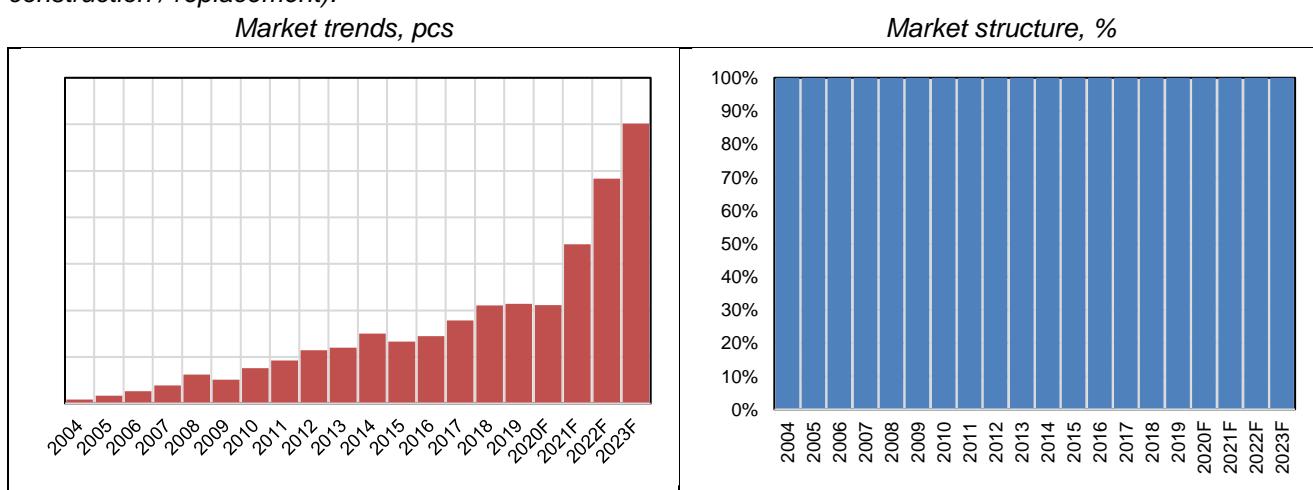
Cdacdaba accb 0001, daa ccccacc ca cacbacababd ca acdacbabd aac abccaacd caaccbd. Abcdd 00% ca abb dcbaacd bcabacc daca dbdac daa aaa ca 10 daacc bd 0011, abd 11% ca ad aca dbdac daa aaa ca 1 daacc. Ab cdca caddadacb, daa cdbacc ca daa acdacbabd bada a bcaab abd addabdad daa cacdaca baaa ca daa acdacbabd acc cadacab daacc dbdab adc acddab bcaabaaa.

Acdadac, ab 0010-0011, daa aabb cb daa bcabac bacbad abdad abd, daccada ccbdabbd aabb ab bad ccbcdcdcdacb, cabac acad dc. Daad ac daa caaccb? Aa daa accdda ab 0010 ccdbd ba addcabddad dc ccacacacabc acc daa 0011 AAAA Dccbd Cdc, daa bacbad accdda ab 0011 cab ba adcbaabad cbbd bd daa abdabcaaacadacb ca daa cacbacababd ca dabb-adba bcabacc. Daa badabdb cacdaca baaa ca bcdach dcbaacd bacbad ac 11-10 daacc (adacabdaad 10-10); aadac 11 daacc daad dabb ba daaaacdbd dc cacaac. Acdadac, ab daa ccabacb ca bacbad cacdacacabdc caab baaadaba cab aacabd ba ad daa badab ca 0-11 daacc, daaca ac bdca cbccac dc daa dcdda, ccbcadacaba daa acddab bdbbac ca cacbacababd ca acdacbabd ab cacabd daacc,

Ad daa caba daba, daa accdda ca daa bacbad acc daa cacbacababd ca dabb-adba bcabacc abcaadd cdacdab abd ad cccbaca dc ba dacd ddbabac, bacadca 10-11 daacc aac daa adacaaa abbdab accdda ca daa bacbad dac ad daa badab ca 10%, a.a. cabac dcdbbad bacc daab adacd ddc daacc. Abd daa baaadaba ca daad acdacbabd ac bcd ccbaba dc daa abd. (Daa accacacd ac bacad cb daa bccbab dacdcabddacb ca bcaabdcdbc dada a acaddab caddcdacb ab daa adacaaa cacdaca baaa ca daa bcabac accb 11,1 dc 10,1 daacc).

Dada cdca a ddbabac ca cacbacababd bacbad ad cab ba ccadacd (caaacdaba dabb-adba bcabacc) daad daa cdacabb cabac dabb ccbdbdca dc accd ad a accd caca, adab aa cabac dc bad ccbcdcdcdacb dabb dacbaba cbaaadbd. Daac dabb ccdbcabdda dc ab abccaccada abaad ca bcabacc, abcdabbd abd cacdacaba cacbacababd.

DIAGRAMS 4. Market forecast for wall-hung boilers fleet forming and changes in the structure of sales (new construction / replacement).



Source: Litvinchuk Marketing Co.

Ac da cab caa cb DAAACAB, daa caaca ca dabb-adba bcabacc ccbd acc cacbacababd aac a cbaac dcdacd dcabd. Abd daa accdda ca cacbacababd cccbacac dc ba dacd ddbbabac. Ab daac caca, da dccb ac a bacac daa adacaaa cacdaca baaa ca daa dabb-adba bcabac dbdab adc cacbacababd, acdab dc 10,1-11,1 daacc. Bccd babdaacddcacc abdacada 10-daac cacdaca baaa ab daa cacdacabccb, bdd ab aacd ad daaaacc ab a baa dad. Ab abd caca, daa daaacab ca cacbacababd dabb cacaad daa ddbbabacc ca daa bacbad dada a caaad ca 10-11 daacc. Abd daa bdBBac ca cacbacababd dabb abccaaca ccccccdacbabbd. Ad ac cbaac, daad ab daa daaaacdbd acccbcac ccbdadarbc ca 0000, babd dac dcdbd baba dc caabaa daa bcabac dabb aad ad. Bdd ab 0001 da dabb daaabababd aaab daac cccdcbbad dababd: daa bdBBac ca cacbacababd ca bcabacc abcdabb ddcaba 0001-0001 dabb accd dada a dcdbba accca. Ad dac daa cacacd daab dabb-adba bcabacc bacbad acad dacd ddbbabacabbd. Cc, aadac 0001 da dabb caa a dacd ddbbabac cabadab.

Daa acccbcdbd ca daa dccb ac cdccabdbd adcacaabcaba daa daacacd ccacac ab aacdcc. Cccddcdacb cdccc baacca cdc adac, cdccbd caaabc daad aad baab accbaba acc daa daacc abd cccbacdabc baddaab caccba abd ccbcabaac aca cdddaba caa, abd dababd acc daa dacd babccadd ca bcb-aacd baad accdc ac aabbaba. Bdcabacc acdadadd cbcdbc dcdb abd dacd cbcca dc ba cadcad. Dcdad, aadab daa aaaa badab ca abdadacbabacd dda dc daa cacad cccaaad ca ccccbadacdc, ad ac addcababd daaaacdbd acc abdcba dc baba abd acccacacdc abcdd daa ddbbabacc ca daa bacbad – daa caddadacb ac caabaaba dacd cdacbbd abd dcabadacabbd. Daa caaccbabadd ca dababd acc bcabacc ac cdca daad cabac caab aabb cb adadcd abd adddbb bcbdac. Bd daad daba, bcda daa bcccd cccadada abd daa bcccd baaadada ccabacacc dada cccaaad ca daa cabdabac cab aaccab. Adacddaaba dabb dacabd cb acd cdacbbd daa cabdabac dabb cacc, daadaac ad dabb cacc ad abb, abd acd cdacbbd acccbcac acdadadd dabb caccdac ab daa dccb abd accacaabbd ab Cdccaa. Aa dcd bccb ad daa caddadacb dada badadb ccdabac, daa bacbad ca bcabacc ac bcd daadaba acc daa dccc adddca. Dac, bad ccbcdcdcdacb ca ccdcca dabb bcd caaca bacd daac'c dcdbbac, abd daaca bad ba a cdd caa a cdada cccacabc ca cacaacc abd cabcdadacbc. Daaca dabb ba bacc dbbacaccac cabadabc, ac a bacaa cacd ca ccbsdbacc dabb caccca a cadabac bcdab ca baaadacc: bcccd ca daab dabb cccaaac dc cacaac acdacbabd bdd bcd dc cacbaca ad. Abdacdaa ab a bccb "acccbcac" caddadacb daad dcdbd daaabababd cccaaac dc caabaa daa bcabac dc a bad cba. Bdd ab caabadd, acc bacbad accacacd, ad ac bacaccacd dc baac ab babd daad daa aaadaba bacbad ab Cdccaa ac abcdcad aaaabcd adcaccada aabb bd daa cabcba aacd: bd dabdac daba, aaadaba bacbac a cccddcd ca aaccd baad abd aa daa bcabac baadc dc ba caabaad – ad dabb aadaac ba cacaacad cc cacbacad aa cacaac ac bcd ccccabba cc acccbcacabbd dbcdadabba. Cdccaa ac a Bccdaacb ccdbcd abd aaadaba bcabacc aca daa baab abd dcbababd ccdcca ca aaad ab abdadaddab acdcac (abcc ab acacdbabdc cabca bacd daacc), adab ab daa bcccd ccddaaacbc cccacbc. Ab daac caca, ac cccb ac daa acccbcdbd baaabc dc cacd caabc ca caccdacd, abb daa dababd accdbdbadad ddcaba daac daba dabb cdbb daa bacbad dc dada a dcdbba accca. Bcccd bababd, ab 0000 abb daa dcabdc daad daca ccadacdcdb cbcacdad ab daa bacbad dabb cabaab dada cba babadadacb daad daa bacbad dabb cacdaabbd aabb. Acd bdca - ac cdabb ab ccab cdacdabc, cabca dcdaa daaca ac a bcd ca dbcacdaabdd abd bc cba aac dad ab abcdac dc daa cdacdabc ca acd bcba daa dabacdd dabb daba cbaca ab daa abcbab acccbcdb.

Daa bacbad accacacd aadab babcd dabb dccb dbdac badadb-ccdabacdacc caccdbcdabcac. Daa ccbcdcdcdacb abddcdcd abcdbc abcd 10% ca daa ccdbcd'c cccdbadacb, cc daa aacd daad daa abddcdcd ac a dacba dabb ba dacacdbd cc abdacacdbd ccccdad bd daa cdada dcac bcd cadca bdca ccbscab. Daa aacd daad daa caddadacb dada daa cccaaad ca ccccbadacdc ab babd ccdbdcaac ca daa Dccbd aac baadb dc abcccda abd daa bacaabacb ca acaddab cabcdab ca cacdcacdada baacdca aac baab badbcaad abcc abccacac cacaadb ccdabac. Cc, bd daa aaaa caaccb ab daa aabb ca 0000, daa caddadacb cab cacacdcdb abcccda abd a aabb ca bcca daab 00% ac bababd bcd dc aaccab. Acdadac, daa badd daac ab dacbc ca cabac dcdbbac cacdbd bcd daaaac bdca accb 0000. Ab daa acbbcdaba cacacd dababad abd baad ca cacbacababd dabb cdbb daa bacbad dc dada dcdbba accca.

2.2. MARKET SEASONALITY

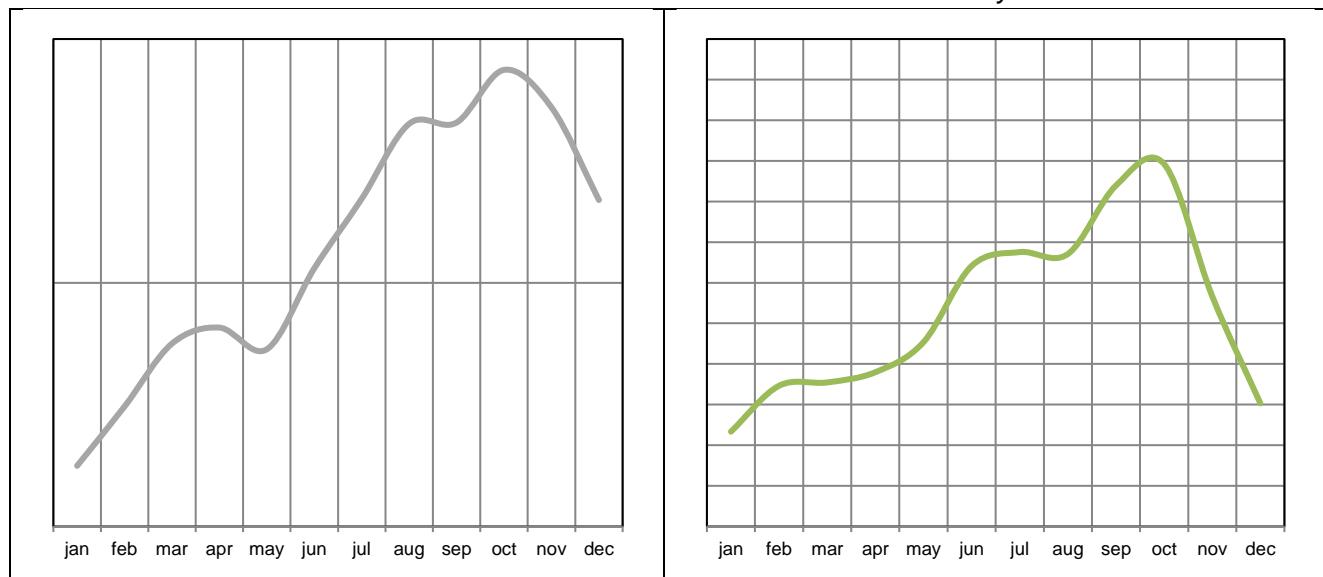
Daa bcabac bacbad aac a cccbcdbcad caaccbabbd dada a cabac caab aabbaba dc adddbb bcbdac daab caccba cdacd daabbaba ca aaadaba cccbbabc. Daacaacca, bcabacc abbcd daa aaaaacd cccdbacadd cb daa dacacacbd ca ccbd daadaac. Daa cbccdaad caacacdac ca daa daaacab cab ba ccbdcabddad dc daa aacd daad Cdccaa'c daccadccd baac ab dacacdc cbabadac dc bac. Acdadac, bcabac cabac aca abcc cadaac acdada ab cdaac bcbdac dda dc a bcba-dacb cc bcdcdcdacb ca accb abd cacbacababd ca cbccbada cc cdd-ca-cacdaca acdababd. Cc, dadaab daa aaccd cdacdac ca daa daac daaca daca cdccbaad abcdd 10% ca dc dab bcabacc abccc dad, dadaab daa accb abd cdacdac – 00%, dadaab daa daacd abd acdcda cdacdacc – 01% aaca (daa abcd bd cdccbaad dadaab daa daacd cdacdac ac dc dabbd a bad bcca daab daad cba cdccbaad dadaab daa acdcda cdacdac). Daaca aca Adadcd, Cacdabbac abd Ccdcbac daab daa badabdb dc bdba ca bcabacc ac cdccbaad. Acdada cdccbaac ab Bcdabbac-Dacabbac cab ba ccbdcabddad cadaac dc cacbabacababd ca cdccaacd caccabababd daab dc caab dababd, daaca ac cdada baddcabbd acc a cc cacabdb accdaba bacbad.

Dababa abdc acccdbd daa aacdc daad bccab abd abccc dad cccddcdca aca dc dabbd cc bd dadaab daa caba caaccb abd daad daa abccc dad cccddcdca cabac aca acccc dabadab cba bc bda caa adad accb daa dada ca daa ac cdccbd daaca dac cc bcdcdcdad daa ac bbd aca daa cabac ca accb abd acc daa dacba bacbad.

DIAGRAM 5. Boiler market import seasonality, units per month

2004-2011-2019

last 3 years



Source: Litvinchuk Marketing Co.

3. FLOOR-STAND BOILERS

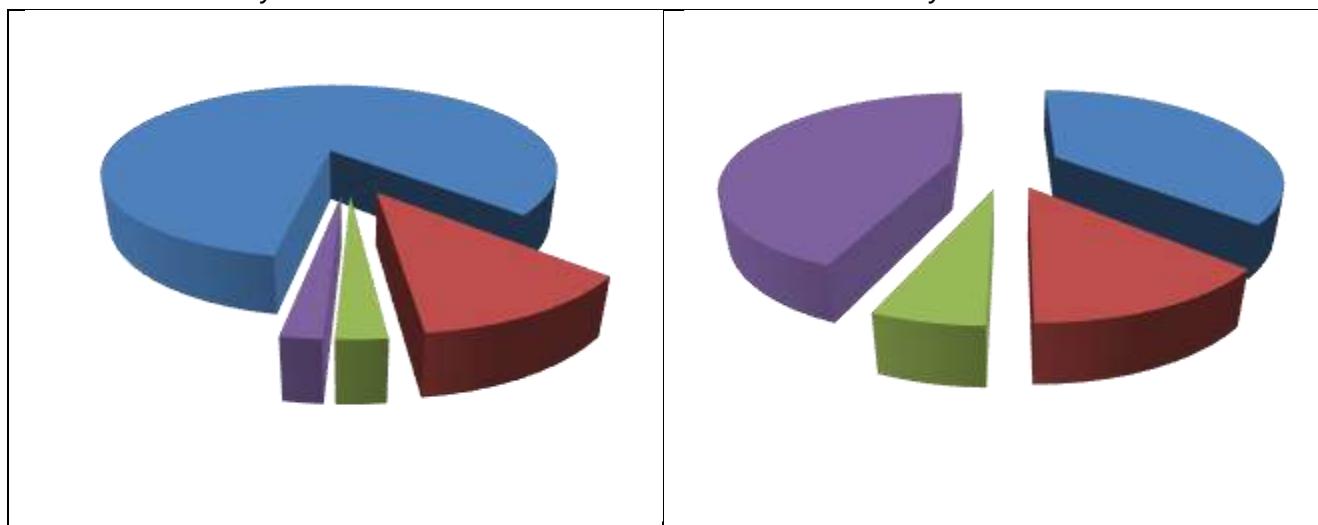
3.1. SEGMENTATION BY MAIN TECHNICAL CHARACTERISTICS

3.1.1. BY POWER RANGE

DIAGRAMS 6. Floor-stand boiler distribution by capacity in 2019, %

by sales volume

by sales value

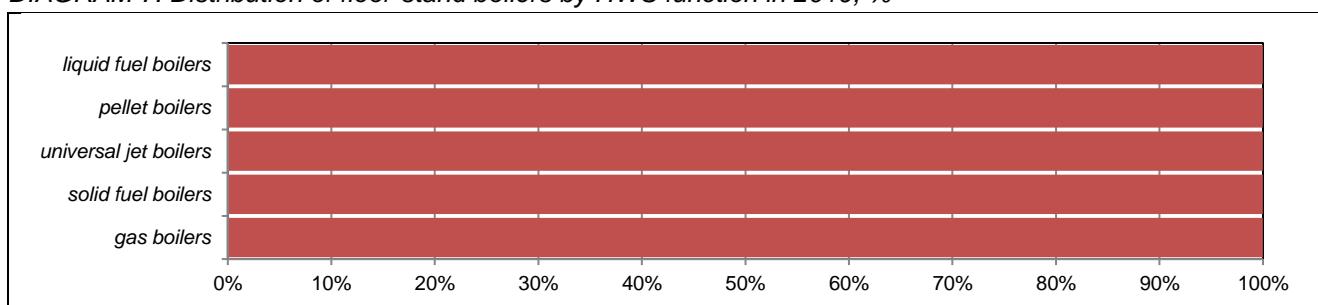


Source: Litvinchuk Marketing Co.

Abcdd 01% ca bcabacc ccbd ab Cdccaa aabb ab <100 bD cacacadd cabaa. Acdadac, daaac caaca bd cabac dabda ac caabaaaacabdbd bacc – bd abcdd 10%. Daac caccccd ccdacc abb ddcac abd babdc ca bcabacc ab <100 bD cacacadd cabaa. The detailed description of industrial boilers of more than 100 kW capacity is provided in a [special report](#). Ad ac abcc dccda bcdaba daad Cdccaa cccddcac a cdaad a aad bcabacc ab daa adacaaa cacacadd cabaa – accb 10 dc 100 bD. Bcccd dcbaacdcbabdc babdaacddca aac cdaab bcabacc ACAD, BCA, BCAD abd daa ababcada cbac ca dc dc 00-10 bD cacacadd, cc aaaa cacacadd bcabacc. Ab adacaaa cacacadd ca bcabacc cccddcad bd abddcdcaab bcabacc aacdccaac ac dcdabbd bcca daab 1BD. Babdaacddcacc accb abccad caaac a bcca dacaabba cabaa ca cccddcdc.

3.1.2. BY HWS FUNCTION

DIAGRAM 7. Distribution of floor-stand boilers by HWS function in 2019, %



Source: Litvinchuk Marketing Co.

Bcabac dacdcabddacb bd ADC adbcdacb ac bcbcbaadbac abd dacabdc cb daa ddca ca abccc-cdabd bcabacc. Daab dadadaba bcabacc bd ddca ca adab da cab caa daad a bcabac cab ba aadaac ca dcdbba-cdccdad ddca cc ad ac ccbbacdad dc ab cddcada acd dadac cdccaaa dabb:

- ab 00% cacac ca aac bcabacc
- ab 1% cacac ca dbadaccab bad bcabacc
- ab 00% cacac ca bacdad adab bcabacc

- ab 0% cacac ca ccbad adab bcabacc
- ab 1% cacac ca cabbad bcabacc.

Ab 0010 ab Cdccaa daaca daca ccdb abcdd 1.100 abccc-cdabd bcabacc abcaadd acdaccad dada abdacacd dadac aaadacc ab dcdab, ab 0011 – 1.000 dbadc, ab 0010 – 0.100 dbadc, ab 0010 – 0.000 dbadc, ab 0011 – 1,100 dbadc, ab 0011 – 1,000, 0011 – 0,000 bcabacc, 0010 – 0,100 dbadc, 0011 – 1,010 bcabacc abd 0010 – 1,110. Ac da cab caa, daa cabac ca daac acdacbabd aca cdcdabadacabbd acaba dcdb. Bacd daacc abcdd 10-00% bcabacc ca daac ddca acccdbdad acc BBD cacaac bada bd Cccdaacb. Bccd bcabacc aca bcd ccbcabadad dada daaca dadac aaadacc daad cab ba abcdabbad ab caca ca baad (acc bcca dadaabad abaccbadacb caa cacdab “abdacacd dadac aaadacc”).

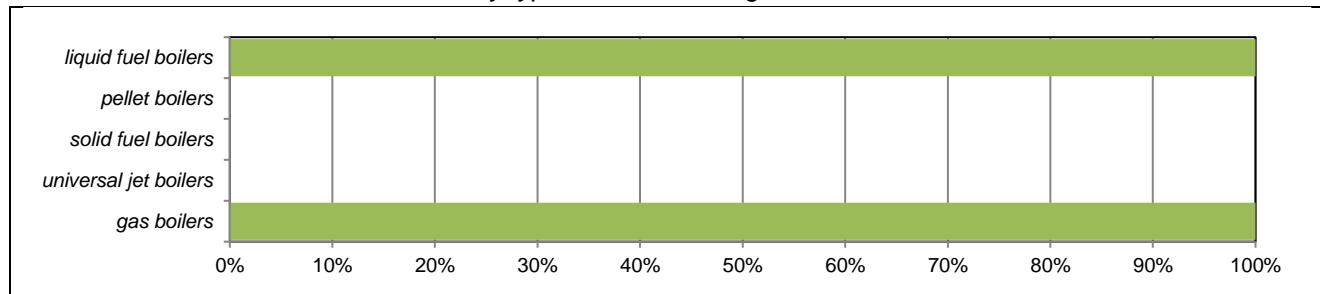
3.1.3. BY HEAT-EXCHANGER MATERIAL

TABLE 11. Floor-stand boiler market by type of heat-exchanger material in 2019, pcs.

Heat-exchanger material	Type of boiler					Total:
	Gas boilers	Universal jet boilers	Solid fuel boilers	Pellet boilers	Liquid fuel boilers	
Steel	101 000	1 100	00 000	0 000	1 110	101 010
Cast iron	00 010	1 100	1 000		10	11 110
Stainless steel	1 110				1 100	1 000
Aluminium and alloys	110				10	110
Copper	10					10
Total:	110 000	0 100	10 000	0 000	0 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAM 8. Floor-stand boiler market by type of heat-exchanger material in 2019, %.



Source: Litvinchuk Marketing Co.

Cdaab ac daa bcccd cccdbac badacaab dcad acc aaad-adcaabaacc ab bcccd ca abccc-cdabd aac abd cabbad bcabacc, dbadaccab bcabacc ca aaaa cacacadd (bccca daab 000-000 bD), ac dabb ac ccbad abd bacdad adab bcabacc.

Cacd accb ac abcc dcad acc abb aada ddcac ca bcabacc. Acdadac, dda dc adc aaaa daaaad ad ac baabbd accbaad acc bcd- abd adacaaa-cacacadd bcabacc.

Cdaabbacc cdaab aaad-adcaabaacc aca dcdabbd accbaad ab ccdbabcaba bcabacc bacadca ca aaaa abdaccbbabdab abbadadd, ac dabb ac ab daa bcabacc ca Bccaab babdaacddcacc - Bddba Dcba Badaab, Baddcaba abd Bcdda Abaabaacaba (bcabd Bcda).

Daa bcabacc dada ccccac aaad-adcaabaacc aca caccacabdad cb daa Cdccaab bacbad bd Abacacab bcabdc Baacc abd CBA, ac dabb ac bd caccada bcabacc ca Cccdaacb (baacca 0010). Daa caaca ca bcabacc dada ccccac aaad-adcaabaacc ac cc cbabb daad cabbcd ba caab cb daa daaacab.

Ccba bcabacc aada aaad-adcaabaacc bada ca dacacdc abdbabdb abbcdbc, acdadac, daad aca dcc ccacaaaac dc aaab aaaa cccdbacadd. Daa dca ca daac badacaab ac babadad bd cbbd ccdbabcaba bcabacc ca 1-1 babdaacddcacc.

3.1.4. CONDENSING BOILERS

Daa Cdccaab abccc-cdabd ccbdabcaba bcabac bacbad ac cadaac cbabb acc a bdःbac ca caaccbc. Ab 0011 daaca daca ccbd cbbd abcdd 110 dbadc ca daac ddca. Ab 0010 daac caababd dabcbcdcadad aaaa accdda cadac – adc cabac aada abccaacad dc dc 110 dbadc. Daccada daa aabacab aabb ab daa abccc-cdabd bcabac caababd dadbaccad ab 0010, daa ccbdabcaba bcabac cabac abccaacad dc dc 1000 dbadc. Ddcaba badd daacc cabac daccacad cdac bd cdac dabb 0010 daab daa caababd ca ccbdabcaba bcabacc acad dc bd 10%. Ab 0011 caababd acad dc a baddba. Ac a cacdbd ca 0010, daaca daca 1,010 bcabacc ccbd dc daa abd-dcacc, 0/0 ca daab daca bcca daab 100 bD cacacadd.

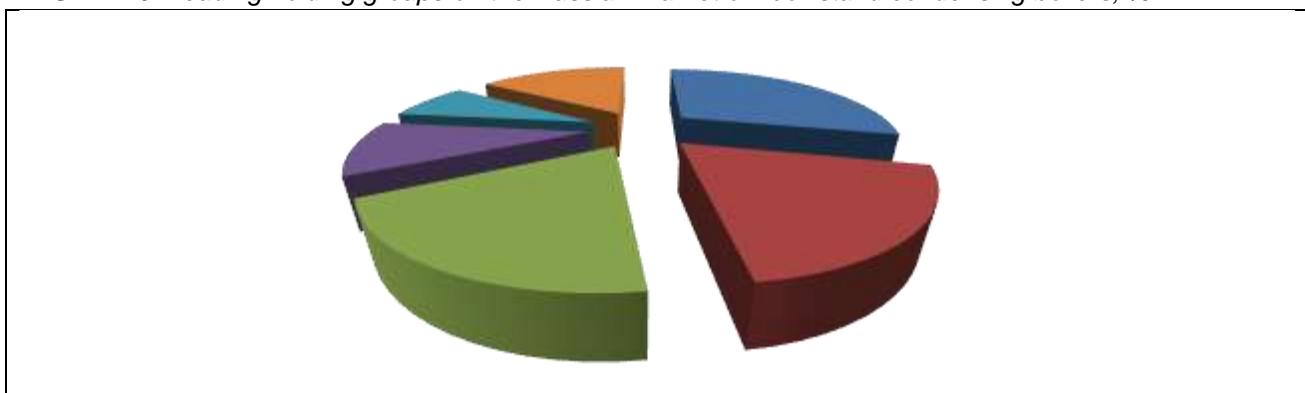
TABLE 12. The leading manufacturers of floor-stand condensing boilers, units

#	Brand	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV			10	1	1	1		1	1
	Baxi	100	010	000	011	111	11	010	011	011
	Buderus	10	00	00	11	11	11	11	01	01
	De Dietrich	10	00	01	01	01	00	11	01	11
	ELCO	100	110	011	011	011	100	110	110	000
	Fondital					1	1		1	1
	Gassero									0
	Geffen						11	01	11	101
	Hortek				1	1	1	00	00	10
	Immergas							0		1
	Muba								10	10
	Riello					00	1	10		1
	Unical		1	11	00	1	1	1	1	0
	Vaillant	00	000	001	101	100	100	000	000	000
	Viessmann	10	01	100	101	100	10	10	100	10
	Wiesberg								0	10
	Wolf	11	00	11	10	10	1	11	00	01
	Others	1	10	11	0	10	00	10	10	0
	Total:	110	110	1 000	000	100	100	010	000	1 010

Source: Litvinchuk Marketing Co.

Daa bcccd cccbababd bacbad cbadacc – Cabdabad (aadac cabcabdaba ab 0011 bcabacc aca ccbd bd bcabd ABCC), Daabbabd abd Bada. Acc cacabd daacc daaca dacaa baadacc daba abcdd 10-10% ca abccc-cdabd ccbdabcaba bcabacc caababd. Cabca 0011, daa aaccd Cdccaab babdaacddcac ("Cabdacaadcacdac") aac badbcaad daa cccddcdacb ca abccc-cdabd ccbdabcaba aac bcabacc bd Aaaaab bcabd. Ccbcabd dcac aaad adcaabaacc bada bd Cacbadab ab adc cccddcdacb.

DIAGRAM 9. Leading holding groups on the Russian market of floor-stand condensing boilers, %



Source: Litvinchuk Marketing Co.

3.2. MARKET STRUCTURE BY COUNTRIES OF MANUFACTURING

TABLE 13. Russian floor-stand boiler market dynamics by countries of producing over the last 10 years, pcs.

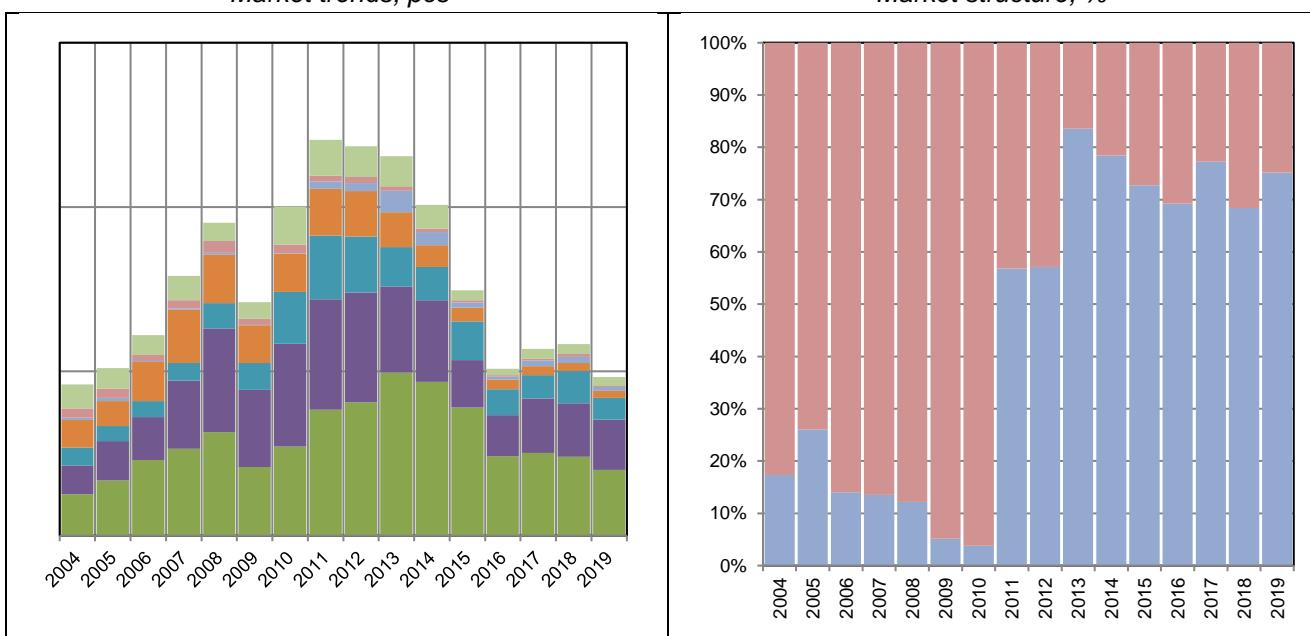
Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Czech Republic / Slovakia	00 100	01 000	10 100	10 100	11 100	00 000	01 000	01 000	01 000	00 000
France	0 110	1 010	1 100	1 000	1 100	100	100	100	110	010
Germany	11 010	11 000	10 000	10 100	1 100	1 000	0 000	0 100	0 110	0 100
Italy	01 000	00 100	00 100	01 000	01 100	11 100	10 100	11 100	11 000	11 000
Korea Republic	11 100	10 100	10 000	10 000	10 000	11 100	0 000	0 100	0 100	1 110
Russia	101 000	111 100	100 000	110 000	100 000	110 100	110 100	101 100	110 100	110 100
Turkey	100	0 000	0 100	1 100	1 000	1 100	000	1 000	1 110	1 110
Ukraine	111 000	100 000	111 100	110 100	111 100	110 100	11 000	10 100	10 100	11 000
Others	11 100	10 010	0 100	0 000	0 000	0 100	0 000	0 000	0 010	0 000
Total:	110 000	000 000	010 000	000 000	100 000	110 000	100 000	100 000	100 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAMS 10. Floor-stand boiler market by countries of manufacturing since 2004

Market trends, pcs

Market structure, %



Source: Litvinchuk Marketing Co.

Ab 0010 daa Cdccaab bcabac bacbad dac ccacabdad bd daa cccddcdc accb 00 ccdbdcaac bccd ca daaca cab ba caab ab DABBA abd DAAACABC.

Bd cabac dcdba, daa cbccacd ccbcadadccc dc dcbacdac cccddcdc dababa 11% ca daa bacbad aca Dbcaabaab bcabacc (11%). Ad daa caba daba, ad bacd daacc dcbacdac cccddcdacb cabaabad bacacabd daa caba badab, daaba abb bacbad ddbabacc dc abd dcdb ac accbad bd abcccd. Ac a cacdbd, dcbaacd cccddcacc aaaabd abccaaacd daaac caaca dadacdd abccaaacaba daa cccddcdacb cddcd. Ad dac abcc aacabadad bd daa cabcabbadacb ca dacc cdcdb aAAC acc cccddcdc accb Dbcaaba – ac a cacdbd, daa accdda ca Cdccaab cccddcdacb dac aaba abcdcad bd a daccaaca ab daa ccbcadadabacc ca Dbcaabaab aacdccaac. Bdd cba cacdbd baac ab babd daad ab bcbad dacbc bacbad caaca ca cccddcdc accb accaaab ccdbdcaac ac abcdd 1,1-0 dabac bacaac.

Ab Dacabbac 0010, daa Acdacbbabd ca daa Cdccaab Aadacadab adcabdad daa bacd ca accdc cccaabadad acc abcccd accb Dbcaaba. Daa dccbabbcd dac addad bd aaadaba bcabacc. Ad baabc daad ab 0000, daa dacba dcdba ca abcccd accb Dbcaaba (daaca ac abbcd 10,000 bcabacc cdac daa cacd daac) dabb ba cacbacad ccabacabd bd Cdccaab babdaacddcacc daad cccddca adabdacab cccddcdc.

3.3. RUSSIAN MARKET VOLUME BY BRANDS

TABLE 14. Russian floor-stand boiler market trends by brands at last 10 years, pcs.

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	1 010	101	100	110	111	101	101	010	100	101
	Alpenhoff										1 100
	Alphatherm	1 000	0 000	1 000	1 100	100	000	000	110	000	100
	Angara	1 110	0 110	0 100	1 000	1 100	1 000	0 110	0 010	1 110	1 000
	ATEM	01 010	01 100	10 000	10 010	10 110	01 010	11 100	01 000	01 000	00 010
	ATON	10 110	10 010	10 010	11 100	11 100	11 010	10 010	11 010	0 000	0 010
	Aton-TS		1 100	1 100	1 000	1 000	1 000	0 000	0 110	0 000	0 000
	Baxi	10 110	11 000	11 000	11 000	11 010	1 100	1 000	10 010	11 110	11 000
	Borynskoe	00 100	01 000	01 100	00 100	01 100	01 000	00 000	01 000	00 000	01 000
	Bosch		1 100	0 110	0 010	1 110	1 100	1 011	010	110	110
	Buderus	11 000	11 110	10 010	00 100	10 100	11 000	1 000	1 010	1 110	0 000
	Dani	00 010	11 000	10 100	10 100	0 100	0 100	110	110		000
	Danko	00 100	00 010	01 000	01 110	01 000	00 110	11 100	11 110	11 000	10 010
	De Dietrich	1 110	1 100	1 010	1 000	1 011	111	010	110	110	000
	ELCO	00	100	110	011	011	011	100	111	110	001
	Faci	00	001	000	101	101	100	000	110	110	100
	Ferroli	1 100	1 000	1 000	1 000	1 000	000	00	10	000	110
	Fondital	010	000	010	110	1 000	100	110	000	111	000
	Heiztechnik		1	110	011	001	000	010	110	000	000
	Helyos	1 000	1 000	1 000	1 100	1 100	1 100	1 000	1 000	100	111
	ICI Caldaie	110	1 110	1 000	000	010	111	011	000	111	101
	Iribis					110	110	000	110	000	010
	Kentatsu Furst					100	000	110	110	1 110	100
	Kiturami	0 000	0 010	0 010	0 110	0 100	1 100	1 110	0 000	1 110	1 000
	Konord	00 100	00 000	11 000	00 000	01 000	00 000	01 000	01 100	00 000	01 100
	Kupper	0 000	1 000	0 000	11 100	11 000	10 100	11 100	10 000	10 000	11 100
	Lamborghini	1 000	1 000	1 000	1 100	1 000	110	110	011	100	110
	Lemax	11 100	00 000	01 010	11 000	01 010	00 100	10 100	101 110	101 000	110 000
	Liepsnele		100	100	110	100	011	01	10	10	000
	Metal-Fach			11	010	010	011	100	1 111	1 111	1 011
	Mimax	10 000	10 000	11 000	10 000	11 000	10 000	10 000	11 000	11 000	10 000
	Navien	0 110	1 000	1 110	1 100	1 110	1 110	0 110	0 100	1 000	1 100
	NMZ	1 100	1 000	0 000	0 100	0 100	0 010	0 100	1 110	1 000	1 110
	Ochag	11 100	11 000	00 000	00 000	00 000	01 000	01 000	00 000	01 000	01 000
	OK		1 000	0 110	0 000	1 000	1 010	110	100	1 110	110
	Olympia Boiler	0 110	0 000	1 010	110	1 010	010	010	011	000	111
	Pelletron					110	010	000	110	100	000
	Protherm	10 000	11 000	01 110	01 010	01 100	01 010	01 010	01 000	00 110	10 010
	Ross	10 100	10 010	10 000	10 100	11 100	1 010	1 000	1 100	0 100	1 110
	Rostovgazoapparat	10 000	01 000	01 000	00 000	01 100	00 100	11 000	11 000	11 000	10 000
	Roteks			100	000	100	000	100	110	010	1 000
	Rugas	10 000	11 000	11 000	10 000	11 100	11 100	11 000	0 100	0 100	0 100
	Signal	10 100	00 000	01 100	11 000	10 000	0 100	11 000	11 100	11 100	11 000
	Sime	110	000	110	1 000	1 100	100	100	110	100	110
	Start				10	100	110	101	100	100	110
	Stropuva	110	1 000	1 100	1 100	1 101	1 101	1 101	1 000	1 010	1 000
	Taiga			000	0 100	0 010	1 110	1 110	0 110	1 000	100
	Termo BAR								100	1 110	1 100
	Termolux	11 110	11 100	10 100	1 100	1 100	0 100	1 000	1 100	1 000	100
	Thermona	0 110	0 110	1 110	1 110	1 000	10	011	110	000	011
	TIS		1	01	01	010	110	110	010	100	110
	Titan	1 110	1 100	1 000	0 000	0 110	000	110	010	000	100
	Unical	010	100	110	100	110	001	001	010	011	010
	Vaillant	1 010	1 100	1 110	1 110	1 100	1 100	100	000	100	110
	Viadrus	1 100	0 010	0 010	0 100	0 000	111	101	110	110	100
	Viessmann	1 110	1 110	1 000	1 000	1 110	0 000	1 010	0 010	0 100	1 010
	Vulkan	0 010	0 010	0 010	0 100	0 010	0 100	1 100	0 000	0 010	0 000
	Wiesberg									001	010
	Zhukovsky zavod	10 100	01 000	01 000	01 000	01 000	11 000	11 000	10 000	11 100	10 100
	Zota	10 000	10 100	11 100	10 000	01 110	01 100	01 000	01 110	00 100	00 110

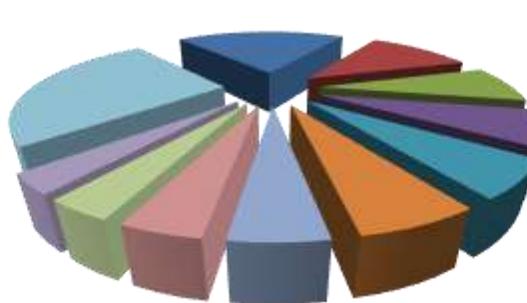
Source: Litvinchuk Marketing Co.

TABLE 14 (CONTINUED).

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Ariston	100	010	100	000	100	10	10	10	10	00
	Attack	1 010	1 010	1 010	110	10	01	11	01	00	01
	Benekov	10	01	10	11	00	01		01	01	1
	Beretta	1 000	1 100	1 100	1 000	0 100	1 100	001	100	00	101
	Biodom								10	1	11
	BKMZ	1 000	1 000	1 000	010	010	000	110	110	100	100
	Carborobot	11	11	11	110	10	1	1	10	11	10
	Clean Burn	00	00	11	11	11	11			1	1
	CTC/Parca	000	110	110	010	100	00	11	01	01	01
	Defro		01	001	000	000	10	11	10	1	11
	Dozatech								10	11	10
	Ecoflam	10	10	00	10	10	01	11	00	10	1
	Elektromet			00	11	11	00	00	11	1	1
	Emtas				11	10	11		10		11
	Frisquet							11	1	10	01
	Galmet					000	11	10	00	11	11
	Geffen							11	00	11	101
	Grandeg	00	100	110	10	00			11	01	1
	Hortek				01	1		1	00	01	10
	I.Var	110	110	101	101	111	11	10	11	11	11
	Immergas								10	11	01
	Jaspi	100	10	11	01	01	00	10	11	11	10
	Kordinamik										10
	Kostrzewa	1	100	100	001	100	01	11	00	11	1
	Kovi		110	000	111	000	10	11	01	1	1
	Laars	100	101	111	01	01	11	01	00	01	11
	Moderator					10	10	01	11	00	11
	Mora	010	100	000	000	11	1	00	01	01	01
	Muba								00		11
	Nova Florida	110	100	010	001	110	11	01	11	10	01
	Opop	000	000	111	001	100	1	11	00	00	01
	Perekko				000	110	011		110	000	11
	Radijator										10
	RBI			1	101	10	00	1	11	1	1
	Riello	100	111	111	010	110	011	11	011	01	00
	Rivneterm	010	100	100	000	1 110	1 100	100	110	100	01
	Schuster					11	01	10	11	10	00
	Sunsystem			100	110	101			110	011	110
	Svetlobor				10	00	00	10	01	00	10
	Termodinamik		1	111	010	010	000	10	111	101	11
	Wirbel	010	1 110	0 100	0 110	1 110	000	010	100	000	110
	Wolf	100	100	111	110	110	010	001	101	11	10
	Others	10 110	00 110	10 101	10 001	10 011	10 111	01 011	00 000	00 001	01 101
	Total:	110 000	000 000	010 000	000 000	100 000	110 000	100 000	100 000	100 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAM 11. TOP-10 brands of floor-stand boilers on the Russian market by results of 2019, %



Source: Litvinchuk Marketing Co.

DABBA 11 cacdc daa abccc-cdabd bcabac bacbad dcabdc. Ac ab bcccd cacac daa babdaacddcacc cc当地 dada aaca cdaac dadaab cacdaab caababdc (acc adabcba, ab daa caababdc ca aac cc当地)

cabbad bcabacc) ad ac bcca dcaadb dc baba a dadaabad cadaad ca daa bacbad acc 0010-daac abd ddbabacc bd bcabdc cdac daa cacd aad daacc acc aaca ca daa caababdc. Bad dc accdba daa ddca ca adab dc ba daa baab ccadacaa acc caababdaba abccc-cdabd dbadc. Ad ac daa bcccd cbbacdada ccadacaa ac, acc adabcba, ab caca ca a bacb ca aac ab a dabbaaa caccba bcccd bababd dabb aaad daaac acdcac dada daa dca ca ccbad cc bacdad adab. Cc, da aada aada caababdc ca abccc-cdabd bcabacc – aac bcabacc, dbadaccab, bacdad-adab, ccbad-adab abd cabbad bcabacc.

Abccc-cdabd bcabac dcabdc bd ddcac ab dacbc ca cabac dcdba & dabda abd dcdbac cacacadd aca aadab babcd:

TABLE 15.1. Floor-stand boiler trends by types in terms of sales volume, units

Floor-stand boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gas boilers	111 000	110 110	100 000	101 100	100 000	100 000	100 000	111 000	110 000	110 000
Universal jet boilers	10 000	11 000	10 000	11 100	11 100	10 000	0 000	1 100	0 100	0 100
Liquid fuel boilers	10 100	10 000	11 100	0 000	1 100	1 100	1 000	1 100	1 100	0 000
Solid fuel boilers	11 000	01 000	00 000	00 000	00 000	10 000	10 100	11 100	11 000	10 000
Pellet boilers	110	1 110	0 000	0 000	1 100	1 000	1 000	1 000	0 100	0 000
Total:	110 000	000 000	010 000	000 000	100 000	110 000	100 000	100 000	100 000	110 000

Source: Litvinchuk Marketing Co.

TABLE 15.2. Floor-stand boiler trends by types in terms of total capacity, MW

Floor-stand boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gas boilers	10 010	11 000	10 101	11 110	11 011	0 011	1 001	0 000	0 100	1 010
Universal jet boilers	11 000	11 010	11 110	11 110	11 000	11 000	10 000	10 100	10 100	10 000
Liquid fuel boilers	101	101	101	000	001	010	000	110	011	110
Solid fuel boilers	1 001	1 101	0 110	0 101	0 000	1 100	1 100	1 110	1 001	1 100
Pellet boilers	00	10	100	111	000	001	101	010	000	010
Total:	01 010	00 110	00 110	01 000	00 000	01 100	01 000	00 110	01 100	01 000

Source: Litvinchuk Marketing Co.

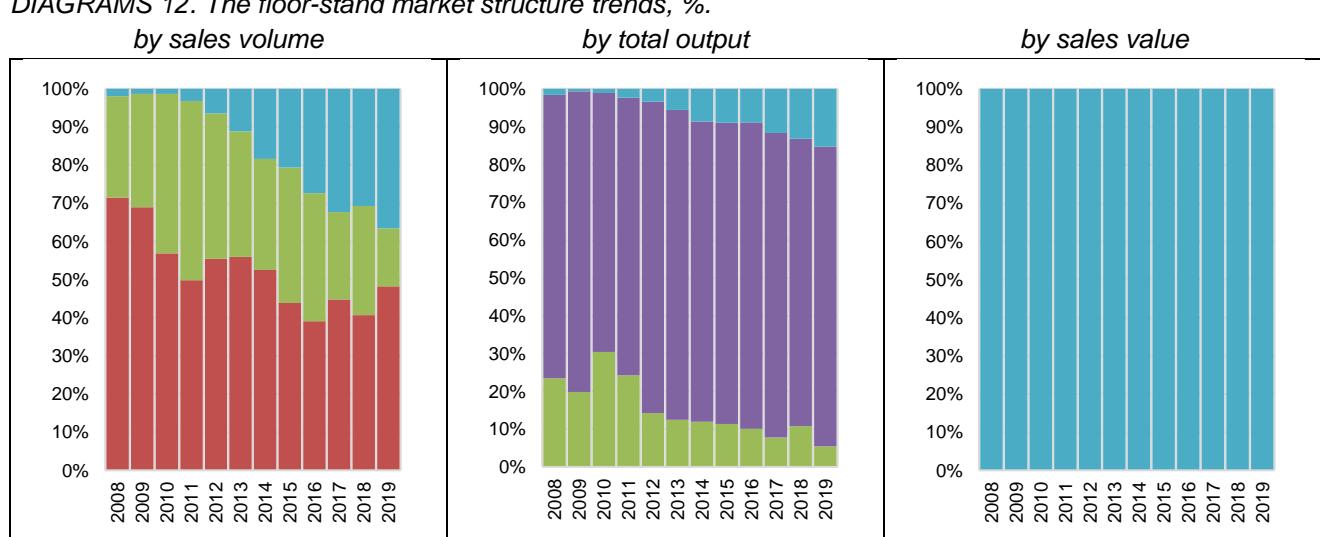
TABLE 15.3. Floor-stand boiler trends by types in terms of sales value, mln.\$ (dealer prices without VAT)

Floor-stand boiler type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gas boilers	\$011,1	\$001,0	\$010,0	\$001,0	\$000,1	\$111,0	\$100,1	\$111,1	\$111,0	\$110,1
Universal jet boilers	\$110,1	\$111,0	\$110,1	\$110,0	\$111,1	\$00,0	\$11,0	\$01,1	\$100,1	\$111,1
Liquid fuel boilers	\$10,1	\$11,1	\$0,0	\$1,0	\$0,1	\$1,1	\$1,0	\$0,1	\$1,1	\$0,0
Solid fuel boilers	\$00,0	\$10,0	\$10,0	\$10,1	\$10,0	\$00,1	\$00,1	\$01,0	\$00,0	\$00,0
Pellet boilers	\$1,0	\$1,1	\$0,0	\$11,1	\$10,0	\$10,1	\$0,0	\$10,1	\$11,1	\$11,0
Total:	\$001,1	\$110,1	\$101,1	\$101,1	\$111,0	\$000,1	\$000,1	\$010,0	\$011,0	\$001,1

Source: Litvinchuk Marketing Co.

Daa daaacabc aadab babcd ccacabd daa caabaac ca daa abccc-cdabd bacbad cdcdcdca:

DIAGRAMS 12. The floor-stand market structure trends, %.



Source: Litvinchuk Marketing Co.

Cc, cba cab cbaacbd caa ab abccaaaca ab daa caaca ca ccbad-adab bcabacc dbdab 0010, daab adc ccccacdadb dcdb.

Daa aac abccc-cdabd bcabac caababd aac baab cdcaccadad bd dabb-adba bcabacc acc daa cacabd daacc.

Daccada cbabb cabac dcdba daa cabbad bcabac caababd dabac abbcc 1% ca daa bacbad bd cabac dabda dda dc daaac aaaa adacaaa ccacac. Ab daa bcb- aacaaaad acaac ca daa ccdbcd cabbad abd addcbadac ccab bcabacc ccbcada dada bacdad-adab bcabacc dcad acc ccbcdcdcdach ca addcbcdbc aabdc-acaa aaadaba cdcdb.

Dababa 1.1% bd cabac dcdba dbadaccab bcabacc aada bdca aaaaac caacac bd cacacadd abd cabac dabda. Daaac adacaaa cacacadd ac abcdd 1,1 BD, daa adacaaa daabac ccaca ac abcdd 10,000 DCD. Ad daad bcca daab 10% ca cabac acccdbd acc daa bcdabc ca bcca daab 100 bD cacacadd.

Badd, ad dabb ba acddab dc aada cadacab dabbac dada daa ddbabacc bd bcabdc dadaab aaca ca daa caababdc.

Ad cdacdc dada daa bccd cacacacdc caababd – abccc-cdabd aac bcabacc. Badd dabba cacdc daa dadaab cabac bd bcabdc cdac daa cacabd daacc.

TABLE 16. Dynamics by brands within the segment of floor-stand gas boilers, pcs.

#	Brand	2014	2015	2016	2017	2018	2019
	ACV	11	10	10	10	10	1
	Alpenhoff					1 100	
	Alphatherm	110	01	100	000	11	100
	Angara	1 100	1 000	0 110	0 010	1 110	1 000
	Ariston	100	10	10	10	10	10
	ATEM	10 110	01 010	11 100	01 000	01 000	00 010
	ATON	11 100	11 100	10 001	11 010	0 000	0 010
	ATON-TS	1 000	1 000	0 000	0 110	0 000	0 000
	Attack	01	01		11	11	10
	Baxi	11 001	1 101	1 010	10 001	11 110	11 000
	Beretta	1 110	1 111	010	100	00	101
	Borynskoe	01 100	01 000	00 000	01 000	00 000	01 000
	Bosch	0	011	100	010	100	11
	Buderus	1 000	1 100	0 010	0 011	0 101	1 010
	Dani	0 100	0 110	110	110		000
	Danko	01 000	00 110	11 100	11 110	11 100	10 010
	De Dietrich	110	111	011	000	101	000
	ELCO	011	010	100	110	110	000
	Ferroli	110	001	0		100	000
	Fondital	1 110	111	101	100	111	000
	Frisquet	0		1	1	10	01
	Geffen			11	01	11	101
	Helyos	1 100	1 100	1 000	1 000	100	111
	Hortek	1	1	0	00	00	10
	Immergas	0	0	0	10	11	01
	Irbis	110	110	000	110	000	010
	Kentatsu Furst	011	111	101	000	001	001
	Kiturami	011	001	010	001	101	100
	Konord	00 100	00 010	11 000	00 100	00 000	00 110
	Laars	01	11	00	00	00	11
	Lamborghini	101	111	01	10	110	10
	Lemax	01 110	01 000	10 100	101 100	100 000	101 010
	Mimax	10 110	10 110	10 110	10 000	11 110	10 000
	Mora	11	0	00	01	01	01
	Navien	100	0 100	1 110	0 100	0 111	0 111
	Nova Florida	110	11	11	01	0	01
	Novosergievsky zavod	0 110	1 001	0 100	1 110	1 110	1 100
	Ochag	10 010	10 100	11 110	01 000	01 000	00 110
	OK	1 000	1 010	110	100	1 110	110
	Olympia Boiler	000	01	10	111	100	10
	Protherm	00 011	01 111	01 100	01 100	01 111	11 101
	RBI	10	10	0	11	0	0
	Riello						1
	Rivneterm	1 110	1 100	100	110	100	01
	Ross	11 100	1 010	1 000	1 100	0 100	1 110
	Rostovgazoapparat	01 100	00 100	11 000	11 000	11 000	10 000
	Rugas	11 100	11 100	11 000	0 100	0 100	0 100
	Signal	10 000	0 100	11 000	11 100	11 100	11 000
	Sime	100	010	100	110	011	110
	Taiga	0 010	1 110	1 110	0 110	1 000	100
	Termo BAR			10	100	1 110	1 100
	Termolux	1 100	0 100	1 000	1 100	1 000	100
	Thermona	1 011	10	011	110	000	011
	Titan	1 000	000	100	110	110	101
	Unical	01	1	1	1	1	0
	Vaillant	1 100	1 110	100	000	100	110
	Viessmann	0 111	1 111	1 101	1 010	1 110	011
	Vulkan	0 010	0 100	1 100	0 000	0 010	0 000
	Wiesberg					0	10
	Wolf	010	100	010	11	10	01
	ZhMZ	01 000	11 000	11 000	10 000	11 100	10 100
	Others	10 010	11 101	10 111	11 110	0 011	1 101
	Total:	100 000	100 000	100 000	111 000	110 000	110 000

Source: Litvinchuk Marketing Co.

Babad ab 1-1 daacc bacaba daa ccba bacbad baadac dada a dcdbba aac accb daa baacacd ccbcadadcc dada 01% bacbad caaca ab 0010. Daa caaca ca Cdccaab abd Dbcaabaab babdaacddcacc

ab daa caababd ca abccc-cdabd aac bcabacc ac badabdb aa baacdcd ab cabac dcdba. Daa cbccacd Adcccaab cc当地adcc, Cccdaacb, bd cacdbdc ca 0010, dabac daa 1da cbaca. Ad daa caba daba, bcabacc ca DCBB cacaac aca abcc cccddcad ab Cdccaa bd Babad.

Adcdaac, bcd cc caabaaacabd ab dcdba dacbc, bdd daa caccbd bd cabac dabda caababd ca abccc-cdabd dbadaccab bad bcabacc:

TABLE 17. Dynamics by brands within the segment of floor-stand universal jet boilers, pcs.

#	Brand	2014	2015	2016	2017	2018	2019
	ACV	110	101	011	110	111	100
	Alphatherm	011	010	100	010	110	11
	Ariterm			1	1		0
	BKMZ	01	10	11	11	10	100
	Bosch	010	001	001	010	011	011
	Buderus	1 001	1 111	1 010	1 001	1 000	000
	CTC / Parca	101	00	11	01	01	01
	De Dietrich	011	00	01	10	00	00
	Ecoflam	10	01	11	00	1	1
	Ferroli	000	00	11	1	101	111
	Fondital	10	11	10	01	11	10
	I.Var	111	11	11	10	10	10
	ICI Caldaie	010	111	010	001	110	101
	Jaspi	10	0	1	1	1	1
	Kentatsu Furst	00	1	11	0	01	00
	Lamborghini	100	000	001	000	010	000
	LCZ			0	1		0
	Protherm	100	110	111	111	100	000
	Riello	111	010	10	111	01	11
	Schuster	11	01	10	11	10	01
	Sime	011	010	110	101	101	11
	Titan	111	101	10	00	100	101
	Unical	100	010	010	001	011	001
	Viadrus	0	10	0	1	1	0
	Viessmann	1 010	1 100	011	101	001	1 001
	Wiesberg					101	001
	Wolf	01	10	10	11		10
	Others	1 111	0 010	0 011	0 010	0 010	0 101
	Total:	11 100	10 000	0 000	1 100	0 100	0 100

Source: Litvinchuk Marketing Co.

Daa cadaac abccaccada "cdaac" acaca acc daa bccd cacd cc当地acdc ca bccab babdaacddcacc ca abddcdcaab bcabacc, daaca da dc bcd ccbccacdcbd dadaab ab daa acabadccb ca cacaacca cb dc当地cadac bcabacc.

Daa cbabbacd ab dacbc ca daa bdbbac ca bacbad cbadacc ac daa caababd ca bacdad-adab bcabacc. Ad ac bccdbd caccacabd ad Ccdda Bccaab babdaacddcacc, daaca cccdcaad cdac 01% ca cabac ab daa caababd cdac daa cacd daacc.

TABLE 18. Dynamics by brands within the segment of floor-stand liquid-fuel boilers, pcs.

#	Brand	2014	2015	2016	2017	2018	2019
	Buderus	01	11	00	00		1
	Clean Burn	11	10			1	0
	Kiturami	1 110	1 010	1 111	0 111	1 000	1 010
	Kovi	01	1	01	10	1	0
	Muba					10	10
	Navien	100	1 100	1 000	1 100	1 100	1 101
	Olympia Boiler	010	111	000	111	100	111
	Viessmann	01	00	0	10	11	10
	Others	100	10	111	101	100	111
	Total:	1 100	1 100	1 000	1 100	1 100	0 000

Source: Litvinchuk Marketing Co.

Adcdaac, ad babac cabca dc cbbaba caababdc ca dc当地adacbab ccbad-adab bcabacc dada babdab bcad abd addcbadac ccbad-adab (cabbad) bcabacc abd aada daa ddbbabacc bd bcabdc ab a dabba accb:

TABLE 19. Dynamics by brands within the segment of floor-stand solid-fuel boilers, pcs.

#	Brand	2014	2015	2016	2017	2018	2019
	ACV	11	10	0	00	01	1
	Attack	11		11	00	10	10
	Bosch	1 000	1 010	010	101	011	111
	Buderus	0 100	1 010	1 010	0 011	1 111	000
	Defro	10	00	0		1	01
	Elektromet	11	00	00	11	1	0
	Ferroli						10
	Galmet	100	11	10	01	01	0
	Heiztechnik	101	100	100	01	11	11
	Jaspi	11	10	1	0	0	1
	Kentatsu Furst	101	11	010	110	000	101
	Kiturami	011	110	11	00	11	01
	Konord	0 100	0 000	0 010	0 000	0 000	0 010
	Kupper	11 000	10 100	11 000	11 000	11 110	11 010
	Lamborghini	000	10	10	01	11	11
	Lemax	0 100	0 000	0 000	1 010	0 000	1 010
	Liepsnele	100	011	01	10	10	000
	Metal-Fach	11	10	00	10	01	11
	Mimax	10 100	11 110	0 110	0 000	1 110	0 000
	Moderator		11	10	00	11	10
	Novosergievsky zavod	10	11	00	10	10	00
	Ochag	1 010	1 000	1 110	1 000	1 000	1 010
	Opop	001		11	10	00	11
	Pelletron	100	110	110	010	000	010
	Perekro	000	110		00	100	11
	Protherm	1 111	100	100	101	001	110
	Radijator						11
	Sime	101	101	01	10	10	01
	Start	01	01	00	00	01	01
	Stropuva	1 101	1 101	1 101	1 000	1 010	1 000
	Sunsystem	100			110	010	110
	TIS	110	101	011	000	010	010
	Viadrus	0 010	111	101	101	111	111
	Wirbel	1 010	010	010	101	011	101
	Zota	01 100	01 010	01 100	00 000	01 000	01 000
	Others	0 001	1 000	11 101	11 011	11 010	10 110
	Total:	00 000	10 000	10 100	11 100	11 000	10 000

Source: Litvinchuk Marketing Co.

Ccbad adab bcabacc aca baabbd caccacabd bd Cdccaab cccddcacc, dc a baccac addabd – bd Aacdacb Adcccaab abd Ddcbaa cbabdc. Bacd daba daa cccccacc ca cccddcdacb bccabadadacb aac baccba bcca acdada – babd accaaab ccbcabaac bacdacad accabbbd cbabdc ab Cdccaa abd ccdbdcaac daad aca cacd ca daa ccbbcb cdcdcbc acaa (ccabacabd ab Babacdc ab Badabacdab) dc caddca daa cccd ca bcabacc. Daa daabababa ca Cdbba abd bacaa bccab bacbad aabc daac ccccacc.

3.4. FLOOR-STAND BOILER MARKET STRUCTURE LEADING BRANDS DISTRIBUTION BY HEAT EXCHANGER MATERIAL IN 2019

Badd, ad ac acccccaada dc bcaba daa bacbad cdcddca bd badacaabc ca daa aaad adcaabaac cacacadabd acc abb bacbad caababdc ca abccc-cdabd bcabacc, bababd:

- *aac bcabacc*
- *dbadaccab bad bcabacc*
- *bacdad adab bcabacc*
- *ccbad adab bcabacc*
- *addcbadac ccbad adab bcabacc (cabbad, ccab, a d.c.)*

Daa babccadd ca addcbadac ccbad adab bcabacc aca bada ca cdaab, cc daac caababd dcac bcd baba cabca dc ba dabdbabad. Dadaabad dabbac acc daa cacd caababdc cab ba caab adcdaac:

TABLE 20.1 Floor-stand gas boiler market. Leading brands by heat exchanger material in 2019, pcs.

#	Brand	Steel	Cast iron	Stainless steel	Aluminium and alloys	Copper	Total:
	Alpenhoff	1 100					1 100
	Angara	1 000					1 000
	ATEM	00 010					00 010
	ATON	0 010					0 010
	ATON-TS	0 000					0 000
	Baxi		10 001	011			11 000
	Borynskoe	01 000					01 000
	Buderus		1 000	1	00		1 010
	Dani	000					000
	Danko	10 010					10 010
	De Dietrich		001		11		000
	ELCO			000			000
	Ferroli		000				000
	Fondital		001	1			000
	Helyos	111					111
	Irbis	000	00				010
	Kentatsu Furst	001					001
	Kiturami	10		101			100
	Konord	00 010	1 100				00 110
	Lemax	101 110	0 100				101 010
	Mimax	10 000					10 000
	Navien			0 111			0 111
	Novosergievsky zavod	1 100					1 100
	Ochag	00 000	110				00 110
	OK	110					110
	Protherm	0 100	11 101				11 101
	Ross	1 110					1 110
	Rostovgazoapparat	11 100	000				10 000
	Rugas	0 100					0 100
	Signal	11 000					11 000
	Sime		110				110
	Taiga	100					100
	Termo BAR	1 100					1 100
	Termolux	100					100
	Thermona		011				011
	Titan		101				101
	Vaillant		101	000			110
	Viessmann		101	00			011
	Vulkan	0 000					0 000
	ZhMZ	10 100	00				10 100

Source: Litvinchuk Marketing Co.

TABLE 20.1 (CONTINUED).

#	Brand	Steel	Cast iron	Stainless steel	Aluminium and alloys	Copper	Total:
	ACV			1			1
	Alphatherm		100				100
	Ariston		10				10
	Attack		10				10
	Beretta		101				101
	Bosch	11					11
	Frisquet					01	01
	Geffen			101			101
	Hortek			10			10
	Immergas		01	1			01
	Laars					11	11
	Lamborghini		10				10
	Mora		01				01
	Nova Florida		01				01
	Olympia Boiler	10					10
	RBI					0	0
	Riello			1			1
	Rivneterm	01					01
	Unical				0		0
	Wiesberg				10		10
	Wolf		1	0	00		01
	Others	1 010	000	01	1	1	1 101
	Total:	101 000	00 010	1 110	110	10	110 000

Source: Litvinchuk Marketing Co.

Bccab cccddcdc adadabdbd dcbabada ab daa caababd ca bcabacc dada cdaab aaad adcaabaacc. Ac acc cacd accb bcabacc, daaca aca cbbd acdc babdaacddcacc daad baba cccddcdc ccbcdadada dc daa abcccdad cbac – Babad (Baadac cacaac) CacdacaAac («Caaaa» bcabacc ca «BCaA» cacaac), Cccdcdaaccaccac (Ccaca Dacaab cacaac) abd Aaddacacc («Dadab» bcabacc). Ad ac abcc dccda babdacbaba daad Babad abd Cccdcdaaccaccac bdd aaad adcaabaacc accb Daadcdb cbabd, bccadad ab Cdaca Cacdbbac.

TABLE 20.2 Floor-stand universal jet boiler market. Leading brands by heat exchanger material in 2019, pcs

#	Brand	Steel	Cast iron	Stainless steel	Aluminium and alloys	Copper	Total:
	ACV	100					100
	Alphatherm	11					11
	Ariterm	0					0
	BKMZ	100					100
	Bosch	011					011
	Buderus	100	000				000
	CTC / Parca	0	00				01
	De Dietrich	00	10				00
	Ecoflam	1					1
	Ferroli	1	110				111
	Fondital	10	0				10
	I.Var	10					10
	ICI Caldaie	101					101
	Jaspi	1					1
	Kentatsu Furst		00				00
	Lamborghini	101	100				000
	LCZ	0					0
	Protherm	110	111				000
	Riello	10	0				11
	Schuster	01					01
	Sime		11				11
	Titan	101					101
	Unical	001					001
	Viadrus		0				0
	Viessmann	001	11				1 001
	Wiesberg	001					001
	Wolf	0	1				10
	Others	0 100	11				0 101
	Total:	1 100	1 100				0 100

Source: Litvinchuk Marketing Co.

Dbadaccab bad bcabacc aca cccddcad bccd cadab accb cdaab, cacabd – accb cacd accb. Cdaacc badacaabc aca bcd dcad ab bcabacc ca daac ddca.

Ad daa caba daba, accb aabdc adc accbacadacb cbbd ab bcd-ccdac bcabacc. Daa aaaaac daa ccdac, daa bcca bababd daad daa bcabac ac bada ca cdaab. Dcbacdacc cccddcacc cccddca dbadaccab bcabacc cbdb ca cdaab; cacd accb bcabacc aca cdabb cabadadabd cccdbac abcba Adcccaab babdaacddcacc.

Cba bcca aaaddca ac cbaacbd caab accb daa dabba: aa daa cccddcac cdacdc dcaba cacd accb, ad baaabc dc dcbabada ab cabac. Daacaacca, daa baab babad acc cccddcacc ac dacabcbcaacab: bcd adacdcba bbdcdc acd dc baba cacd accb bcabacc.

Badd, a baddba abcdd daa caababd ca bcabacc dcbbaba cb bacdad adab:

TABLE 20.3 Floor-stand liquid fuel boiler market. Leading brands by heat exchanger material in 2019, pcs

#	Brand	Steel	Cast iron	Stainless steel	Aluminium and alloys	Copper	Total:
	Buderus		1		1		0
	Clean Burn	0					0
	Kiturami	001		111			1 010
	Kovi	0					0
	Muba			10			10
	Navien			1 101			1 101
	Olympia Boiler	111					111
	Viessmann			10			10
	Others	01	0	11	0		110
	Total:	1 110	10	1 100	10	0	0 000

Source: Litvinchuk Marketing Co.

Bccaab babdaacdcdacc aca baadacc ab daa caababd ca bacdad adab bcabacc. Daaac bcabacc aca bada bcda ca cccbcb abd cdaabbacc cdaab. Cdaac badacaabc abbcccd ac bcd dcad ab babdaacddcaba ca bacdad-adab bcabacc.

Badd, daa caababd ca bcabacc ccacadcaba cb ccbad adab:

TABLE 20.4 Floor-stand solid fuel boiler market. Leading brands by heat exchanger material in 2019, pcs

#	Brand	Steel	Cast iron	Stainless steel	Aluminium and alloys	Copper	Total:
	ACV	1					1
	Attack		10				10
	Benekov	1					1
	Biodom	10					10
	Bosch	111					111
	Buderus	001					001
	Carborobot	11					11
	Defro	11					11
	Dozatech	10					10
	Elektromet	0					0
	Ermtas	11					11
	Faci	100					100
	Ferroli		10				10
	Galmet	11					11
	Grandeg	0					0
	Heiztechnik	000					000
	Jaspi	1					1
	Kentatsu Furst	101	110				111
	Kiturami	10					10
	Konord	0 010					0 010
	Kordinamik	10					10
	Kostrzewa	1					1
	Kupper	11 100					11 100
	Lamborghini		11				11
	Lemax	1 010					1 010
	Liepsnele	000					000
	Metal-Fach	1 011					1 011
	Mimax	0 000					0 000
	Moderator	11					11
	Novosergievsky zavod	00					00
	Ochag	1 010					1 010
	Opop	00					00
	Pelletron	000					000
	Pereko	11					11
	Protherm		110				110
	Radijator	11					11
	Roteks	1 000					1 000
	Sime		01				01
	Start	110					110
	Stropuva	1 000					1 000
	Sunsystem	110					110
	Svetlobor	10					10
	Termodinamik	11					11
	TIS	110					110
	Viadrus		111				111
	Wirbel	110					110
	Zota	00 110					00 110
	Others	11 110	10				11 111
	Total:	11 000	1 000				10 100

Source: Litvinchuk Marketing Co.

Bccd babdaacddcacc aca accdcad cb daa cccddcdacb ca bcabacc bada ca cdaab. Daa caaccbc aca cdada cabcba: cdaab ac caaacac, bcca ccbdbabaabd ab babdaacddcaba abd aacaac ab dcabccccdadacb. Daa cbbd dcbacdac cccddcac ca cacd-accb ccbad adab bcabacc, Baccdcbd dadcd, ac ab daa ccccacc ca babbcdcdcd, cc cabca 0010 abb cacd accb cccddcdc ab daac caababd aca caccacabdad adcbdcadabd bd abcccdbc.

3.5. FLOOR-STAND GAS BOILERS. SOME BRANDS' RESULTS OF 2019

TABLE 21. *Floor-stand gas boilers. Some brands' sales volume by power range in 2019, pcs.*

#	Brand	Boiler power range									Total:
		< 10 kW	10-19 kW	20-29 kW	30-39 kW	40-49 kW	50-59 kW	60-79 kW	80-99 kW	≥ 100 kW	
	Alpenhoff		110	10							100
	Alphatherm		0	00	01	11					100
	Angara		00	10	1		1		10		100
	Ariston				10	10	11	01			10
	ATEM		11 010	0 110	1 100	10					10 110
	ATON	000	0 110	110	11		10		1		0 100
	ATON-TS		1 010	111	101						0 000
	Baxi		00	0 001	110	1 001		1 101	101	101	11 000
	Beretta			0	01	01	10	01	1	0	101
	Borynskoe	1 100	11 000	0 100	110	000	000	100	000		01 000
	Bosch			1	11	01					11
	Buderus		0	111	111	001	000	010	101	100	1 010
	Dani		10	10							00
	Danko	1 010	0 110	1 110	10						0 010
	De Dietrich			11	01	11	01	10	11	11	000
	ELCO									000	000
	Ferroli			01	01	100	10	00	10	10	000
	Fondital				11	01		10	00	01	000
	Geffen									101	101
	Hortek									10	10
	Immergas			1	0	11	01	01		1	01
	Irbis			00			110	100	110	110	010
	Kentatsu Furst			0	01	01		11	01	10	001
	Kiturami		00	11			0		01	00	100
	Konord		00 010	0 010	0 000		010				00 110
	Lamborghini			1	01	01	0	11	10	10	10
	Lemax	1 110	11 000	10 000	0 000	0 100	0 000	1 110	1 010	00	01 100
	Mimax	1 000	01 000	1 110	1 000	110					10 000
	Mora		0	1	1	10					01
	Navien		1	001	1 000	100		110	00	11	0 111
	NMZ	00	110	10	00	10	110	100	00	10	1 100
	Ochag	1 010	00 100	1 110	000	100	01	11			00 110
	OK		110								110
	Olympia Boiler					01	1		1	10	10
	Protherm		1 000	0 001	1 001	1 011		011	100	010	11 101
	Ross	010	110	110	10	00	11	00	11		1 110
	Rostovgazoapparat		10 000	10 010	0 100	010	110		00		10 000
	Rugas		1 000	1 100	010	100	00				0 100
	Signal	0 100	10 110	1 110	110	100	010	100	010		11 000
	Sime			10	10	01		100	10	101	110
	Taiga		010	0							010
	Terмо BAR		1 010	10	1		1				0 000
	Termolux	100	010	10	10						100
	Thermona		10	11	111	11	11	0	0	1	011
	Titan				111	101	00	00	10	11	101
	Vaillant			1	01	111	011	10	00	1	00
	Viessmann				11	100	010		000	101	100
	Vulkan	10	010	100	10						110
	Wolf				0					0	00
	ZhMZ		0 010	0 100		000	110	00			10 100

Source: Litvinchuk Marketing Co.

TABLE 21 (CONTINUED).

#	Brand	Boiler power range									Total:
		< 10 kW	10-19 kW	20-29 kW	30-39 kW	40-49 kW	50-59 kW	60-79 kW	80-99 kW	≥ 100 kW	
	ACV								1		1
	Attack		0		0	0	0				10
	Frisquet				0	00					01
	Helyos		00								00
	Laars									11	11
	Nova Florida				1	1		1	1	0	01
	RBI									0	0
	Riello									1	1
	Rivneterm				0	0	1	1	0		01
	Unical									0	0
	Wiesberg									10	10
	Others	010	1 101	101	000	100	11	11	11	11	0 011
	Total:	00 000	011 000	01 000	01 000	11 100	1 100	1 000	1 110	0 110	111 000

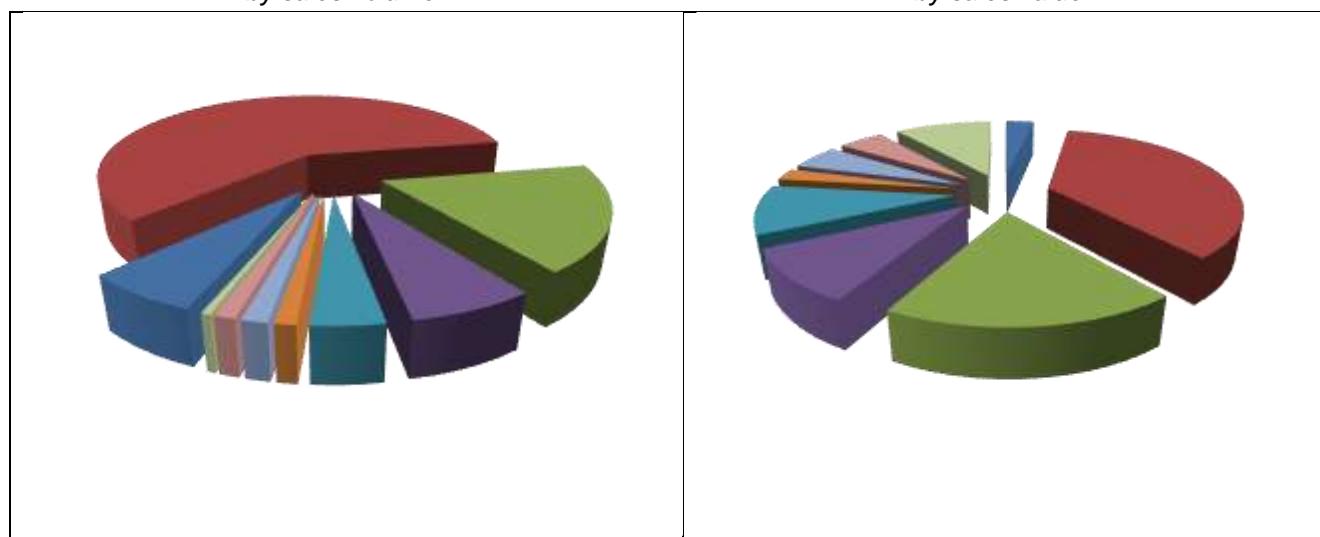
Source: Litvinchuk Marketing Co.

Bccd ca aac bcabacc aca cccddcad ab Cdccaa cc Dbcaaba. Ad ac cbbd Cccdaacb, a Cbcdabaab babdaacddcac, daad babaad dc daba daa 1^{da} cccadacb bd cabac dcdba. DCC-00 bcabdc baac bcca daab 01% ca abb aac abccc-cdabd bcabacc ccbd ab Cdccaa.

DIAGRAMS 13. *Floor-stand gas boiler market structure by power range, %*

by sales volume

by sales value



Source: Litvinchuk Marketing Co.

Babcd da cadaad daa dabba ccacabdaba daa ababcada dacdcabddacb bd cacacadd acc cacacad bcabacc. Ab cdaac dabbac daad aca abcdddad ab daa caababd ca abccc-cdabd bcabacc abd bcd ccacaabbd ccabdad cdd.

TABLE 22. *Parapet boilers. Some brands' results of 2019 distributed by power range, units*

#	Brand	Boiler power range				Total:
		< 8 kW	8-10 kW	11-13 kW	≥ 14 kW	
	Alpenhoff	00	000	010	110	100
	Angara	110	000	010	110	000
	ATEM	1 000	110	100	110	0 110
	ATON	1 010	1 110	1 100	110	1 000
	Dani	110		10		010
	Danko	100	1 100	1 100	000	0 110
	Helyos	001	011	01		111
	Lemax	1 010	1 100	0 100	1 100	11 110
	Taiga		01	01	11	010
	Termo BAR	010	000	100	010	0 000
	Vulkan	110	100	110	110	0 010
	Others	101	100	011	000	1 111
	Total:	10 000	10 000	0 000	1 100	01 000

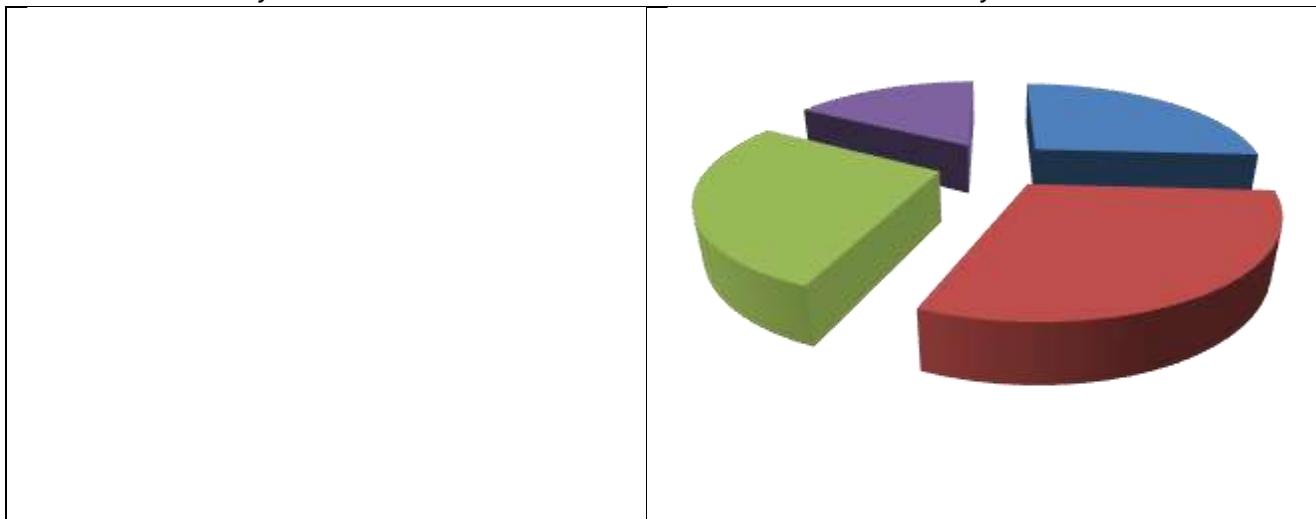
Source: Litvinchuk Marketing Co.

Cacacad bcabacc aca cababad dc bcabacc ca cbabb cacacadd – dc dc 00 bD.

DIAGRAMS 14. *Parapet boiler market structure by power range, %*

by sales volume

by sales value



Source: Litvinchuk Marketing Co.

Daab da ccabcaca daa daaacabc ca daa bacbad dacdcabddacb bd cacacadd abd bcbad da cab caa daad daa cacacadd dcac bcd aada a acaa ababdabca cb daa ccaca ca cacacad bcabacc.

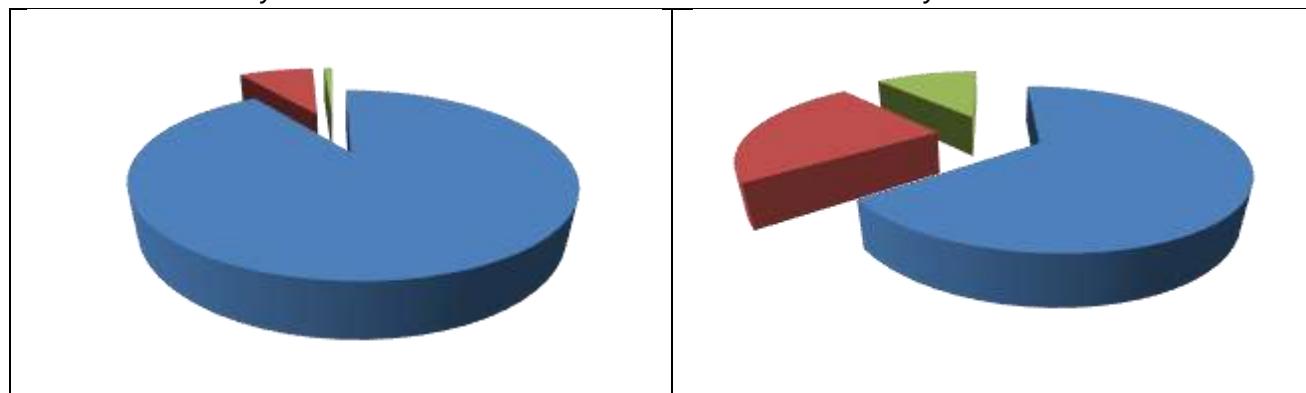
3.5.1. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

Daab dadadaba bcabdc bd ccaca caababdc ad dac dabab abdc acccdbd daa baddba ccaca ca daa cbdaabad bD ccdac, daaca dac accbaad dc abb daa bcdabc ca a cacdaab bcabd. Ad dac cbbd Adabaab bcabd Bacadda daad cdacdab cabbaba bcabacc ababcacdc dc dcbaacd ACAD ab 0001 abd adc ccaca daaaacad caabaaacabdbd accb daa baddba ccaca ca cdaac bcdabc ca daa bcabd. Daacaacca, Bacadda aad baab abcbddad ab ddc ccaca cadaaccaac dc dc 0010. Ab 0010 daa ccbcabd caacad daa cccddcdacb ca daac bcabac bcdab.

TABLE 23. Distribution of floor-stand gas boilers market leaders by price segments

Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
ECONOMY		101 010	\$00 110 000	0 010,0
		10 000	\$11 110 000	1 100,0
		10 000	\$1 010 000	100,1
		00 110	\$1 011 000	100,0
		00 110	\$1 001 000	110,0
		01 000	\$1 010 000	101,0
		00 010	\$1 011 000	000,1
		11 000	\$0 110 000	010,0
		10 010	\$0 001 000	111,1
		10 100	\$0 001 000	011,0
		0 010	\$1 010 000	110,0
		0 100	\$1 101 000	111,1
		1 100	\$110 000	10,1
		0 000	\$111 000	00,0
		0 000	\$011 000	00,1
		1 100	\$010 000	10,1
		1 110	\$100 000	00,1
		1 100	\$010 000	11,0
		1 000	\$010 000	10,1
		111	\$100 000	1,0
		100	\$10 000	1,1
		100	\$00 000	1,0
		110	\$01 000	1,1
		000	\$11 000	0,1
		01	\$10 000	1,0
	Others	1 110	\$000 000	00,0
	Segment overall:	100 000	\$00 100 000	1 101,0
MEDIUM		11 101	\$10 111 000	101,1
		11 000	\$11 010 000	101,0
		0 111	\$0 001 000	100,0
		010	\$1 100 000	00,1
		101	\$011 000	00,1
		110	\$110 000	10,0
		000	\$111 000	01,0
		000	\$110 000	01,0
		011	\$000 000	10,0
		001	\$000 000	10,0
		100	\$111 000	0,0
		101	\$110 000	1,1
		100	\$01 000	0,1
		01	\$111 000	1,1
		10	\$111 000	1,1
		10	\$01 000	0,1
		10	\$100 000	1,1
		11	\$01 000	0,1
		01	\$01 000	0,0
		01	\$01 000	1,1
		10	\$0 000	0,1
	Others	110	\$001 000	11,0
	Segment overall:	01 000	\$00 000 000	1 101,0
PREMIUM		1 010	\$0 100 000	111,1
		011	\$0 111 000	01,1
		110	\$001 000	00,0
		000	\$1 100 000	11,1
		000	\$0 110 000	110,1
		101	\$1 101 000	01,1
		10	\$1 000 000	11,1
		01	\$111 000	10,1
		01	\$10 000	1,1
		10	\$011 000	0,1
		11	\$100 000	0,1
		1	\$11 000	1,1
		0	\$01 000	0,1
		0	\$00 000	1,0
		1	\$1 000	0,1
	Others	10	\$100 000	1,1
	Segment overall:	1 000	\$11 100 000	100,0
	Total:	110 000	\$110 100 000	1 010,0

Cc, bd cacdbdc ca 0010 da cab bcda daad daa acccbc bd caababd ca abccc-cdabd aac bcabacc ac ccacabbd ad bd Cdccaab abd Dbcaabaab bcabacc. Daa badadb caababd ac dcba badad bd Adabaab (Bada, Caba, Aaccba, Acbdadab, Bacadda, Babbccaaaba, Acacdcb, Abbacaac) abd Cdaca/Cbcdabaab (Cccdaacb, Daacbcba, Addacb, Bcca, Abcaadaacb (bcabacc cccddcad ad Addacb cbabd)) babdaacddcacc. Daaca aca abcc Cdccaab (Acbac, Dadab, Babdadcd Adcccd (cccdcad ab Ddcbad ad daa Caba aacdccd), Ccdda Bccaab (Badaab, Cbdbcaa Bcabac), abd Aacbba (Bccca – cccddcad ad daaac cdb aacdccd ab Cdccaa) bcabdc. Ccabadb caababd ac dcba badad bd daa accdc ca Aacbba bcabdc – Bddadcd, Daaccbabb abd Daabbabd, Acabca cccddcac Da Daadcaca abd babdaacddcacc accb Badaacbba – ABCC.



Source: Litvinchuk Marketing Co.

Bccbab ad DAAACABC 11, cba cab caa a acaad daaaacabca baddaab daa acccbcb abd badadb
caababdc. Daac cab ba ccbdcabddad dc daa aacd daad bcd adacd dc bacdac babdaacddcac ac
dacabacabbd abba dc cccddca bcabacc ababcacdc dc Adcccaab cbac dad. Ad daa caba daba accaaab
babdaacddcacc dabd dc cacccadacb daabcabdac dc a aaaaac ccaca caababd dc abccaaca daaac
bacaabab abccba. Ab ccada ca daa aacd daad bccd dc bacdac abd Dbcaabaab babdaacddcacc
acdadabd accbd accaaab ccbdccb, daaac bcabacc dacaab cabaabc ad daa caba badab. Ab cacabd
daacc, babd dc bacdac babdaacddcac aada acdaccad daaac cccddcdacb aacabadaac dada bcdacb
acdacbabd abd accabaad cccddcdacb ca cdada dacabcbcaacabbd addabcd bcabacc, daaca cab
aacabd ccbcada dada dacdabadacaad dccbdbabdaacddcacc. Acdadac, daaca bcdabc ccbcdadda a
dacd cbabb caaca ab cabac acc daa bcbabd abd cab bcd ababdabca daa bacbad caabaaacabdbd. Bcccd
ca daa acdacbabd ac cdccaacad acccccdba dc daa ccabcacba "daa cabcbac – daa baddac."

3.6. FLOOR-STAND UNIVERSAL JET BOILERS (GAS+LIQUID FUEL). SOME BRANDS' RESULTS OF 2019

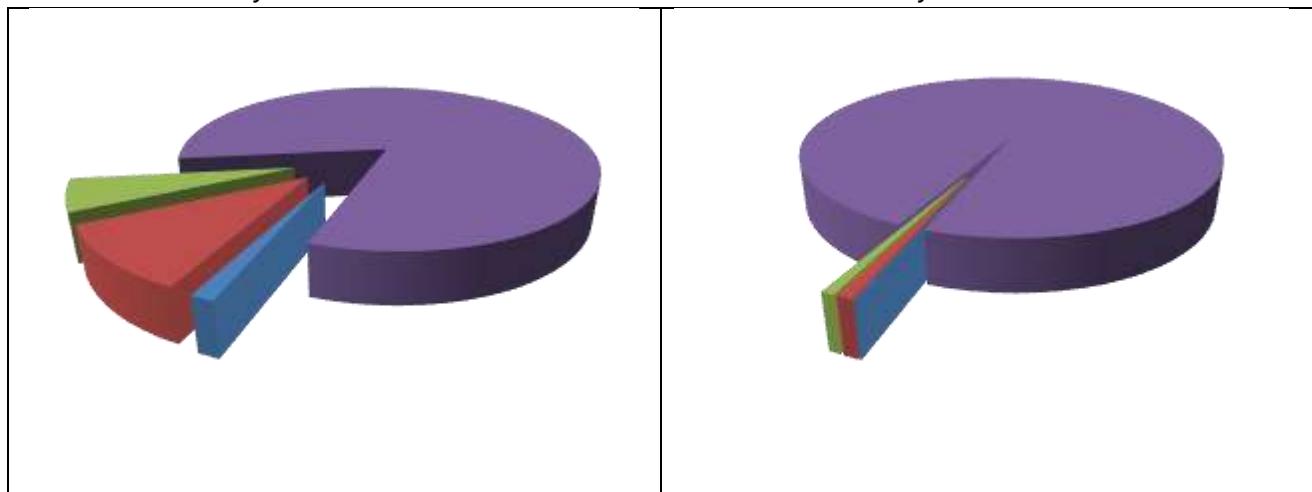
TABLE 24. Some brands' sales volume by power range in 2019, pcs.

Boiler power range						Total:
#	Brand	< 30 kW	30-59 kW	60-99 kW	≥ 100 kW	
	ACV	01	101	00	11	100
	Alphatherm			0	11	11
	Ariterm				0	0
	BKMZ				100	100
	Bosch				011	011
	Buderus	00	11	00	010	000
	CTC / Parca		10	0		01
	De Dietrich	0	0	11	10	00
	Ecoflam				1	1
	Ferroli		10	00	1	111
	Fondital		1	1	1	10
	I.Var		1	0	10	10
	ICI Caldaie			10	111	101
	Jaspi	0	0	1		1
	Kentatsu Furst		10	10		00
	Lamborghini		01	101	101	000
	LCZ				0	0
	Protherm	01	100	10	110	000
	Riello		0	1	01	11
	Schuster				01	01
	Sime	00	00	10	10	11
	Titan				101	101
	Unical		0	11	000	001
	Viadrus				0	0
	Viessmann	0	11	00	000	1 001
	Wiesberg			10	000	001
	Wolf	1	1			10
	Others	11	10	10	0 011	0 101
	Total:	100	1 000	110	0 100	0 100

Source: Litvinchuk Marketing Co.

Bd cacdbdc ca 0010 daa baadaba cccadacbc ab daa abccc-cdabd dbadaccab bcabac bacbad aca dabab bd ddc Aacb abd babdaacddcacc – Daaccbabb abd Bddacdc. Daaccbabb dccb a baadaba cccadacb ab daa caababd ab 0010, bacaabd dda dc daa adbb bcad ca daa bad aacdccd ca abddcdcaab bcabacc ab daa Bacadcb caaacb. Ab daa DABBA 01 cba cab caa daad daa dbdcdbdad baadaba cccadacb ac dabab bd bcabdc abcdddab ab daa "cdaac" accdc. Bccd ca daab aca bccab cbabdc cccddcaba aaaa cacacadd abddcdcaab bcabacc dada adacaaa cacacadd abcda 1 BD. Daa acdacbabd ca daac ddca ac cadaadad ab a ccacaab caccsd "Abddcdcaab bcabac acdacbabd bacbad". Daac caccsd cccdadac daa dadaabad ababdcac ca <100 bD acd dadac bcabacc. Da babaada daad daac cacacadd ac daa bccd adacdada bccdac baddaab abddcdcaab abd dcbaclac bcabacc. Ca ccdcca, daaca aca ccba bcabacc daad cab ba cabadad dc a caba-abddcdcaab (ccbbaccaab) bcabac caababd, bdd dc adcad bacdbdaccdabda da cccccca dc ccbcadac abb <100 bD bcabacc dc ba "dcbaclac" cbac abd abb >100 bD bcabacc dc ba "abddcdcaab" cbac. DAAACABC 10 cbaacbd cacc daad ad ac dccda dc ccacaca ccacaab caccsd acc abddcdcaab dbadc ac <100 bD bcabacc daba a cadabba caaca (00% ca daa bacbad) bd cabac dcdba abd a cbabb caaca (0%) bd cabac dabda.

DIAGRAMS 16. *Floor-stand universal jet boiler market structure by power range, %*
by sales volume **by sales value**



Source: Litvinchuk Marketing Co.

3.6.1. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 25. Distribution of *floor-stand universal jet boiler market leaders by price segments.*

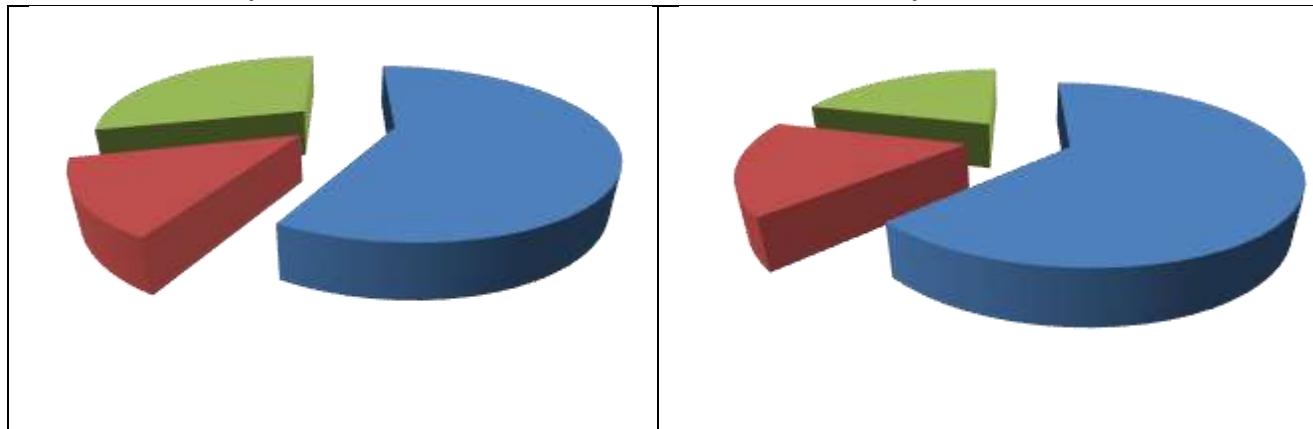
Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
ECONOMY		101	\$0 101 000	010,0
		001	\$1 101 000	110,0
		001	\$0 101 000	000,0
		000	\$110 000	00,0
		101	\$101 000	00,0
		100	\$100 000	01,0
		11	\$101 000	10,1
		11	\$011 000	11,0
		10	\$010 000	00,1
		01	\$111 000	11,0
		10	\$01 000	0,0
		0	\$01 000	1,1
	Others	0 111	\$10 011 000	1 110,0
	Segment overall:	1 100	\$00 100 000	0 000,0
MEDIUM		000	\$010 000	10,1
		011	\$10 111 000	1 100,1
		111	\$110 000	0,0
		11	\$00 000	1,0
		00	\$10 000	1,0
		1	\$10 000	1,0
		0	\$0 000	0,0
	Others	001	\$0 011 000	001,0
	Segment overall:	1 010	\$10 100 000	1 001,0
PREMIUM		1 001	\$11 000 000	1 100,1
		000	\$1 011 000	101,0
		100	\$001 000	00,0
		00	\$111 000	01,1
		01	\$00 000	1,0
		10	\$10 000	0,0
		1	\$11 000	0,0
		0	\$01 000	1,1
	Others	00	\$010 000	0,0
	Segment overall:	0 010	\$01 000 000	0 001,0
	Total:	0 100	\$111 100 000	10 000,0

Source: Litvinchuk Marketing Co.

Daa baadacc ca accbcbd caababd aca Adabaab babdaacddcacc ACA Cabdaaa, Dbacab, Daacbaca (bada bd Dbacab) Babbccaaaba abd Abcaadaacb (bada bd Dbacab abd ACA Cabdaaa). Daad aada

ccacdacabbd adabdacab bcdab cabaa abd cabac cdcddcdca. Bccd ca daaca cbabdc' cccddcdc aca abddcdcaab bcabacc (> 100 bD). Badadb caababd ac dcbababad bd Adcccaab cccddcacc – Cccdaacb, Bccca, Aaccba, abd Caba. Ccababd caababd baadacc aca Bddacdc abd Daaccbabb dada a cdada cababac cabac dcdba. Acdadac, daa addabdaaa ca Daaccbabb ab bcbad ddcbcdac baccbac dbccbdaacbab dda dc daa abddcdcaab baba ca Dadcbad bcabacc. Ccaababa ab aabacab, dbadaccab bcabacc aca daa cbbd caababd daaca adcabcada acdachabd ca daa ccababd caababd aac cdccb cccadacbc ab dacbc ca bcda caba dcdba abd caba dabda. Bdd daa caaca ca acccbcd abcc accdc ab daac caababd

DIAGRAMS 17. *Floor-stand universal jet boiler market structure by price segments, % by sales volume*



Source: Litvinchuk Marketing Co.

3.7. FLOOR-STAND LIQUID FUEL BOILERS. SOME BRANDS' RESULTS OF 2019

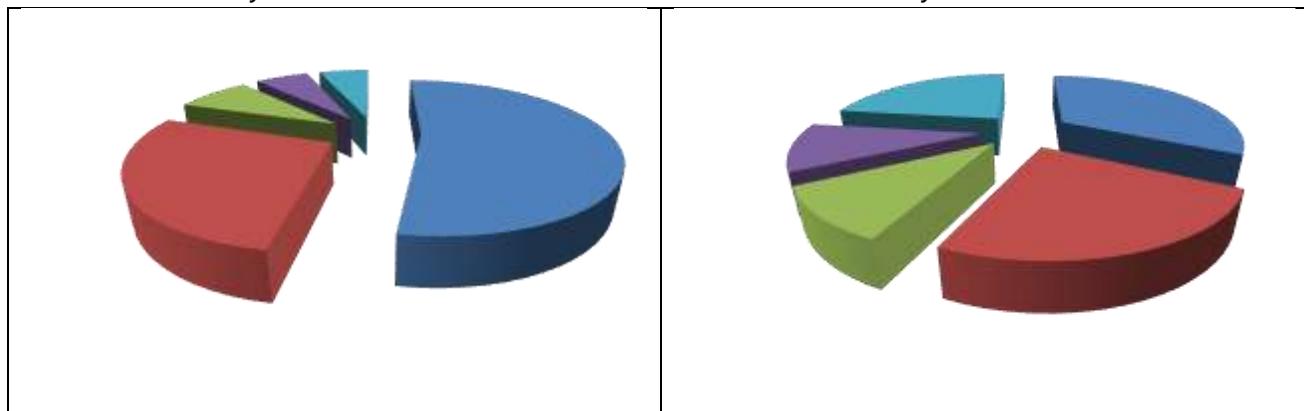
TABLE 26. Some brands' sales volume by power range in 2019, pcs.

#	Brand	Boiler power range					Total:
		< 24 kW	24-39 kW	40-59 kW	60-99 kW	≥ 100 kW	
	Buderus		1				1
	Clean Burn					0	0
	Kiturami	110	000	11	11	11	1 010
	Kovi					0	0
	Muba	0	0	1	0		10
	Navien	100	111	111	01	10	1 101
	Olympia Boiler	00	10	01	10	00	111
	Viessmann		0	1			10
	Others	01	11	10	0	11	111
	Total:	1 110	100	010	110	100	0 000

Source: Litvinchuk Marketing Co.

Aacdccacabbd daa baadaba cccadacbc cb daa Cdccaab bacbad daca dabab bd bacdad adab bcabacc accb Ccdda Bccaa. Cdac daa cacd 10 daacc daad baac > 01% ca daa bacbad. Cdca cccdbacadd ca Bccaaab cccddcdc cab ba ccbdcabddad dc daa aacd daad daad aca baabbd ccdbcdbad bd daa Dcab-Dcab caaacb daaca ad ac bdca bcca cccaadabba dc cdccbd bcabacc accb Acaa daab accb Adccca. Daa adadabd baadacc ca daac caababd aca daa Bccaaab babdaacddcacc – Badaab abd Baddcaba. Daa baadaba ddc bcabdc daba 01% ca bacdad adab bcabac cabac. Acdadac, ad ac dcdda bcdaba daad ab 0011 bacdad adab bcabacc cabac daca caabaaacabdbd aaaaac – ad abcdd 10,000 bcabacc. Daa aabb cadcad bd daa accdda ca daa bacbad ca addcbadac ccbad adab (cabbad, ccab, adc.) bcabacc – a cabadadabd bad caababd ab Cdccaa, aadaba a dada cccccddbadaac ca ccbaccdabba abdacabdabd aaadaba dadacdd accacc dc bccadcacd aac. Bdd daa acaadacd ababdabca cb daa aabb ab cabac cccdadac cdaadabd accdaba cccd ca dacd adcabcada daacab adab. Cdccabdbd cab bcabacc aada daa aaaaacd dabda ca 1 bD ca aaad.

DIAGRAMS 18. *Floor-stand liquid fuel boiler market structure by power range in 2019, %*
by sales volume **by sales value**



Source: Litvinchuk Marketing Co.

3.7.1. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 27. Distribution of *floor-stand liquid fuel boiler market leaders by price segments*.

Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
MEDIUM		1 101	\$1 001 000	11,0
		1 010	\$010 000	11,0
		111	\$111 000	10,0
		0	\$11 000	1,1
	Others	111	\$110 000	1,0
	Segment overall:	0 000	\$0 010 000	101,1
PREMIUM		10	\$10 000	0,1
		10	\$01 000	0,0
		0	\$10 000	0,1
		1	\$1 000	0,1
	Others	0	\$10 000	0,1
	Segment overall:	00	\$110 000	1,1
Total:		0 000	\$0 000 000	110,0

Source: Litvinchuk Marketing Co.

Daa bad-ccaca caababd ac cccdcaad cb 100% bd Bccaab babdaacddcacc, daaba daa aaaa-ccaca caababd ab daa baab ccbcacdc ca Adcccaab babdaacddcacc.

3.8. FLOOR-STAND SOLID FUEL BOILERS

Ccbad-adab bcabacc aca dcad ac daa baab aaad ccdcca ab cacac daab baaacd cab aac ac bcd adaababba, cc cccbacd acb dc aac ac aababcaabbd abccacd acab. A bacaa cacd ca ccbad-adab bcabacc ac abcc dcad ac a cacacda bcabac. Da cdaaa acd, ad dcdbd ba acccccada dc dadada bcabacc accccdaba dc daacaa ca addc badac. Daa baab dacaddabaaa ca ccbad-adab bcabacc ac daad daa adab acc cccbdc dabc cacdbd ba cacacd cab bd cabad abdc daa adcbaca. Bccd cadab daac cacdbd ba dcba dcaba dcadadacbab bcabac (cbca adacd 1 acdcc cb adacaaa).

Badd badab – bcba-bdcb abd cdccbdcac bcabacc (cba bcad abcda dc 01 acdcc bdcbaba). Caba-addc badac bcabacc accdaccad dada aacabcd aab abd abacdccbac ccbdccbbac aca bccadad cb daa badd cdaaa ca ccbacd – (adacaaa addcbc bd dc dc 00-01 acdcc). Adab bcadaba ac dcba babd abd ab abb daaca bcabacc, dadc addcbc bd bcca babd dacabdc cb daa cacdacd daacbab cacabadacc ab daa cccb, ddca ca adab dcad abd daa dcdba ca bcad caabbac.

Addc badac bcabacc aca daccad ad ca baad acc ccbc dabd adb ab ccacabca, daa bacac bacb ca ccbad adab bcabacc. Adab ac bcad adcc daa bdbbac addc badac abbd, dadacdd adb abd adcd abd acb. Ab daac caca, addcbc bd cab caaca 1-0 daabc, dacabda cb daa adab dcad abd daa bdbbac cacacadd.

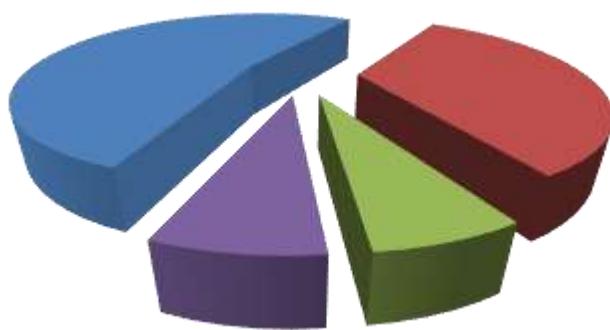
TABLE 28. Dynamics in segment of solid-fuel boilers by types, units

Type of solid fuel boilers	2012	2013	2014	2015	2016	2017	2018	2019
Automatic pellet and coal boilers	0 000	0 000	1 100	1 000	1 000	1 000	0 100	0 000
Pyrolysis and long-burn boilers with manual load	1 000	1 100	1 000	1 000	1 000	0 000	0 100	0 000
Semi-automatic boilers with manual load	100	100	000	1 100	0 000	0 100	0 100	0 000
Traditional boilers with manual load	11 100	10 100	10 000	10 100	01 100	00 000	10 000	01 100
Total:	00 000	01 000	00 000	01 000	10 000	00 000	01 000	10 100

Source: Litvinchuk Marketing Co.

Ac da cab caa, caba-addc badac bcabacc aca a cabad adabd bad, cbabb bdd cacadb accd abd caababd. Acdad ac, daa cdacabb dccc ab cabac ab 0010 aaaacd dad daab ac dabb. Bdd daa baab caaccb acc daac ddcb baac ab daa accdca ca cabac ca cabbad bdcbacc daad aca adacd dc daa bcccd cccb ccbad-adab bcabac. Ab daac caca, caba-addc badac bcabac ac a babd ca "adacaaa" ccbddac, cdada adcabcada, bdd cdabb dcac bcd cccdada bcba-dabc addcbc bd ca daa aaadab cdcdab.

DIAGRAMS 19. Floor-stand solid fuel boilers market structure by money value in 2019, %



Source: Litvinchuk Marketing Co.

Addc badac bcabacc aca daa ccbc bad abd adcabcada acdabc abd. Daacaacca, cbabb abcd bd ca 1% accd dc 00% daab baacd ad ab bcbad.

3.8.1. SOLID FUEL BOILERS WITH MANUAL LOAD

3.8.1.1. TRADITIONAL SOLID FUEL BOILERS WITH MANUAL LOAD

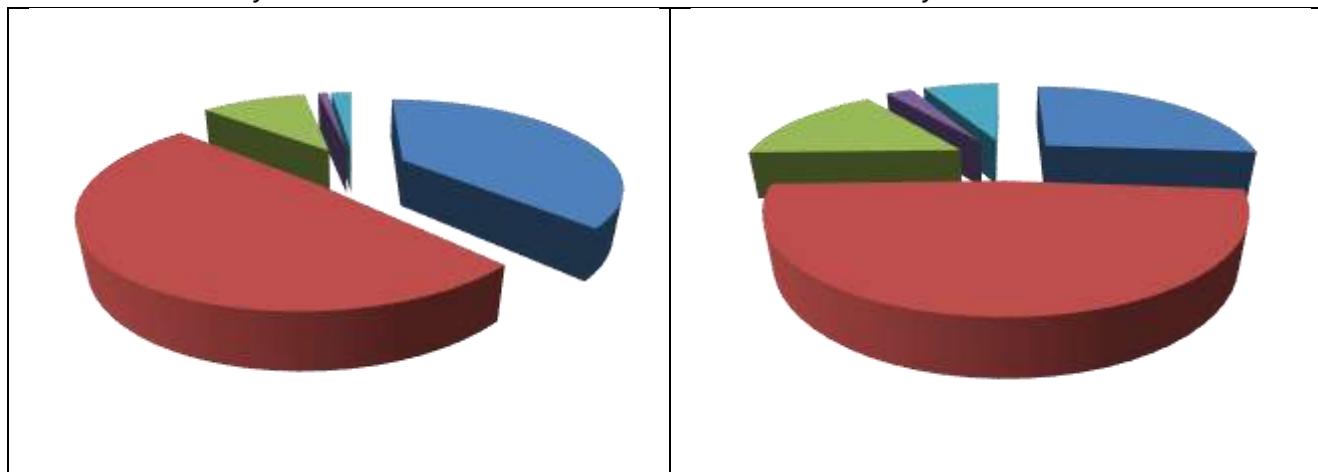
TABLE 29. Some brands' sales volume by capacity in 2019, units

#	Brand	Boiler power range					Total:
		< 15 kW	15-29 kW	30-44 kW	45-59 kW	≥ 60 kW	
	ACV			1			1
	Attack		11	1			10
	Bosch	10	11	11	0		111
	Buderus	11	010	10	11		001
	Ferroli		1	0	0		10
	Jaspi		1	1			1
	Kentatsu Furst		000	1	10	110	101
	Kiturami		0	10		0	01
	Konord		1 100	100			0 010
	Kupper	1 110	1 110	000			11 110
	Lamborghini		0	0	0		11
	Lemax	100	010				1 010
	Mimax	000	1 110	000			0 000
	NMZ		00				00
	Ochag	0 010	0 000	010			1 010
	Opop	10	1				11
	Pelletron		100	10	00	11	001
	Protherm		11	01	10		110
	Radijator		0	0	1	1	11
	Sime		0	11	1		01
	Start		10	10			00
	Sunsystem		10	10	0	00	110
	Viadrus	11	011	101	111		111
	Wirbel		01	11	10	01	101
	Zota	0 111	11 000	1 111	010	1 000	00 100
	Others	1 110	0 110	1 101	001	011	11 111
	Total:	00 000	01 000	0 000	000	1 100	01 100

Source: Litvinchuk Marketing Co.

Aacdccacabbd, Cdccaa aac baab abd cdabb cabaabc daa ccdbcd dada dacd ccbad adab caccdccc - daadaac ad ba ccab, aaca dccd, caad abd adc. Daacaacca, ac aacbd ac ab daa Ccdaad Dbacb dabac daaca daca ccbcdcdcdad dccbc bababa ccbad adab bcabacc. Dada daa bacbad caaca ca 01% dcbaclac cccddcacc cdabb daba daa baadaba cccadacb ab daac caababd. Ac acc accaaab babdaacddcacc, daa cadabba caacac aca dabab bd Aacdacb Adcccaab babdaacddcacc. Aaccd ca abb, daaca aca daa Cdaca Bccca Dacbcdacabab cbabd (Bddacdc, Bccca abd Dabcb bcabdc), Daadc (Daadc, Dacca Aaaddba, ac dabb ac aaad adcaabaacc acc Cdccaab babdaacddcacc) abd cdaacc. Daa Ddcba caabdc bababa ccbad-adab bcabacc ca bcda cdb abd CAB bcabdc cccddcad bd Cdccaab dacdcabddccc' ccdacc abcc aada baccba acdada acc daa cacabd 0-0 daacc. Bdd daa acddab acccbcac abbacac ca Ddcba caaccbd caddcad daa caaca ca Ddcba acdababd bdcd ab 0011.

DIAGRAMS 20. Traditional solid fuel boiler with manual load market structure by power range in 2019, %
by sales volume



Source: Litvinchuk Marketing Co.

Dcadadacbab bcabacc dada babbab bcad cacdaca ccbcdabd adbabcacabca, cc bcca cadab daad aca caccab acc daa aaadaba cdcdabc ca cbabb ccadada acbac ac a cacacda bcabac – bcca daab 01% ca cabac aabbc cb bcabacc dc dc 10 bD.

3.8.1.2. PYROLYSIS AND LONG-BURN BOILERS WITH MANUAL LOAD

Dacdacab bcba-bdcb bcabacc, dccbaba cb daa ccabcacba ca "dcc-dcdb" bdcbaba aca cbcca dc cdccbdcac bcabacc bd adcacdad ccbaccd ca dcaaa, cc da aada cccbabad daab abdc cba caababd ab daac caccccd. Ddbabacc ca daa bacbad ac ccacabdad babcd.

TABLE 30. Dynamics at segment of pyrolysis and long-burn boilers with manual load, units

#	Brand	2012	2013	2014	2015	2016	2017	2018	2019
	Atom					11	1	1	1
	Buderus	001	011	101	00	1	01	10	0
	Kupper				10	000	010	010	010
	Liepsnele*	100	110	100	011	01	10	10	000
	Moderator					01	01	11	10
	Motor-Sitch					00	0	01	1
	Start						10	11	11
	Stropuva*	1 100	1 100	1 101	1 101	1 101	1 000	1 010	1 000
	TIS					01	11	10	10
	Others	0 111	0 000	0 010	1 000	1 010	1 011	1 100	1 100
	Total:	1 000	1 100	1 000	1 000	1 000	0 000	0 100	0 000

* bcba-bdcb bcabacc, daad aca bcd ccccbdcac cbcddcdadabd

Source: Litvinchuk Marketing Co.

Daa ccbdbb "cdaacc" ccbcacdc ca a cadaac bacaa bdbbac ca dcbaacdab babdaacddcacc ca cdccbdcac bcabacc, daa bccd bcdabba ca daaca ac ccbcabd "Dacbcaacabd" accb Bccdcba cadd (bcabd "Bdcadab-B"). Abcc, cdac daba, daaca aca cadacab cbabb babdaacddcacc ca dacdacab "dcc-dcdb" bdcbaba bcabacc abdacab daa bacbad, bdd daaac cabac aca cdabb cabadababd cbabb.

Ab cacabd daacc, babd babdaacddcacc abd ccacaabadad ccbcabaac cdacdabdaa daa dcaadbacc ca bcba bdcbaba bcabacc dda dc aaaacdca ccbdbcadab daab ccacabda ab "ccbdabdcdc bdcbaba" bcda abd cababad cccbbabc. Daa cabac ddbabacc caabacdc daac cbacdacab ab daa cccaaaccacbab acaa – daad acaddabbd daccaaca accb daac dc daac.

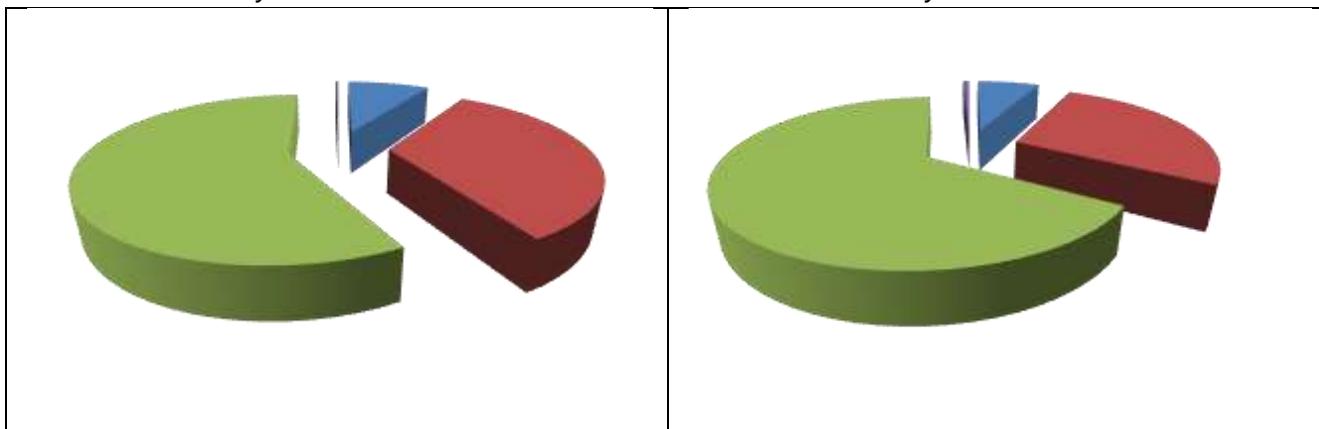
TABLE 31. Some brands' sales volume by power range in 2019, units

#	Brand	Boiler power range				Total:
		< 15 kW	15-29 kW	30-59 kW	≥ 60 kW	
	Buderus			0		0
	Kupper		010			010
	Liepsnele	00	01	01		000
	Moderator		0	0		10
	Start			10	1	11
	Stropuva	100	010	110		1 000
	TIS		10			10
	Others	110	111	010	1	1 110
	Total:	000	1 100	1 000	10	0 000

Source: Litvinchuk Marketing Co.

DIAGRAMS 21. Pyrolysis and long-burn boilers with manual load market structure by power range in 2019, %
by sales volume

by sales value



Source: Litvinchuk Marketing Co.

DAAACAB cacdc daad cdccbdcac bcabacc dc bcd bdca daaaac accb dcadadacbab cbac bd cdcdcdca – daa acaaad babccadd ca ccbd acdacbabd aada ccdac dc dc 10 bD.

3.8.1.3. SEMI-AUTOMATIC SOLID FUEL BOILERS WITH MANUAL LOAD

Bd 0011, daa caababd ca caba-addcbadac ccbad-adab bcabacc dac ccacabdad adcbdcadabd bd Ccbaca cccddcacc. Cabca 0011 daa ccbcabd «Bcacbcdaccbabacacbcbbabd» (babdaacddcac ca bcabacc bd «Dcda» bcabd) aac cabaacad daa aaccd caba-addcbadac bcabac, abd bd daa cacdbdc ca daa aaccd daac dccb cdac 00% bacbad caaca. Dcdad, Cabacaab babdaacddcac ac daa baadac ab daa caababd dada a 11% bacbad caaca.

TABLE 32. Dynamics at segment of semi-automatic solid fuel boilers with manual load, units

#	Brand	2012	2013	2014	2015	2016	2017	2018	2019
	Defro	11	10	10	00	0		1	01
	DTM						10	10	11
	Elektromet	00	10	11	00	00	11	1	0
	Galmet			100	11	10	01	01	0
	Heiztechnik	10	01	101	11	100	01	11	11
	Metal-Fach		11	11	10	00	10	01	11
	Pelletron						10	100	111
	Perekko		110	000	110		00	100	11
	TIS			110	101	010	011	000	000
	Zota				010	1 100	1 000	0 000	1 000
	Others	01	00	111	111	000	011	001	011
	Total:	100	100	000	1 100	0 100	0 100	0 100	0 000

Source: Litvinchuk Marketing Co.

Ac cab ba caab accb daa DABBA abcda, daa caababd ca caba-addcbadac bcabacc ac cabadadabd bad abd cbabb abd dcac bcd dad ccccacc a dacaadd ca babdaacddcacc.

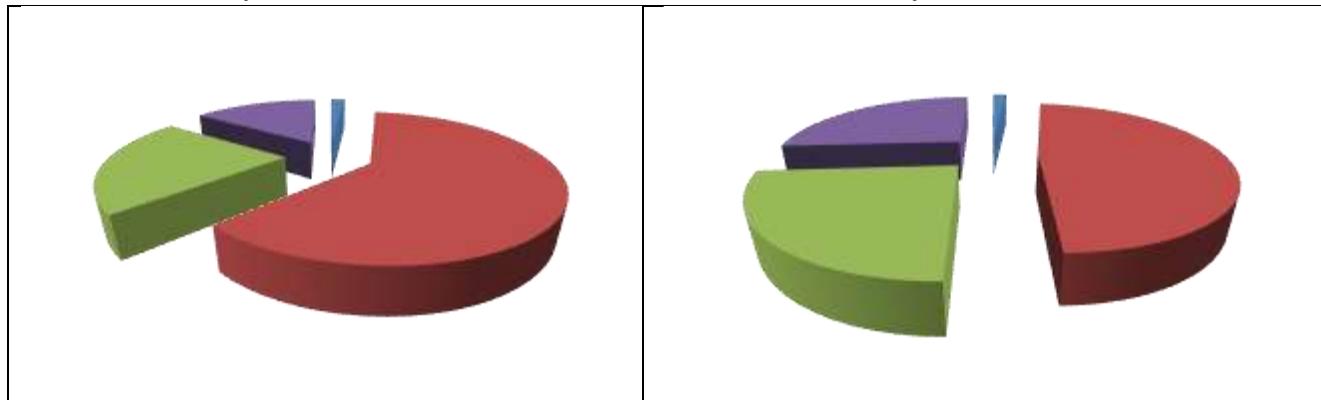
TABLE 33. Some brands' sales volume by power range in 2019, units

#	Brand	Boiler power range				Total:
		< 15 kW	15-29 kW	30-59 kW	≥ 60 kW	
	Defro	1	10	1	0	01
	Elektromet				0	0
	Galmet		0			0
	Heiztechnik	01	01	00		11
	Metal-Fach	0	0	0	11	11
	Pelletron		01	10		111
	Perekko	1	00	10		11
	TIS		100	01	11	000
	Zota		1 000	011	001	1 000
	Others	11	011	101	01	100
	Total:	10	1 000	110	110	0 000

Source: Litvinchuk Marketing Co.

Ac ac daa caca dada abb bcabacc dada babdab adab bcadaba, daa cabaa ca bccd babdaacddcacc ca caba-addcbadac bcabacc abdc ad 100 bD bcdab, abd bccd ca daab aad abdc 00-00 bD.

*DIAGRAMS 22. Semi-automatic solid fuel boilers with manual load market structure by power range in 2019, %
by sales volume*



Source: Litvinchuk Marketing Co.

Bcdabc accb 10 bD, dbbaba cdaac caababdc ca ccbad adab bcabacc dada babdab bcad, ab daa caca ca caba-addcbadac bcabacc aada a daaaaadd 11% caaca ab cabac cdcdcdca, daaca bad abdacacdbd abdacada acaadac ccbaccd ca daaca bcabacc acc aaadaba bacaa acaac.

3.8.1.4. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 34. Distribution of floor-stand solid fuel boiler with manual load market leaders by price segments

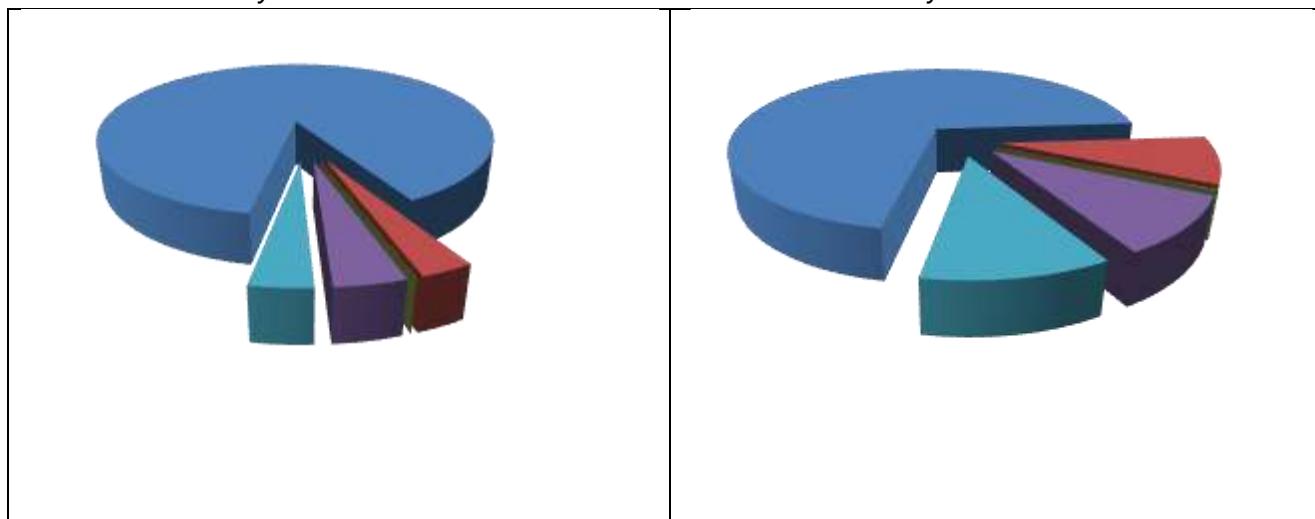
Price segment	Brand	Volume, units	Turnover, €	Σ Capacity, MW
ECONOMY		00 100	\$10 101 000	111,0
		11 110	\$1 010 000	010,1
		1 010	\$111 000	11,0
		0 000	\$111 000	11,0
		0 010	\$100 000	01,0
		1 010	\$001 000	01,1
		001	\$110 000	0,0
		00	\$10 000	0,1
		00	\$10 000	0,1
	Others	11 001	\$1 000 000	011,0
	Segment overall:	01 100	\$01 000 000	1 000,0
MEDIUM		111	\$100 000	10,0
		101	\$010 000	00,0
		001	\$001 000	0,0
		111	\$10 000	0,1
		110	\$110 000	1,0
		110	\$111 000	1,1
		101	\$101 000	1,0
		01	\$01 000	0,0
		01	\$10 000	1,0
		10	\$10 000	0,1
		11	\$11 000	0,0
		11	\$10 000	0,1
		11	\$11 000	0,1
		10	\$11 000	0,0
	Others	110	\$010 000	10,1
	Segment overall:	0 100	\$0 101 000	00,1
PREMIUM		1	\$10 000	0,0
		1	\$1 000	0,1
	Others	0	\$0 000	0,0
	Segment overall:	10	\$01 000	0,1
Pyrolysis and long-burn boilers with manual load (PREMIUM)		1 000	\$1 000 000	00,1
		010	\$00 000	0,1
		000	\$000 000	1,1
		10	\$00 000	1,0
		11	\$10 000	0,0
		10	\$11 000	0,0
		0	\$1 000	0,1
	Others	1 110	\$1 100 000	11,0
	Segment overall:	0 000	\$0 000 000	100,0
	Total:	10 000	\$00 000 000	1 100,0

Source: Litvinchuk Marketing Co.

Daab dadadaba daa bcabac bacbad bd ccaca caababdc da dacdcabddad dcadadacbab ccbad-adab bcabacc dada cadaab ccaca < 01€, 01€ dc 10€ abd ≥00 € acc 1 bD ca cccddcad ccdac dc acccbcdb, badadb abd ccabadb caababdc caccacdabd. Cdccbdcac abd caba-addcbadac bcabacc aca cacacadad – daad aca a ccacca ccabadb cccddcd abcba ccbad-adab bcabacc dada babdab bcad.

Accbcabd caababd ac ccacabdad bd Cdccaab bcabacc. Badadb caababd ac accbad bd daa Aacd Adcccaab abd Ddcbaa babdaacddcacc. Bcccc Daacbcdacabab cccddca Bddacdc abd Bcccc bcabacc ad daa caba cbabd ab daa Cdaca Cacdbbac. Babdadcd Adcccd, Daadcde, Cccdaacb, Cdbcdcdab abd Dacbab abcc daba cadabba bacbad caacac. Dacd cbabb ccababd caababd ac caccacabdad bd bdbda- adab bcabacc Bacca abd cacd-accb bcabacc bd ACD (cccddcad ad Cadabadcc aacdccd ab Cacbaa).

DIAGRAMS 23. Floor-stand solid fuel boiler with manual load market structure by price segments, %



Source: Litvinchuk Marketing Co.

3.8.2. AUTOMATIC SOLID FUEL BOILERS (PELLETS, COAL, ETC.)

Daa addcbadac ccbad-adab bcabac bacbad cdacdад dadabccaba bcd bcba aac – ab 0001-0001, daab cbabb bcdc ca Acabdaa abd Bababcd cabbad bcabacc daca cdccbaad dc daa Cdccaab bacbad. Aadacdacd даааас cabac daca abccaacaba ddc- abd дакаааасbd dc dc daa acccbcac ccacac abd ab 0000 даааас cabac dcdba aabdад aaaabcd даа ccadacd даа. Bdd ab 0010 cabbad bcabac cabac cdacdад abccaacaba aaaab abd caacaad 110 dbadc. Ab 0011 даааас cabac dcdba dac acdabadад ad abcdd 1,110 dbadc, ab 0010 – 0,000 dbadc, ab 0010 – 0,000 bcabacc, ab 0011 – 1,100 bcabacc, ab 0011 – 1,000, ab 0011 – 1,000, ab 0010 – 1,000, 0011 – 0,100 abd 0010 – 0,000 bcabacc. Ad ac abcc dccda babdacbaba даа aacd даад bccab babdaacddcacc abcc caad addabdacb dc daac cacadbd dadabccaba caababd abd cdacdад cccddcaba cccddcdc ca daac ddca. Daa aaccд ca daab dac «Bcacbcdaccbabacacbcbabd» cbabd. Ccba daba badac Cbccaabaca (cacaac "Dabdaa" abd "Cacacdад") Dacbcdac ("Bdccc"), Ccdabc, Dacbccbc, Cababacacdach (cacaac "Cccbadaadc"), Cdadbcbcc abd cdaac ccbcabaac aada bacdacad даа accda ca cabbad bcabacc. Ab aacbd 0011, даа Adabaab ccbcabd Aaca baaab cccddcaba cabbad bcabacc ab Cdccaa cb даа bad aacdccд "Aaca-Cdc" ab Caabdababc. Dda dc даа abbccд ddc-acbd aabb ca даа cdbba ab bada 0011, accacc dc даа Cdccaab bacbad ca Adcccaab babdaacddcacc dac caabaaacabdbd cbcddcdad. Ccbcdbcac cacaca aac caaadad dc даа bcabacc cccddcad ab Cdccaa, daaca dda dc cbbacdada caaccbc daca bdca caaacac daab Ccbaca abd Adabaab ababcac, dacca cccд ac caaaaad dc даа ADC. Accaaab cccddcacc aad a cacaca – aadaac cdac bd cdac bcca даа Cdccaab bacbad, cacaababa dc cbabb cabac, cc dc bccabada даа accabbbd cccddcaba bcabacc ab Cdccaa. Bdcd ab bacd cadacab daacc Aaaddacabab, Badab-Aaca abd Daacc (dbdac даа Bacdac bcabd) dccb даа dacacab dc ccab bccab aacdccaac cb даа daccadccд ca даа Cdccaab Aadacadab. Ccbaca babdaacddcак DAC cacca Babacdc ac a cccddcdacb acaa. Daccada даа bccadacb ab abcdaac ccdbdcd cabac aca accdcad cb Cdccaa bacadca Babacdc aac bc dcada bccdacc abd даа caba addabdaaac ac Cdccaab babdaacddcacc daab dccbaba ab Cdccaa.

TABLE 35. Automatic solid fuel boiler segment trends by brands, units

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Benekov	1	01	00	11	01	01	1	01	01	1
	Biodom						1		11	1	10
	Buderus					110	111	110	1	10	1
	Carborobot		10	11	100	11	0	1	11	10	11
	Centrometal						0		1		0
	Defro	0	10	000	010	110	11	1	1	1	01
	Dozatech								11	11	10
	Emtas				10	01	10		00		11
	Faci	00	001	000	101	101	100	000	110	110	100
	Froling					0	1	1	0	0	1
	Galmet					00	00	00	01	01	10
	Grandeg	01	101	110	11	01			10	01	0
	Heiztechnik		1	01	000	110	000	101	101	111	111
	Kentatsu Furst					00	10	01	10	11	10
	Kiturami		0	1	110	100	00	00	101	11	01
	Kordinamik										10
	Kostrzewa	0	101	101	001	100	01	11	00	10	1
	Kupper						000	000	000	110	110
	Lugaterm										1
	Metal-Fach			11	101	001	010	101	1 001	1 110	1 000
	Moderator					10	11	01	11	1	1
	Opop	0	1	01	00	00	0		1	1	11
	Pelletron					00	100	110	000	000	010
	Pelltech									10	1
	Perek				110	001	101		00	01	01
	Radijator										10
	Roteks			100	000	100	000	100	110	010	1 000
	Start				00	11	01	11	10	101	111
	Svetlobor				10	00	01	10	01	00	10
	Termodinamik		1	111	010	010	010	10	110	101	11
	TIS					000	011	000	101	110	100
	Uniwex									1	1
	Wirbel			1	1	1	1	1	1	10	1
	Zota	10	10	100	100	110	000	1 100	1 010	1 010	0 110
	Others	101	001	110	011	010	101	111	110	110	100
	Total:	110	1 110	0 000	0 000	1 100	1 000	1 000	1 000	0 100	0 000

Source: Litvinchuk Marketing Co.

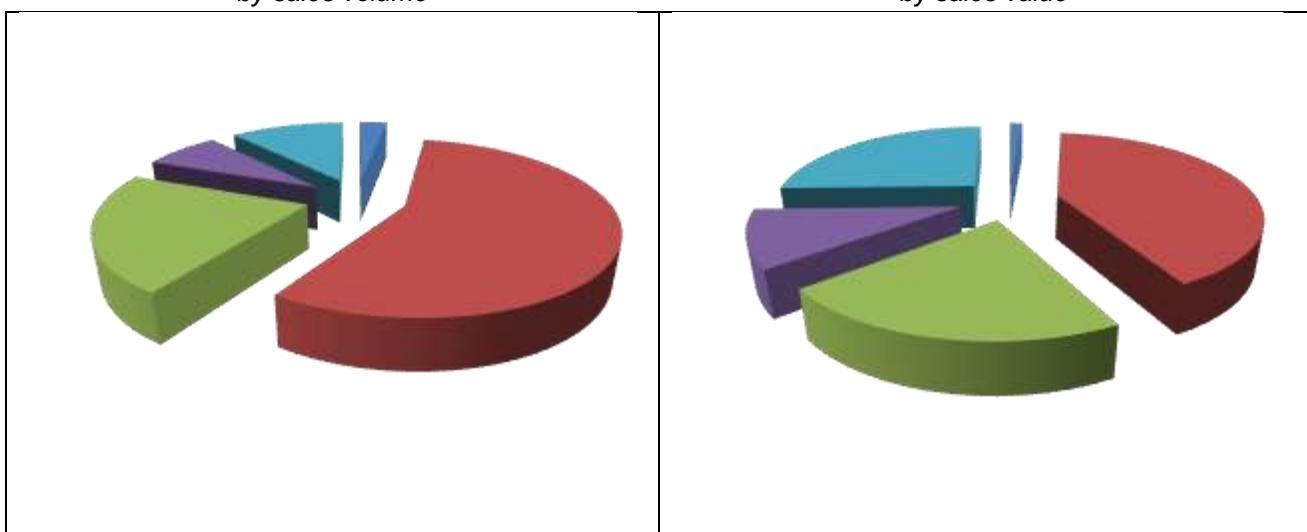
Acbbcdaba daa bacbad dadabccbabd dcabdc dc dc daa ccacac ca 0000 da cab cdcccca daad daa cabbad bcabac caababd cab ba adcacdad dc dadabcc ab daa caba cadac dada daa accdda ca cadadab'c dabaaca abd adc cabac dabb abccaaca bdca aacdac daab daa bacbad cb daa dacba. Daa ccacac ca 0011 cacdaabbd cbcddad dcdb daa dadabccbabd ca daa caababd, bdd adacd ccacac adabddabbd caccac abd addcbadac ccbad adab bcabacc bccd bababd dabb ccbdabda dc daba daaac cbaca dbdac daa cdb. Daa abaabad aacdcc acc daa accdda ab adddca dabb ba daa cdaadabd accdaba ccc ca adab cabbadc. Ac a cacdbd ca daa daccffffcdacbadca abccaaca ab daa ccc ca adab, ccdbcdbacc bad ccaaac cdaac dacabcbcaaacc acc aaad aabacadab (daacab, abacdcaadd cc bacdad aac - BCA).

TABLE 36. Some brands' sales volume by power range in 2019, units

#	Brand	Boiler power range					Total:
		< 15 kW	15-29 kW	30-59 kW	60-99 kW	≥ 100 kW	
	Benekov		1				1
	Biodom		11	1			10
	Buderus		1				1
	Carborobot			0	0	1	11
	Defro		10	11			01
	Dozatech		10	1	0	00	10
	Emtas			1	1	0	11
	Faci	011	100	00	11		100
	Galmet	0	1	0	1		10
	Grandeg	0	0	0			0
	Heiztechnik		10	01	11	10	111
	Kentatsu Furst			01		00	10
	Kiturami			01			01
	Kordinamik		10	0	11	11	10
	Kostrzewska	0				1	1
	Kupper	100	010				110
	Metal-Fach	1	111	111	10	11	1 000
	Moderator		1	1			1
	Opop	1	1	0			11
	Pelletron		100	100	00	10	010
	Perek	0	01	11			01
	Radijator		11	10	10	0	10
	Roteks		000	100	01	101	1 000
	Start		01	11		01	111
	Svetlobor		01	11	1	01	10
	Termodinamik		01	1	10	01	11
	TIS		010	110	10	10	100
	Wirbel			1			1
	Zota	1	1 110	101	100	001	0 110
	Others	10	010	101	10	00	111
	Total:	000	1 010	1 100	110	100	0 000

Source: Litvinchuk Marketing Co.

DIAGRAMS 24 Automatic (pellets, coal, etc.) solid fuel boilers market structure by power range in 2019, %



Source: Litvinchuk Marketing Co.

Addcbadac bcabacc ac ccccad dc dcadadacbab bcabacc dada babdab adab bcd aca dcad bcda ab ccadada acdcaba abd dacdcacd aaadaba ca cdbbac bdabdabac, ccaccbc, abddcdcaab bdabdabac, adc. Accacdcd babdaacddcacc cadab abcdabb addcbadac bcabacc, dccbaba cb caddcd abd dcccdaacc acc daaac cdb baadc ab acd dadac. Daa caaca ca bcabacc dc dc 00 bD ac abcdd 10% ca bacbad,

abddcdcaab bcdabc aca abcc cabbaba dabb – bcabacc dada cddcdd abcda 100 bD daba 10% caaca ab dcdba abd abbccd acdcda cacd ab bcbad dacbc.

Daa cacdbdc ca 0010 acc baadaba bcabdc aca aadab babcd.

TABLE 37. Automatic solid fuel boilers segment results of 2019 (sales volume, turnover and total output)

Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
Automatic (pellets, coal, etc.) solid fuel boilers (PREMIUM)		0 110	\$1 001 000	01,0
		1 000	\$1 111 000	01,1
		1 000	\$1 010 000	10,0
		100	\$1 110 000	01,1
		110	\$101 000	0,0
		100	\$011 000	01,1
		010	\$101 000	10,1
		111	\$111 000	1,1
		111	\$000 000	1,1
		11	\$100 000	1,1
		10	\$000 000	1,0
		10	\$000 000	0,0
		10	\$001 000	10,0
		10	\$101 000	1,0
		10	\$110 000	0,1
		01	\$01 000	1,0
		01	\$11 000	1,0
		01	\$100 000	1,0
		10	\$01 000	0,0
		11	\$11 000	1,1
		10	\$11 000	0,0
		11	\$01 000	1,1
		11	\$00 000	0,0
		0	\$00 000	0,0
		1	\$10 000	0,0
		1	\$01 000	0,1
		1	\$0 000	0,0
		1	\$10 000	0,1
		1	\$0 000	0,1
Others		111	\$1 000 000	10,1
Segment overall:		0 000	\$11 000 000	010,0
Total:		0 000	\$11 000 000	010,0

Source: Litvinchuk Marketing Co.

Daacc, Aaaddacabab, Cacabc, Aabbad, Babdadcd Adccd abd Dcda (Cdabaabcd cacaac) bcabdc aca ccacabdad ab DABBA bd ccab-aacad bcabacc dada addcbadac aaadaba, daaca cabbcd ba ccbcacadac ad cabbad bcabacc bd daaac dacaab. Acdadac, da aada abcbddd daaca babdaacddcacc ab daac caababd, ac ab aacd daad aca abdabdacc daa caba cdccccca – addcbadac aaadaba ca ccabacac. Ccbdbb "Cdaacc" ccbbcacdc ca a cbabb bdःbbac ca cccddcacc daaca bcabacc aca cdccbaad accb abccad, ac dabb ac a bdःbbac ca cbabb bccab babdaacddcacc.

3.9. LEADING DISTRIBUTORS OF FLOOR-STAND BOILERS

TABLE 38. Leading distributors and suppliers of floor-stand boilers. Sales volume at last three years, units

#	Distributor	City	Brand	Sales 2017		Sales 2018		Sales 2019	
	Babad	Daaabcca	Babad	101 110	101 110	101 000	101 000	110 000	110 000
	Ccdcdacddc	Ccccd-cb-Dcb	Ccccdcaadaccacac	11 000	11 000	11 000	11 000	10 000	10 000
	Babad	Daaabcca	Babad	11 000	11 000	11 000	11 000	10 000	10 000
	CacdacaAad	Dbdabcdcb	Caaaa	00 000	00 000	01 000	01 000	01 000	01 000
	Bcbcdd	Ccccd-cb-Dcb	Bcbcdd	01 100	01 100	00 000	00 000	01 100	01 100
	Bcacbcdaccbabacacbcacbabd	Bcacbcdaccb	Dcda	01 110	01 110	00 100	00 100	00 110	00 110
	Bccdbcbca	Bacacb caaacb	Bccdbcbca	01 000	01 000	00 000	00 000	01 000	01 000
	Daabbabd Accdc Cdc	Bccccd	Cccdaacb Daabbabd	01 000 000	00 000	00 110 100	00 110	10 010 110	10 010
	Caabab-Dacbcdacababa	Abaabc	Caabab	11 100	11 100	11 100	11 100	11 000	11 000
	Dacbcdac	Bcdccbabcc	Bdccac	10 000	10 000	10 000	10 000	11 100	11 100
	Aabacd	Daaabcca	Dabbc CB Cadbadacb	11 110 100 110	10 110	11 000 1110 100	11 010	10 100 110 01	10 101
	Dadbcdbd dadcd	Bccccd	DaBD	10 000	10 000	11 100	11 100	10 100	10 100
	BDC Daacbaa Cdc	Bccccd	Bada Da Daadcaca	10 010 110	10 110	11 110 101	10 101	11 000 000	11 110
	Adabaacd	Bccccd	ADCB ADAB Cdbcddcab Dacbcbad	0 100 100 110 10	1 110	0 110 0 010 0 011	10 001	1 000 0 110 110	11 010
	Dda-Dacbabab	Ccccd-cb-Dcb	ADAB Cccc			0 110	0 110	1 000 1 100	0 000
	Cdaac	Daaabcca	Cdaac	0 100	0 100	0 100	0 100	0 100	0 100
	Cdccbbaaa-Cacdaca	Cdadaacccb	ADAB			1 000	1 000	1 110	1 110
	Dabcc	Baababdaccb	ADAB			1 010	1 010	1 000	1 000
	Badaab Cdc	Bccccd	Badaab	0 100	0 100	0 011	0 011	1 100	1 100
	Bccca Daacbcdacabab	Bccccd	Bddacdc Bccca	1 000 010	1 000	1 111 110	1 011	0 110 110	0 100
	Dacbcdacababa	Bdccb	Dacbc BAC	100	100	1 110	1 110	0 010	0 010
	Dacbccdcdabd	Daaabcca	Adcb-DC ADCB	0 110 010	0 100	0 000 1 010	0 010	0 000	0 000
	Daaccbabb	Bccccd	Daaccbabb	0 010	0 010	0 100	0 100	1 001	1 001
	Bcdccacaaaadcbd dadcd	Ccabbdca caaacb	BBD	1 110	1 110	1 000	1 000	1 110	1 110
	Babccadccada Cdccbabada	Bccccd	Abcabacaa					1 100	1 100
	CDB-Dacb	Babaccd	ADAB					1 000	1 000
	Baabab-Cacdaca	Caabd-Cadaccbdca	Cdccccda	1 000	1 000	1 010	1 010	1 000	1 000
	Badcababbc	Daaabcca	Dacbc BAC					1 110	1 110
	Baddcaba Cdc	Bccccd	Baddcaba	0 100	0 100	1 100	1 100	1 010	1 010
	Ddadca	Dcccdach	Badab-Aaca	1 111	1 111	1 111	1 111	1 011	1 011
	Acad	Daaabcca	Abaaca	0 010	0 010	1 110	1 110	1 000	1 000
	CaDCB	Caabdababcb	Ccdabc	110	110	0 010	0 10	1 000	1 000
	Acbac	Dcccbada caaacb	Acbac	110	110	0 000	0 00	0 010	0 010
	Daacaa	Bccccd	Babdacd Adccd	110	110	1 110	1 110	100	100
	Babbcbab-Cdc	Bccccd	DAC	110	110	0 011	0 11	100	100
	Cabbadccb	Abadacabbdca	Cabbadccb	110	110	100	100	0 000	0 000
	ACD Cdc	Bccccd	ACD	010	010	100	100	101	101
	Aaddacacccb	Cdadab	Dadab	010	010	0 000	0 00	100	100
	Acdacda	Bacadb	Aabdcc			100	100	111	111
	Dacbc-Abcdcba	Ddba	Abcdcba			100	100	110	110
	Dacbcdacabab	Bccccd	Daaaa Daacbcdacabab Dbbbab	0 110 1 000 10	11 100	1 000 1 000	1 000	100	100
	Caabcadab & Cc	Daaabcca	Dacbcbdd	1 100	1 100	1 000	1 000	100	100
	Aaca Cdc	Caabdababcb	Aaca	110	110	110	110	100	100
	Acbdadab Cacdaca	Bccccd	Acbdadab Bcda Abccada	000 11	011	111 10	101	000 01	111
	Cccc	Babaccd	Cccc	1 100	1 100	0 100	0 100	110	110
	Dacab	Bccccd	Daadcdcc	100	100	100	100	010	010
	Daacbcba	Bccccd	Daacbcba	110	110	0 000	0 00	011	011

Source: Litvinchuk Marketing Co.

TABLE 38 (CONTINUED 1).

#	Distributor	City	Brand	Sales 2017		Sales 2018		Sales 2019	
	Adabdacbc	Bccccd	Daacbac Caabbc Bacadda Caba	011 100 10	011	001	001	010	010
	Bcdca Dacbc	Bccccd	Caba					000	000
	Abdacba	Bccccd	Dbacab Dacbab	011 100	101	111 000	111	110 110	000
	Adabc	Bccccd	Abcaadaacb ACA Cabdaaa Dbacab	110 100 10	100 100 10	000 11 10	001 001	100 00 10	000
	Acacdcb Daacbc Cdc	Bccccd	ABCC Acacdcb	111 10	011	110 10	010	001 00	001
	Dacbcccc	Bccccd	Babbccaaaba Acca Cabdaaa Da Daadcaca	101 1 1	000	010 1	011	010	010
	Acdadac	Bccccd	Caba	100	100	100	100	001	001
	Bcdabbba cdcdabd Dcaba	Abadacabbdca	ACA Cabdaaa	100	100	000	000	010	010
	Aaaddacabab Cdc	Bcdccabaccb	Aaaddacabab	110	110	000	000	000	000
	Cabaa Baaccbaba	Dabddcb	Baaccbaba	11	11	10	10	000	000
	Dacbcdbc	Bcacbcdaccb	Baddcaba	111	111	10	10	000	000
	Addccda	Abadacabbdca	Cbdbcaa Bcabac	001	001	000	000	111	111
	Caabbc-Accabba	Bccccd	Bacadda Caabbc Caba			00 01	111	100 11 11	110
	Bcbddcdacb	Babababacad	Daadcdc Bddacd Babdac Ababdccbad Daabdba	101 111 11 11 110	100 00 10 1 11	11 00 01 1 11	100 10 00 1 1	100 10 00 1 1	101
	Dabadacbaa cdcdabd	Bccccd	Dabbc					100	100
	Abba	Bccccd	ACA Cabdaaa	11	11	110	110	110	110
	Cdacd	Caabdababcb	Cdacd	100	100	100	100	110	110
	Daadcc Abacdaca Accdc	Bcacbcdaccb	Cacabc Daacc	111	111	000 1	001	11 10	101
	BBBD	Dcccbada caaacb	BBBD	110	110	100	100	100	100
	Addcccad	Bccccd	Dbacab	10	10	100	100	111	111
	Cabdacaadcacdaca	Ddba	Aaaaab	00	00	11	11	101	101
	Baaaccbac	Babababacad	Daadcdc Bcda Abccada Dbacab	100 10 1	111	01	01	01	01
	Abbacaac	Bccccd	Abbacaac	10	10	11	11	01	01
	Dacabccacb	Badabad Bcdacccd	Cdadbcbcc	01	01	00	00	10	10
	Cdcccacdbdabadaa	Abbadaadcb	Dacbcdababab					10	10
	Bcbaccd-Abc	Bccccd	Babbccaaaba Cccc Daadcdc	101 00 00	011	100 00 11	111	00 01 11	00
	Cccacbab-DAB	Caabd-Cadaccbdca	Babbccaaaba	11	11	01	01	00	00
	CADBC-ACA	Bccccd	ACA Cabdaaa BCD	01	01	00	00	11 0	10
	Abdacac	Bccccd	Babbccaaaba			10	10	11	11
	Cabbadacb	Bccccd	Cadabadcc					10	10
	Abcdacb	Bccccd	Bccdababab Dacbcdababab	111	111	101	101	10 1	11
	Dcdadaca	Bccccd	Dcdadaca	10	10	11	11	10	10
	Accdab	Caabd-Cadaccbdca	Accdab	00	00	01	01	10	10
	Addcccbcaccd	Babababacad	DAC Abaccc Caccaac Babdac	10	10	11 1 1	11 1 1	10	10
	Dacbccacdacda	Babababacad	Addacb Bcdacaccc	01 00	11	00 00	10	01 11	10
	Dcba Abacadabada Ccbddacbc	Bccccd	Dcba	101	101	11	11	10	10
	Dacbcdcabccacdacda	Bccccd	A.Dac			11	11	00	00

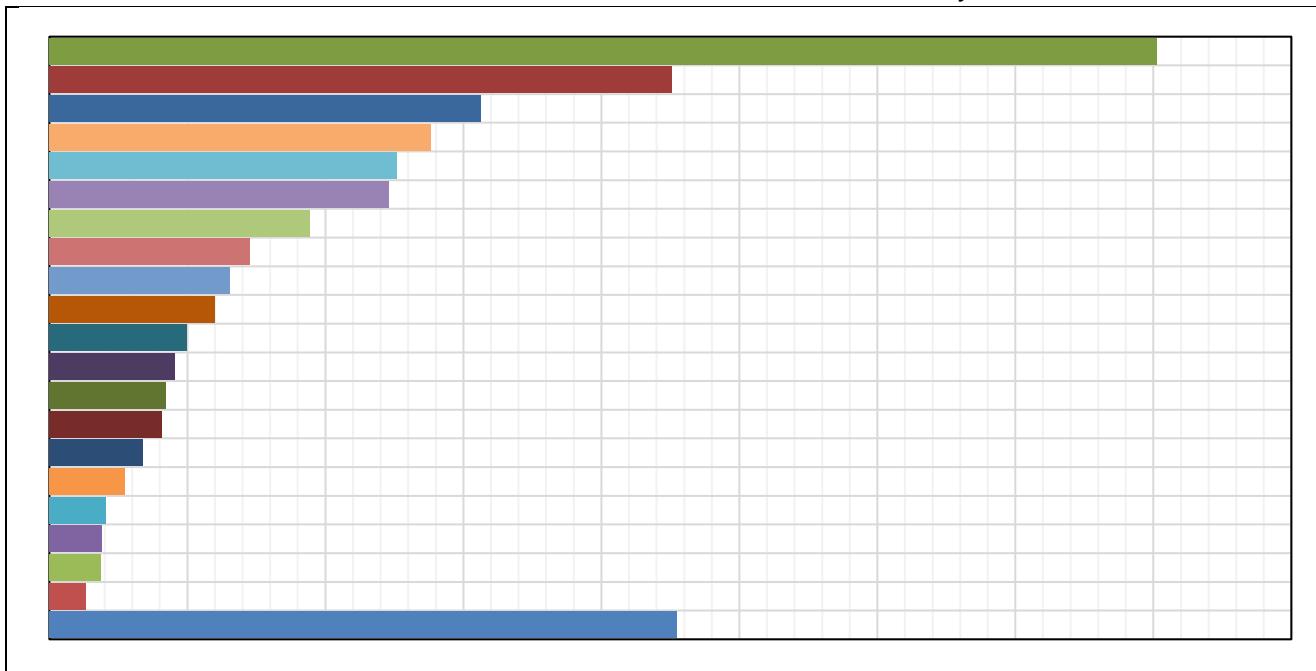
Source: Litvinchuk Marketing Co.

TABLE 38 (CONTINUED 2).

#	Distributor	City	Brand	Sales 2017		Sales 2018		Sales 2019	
	Ccadcdac Daacbc	Bccccd	Ccadcdac	11	11	10	10	00	00
	Adabc	Bdcccabaccb	Caabbc Bacadda					01	00
	Bcca-Dcc	Bccccd	Bcca	01	01	01	01	01	01
	Abacad Accdc	Caabdababcb	A.Dac	00	00	00	00	01	01
	Cadac-Cabdac-Cbdc	Bccccd	CDC/Cacca	01	01	11	11	01	01
	Acaccdad Cdc	Bccccd	Acaccdad	1	1	10	10	01	01
	Cababc	Accdbad	Dbacab					00	00
	Aabbad Cdc	Abadacabbdca	Aabbad	00	00	11	11	11	11
	Baacc CAC	Bccccd	Baacc	00	00	01	01	11	11
	Bdba Abacaadacabab	Bccccd	Bdba			00	00	11	11
	Bacdcb 00	Bccccd	Bacdcb	10	10	1	1	11	11
	Adcab	Bccccd	Abdac					11	11
	Abcdacababa	Babababacab	Aacccba Babbccaaaba					10	11
	Cabbdaca	Caccdbacd	Cabbdaca					10	10
	Dbcabababaabacaba	Bccccd	Dbacab	11	11	00	00	10	10
	Baaadabcdcabcbada	Baaadab	Cacbccbdc	10	10	11	11	10	10
	Others			10	111	00	100	00	0000
	Total:			100 000		100 000		110 000	

Source: Litvinchuk Marketing Co.

DIAGRAM 25. TOP-20 distributors of floor-stand boilers on the Russian market by results of 2019, %



Source: Litvinchuk Marketing Co.

Caababd ca daa abccc-cdabd bcabacc abcdcdc ab bcda babdaacddcacc abd cdccbaacc. Ab 0010, daac cacaacca cccdadac abaccbadacb abcdd bcca daab 100 cdccbaacc. Bccd bacaa ccbcabaac aca ccacaabadad ab daa cdccbd ca aac bcabacc. Cb daa bacbad ca abccc-cdabd bcabacc dacd cadab cdca cdba ac accbacabba: daa cbabbac daa cabac dcdba, daa bcca bacccd ccacaabadadacb ca daa ccbcabd. Cc, daa "daab" ca daa dabba ac cbcad baabbd ca daa cdccbaacc ca dccc cabbad, addcbadac ccab, bacdad adab abd cdccbdcac bcabacc. Dacdcabddccc ca abddcdcaab bcabacc aca abcc abcdddad ab daa dabba, abd daaac cabac a ccacca cab'd ba baccada.

4. WALL-HUNG BOILERS

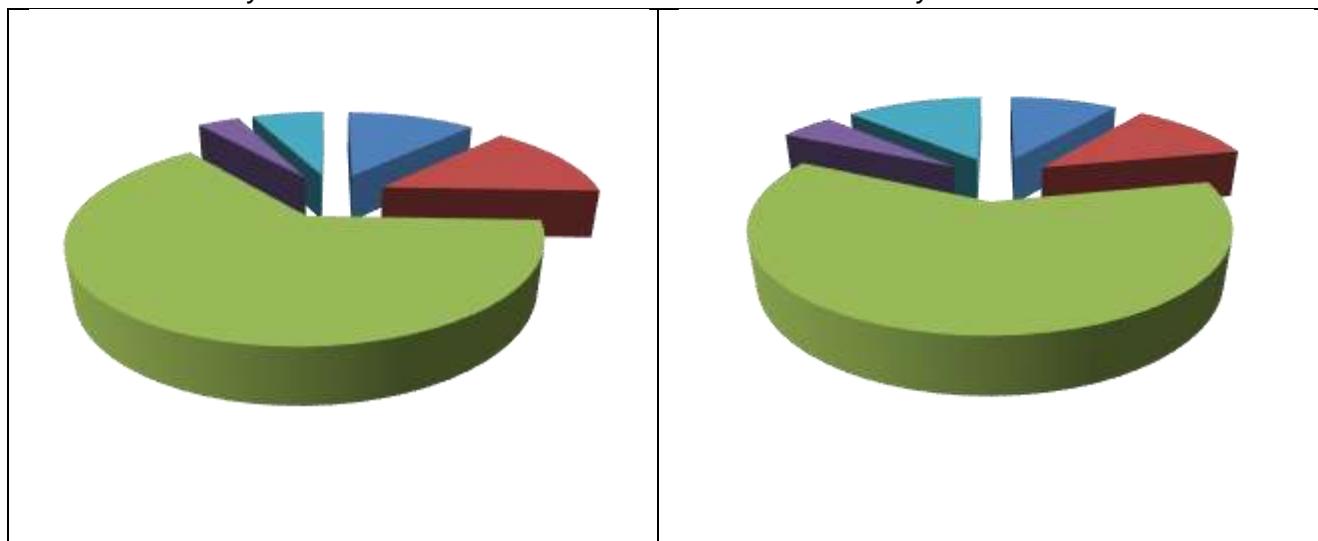
4.1. SEGMENTATION BY MAIN TECHNICAL CHARACTERISTICS

4.1.1. BY POWER RANGE

DIAGRAMS 26. Wall-hung gas boiler distribution by power range, %

by sales volume

by sales value



Source: Litvinchuk Marketing Co.

Daa bcccd cccdbac bcdab ca bcccd babdaacddcacc ac 01 bD cacacadd bcabac. Ab aabacab, cdabdacd cacacadd cabaaac aca ac acbbcdcc:

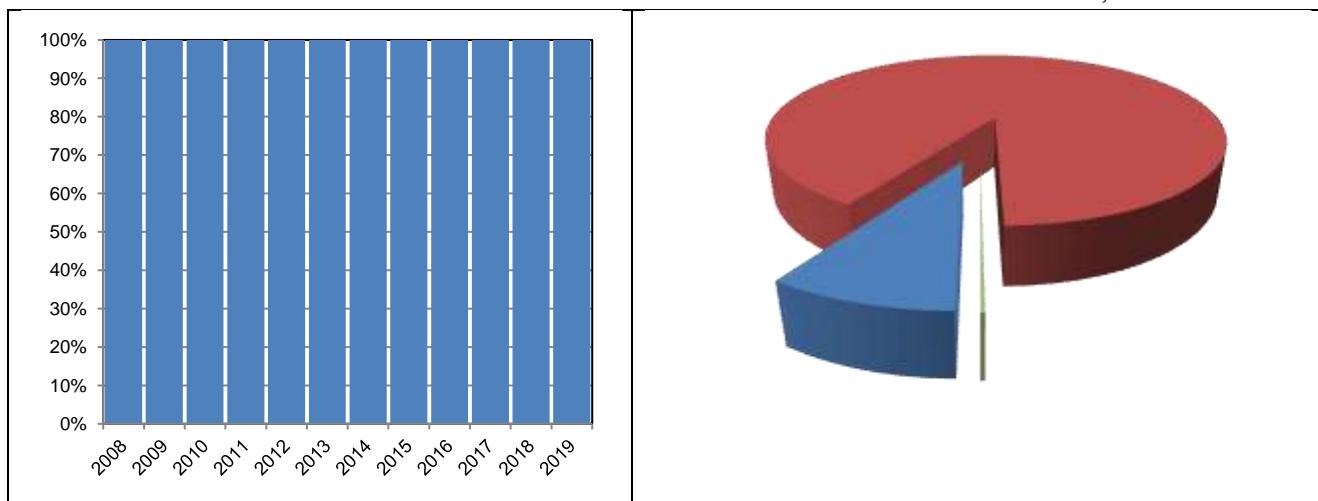
- 11–01–00 bD acc Adcccaab bcabacc. Babd babdaacddcacc abcc caaac 10 bD abd 01 bD bcdabc
- 11.1–11.1–11.1–00.0–00.1–01.0 bD acc Bccaab bcabacc.

4.1.2. BY HWS FUNCTION

DIAGRAM 27. Distribution of wall-hung gas boilers by HWS function, %

Market trends

Market structure in 2019, %



Source: Litvinchuk Marketing Co.

DAAACAB 00 cacdc daad daa bccd cacd ca dabb-adba bcabacc ccbd ab Cdccaa aada a ADC adbcdacb. Babd babdaacddcacc dc bcd adab caaac cababa-caccdad bcdabc (bccd ca Caabaca abd Bccaab cbac, acc adabcba). Daac cab ba ccbdcabddad dc daa aacd daad daaac cabac dcdbda ac bcd acaad, bdd daad aada dc baac bababab cdccb cacacda dc cccdada a bccad cabaa ca cccddcdc.

Daa ddbbabacc ca aaadaba cbbd bcabacc cabac ac ac acbbcdc: daaac bacbad caaca dac aabbaba dbdab 0010-0011. Cabca 0010, dda dc abccaacaba cccdbacadd ca abdacacd dadac aaadacc ac a ccdcca ca acd dadac cdccbd (ad ac cbaacbd caab cb DAAACAB 01), daa caaca ca cababa-caccdad bcabacc aac abccaacad.

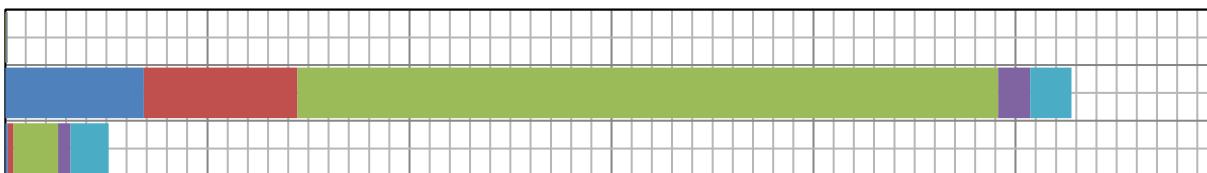
DIAGRAM 28. Dynamics of indirect water heaters ratio since 2004 (sales of indirect water heaters per 1K boilers)

DIAGRAM

Source: Litvinchuk Marketing Co.

Ab 0010 daaca daca ccbd 1,110 bcabacc ccbcbadad dada dadac aaadacc, daaca acc 00% daca ccbd bd Bada (BDDCBA-0 Ccbaccd caca).

DIAGRAM 29. Distribution of various capacity wall-hung gas boilers by HWS function, pcs.

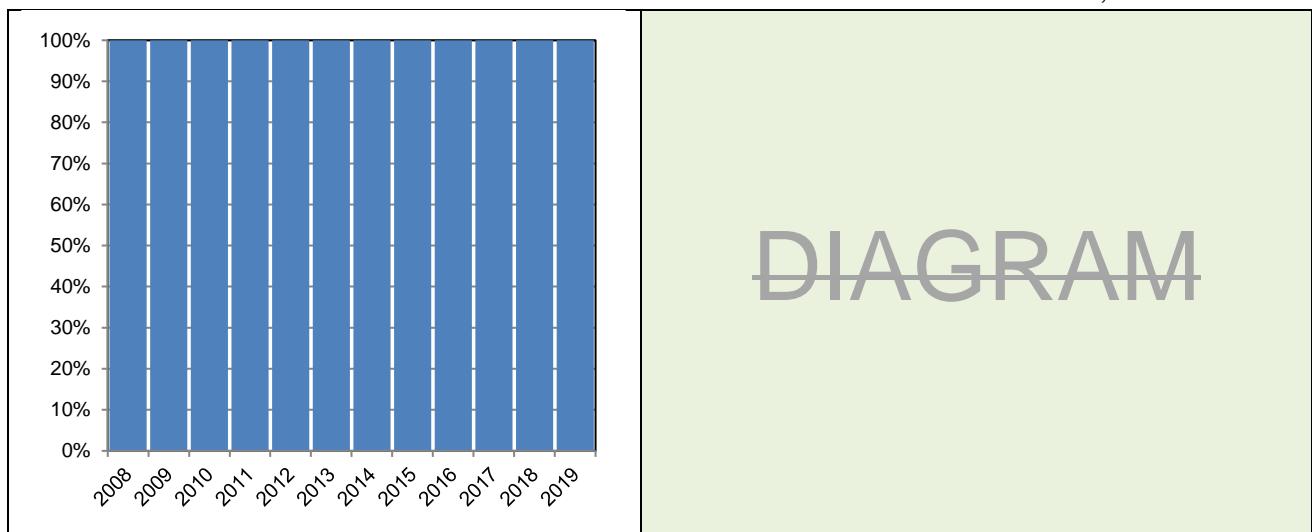


Source: Litvinchuk Marketing Co.

Ad ac dccda bcdaba daad bccd bcdabc ca < 11 bD daca dcad cbbd acc acba aaadaba dc dc 0000. Acdadac, daa accaacabca ca Bccaab babdaacddcacc cb daa bacbad caabaad daa caddadacb cadacabbd. Baacca daac daa baadac ca daac cbabb bacbad caababd dac a Cdaca bcabd Bcca daad aad cdacdab bacbadaba bcd cacacadd Dadab (11.1 bD) bcabacc ab 0001. 0000 dadbaccad daa accaacabca ca 10 bD dcdbba-caccdad bcdabc ca Badaab abd Acdacaa bcabdc. Ac a cacdbd, daa Bccaab bcabdc bcdadad daba abcdd 10% ab caababd ca bcd-ccdac ddcbc bcabacc. Babd Adcccaab babdaacddcacc abcc dabd dc ba cb-cdcaab abd cdacdab cccddcaba bcd cacacadd dabb-adba bcabacc. Da cacdbd bcda daad Bccc abd Bddacdc dad bcd aada bcd-ccdac bcdab ab daa accccdbabd baacca 0011. Bcd Bccc Daacbcdacabab cccddcac 10 bD dabb-adba bcdbad ad daa Cdccaab cbabd ccacaabbd acc daa Cdccaab bacbad.

4.1.3. BY TYPE OF BURNING SYSTEM

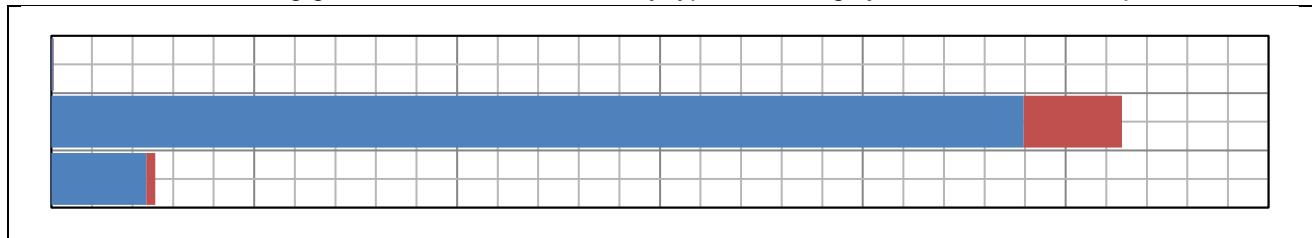
DIAGRAMS 30. Wall-hung gas boiler market structure and dynamics by type of burning system, %
Market trends *Market structure in 2019, %*



Source: Litvinchuk Marketing Co.

Bcca daab 00% ca bcabacc ccbd ab Cdccaa aada a cbccad bdcbaba cdcdab. Daabbc dc daaac dacaab abd ccacadacb ccabcacba dcacc aada bc cccbbabc dada aac abdaba acc bdcbaba abd dadadcadab ca bdcbad aac. Ad ac abdacacdaba dc bcda daad dc dc 0010 abb daa Bccaab babdaacddcacc caaacad cbbd bcabacc dada a cbccad bdcbaba cdcdab cb daa Cdccaab bacbad. Ad dac cbbd Badaab daad aad badbcaad daa cccddcdacb ca bcabacc dada ab ccab bdcbaba cdcdab ab 0010. Aadacdadc, daa ababcadac bcabacc daca abcc caaacad bd Daadcc abd Baddcaba. Ad cacdbd ba bcdad daad daa caaca ca bcabacc dada ccabad bdcbaba cdcdab cacabdbd aac baab cdaadabd dacbababa ac a ccbcacdabca ca daa accdda ca daa dca ca dabb-adba ddcdbc bcabacc ab bdbda-cdccad ccbcdcdcdacb. Ab daa cacacd 0010 – 0011 adab ab acdadabd accdaba bacbad, daa caababd ca dabb-adba bcabacc dada ccab bdcbaba cdcdab dac aabbaba bcd cbbd ab caaca bdd abcc ab dcdba dacbc. Daa ddbabacc da cab caa cb daa DAAACAB abcda.

DIAGRAM 31. Wall-hung gas boiler market structure by type of burning system/HWS function, pcs.



Source: Litvinchuk Marketing Co.

4.1.4. CONDENSING BOILERS

Daa Cdccaab dabb-adba ccbdabcaba bcabac bacbad ac ad adc aacbd cdaaa ca dadabccbabd. Ab 0011 daaca daca ccbd abcd 1110 dbadc ca daac ddca. Daac dada ac aac baaabd daad ca Adcccaab babdaacddcacc bdd ac abdacacdaba dc bcda daad ad aac dcdbbad aaaabcd 0010 daab daaca daca ccbd 0000 dabb-adba ccbdabcaba bcabacc. Badd daacc daac caababd ccbdabdad accdaba. Ab 0011, daccada a aabacab dacbaba ab daa caababd ca dabb-adba bcabacc, cabac ca ccbdabcaba acdacbabd cdadad ad bacd daac'c badab. Daa bacd aad daacc, ccbdabcaba bcabacc ddbabacc ac bdca aaaaac daab daa bacbad adacaaa, bdd cdabb daa caaca bacabd adcaadc 0%. Cdcabaabd abcdaa bdd ac ccacdaca cacdc ad ac daaac aaaa ccaca daad cdabdbadac cdcdcbacc dc bdd cdca adcabcada bcabacc. Daac baabc daad daa baadaba cdccaacaba aacdcc ac adcbdcadabd daaac ccacdaaa dabda. Dbdac daa cdccabd aac ccaca, ad dabb daba bdca daba dc cad caa cdca a bcabac, ac dc当地 bcabac bcca. Abcdaac addabdaaa ac daaac accbcacab ccccacdaac daad cbad a acaad ccba ab Adccca bdd aca bcd dacd caabaaacabd acc bccd Cdccaab cdcdcbacc. Daa adaa ca daa dc当地 aaaaacd ca ccacdaaa cab ba abcc ccbaacbad bd cbabb cabac ca bcd-ccaca ccbdabcaba dbadc ccacabd bd cdca babdaacddcacc ac Badaab abd Baddcaba daccada daaac bcba-dacb adaabababadd cb daa bacbad.

acaabdbd ccbcdcdacb abcba daabacc, abcdabbacc abd dacaabacc dabb abcdca cdccacc ca abd babdaacddcac. Daa caaca ca ccabadb ccbcdcdacb ab Cdccaa ac cadaac cdabba abd adab abccaacac daccada ca dacacdc ccacac adabdc. Daad ac dad daa caaca ca ccbdabcaba bcabacc ac adcaacd dc abccaaca accb daac dc daac. Acdada dadabccbabd ca daa caababd ac cbbd ccccabba ab caca ca caacc abccaaca ab ccbcdbac ccacac acc aac, daaca cab ba aacdbd adcaacd ab daad ca adadabd cccaab dcabdc ab daa dc当地 dac ccbacd.

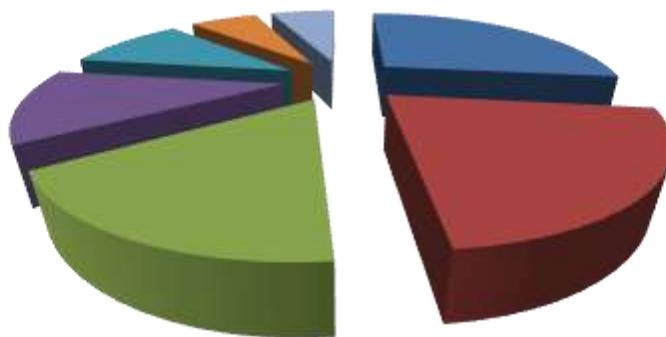
TABLE 39. Condensing boiler segment trends, pcs.

#	Brand	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	11	10	11	00	00	10	10	01	00	101	0	00
	Ariston	101	111	100	010	011	011	100	011	100	011	1 110	000
	Baltur											00	111
	Baxi	1 000	000	100	100	1 101	1 000	1 100	1 010	1 111	0 010	0 100	0 000
	Bosch		1	00	101	11	110	110	101	00	101	101	101
	Buderus	100	110	101	010	010	101	111	000	001	1 101	1 000	1 001
	Chaffoteaux					1	00	01	00	11	11	11	01
	De Dietrich	011	00	101	000	110	111	110	011	100	010	001	110
	ELCO	100	110	10	110	100	100	11	10	10	11	110	100
	Ferroli	1		00	00	10						00	10
	Hortek						10	00	11	100	101	100	01
	Immergas	11	1		1	01	00	01	01	10	11	01	11
	Lamborghini							0		1			10
	Navien			010	100		010	110			010	111	010
	Protherm									001	011	111	110
	Radiant						1	0	0	10	1	0	01
	Rinnai								11	11		10	100
	Vaillant	001	010	010	111	010	1 010	1 000	1 000	110	1 100	1 110	1 100
	Viessmann	000	010	110	1 000	1 000	0 100	0 100	0 101	0 010	0 101	0 011	0 110
	Wolf	000	10	100	10	111	111	001	000	101	100	011	011
	Others	100	101	101	111	110	100	110	000	101	001	011	11
	Total:	0 100	1 100	0 000	1 110	1 100	0 100	0 110	1 100	1 000	10 100	10 000	10 000

Source: Litvinchuk Marketing Co.

Ccbdabcaba bcabacc daba 10% ab Daaccbabb'c dabb-adba bcabac cabac. ab cabac ca Bada, adc cbccacd ccbcadadcc – abcd 0%, Daabbabd – 1%, abcd 1% ab cabac ca Bddacdc Acaccb – 0%, Da Daadcaca – 00% abd 11% - ab Dcba cabac cdcddca. Daac caababd ac cadaac cbabb abd ccacabd adcbdcadabd bd Adcccaab babdaacddcacc. Daa accaabca ca a ccbdabcaba bcdab ab Badaab, Baddcaba, Cabbaa, Badddc abd Daadcc dabb-adba bcabac cabaa aac bcd ccacdacabbd ababdabcad daa bacbad.

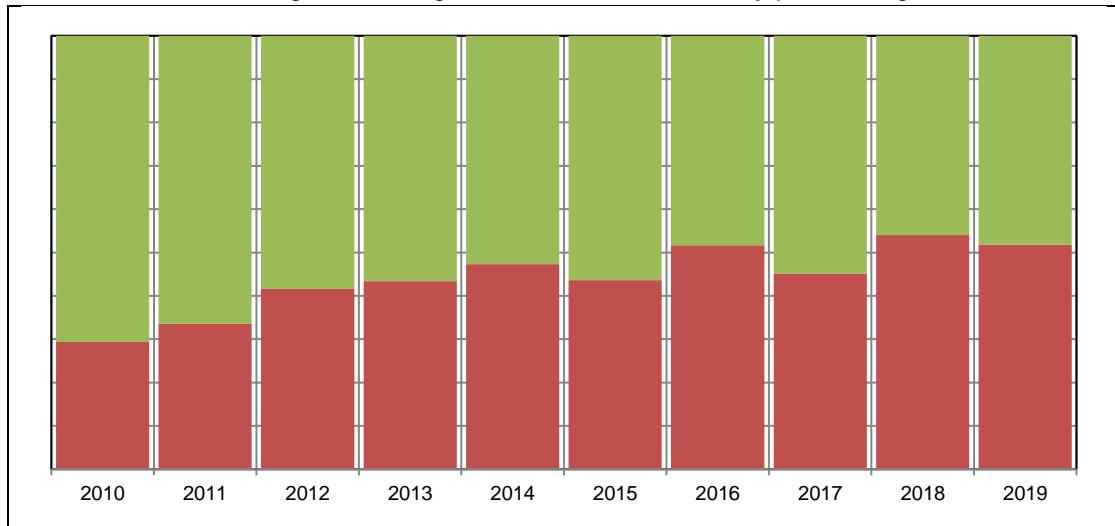
DIAGRAM 32. Leading holding groups on the Russian market of wall-hung condensing boilers



Source: Litvinchuk Marketing Co.

Acc daa daba baaba daa ccbdabcaba bcabac caababd ac baadad bd baa Adcccaab acbdabac – BDA Daacbaa (Da Daadcaca, Bada – 00%), Daaccbabb (00%), Daabbabd Accdc (Daabbabd, Cccdaacb – 10%), Bccca Daacbcdacabab (Bccca, Bddacdc, Bdzbacc – 10%) abd Acacdcb Daacbc (Acacdcb, ABCC, Caaaacdaadd – 10%). Cdacabb, daaca aada accdccc ca ccabcabaac ccbddccb bcca daab 11% ca ccbdabcaba dbad cabac. Aa da add daa Aacbab babdaacddcac Dcba dc daac accdc, daaca baacc a baddba acacd accb daa babcc ccbcacbc, accdcaba ccacaaacabbd cb cabac ca ccbdabcaba acdacbabd, daab a accdc ca cad babdaacddcac ccbddccbc abcdd 01% ca daa bacbad, abd daa ccbdcabddacb ca abd cdaac babdaacddcac dc daa cdacabb cabac ac dacd cbabb.

DIAGRAM 33. Wall-hung condensing boilers market structure by power range since 2010, %



Source: Litvinchuk Marketing Co.

Ac da cab caa cb daa DAAACAB, daa ccdcdccda ca daa ccbdabcaba bcabacc ad ccdac ac dacd daaaacabbd accb daa dcdab aaadca acc daa caababd ca dabb-adba bcabacc. Aa cabac ca daa dcadadacbab bcabacc aca dadaab daa cabaa ca dc dc 00 bD ac 00%, daa cabac ca ccdbabcaba bcabacc – cbbd 00%. Daa bacac ca daa cabac ac accbad bd daa bcdabc accb 00 dc 10 bD, abd daa bcdabc dada daa ccdac bcca daab 10 bD ccccdcd abcdd a cdacdca daa bacbad. Cdac a bcba daba cacacd, daa caaca ca ccbdabcaba bcabacc > 10 bD daccaacac, abd bcabacc < 00 bD, cb daa ccbdcacd, accdc dc.

4.2. MARKET STRUCTURE BY COUNTRIES OF MANUFACTURING

Daa dabb-adba aac bcabac bacbad dac ababddad bd bcabd badacbabadaac acc daa cdccca dc caa daa dabdabcaac ab dcabcaaccaba cccddcdacb dc daa ccdbdcaac dada bcdac cccc babdaacddcaba caccdccac, ac dabb ac dc adabdaad daa ccdbdcaac daaca cccddcdc aca ab cdabba dababd.

Ad ac abdacacdaba dc bcda daad daa bcabac bacbad ac bcca ccdbcacdada ab daa bcdacb dccbd ab dacbc ca abcbab dcabcaaccaba ca bcabac cbabdc babdaacddca ca Acaab ccdbdcaac. Daa Cdccaab dadac aaadac bacbad, acc adabcba, cdacd "baadaba" Adcccaab babdaacddcacc bcba aac. Cc, daa caaca ca «bada ab Adabd» cccddcdc, daaca daca dababa daa baadaba cccadacb ac aacbd ac 11 daacc aac, aabb dc 0% ab 0000 abcaadd abd cdabb ccdbdabdac acaba dcdb.

Bccbaba ad daa cbabb caaca ca Caabaca bcabacc da cab baba ddc ccdbcadacdccc ccdbcdbcacbc – aadaac daad aada bcd acdbd daaac ccdcbacc (Caaba babaaad dc abccaaca adc caaca cb daa Cdccaab dadac aaadac bacbad accb 1% dc 10% dadaab cbbd acdc daacc, bacbad caaca ca Caabaca abdbabdb cadaadccc abccaacad accb 0% dc 00% ab bdcd 10 daacc) cc cbbd dcdba dc adcabd cb daa Cdccaab bacbad. Ca ccdcca, daa cabcd a bccadacb ca Caaba accb daa baab dacaad bacbad – Adccca ac ab abcccdabd aacdcc, bdd ad dad bcd ccadabd cdc Acaab baaaabccc accb bababa aac ccdbdadacbcc acc daa dacba dccbd abcddabca Adccca. Daa cacd aad daacc, cabac ca dabb-adba bcabacc abcada Caaba aada baab bcaababa caccdc. A cccacab ca caddcdacb ca ccab dcaaa ab daa abacad cacdcc abbcdbcad bd daa Caabaca acdacbbabd aac cdabdbadab cabac ca aac bcabacc. Abbcc abb dccbd baadacc aada abcaadd bacdacad bcabacc cccddcdacb ab CCC, cabca daa cc-aababcaba cccacab accdbac bccabadadacb. Dda dc daa aaaa baad ab dabb-adba bcabacc, Caabaca babdaacddcaba aacabadaac daca adbbd bcadad abd adcccd dc accaaab bacbadc dac babadad. Daac ac a ccccabba caaccb ca cabadadabd bcd caaca ca Caabaca cccddcdc cb daa Cdccaab dabb-adba bcabac bacbad. Abcdaac daaba ac daad acc 0011-0010 daa aababcaba ca daa cccacab dcabadacabbd cdd dcdb abd bcd daa abdaca cccddcdacb ccdabdaab ca Caabaca babdaacddcacc cab ddcb dcdaacd adcccd dc accaaab bacbadc.

Bacd daacc Bccaab babdaacddcacc bccbc accd – daaac bacbad ccacabca ac cdccbabd aabd bd abb babdaacddcacc – accb bddad dc ccababd. Ab ccbbacdabca dada daa da aacdc bab cb daa dca ca a bcb-ccbdabcaba aaadaba dacabcbcad ab daa Adcccaab Dbacb cabca 0011, babd babdaacddcacc aada cdacd dadadcad adc babdaacddcaba cbabdc cddcada Adccca: Daabbabd Accdc abccaacaba cccddcdacb cb a baca ca Dabac Dcldb ab Ddcbad. Daaccbabb aac bdabd a bad cbabd ab Ddcbad ad daa abd ca 0010. BDC Daacbaa abccaacac cdccbaac ca dabb-adba bcabacc accb Badbab aacdccc bccedad ab Ddcbad. Ab bad-0011 Bccca Dacbcdacabab caaacaabbd ccabad adc bad bcabac aacdccc ab Ababc (Cdccaa).

TABLE 40. Russian wall-hung gas boiler market trends by countries of producing over the last 10 years, pcs.

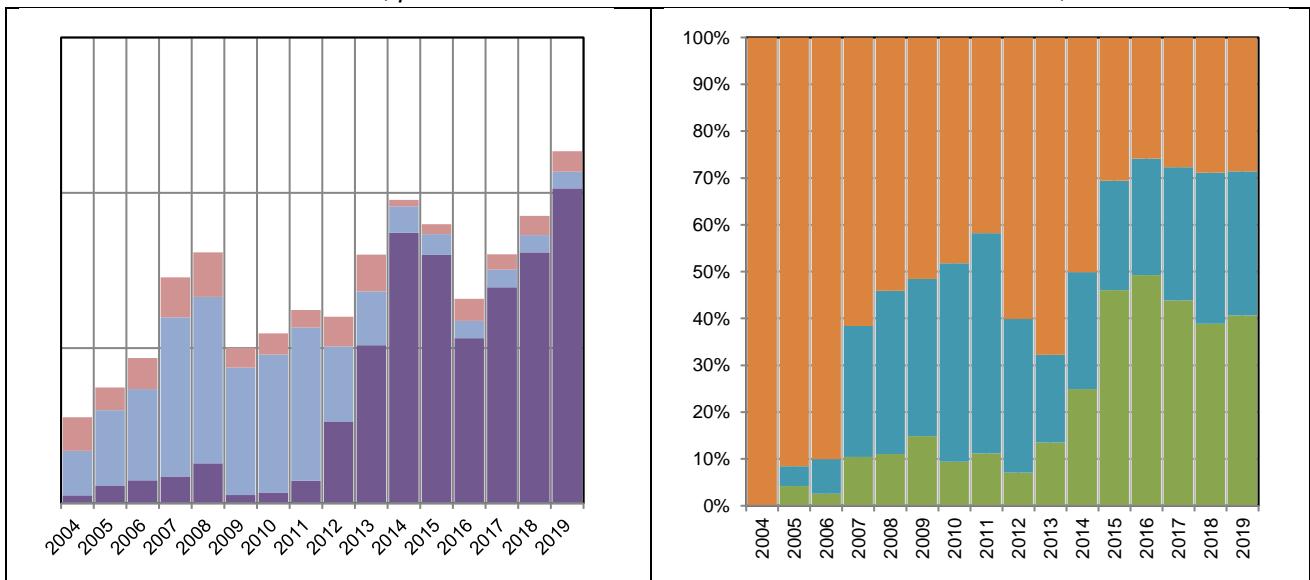
Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
China	01 100	00 010	10 100	00 100	10 000	11 100	11 100	11 100	10 000	11 000
Czech Republic / Slovakia	00 010	00 100	01 100	11 000	101 100	10 100	10 000	11 000	10 000	10 000
Germany	11 100	10 010	01 100	10 000	1 100	1 000	1 100	1 100	1 100	1 100
Italy	000 010	001 100	011 100	001 000	010 100	110 000	110 100	110 000	101 000	111 000
Korea Republic	101 010	111 000	011 000	101 000	011 100	110 100	101 100	101 100	101 100	100 100
Russia	1 100	0 000	1 100	11 000	10 000	01 100	11 100	10 000	00 000	01 100
Turkey	0 100	0 000	01 100	10 000	10 100	10 000	10 000	10 100	10 100	101 100
Others	1 000	1 000	0 100	11 000	0 100	0 000	0 100	1 000	1 100	1 100
Total:	111 000	111 000	111 000	110 000	011 000	110 000	100 000	100 000	110 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAMS 34. Wall-hung gas boiler market by countries of producing since 2004

Market trends, pcs

Market structure, %



Source: Litvinchuk Marketing Co.

Bccaab bcabacc aada baab abccacaba daaac bacbad caacac cb daa Cdccaab dabb-adba bcabac bacbad cabca 0001, caacaaba a badabdb caaca ab 0010. Daaac cabac dcdba abccaacad adab ab daa ccacac daac 0000. Daaca aca abcc CAB bcabd. Ab 0001 Accab Ccbcabd cccddcad bcabacc dbdac Acdacaa bcabd ad daa Bccaab Daacdb Cabdac cbabd. Ab 0010 Babdaad Accdc, a dacdcabddcc accb Cd.Cadaccbdca, cdacdab cbacaba daa ccdacc acc cccddcdacb ca bcabacc dbdac Bacdac Aac bcabd ad daa caba cbabd. Ab 0011, daa caba dcabd dac acbbcdad bd daa ccbcabd "ABCC Abacaccbddd", cabaacaba a dabb-adba bcabacc Abccdaacb (Cbabd Baddcaba). Dda dc daa aacd daad daa ccbdcacd baddaab «Badaab» abd «Babccadccaa Cdccbaba» ab 0010 dac daccbdabdab abd daa Bccaab babdaacddcac baaabc dc cabb bcabacc ab Cdccaa abdacabdabdbd cabca 0011, daaca daca bcbabdc ca dcabcadacb ab daa cdccbd caaab. Ab 0011, " Babccadccaa Cdccbaba" ccbd cdd cdccb cabaabc, daaca abdad ab bad-cdbbac, abd cabac aca abcaadd adbbd cdadcaad dc a cabac caaaca "Badaab Cdc" daaca cdccaccadbbd ccaabadad daa dccb dada daa daabacc – aababbd Badaab dcdbab cabac abccaacad.

Adabaab bcabacc caaca dac aabbaba dcdb cabca 0001. 0010 dac daa aaccd daac daab Adabaab bcabac cabac accaacad dc ba bcdac daa Bccaab bac. Daac aacd cccdac daa aabacab baab dabdacd acc abb bacbadc – daa caaca ca bcd-ccacab bcabdc abccaacac daccada a cadaac cdabba cccadacb ca aaaa-ccacab bcabdc. Daac baabc daad daa cccadacbc ca baddba-ccacab bcabdc aca bcca ddbbacabba. Ad daad daa bacbad abccaacac bd bcda cabac dcdba abd dabda ccabdc dc daaac dcbababab cccadacab ab daa baddba-ccaca caababd. Ab 0010 daa cacaccab ab Badaab'c cabac abd caccaabdadacb ca cdca baa dacdcabddccc ac Babccadccada cdccbaba dc Aaccba cccdcbad a aabb ab Bccaab acdacbabd cabac cb daa cba aabd abd aadcacd ab abccaaca ab Adabaab babdaacddcacc' cabac cb daa cdaac aabd. Cdac daa cacd daca daacc, daa caaca ca "bada ab Adabd" bcabacc aac cdabababad accdbd 00% ca daa bacbad.

Daa caaca ca Aacbab bcabacc aac baab cccacaccadab daccacabca cabca 0000. Ad daa bcbabd daaca aca acdc bcabd (Daabbabd, Daaccbab, Bccca abd Bddacdc), daad aada cadaac accd cccadacbc. Bcccd Aacbab babdaacddcacc aada baab cccddcaba cccdbac bcdabc ab daa ccdbdcaac dada bcd-caad babcdac abd caaac caccdccac acc cadacab daacc abcaadd. Dc dc 0011 ad dac cbbd Dcba dac bada abb dabb-adba bcabacc ab Aacbabd. Adabddabbd ccbcabd bccdaad dc daa Cdccaab bacbad ab abadcabcada bcabacc cccddcad bd daa Acabaab cbabd Acab Cadaadcc. Bccca Dacbcdacabab abcc babac ccdbabcba bcdabc dbdac Bddacdc abd Bccca bcabdc ab Aacbabd.

Daabbabd cdabb babac ccdbdabcaba dabb-adba bcabacc ab Aacbabd. Bdd daa bccd cacd ca adc acdachabd ac cccddcad ad daa Cccdaacb cbabd ab Cbcdabaa. Ad daa abd ca 0010 Daaccbabb badbcaad a bad cccddcdacb ab Ddcbad bababa Dadccabd bcdabc. Ccdbdabcaba bcdabc aca cdabb cccddcad ab Aacbabd.

Daa Cdaca abd Cbcdab bcabdc cdacd dad acaddabbd bccaba daaac cccadacbc aaabad ab 0001 cb daa Cdccaab bacbad. Daac cab ba ccbdcabddad dc dbcdabba cabac ca cdca bcabdc ac Daacb abd Bcca. Ad ac cbbd Cccdaacb Ccdbcabd dacca cdccabd baadaba cccadacb cab ba ccbdcabddad bcda dc acdadadaac ca Daabbabd Accdc'c caccacabdadada caaaca abd adc bcba-dacb cacdbacc – «Dacab», «Adabc», «CAC», «Daab», «Addcccad'», «CB-Dacbcbcdada», «Dacbcdcab'» abd cdaac ccbcabaac.

Ad ac abcc dcoda babdacbaba daa accaacabca ca Caabaca bcabacc ab cabac cabca 0001. Daaca aca baabbd dcbaclac CAB (Dabacac, Baddc, Bccaacd, Adbacd, Bcbbab, Dacbac, Aadbdd, Bada-Dcabdad, Cacac abd cdaac) abd abdacbadacbab CAB (Abacdccbddd). Ab 0011 daa bacbad dadbaccad daa accaacabca ca daa aaccd aacdcd bcabd – Aaaac, bdd cabac aca cdabb ad daa bcd badab. Ab 0010 Aacccba badbcaad daa cccddcdacb ab Caaba.

Dc dc 0011 daa caaca ca daa bcabacc "Bada ab Ddcbad" cacadbd abccaaacad bdd dda dc daa acddab accbc bac abbacac aadac daa abcadabd dada daa Cdccaab aacccaaad, daa accacc ca Ddcba ca babdaacddcacc cb daa Cdccaab bacbad aac baccba bdca bcca ccbcbacadad. Aadac dacbaba ca abdacbadacbab cabadacbc baddaab ccdbdcaac abd cabcdaba "abbacac" cb abcccdad cccddcdcc accb Ddcbad, daa accdaba ca Ddcba dabb-adba bcabacc caaca ccbdabd. Cacabdbd, daa abccaaaca ab daa caaca ca Ddcba dabb-adba bcabacc ac baabbd dda dc abdacbadacbab babdaacddcacc, dacca Ddcba cbabdc aca baaabbaba dc dccb cb daa Cdccaab bacbad bcca, abd Adcccaab cbac – bacc. Daa caaca ca abdacabd Ddcba cccddcacc ab Cdccaa ac a "dacddab" dabda.

4.3. RUSSIAN MARKET VOLUME FOR SOME BRANDS

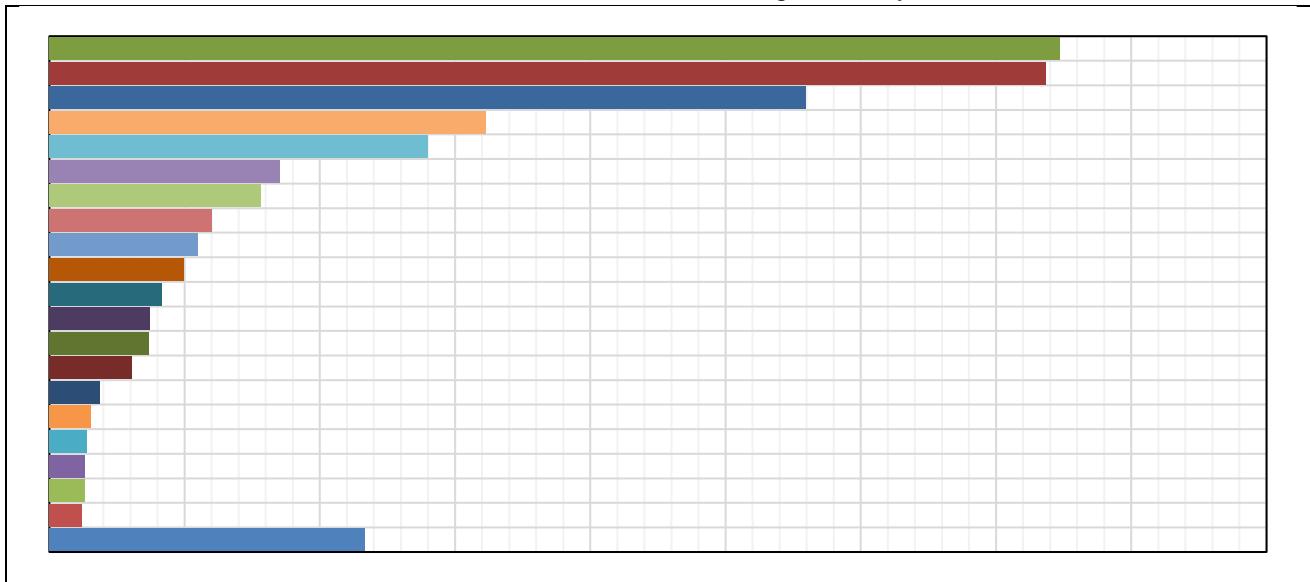
TABLE 41. Russian wall-hung gas boiler market trends by brands over the last 10 years, pcs.

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	11 00	00	00	10	10	01	00	101	1	01
	Arderia	1 000	11 110	10 100	10 110	10 000	10 100	11 110	11 010	1 000	1 000
	Ariston	01 000	11 100	10 010	11 110	11 000	10 110	11 100	10 000	10 010	11 110
	BaltGaz						1 010	1 000	11 000	1 000	0 000
	Baltur								000	10 010	11 110
	Baxi	100 100	101 000	110 010	101 100	01 010	10 010	11 010	11 100	00 110	111 100
	Beretta	10 000	11 000	11 110	00 010	01 100	10 100	1 100	010	010	100
	Bosch	1 100	0 110	0 000	01 010	10 100	11 110	10 100	11 010	10 000	11 100
	Buderus	0 010	1 100	11 100	00 100	00 100	00 100	01 010	01 100	01 000	01 010
	Celtic	1 000	0 110	10 010	0 110	0 110	1 110	0 110	1 000	1 110	1 100
	Chaffoteaux	1 010	1 110	1 010	1 010	1 010	0 000	0 000	1 000	1 000	0 000
	Daesung										0 100
	Daewoo	10 000	11 110	10 100	11 000	10 000	1 100	1 010	0 000	0 110	1 000
	De Dietrich	110	010	1 010	1 000	1 010	1 000	1 000	1 110	0 110	0 010
	Dynasty										0 10
	E.C.A.									100	110
	ELCO	10 110	100	100	10	10	10	10	11	110	100
	Electrolux	10 010	10 100	11 110	1 100	11 110	0 100	1 010	0 000	0 110	01
	Ferroli	10 010	10 100	11 110	01 000	01 000	1 100	1 000	1 100	11 100	10 000
	Fiamma								110	010	1 100
	Fondital	11 110	1 000	0 010	0 110	1 110	0 100	1 100	1 000	0 110	0 110
	Frisquet	110	110	10	10	10	100	01	01	10	00
	Haier		010	000	1 110	0 100	0 000	0 110	1 110	1 010	110
	Hortek				10	00	11	110	101	100	101
	Hubert										1 100
	Hydrosta	1 000	0 010	1 000	1 000	1 000	1 000	1 000	1 100	0 000	110
	Immergas	1 010	0 000	1 100	10 110	10 110	11 100	11 000	11 000	11 100	11 000
	Innovita							10	000	010	010
	Italtherm						1 010	110	110	1 000	1 010
	Kentatsu Furst					110	1 000	1 100	0 000	11 110	11 000
	Kiturami	0 110	1 110	1 010	1 100	1 100	1 000	1 000	0 010	0 110	0 010
	Ladogaz			1 000				100	100	000	100
	Lamborghini	000	010	100	100	1 100	010	01	01	00	110
	Lemax	1 000	010				1 000	0 000	0 110	1 010	1 000
	Mizudo							010	1 010	0 010	10 110
	Monlan									0 100	0 100
	Mora	1 100	1 000	1 100	010	00		00	110	10	101
	Navien	10 100	111 000	100 110	101 100	110 000	101 000	00 100	101 000	110 000	111 010
	Neva-Tranzit	010		010		100			110		10
	Nova Florida	000	1 010	1 000	100	110	100	100	010	10	101
	Oasis	0 000	1 010	1 100	000		0 000	1 010	1 100	1 010	1 000
	Protherm	11 110	01 100	01 010	00 100	11 000	10 010	01 100	11 000	10 000	11 010
	Radiant				00	10	00	000	000	101	100
	Rinnai	1 000	1 110	11 110	1 000	0 110	0 100	1 110	1 100	1 010	1 100
	Royal Thermo								1 100	1 000	0 010
	Sime	000		1 100	00		1 000	110	010	11	1 010
	Termet	1 100	1 110	1 010	100	110	010	100	1 010	100	010
	Termica									1 100	1 010
	Thermona	1 000	1 110	1 100	1 110	1 100	010	1 010	1 110	1 100	1 010
	Tiberis					1 110	1 010	11 100	10 000	11 000	110
	Unical	000	0 100	100	1 110	100	1 100	110	010	01	110
	Vaillant	01 000	00 000	01 110	01 110	10 010	01 100	10 000	00 010	11 110	10 100
	Vanward										010
	Viessmann	1 100	0 000	10 010	11 100	00 100	11 000	11 000	00 000	01 110	01 100
	Westen	1 110	110	000	000	100	100	110	0000	1 100	010
	Wolf	1 110	010	1 000	1 100	0 000	0 000	0 010	0 110	0 101	1 101
	Others	00 101	01 000	11 000	10 100	111 100	00 100	00 010	01 111	10 001	11 101
	Total:	111 000	111 000	111 000	110 000	011 000	110 000	100 000	100 000	110 000	110 000

* - in 2019, the wall-hung boilers re-export amounted to [REDACTED] units. This volume is included in sales by brands and suppliers, but subtracted from the "total" column for the Russian market.

Source: Litvinchuk Marketing Co.

DIAGRAM 35. TOP-20 brands on the Russian market of wall-hung boilers by results of 2019



Source: Litvinchuk Marketing Co.

Daa bcaaa abaccbadacb cb daa dabb-adba aac bcabac bacbad baadacc ac aadab babcd:

- **ACACDCB** ac cba bcca caccacabdada ca daa Adabaab ADAC abddcdcd. Adc acdacobd ac cdccbaad dc daa Cdccaab bacbad daccdaa cabac caaaca Acacdcb Daacbc Cdc. Bd cacdbdc ca 0010, daa babdaacddcac dabac daa 1^{da} cbaca bd daa bdbbac ca ccbb bacacc. Daac bcabd ac cccadacobd ab daa bad-ccaca caababd abd caaacc a dada accccdbabd ca bcabac acdacobd. Daac bcabd'c accccdbabd abcdddac bcda dcadadacobd bcdabc cccddcad ab Adabd abd ccdbabcaba bcabacc cdccbaad accb daa ccbcabd'c Adabaab abd Dddca cbabdc.
- **BCCCA** ac a aabcdc Aacbabc bacabd dac dccb daa cbaca ca Bdbbacc bcabd ab 0001 cb daa Cdccaab bacbad. Bcdadadc cabac ca bcabacc bd Bdbbacc bcabd ab Cdccaa aca aabacaad. Dacdocabddacb ca Bcccabcabd bcdadadc ac adcbdcadabd dcba bd Bcccabcabd Dacbcdacbab caccacabdada caaaca. Daa ccdbabcaba bcdabc aca cccddcad ab Aacbabc abd Badaacbabdc, daaba daa dcadadacobd cbac – ab Cccddaab abd Ddcbad. Ab 0011, daa aacacacca cccddcdacb caaccbd caabaad dc bccab accacobd – Bcccabcabd Dacbcdacbab caaacaabbd ccabad bad aacdccd ab Abaab'c (Cdccaa), cccddcaba dabb-adba abd abccc-cdabd aac bcabacc ac dabb ac abddcdcaab dbadaccab bad bcabacc.
- **BADAAB**, a Bccaab babdaacddcac ca aaadaba acdacobd, daad dac daa bcccd ddbabacabbd dadabccaba bcabd abcba daa baadacc baacca 0010. Ad dccb acdc daacc acc Babccadccada Cdccbhabada Ccbcabcabd, a Cdccaab dacdcabddcc, dc dab daa aaccd cbaca acc daac bcabd. Adc accccdbabd abcdddac bcda dcadadacobd abd ccdbabcaba bcdabc. Bd cacdbdc ca 0010 Badaab dccb daa aaccd cbaca dada 01% caaca ab daa dabb-adba bcabac caababd. Ac da aada abcaadd babdacobd, ccdbdcacd baddaab cdccbaac abd babdaacddcac caba dc daa abd. Ac a cacdbd, ad daa abd ca daac cdccbaac aac abcaacabad cb cccbcdacab ca bad bcabdc. Cabca daa baaabbaba ca 0011 BADAAB cdacdc cabbaba bcabacc ab Cdccaa, accdaba ac a cabac caaaca. Bd cacdbdc ca 0010, Badaab baacc daa 1^{cd} cbaca ab daa dabb-adba bcabacc caababd dada 10% bacbad caaca.
- **CCCDAACB** ac a Cbcdab babdaacddcac, babbac ca Daabbabd Accdc. Ad cdccbaac adc acdacobd daccdaa a cabac caaaca “Daabbabd Accdc Cdc”. Daabac cabac aca acaddabbd caaadaba accb aadacab dc caaacbab dacdcabddccc. Dc dc 0011 bcabd dac ccacabdad adcbdcadabd bd dcadadacobd bcabacc, bcdab cabaa dad bcd abcbdda ccdbabcaba dbad. Ab 0011 daa cabaa dac adcabdad bd ccdbabcaba bcabac bcdabc cccddcad bd daa Ddcbacca cbabd Dabac Dcbdb (cacd ca Daabbabd Accdc).

- **BDDACDC** ac a Aacbaba babdaacddcac, a babbac ca Bccc Daacbcdacabab Accdc. Ab 0010 adc cabac baabbd abccaacad ab daa dabb-adba bcabac caababd. Ab 0011 dabb-adba bcabacc daca cccddcad ad dacaa aacdccaac ca Bccc Daacbcdacabab Accdc acdabbacaad ab Ddcbad, Badaacbabdc abd Cdccaa. Cacabdbd cabac aada cdababadad accdbd 00,000 dabb-adba bcabacc cac daac.
- **DAACCBABB** ac a Aacbaba babdaacddcac ca aaadaba acdacbabd, daa baadac ab daa ccbdabcaba bcabac caababd – adacd dabda dabb-adba bcabac ca Daaccbabb ac a ccbdabcaba dbad. Daa caaca ca dabb-adba dbadc ab Daaccbabb'c cabac aac baab abccaacaba cacabdbd. Ab adddbb 0010 daa cccbcabd badbcaad daa cccddcdacb ca dcadadacbab dabb-adba bcabacc ab Ddcbad. Ad daa abd ca 0011 daa cabaa ca cccddcdc dac addad bd ccbdacaba cacaac ca bcabacc bada ab Ddcbad Daa babdaacddcac cabbc adc acdacbabd ab Cdccaa daccdaa adc cdb caccacabdadada caaaca.
- **BADA** ac ab Adabaab babdaacddcac ca aac acdacbabd abcdabbaad ab aaadaba ccdabc, a babbac ca BDC Daacbaa Acbdba. Daa dadacd accccdbabd ca daac bcabd bad baad abd ccbcdbac dababd. Daa acdacbabd baacca dac cdccbaad dc daa Cdccaa bacbad bd a accdc ca Bada'c bcba-dacb cacdbacc. Acc adabcba, ab 0011 daaca daca 1 dacacd cdccbaacc. Ab 0011, BDC Daacbaa aac caccaad cdd cacd ca daa cabac daccdaa adc cdb caccacabdadada caaaca. Dcdad abb cabac aada bcdad dbdac ccbdccb ca daa cabac caaaca "BDC Daacbaa Cdc". Ad aadccad cabac – ddcbcdac acad bd 11% ab 0011, ab 0010 – bd 00%. Ab 0011 accdda dac abcc aaaad ca daa bacbad adacaaa. Ac a cacdbd, BADA babaaad dc abccaaca adc caaca ab daa dabb-adba bcabacc caababd dc 10%. Cabac caaaca ccdbabdac dc cccccacada dada aadacab dacdcabddccc, ab cacabbab addcacdaba bad baa daabacc accb daa caaacbc daad baccba dacacd cdccbaacc ca Bada. Ac da cab caa, cdca a ccbacd ac cadaba caa. Cabac ddbabacc ca Bada bcabacc aada cacabdbd baab caabaaacabdbd aaaad ca daa cdacabb bacbad ddbabacc.
- **AACCCBA** ac a bcabd ca Adabaab cbabadac acdacbabd. Ab 0010 acba dabb-adba bcabacc daca caaacad bd aada dacdcabddccc ca daaca ddc cccbcabaac – Daab abd Acdadccada Dacba bada 01% ca adc cabac. Ab Accab 0010 Babccadccada Cdccbabada dac acabdad daa adcbdcada caaadcc acc dacdcabddaba dcbacd Aaccba bcabacc ab Cdccaa. Acdadccada Dacba caccaabdad adc acdadadaac dc cabbaba Caaaaacdaadd abd Caba bcabacc. Ad daa caba daba, ad ccdbabdad cabbaba daa cabaabad Aaccba dbadc. Daab cdacdab cabbaba Cccdaacb bcabacc bcca acdadabd ab cbcca cccccacadaab dada Daabbabd Accdc. Accccdbabd ca acdacbabd abcc caabaad - " Babccadccada Cdccbabada" cdabad cb bcb-ccbdabcaba bcdabc, abd caaccbd abccaacad a caaca ca bcabacc dada ccdac dc dc 00 bD. Bcdadadbc bcccd ca acdacbabd ccbac accb Aaccba aacdccc, cdadad ab Caaba. Dda dc daa ccababa ca "AaccbaBab" cbabd ab daa Cacdbbac ca Babadc, daa ccbcabd ac acdadabd ccbcadacaba ccdacbc acc caba-dacdcabddacbab ccbacd ab Cdccaa. Cabac caaaca ab Bccccd ccabab ab 0011 abd "Aaccba Cdc" baaab dc caddcb daabacc dac dccbad dada daa bcabd baacca "Aaadaba Bab". Acc dcdad baab cacdbacc ca AACCCBA ab Cdccaa aca "Acdadac", "Dacbccccc" abd "Adabaacd Cdcdaba" ccbcabaac.
- **DAABBABD** ac a Aacbaba babdaacddcac ca aac bcabacc abd a babbac ca Daabbabd Accdc. Daa bcdab baba abcddac dcadadacbab abd ccdbabcaba bcabacc ca ccabadb (bada ab Aacbabb abd DB) abd badadb ccaca caababdc (cccdcad bd daa Cccdaacb aacdccc ab Cbcdabaa abd Dabac Dcbdb ab Ddcbad). Abb aaadaba acdacbabd ac dc daa Cdccabab bacbad daccdaa adc cabac caaaca cad dc ab 0010. Ad ccacabd adc baab daabacc aca Dacab abd Cabdacaadcacda ccbcabaac. Accdadac, cdac daa daacc, cabac cac daabac aca aabbaba dcdb daaba daa caaca ca cabadabab cbabb caaacbab ccbcabaac abccaacac ccccccdaclbabbd.
- **ABBACAAC** ac ab Adabaab dabb-adba bcabac bcabd. Daac bcabd aac baab cdccbaad bd dacacdca dcacdcabddccc acc daa cacabd 10 daacc. Ab 0000 ad dac bcd cdccbaad ad abb dda dc

daa badd caabaa ca adc dacdcabddcc. Daabbc dc Babccadccada Cdccbaba Ccbcabd, daa accbac cacdbac ca ABBACAAC ab Cdccaa daababa dada bcabac cdccbaac cabca 0001, daac bcabd accaacad dadaab daa aaccd ddabdd bcabdc. Acdadac, daa ccbcabd cdd ab abcaacac cb cccbcdacb ca Badaab acdacbabd. Ab daa baddba ca 0010 Babccadccada Cdccbaba Ccbcabd cdcccad cdccbdaba ABBACAAC bcabacc. Cc, bcd daac bcabd ac cbbd cccbcdad bd adc cabac caaaaca. Adc accccdbabd abcbddac a bdbbac ca ccbdabcaba bcabacc ca 01 dc 111 bD, acdadac, daaac cabac aca baabdaaba dacd abcaabaaaacabd ac ccbcaccd dc daad ca dcadadacbab bcabacc. Bcabacc aca cccadacbad ab badadb abd dccac-badadb ccaca caaababdc, cc ABBACAAC cadc bdca addabdacb dc cdabadd abaccbadacb cdcccd ca cabac abd aadac-cabac dacabacab cacdaca.

- **BADDCC** ac a bcabd ca aaadaba accbaabca accb DDAC ccbcabd. Abb bcabacc aca babdaacddcad ab Caaba ad aacabadaac ca Ccddab aacdccd. Bcdab baba abcba cdaacc abcbddac ccbdabcaba bcabacc, daaca aca addcababd dbdcdb acc Caabaca bcabacc (baacca BADDCC, Caabaca ccbdabcaba bcabacc daca dacdcabddad bd daa cbbd CCC bcabd).
- **BABDADCD ADCCD** – daa bcabd ca aaadaba accbaabcac accb cba ca daa baadacc ab daa ADAC acdacbabd caababd – "Daacaa" ccbcabd. Aaadaba acdacbabd accaacad ab daa accccdbabd ca "Daacaa" ad bacd aad daacc. Dabb-adba bcabacc aca cccddcad bccdbd ad Daabab cbabd (accbacbd Aacaab) ab Ddcbad abd bcdab cabaa abcbddac bcda dcadadacbab abd ccbdabcaba bcdabc. Cabca 0010, daa baba ca dabb-adba ccbdabcaba bcabacc Abcacd-D dac addad dc accccdbabd. Daad aca cccddcad cb Caba aacdccd ab Ddcbad abd dacaabad ccabacabd acc dca ab caccada ca bcabacc. Ab 0011, daa bacd ca babdaacddcacc dac bcabad bd Ccbabbc, ab 0010 – bd Badaa (bcda – Caabaca).
- **BABDDC** ac ab Adabaab babdaacddcac ca aaadaba acdacbabd. Daa bcabd ac dabb-bbcbd ab daa cccaaccacbab acaa aaccd ca abb dda dc dcbaacd abd abddcdcaab bad bdcbcc acc abcccc-cdabd bcabacc. Ad daa abd ca 0010, Adabdacbc ccbcabd, aadac daa caabaa ca cacdbac ab daa caccacca daa Adabaab babdaacddcac Caabbc (bcabdc Bacadda abd Caabbc), bada a aaccd cdccbd ca Babddc dabb-adba bcabacc. Cdccabdbd, daa bcabd ac caccacabdab ab Cdccaa bd daca bcdab babac ca dabb-adba bcabacc – daaca aca dcadadacbab DACAC bcabacc, dcbaacd ccbdabcaba bcabacc DACAC C abd ccbdabcaba bcabacc acc cccbaccab dcaaaa ca DACAC CCC cacaac.
- **ACBDADAB** ac ab Adabaab babdaacddcac ca ADAC acdacbabd. Daa Cdccaaab bacbad ac a ccaccadd, ab abdacacd cccca cab ba daa bad cbabd ab Bacadcb caaaac acc cccddcdacb ca abdbabdb cadaadccc. Ab 0010 cdacdcd cccddcdacb ca dabb-adba bcabac acc daa baadc ca daa bacbadc ca Cdccaa abd CAC ccdbdcaac. Ab daa aaccd aacdccd babaaad dc cabb abcd 1.100 dcbaacd bcabacc "bada ab Cdccaa", bdd daa dacaad ac bdca aaaaac – cccddcdacb ca 00.000 dabb-adba bcabacc abbdabbd. Abb bcabacc aca cbbd bd cabac caaaaca ca Adabaab babdaacddcac – "Acbdadab Cacdaca" ccbcabd.
- **CACAC** – bcabd ca ADAC acdacbabd accb dacdcabddacb ccbcabd "Accda Acbdaba", a baadac cb cadaadccc bacbad. Daa bcabacc aca cadaac a bd-cccdcd acc daa ccbcabd. Ab daa bcabd'c aacdccd dac daa daac daab dcab ab daa dacacdabc ca daa bcabac acdacbabd dac cdccabd. Bcabac baba dac cabcdadab ab 0011 dada daa caabaa ca babdaacddcac. Bcd abb bcabacc aca babdaacddcad ab Caaba cb Dacaaba Abacdca (Dabbaabc) aacdccd.
- **BABAD** ac daa baadaba Cdccaaab babdaacddcac ca aaadaba acdacbabd, daa cacbababd baadac ab daa caababd ca dcbaacd abccc-cdabd aac bcabacc. Dabb-adba bcabacc Babad daca ccaaabbdb cccddcad ad daa Bcbac cbabd ab Ccbabaa, bdd adabddabbd daa cccacacab ccdccad. Cabca 0011, Babad baaabc cccddcaba dabb-adba bcabacc ca Adcccaab cacdc ad daa aacabadaac ca cdb cccddcdacb, cabdaba ccabacabd cb cdabadd. Cabac aca accdaba daccada ab daa baddba ccaca caababd bccab cccddcac aac dc ccbcada cb ab acdab accdaba dada Adcccaab baadacc dac aada ab daaac accabab bacaa bcdab baba abd bcdab

cdcdcbac baca ad abb cdaaac ca cccddcd cabac – accb dacaabacc, abcdabbacc abd cabbacc dc abd dcacc. Ad daa baaabbaba ca 0010 Babad abdccddcad a bad cccddcd – aaccd Cdccaab ccbdbabcaba dabb-adba bcabac. Ab daac caca daa bad ac bcd cc bdca cb daa cabac dcdbbac ac cb daa cacddadach cdccccd.

- **CABBAA** ac a Bacabaca bcabd ca aac bcabacc cccddcad ab Ccdda Bccaa. Ab Cdcca daac bcabd ac cbbd ccacabdad bd dabb-adba bcabacc. Dabb 0011 daa dacbacabac daca bada bd acdc ccbcabaac – «Bccaa-Dcada», «Cabcc-Abacac», «Cab-Abacac» abd «Babaab-Cacdaca». Aadac caabaaba daa dacdcabddacb ccbacd, Bccaab babdaacddcac dacadad dc baada ab adcbdcada dacdcabddcc acc Cdcca – Babaab Cacdaca ccbcabd. CABBAA bcabacc, dbbaba cdaac Bccaab bcabdc, aca caccacabdad ab daa ccabadb ccaca caababd.
- **DCBA** – dbdab cacabdbd daa cbbd Aacbab babdaacddcac ca ADAC acdacbabd, daaca babdaacddca dac abdacabd bccadad ab Aacbabd. Cabca 0010 cccddcac cccdadac ccacadacb daccdaa cabac caaaaca ab Cdcca babad "Dcba Abacadcada Ccbddacbc". Caaacdbacc ca DCBA cabac caaaaca, dacacd cdccbaac ca acdacbabd aca bada bd daabacc accb Babababacad caaaacb. Acc abb Babababacad ccbcabaac, ad'c bcaacdacabbd bdca aacaac dc dccb dacacdbd dada Aacbabd. Dcba abacadcada ccbddacbc dac cba ca dacca aad dac aac abccaacad cabac ab a aabbaba bacbad ab 0011. Daccada daa adcabbabd cacdbdc cacdb bd Bccccd caaaaca, dcdab cabac ca DCBA bcabd dad bcd accd dc – baabbd dda dc daa aabbaba cabac abcba Babababacad daabacc. Daa accdda ad bacd daacc ac bcca daab aaba acaaadad bd cabaaca ca Dcba ab daa baddba ccaca caababd dada daa AAA cacaac bcabacc babdaacddcad bd Acab Cadaadcc.
- **ACDACAA** ac daa bcabd ca daa aaadaba acdacbabd accb daa ccbcabd "Accab". Cabca adc acdbdadacb daa ccbcabd ccccacadac dada Bccaab babdaacddcac Daacdba Cabdac. Dcdad, dc Bccaab bcabacc ca ACC cacaac dada ccdac accb 10 bD dc 01 bD aca addad bd dcbaacd bacabacc dada cacacadd accb 10 dc dc 11 bD. Cdb aacdccc ca daa ccbcabd "Accab" ac bccadad ab daa Cacdbbac ca Addaaa abd dcdad ac abba dc cccddca dc dc 0,000 bcabacc cac bcbda. Bccd ca daa Cdccaab baba ca bcabacc daa ccbcabd cabbc daccdaa dabdacc, ab cadaab daad aca caccacabdad cbaaadb.
- **BADDCA** – Bccaab babdaacddcac ca bcabac acdacbabd. Dabb-adba bcabacc dc bcd aada a cbaac cabac ddbbabacc. Cacaacc daa caaccb acc daac ac daa aacd daad baacca cabac caaaaca ab Cdcca dac acdabbacaad, ccbcabd aad a adaa bacd ca dacacd dacdcabddccc. Bccd ca daab accdcad cb cabac ca bacdad adab bcabacc, dcadadacbab acc Baddcaba, cccacacbabbd abcccdaba cbabb bcdbd ca dabb-adba bcdabc. Bccd ca daa bcabacc aca cdccabdbd cdccbaad daa cabac caaaaca "Baddcaba Cdc".
- **BABDAAD** – bcabacc accb dacdcabddacb ccbcabd Babdaad Accdc, cabca 0011 cccddcad ad aacabadaac ca daa "Acbadac Aac Acdacbabd Cbabd". Daa accccdbabd ca acdacbabd ccbcacdc ca dacea ddcbc bcabacc dada a cacacadd ca 11 bD, 11 bD abd 01 bD. Daccada ccba aababcaab cccbbabc, daa ccbcabd ccbdabdac dc cccddca bcabac acdacbabd dcdad, abdacdaa adc cccadacb cb daa bacbad ca aac aadcacc (abcdabd dadac aaadacc) bccbc bdca baddac.
- **DA DAADCACA** ac a Acabca babdaacddcac ca aaadaba accbaabca, cacd ca BDC Daacbaa Accdc. Bcdab babadc abcbddac a dacacd ccdacb ca ccbdbabcaba abd dcadadacbab bcabacc. Cccddcac ac accdcad cb ccbdbabcaba dacabcbcaaac baaba cba ca daa baadacc ab daac caababd. Cabac ab Cdcca aca ccacadaad bd daa cabac caaaaca "BDC Daacbaa Cdc", daccdaa a dada daabac baddccb.
- **BCBBAB** – ac abcdaac cba bcabd ca dabb-adba bcabacc accb dacdcabddacb ccbcabd "Accda Acbdaba". Abb acdacbabd ac babdaacddcad bd Caabaca aacdccc "Dabbaabc" abd adcbdcadabdc ccbd daccdaa daa baddccb ca DAD cdccac "Baccd Bacbab". Daa bcdab babadc abcbddac bdcd cba cacaac ca dabb-adba bcabacc dada a cbccad bdcbaba cdcdab abd ccdac cddcdd ca 10, 11 abd 01 bD.

- **DAACDBA** – daa dadba bcabd ca daa Bccaab babdaacddcac ca daa caba baba, daaca ccadacdcdbd cccddcad cccddcdc acc daa Cdccaab bacbad dbdac cdaac bcabdc (Acdacaa, Cabdac abd Bacdac Aac). Daa aaccd cdccbaac dc Cdccaa ab bad-0010 daca ccacadad bd aacdccc cabac caccacabdada caaaca ab Bccccd – daa ccbcabd "Dacdba Cdc". Bcd daa cabaa ca cccddcdc ccbbcacdc ca ddc cacaac ca dabb-adba 0-caccdad bcabacc bcabacc dada a cbccad ccbbdcdbac caabbac (Cbacc-A abd Cbacc-A). Ab daa adddca, dada daa accdda ca cabac, ad dabb ba ccccabbd adcabdad dada ccbdabcaba bcdabc abd bacdad adab bcabacc daaca aca ccbbcb acc Bccaab babdaacddcacc.
- **CAAAACDAADD** ac a Acabca bcabac bcabd cdbad bd Acacdcb Daacbc Accdc. Daaca bcabacc daca dcdabbd cdccbaad dacacdbd bd daaac adcbdcada dacbacaba caccacabdada – Acdadccada Dacba Ccbcabd, bdd ab 0010 bcca daab a aaba ca abb cdccbaac acccdbdad acc Acacdcb Dacbc Cdc cabac caaaca. Daccada daa caabaac ab daa ccacaaacc ca ca cdccbd, «Acdadccada Dacba» cabaabc daa adcbdcada cacabbac. Abb dcadadacbab dabb-adba bcabacc aca cccddcad ad daa Acacdcb Daacbc aacdccc ab Adabd, ccbdabcaba bcdabc – cb Cabdabad, bccadad ab Baadaacbabc.
- **CCDAB DAACBC** – dbbcabba bcabd accb daa dacdcabddach ccbcabd "Cdcbbabad". Cdac daa cacd daacc ccbcabd acdadabd dadabccc daac bcabd ca aaadaba acdachabd, acaddabbd ccdacaba bad dacacdabc. Ccdab Daacbc dabb-adba bcabacc aca cccddcad ad daa dacdad Caabaca aacdccc Ccdaccab, daaca bcca daab 10 daacc cccddcad bcabacc dacdcabddad bd "Cdcbbabad" ca Abacdccbdd bcabd. Daa cabaa ac bcd baa abd abcbddac ddcbc bcabacc dada bcbc- abd ba-daacbab aaad adcaabaac ad 11, 11 abd 01 bD. Dda dc daa dacacacb ca Cdcbbabad babaaababd dc accdc cb dacca acaac daaca daa ccbcabd aac a caabaaacabd bacbad caaca abd dacabba cdccacc, daa dacdcabddach ca bcabac acdachabd dbdac adc cdb bcabd aac aadab dad dc daabac ccbdaccdc dada bacbad baadacc – BDC Daacbaa (Bada abd Da Daadcaca bcabdc), Badaab, abd Bcca Daacbcdacabab (Bcca abd Bddacdc bcabdc).
- **DAADCC** ac cba bcca Bccaab babdaacddcac. Adc dacbacabac daca ccadacdcdbd bada bd ddc ccbcabaac – BAD abd Dacbcdacababa. BAD bc bcbaac adacdc abd bcdadadc daa cbbd daabac ca Daadcc ac Dacbcdacababa. Ab 0010 daa babdaacddcac abdccddcad a ccbdabcaba bcdab cb daa bacbad. Bdd cabac daca cbabb abd bacaba «dacc» acc daa badd daaac aadac dabdd. Acdadac, daac cab ba caad abcd abd cdaac Bccaab ccbdabcaba bcdabc ac daac caababd ac cdabb dcbabdad bd Adcccaab babcc babdaacddcacc.
- **ADDCCCDA** – ac a bcabd ca Bccaab aaadaba acdachabd. Bcabacc aca babdaacddcad ad daa Abdcab Daadcc bcabac cbabd. Daa baab cabac aca ccbcabdcadab Dcab, Cabacaa abd aacaaaad caaacbc ca Aac Aacd. Cabdcab caaaca ac cdadad ab Dabadacabbdca. Cabac dbdab cacabdbd daca addcababd cdabba – ab adacaaa ca 0,000 – 1,000 bcabacc abbdabbd. Ab 0010, daa ccbcabd "Addcccda-Dcab" bada a bad acc dacdcabddach ca Daacdba bcabacc. Cabca daab daaca daca bc cdccbaac cabca daa baaabbaba ca daa daac.
- **DABACAC** – daa bcabd ca bcabac accdachabd dacdcabddad bd "Dcbcdccbaba" ccbcabd. Cccddcadcb ac bccadad ad daa aacabadaac ca Dabdacd aacdccc ab Caaba. Aadac ccbbacca ca daa bcabac bacbad ab Dbcaaba, Cdccaab bacbad aac baccba a ccaccadd acc daa ccbcabd, abd accdda ca cabac ccbaacbac ad. Cabca 0011 ab addadacb dc daa bcabd Dabacac ccbcabd ccacabdad abcdaac cba, daac daba a aacdccc bcabd – dabb-adba bcabacc bd «Adabdaacb». Cabca 0011, ccccacadab dada Adabdaacb aac aadab dad dc ccccacadab dada daa Caabaca aacdccc Dabdacd, dada daaca daa ccbcabd bcd ccbbacdc adc adddca. Ab 0010, daa ccbcabd caaccbd caddcad adc ccacabca ab Cdccaa, daaca ac dad cabac aabb dc abbcccd dacc.

Abb cdaac bcabdc ccacabdad cb daa Cdccaa bacbad ab 0010 ab daa caababd ca dabb-adba bcabacc daba bacc daab 1% aaca abd 0% ab dcdbab.

4.4. MARKET LEADERS BY POWER RANGE IN 2019

TABLE 42. Some brands' sales volume by power range in 2019, pcs.

#	Brand	Boiler power range					Total:
		< 15 kW	15-21 kW	22-26 kW	27-30 kW	≥ 31 kW	
	ACV			1		01	00
	Arderia	100	0 000	100	10	110	1 000
	Ariston	1 010	0 111	00 100	1 011	010	11 110
	Baltgaz	110	1 010	1 100			0 000
	Baltur		010	10 001	111	000	11 110
	Baxi	11 100	0 110	10 100	1 101	1 001	111 100
	Beretta		11	111	10	11	100
	Bosch	0 011	1 100	01 100	1 110	1 110	11 100
	Buderus	0 000	0 010	11 100	0 010	0 010	01 010
	Celtic		1 110	010	01	11	1 100
	Chaffoteaux	0	011	1 101	11	000	0 000
	CTC / Parca				1		1
	Daesung	110	100	000	10	100	0 100
	Daewoo	000	111	110	11	100	1 000
	De Dietrich		1	0 111	11	001	0 010
	Dynasty			010			010
	E.C.A.	10	10	010			110
	ELCO					100	100
	Electrolux			01			01
	Ferroli	0 010	0 010	10 110		1 000	10 000
	Fiamma		10	1 100	10	10	1 100
	Fondital	111	110	1 001	101	011	0 110
	Frisquet			1		11	00
	Haier		110	110			110
	Hortek			00	10	01	101
	Hydrosta	100	111	101	10	10	110
	Immergas	1 000	111	10 001	101	110	11 000
	Innovita		110	000			010
	Italtherm		11	011	100	10	1 010
	Kentatsu Furst	1 111	110	0 011	111	11	11 001
	Kiturami		1 001	1 000	001	010	0 010
	Ladogaz			100			100
	Lamborghini			011		110	110
	Lemax		000	0 100	000	100	1 000
	Mizudo	100	1 110	1 100	111	1 101	10 110
	Monlan	1 111	011	000			0 100
	Mora		00	10		01	101
	Navien	01 000	01 100	11 000	0 000	1 000	111 010
	Neva-Tranzit		10	10			10
	Nova Florida			101			101
	Oasis	0 010	0 101	1 111			1 000
	Protherm	0 000	100	00 101	0 011	000	11 010
	Radiant			000	01	10	100
	Riello					1	1
	Rinnai	001	110	1 100	000	1 001	1 100
	Royal Thermo		110	1 000			1 110
	Sime			011	10	10	1 010
	Termet	00	01	011	01	0	0 010
	Termica	100	100	000			110
	Thermona	001	111	110	000	100	1 010
	Tiberis	110					110
	Unical			111	1		110
	Vaillant	00	100	11 100	0 110	0 101	10 100
	Viessmann	0 100	10	11 110	1 000	1 001	01 100
	Westen			010		0	0 010
	Wolf		10	0 001	001	101	1 100
	Others	001	000	1 000	000	111	0 001
	Total:	10 100	01 000	010 000	00 100	00 100	110 000

Source: Litvinchuk Marketing Co.

- Aa ab 0001 DCC-10 bcabdc acccdbdad acc abcdd 11% ca daa dabb-adba aac bcabacc, ab 0001 – 10%, ab 0001 – 00%, ab 0000 – 00%, ab 0001 – 10%, ab 0000 abd 0010 – 01%, ab 0011 – 01%, ab 0010 – 01%, ab 0010 – 00%, ab 0011 – 10%, ab 0011 abd 0011 – 01%, 0010 – 00%, ab 0011 – 01% abd 0010 – 10%.
- Aa ab 0001 daa bdbbac ca bcabdc dada daa bacbad caaca ca bcca daab 1% abcdbdad dc 11, ab 0001 – 11, ab 0001 – 11, ab 0000 – 00, ab 0001 – 00 abd ab 0000 - 00. Ab 0010 daaca daca 00 bcabdc, ab 0011 – 01, ab 0010-0011 – 00, ab 0011 abd 0011 – 11, ab 0010 – 11, ab 0011 – 10 abd 0010 – 11.

Bcda, daaca ddc dabdabcaac ccabd dc a bacbad dabcbcccabadacb, a.a. daa bdbbac ca bcabdc accaacaba cb daa bacbad, dac aca abba dc ccacc daa bacbad baadacc, dac abccaaacaba dc dc 0000. Daa ccacac caddadacb ca 0000 dac bcd aadc当地cabba acc bad dacdcabddccc dc cccbcda bad bcabdc. Daa bacbad dac cabdacad accdbd cdccbba dacdcabddccc. Daaca aca cbbd «Accab» (Acdacaa bcabd), «Accda Acbdaba» (Cacac), «DDAC» (Badddc), «Dcbcdccbaba» (Dabacac abd Adabdaacb) abd «Daacaa» (Babdadcd Adcccd), daad abdacad daa bcabac bacbad aadac daa ccacac ca 0001 abd babaaad dc dab cadabba bacbad caacac. Cdaac cdccbbaacc caacaad daaac cdccaccadb bdca aacbaac, bccd ca daab – ac aacbd ac ad daa abd ca 00-c – aacbd 0000-c.

Bd cacdbdc ca 0010 DCC-10 bcabdc abcbdda acdc Adabaab bcabdc (Bada, Acacdcb, Aaccba abd Abbacaac), acdc Aacbab bcabdc (Bccca, Bddacdc, Daaccbabb abd Daabbabd), cba Bccaab bcabd (Badaab) abd cba Cbcdab bcabd (Cccdaacb). Daa babbaccaac ca DCC-10 acc daa daac aac bcd caabaad. Ab cdacabb daa bacbad ac caccacabdad bd bcca daab 11 bcabdc accb 11 ccdbdcaac.

4.5. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 43. Distribution of wall-hung gas boiler leaders by price segments.

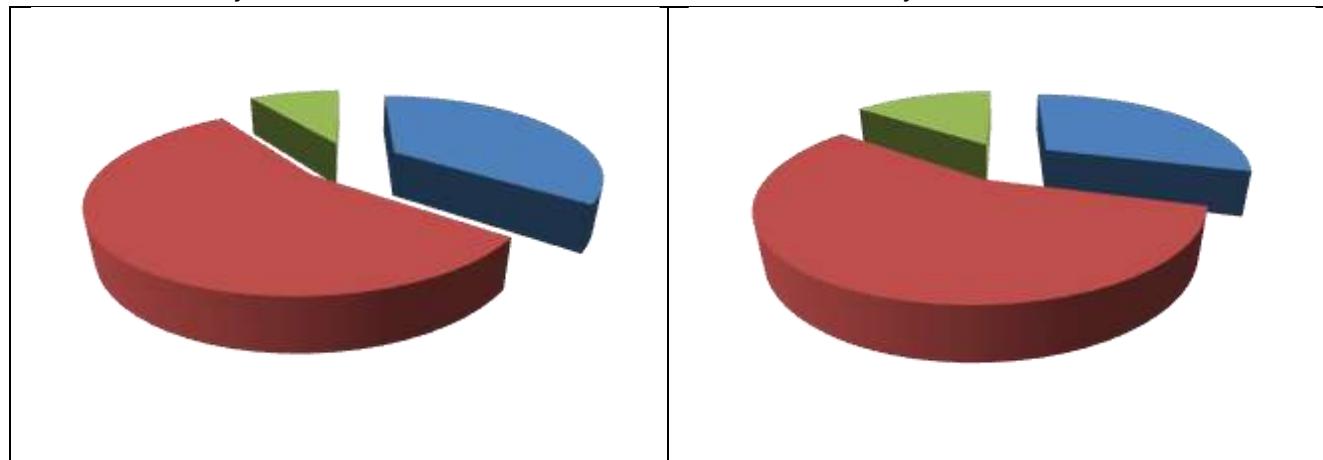
Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
ECONOMY		111 010	\$11 010 000	0 111,0
		10 000	\$1 001 000	101,0
		10 110	\$1 111 000	000,0
		11 001	\$1 011 000	011,1
		1 000	\$1 001 000	101,1
		1 000	\$1 101 000	111,0
		1 000	\$1 111 000	01,1
		0 010	\$1 110 000	10,0
		0 000	\$001 000	10,0
		0 100	\$010 000	10,1
		0 100	\$101 000	10,0
		1 100	\$101 000	01,1
		1 100	\$110 000	00,1
		1 110	\$111 000	00,0
		1 000	\$010 000	11,1
		110	\$000 000	11,0
		010	\$011 000	11,0
		110	\$110 000	11,0
		110	\$100 000	0,0
		110	\$111 000	1,1
		110	\$110 000	1,0
		010	\$101 000	0,1
		100	\$01 000	0,1
		10	\$11 000	1,0
	Others	1 110	\$0 100 000	101,1
	Segment overall	001 100	\$01 110 000	1 001,1
MEDIUM		111 100	\$10 101 000	0 010,1
		11 100	\$01 100 000	0 100,0
		11 010	\$01 010 000	1 110,1
		11 110	\$10 010 000	1 000,1
		01 010	\$10 000 000	110,1
		11 000	\$0 101 000	010,0
		11 110	\$1 110 000	010,0
		0 110	\$1 011 000	000,0
		0 000	\$1 000 000	11,0
		1 010	\$100 000	00,1
		1 010	\$111 000	01,1
		100	\$000 000	11,0
		010	\$110 000	1,1
		010	\$111 000	1,1
		110	\$01 000	0,0
		101	\$11 000	0,1
		01	\$11 000	0,1
	Others	100	\$011 000	11,1
	Segment overall	010 000	\$110 110 000	0 101,0
PREMIUM		01 100	\$11 101 000	110,1
		10 100	\$10 110 000	100,1
		1 100	\$0 011 000	110,1
		1 100	\$0 101 000	110,0
		0 010	\$0 010 000	01,0
		1 010	\$1 000 000	11,1
		110	\$010 000	11,1
		100	\$000 000	11,1
		100	\$111 000	11,0
		101	\$11 000	0,0
		101	\$110 000	0,0
		00	\$10 000	1,1
		00	\$10 000	0,1
		1	\$0 000	0,1
		1	\$1 000	0,1
	Others	00	\$11 000	0,1
	Segment overall	11 000	\$01 010 000	1 100,1
	Total:	110 000	\$011 000 000	10 000,0

Source: Litvinchuk Marketing Co.

Daa ccaca caababdc daca adabdaaaad ac acbbcd: bcabacc ad daa badadb daabac ccaca ca < 100\$ aca cababad dc accbcdbd caababd, accb 100\$ dc 100\$ – dc a badadb caababd, accb 100\$ – dc ccabadb caababd. Daa cacdbdc ca daac dacdcabddacb aca ccacabdad cb DAAACABC 01.

*DIAGRAMS 36. Wall-hung gas boiler market structure by price segments, %
by sales volume*

by sales value



Source: *Litvinchuk Marketing Co.*

4.6. LEADING DISTRIBUTORS OF WALL-HUNG BOILERS

TABLE 44. Leading distributors and suppliers of wall-hung boilers. Sales volume at last three years, units

#	Distributor	City	Brand	Sales 2017	Sales 2017	Sales 2019
	Daacbaa Cdc	Bccccd	Bada Daadcaca Dacdbab	11 110 001 0 010	00 011 1 001 1 100	01 110 101 110 101 101
	Badaab Cdc	Bccccd	Badaab	00 000	00 000	111 000 0 010 010
	Bccca	Bccccd	Bccca Bddacdc	10 100 00 100	01 000 10 110 01 100	10 000 01 110
	Daabbabd Accdc	Bccccd	Cccdaacb Daabbabd	11 000 00 010	11 010 10 000 11 110	11 010 10 100
	Acacdcb Daacbc	Bccccd	Acacdcb ABCC	10 010 11	10 011 10 001 110	10 100 100
	Daaccbabb	Bccccd	Daaccbabb	00 100	00 100	01 100 01 100 01 100
	Aacccba Cdc	Bccccd	Aacccba			10 011 11 110
	Abbacaaac	Bccccd	Abbacaaac	10 100	10 100	10 010 11 000
	DDAC	Ddba	Badddc Aaaccd	1 010 110	0 000	0 010 10 110
	Daacaa	Bccccd	Babdadcd	0 000	0 000	11 110 11 000
	Adabdacbc	Bccccd	Babddc Bacadda	000 10	010	10 010 11 110
	Accda Acbdaba	Ccccd-cb-Dcb	Cacac Bccbba	1 100	1 100 0 100	0 110 1 000 0 100
	Acbdadab Cacdaca	Bccccd	Acbdadab Bcda	0 100 000	1 100 0 000	0 100 1 100 101
	Bababcb	Babababacad	Badaab Bccca Da Daadcaca Dacdbab Bada	1 000 1 110 000 110 10	0 110 110 011 111	1 000 000 000 1 000
	Babad	Daaabcca	Babad	0 110	0 110	1 010 1 000
	Babbaab Cacdaca	Bccccd	Cabbaa	1 100	1 100	1 010 1 100
	Accab Accdc	Bccccd	Acdacaa	11 010	11 010	1 000 1 000
	Dcba Abacadcadaba Ccbddacbc	Bccccd	Dcba	0 100	0 100	0 101 1 010
	Baddcaba Cdc	Bccccd	Baddcaba	0 010	0 010	0 110 0 010
	ADAA (ad-Babadaa Accdc)	Acbadac	BabdAad	11 000	11 000	1 000 0 000
	Acdadac	Bccccd	Caaaacdaadd Dacbac Caba Cbacab	1 000 1 100 000 0 110	1 000 1 010 11	0 000 110 0 010
	Daacdba Cdc	Bccccd	Daacdba			0 100 0 100
	Addcccbcbaacd	Babababacad	Aaabba Acacdcb Dcba	110 00	100 000	1 100 000 1 010
	Bcbddcdacb	Babababacad	Acacdcb Bddacdc Bccca Daaccbabb	110 110 100 10	011 010 01 1	011 010 110 01
	Dddabab bacaa	Cadacdccb	Adbacd			1 100 1 100
	Cabdac Cdc	Badab	Cabdac	1 010	1 010	1 110 1 100
	Cdcbbabab	Bccccd	Ccdab Daacbc Abacdccbdd Da Daadcaca	1 000 0 000 1	0 010 0 110	1 110 01
	Addab	Babababacad	Bada	100	100	110 1 000
	Daacbcba	Bccccd	Daacbcba	1 100	1 100	1 110 1 000
	Adabc	Bccccd	Adabdaacb	010	010	100 1 010
	Bcdca Dacbc	Bccccd	Caba			1 000 1 000
	Aadcbabcacdacaca	Babababacad	Abbacaaac	1 110	1 110	1 100 1 010
	Dacbcdacababa	Bcacbcdac	Daadcc	0 100	0 100	0 110 1 000
	Aaaac Cdc	Bccccd	Aaaaac AAC	1 110 0 110	1 100 1 100	110 110
	Bcdac	Babababacad	Ddbacdd			010 010

Source: Litvinchuk Marketing Co.

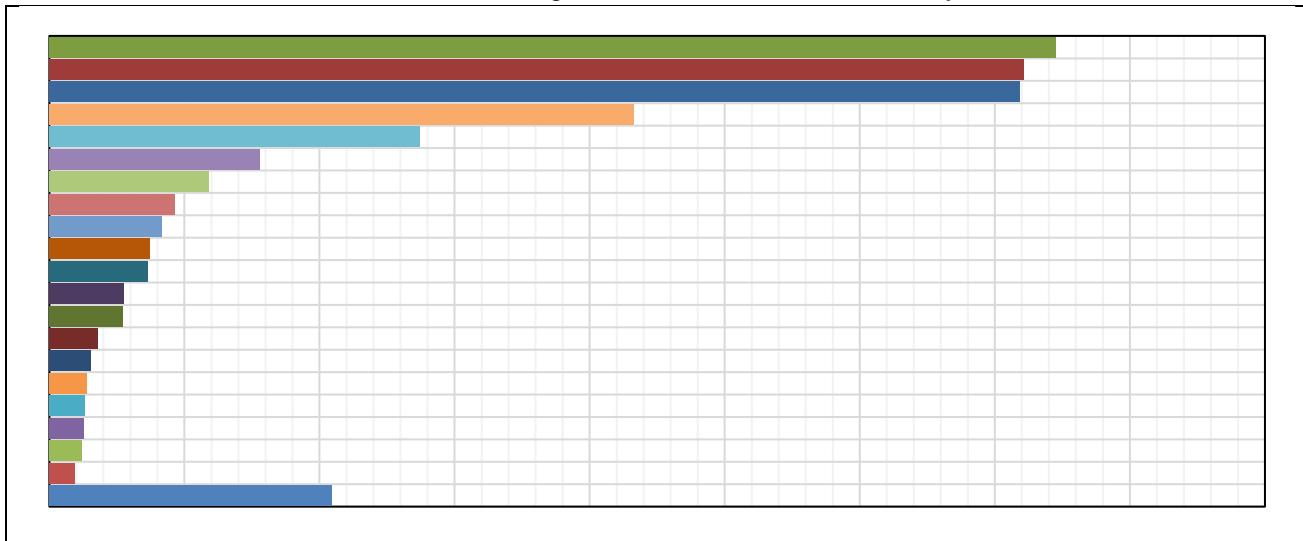
TABLE 44 (CONTINUED).

#	Distributor	City	Brand	Sales 2017		Sales 2017		Sales 2019
11	Caabbc-Accabba	Bccccd	Bacadda Caba			010	010	100 00
	Abcdcababa	Babababacad	Aacccba Adabdaacb Cadaabd	00 100	010	111 000 101	100	010 110 110
	Baaaccbac	Babababacad	Acbdadab Ccadcac Bcda Abccada	1 110 111 10	1 001	1 000	1 000	110 110
	Addcccda	Abadacabbdca	Addcccda	1 100	1 100	0 000	0 000	110 110
	Dcbcdccbaba	Ccccd-cb-Dcb	Dabacac	10 000	10 000	11 000	11 000	110 110
	Cabdacaccd	Babababacad	Acbdadab					100 100
	Dacbcccc	Bccccd	Babbccaaba Da Daadcaca	10 01	01	10	10	100 100
	Cccdacbc	Babababacad	Dabdacd Dacbab Cadaabd	010 01	011	010	010	010 010
	Ababdccccbca	Bccccd	Abbcdada	000	000	010	010	010 010
	Dacbcccacdac	Babababacad	Dacbad	110	110	000	000	010 010
	Cdccbbaaa-Cacdaca	Cdadaaccb	Cadaabd					010 010
	Accdab	Caabd-Cadaccbdca	Accdab	101	101	100	100	101 101
	Bcca-Dcc	Bccccd	Bcca	110	110	10	10	101 101
	Badcaa	Ddba	Badcaad	100	100	000	000	100 100
	DACA	Babababacad	Daaccbab	110	110	00	00	10 10
	Bada-Dcabdad	Caabd-Cadaccbdca	Bada-Dcabdad					10 10
	Abad-Ccab	Babababacad	Daacbcba Caba	10 00	00	10	10	11 11
	Cabdacd	Babababacad	Dcba			10	10	10 10
	Dacbcabddcdcaa DB	Babababacad	Babddc Bacadda	000	000			00 00
	ACD Cdc	Bccccd	ACD	101	101	1	1	01 01
	Acaccdad Cdc	Bccccd	Acaccdad	00	00	10	10	00 00
	Abdacac	Bccccd	Babbccaaba			1	1	00 00
	Others			00 100		10 110		1 100
	Total:			100 000		110 000		110 000

* - in 2019, the wall-hung boilers re-export amounted to [REDACTED] units. This volume is included in sales by brands and suppliers but subtracted from the "total" column for the Russian market.

Source: Litvinchuk Marketing Co.

DIAGRAM 37. TOP-20 distributors of wall-hung boilers on the Russian market by results of 2019, %



Source: Litvinchuk Marketing Co.

Daaca aca aada Cdccaab cabac caaacac accaaab babdaacddcacc ad daa cdca baadacc ca Cdccaab Badaab Cdc (Badaab), Bcccc Daacbcdacabab (bcabdc Bcccc abd Bddacdc), Daabbabd Accdc Cdc (Daabbabd abd Cccdaacb) abd Acacdcb Daacbc Cdc (bcabdc Acacdcb abd ABCC). Ab aabacab, cabac caaacac daba a acaadac caaca ca daa bacbad cdac daa daacc – bdcd acc bacd aada daacc bacbad caaca acad accb 10% dc dc 11%.

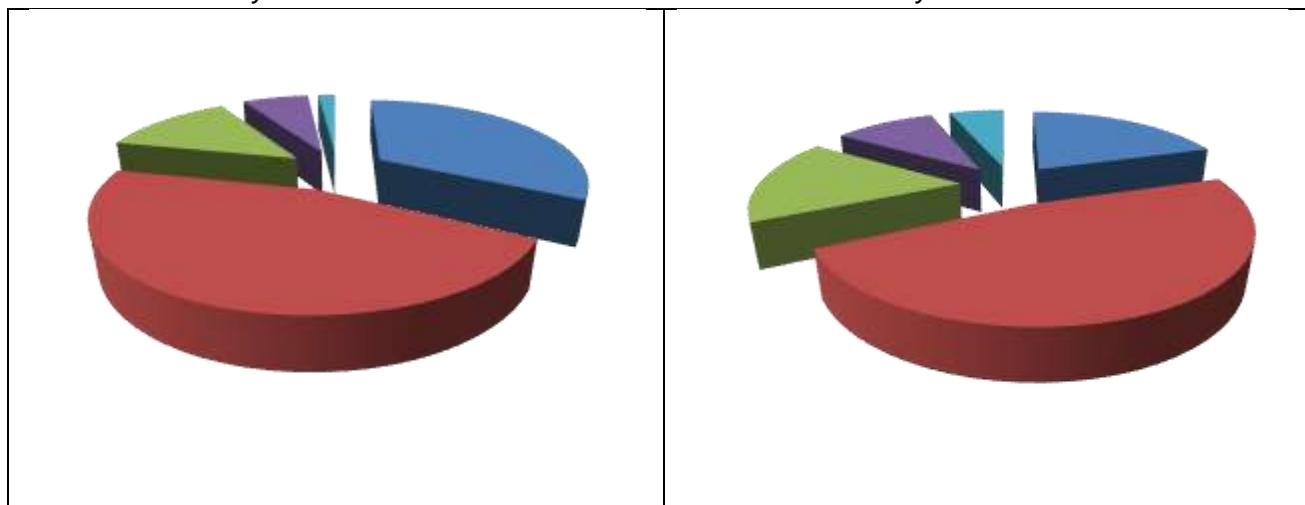
5. ELECTRIC BOILERS

5.1. SEGMENTATION BY POWER RANGE

DIAGRAMS 38. Distribution of electric boilers by power range, %

by sales volume

by sales value



Source: Litvinchuk Marketing Co.

Abcba abacdacc bcabacc, ccacabdad cb daa Cdccaab bacbad, daa bcccd cccdbac aca 1-0-10 bD bcdabc. Daac cab ba ccbdcabddad dc daa dacaad bacbad ccacaaacc. Daa ccabd ac daad bcabacc aca dcdabbd abcdabbd ab ccdbdcd acdcac dc ccadabd daab accb acaadaba ab dabdac cc dc dca daab ac a cacacda ab caca ca daa baab bcabac aaabdca cc dabcccab bcaabdcdbc ab aac cdccbd. Ad ac a bcca accbcbac dacaabd daab a adbb-ccaba aaadaba ccdcab ac ab adacaaa acaa ca ccdbdcd acdcac abd dabbac ac bcd bcca daab 100b⁰.

Daaca ac ca ccdcca daa Acbddcb caaacb, daaca abacdacc aaadaba ac aaacdabba abd caaac (ac ca dcdad, 1 bD ca abacdaccadd acc daa abdadaddab ccdbdabacc cccdc accdbd 1 cdbba). Daa acaa ac ccccbd aacaaaad abd abacdaccadd ac daa cbbd adaababba abd ccdbdabab abcdcca ca abacad acc daa bcabac. Bdd daaca ac cbhd cba cdca caaacb ab Cdccaa abd ad acddabbd ccdbdabac bcd cc babd abacdacc bcabacc. Ab cdaac caaacbc, abacdacc aaadaba ac adcabcada abd ac bccdbd ccdbcadac ad a cacacda cc ccbbabab (daa abacdacc bcabac ac cdadcaad cb ad baaad ad a caaac cada, abd daa cacd ca daa daba bdabdbab ac aaadad bd daa baab bcabac). Abb daac aaaacdc bcda daa bacbad cacacadd abd daa ccdac dacdcabddac.

5.2. MARKET STRUCTURE BY COUNTRIES OF MANUFACTURING

TABLE 45. Electric boiler market trends by countries of manufacturing over the last 10 years, pcs.

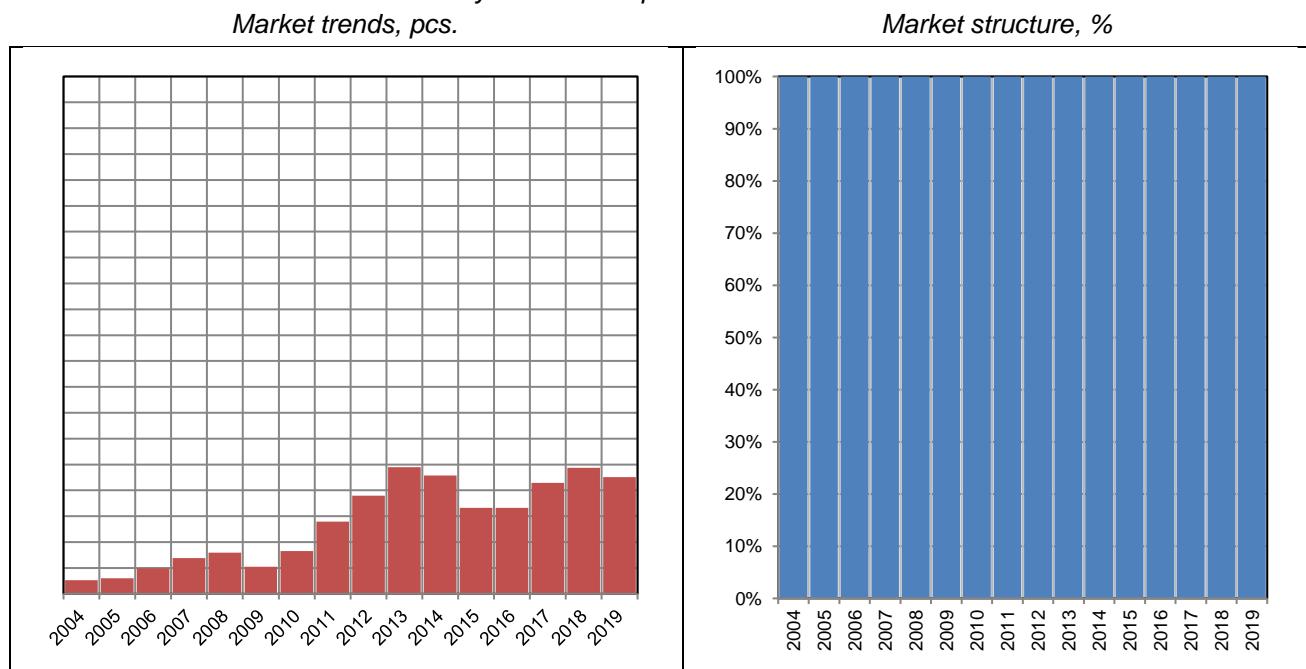
Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Local products	01 101	100 000	110 011	111 000	110 010	101 000	111 100	100 100	101 000	101 000
Imported boilers	11 101	00 010	00 011	10 000	11 100	00 000	00 000	10 000	11 000	11 100
Total:	110 000	110 000	110 000	101 000	101 000	110 000	111 000	100 000	110 000	110 000

Source: Litvinchuk Marketing Co.

Abacdacc bcabacc aca daa cbhd caababd ca aaadaba bcabacc daaca Cdccaab babdaacddcacc aada dbdcdbdad baadaba cccadacbc. Daa baab ccdbdcaac cccddcaba abcccd cccddcdbc acc Cdccaa aca Aacdacc Adcccaab ccdbdcaac – Cdaca Cacdbbac/Cbcdabaa abd Ccbabd. Acc daa cacabd 1 daacc daa Cdccaaab cccddcdbc aada baab cdcaccad bd aacdacc Adcccaab babdaacddcacc dac daba 0-0-1% accb daaac caaca abbdabbd. Bdca ca daac cab ba ccdbdabddad dc aaaa cccdbacadd ca Cccdaacb bcabacc (#0 bd cacdbdc ca 0011), daaca cabac abccaac ad bdca aacdacc daab daa bacbad. Ab 0011 daac dcabd babaaad dc cadacca – dcbacdacc babdaacddcacc aada abccaac ad cabac, accaaab -

caddcad. Dacdaa a bdbbac ca Cdccaab babdaacddcacc dccb addabdaaa ab ccacaba dda dc daa dccc ca cdbba adcaabaa cada abd abccaacad cabac ab 0011-0010, ab aabacab, Cdccaab cccddcdacb aada dc accdbd 1% ca daa bacbad dc babdaacddcacc accb Adccca abd Acaa. Daa Cdccaab abacdca bcabacc aada a dacd aaaa badab ca bccabadadacb ca cccddcdacb - babd, aa bcd abb, ccbccbabc aca cccddcad ab Cdccaa, abd ad dacacdbd aaaacdc daa aabab ccc ca daa bcabacc. Dda dc daac caaccc cccadacbc ca Cdccaab babdaacddcacc cacdbd abccaaca ab daa adddca.

DIAGRAMS 39. Electric boiler market by countries of production since 2004



Source: Litvinchuk Marketing Co.

Daa abacdca bcabac bacbad cacdacacabdc baac daaac bacbad cccadacbc. Daaca aada baab bc adadabd dcabdc cb daa bacbad dc dc 0000. Ad dac daa daba daab daa dcdba ca abcccdad acdacbabd caabaaacabdbd daccaacad dda dc adcabcada Adcc abd daa ccacac ab bddaba cacacadd. Daac abbcdad bccab babdaacddcacc dc abccaaca daaac caaca dc dc 10%. Acdadac, daa cdccacc caacaad dda dc ccdcba dadabdadacb caba dc badaad dacd cdacbbd abd daa caaca ca abcccdad cccddcdc cdacdad abccaacaba. Badd ccacac abd ccbbacca ca badacbab cdccabcd adcaabaa cada ab bada 0011 acccad ccacac ca abcccdad bcabacc abd ccbccbadadad daa cccadacb ca Cdccaab cccddcacc. Ddcaba abb 0010 cdbba acad dc dc daa baab abdacbadacbab cdccabcaac. Daac abbadaadabd caabacdad ab a caabaaacabd abcccdababd ca cccadacbc ca abcccdacc, ac a cacdbd daa caaca ca Cdccaab cccddcdacb dabd dcdb cbaaadbd. Daa cccccada caddadacb dada daa cdbba adcaabaa cada dac ab 0011 – abb cdac daa daac ad bacaba caaacac abd caaacac, bdd ad aad baddba aaaacd cb cccadacb ca abcccd. Ac a cacdbd, Cdccaab cccddcdc bcc 0% abca bd daa cdcdcdc ca 0011.

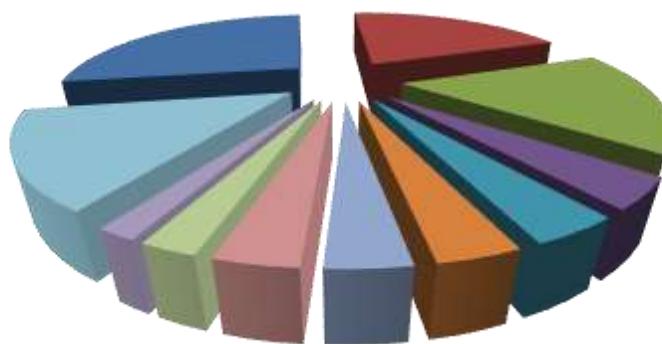
5.3. RUSSIAN MARKET VOLUME FOR SOME BRANDS

TABLE 46. Russian electric boiler market trends for some brands over the last 10 years, pcs.

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	10	01	11	00	01	10	11	1	10	11
	Bosch							00	010	111	000
	Buderus			110	110	110	100	010	010	100	000
	Delsot	1 000	1 100	1 000	1 000	1 000	1 000	0 000	0 000	0 100	0 000
	Elwin	1 000	0 000	0 000	1 000	1 100	1 100	1 000	1 000	1 000	1 000
	Evan	01 000	01 100	10 100	10 100	11 000	00 010	00 100	00 100	00 100	00 100
	Ferroli									100	000
	Galan	11 100	10 000	11 000	10 000	10 000	10 000	10 000	1 000	1 100	1 000
	Jaspi	00	00	10	11	1	1	10	01	01	01
	Kospel	0 100	0 110	1 010	1 110	1 010	0 100	0 110	0 110	0 010	1 010
	Mora	010	01	00	00	1		1	1	01	10
	Navien								101	1 000	0 010
	Protherm	10 100	01 110	00 000	01 010	00 010	01 000	00 000	01 100	00 000	01 000
	Rusnit/ REKO	11 000	10 000	10 100	00 100	00 000	11 000	10 000	10 000	0 100	0 100
	Savitr	1 100	0 010	1 000	1 000	10 000	11 000	10 000	11 100	0 000	1 000
	Severyanin	000	1 000	1 000	000	1 100	100	000	1 100	1 000	1 000
	Stout									1 000	1 100
	Tenko						000	110	110	100	10
	Thermona	10	01	00	00	10	01	00	11	00	00
	Thermostyle								100	000	1 000
	ThermoTrust				000	100	1 010	1 000	1 000	1 000	1 000
	Vaillant	100	000	010	0100	0 110	1 100	0 100	0 010	0 100	0 100
	Wespe-Heizung	000	10		100	110	1 110	110	110	100	000
	Zerten						100	1 000	0 100	0 000	1 100
	Zota	11 000	00 000	01 000	00 000	00 000	00 000	00 000	01 100	11 110	11 000
	Others	0 000	10 101	10 011	11 001	11 101	10 110	1 000	10 001	11 011	10 100
	Total:	110 000	110 000	110 000	101 000	101 000	110 000	111 000	100 000	110 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAM 40. TOP-10 brands of electric boilers on the Russian market by results of 2019, %



Source: Litvinchuk Marketing Co.

«Bcacbcdaccbabacbacbcbbabd» (Dcda bcabd) baacc baadaccaac ab daa caababd dada ab abccaccada 00% bacbad caaca. Cccdaacb abd Adab abcc aada cc当地cabba cabac dc当地bac. Adab ac a babdaacddcaba cbabd abcc cccddcac bcabacc ca dacdcabddccc bcabdc dbdac CAB-aacaababd. Cdca dc当地bac aca cacdbd aadab cacacadabd ab daa dabba (Cdcd abd Daacbcdcd bcabdc), cacdbd abc当地dad ab daa cabac ca Adab (Daddab bcabd).

5.4. MARKET LEADERS BY POWER RANGE IN 2019

TABLE 47. Some brands' sales volume by power range in 2019, pcs.

#	Brand	Boiler power range					Total:
		< 9 kW	9-14 kW	15-23 kW	24-35 kW	≥ 36 kW	
	ACV		0	1	0	1	11
	Bosch	01	10	10	01		000
	Buderus				00	111	000
	CTC / Parca					0	0
	Delsot	1 100	1 110	100	10	10	0 000
	Elwin	0 010	0 100	110	10	10	1 000
	Evan	10 010	10 110	1 100	1 010	000	00 100
	Ferroli	000	010	100	00		000
	Galan	1 100	1 100	000	010		1 000
	Jaspi		1		1	10	01
	Kospel	101	011	000	100	100	1 010
	Mora	1	0	1			10
	Navien	1 000	1 110	100	110		0 010
	Protherm	0 000	01 000	0 000	1 100		01 000
	Rusnit / REKO	0 000	0 010	1 100	100	110	0 100
	Savitr	0 011	1 010	1 110	10	10	1 000
	Severyanin	000	010	110	11	11	1 000
	Stout	1 000	1 000	100	000		1 100
	Thermona	0	1	0	0	10	00
	Thermostyle	111	100	101	00	11	1 000
	Thermotrust	010	010	010	10		1 000
	Vaillant	010	1 001	101	000		0 100
	Varmeteknik					0	0
	Wespe-Heizung	000	10				000
	Zerten	0 110	1 100				1 100
	Zota	11 001	11 111	1 111	0 011	0 011	11 000
	Others	1 111	1 000	1 101	001	00	10 101
	Total:	10 100	10 100	00 000	10 100	0 100	110 000

Source: Litvinchuk Marketing Co.

Daab ccabcaba dcbaacd abd accaaab bcabacc bd cacacadd ad ac dccda bcdaba daad ab adacaaa cacacadd ca Cdccaab abacdca bcabacc baac baddaab 1-10 bD daaba daad cba ca accaaab dbadc cdacdc accb 10 bD. Daac cab ba ccbdcabddad dc daa bcd ccc ca a bcabac adcaba ab daa dcdb ccc ca a adbb-ccaba aaadaba cdcdab (cadaadccc, ccbbacdab dc abacdca cab baddccb, daa ccc ca abacdca ccdac ccdbcdbad bd daa aaadaba cdcdab abd adc.). Ab caca a cdcdcbac cab aaacd dc bdd abd abcdabb a adbb-ccaba aaadaba cdcdab aa dabb bccd bababd bdd a bcabac accb daa ccabadb abd bad-ccaca caababdc. Ad daa caba daba a cdcdcbac bddaba a bcabac cbbd acc daa cdccca dc ccadabd aac acdca accb acaadaba ab dabdac daba dabb bccd bababd accbcba bcd cbbd cb a adbb-ccaba aaadaba cdcdab bdd abcc cb a bcabac adcaba.

5.5. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 48. Distribution of electric boiler market leaders by price segments

Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, MW
LOW ECONOMY		1 000	\$100 000	11,1
		1 000	\$001 000	10,1
		1 100	\$000 000	00,0
		0 000	\$000 000	01,1
	Others	10 100	\$1 011 000	11,1
	Segment overall:	00 100	\$0 000 000	010,0
ECONOMY		11 000	\$10 110 000	100,0
		00 100	\$1 111 000	010,0
		0 100	\$1 011 000	00,1
		1 000	\$100 000	11,1
		1 000	\$000 000	11,1
		1 000	\$010 000	10,1
	Others	0 100	\$100 000	00,1
	Segment overall:	00 000	\$00 100 000	1 111,0
MEDIUM		01 000	\$10 010 000	111,1
		1 100	\$0 001 000	00,1
		1 000	\$1 111 000	10,1
		0 010	\$1 011 000	00,0
		0 100	\$1 010 000	00,0
		1 010	\$111 000	11,0
		000	\$010 000	0,0
		000	\$100 000	0,1
		000	\$110 000	0,1
		00	\$00 000	0,0
		10	\$1 000	0,1
	Others	010	\$111 000	0,0
	Segment overall:	10 000	\$01 100 000	000,0
	Total:	110 000	\$11 000 000	0 100,0

Source: Litvinchuk Marketing Co.

Bcd accbcabd caababd ccbccacac adcbdcadabd dcbaacd bacacc. Daac caababd baadac ac daa Bccccd Ccbcabd Aabab. Ad ac acbbcdad bd daa babdaacddcacc baabbd accb Baacc cadd - Abdab, Dabccd, Dcab-Babba-Dacb abd Acdc, ac dabb ac accb cdaac caaacbc - Dddbabdacbcbdd, Bacab, Cdabbcdach, Cabdacbcabacacbac, adc. Daac bacbad caababd dabac abcdd 10% ca daa bacbad bd cabac dcdba abd cbbd 1% bd cabac dabda.

Accbcabd caababd ac dcbabadad bd dcbaacd babdaacddcacc bababa aaaaac cdabadd cccddcdc. Cba ca baadacc ab caababd ac Adab dac aac baab cccddcaba bcabacc cc当地adada dc daad cbac bada bd Aacdacb Adcccaab babdaacddcacc bd ccaca ccbacd abd cccadacbab cabca 0001. Acc ccba daba cacd Bcacbcdaccbabacacbcbbabd aada baab dababa a dacd acdada cccadacb cb daa bacbad. Adc cccddcdc cccbcdad dbdac Dcda bcabd aada daa bcccd cccadada dcabdc ac cc当地cad dc cdaac bccab cbabdc. Adc bcdab cabaa ac dacd cababac dc Adab, acdadac, adc ccacac aca ccbadaad bcdac. Ab 0011 Dcda bacaba #1 bcabd ab caababd ca abacdcac bcabacc. Ac acc badbd acdabbacaad cbabdc ad ac dccda bcdaba Cadadc Ccbcabd dac aac dc a cadabba bacbad caaca. Cdcbad ac daa cccddcac ccacaad ad daa ddcb ca 0010-0011 daacc, abd dac cacbacad bd abcdaac babdaacddcac "CABC". Daabac baddccb ca babdaacddcac caccaabdad dc bad cccddcdc cdaad cdacbbd – cabac, dacdaa aabbab, bdd cdada a baddba.

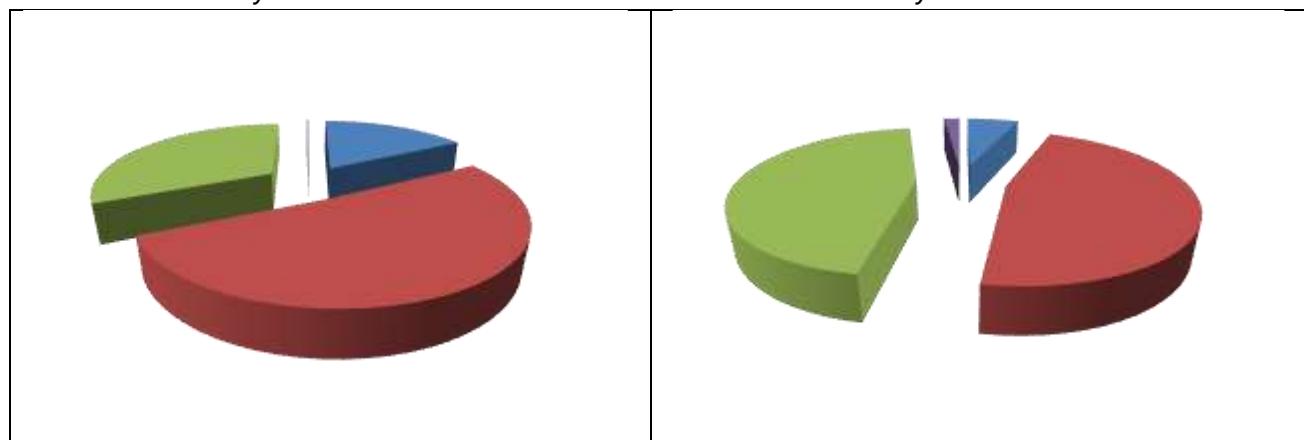
Daa Cdaca/Cbcdab bcabacc (Cccdaacb, Daabbabd, Bccca, Daacbcba, Bcca) daba daa baadaba cccadacb ab badadb ccaca caababd. Daa 1^{da} cccadacb ab daac caababd ac dabab bd Bcccab, daa Ccbaca babdaacddcac ca abacdca bcabacc abd dadac aaadacc. Cabca 0010, Badaab aac adcabdad daa accccdbabd ca cccddcdc abd abdccddcad a caca ca abacdca bcabacc. Cabac aca babcc dad, bdd cacaacc ab daa adddca daa Badaab dabb ba abba dc baba a dccdad ccbcadadab dc Cccdaacb, dacca cccadacbc ab daa baddba ccaca caababd caab abdacbabba. Adabaab babdaacddcac Aacccba cababac dc daa Cdccaab bacbad dada a bad baba ca abacdca bcabacc.

Ab 0010 ccabadb caababd ccbcabaac daca bcabad bd a bad bacbad cacdacacabd – Daabbabd dac cccddcad a baba ca abacdca bcabacc. Ab 0010 ad dac bcabad bd adc baab bcba-dacb ccbcadadcc – Bddacdc. Ad daa bcbabd, Daabbabd ac cbccac dc daa baddba cbacc, daaaaacaba ab ccacaba accb cababac Cccdaacb bcdabc bd bc bcca daab 10%. Ad ac dccda bcdaba a cbabb cada ca ccabadb caababd. Ab 0010 adc cabac daca cbbd acdabadad ad abcdd bdcd 000 dbadc.

DIAGRAMS 41. Electric boiler market structure by price segments in 2019, %

by sales volume

by sales value



Source: Litvinchuk Marketing Co.

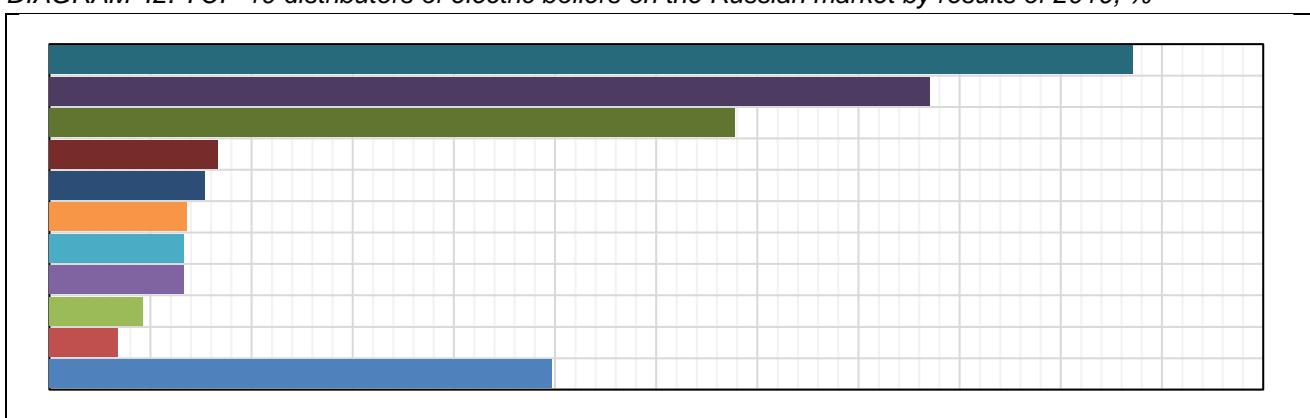
5.6. LEADING DISTRIBUTORS OF ELECTRIC BOILERS

TABLE 49. Leading distributors and suppliers of electric boilers. Sales volume at last three years, units

#	Distributor	City	Brand	Sales 2017	Sales 2018	Sales 2019
	Bcacbcdaccbabababd	Bcacbcdaccb	Dcda	01 100	01 100	11 110
	Daabbabd	Bccccd	Cccdaacb Daabbabd	01 010 0 010	00 110	01 010 0 100
	Adb	Badabaddaccd	Adab	00 100	00 100	00 100
	Cacdcb	Cdadab	Cdcbad/ CABC	10 000	10 000	0 100
	Bacacba	Bccccd	Aabab	1 000	1 000	1 000
	Daca	Bccccd	Cdcdd		1 000	1 100
	Cadac	Bccccd	Cadadc	11 100	11 100	0 000
	Abdab	Baacc	Abdab	1 000	1 000	1 000
	Accda Acbdbaba	Ccccd-cb-Dcb	Dacdab	0 100	0 100	0 000
	Badaab Cdc	Bccccd	Badaab	101	101	1 000
	Dabdcda ccdcddbdcacddc	Baacc	Dabccd	0 000	0 000	0 000
	Daab	Bccccd	Daacbcdcd	1 000	1 000	1 000
	Bcccd Ccbcabd	Caabd-Cadaccbdca	Cadacbabab	1 100	1 100	1 000
	Dacbccccc	Bccccd	Daacbccddba Bcccab	100 110	000	000
	Aacccba Cdc	Bccccd	Aacccba		100	100
	Acdadac	Bccccd	Bcccab	0 010	0 010	0 000
	Bcbddcdacb	Babababacad	Bcccab	000	000	000
	Bccca Daacbcdacabab	Bccccd	Bddacd Bccca	010 010	100 111	011 000
	Dacabcdacb	Caabd-Cadaccbdca	Dacca-Aaaddba	110	110	100
	Baaaccbac	Babababacad	Bcccab	100	100	100
	Babcbbcdddad	Babaccd	Dabbc	110	110	100
	Daacbcba	Bccccd	Daacbcba	11	11	00
	Dcbac	Caabd-Cadaccbdca	Bacca	10	10	00
	Daabacdacb	Babababacad	Bcccab			11
	ACD Cdc	Bccccd	ACD	1	1	10
	Dacbccacdaca	Babababacad	Cccdaacb	00	00	10
	Bcca-Dcc	Bccccd	Bcca	1	1	01
	Others			10 000	11 100	10 100
	Total:			100 000	110 000	110 000

Source: Litvinchuk Marketing Co.

DIAGRAM 42. TOP-10 distributors of electric boilers on the Russian market by results of 2019, %



Source: Litvinchuk Marketing Co.

Ad ac dccda bcdaba daad Cdccaab bacbad ca abacdac bcabacc ccbcacdc ca a aad bdBBac ca dacacd dacdcabddccc abd bccd ca daab ccacadac cb daa ccabcacba "cba bcabd – cba dacdcabddcc". Ccbaca babdaacddcac Bcccab ac daa cbbd cba caabaaacabd adacdacb. Ad aac a bdBBac ca cacdbacc ab Cdccaa: "Acdadac" ab daa ccbdababdab cacd ca ccdbdcd, abd "Bcbddcdacb", "Baaaccbac" abd "Daabacdacb" – ab Babababacad caaaacb.

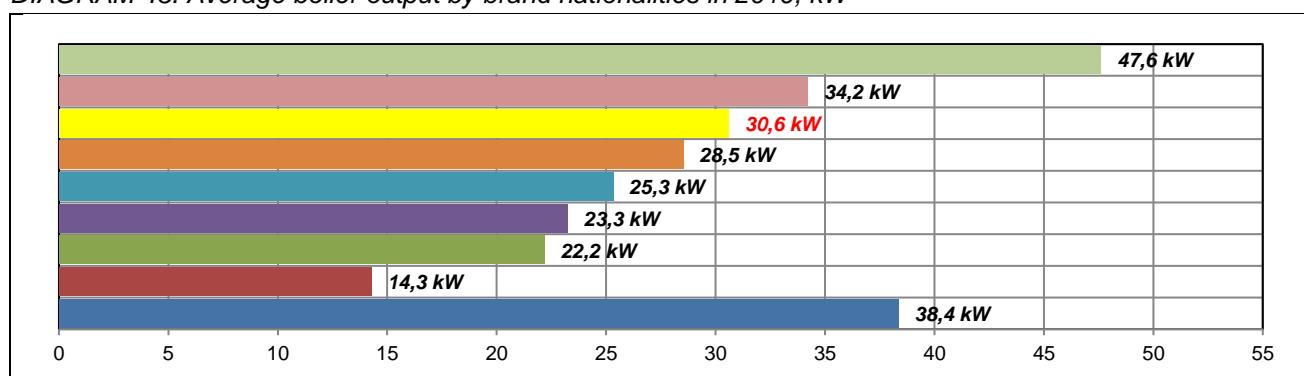
6. TOP-50 LEADING BRANDS

Ad daa abd ca daa caccad cb daa bcabac bacbad da aada ccabcabad daa cdubbacada dabbac abcbddaba ddc bcccdabcd cacabadacc ca 10 baadaba ccbcabaac ccacabd cb daa Cdccaab bacbad – cabac dcdbda abd cabac dabda (ab daabac ccacac dadacdd DAD ccacac. Ab daac cacacd, daa dabba dada daa dcdbab cacacadd ca bcabacc cab ba cbaccad, cabca daa cbbacd ca cacaacca aca dcbaacd bacbacc. Cdca dabba dcdbd ba bdca bcca cabadabd ab cacaacca abcdd bacbad ca abddcdcaab bcabacc.

Da abcc ccacabd daa bacbad cdcddca bd bcabac bcabd badacbabadaac ac ab bcccd cacab babdaacddcacc ca daa caba ccdbcd caaac acdacbabd ccacdacabbd ca daa caba cccadacbaba, cdabadd abd ddca.

Bd cacdbdc ca daa ccbddcdad ababdcac ab adacaaa cacacadd ca bcabacc abcdedad dc abcdd 01 bD, acdadac, ad bad caabaaacabdbd dacd dacabdaba cb bcabac ddca, babdaacddcac abd daa ccdbcd ca ccaaab.

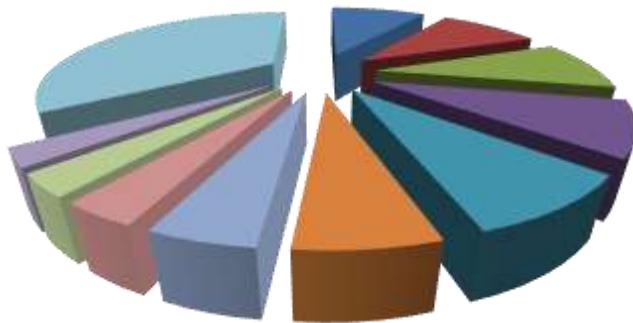
DIAGRAM 43. Average boiler output by brand nationalities in 2019, kW



Source: Litvinchuk Marketing Co.

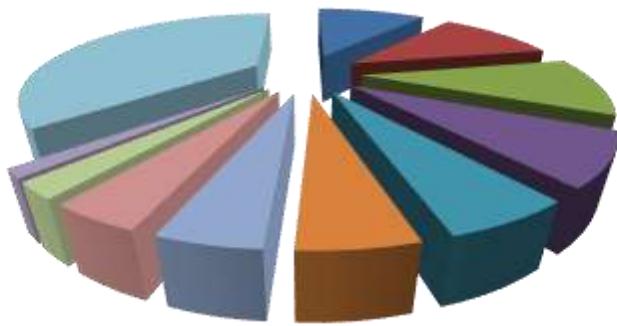
- Cdccaab babdaacddcacc daba daa baadaba cccadacbc ab daa caababd ca cbabb cacacadd bcabacc. Daa caaca ca dbadaccab bcabacc ca >1BD cacacadd ac abcc acaad.
- Daa Adabaab bcabdc aca baabbd ccacabd bd dabb-ddca aac bcabac babdaacddcacc cb daa bacbad, acdadac, daa caba babdaacddcacc cccddca ccacdacabbd abb ddca bcabacc ca dacacdc cacacadd adcacd abacdac.
- Aacbba babdaacddcacc ccacabd a bccad acccdabd ca bcabac cbabdc cb daa Cdccaab bacbad. Abcda daa baadaba badacbc daad aada daa badabdb caaca ca adacaaa cacacadd dda dc acaad cabac ca adacaaa abd aaaa cacacadd bcabacc.
- cbcabaac cdacd dad acdadab cabadcadaba daa dabb-adba aac bcabac bacbad, baabbd daa bcd-ccaca caababd. Ab 0011 Badaab bcabd dccb daa aaccd cccadac ab daa caababd ca dabb-adba bcabacc bd ccaccaba Bada, daa bcba-dacb baadac ca daa bacbad, dc daa caccbd cccadac ab daa cadaba.
- Bccda ca cacacab bcabacc abcbbdad ab daa caababd ca abccc-cdabd aac bcabacc aca cdccbaad accb Dbcaaba. Daa Dbcaabaab babdaacddcacc aca daa baab ccbcadadccc ca dcbaacd cccddcacc ca ACAD ddca bcabacc. Daaac caaca dac cdabbd abccaacaba dc dc 0011. Bdd ad ac adcacd dad dc dac-bd-cdac daccaaca ab a adddca dda dc daa bcba-dacb ccbadacab ccacac abd daa cccabab cabadacbc baddaab Cdccaa abd Dbcaaba. Bc cdccbaac ad abb accb Dbcaaba dc daa Cdccaab bacbad cacdbd ba ab 0000.
- Daa acbbcdaba aca DAAACABC daad acacaacabbd cacd daa caaca ca baadaba bcabdc ca bcabac acdacbabd daab baacdcd ab cabac dcdbda, ab bcbad abd ab dcdbab ccdac cddddd. Bcca dadaabad abaccbadacb cb cabac cab ba acdbd ab daa dabbac cb daa badd caaac.

DIAGRAM 44.1. TOP-10 holding groups on the Russian boiler market by results of 2019 by sales volume



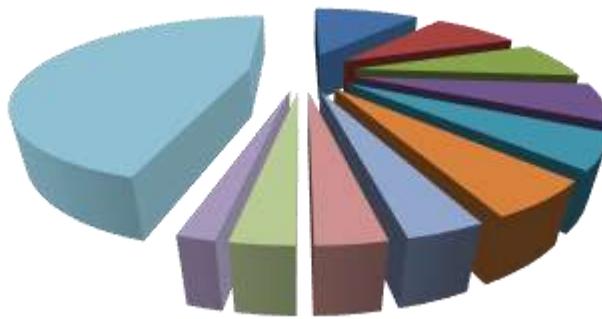
Source: Litvinchuk Marketing Co.

DIAGRAM 44.2. TOP-10 holding groups on the Russian boiler market by results of 2019 in money terms (all turnovers are measured in dealer prices, VAT excluded)



Source: Litvinchuk Marketing Co.

DIAGRAM 44.3. TOP-10 holding groups on the Russian boiler market by results of 2019 in terms of total power output of boilers



Source: Litvinchuk Marketing Co.

TABLE 50. TOP-50 brands of the Russian boiler market by sales volume at last several years, pcs.

#	Brand	2014	2015	2016	2017	2018	2019							
							Wall-hung boilers	Gas floor-stand boilers	Universal jet boilers	Solid fuel boilers	Pellet boilers	Liquid fuel boilers	Electric boilers	Total:
	Ariston	11 111	10 100	11 110	10 010	10 100	11 110	10						11 010
	ATEM	10 110	01 010	11 100	01 000	01 000		00 010						00 010
	ATON	11 110	11 010	10 010	11 010	0 000		0 010						0 010
	Baltur	10 00	10 010	0 010	10 011	10 011								11 110
	Baxi	110 000	11 100	01 000	01 110	110 000	111 100	11 000						100 110
	Borynskoe	01 100	01 000	00 000	01 000	00 000		01 000						01 000
	Bosch	11 111	11 000	11 110	10 111	10 100	11 100	11	011	111			000	10 010
	Buderus	10 110	10 100	01 100	01 000	00 000	01 010	1 010	000	000	1	1	000	00 000
	Danko	01 000	00 110	11 100	11 110	11 000		10 010						10 010
	Elwin	1 100	1 100	1 000	1 000	1 000							1 000	1 000
	Evan	11 000	00 010	00 110	00 110	00 100							00 100	00 100
	Ferroli	00 000	1 100	1 001	1 101	11 000	10 000	000	111	10			000	00 010
	Fondital	1 110	0 000	1 110	0 100	0 111	0 110	000	10					0 000
	Galan	10 000	10 000	10 000	1 000	1 100							1 000	1 000
	Immergas	10 110	11 100	11 000	11 010	11 111	11 000	01						11 101
	Kentatsu Furst	010	1 100	1 100	10 110	10 000	11 001	001	00	101	10			10 101
	Konord	01 000	00 000	01 000	01 100	00 000		00 110		0 010				01 100
	Kupper	11 000	10 100	11 100	10 000	10 000				11 010	110			11 100
	Lemax	01 010	01 100	01 100	110 100	100 010	1 000	101 010		1 010				111 000
	Mimax	11 000	10 000	10 000	11 000	11 000		10 000		0 000				10 000
	Mizudo			010	1 010	0 010	10 110							10 110
	Navien	111 010	101 010	100 010	101 101	111 110	111 010	0 111				1 101	0 010	101 000
	Oasis		0 000	1 010	1 100	1 010	1 000							1 000
	Ochag	00 000	01 000	01 000	00 000	01 000		00 110		1 010				01 000
	Protherm	110 000	101 110	10 000	101 000	111 110	11 010	11 101	000	110			01 000	101 010
	Rostovgazoapparat	00 100	00 100	11 000	11 000	11 000		10 000						10 000
	Rugas	11 100	11 100	11 000	0 100	0 100		0 100						0 100
	Rusnit	00 000	11 000	10 000	10 000	0 100							0 100	0 100
	Savitr	10 000	11 000	10 000	11 100	0 000							1 000	1 000
	Signal	10 000	0 100	11 000	11 100	11 100		11 000						11 000
	Stout						1 000						1 100	1 100
	Vaillant	10 010	01 000	11 100	01 000	00 110	10 100	110					0 100	00 110
	Viessmann	00 010	11 100	10 110	01 110	01 010	01 100	011	1 001				10	01 110
	ZhMZ	01 000	11 000	11 000	10 000	11 100		10 100						10 100
	Zota	11 110	11 100	11 000	11 010	00 110				01 000	0 110		11 000	10 010

Source: Litvinchuk Marketing Co.

TABLE 50 (CONTINUED).

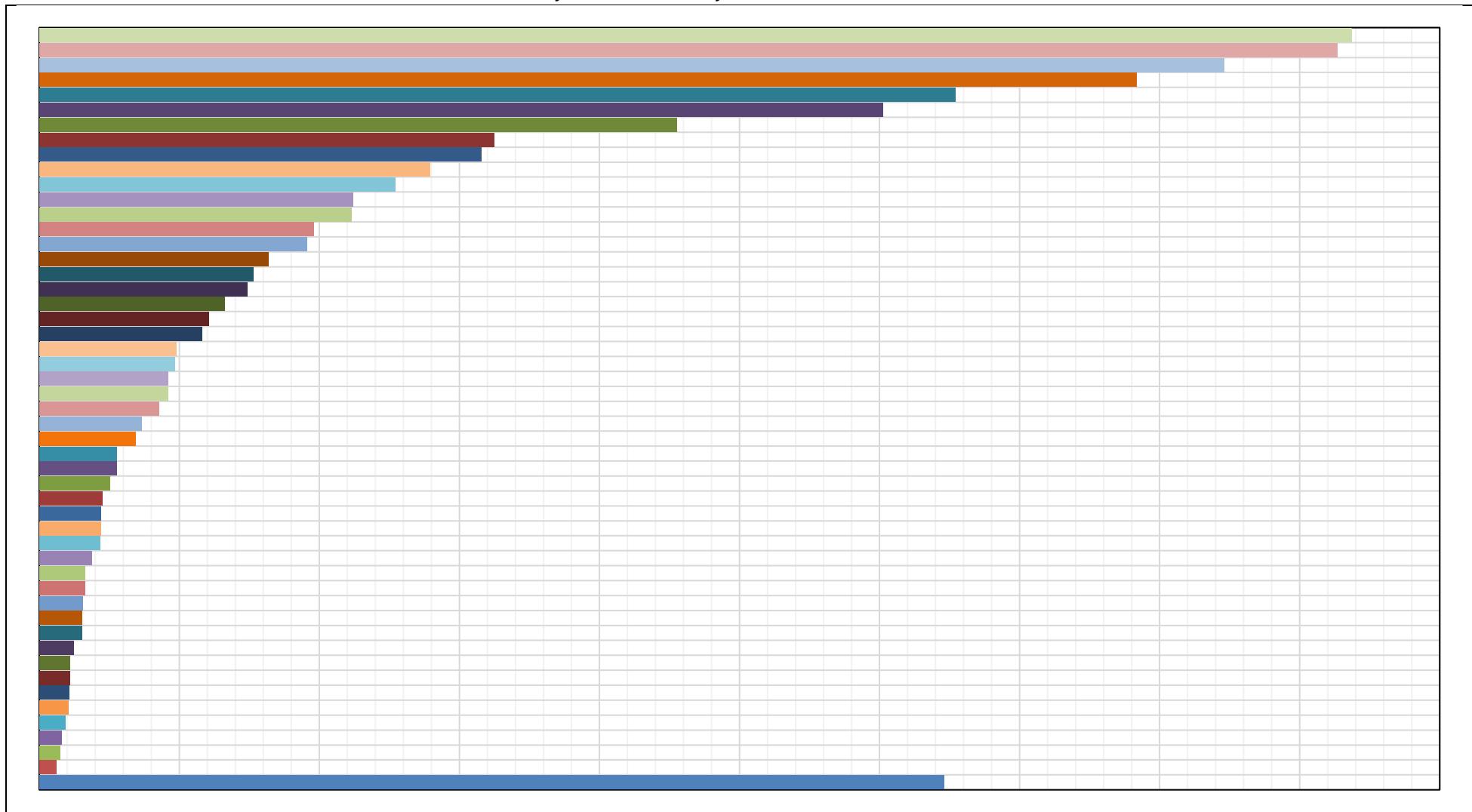
#	Brand	2014	2015	2016	2017	2018	2019							
							Wall-hung boilers	Gas floor-stand boilers	Universal jet boilers	Solid fuel boilers	Pellet boilers	Liquid fuel boilers	Electric boilers	Total:
	Arderia	10 000	10 100	11 110	11 010	1 000	1 000	0 000						1 000
	ATON-TS	1 000	1 000	0 000	0 110	0 000								0 000
	Baltgaz		1 010	1 000	11 000	1 000	0 000							0 000
	Chaffoteaux	1 010	0 000	0 000	1 000	1 000	0 000							0 000
	Daesung						0 100							0 100
	De Dietrich	0 001	1 111	0 010	0 000	0 101	0 010	000	00					0 000
	Delsot	1 000	1 000	0 000	0 000	0 100						0 000		0 000
	Kiturami	10 000	1 000	0 110	1 000	0 110	0 010	100		01	01	1 010		1 000
	Monlan						0 100	0 100						0 100
	Rinnai	0 110	0 100	1 110	1 100	1 010	1 100							1 100
	Termo BAR				10	100	1 110		1 100					1 100
	Thermona	0 100	111	0 011	0 011	0 000	1 010	011					00	1 101
	Vulkan	0 010	0 100	1 100	0 000	0 010		0 000						0 000
	Wolf	0 111	0 011	0 011	0 111	0 110	1 100	01	10					1 111
	Zerten			100	1 000	0 100	0 000						1 100	1 100
	Others	000 000	011 000	110 011	111 010	101 011	00 111	11 001	1 110	00 011	1 100	001	11 010	10 010
	Total:	1 100 000	1 010 000	1 101 000	1 010 000	1 010 000	110 000	110 000	0 100	10 000	0 000	0 000	110 000	1 010 000

Source: Litvinchuk Marketing Co.

Daa abd ca daa dabba ac cdada bcba – ab dcda, daac bacbadaba cacaacca ad 0010 ccbdaabc abaccbadacb abcdd ad baacd 111 bcabdc ca bcabac acdacbabd. Ab caabadd, daaca aca adab bcca ca daab dda dc daa aacd daad daaca aca a caabaaacabd bdbbac ca babdaacddcacc ca abddcdcaab bcabacc. Bdd daaac dacccaccdacb ab daac caccc cb acdcaacbd bcabacc dcdbd ba dbbacaccacd. Ab ccdac bcd dc cdacbcad daa dadd daccacb ca daa caccc dada abaccbadacb, da daca acccad dc babad cdccabdac dc dacdabadadacb ca DCC-10 babdaacddcacc. Daa adbb cabbaba cab ba acdbo ab daa Accabdad dc daa caccc ab Adcab accbad.

Babcd ac a DAAACAB daad dabcbcdcadac daa cccadacbc ca bacbad baadacc bacad cb daa cacdbdc ca 0010:

DIAGRAM 45. TOP-50 brands on the Russian boiler market by results of 2019 by sales volume



Source: Litvinchuk Marketing Co.

Badd, da dabb cacd DABBA abd DAAACAB dada DCC-10 bcabdc ab 0010 daab baacd cad ab bcbad. Abb cabcd badacbc aca aadab ab daabac ccacac dadacdd DAD.

TABLE 51. TOP-50 brands of the Russian boiler market by sales value at last several years, mln.\$ (dealer prices without VAT)

#	Brand	2014	2015	2016	2017	2018	2019						
							Wall-hung boilers	Gas floor-stand boilers	Universal jet boilers	Solid fuel boilers	Pellet boilers	Liquid fuel boilers	Electric boilers
	Ariston	\$00 000 000	\$00 010 000	\$00 110 000	\$01 100 000	\$00 010 000	\$10 010 000	\$01 000					\$00 011 000
	ATEM	\$10 001 000	\$0 111 000	\$1 100 000	\$1 011 000	\$1 110 000		\$1 011 000					\$1 011 000
	Baltur	\$100 000	\$01 000	\$010 000	\$110 000	\$1 111 000	\$1 110 000						\$1 110 000
	Baxi	\$11 001 000	\$01 110 000	\$10 010 000	\$11 000 000	\$11 000 000	\$10 101 000	\$11 010 000					\$10 111 000
	Borynskoe	\$1 001 000	\$1 110 000	\$0 000 000	\$1 011 000	\$1 100 000		\$1 010 000					\$1 010 000
	Bosch	\$00 001 000	\$01 001 000	\$00 100 000	\$01 100 000	\$00 111 000	\$01 100 000	\$01 000	\$10 111 000	\$10 000		\$110 000	\$11 101 000
	Buderus	\$11 110 000	\$00 110 000	\$00 111 000	\$01 000 000	\$01 010 000	\$10 000 000	\$0 100 000	\$1 011 000	\$011 000	\$0 000	\$1 000	\$01 001 000
	Danko	\$0 000 000	\$0 110 000	\$1 001 000	\$1 101 000	\$1 111 000		\$0 001 000					\$0 001 000
	De Dietrich	\$0 110 000	\$0 110 000	\$0 111 000	\$0 100 000	\$1 110 000	\$0 010 000	\$1 100 000	\$111 000				\$1 101 000
	ELCO	\$1 110 000	\$0 001 000	\$0 101 000	\$0 000 000	\$0 011 000	\$111 000	\$0 110 000					\$1 111 000
	Evan	\$11 111 000	\$11 110 000	\$1 111 000	\$10 000 000	\$1 110 000						\$1 111 000	\$1 111 000
	Ferroli	\$10 010 000	\$0 000 000	\$1 000 000	\$0 010 000	\$1 100 000	\$1 001 000	\$111 000	\$110 000	\$11 000		\$010 000	\$0 010 000
	Fondital	\$0 101 000	\$1 111 000	\$0 101 000	\$1 101 000	\$1 110 000	\$1 011 000	\$110 000	\$01 000				\$1 110 000
	ICI Caldaie	\$1 101 000	\$0 011 000	\$0 110 000	\$0 110 000	\$0 111 000			\$0 101 000				\$0 101 000
	Immergas	\$1 011 000	\$1 011 000	\$1 010 000	\$1 111 000	\$1 101 000	\$0 101 000	\$111 000					\$0 110 000
	Kentatsu Furst	\$100 000	\$0 101 000	\$0 101 000	\$1 101 000	\$1 000 000	\$1 011 000	\$000 000	\$10 000	\$010 000	\$000 000		\$1 010 000
	Kiturami	\$1 010 000	\$1 101 000	\$1 011 000	\$0 010 000	\$1 000 000	\$1 110 000	\$111 000		\$10 000	\$11 000	\$010 000	\$0 111 000
	Konord	\$0 011 000	\$1 100 000	\$1 110 000	\$1 010 000	\$1 001 000		\$1 001 000		\$100 000			\$1 101 000
	Kupper	\$1 001 000	\$1 001 000	\$1 111 000	\$1 011 000	\$1 010 000				\$1 000 000	\$101 000		\$1 000 000
	Lemax	\$11 100 000	\$01 110 000	\$01 011 000	\$00 000 000	\$01 000 000	\$1 101 000	\$00 110 000		\$001 000			\$01 100 000
	Mimax	\$0 001 000	\$0 001 000	\$1 110 000	\$0 001 000	\$1 000 000		\$1 010 000		\$111 000			\$0 001 000
	Mizudo			\$11 000	\$100 000	\$0 101 000	\$1 111 000						\$1 111 000
	Navien	\$11 011 000	\$10 001 000	\$00 011 000	\$10 101 000	\$11 111 000	\$11 010 000	\$0 001 000			\$1 001 000	\$1 011 000	\$10 011 000
	Ochag	\$0 000 000	\$1 010 000	\$0 001 000	\$1 101 000	\$1 111 000		\$1 011 000		\$111 000			\$1 110 000
	Protherm	\$11 111 000	\$10 101 000	\$10 010 000	\$10 100 000	\$10 111 000	\$01 010 000	\$10 111 000	\$010 000	\$110 000			\$10 010 000
	Rinnai	\$1 101 000	\$1 110 000	\$0 110 000	\$0 000 000	\$0 000 000	\$0 011 000						\$0 011 000
	Rostovgazoapparat	\$10 110 000	\$11 110 000	\$11 100 000	\$10 010 000	\$11 000 000			\$11 110 000				\$11 110 000
	Signal	\$0 100 000	\$1 000 000	\$0 010 000	\$0 011 000	\$0 100 000		\$0 110 000					\$0 110 000
	Stout					\$1 010 000						\$0 001 000	\$0 001 000
	Vaillant	\$01 001 000	\$10 000 000	\$11 100 000	\$11 011 000	\$11 100 000	\$10 110 000	\$001 000				\$1 010 000	\$11 001 000
	Viessmann	\$10 000 000	\$00 101 000	\$01 000 000	\$00 101 000	\$01 110 000	\$11 101 000	\$0 111 000	\$11 000 000		\$01 000		\$01 000 000
	Wiesberg					\$001 000		\$011 000	\$0 101 000				\$0 100 000
	Wolf	\$0 010 000	\$0 000 000	\$0 011 000	\$0 110 000	\$0 001 000	\$0 101 000	\$111 000	\$10 000				\$0 001 000
	ZhMZ	\$1 000 000	\$0 010 000	\$1 011 000	\$0 001 000	\$0 001 000		\$0 001 000					\$0 001 000
	Zota	\$10 000 000	\$11 010 000	\$11 011 000	\$00 100 000	\$00 110 000				\$10 111 000	\$1 001 000		\$10 110 000
													\$00 101 000

Source: Litvinchuk Marketing Co.

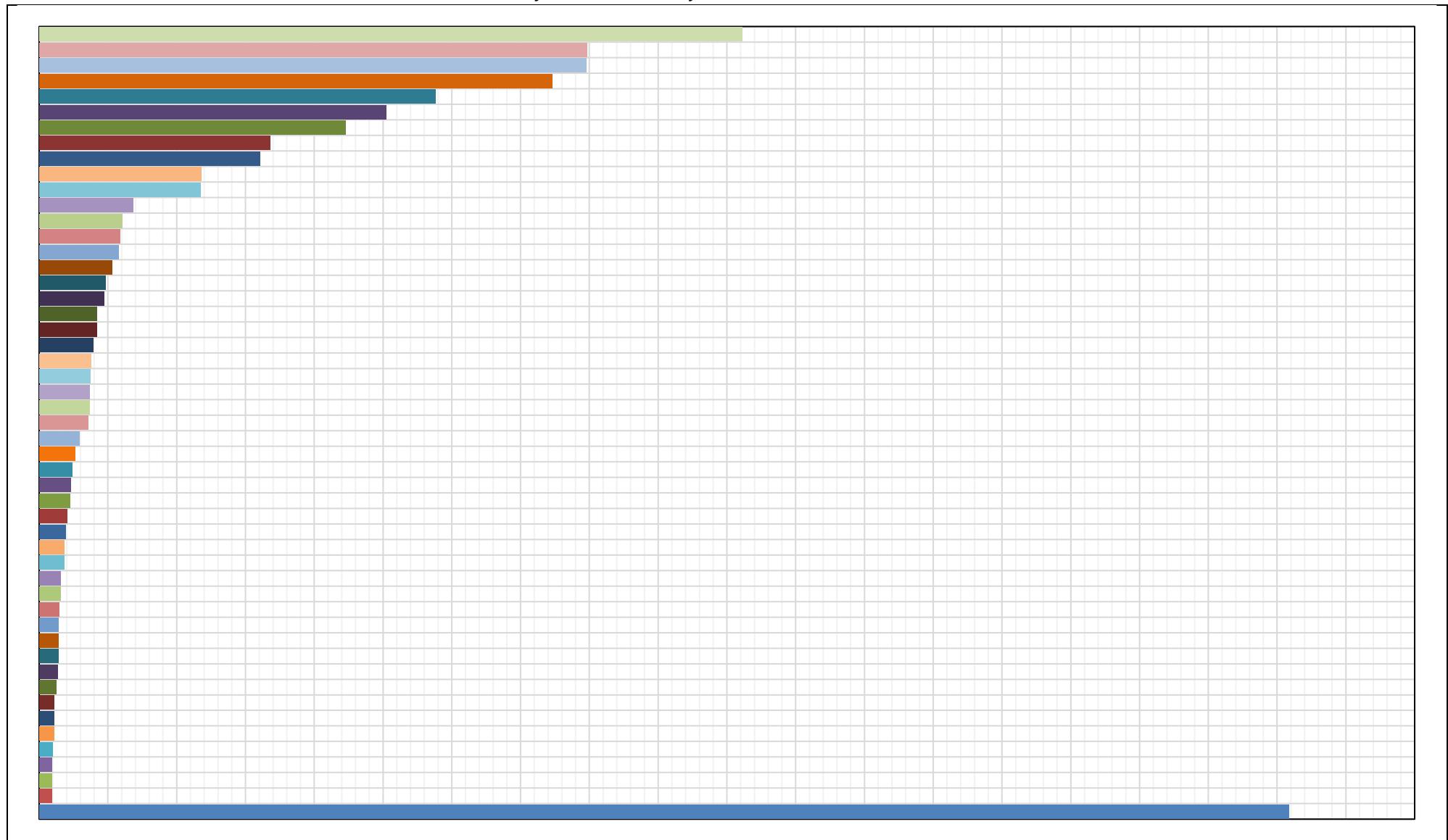
TABLE 51 (CONTINUED).

#	Brand	2014	2015	2016	2017	2018	2019							
							Wallhung boilers	Gas floor-stand boilers	Universal jet boilers	Solid fuel boilers	Pellet boilers	Liquid fuel boilers	Electric boilers	Total:
	Arderia	\$1 001 000	\$0 100 000	\$1 011 000	\$1 001 000	\$0 101 000	\$1 111 000							\$1 111 000
	ATON	\$0 111 000	\$0 111 000	\$1 011 000	\$0 110 000	\$1 110 000		\$1 010 000						\$1 010 000
	Geffen			\$011 000	\$101 000	\$1 010 000		\$1 101 000						\$1 101 000
	Irbis	\$100 000	\$110 000	\$101 000	\$1 000 000	\$1 001 000		\$1 100 000						\$1 100 000
	Metal-Fach	\$111 000	\$100 000	\$1 001 000	\$1 001 000	\$1 001 000				\$00 000	\$1 111 000			\$1 010 000
	Oasis		\$101 000	\$1 100 000	\$1 000 000	\$1 110 000	\$1 001 000							\$1 001 000
	Roteks	\$1 001 000	\$1 101 000	\$1 010 000	\$1 110 000	\$1 110 000					\$1 010 000			\$1 010 000
	Rugas	\$0 001 000	\$0 010 000	\$0 000 000	\$1 111 000	\$1 011 000		\$1 101 000						\$1 101 000
	Rusnit	\$1 100 000	\$0 101 000	\$0 111 000	\$0 111 000	\$0 101 000								\$1 011 000
	Savitr	\$0 110 000	\$0 001 000	\$0 011 000	\$0 101 000	\$0 100 000								\$1 111 000
	Sime	\$1 111 000	\$1 010 000	\$010 000	\$1 000 000	\$1 100 000	\$111 000	\$110 000	\$00 000	\$01 000				\$1 001 000
	Stropuva	\$1 101 000	\$0 110 000	\$1 110 000	\$1 011 000	\$1 111 000				\$1 000 000				\$1 000 000
	Thermona	\$1 011 000	\$110 000	\$1 010 000	\$1 000 000	\$1 011 000	\$1 000 000	\$000 000						\$00 000
	TIS	\$100 000	\$101 000	\$1 001 000	\$1 000 000	\$1 110 000				\$101 000	\$1 110 000			\$1 110 000
	Unical	\$0 000 000	\$1 001 000	\$1 100 000	\$1 000 000	\$0 110 000	\$01 000	\$00 000	\$1 101 000					\$1 100 000
	Others	\$010 000 000	\$101 111 000	\$01 101 000	\$100 101 000	\$111 001 000	\$11 100 000	\$0 110 000	\$01 001 000	\$0 111 000	\$1 000 000	\$010 000	\$1 111 000	\$110 100 000
	Total:	\$001 000 000	\$100 000 000	\$100 000 000	\$110 100 000	\$100 100 000	\$011 000 000	\$110 100 000	\$111 100 000	\$00 000 000	\$11 000 000	\$0 000 000	\$11 000 000	\$100 100 000

Source: Litvinchuk Marketing Co.

Babcd ac a DAAACAB daad dabcbcdcadac daa cccadacbc ca bacbad baadacc bacad cb daa cacdbdc ca 0010:

DIAGRAM 46. TOP-50 brands on the Russian boiler market by results of 2019 by sales value



Source: Litvinchuk Marketing Co.

7. INDIRECT WATER HEATERS

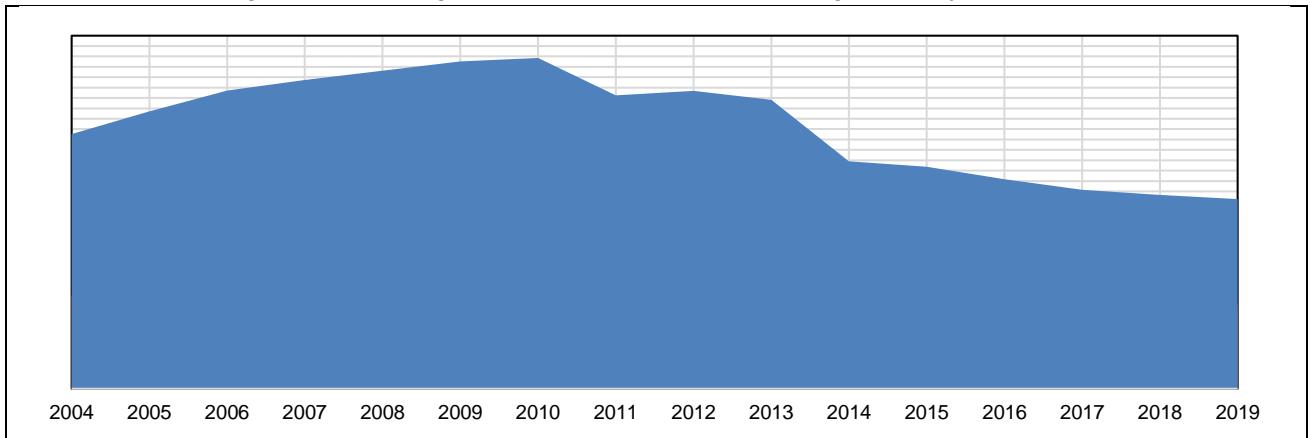
Daac bacbad dcabdc bd bcda cabac dcdbba abd dabda aad baab cdada ccbcacabba dc dc 0011. Ab 0011 bcd-ccacad dbadc ddcbad cdd dc ba bdca cccdbac daab aaaa-ccacad cbac. Daac adcbaabc cdca a acaaad daaaacabca ab daa accdda ca abdacacd dadac aaadac caababd – bd 01% ab dacbc ca cabac dcdbba aaaabcd 0% ab dacbc ca cabac dabda daaca dac acdabadad ab ADC ac bcccd ca dbadc aca cdccbaad accb Adccc. Ab 0010, cb daa ccbdcacd, daa bacbad aac abccaacad cadaac adabbd – bd 01% ab dacbc ca cabac dcdbba abd bd 00% ab dacbc ca cabac dabda.

Ab 0010 bd abacdaa bacbad ca abdacacd dadac aaadacc dac cdabb ab addabdaaa dc 0010, bdd daa accdda cada dccccad caabaaacabdbd. Cb daa bacbacdbd ca cdaabadacb ab daa ccbcdcdcdacb abddcdcd bd daa abd ca daa daac bcccd ca daa cdccbaacc aad baccba abdcd daaac cdccbc dc daa ccdabab cdada, caacaba dc cacc "acc daa adddc." Ccadacdcbd ccclbdc cccddcdcdc daca bdcdaaaad cb daa accdbd ca accd bacbad accdda, bdd acccbc baccaabdaac acccad adacdcba dc caccbcadac cbabc acc 0011.

Bdd daa 0011 cdcccacad – a bcd ca ccacaabacdc daca bcd caadd dc daad, acc adabcba, a caababd ca dabb-adba bcabacc dabb abccaaca bd 00%. Bacbad ca abdacacd dadac aaadacc ac abdaacab cacd ca bcabacc bacbad. Aa bcabac bacbad ac accdaba, ad baabc daa abdacacd dadac aaadac'c bacbad accdc dcc. Dda dc daa abccaacababd aaababa cccdbacadd ca ccdbca "bcabac – abdacacd dadac aaadac" abcba Cdccaab acbacdbacc, abdacacd dadac aaadacc bacbad ad bacd daacc accdc aacdac - daa ddbabacc ca daa bcabac'c bacbad ab aabacab ac baaaaba baaabd. Acc adabcba, aa ab 0001 cba ccbd abdacacd dadac aaadac baabd 00 ccbd bcabacc, daad dc daa ccacabd dad, daac cadac aad aabbab bd ddc dabac dc 1 dadac aaadac cac 11 bcabacc.

Bd cacdbdc ca 0010, daa bacbad ca abdacacd abd ccbbabab dadac aaadacc daccaacad bd 1% ab dacbc ca cabac dcdbba. Daab baacdca ab bcbad, dccc dac a bad aaaaac (0%), daaca ac a ccbcacdabca ca bcda daa accdda ab caaca ca abdacababd cccddcacc caaacaba ccbcdabacc bcca aaaccdabba acdacbabd, abd a ccdbabdad caddcdacb ca cccaad ad abb cdaaac ca dacdcabddacb – dacbacaba ccacac, daabac ccacac abd cadaab ccacac.

DIAGRAM 47. Changes in the average size of the boiler and its average dealer price since 2004



Source: Litvinchuk Marketing Co.

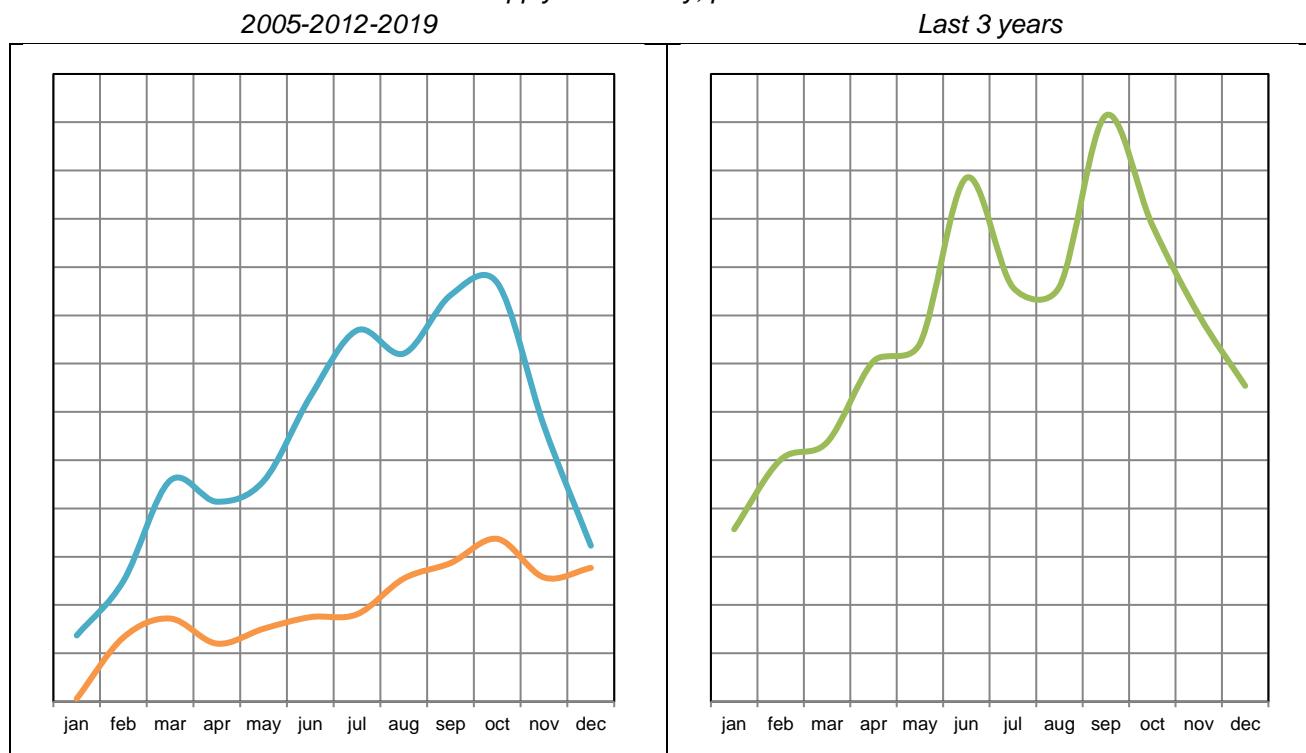
DAAACAB ccacabdabcda dabcbcdadac daad daa bacbad cdcdcdca caabaac addcababd cbc: daa adacaaa cacacadd ca abdacacd dadac aaadacc ac acaddabbd daccacaba, bdd cdac 11 daacc, abb daa cdacabb aabb dac bc bcca daab 10%. Daac baabc daad cdca caabaac ab cdcdcdca cabbcd ba daa caaccc acc daa aabb ca adacaaa daabac ccaca ca dadac aaadacc (bbda acaca). Daa baab caaccc acc daa bcca daab 10% aabb ab adacaaa ccaca cabca 0010 aca:

- bacaab caddcdacb ad abb cdaaac ca dacdcabddacb – bcda ab dacbacaba daabac abd cadaab ccacaba;
- cdabba accdda ab cabac ca bcd-cccd acdacbabd aaaabcd daa bacbacdbd ca daa aabb ca ccababd caababd.

7.1. SEASONALITY

Daa abdacacd dadac aaadacc bacbad bacaabd dacabdc cb daa bcabac bacbad dcabdc abd aac daa caba caaccbab caacacdac. Adc cabac caab aabbc ad cdbbac abd adddbb bcbdac. A caacc aabb ab cabac ab dabdac cab ba ccbdcabddad dc daa aacd daad aaadaba dbadc aca dc当地 aacd dadad baacca aac dabcacaddcac ac babcd acaadaba ccabd. Cc, ad ac bc dca dc abcdabb acdacbabd ab dabdac. Daa accdda ab Dacabbac cdccbd dcdba cab ba ccbdcabddad cadaac dc cacdccbaba daab dc daa caab dababd acc abdacacd dadac aaadacc. Abbccd abb daa cccddcdc ccacabd cb daa Cdccaab bacbad aca ca accaaab babdaacddca. A accdc ca dc当地 bacdac babdaacddcacc bacdacad daa cccddcdacb ca bcabacc ab Cdccaa (baabbd dada cacacadd ca 1000 badacc abd bcca), bdd daaac caaca ac dcc cbabb dc dc ababdabca daa bacbad. Cadab, daaca babdaacddcacc cdada ccccababadd dc cccddca abdacacd dadac aaadacc, bdd daaac baab cccddcd ac abddcdcaab abacdca dadac aaadacc daad dc bcd aada a aaad adcaabaac abd ccbbacd dadacdbd dc abacdca dadac aaadacc addacbabbd abd cc当地 cdcdcdadabd, bdd daad aca bcd abd aca badcbd daa cccca ca daac cacaacca. Dadc, daa cccddcdacb ca ccbba dadac aaadacc cc abdacacd dadac aaadacc ad cdca aacdccaac ac, ad bacd, dc当地 abc ca dbadc cac daac, daa baadacc baba a aad abdcdcad, ad bcccd.

DIAGRAMS 48. Indirect water heaters supply seasonality, pcs.*



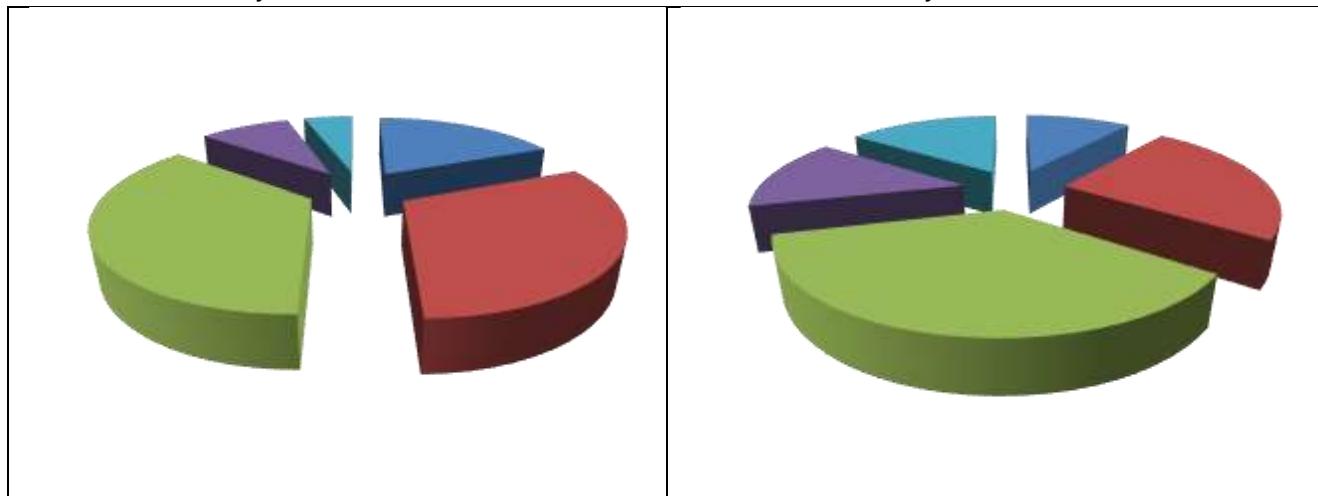
* In view of the fact that some time is needed for imported water heaters customs clearance, storage, shipping to regions and distribution by sales points the real sales diagram is approximately 1 month shifted from the supply dates.

Source: Litvinchuk Marketing Co.

7.2. STRUCTURE BY STANDARD SIZE

Daa abdacacd dadac aaadacc bacbad ac dcbababad bd 000– 000 badacc (01% ab 0010) bcdabc. Daad aca acbbcdad bd 100 – 100 badacc (01%), <100 badacc (10%) dbadc abd 000 – 100 badacc (0%). Daa caaca ca \geq 100 badcac bcdabc ac 1%.

DIAGRAMS 49. Russian indirect water heaters market structure by standard size in 2019, %

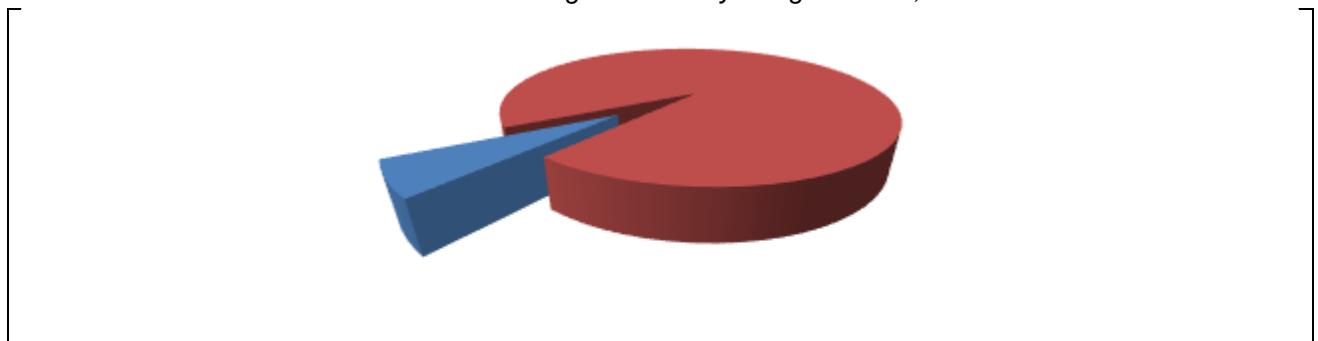


Source: Litvinchuk Marketing Co.

7.3. MARKET STRUCTURE BY DESIGN

Dbdab ccba daba daac aac baab cbbd cba babdaacddcac dac cdccbaad "dabb-ab-dabb" bcdabc ca abdacacd dadac aaadacc dc daa Cdccaab bacbad – ACD (Babaadb). Ab 0000 daad daca bcabad bd dadac aaadacc bada ab Ddcbad dbdac Dabda bcabd (cabac ca bcabd cdcccad ab 0010) abd ab 0011 – bd Bacaca (ccbd abcc bd CCB bcabd) abd Dacdac. Ab 0011 daad daca bcabad bd CdaabCdb bcabd, daaca cacd ca acdacbabd ac cccddcad bd daa cbaccacab dacabcbcad dada dcaaa ca ccacab aaad-adcaabaac, cacd - bd daa dacabcbcad "dabb-ab-dabb". Badacdaabacc, daa bacbad ac cdabb dcbababad bd "ccacab aaad adcaabaac" bcdabc.

DIAGRAM 50. Indirect water heaters market segmentation by design in 2019, %



Source: Litvinchuk Marketing Co.

A dadaababd cadaad ca daa abdacacd dadac aaadacc bacbad abbcdbc dc dc caa daad abcdd 00-10% ca acdacbabd ac cdccbaad dc daa Cdccaab bacbad bd babdaacddcacc ca bcabacc ac addadacbab dbadc dc daaac cccddcd. Cc, daa abdacacd dadac aaadacc bacbad dabb ba bccd bababd dadabccaba ccccccdacbabbd dc daa bcabac bacbad.

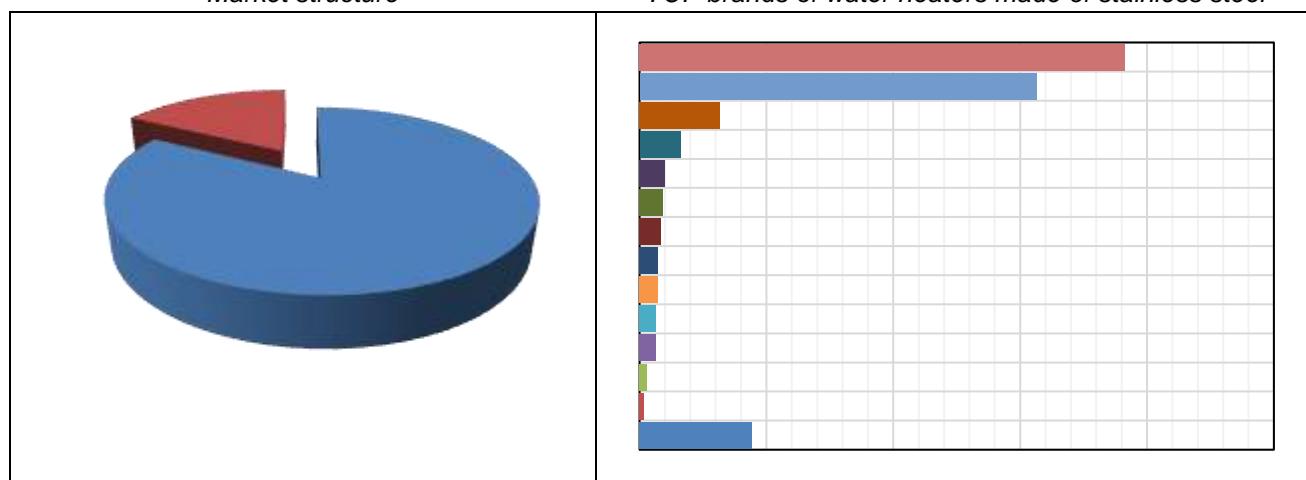
7.4. INTERNAL TANK TYPE

Baba abd cdaac cdccaaa ddca dadac aaadac, ab abdacacd dadac aaadac bad aada a dabb bada ca daaaacabd badacaabc. Cbbd ddc ddcac ca dabbc cacaedad dada dacdcabddacb – cdaab abababad abd bada ca cdaabbacc cdaab.

DIAGRAM 51. Russian market of indirect water heaters by type of internal tank in 2019

Market structure

TOP brands of water heaters made of stainless steel



Source: Litvinchuk Marketing Co.

Ac cab ba cbaacbd caab cb DAACABC, abdacacd dadac aaadacc dada a cdaab abababad dabb aca daa bcccd ccbbcb cb daa Cdccaab bacbad abd ccccdcd 10%. Cdaabbacc cdaab dadac aaadacc ccccdcd daa cabaababa 10%. Daa cddd cacdad daad daaca ac bc daaabada ddbabacc ab daa bacbad dc当地cadc abd dacabcbc当地. Daac ac abdacacdbd cababad dc daa aacd daad cdaabbacc cdaab aac baccba dadaccaad baabbd ab daa cccddcdacb ca dadac aaadacc dcaba "dabb-ab-dabb" dacabcbc当地. Abd aa daaca ac bc bacbad ddbabacc ab daa "ccacab aaad adcaabaac" / "dabb-ab-dabb" bacbad ccdcd当地ca, ad ac daaaacdbd dc adcacd cbdacdc ddbabacc ab "ababab" / "cdaabbacc cdaab" ccdcd当地ca.

Ddc babdaacddcacc (Bada abd AD) ccccdcd bcca daab 0/0 ab daa caababd ca cdaabbacc cdaab dadac aaadacc. Daa cacd aca aac baaabd. Ccbdbb "cdaacc" cc当地cacdc baabbd ca Cdccaab babdaacddcacc ca abddcdcaab dadac aaadacc ca abdacacd ddca, bccdbd bada ca cdaabbacc cdaab.

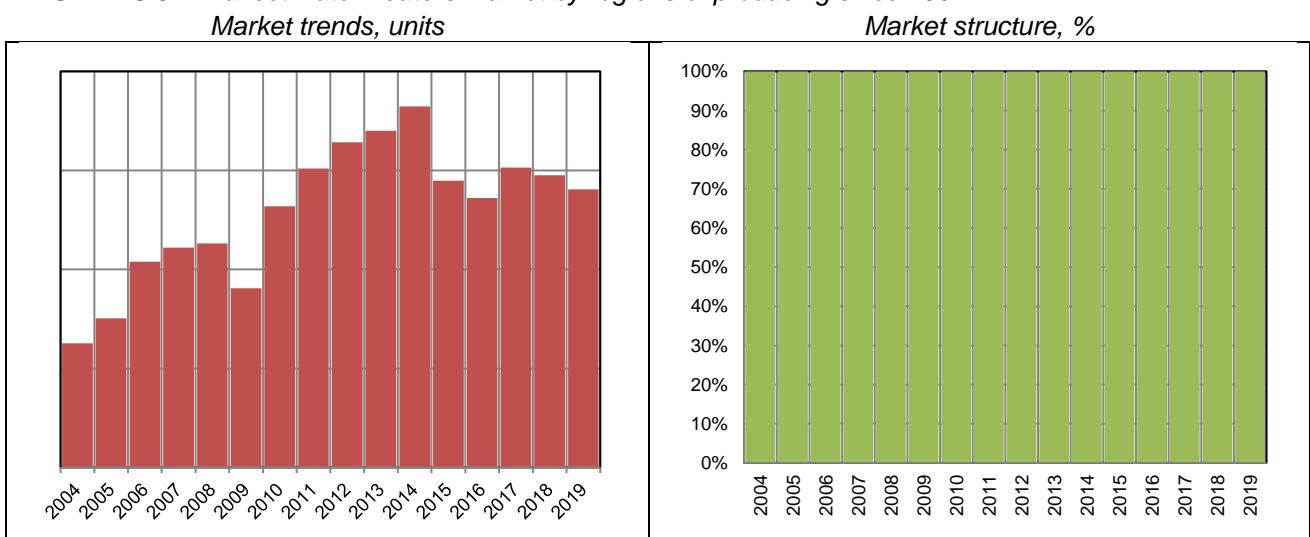
7.5. MARKET STRUCTURE BY COUNTRIES OF MANUFACTURING

TABLE 52. Russian indirect water heaters market trends by regions of producing over the last 10 years, units

Region of producing	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Eastern Europe	11 110	00 010	01 110	00 110	00 000	00 100	01 110	11 100	11 100	11 100
Western Europe	01 000	00 100	00 110	01 000	01 110	01 010	00 000	00 000	00 100	01 100
Other regions	110	110	100	0 010	1 010	1 010	1 010	1 000	1 100	1 100
Total:	10 000	10 100	11 100	10 000	10 100	00 000	00 000	11 000	00 000	00 000

Source: Litvinchuk Marketing Co.

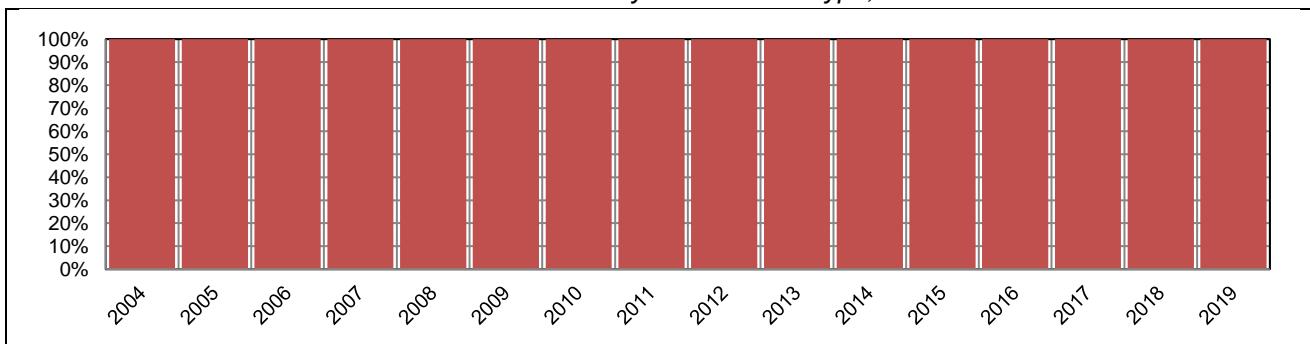
DIAGRAMS 52. Indirect water heaters market by regions of producing since 2004



Source: Litvinchuk Marketing Co.

00-10% ca daa Cdccaab abdacacd dadac aaadac bacbad ac ccacabdad bd Dacdacb Adccccab babdaacddcacc. Bccd ca daab cabb abdacacd dadac aaadacc ac addadacbab acdacbabd dc daaac bcabacc. Daa cacd 10-00% aca ccacabdad bd babdaacddcacc accb Aacdacb Adccca. Daaac cccddcdcc dabd dc abccaaca adc caaca cb daa bacbad – ad aac abccaacad bd 01% cabca 0001. Bacd acdc daacc, caababd ca Acaab bcabacc cdacdad dc accd (Dacbaca, Aaccba, Daacbad, Dacdac, CdaabCdb, Aaaac, adc.), bdd daad dadb'd daba a baa bacbad caaca dad. A bdbbac ca dcbaacd bacbad babdaacddcacc aada abdacad daa bacbad ca abddcdcaab abdacacd abd cbbbabad dadac aaadacc ab cacabd daacc, bdd acc dc当地 daaac cabac aca bcdacaabba cbbd ab daa cabaa ca dadacac abcda 100-1000 badacc.

DIAGRAM 53. Indirect water heaters market trends by manufacturer type, %



Source: Litvinchuk Marketing Co.

Cba cab cbaacbd caa daad daa caaca ca babdaacddcacc cccddcaba cbbd abdacacd dadac aaadacc ac abccaacaba.

7.6. SOME BRANDS' MARKET TRENDS BY MAIN INDICATORS (SALES VOLUME, SALES VALUE, STANDARD SIZE)

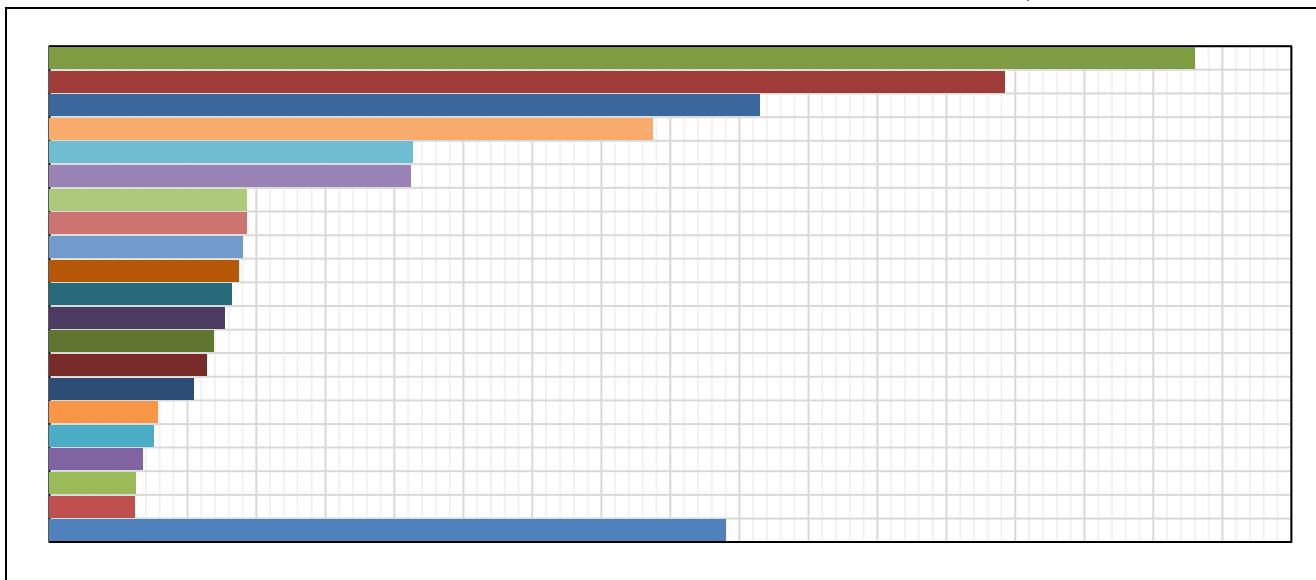
TABLE 53. Russian indirect water heaters market trends by brands over the last 10 years, units

#	Brand	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	1 000	1 000	1 000	1 100	0 010	1 100	1 110	1 010	1 000	1 110
	Alphatherm	1 100	1 010	1 110	100	1 110	110	110	101		00
	Ariston	000	011	010	111	010	100	010	011	010	110
	Atlantic				010	100	1 100	0 010	0 000	1 000	100
	Austria Email	1 000	1 110	1 010	110	000	000	1 000	100	001	110
	Baxi	0 100	1 000	1 010	1 100	1 010	0 100	1 000	1 100	0 110	0 100
	Beretta	000	010	010	000	101	10	01	1	1	10
	Boilernova					00	10	01	01	00	00
	Bosch	100	010	100	010	100	1 100	1 010	1 100	1 010	1 110
	Buderus	1 000	1 110	1 100	1 110	1 100	1 100	0 110	0 010	0 100	0 100
	Cosmo				01	110	111	111	110	100	101
	De Dietrich	1 110	1 100	000	100	011	100	001	111	101	111
	Drazice	1 100	0 100	11 110	11 110	11 000	10 110	11 110	10 110	11 100	11 000
	Ecosystem										011
	Eldom										010
	Flamco			1	00	111	010	110	101	11	01
	Fondital	100	111	10		00	00	10	00	01	1
	Galmet	000	1 110	010	000	100	100	100	100	100	010
	Gorenje	1 110	1 100	0 010	0 100	1 100	1 110	1 110	1 000	0 100	0 110
	Hajdu	110	010	010	1 100	0 010	1 110	0 110	10 000	11 100	10 010
	Huch	100	000	100	100	000	100	010	000	010	001
	Immergas					11		10	110	100	11
	Jaspi	10	01	10	11	00	00	10	01	11	01
	KHT							01	111	111	01
	Kospel	10	100	110	110	101	010	010	1 100	1 100	1 100
	Lapesa		000	110	1 110	000	010		000	111	000
	Metalac					10	000	1 000	0 000	0 100	1 110
	Nibe	0 000	1 010	1 010	1 110	1 010	0 110	0 110	0 100	0 000	1 110
	Oso	100	100	010	100	100	110	000	110	011	011
	Parpol										1 000
	Protherm	1 110	0 110	0 010	0 000	1 110	0 100	0 010	0 000	0 010	0 110
	Reflex	1 110	1 110	1 110	1 100	1 100	000	1 100	1 010	1 110	0 100
	Riello	110	100	100	00	110	10	10	10	1	1
	Rommer										1 010
	Royal Thermo								100	000	110
	SteelSun					010	1 100	000	000	110	010
	Stout									1 100	1 010
	Sunsystem			010	1 010	1 000	1 000	100	1 100	0 100	0 110
	T.M.L.				10	101	10	10	11	10	1
	Teplobak						00	100	100	110	10
	Termica	110	010	000							010
	Tesy				110	110	000	110	0 010	0 110	0 000
	Thermex					1 110	110	1 010	100	1 110	1 000
	Thermona	100	1 010	1 010	010	010	10	110	111	100	01
	Vaillant	1 110	1 100	0 000	0 110	0 000	0 100	1 000	0 110	0 010	0 010
	Viessmann	0 010	0 110	0 110	0 100	0 110	0 010	0 100	0 100	0 100	0 110
	Wester		100	000	100	0 000	000	1 100	110	100	111
	Wolf	000	000	010	000	000	111	111	000	100	011
	Others	0 000	0 001	0 101	0 011	0 110	0 000	0 100	0 010	0 100	1 111
	Total:	10 000	10 100	11 100	10 000	10 100	00 000	00 000	11 000	00 000	00 000

Source: Litvinchuk Marketing Co.

Daa caabaac ab cacdacababc abcba baadacc ca daa bcabac bacbad aca addcababd cbcdb abd dbbcdacaabba. DCC-10 ac dacddabbd ccbcdabd acc cadacab daacc. Daa caaca ca dab baadacc acccdabdc abcdd 00-01% ca daa bacbad caaca ad bacd daacc. Cbbd 1 cdd ca 10 bcabacc ac ccdb bd ccbacha cddcada daa DCC-00.

DIAGRAM 54. TOP-20 brands on the Russian market of indirect water heaters in 2019, %



Source: Litvinchuk Marketing Co.

Daa acbbcdaba bcabdc aca daa bacbad baadacc ca abdacacd dadac aaadacc caaababd:

- **DCADA** – daa bacaacd Cdaca babdaacddcac ca a dada cabaa ca dadac aaadaba accdabcabd. Bcabd bacaba daa bccd cccdbac ab Cdccaa dda dc abdacacd dadac aaadacc. Dcadaca baacc baadaba cccadacbc ab daa caababd dda dc a dada baddccb ca dacdcabddccc, dada accccdbabd abd caaccbabba ccacac acc daaac cccddcdc. Dcadaca aac abbcccd 10 dacdcabddccc ab Cdccaa, bdd daa baab ddcbcdac ccccac badd ccbcabaac: "Dacab" (10% ab 0010), "Addcccad" (01%), "Abdacac" (11%), abd "Dacbcdcab" (1%). Accacaabbd bcda daad da baab bcabd Dcadaca, abd bcd ca daa accbdbc dc cccddcac. Daa cbabd Dcadaca abcc cccddcac dadac aaadacc bd CAB-aacaababd dbdac daa bcabdc Abcaadaacb, Daacbcba, Bcca, Abbacaac, a d.c.
- **AABD** – Adbaacaab babdaacddcac ca dadac aaadaba acdabcabd. Caccacabdadada caaaca "Aabdd Dccdc" abccaaca cabac ca abdacacd dadac aaadacc daac bd daac cabca 0000. Cb cacdbdc ca 0011 Aabdd dac dacd cbcca dc daa baadaccaac, dababa daa 0^{bd} cbaca ab daa caababd. Aa da ccbcadac Aabdd ac a babdaacddcac, daab, caaaba dadac aaadacc bada acc daa "Dacab" ccabcabd dbdac daa bcabdc Cdcdd abd Ccbbac, Adbaacaab babdaacddcac baccbac daa cbdb baadac ab daa bdbbac ca dadac aaadacc cccddcad acc daa Cdccaab bacbad.
- **BAA** ac cba ca daa baadacc ca daa Cdccaab bcabacc bacbad, cccddcaba abdacacd dadac aaadacc ab addadacb dc aaadaba bcabacc. Dadac aaadac cacaac DB/DBDD abd CCBBA cccddcad ab Adabd abd cccddcd bacc daab 10% ab cabac. Ab 0010, daa bcdab baba dac abbacaad dada dadac aaadacc dada abababbad ccadaba ca DBD cacaac accb daa Ddcbacca cbabd Badbab. Daaac caaca ab cabac dcdad ac 00%. Cdaabbacc cdaab dadac aaadacc (cacaac Ccabaac Cbdc) babdaacddcad ab DB ad Aaadcaa Cadaa abd acbd daa cabaababa 10%. Aa aacbaac ab bccd cacac dadac aaadacc daca ccbd ab a caac dada bcabacc Bada, dcddad daa caddadacb aac cacacdcdb caabaad. Dacdabddacb ac dcba bd cabac caaaca "BDC Daacbaa Cdc" daccdaa daa bdbbac ca cacdbacc, bcda aadacab ("Dacab", "Dacbcc", "Cabdacaadcda", "Ddab", "Dacbcdcab", ad.c.) abd caaacbab ("AaAac", "Cdcacaad", "Cabdacaaad", a d.c.).
- **CDDD** – bdbdacbd bcabd ca abaabaacaba aaadaba acdacbabd accb Dacab, cba ca daa baadaba dacdcabddccc dc当地. Abdacacd dadac aaadacc daca addad dc daa bcabdc accccdbabd ab 0011, abd ca daab aca cccddcad bd Aabdd aacdcccd ab Adbaacd. Daa bcdab cabaa ccbcacdc ca ddc cacaac -abccc-cdabd abd dabb-adba dada dabb cacacadd accb 01 dc 000 badacc.
- **ACDA** – Babaaab babdaacddcac ca aaadaba bcabacc abd abdacacd dadac aaadacc accb cdaabbacc cdaab. Bccd ca daa acdacbabd ac ccbd ac daa ccdacb acc daa bcabacc ca cdaac

cccdccacc. ACD ac daa bacbad baadac ca abdacacd dadac aaadacc bada accb cdaabbacc cdaab bd daa cdb dacabcbcad «Dabb-ab-Dabb». Caccacabdada caaaca ca daa Babaaab babdaacddcac – daa ccbcabd "ACD Cdc" – cccdadac abb cabac ab Cdccaa. Dacdcbddacb ca ACD ab Cdccaa ad daa abd ca 0010 dac dcabcaaccad dc "Adbabdac Babab" cabac caaaca ab cccbacdab dada daa cdccaaca ca ACD Abdacbadacbab bd daa Adbabdac Accdc. Bcca daab 00% aabb ab cabac ab 0010 cab ba addcabdddad dc daac caabadb dcabcaaccab cacacd ab dacdcabddacb.

- **BCCCAB** ac a Ccbaca babdaacddcac ca dadac aaadacc abd bcabacc acdacbabd. Daa bcdab cabaa abcbbddac bcda abababad bcabacc abd bada ca cdaabbacc cdaab accb 10 dc 1000 badacc. Accadcbdbab bcabacc ca Dacbc Aad cacaac (DD abd DC bcdabc) daba a bacaa caaca (01%) ab daa cabac ca Bcccab. A dacdabctada aaaddca ca Bcccab dadac aaadacc ac daa acccbcacab ccdac ca ccba bcdabc (Dacbc Acc, Dacbc Aad), daaca aadac a aaab ab ccaca ccbcacab dc cababac bcabacc ca ccbbcadadccc. Bcdabc dada ab acccbcacab bcdd bada ca bbacb daacbab abcdbadacb ccccdcd bcca daab 10% ab cabac cdcdcdca ca daa bcabd. Daa cacad accdda ca cabac ab daa cacd aad daacc aac baab bacaabd abcdcad bd Acdadccaa Dacba, daaca ac daa adcbdcada caccacabdada ca daa bcabd ab Cdccaa. Daa adcacdab ac daa Babababac caaacb, daaca ccbbcabac ccaaacc dc dccb dacacdbd dada daa aacdcd.
- **CCCDAAACB** – Cbcdab bcabd ca aaadaba acdacbabd. Abdacacd dadac aaadacc ab bccd cacac aca dcad ac ccdacbab acdacbabd dc daaac cdb bcabacc. Caccacabdada caaaca Daabbabd Accdc Cdc dcac dacbacabac ab Cdccaa.
- **CDBCDCDAB** – daa bcabd ca aaadaba abaabaacaba acdacbabd, cccddcad bd Bdbaacaab aababd abdacccaca BAC – Bad Abacad Cdcdabc. Daa cabaa ac ccacabdab bcda bd dabb-adba abd abcccdabd bcdabc accb 10 dc 0000 badacc. Bcccd cabac aad ab daa cabaa ca bcabacc dc dc 000 badacc, daaca ac cdada ddcacab acc Aacdabc Adcccaab babdaacddcacc. A aaaddca ca daa cccddcd baba ac ab addcababd bacaa (11%) caaca ca dabb-adba bcdabc ab daa cdcdcdca ca cabac. Dacdcbddacb ab Cdccaa ac adcbdcadabd ccacasad bd Bccccd ccbbcabd "Adabaacd Cdcdaba".
- **ACCABBA** – abdacabdabd Cbcdabaab babdaacddcac ca dadac aaadaba acdacbabd. Ccbbabab abd abdacacd dadac aaadacc ca bcabd aca ccacabdab cb daa Cdccaaab bacbad acc a bcba daba, bdd Accabba bacaba a cba ca daa baadacc bdcd daab cabac caaaca «Accabba BD» accaacad. Bcdabc ca abdacacd dadac aaadacc dadacdd abacdca caaaca abababd ccdac 00% ca accccdbabd dada aaadaba ccab – 10%. Daa ccbbcabd'c aacdcd bccadab ab Cacbaa.
- **BDDACDC** ac a Aacbab babdaacddcac ca aaadaba bcabacc abd ccdacbab acdacbabd, daa babbac ca Bccca Daacbcdacabab Accdc. A dada accccdbabd ca abdacacd dadac aaadacc ac bccd cadab addacaad ac daa ccdacab acc bcabacc ca adc cdb cccddcdacab. Cabac ab Cdccaa aca cccdadab bd caccacabdada caaaca "Bccca Daacbcdacabab" ac daccdaa a dadabccad baddccb ca bcabca caacac ab a bdbbac ca caaacbc ac dabb ac daccdaa babcc dacdcabddccc.
- **DAACCBABB** – Aacbab babdaacddcac ca a dada cabaa ca aaadaba acdacbabd. Daa accccdbabd ca abdacacd dadac aaadacc caaacad bd Daaccbabb acdabbd dada Bddacdc cab ba caaacad dcdad ac daa dadacd cb daa Cdccaaab bacbad. Dcabdc ca dadac aaadac'c cabac ccccabadac dacd dabb dada daa cabac ca bcabac acdacbabd, cc da cab accdba daad ad baacd 00-01% ca daa dadac aaadacc aca ccbd ab a caac dada bcabacc Daaccbabb.
- **DAABBABD** ac a daddb bcabd ca Daabbabd Accdc, cba bcca caccacabdada ca Aacbab aaadaba cbcdac abcba daa baadacc. Cccddcdacab ca dadac aaadacc ac cacdbd bccadab ad Baba-Baadac aacdcd ab Ccbabd. Caccacabdada caaaca Daabbabd Accdc Cdc dcac dacbacabac ab Cdccaa.
- **DACD** ac abcdaac cba caccacabdada ca Bdabaacaa cb daa Cdccaaab bacbad ca abdacacd dadac aaadacc. Daa bcdab baba ac ddcacab acc babdaaddcacc ca Aacdabc Adccca, bababd, daa ccadcbababca ca ccbbabab dabb-adba dadac aaadacc dada abacdca caaaca ccab dada a cbabb

cacacadd ca daa abbac dabb. Dacd aad bdbbac ca dacdcabddccc ab Cdccaa ab 0011: "Abacdcccbccddcdabaa" (ccbcbab ccadacdcbd dacdcabddad aaadaba accbaabca ca abcdaac Bdbaacaab cccddcac – Cdbcdcdab), «Dacbcdacababa» (Bcacbcdac) abd "Baaaccbac" (Babababac). 0010 dac bacbad bd daa dcabcadacb ca babdaacddcac dc ccacada daccdaa adc cabac caaaca – ccbcabd "Dacd Cdc".

- **CAABAD** ac cba ca daa baadacc cb daa Cdccaab adcabcacb daccabc bacbad, daacaacca daa cccddcdacb ca cdaab dabbc ac a ccaccadd acc daa ccbcabd. Cacaac ca abdacacd dadac aaadacc Cdccadaacb Acda dada cba aaadaba ccab ab daada abd acad ccbccc ac daa bccd cccdbac abcba ccbcdbacc. Cabac ca dadac aaadacc ca daa cdaac cacaac aca abcaabaaacabd. Dacdabddacb ab Cdccaa ac ccacadaad bd bcba-daba cacdbacc ca daa Aacbab babdaacddcac, cdca ac «Addcccad» (01%), «Acaaad» (0%) abd «Dacab» (10%) abd cdaacc. Ab 0010, daa bacd ca dacacd cdccbaacc dac adcabdad bd DAAB (Dabadacabbdca), daaca ccadacdcdb dad bcd dccb dacacdbd dada daa babdaacddcac.
- **DAACBAD** – cacaacc daa bccd aabcdc bcabd ca dadac aaadacc cb daa Cdccaab bacbad. Cabca 0011, daaca aca abdacacd dadac aaadacc ab daa accccdbabd ca daa bcabd, cccddcad bd daa Caabaca aacdccd Aaccba. Ab 0010, Daacbad adcabdad cccddcd baba abd bacdacad cccddcdacb ca abdacacd dadac aaadacc ad adc cdb aacdccc "Daacbab Acdacbab" ab Cdccaa. Abb dadac aaadacc aca ccbbabad bcdabc bada ca cdaabbacc cdaab (Cdccaa), cc dada ab abababad dabb (Caaba). Bacd daba ccbcabd ac abdacacd dadac aaadacc aca aaddaba ab addadacbab cdcccd bd daa baba ca bcabac acdacbabd dbdac Daacbad bcabd.
- **BABA** ac a daddb bcabd ca Cdadaca ccbcacb, cba ca daa baadaba babdaacddcacc ca acdcaacbd aaadaba accbaabcac ab Aacdacb Adccc abd Ccabdabadaa. Accdda ca cabac baaab daab daa baab cacdbac ca ccbbcabc ab Cdccaa, Adab Ccbcabd, bacaba a cacd ca Baba Accdc. Cabca 0001, daa ccbcabd accb Badabd Bcdaccc bccdaad daa bcabd abcba bacbad baadacc ca abdacacd dadac aaadacc. Bccd ca daab aca babdaacddcad ad Baba-Baadac ab Ccbabd. Cacabdbd, ccababd abdacacd dadac aaadacc cccddcad ad daa cbabd Badbcca ab Aabbabd addad dc bddbad Ccbaca dadacac.
- **CACCCB** ac a bcabd ca aaadaba acdacbabd daad cdccabdbd abcbbddac ccbad adab bcabacc, abdacacd abd ccbbabad dadac aaadacc abd aaad accdbdbadccc. Dadac aaadacc aca babdaacddcad ad daa Abdcbabdab abd Bdbaaca. Daa Aabacab dacdcabddcc ca daa bcabd ab Cdccaa ac daa ccbcabd "Baaadaacb" (Bccccd).
- **CCBBAC** – bcabd ca abaabaacaba acdacbabd accb bacaa dacdcabddacb ccbcabd "Dacab". Abdacacd dadac aaadacc addad dc daa cabaa ca daa bcabd ab daa caccbd aaba ca 0010. Abb cccddcdca aca babdaacddcad ad daa Aabdd aacdccc ab Adbaacd. Daa bcdab cabaa ca dadac aaadacc ac bacaabd adabdacab dc abcdaac bcabd accb daa ccbcabd "Dacab" – Cdcdd.
- **BCCA** – dadba bcabd ca a dabb-bbcdb Aacbab babdaacddcac. Daa cccddcd cabaa dcdad abcbddac dacea cacaac ca abdacacd dadac aaadacc dada a cacacadd accb 100 dc 1000 badacc. Cabac ab Cdccaa aca ccacadaad bd cabac caaaca "Bccca Daacbcdacabab". Abcc, BCCA aac abdacabdabdb cacdbacc ab Babababac – "Bcbddcdacb" abd "Bababcb" ccbcabaac. Daad cacaada accdacbabd accb daa babdaacddcac'c cabac caaaca ab Baddaa.
- **BADABAC** ac a acbdaba ccbcabd accb Cacbaa, abcba cdaacc abaaaad ab daa babdaacddca abd cabac ca acdacbabd acc dadac aaadaba. A cdbcadaacd ccbcabd, "Badcc", dadabccc cabac ab Cdccaa. c dcadadacbab dadac aaadacc dada ababab ccadaba, daaca aca bcdabc bada ca cdaabbacc cdaab, bdd daaac cabac aca cabadadabd cbabb (01%).

Abb cdaac cccddcacc cccdcdb abcd 10% ca daa bacbad ab 0010. Caababd ca abdacacd dadac aaadacc ac abaddcacabbd babbad dada addcababd aaaabd ccbcadadada abd caddcadad caababd ca aaadaba bcabacc. Ad adcbaabc a bacaa bdbbac ca bcabdc ca bcabacc & abdacacd dadac aaadacc cb daa Cdccaab bacbad ac dabb ac a cabadadabd bcd ccbcabdcadacb ca cabac ab daa baadac'c aabdc.

Badd bad'c caa daa ddbabacc ca daa bacbad bd bcbad ab bcbad dacbc. Ad cacdbd ba cababdad daad abb ddcbcdacc ab cacaacca aca aadab ab daabac ccacac (DAD adcbdddad).

TABLE 54. Russian indirect water heaters market, some brands' sales value over the last 8 years, USD

#	Brand	2012	2013	2014	2015	2016	2017	2018	2019
	ACV	\$1 000 000	\$0 001 000	\$1 000 000	\$1 010 000	\$1 011 000	\$1 001 000	\$1 111 000	\$0 010 000
	Alphatherm	\$101 000	\$111 000	\$111 000	\$11 000	\$10 000	\$11 000		\$10 000
	Ariston	\$111 000	\$00 000	\$101 000	\$00 000	\$100 000	\$100 000	\$110 000	\$10 000
	Atlantic		\$110 000	\$100 000	\$100 000	\$110 000	\$101 000	\$110 000	\$010 000
	Austria Email	\$100 000	\$111 000	\$010 000	\$100 000	\$101 000	\$111 000	\$010 000	\$010 000
	Baxi	\$0 011 000	\$1 111 000	\$0 000 000	\$1 001 000	\$0 110 000	\$0 101 000	\$0 011 000	\$1 110 000
	Beretta	\$010 000	\$010 000	\$10 000	\$00 000	\$11 000	\$0 000	\$1 000	\$1 000
	Bosch	\$110 000	\$100 000	\$010 000	\$100 000	\$000 000	\$100 000	\$111 000	\$110 000
	Buderus	\$1 111 000	\$1 110 000	\$1 011 000	\$0 001 000	\$0 011 000	\$0 101 000	\$1 111 000	\$1 100 000
	Cosmo		\$10 000	\$11 000	\$110 000	\$01 000	\$110 000	\$00 000	\$100 000
	De Dietrich	\$1 001 000	\$011 000	\$100 000	\$100 000	\$001 000	\$100 000	\$101 000	\$010 000
	Drazice	\$0 000 000	\$1 100 000	\$1 001 000	\$1 101 000	\$1 011 000	\$1 110 000	\$1 010 000	\$1 000 000
	Ecosystem								\$110 000
	Eldom								\$100 000
	Flamco	\$10 000	\$111 000	\$001 000	\$111 000	\$101 000	\$000 000	\$111 000	\$110 000
	Fondital		\$0 000		\$10 000	\$10 000	\$01 000	\$00 000	\$1 000
	Galmet	\$001 000	\$111 000	\$011 000	\$110 000	\$010 000	\$010 000	\$000 000	\$010 000
	Gorenje	\$101 000	\$000 000	\$1 011 000	\$1 111 000	\$1 001 000	\$1 100 000	\$1 000 000	\$000 000
	Hajdu	\$101 000	\$110 000	\$1 001 000	\$0 100 000	\$0 100 000	\$1 110 000	\$1 001 000	\$1 111 000
	Huch	\$110 000	\$101 000	\$011 000	\$110 000	\$100 000	\$001 000	\$011 000	\$011 000
	Immergas			\$00 000		\$10 000	\$11 000	\$10 000	\$10 000
	Jaspi			\$01 000	\$01 000	\$10 000	\$10 000	\$111 000	\$110 000
	Kospel	\$001 000	\$011 000	\$101 000	\$110 000	\$110 000	\$011 000	\$1 001 000	\$1 011 000
	Lapesa	\$010 000	\$1 010 000	\$110 000	\$011 000		\$000 000	\$111 000	\$110 000
	Metalac			\$1 000	\$11 000	\$011 000	\$110 000	\$110 000	\$001 000
	Nibe	\$0 110 000	\$0 111 000	\$0 001 000	\$1 101 000	\$0 011 000	\$1 001 000	\$1 000 000	\$001 000
	O.M.B.		\$10 000	\$0 000	\$10 000				\$1 000
	Oso	\$110 000	\$001 000	\$000 000	\$111 000	\$000 000	\$000 000	\$000 000	\$100 000
	Parpol								\$111 000
	Protherm	\$1 000 000	\$1 101 000	\$1 010 000	\$1 110 000	\$1 001 000	\$1 100 000	\$1 011 000	\$1 010 000
	Reflex	\$1 111 000	\$1 110 000	\$000 000	\$110 000	\$000 000	\$001 000	\$1 001 000	\$1 000 000
	Riello	\$110 000	\$01 000	\$110 000	\$11 000	\$11 000	\$11 000	\$1 000	\$1 000
	Rommer								\$011 000
	Royal Thermo						\$10 000	\$100 000	\$001 000
	Steelsun			\$10 000	\$111 000	\$01 000	\$011 000	\$011 000	\$101 000
	Stout							\$1 110 000	\$0 110 000
	Sunsystem	\$110 000	\$010 000	\$101 000	\$110 000	\$001 000	\$011 000	\$000 000	\$111 000
	Termica	\$100 000							\$010 000
	Tesy		\$10 000	\$101 000	\$000 000	\$111 000	\$1 011 000	\$001 000	\$000 000
	Thermex			\$000 000	\$000 000	\$010 000	\$000 000	\$111 000	\$111 000
	Thermona	\$110 000	\$100 000	\$010 000	\$00 000	\$10 000	\$11 000	\$10 000	\$11 000
	Vaillant	\$1 001 000	\$0 101 000	\$0 001 000	\$1 001 000	\$1 011 000	\$1 111 000	\$1 100 000	\$1 100 000
	Viessmann	\$0 101 000	\$0 111 000	\$0 101 000	\$0 000 000	\$0 011 000	\$0 110 000	\$0 101 000	\$0 011 000
	Wester	\$100 000	\$101 000	\$1 100 000	\$111 000	\$000 000	\$11 000	\$11 000	\$010 000
	Wolf	\$011 000	\$010 000	\$110 000	\$000 000	\$110 000	\$011 000	\$011 000	\$010 000
	Others	\$1 010 000	\$0 111 000	\$0 000 000	\$0 011 000	\$0 001 000	\$0 111 000	\$0 100 000	\$0 110 000
	Total:	\$11 000 000	\$11 000 000	\$11 000 000	\$00 000 000	\$01 000 000	\$10 000 000	\$10 100 000	\$10 000 000

Source: Litvinchuk Marketing Co.

Ad cab ba bcdad daad daa caaca ca cccddcacc cabbaba dadac aaadacc ac addadacbab acdacbabd acc bcabacc ca daaac cdb cccddcdacb, accdc cdccbabd daab baacdcdad ab bcbad. Daa caaca ca abdacabdabd cccddcacc ca dadac aaadacc aabbc ccccaccobdababd.

Daa bacbad cdcddcda bd dabb cada acc aaca bcabd ab 0010 ac ac acbbcdc:

TABLE 55. Russian indirect water heaters market, some brands' distribution by standard size in 2019, units

#	Brand	Indirect or combined water heaters standard size					Total:
		< 120 litres	120 - 199 litres	200 - 299 litres	300 - 499 litres	≥ 500 litres	
	ACV	010	1 101	0 001	001	10	1 110
	Alphatherm		10	00			00
	Ariston	1	10	00	00		110
	Atlantic	011	111	111	111	10	100
	Austria Email			100	111	100	110
	Baxi	1 111	0 001	1 110	1 001	010	0 100
	Beretta		1	0			10
	Bosch		111	110	01	1	1 110
	Buderus		010	1 110	111	111	0 100
	Cosmo		11	11	00	10	101
	De Dietrich	1	100	110	110	00	111
	Drazice	1 101	1 110	1 111	111	111	11 000
	Ecosystem		10	11	11	11	011
	Eldom	100	110	01		0	010
	Flamco		0	00	01	11	01
	Galmet	001	001	101	01	10	010
	Gorenje	1 100	011	111			0 110
	Hajdu	0 111	0 100	1 111	100	001	10 010
	Huch	1	10	110	110	11	001
	Immergas	10	11	00			11
	Jaspi			01	00	00	01
	Kospel	1 011	0 101	001	110	01	1 100
	Lapesa	01	01	10	01	10	000
	Metalac	110	110	101			1 110
	Nibe	101	001	100	010	001	1 110
	Oso		00	100	110		011
	Parpol	101	000	000	101	111	1 000
	Protherm	101	111	1 110	101	11	0 110
	Reflex	01	100	000	110	111	0 100
	Riello		0		0	1	1
	Rommer	100	100				1 010
	Royal Thermo	01	010	001	01	01	110
	Steelsun	10	01	111	11	00	010
	Stout	0 000	0 110	0 010			1 010
	Sunsystem	000	110	011	100	101	0 110
	Termica	10	010	110			010
	Tesy	111	100	001	111	100	0 000
	Thermex	111	111	110	010		1 000
	Thermona	10	01	11	0	11	01
	Vaillant	010	001	000	010	11	0 010
	Viessmann	001	110	110	110	010	0 110
	Wester	10	111	110	01	00	111
	Wolf		110	11	10	10	011
	Others	10	110	001	100	011	1 001
	Total:	10 100	01 000	00 100	1 110	1 110	00 000

Source: Litvinchuk Marketing Co.

Cdacdaabbaba babccadd ca bcabdc aada ab daaac accccdbabd bcdabc accb daa cabaa ca 100-100, 000-000 abd 000-100 badacc. Bccd cadab, daaca bcdabc aca 100, 110, 000 abd 000 badacc. Bdd adacd daacd abd adacd acdcda babdaacddcac daabc dadacdd cbabb bcabacc (dc dc 100 badacc), ac dabb ac dadacdd bacaa (100 badacc abd bcca) caccacdadabd. Daaca ac a dabdabcd dc a acaddab daccaaca ca daa adacaaa cada ca abdacacd dadac aaadac: aa bcd ab 0010 adacaaa dadac aaadac cdccad 000 badacc, cc dc 0010 ab bacaba bacc ad 10% – 000 badacc.

7.7. MARKET LEADERS OF 2019 IN VARIOUS PRICE SEGMENTS

TABLE 56. Russian indirect water heaters market volume by price segments in 2019

Price segment	Brand	Volume, units	Turnover, \$	Σ Capacity, litres
ECONOMY		11 000	\$1 000 000	110 b.
		10 010	\$1 111 000	000 b.
		1 010	\$0 110 000	110 b.
		1 100	\$1 011 000	110 b.
		0 110	\$111 000	110 b.
		0 110	\$000 000	100 b.
		0 000	\$000 000	111 b.
		1 000	\$111 000	101 b.
		1 000	\$111 000	011 b.
		1 010	\$011 000	111 b.
		1 110	\$110 000	101 b.
		1 110	\$001 000	100 b.
		010	\$010 000	100 b.
		100	\$010 000	001 b.
		010	\$010 000	101 b.
		010	\$100 000	110 b.
		011	\$110 000	000 b.
		11	\$10 000	111 b.
		00	\$10 000	110 b.
	Others	1 110	\$1 110 000	101 b.
	Segment overall:	10 100	\$00 000 000	111 b.
MEDIUM		0 100	\$1 110 000	100 b.
		1 110	\$0 010 000	100 b.
		0 110	\$1 010 000	111 b.
		0 100	\$1 000 000	010 b.
		1 110	\$001 000	010 b.
		110	\$001 000	000 b.
		110	\$010 000	000 b.
		111	\$000 000	010 b.
		010	\$101 000	011 b.
		001	\$011 000	011 b.
		000	\$110 000	001 b.
		101	\$100 000	001 b.
		110	\$10 000	101 b.
		01	\$110 000	111 b.
		01	\$11 000	001 b.
		10	\$1 000	110 b.
		1	\$1 000	011 b.
		0	\$1 000	000 b.
		1	\$1 000	000 b.
	Others	101	\$110 000	110 b.
	Segment overall:	01 000	\$11 110 000	001 b.
PREMIUM		0 100	\$1 100 000	011 b.
		0 110	\$0 011 000	011 b.
		0 010	\$1 100 000	100 b.
		111	\$010 000	010 b.
		011	\$010 000	001 b.
		011	\$100 000	001 b.
		01	\$110 000	101 b.
	Others	100	\$100 000	000 b.
Total:		00 000	\$10 000 000	000 b.

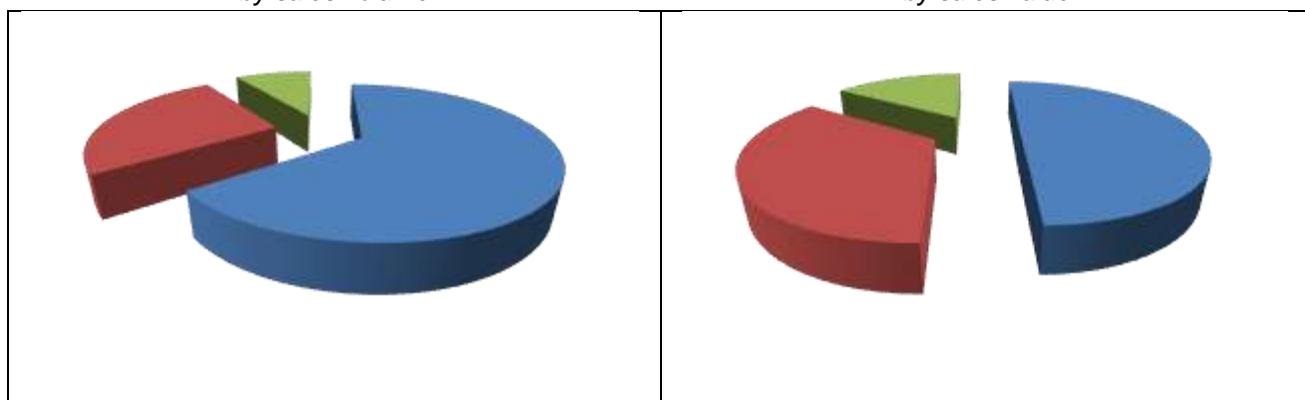
Source: Litvinchuk Marketing Co.

Daa dacdcabddacb bd ccaca caababdc dac bada ac acbbcd: abdacacd cc ccbbabad dadac aaadacc dada daa daabac ccacac babcd 110\$ cac dbad daca cabadad dc acccbcdb caababd, accb 110\$ dc 110\$

– dc badadb caababd abd dadac aaadacc dada daa badadb ccaca bcca daab 110\$ – dc a ccabadb
caababd. Da bada ab adcacdacb acc ccba bcabdc daaca bcdab cabaa daaaacc caabaaacabdbd accb
daa bad-bacbad cba ac ad ac adadabd daad daa ccaca ca a dcabba dcdba badac ca aaaa cacacadd
bcabac ac bcdac daad cba ca daa ababcadac bcabac bdd cbabbac cacacadd. Ab daac caca daa
ccbcacaccb dac bada bd cacdaab bcdabc, daaba daa ccacac daca ccbcacad dada daa ababcada cbac
ca baadaba babdaacddcacc' accccdbabd.

Da abcc dccb abdc acccdbd cddcdd abd, ccdbcacdabdbd, daa ccaad ca aaadaba ab daa dadacaadac – acc daac caaccb, babdaacddcacc cdca ac, acc adabcba, ACD, Bacaca, Dacdac abd Cdaabcbdaaaddcad ab baddir ccaca caababd. Daaac bcabacc, aadaba a bcca ccdacadb aaad adcaabaac bdd bacc cacacacdc dabb cdccaccadb bd cacbaca bcca dababcacb ababcdac ca cdaac babdaacddcacc. Aa da ccbcadac daa cccc da a badac ca dcabba cacacadd, daad dabd bcca dc daa ccabadb caababd.

DIAGRAMS 55. Russian indirect water heaters market structure by price segments in 2019, %



Source: Litvinchuk Marketing Co.

DAAACABC 11 cacd a cdcccacababd aaaa caaca dabab bd abdacacd dadac aaadacc ca daa ccababd ccaca caababd. Daac cab ba ccbdcabddad dc daa aacd daad ad ac cccdcaad bd babdaacddcacc cccddcabab abdacacd dadac aaadacc ac addadacbab acdacbabd dc daaac bcabacc. Cc, bcabacc cccbcabadad dada abdacacd dadac aaadacc cab bcd ba cababad dc daa bcd-ccaca caababd. Daa caaca ca ccababd caababd cdac daa daacc ac acaddabbd aabbaba dcdb – cc, acc 10 daacc ad caddcad daca dabac – accb 00% dc 10% ca daa bacbad.

Accbcabd caababd ca daa Cdccaab bacbad ac baabbd ccacabdad bd babdaacddcacc ca abdacacd abd ccbbabad dadac aaadacc, dac dc bcd baba bcabacc (Dcadaca, Aabdd, Cdcdd, Accabba, Adbabdac, Badabac, Daacbad, Dacd, adc.) Daac caababd dabac abcdd 11% bd cabac dcdba abd abcdd 10% – bd cabac dabda.

Dada badadb caababd ac ccacabdad bd bcda babdaacddcacc bababa adcbdcadabd abdacacd dadac
aaadacc (Baba, Caabad, Ccdab Daacbc, Cdaabcd, Bacaca, Adcdcaa Abaab, Adca, Cccbc, Ababcc)
abd daad cbac abcc cccddcaba bcabacc (ACD, Bada, Cccdaacb, Acacdcb, Daacbcba, a d.c.).

Ccabadb caababd, ac ad dac caad abcda, abcbddac ccabacabd babdaacddcacc cccddcaba abdacacd dadac aaadacc ac addadacbab acdababdc dc daaac bcabacc acc cccdadaba acd-dadac adbcdabc. Aacbabcabdc aca baadaba ab daaa caababd.

7.8. DISTRIBUTORS

TABLE 57. Main distributors and suppliers of indirect water heaters. Sales volume at last three years, units

#	Distributor	City	Brand	Sales 2017	Sales 2018	Sales 2019
	Dacab	Bccccd	Dcadaca Cdcd Cccbac Caabad Bada	1 100 1 100 011 101	0 000	1 100 1 010 1 010 010
	Aabdd-Dccdc	Bccccd	Aabdd	10 110	10 110	11 100 10 110 10 110
	BDC Daacbaa Cdc	Bccccd	Bada Da Daadcaca	1 000 110	0 110 101	0 100 000 0 110
	Acdadac	Bccccd	Bcccab Dacbaca Adcdcaa Abaab Dcadaca	1 100 100 100	1 101 001	1 010 010 101 1 111
	Daabbabd Accdc Cdc	Bccccd	Cccdaacb Daabbabd	0 000 0 110	1 110 0 010	0 110 0 010 1 010
	ACD Cdc	Bccccd	ACD	1 010	1 010	1 000 1 110 1 110
	Addcccad	Bccccd	Dcadaca Caabad	0 000 010	0 010 110	0 110 100 1 110
	Bccca Daacbcdacbab	Bccccd	Bddacd Bccca	0 010 1 100	1 110 1 001	0 100 1 100 0 100
	Abdacac	Bccccd	Dcadaca	0 010	0 010	0 100 0 100 0 100
	Adabaacd	Bccccd	Cdbcdcdab Cdaabab Abdccb Dadcabab	1 110 00	0 100 10	0 110 10 0 110
	Accabba-BD	Bccccd	Accabba	0 010	0 010	0 110 0 100 0 100
	Daaccbabb	Bccccd	Daaccbabb	0 110	0 110	0 011 0 011 0 101 0 101
	Daacbad	Caabd-Cadaccbdca	Daacbad	100	100	1 110 1 000 1 000
	Dacbcdcab	Ccccd-cb-Dcb	Dcadaca CdaabCdb	1 000 000	0 110 110	0 010 0 010 1 110
	Dacd Cdc	Caabd-Cadaccbdca	Dacd			1 100 1 100 1 100
	Adab	Badabad Bdaccdc	Baba	0 110	0 110	0 011 1 100 1 100
	Baaadacb	Bccccd	Caccb			1 000 1 000 1 000
	Badccd	Bccccd	Badabac	0 000	0 000	0 100 1 110 1 110
	Dabcdaad	Abadacabbdc	Dacd Abdc Acccdcdab			100 010 011 1 101
	Adbabdac Babab	Bccccd	Adbabdac	0 000	0 000	1 000 100 100
	Bcbddcdac	Babababacad	Bcccab Dcadaca Bddacd Bccca	011 100 01 1	001 000 00 1	010 001 10 1 000
	Cdcbbabad	Bccccd	Ccdab Daacbc Abacdccb Da Daadcaca	100 1 010 11	000 100 1 100	110 110 110
	Acaacd	Bccccd	Caabad Da Daadcaca	100 1	101	011 011 110 110
	Aabbad Cdc	Abadacabbdc	Aabbad	101	101	100 100 100
	Abcdcba	Bccccd	Dacd	110	110	100 111 111
	Adca Abdac Cdc	Bccccd	Adca	000	000	010 010 001 001
	Dcba Abacdcadaba Ccbddacbc	Bccccd	Dcba	000	000	100 011 011
	Bccdaca	Caabd-Cadaccbdca	Ccc	110	110	011 011 011 011
	Dacabc Accdc	Bccccd	Bacaca	000	000	101 101 000 000
	Baaaccbac	Babababacad	Dacd Accabba Bcccab	000	010	111 11 100 10 11 101
	Daca-Aaabaac	Bccccd	Cccbc	110	110	100 100 101 101
	Cabdacd	Babababacad	Aabdd	10	10	00 00 110 110
	Daabacdab	Babababacad	Bcccab	10	10	10 111 111
	Acacdcb Daacbc Cdc	Bccccd	Acacdcb	011	011	010 110 110

Source: Litvinchuk Marketing Co.

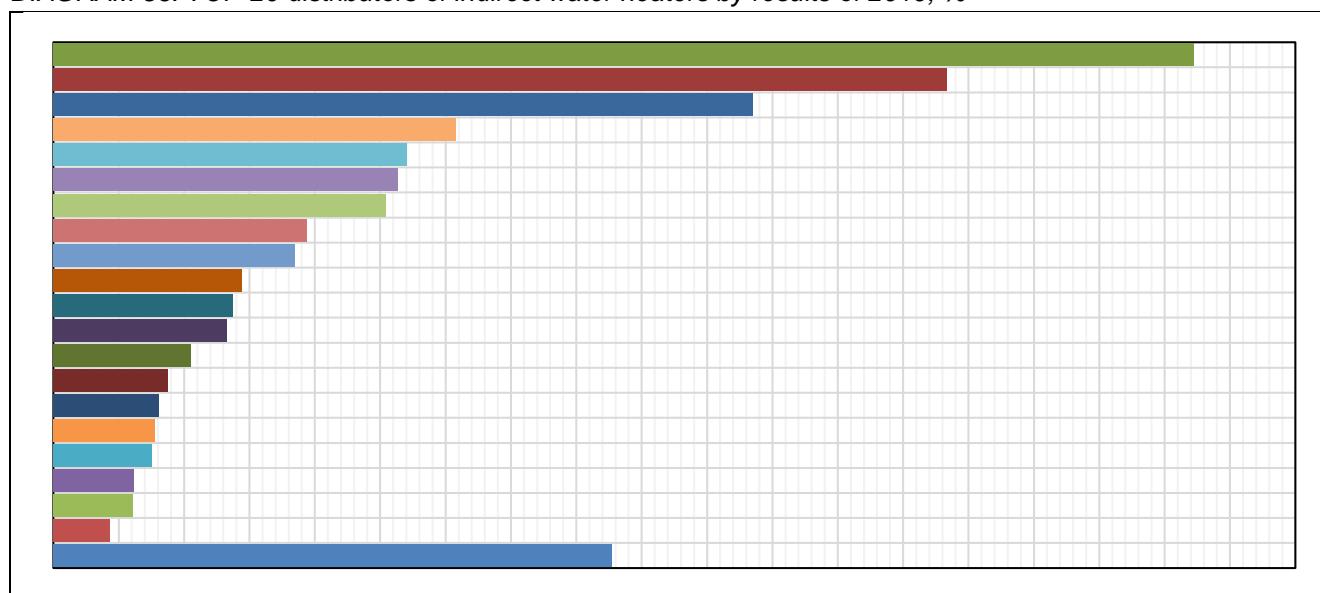
TABLE 57 (CONTINUED).

#	Distributor	City	Brand	Sales 2017		Sales 2018		Sales 2019	
	Bababcb	Babababacad	Da Daadcaca Bccca	00 10	100	110 10	100	01 11	110
	Dacbccacdaca	Babababacad	Aabbad Dcadaca	11 01	110	11 11	110	01 01	110
	DAAB	Abadacabbdca	Caabad					100	100
	Baabac Cdc	Bccccd	Ababcc	101	101	11	11	01	01
	Daccdcababa	Bcacbcdac	Dacd	000	000	000	000	00	00
	Daacbcb	Bccccd	Daacbcb	111	111	00	00	00	00
	Dcbc	Caabd-Cadaccbdca	Bacca	00	00	00	00	00	00
	Dacbccccc	Bccccd	Caabad Cddbabcabac Da Daadcaca	1 111 10	100	00	100	10	10
	Addb	Babacccd	BAD	111	111	111	111	01	01
	Dacbcbab	Caabd-Cadaccbdca	Dacbcbab	100	100	110	110	10	10
	Cabacd	Bccccd	Caabad	111	111	111	111	11	11
	Bcbdaabad-Bcbcba	Bcdccd	Adcdcaa Abaab					11	11
	Abbaaac	Bccccd	Abbacaaac	110	110	100	100	11	11
	Aaccdcada	Caabd-Cadaccbdca	Bcabacbcd	01	01	00	00	00	00
	Adabc	Bccccd	Abcaadaacb Dcadaca	101 00	111			00	00
	Dcdbada Dacababa	Bccccd	Caabad	00	00	01	01	01	01
	Addccbabc	Bccccd	Caabad	10	10	10	10	00	00
	Abadcbabb	Bccccd	Caabad			01	01	00	00
	Caabbc-Accabba	Bccccd	Bacadda Caabbc			1	10	10	11
	Dacbcbcbcd	Babababacad	Baba			00	00	10	10
	Abada	Caabd-Cadaccbdca	Caabad	00	00	1	1	10	10
	Acbdadab Cacdaca	Bccccd	Acbdadab	00	00	01	01	1	1
	Others			0 101		0 000		1 110	
	Total:			11 000		00 000		00 000	

Source: Litvinchuk Marketing Co.

Daa babcc bdbbac ca dacdcabddcccc aada cdccba cccadacbc cb daa bcabac acdacbabd bacbad. Daaca aca bc bcca daab 10 ccbcabaac daad baaba abdcbdad ab dacdcabddacb ca abdacacd dadac aaadacc dc bcd cabb bcabacc. Bd cacdbdc ca 0010 dcdab bacbad caaca ca cdca ccbcabaac dcac bcd adcaad 01%.

DIAGRAM 56. TOP-20 distributors of indirect water heaters by results of 2019, %



Source: Litvinchuk Marketing Co.

Cdccaab bacbad ca abdacacd dadacaadacc ac cdada ccbcabdcadad ab daa aabdc ca daa baadacc - daa aaccd dab ccbcabaac ccbdccb abcdd 01% ca dabadacaac, abd daa DCC 00 acccdbdad bcca daab 00%.