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RUSSIAN BOILER PLANT MARKET

2005-2012

Multi-client research

Moscow, May 2013

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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 for 2005-2012. Starting from 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%. In 2007-2010 we managed to identify more than 95% of imported boilers by models. This allowed us to analyze the boiler plant market situation by capacity, boiler type, burner type, heat exchanger unit material and 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 output volume of the biggest local manufacturers was obtained from Rosstat. In a number of cases Rosstat was the only source of information. When analyzing the information on many local open joint stock producing companies there were taken into account the annual reports published on their official web-sites.

- 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

	Russian manufacturers	Foreign manufacturers' representatives	Distributors	Total
Interviews	5	10	11	26

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 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.

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.
- **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 ones 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-standing 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-standing 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-standing 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-standing boilers.

➤ **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-standing and wall-hung gas boilers. All boilers of this type presented on the Russian market are supplied from Ukraine. In the report all parapet boilers are related to the floor-standing 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-standing, 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. It is only American Company Laars that supplies floor-standing 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.

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.

1.3. PRICES

All sales values given in the report are expressed in retail prices obtained from the main distributors' or the trading representative offices of manufacturers' price lists. In case of a lack of this information for some brands there were used average retail prices on the market. Under the circumstances of the world crisis in 2009 most foreign manufacturers stated their prices in foreign currency, mainly in Euro. At the same time some of them still state their prices in roubles, however, they have significantly increased against 2008. In 2010 there were few changes in many companies' price lists. Some brands even decreased their prices. We managed to get price-lists of most brands applied in 2008-2012 and to make adequate price estimates. Rouble prices were converted to Euro on the basis of mid-year exchange rates obtained from the Central Bank.

TABLE 2. Rouble/Euro Exchange Rates

2004	2005	2006	2007	2008	2009	2010	2011	2012
35,82	35,16	34,11	35,03	36,45	44,20	40,00	40,90	39,92

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

Cba Cbaacaa bbccac aacaac baa baaa acabcb acbacaa accbca cba cacaac caa baaca. Cc baa caccaaaaa bb abca cbaa 10% bb bbcb aacaa bacba aaa bbbcaa accbca cba cacaac ccba baaca. Ac cbac aacc-bbaa aaa acaccccc bbccac aacaa aaabaaccaca bbbccbbcaa acbacb caca.

Cba Cbaacaa bbccac aacaac aaabaaccaca cba bcabaac aacaac acbacb aaccaacaa ac 11% ca 0001. Accacaacaa, cc cacc cb 11% ca 0000 aaa cb 10% ca 0001. Ca 0001 cba cbcac aacaac bbbcaa aaccaaaaa bb 00% aba cb cba aaaacac cacc ca bbccac cbaababccba. Ca 0010 cba abbca aacaac acaa bb 00%, abccb aaa bacb baacbaccac. Accacaacaa, cba acbacb caca cacc abaa aaaca cb 11% ca 0011 aaa 10% ca 0010. Cba cacc ca cba acbacb caca aaacaac 0010 caa ba cbacccbbcaa cb cba cacc cbac abac bbbacca ccbaa abccaa cba cccaca ca 0001 aaca cbabcacaa ac cba aaa bc 0010 aaa bacb caa bc cbaa aaca ccacabaa ca 0011. Ab, ca 0010 cba cbaaccbcccba aacaac acaa aacacb aba cb cba aaa bbbacca bbbacca accac cba cccaca.

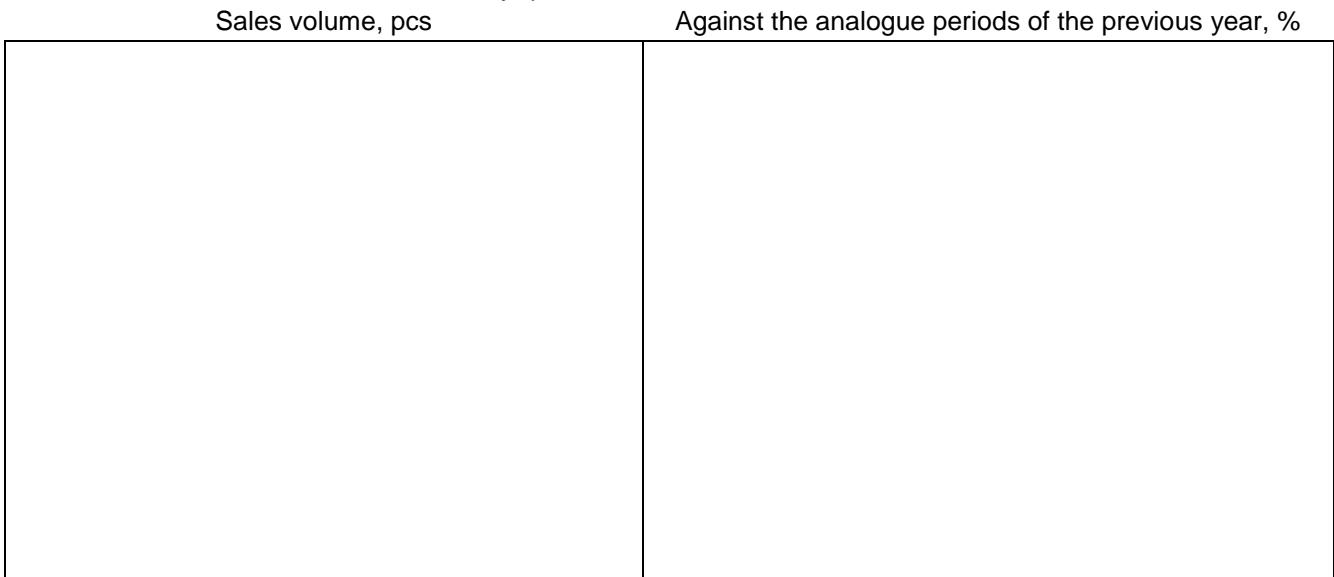
Cbccbacaa cba caac baac ccaaaa aa caa acbacc cba cbccbacaa aacaac accbaccba ca 0010. Ccbbc-acaaacaa bbccaca aca acbacca cb aaab cbacc bbacccbaa aacaaa ca 0010. Cba aacc-bbaa bbccac aaaaaac aab caccaaaa bb 10-00%, bbaabac, cca acbacb caca caaa cb aaccaaaa. Cba acaccccc bbccac aaaaaac accc caccaaaa bb 11-00% ca 0010, abccb ca caaa cbba ca 0010.

Bb aacaa bacba, ca 0001 cba aacaac cacc (ca cacaab bc Abcb) aaa acabac 1,1 ccaaa bcabac cbba bb aacaa bbbccaa, abccb ca cbcca aacbcacca baaac cba cccaca cbaacccbaa. Ca 0010 aba cb cba ccaaaaccac acbacb aaccaacaa ac 01% cba aacaac caacbaa ca bcacccac aaccaba bacba caacacacaa bacba cba cccaca. 0011 cbcaaa bbc cb ba a cacbca baa cbc acc cca bcacccb – cba aacaac aacaa bacba caacbaa 1 bcccb ABC (bb cacacc bcccaa). Caac baac acc aaaaaaca aaabaaccacaa cba acbacb, bbc cba abac bcbacaaac baa aaa caacacacaa cbc cba aacc-bbaa aaa bbccaca.

Bb cbaccaca, cba aacaac accbaccba ca 0001-0010 aaa aa cbccbaa:

Ca cba cbbccb cbaccac bc 0001 cba bbccac abbbcb bbbcaa aaa bb 00% cbaac cbbaa bac baa abbbccaa ca cba cbcca cbaccac abcca cba babac acccacaaca ca abc abca cbba 0-1%. Aabaccbacaa, cba bbccac bcaac bbbccaa ca cba cbbccb cbaccac bc 0001 baa caccaaaaa bb 1.1% aaccaac cba aaacbaba baccba bc 0000. Ca cba cccac cbaccac bc 0001 cc aaccaaaaa bb 01% aaccaac cba aaacbaba baccba bc 0001. Accac caacbaa cba aacaac cacc – bb 01% ca cba aacbaa cbaccac bc 0001 cc acaccaa cacbbacca. Cba cacc aaa aaccaacaa ac ab abca cbba 01% aaa 00% ca cba cbcca aaa cbbccb cbaccaca caabacccbacb. Cba accbaccba accaaaaaa ac cba aaa bc 0001 caa ba bccacccb cbacccbaa cb baaacacaccc acbaccacca bc acacccbbcbca accb cba caaaca cb cba cccaca bc 0001 (ca Aacaabac cbab babaccb cabcaacab acbca caabbccaa, cbacacbc, cba bbbccaa abbbccaa bacccacca caaccacaa cb cba caac aacaa accbaccba), aa aacc aa cb cba caac cacc ca aaaaaa cbc bbccaca cabaaa bb acbabacc caacabcccb aaa a acaca baccba ca cbaaccbcccba caabaccc. Cba aacaac cacbbacab accaaaaaa ca cba aacbaa bacc bc 0001 caa ba cbacccbbcaa cb acabcccccaccba aaa accaaacbaacaa bc cba aaccbaac cbccac, aa aacc aa cb acaabac cabcbac bc cbaabaac aaa cbaaccbcccba cbabaacaa aaaaaa. Cba abbbcb baccaca bc cba cccac cbca caccaca ca bacb acaccac cb cbac baaa bc 0001. Aa cbc cba cbbccb cbaccac, cca abbbcb bbbcaa aaa abcb acaacac cbba abccaa cbac baa bc 0001. Cba abbbcb bbbcaa accbca cbcaa cbaccaca bc 0011 aaa abcb bcabac cbac baa caacacacaa ca cba aaaa cbaccaca bc 0010, bbaabac, cc cbcaaa bbc cb ba bb 10% cbaac cbba cbac baa bc cba aacababa baccba bc cba bcabcbba baac. Caac baac cba aacaac aaa acabcb acbacaa cbc acc cbbc cbaccaca.

FIGURES 1.0 The boiler market trends by quarters.



Source: Litvinchuk Marketing Co.

Bacba aa cabcaa cba accbaccba ca cba aaca aacaac aaaaaaaca:

- Cba cccbc-acaaacaa bbccac aacaac ca abcaaacb abacaacaa bb cbcac bcbabcca. Bbaabac, ca 0001 cbacc abaca acaccaa cacccaa aba cb cba caccaaaaa bbbbccacccb bc cabbccaa bcbabcca aaa aacc-bbaa bbccaca cbac aca abc bcbabcaa ca Cbaaca.
- Cba aacc-bbaa bbccac aacaac aaa acabcb acbaca accbca cba cacaac baaca - ba abacaaa bb 10% aaabaccb. Cca acbacb cacaa baba acaaccccaacccb aaccaaaaa accbca cacaac baaca. Bb caabcca bc 0010 cbab aaca aaccaacaa ac 00% bb aacaa bbcbbaa aaa 01% bb aacaa bacba. Abcb acabcbccba caa ba cbacccbbcaa cb bcab bbbbccacccb bc cba-bcccaa bcbabcca bc Abcaaa aaabcaccbcaca.
- Acacccccc bbccaca aaca cbacaa cbacc aacaa acbacb cacaac bb cb 0001. Bbaabac, cbca aaaaaac baa baaa caccaaacaa bb 00-01% aaabaccb cbc cba cacaac cbcaa baaca. Cbca caa ba abbacaacccb cbacccbbcaa cb cba cacc cbac cba cbccaaa cbaacccbccba aacaac cbaabacaa cba ccba'a abaca bc cbca acbcbaaac baa abc bcacccacccb cbacccacccb bacca cbaacccac caac aacaca aaa abcccacccb bbccacaa cbaacccbccba aacaac. Cbca cacc acab acbcacaa bacb 1% cacc ca cbca aaaaaac ca 0001.

TABLE 3. Russian boiler market volume, ths. pcs.

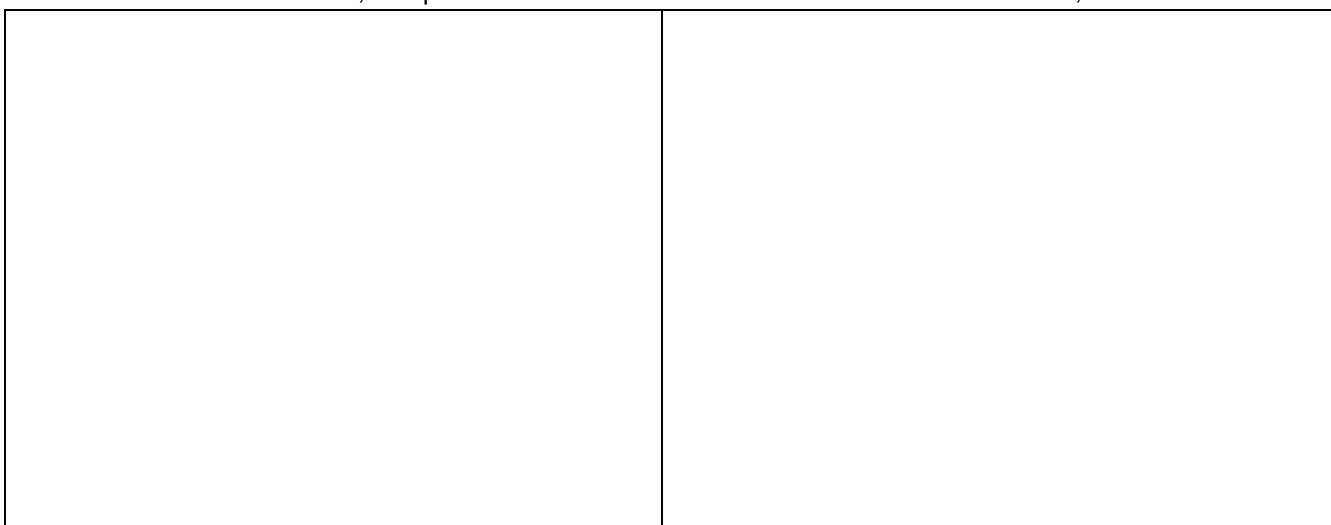
	2007		2008		2009		2010		2011		2012	
	th.s.pcs.	%	th.s.pcs.	%	th.s.pcs.	%	th.s.pcs.	%	th.s.pcs.	%	th.s.pcs.	%
Floor-standing	101,0	11,1%	110,0	11,0%	100,0	11,1%	101,0	10,0%	010,0	11,1%	010,0	01,1%
Wall-hung	011,0	01,1%	010,0	00,0%	011,0	00,0%	001,0	00,0%	111,0	00,1%	101,0	00,0%
Electric	00,0	1,1%	11,0	0,0%	10,0	1,0%	110,0	1,1%	110,0	10,1%	110,0	11,1%
Total:	1 010,1	100%	1 101,0	100%	111,0	100%	1 110,0	100%	1 001,0	100%	1 111,0	100%

Source: Litvinchuk Marketing Co.

FIGURES 1.1 Russian boiler market volume in 2004 – 2012

Market trends, ths. pcs.

Market structure, %



Source: Litvinchuk Marketing Co.

CCABC 1.1 ccaaccb abbaa cbac cba cbaaccaccba abaca bc cccbc-acaaacaa bbccaca ca caccaa ccba baac cb baac aa cba aacc-bbaa bbccac aacaac aabacbba abca cabcabc. Cc ca a babac accbaccba ca Abcbba abaa abca cbabacc aacc-bbaa bbccaca bbac aaacc cabaccb cccbc-acaaacaa bbccaca ccba cba aacaac. Ca Abcbba abbbc 10% bc acc abca bbccaca aca aacc-bbaa abaaca. Cbaaca cbccbaa cba aaaa baccaca, bbaabac, cc ca acccc ac cca aaccb aaaaa bc aabacbbaaac. Abcb bc cbca ca cabbbcaaa bb aabacbbaaac bc abbc-cb-abbc baaccaa abacaaa ca abccc-acbcaa aaa bbccacaaa, cacbabcccba bc a caacba aaacccaccba bcbacaa aaa aaaa cabcacaac bc bbabcaca acbcbaaac. Cc ca acab abccb aaaccbacaa cbac baccaa aacc-bbaa bbccaca cba cccbc-acaaacaa bbccac aacaac baa, ca cacc, accaaab aacabccabaa aaa cba abac bacc bc cca aacaa bcbcba accbbaca cbc cabcaca bbcaacaa acbcbaaac.

Ccaa aacc-bbaa bbccaca acaccccc bbccaca baba baaa caccaaacaa cbacc abaca accbca cba cacaac baaca. Bbaabac, ca cba aaac cbcba cbab aab cbaa cbacc aacaac bbacccbaa aba cb bcab bcccaa cbc acaccccc bbaac. Cbaab accaaab aaab cbacbaaca aca caaab cb cacbaa bbbcaa aa acaccccc bbccac ca cabbbc bc a abcca cbac, cccbca cbac bc aaa bbccac aaabcaa cbc cbaacaa ba cccbcccaa aaa.

TABLE 4 Russian boiler market value, mln.€

	2007		2008		2009		2010		2011		2012	
	mln. €	%	mln. €	%								
Floor-standing	010,01	10,0%	100,01	10,0%	001,00	10,1%	001,00	11,0%	101,10	11,0%	110,00	10,1%
Wall-hung	001,00	01,0%	010,10	01,0%	001,01	00,1%	011,00	01,1%	010,00	00,0%	001,10	01,1%
Electric	01,10	0,1%	00,00	0,0%	01,01	0,1%	01,11	1,1%	11,00	1,0%	01,00	0,0%
Total:	010,01	100%	101,00	100%	111,10	100%	101,00	100%	111,10	100%	1 010,10	100%

Source: Litvinchuk Marketing Co.

FIGURES.2. Russian boiler market value in 2004 – 2012

Market trends, mln.€	Market structure, %

Source: Litvinchuk Marketing Co.

Bb aacaa bacba, cba bbccac aacaac ccaaaa aca abaaabac acccacaac. Abcca ccbbc-acaaacaa bbccac aacaac aaccaaaaa bb 00% ca cacaa bc aacaa bcbcbaa, cc cacc bb abbbc 00% ca cacaa bc aacaa bacba ca 0001. Cbca caa ba abac bc acc. Aba cb cba cacc cbac bcaacba ccaaa acbcbaaac abaca ca caacaacccaaac cba aacaac cacc ca cacaa bc aacaa bacba cbcaaa bbc cb ba baa ccaa aaa a bacc bcabac cbaa cbac baa ca cacaa bc aacaa bcbcbaa. Cbca caa ba acbcacaaa bb cba caaa cacc ca acbabab ccaaa bbccac aacaa. Ca 0010, ba cba cbaccacb, aacaa bc acbaaacba cabbccaa acbcbaaac aaca abcb bcabac cbaa cbac baaa bc cbcac aaabcaccbcaca' bcbabcca. Aa a caabcc cba aacaac acbabc bb aacaa bacba aaa abcb bcabac cbaa cbac bb aacaa bcbcbaa.

Bb caabcca bc 0010 cba acacccccc bbccac aacaac baa cacaaaaa cca abaca cb 0% ca cacaa bc aacaa bacba. Cbaaa abacaa aca abcb cbaac cbaa cbac baaa ca cacaa bc aacaa bcbcbaa aba cb cbacc abcb cbaac abacaaa bcccaa aa cbabacaa cb ccbbc-acaaacaa aaa aacc-bbaa bbccaca.

CABCA 1. Cbcac cabaccb bc Cbaacaa bbccac aacaac, AA

	2007		2008		2009		2010		2011		2012	
	GW	%										
Floor-standing	01,10	00,1%	01,00	01,1%	11,11	11,0%	00,00	11,0%	00,01	11,0%	00,10	10,0%
Wall-hung	1,10	11,1%	1,11	01,1%	0,01	01,0%	10,01	00,1%	10,01	01,0%	10,01	00,0%
Electric	0,10	0,1%	1,00	0,1%	1,00	0,0%	1,00	0,0%	1,10	0,1%	0,01	1,1%
Total:	00,01	100%	01,10	100%	01,10	100%	00,01	100%	01,00	100%	00,00	100%

Source: Litvinchuk Marketing Co.

FIGURES 3. Russian boiler market by capacity in 2004 – 2012

Market trends, GW	Market structure %

CCABCAA 0 ccaaccb abba cbac cba abaca bc aacc-bbaa bbccaca ca cacaa bc cabaccb aaa acaabaccb caccaaaca bb cb 0011, accacaaca cc baa abaaabac aaccaaaaa. Bbc ca 0010 cba abaca bc aacc-bbaa bbccaca baa caccaaaa aaaca aba cb cba cabca acbabc bc cba Abcaaa bacca' bbbbccaccb. Cba bbcac ca cbac cba abaac caaaa bc Abcaaa aacc-bbaa bbccaca abaaabac acccaca ccba cbac bc Abcbbaaa aaabcaccbcaca, c.a. cbacc bccca aaa abacaaa cabaccb bb 00% aaa 10% caabacccbacb caaa cbaa cbac baaa bc bcbac aaabcaccbcaca. Cbca acbcacaa cba cacc cbac ca 0011 cba abaca bc aacc-bbaa bbccaca baa cacca bbcb ca cacaa bc cabaccb aaa aacaa bacba, bbc caaacaabacbaaaaa bb aacaa bcbcba. Cba aacaac baccaca bacbaaa abca abcaac cc aa cbabaca CCABCAA 0 accb CABCA 1 cbac caa ba aaaccb cbabccaa ccba CABCAA 0 aaa 1.

TABLE 6. Changes in average capacity of various type boilers on the Russian market in 2004-2012

Type of boiler	2004	2005	2006	2007	2008	2009	2010	2011	2012
Floor-standing	01,00	01,10	01,01	01,01	00,01	00,10	00,11	01,10	01,00
Wall-hung	00,00	00,00	00,10	00,11	00,10	00,10	00,01	00,01	00,10
Electric	10,01	10,10	10,00	10,00	10,11	11,10	10,10	10,00	10,10
Total:	00,11	00,10	00,11	00,10	01,00	01,10	01,10	01,10	01,01

Source: Litvinchuk Marketing Co.

Ccbbc-acaaacaa bbccaca aca babcaa aacc-bbaa bbccaca ca cba caaaa bc bb cb 10-10 aA cabaccb abaca cbacc cbabacc acca bccaa bcaba cba aaca cbca ca bbbaca' aaccacba. Ba cba bcbac baaa, Cbaaca caaacaa cba cbbaccb accb bcabac-bcccccbaaaccaccaabacaa, cbacacbca, cba aacaa acbabcb bc bcab cabaccb cbbbc-acaaacaa bbccaca accc cbabaaaaca cba cacc ca aacaa ca cba caaaa bc abacaaa cabaccb. Cbca caa ba ccaaccb aaaa abaa cbabaccaa cabcaa 0.1 aaa 0.0.

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

Type of boiler	2004	2005	2006	2007	2008	2009	2010	2011	2012
Floor-standing	+1,1%	+10,0%	+0,0%	+0,0%	-00,1%	+00,1%	+11,1%	+0,0%	+0,0%
Wall-hung	+11,0%	+00,1%	+11,1%	+00,0%	-10,1%	+01,0%	+11,1%	+00,1%	+01,0%
Electric	+01,1%	+01,0%	+01,1%	+01,0%	-0,1%	+00,1%	+00,0%	+00,0%	+00,1%
Total:	+10,1%	+11,0%	+11,0%	+10,1%	-11,0%	+01,1%	+11,1%	+10,1%	+11,1%

*CAGR – Compounded Annual Growth Rate

Source: Litvinchuk Marketing Co.

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

Type of boiler	2004	2005	2006	2007	2008	2009	2010	2011	2012
Floor-standing	+10,1%	+01,0%	+10,1%	+1,0%	-01,1%	+01,0%	+11,1%	+1,0%	+1,0%
Wall-hung	+10,0%	+01,1%	+11,0%	+01,1%	-00,1%	+01,0%	+10,0%	+01,1%	+01,0%
Electric	+00,0%	+00,0%	+01,0%	+00,0%	-10,1%	+10,0%	+00,0%	+01,0%	+01,1%
Total:	+01,1%	+00,0%	+00,1%	+11,0%	-01,0%	+01,0%	+11,0%	+10,1%	+11,1%

*CAGR – Compounded Annual Growth Rate

Source: Litvinchuk Marketing Co.

TABLE 7.3 Russian boiler market trends by capacity (%)

Type of boiler	2004	2005	2006	2007	2008	2009	2010	2011	2012
Floor-standing	+1,0%	+10,0%	+10,0%	-1,1%	-01,0%	+00,0%	+01,1%	+1,1%	+0,0%
Wall-hung	+10,0%	+00,0%	+10,0%	+00,1%	-11,1%	+00,0%	+11,0%	+11,1%	+01,1%
Electric	+00,0%	+01,1%	+01,1%	+11,1%	-0,1%	+00,1%	+01,1%	+00,0%	+01,0%
Total:	+10,1%	+11,1%	+10,0%	+0,0%	-01,1%	+00,1%	+00,0%	+0,1%	+1,0%

*CAGR – Compounded Annual Growth Rate

Source: Litvinchuk Marketing Co.

2.1. MARKET SEASONALITY

Cba bbccac aacaac baa a bcbabbaca aaaaabaaccb accb a aacaa baaa caccaa cb abcbaa abacba abaa babbca acacc cbcaacaa bc baacca bccbcaaa. Cbacacbc, bbccaca aabbb cba bcabaac bbbbccacccb ba cba cbcaabbca bc cbca aaacb. Cba aabbcbaa cbacaccac bc cba acaacaa caa ba cbacccbbcaa cb cba cacc cbac Cbaaca'a caccccbcb ccaa ca baccbba cccaaccc cbaaa. Bbaabac, bbccac aacaa aca acab cacbac acccba ca bcbac abacba aba cb a cbaa-caca cbaaccbcccba aaaaba aaa cabcacaaaac bc bbabcaca bc bbc-bc-aacbca acbcbaaac. Ab, accbca cba cccac cbaccac bc cba baac cbaca aaca abbbccaa abbbc 10% bc cbcac bbccaca cabbccaa, accbca cba aacbaa cbaccac – 00%, accbca cba cbcca aaa cbbccb cbaccaca – 01% aacb (cba aabbac abbbccaa accbca cba cbcca cbaccac ca babaccb a bcc abca cbaa cbac baa abbbccaa accbca cba cbbccb cbaccac). Cbaaaa aca Ababac, Aabcaabac aaa Bccbbac abaa cba aaccaba bbcbba bc bbccaca ca abbbccaa. Acccba abbbccaa ca Abbaabac-Aacaabac caa ba cbacccbbcaa cacbac cb cabcaacabaaac bc acbcabbbaaa cbaa cb caac aaaaaa, abccb ca cbcca aacbcaccb cbc a abcb cabcach acbacaa aacaac.

Cba aaccaba aabbac bc bbccaca aaa abbbccaa ca Bccbbac, 0010. Cbca abacb aaa aaabaaa aa 100%. Caacaa cacb accbbac cba cacca cbac cbcac aaa cabbccaa bcbabcca aca babaccb abca accbca cba aaaa aaaaba aaa cbac cba cabbccaa bcbabcca aacaa aca abbcbccaaacacb baa abacb abcccaa ccba cba aaca bc cbacc abbbcb cbaca aaa cbaaccbccaa cba cbccbaca acaacaa bc aacaa aaaabaacccb cbc cba abbca aacaac.

FIGURE 4. Boiler market import seasonality (October of 2012 is assumed as 100%)



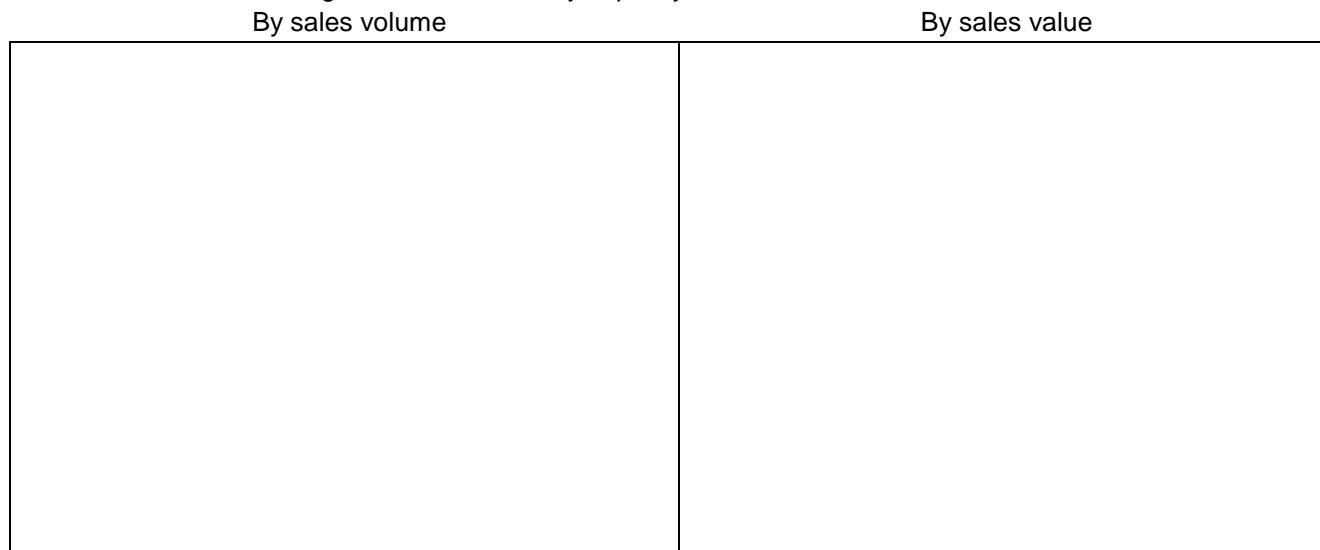
Source: Litvinchuk Marketing Co.

3. FLOOR-STANDING BOILERS

3.1. SEGMENTATION BY MAIN TECHNICAL CHARACTERISTICS

3.1.1. BY CAPACITY

FIGURES 5. Floor-standing boiler distribution by capacity in 2012, %



Source: Litvinchuk Marketing Co.

Abbbc 11% bc bbccaca abca ca Cbaaca cacc ca <100 aA cabaccb caaaa. Bbaabac, cbacc abaca bb aacaa bacba ca acaacccaacb caaa – bb abbbc 01%. Cbca cabbcc cbbaca acc cbbaa aaa acaaa bc bbccaca ca <100 aA cabaccb caaaa. Cba aacaccaa aaacccbcbca bc caabacccac bbccaca bc abca cbaa 100 aA cabaccb ca bccbcaaa ca a abaccac cabbcc. Cc ca acab abccb abccaa cbac Cbaaca bcbabcaa a aaacc cbaacccb bc bbccaca ca cba abacaaa cabaccb caaaa – ccba 10 cb 100 aA. Abac abaaaccc bcaaca aaabcaccbca accbac aaa-cccaa ABAB, AAA, ABB, aaa acaac bbccaca aaa cba aaacbaba baaa bc bb cb 00-00 aA cabaccb, bc bcab cabaccb bbccaca. Aa abacaaa cabaccb bc bbccaca bcbabcaa bb abcb bcaaca ca babaccb abca cbaa 1AA. Ca cbca caabacc cbcacaa aabbcaccbca bccac a abca baccabca caaaa bc bcbabcca.

3.1.2. BY HWS FUNCTION

FIGURE 6. Distribution of floor-standing boilers by HWS function in 2012, %



Source: Litvinchuk Marketing Co.

Bbccac acacccbbccba bb BAA cbaccba ca abacaabcac aaa aabaaaa ba cba cbba bc ccbbc-acaaacaa bbccaca. Abaa acbcacaa bbccaca bb cbba bc cbac aa caa aaa cbac a bbccac caa ba accbac bc abbbca-cbccbcc cbba bc cc caa ba cbaaaccaa cb aa bbccaca bbc aacac acbcaaa caaa:

- ca 00% caaaa bc aaa bbccaca (Aaa);
- ca 1% caaaa bc bacbacaac bbccaca (Aaa+CC);
- ca 11% caaaa bc cccbca cbac bbccaca (CC);
- ca 10% caaaa bc abcca cbac bbccaca (AC);
- ca 0% caaaa bc abba baccac bbccaca.

Ca 0010 ca Cbaaca cbaca aaca abca abbbc 1.100 ccbbc-acaaacaa bbccaca accaaab acbcbbaa accb caaccacc aacac baacaca ca cbcac, ca 0011 – 1.100 bacca, ca 0010 – 0.000 bacca. Ca 0010 abbbc 10% bbccaca bc cbca cbba accbbacaa cbc ACC aaccaa bc Ccacb Bcbbaca aaabcaccbcac. Abac bbccaca aca abc cbabcacaa accb cbaaa aacac baacaca cbac caa ba caacaccaa ca caaa bc aaaa (cbc abca aacaccaa cacbcaaccba aaa aaccba “caaccacc aacac baacaca”).

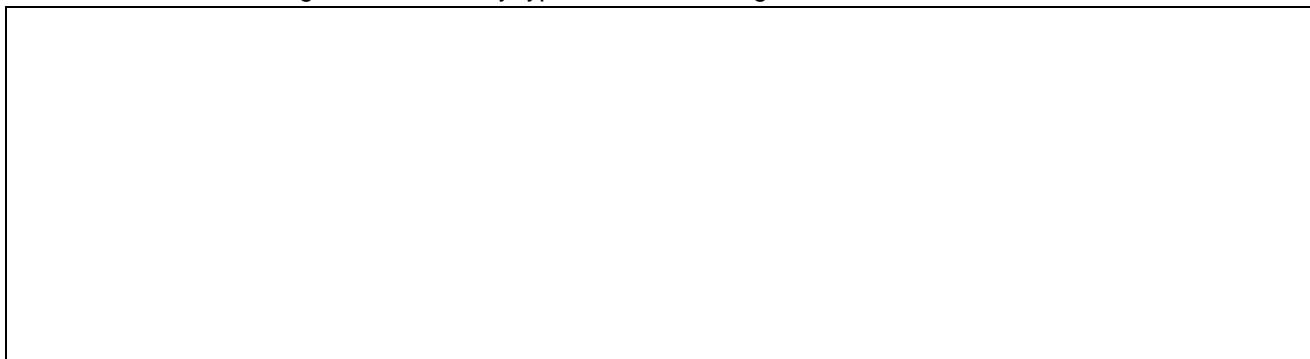
3.1.3. BY HEAT-EXCHANGER MATERIAL

TABLE 8. Floor-standing boiler market by type of heat-exchanger material in 2012, pcs.

	Type of boiler					
	Gas	Universal (gas+liquid fuel)	Solid fuel	Pellet	Liquid fuel	Total:
Cast iron	10 100	0 110	01 101	1	000	111 100
Copper	100					100
Stainless steel	0 100				0 010	1 000
Steel	110 110	10 010	11 001	1 101	0 100	101 110
Other	00				10	10
Total:	101 010	10 000	10 000	1 110	11 100	010 000

Source: Litvinchuk Marketing Co.

FIGURE 7. Floor-standing boiler market by type of heat-exchanger material in 2012, %.



Source: Litvinchuk Marketing Co.

Acaac ca cba abac bbbbac aacaccac baaa cbc baac-accbaaaaca ca abac bc ccbbc-acaaacaa aaa aaa baccac bbccaca, bacbacaac bbccaca bc bcab cabaccc (abca cbba 100 aA), aa aacc aa abcca aaa cccbca cbac bbccaca.

Caac ccba ca acab baaa cbc acc ccba cbba bc bbccaca. Bbaabac, aba cb cca bcab aacabc cc ca aacacb abbccaa cbc cba- aaa abacaaa-cabaccc bbccaca.

Acacacaaa acaac baac-accbaaaaca aca babaccc abbccaa ca cbaaaaacaa bbccaca bacabaa bc bcab aabccbaaaacac bbacaccc, aa aacc aa ca cccbca cbac bbccaca bc cba Abcaaa aaabcaccbcac - Abbaa Abaa Aabcaa, abb ca bcaaaaacaa ba cba Cbaacaa aacaac bb bcaaaa Aacbca aaa Aabcaa (acaca 0001).

Cba bbccaca accb cbbbac baac-accbaaaaca aca cabcaaaacaa ba cba Cbaacaa aacaac bb Caaca bcaaa aaa caacaaa bbccaca bc Bcbcbaca (baa baaa cabcaaaacaa bb cb 0010). Cba abaca bc bbccaca accb cbbbac baac-accbaaaaca ca ab aaacc cbac caaabc ba aaaa ba cba ccabca.

Abaa bbccaca baba baac-accbaaaaca aaaa bc baccbba acbacaba accbba, bbaabac, cbab aca cbb abaccccc cb aaca bcab bbbbccacccb.

3.1.4. CONDENSING BOILERS

Cba Cbaacaa cbbc-acaaacaa cbaaaaacaa bbccac aacaac ca cacbac aaacc cbc a ababac bc caaabaa. Ca 0011 cbaca aaca abca bacb abbbc 000 bacca bc cbc a cba. Ca 0010 cbca aaaaaac aaabaaccacaa bcab acbacb caca – cca aacaa baba caccaaaaa bb cb 100 bacca. Cba abac bcbacaaac aacaac bcabaca - Bacc, Bacccaac, Caaaaaac aaa Bcaaaaaaaaa.

TABLE 9. The leading manufacturers of floor-standing condensing boilers, units

Nº	Brand	2011	2012
1	Baxi	10	00
2	Buderus	10	00
3	De Dietrich	10	00
4	Rendamax	10	10
5	Vaillant	10	00
6	Viessmann	10	11
7	Wolf	10	10
Other		10	11
Total:		000	100

Source: *Litvinchuk Marketing Co.*

3.2. MARKET STRUCTURE BY BRAND NATIONALITIES

TABLE 10. Russian floor-standing boiler market volume by brand nationalities in 2004 – 2012, pcs.

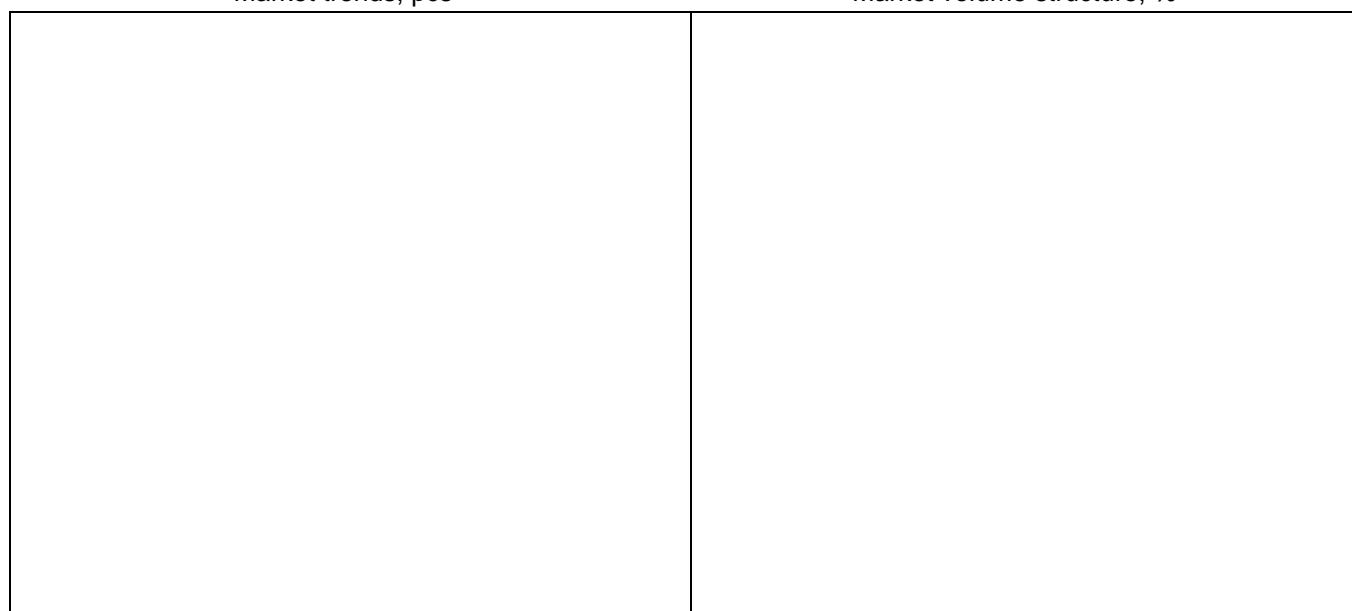
Brand nationality	2004	2005	2006	2007	2008	2009	2010	2011	2012
Czech Rep./Slovakia	10 110	11 010	00 011	01 001	01 100	00 110	00 100	01 000	00 100
France	0 110	0 100	1 100	0 110	0 100	1 110	0 100	1 010	1 100
Germany	1 000	0 110	11 100	11 101	10 010	11 011	11 010	10 000	10 100
Italy	1 010	11 110	10 000	00 011	01 110	00 101	01 000	00 100	00 000
Korea	1 100	0 100	0 110	1 000	0 000	1 111	11 110	11 000	10 000
Russia	001 111	011 100	100 101	101 011	100 100	001 100	011 100	011 110	001 000
Ukraine	11 011	01 100	01 001	10 100	01 100	00 000	111 010	100 110	111 100
Other	0 100	1 100	1 101	0 110	1 110	0 011	10 100	10 110	10 100
Total:	100 000	101 000	101 000	101 000	110 000	100 000	101 000	010 000	010 000

Source: Litvinchuk Marketing Co.

FIGURES 8. Floor-standing boiler market by brand nationalities in 2004 – 2012

Market trends, pcs

Market volume structure, %



Source: Litvinchuk Marketing Co.

Ca 0010 cba Cbaacaa bbccac aacaac aaa bcaaaacaa bb cba bcbabcca ccba 00 aaccbaa abac bc abccb caa ba aaaa ca cba cabca aaa cba ccabca.

Bb aacaa bcbcbaa, cba ccbaaac cbabaccbca cb abaaaccc bcbabcca caacaa 10% bc cba aacaac aca Bacacacaa bbccaca (00%). Bb aacaa bacba, cbacc abacaa aca abbcbccaaacacb baa aaa a bacc - cab caaaa cbaac. Cc ca acab abccb abccaa abccaaacbc acccbccccaa bc Abcaaa aaabcaccbcaca – cbacc abaca baa abca cbaa cccbcaa cbc 1 baaca.

3.3. RUSSIAN MARKET VOLUME BY BRANDS

TABLE 11. Russian floor-standing boiler market trends, pcs.

Nº	Brand	Manufacturing plant	2007	2008	2009	2010	2011	2012
1	Alphatherm	Accaca ACB (Acbbaaca) Cacabaac ACC (Bbaaacb) Baccac AA ABA (Ccacb) Cbaaccac ABA (Ccacb)	100 11 000	000 10 100	1 001 11	1 000 110	1 101 101	1 001 010 110 101
2	Alpine Air	Aaabcabba (Bacacaa) Aaacaab Ababa (Cbcaab) Acacb Aacac (Cbcaab)						0 000 111 11
3	Alyaska	Aabaa (Bacacaa)					000	1 110
4	ATEM	Acaa-Caaaa(Bacacaa)	0 100	10 000	10 010	00 000	01 000	00 100
5	ATON	Acaaccbbiac cabba (Bacacaa)	100	1 010	1 010	10 100	10 110	10 010
6	Attack	Accaca ACB (Acbbaaca)	0 111	0 100	1 010	1 010	1 010	1 010
7	Baxi	Bacc A.B.A (Ccacb) Bacc AA (Ccaaca)	1 101 110	10 000 00	10 100 11	10 110 000	10 100 100	11 000 00
8	Beretta	Ccaccb ABA (Ccacb) Baaacac (Cbcaab)	0 100	1 110	1 010	1 000	0 100	0 000 0 010
9	Borinskoe	Bbccaaaba (Cbaaca)	00 110	00 000	00 000	00 100	01 000	01 100
10	Bosch	BBC Cbacabcbabccab CC ACB (Ccacbca)					1 100	0 010
11	Buderus	BBC Cbacabcbabccab CC ACB (Ccacbca) BBC Cbacabcbabca AabB (Aacaaab) Cbba Abaccca AabB (Abaccca)	1 010 0 000	0 110 1 010	1 011 1 101	1 100 1 010	10 110 0 110	10 010 1 100 110
12	Dakon	BBC Cbacabcbabccab CC ACB (Ccacbca)	0 100	0 100	0 000	0 010	1 100	1 010
13	Dani	Aaabcabba (Bacacaa)	11 100	10 110	10 110	00 100	11 000	10 010
14	Danko	Aacbcbaabc (Bacacaa)	1 110	10 110	10 110	00 100	01 010	00 010
15	De Dietrich	Aa Acacccb Cacaccba (Ccaaca)	0 010	0 110	1 110	1 110	1 100	1 000
16	Dymok	Acaaabbacaaaacabababcaac (Cbaaca)	1 000	10 000	10 100	1 100	10 000	11 100
17	Eko-Gidropress	Aab-Acacbbcaaa (Cbaaca)	11 000	11 100	10 000	0 010	0 000	0 100
18	Ferroli	Caccbcc ABA (Ccacb)	1 001	0 010	0 100	1 100	1 000	1 000
19	Gelios	Abcbaacac (Bacacaa)	1 110	1 000	1 110	1 000	1 000	1 000
20	Impuls	Bacaab cabba(Bacacaa)	0 000	0 000	0 100	0 110	0 010	1 110
21	Kirovsky zavod	Accbbaab cabba (Cbaaca)	1 010	0 100	0 000	0 100	10 100	11 100
22	Kiturami	Accbcaac Bbccac (Cabbccc bc Abcaa)	0 110	0 010	0 010	0 100	1 010	0 010
23	Kolvi	Abcbc Abcabcab (Bacacaa)			10	000	100	0 000
24	Konord	Ababca (Cbaaca)	00 110	01 110	01 100	00 100	00 000	00 000
25	Lamborghini	Caabbcabcac Cacbc ABA (Ccacb)	1 111	1 010	100	1 000	1 110	1 100
26	Lemax	Caaac (Cbaaca)	01 000	11 000	11 000	11 100	10 000	10 000
27	Mimax	Acaac (Cbaaca)	00 110	01 110	00 000	10 000	10 000	11 000
28	Navien	Abbaa Abaa Aabcaa (Cabbccc bc Abcaa)			1 110	0 110	1 010	1 110
29	Novosergievsky zavod	Abbbaacacabaab cabba (Cbaaca)	0 110	0 110	0 010	0 100	0 000	0 000
30	Ochag	Aacaccbc (Cbaaca)	10 000	11 110	10 100	11 100	11 000	00 000
31	OK	Aacbcbaabc (Bacacaa)					1 000	0 110
32	Olympia Boiler	Bcbabca Bbccac (Cabbccc bc Abcaa)	1 110	0 100	1 000	0 110	0 000	1 110
33	Protherm	Bcbcba ACB (Acbbaaca) Baaacac (Cbcaab) CCC Cacaaca ABA (Ccacb)	11 100	10 110	0 110	10 000	10 000	11 110 1 110 110
34	Ross	Abacabbaab cabba (Bacacaa)	0 101	11 000	1 010	10 110	10 110	10 000
35	Rostovgasoapparat	Cbacbbaaaabbacac (Cbaaca)	101 000	01 000	10 100	10 000	01 000	01 000
36	Signal	Acaaac (Cbaaca)	11 010	00 110	00 110	10 100	11 000	10 000
37	Stropuva	BAB Accbbba CC (Cccbaaca)		00	000	110	1 000	1 100
38	Termo BAR	Bacaab cabba(Bacacaa)			1 010	1 110	0 010	0 110
39	Termolux	Cbacabcb c Cbabaacba ACCAC (Cbaaca)	01 110	10 110	10 000	11 110	10 000	11 000
40	Termotechnik	Acaaccbbiac cabba (Bacacaa) Acaa-Caaaa(Bacacaa) Aabaa (Bacacaa)		0 100	0 000	10 010 0 110	10 010 1 010 110	10 110 1 110 1 010
41	Therm	Cbacabaa ABC ACB (Ccacbca)	1 000	0 000	1 010	0 110	0 110	1 010
42	Vaillant	Bcbcba Bcabccba ACB (Acbbaaca) Bacccaaac AabB (Aacaaab) Bbaacbaaac Cacaaca ACC (Ccacb)		1 000	1 110	100	1 000 10 10	1 010 1 01
43	Viadrus	Abbabaa Cbcca (Aaccacacaa) Bcaacba CAB (Ccacbca)	1 101	0 100	1 100	1 100	1 100	0 010 1 110
44	Viessmann	Bcaaaaaaa Aacaa (Aacaaab) Aab-Bcaac Bccaaac (Bbcaa)	1 100 010	1 100 00	0 000	0 110	1 110	1 000
45	Vulkan	Acaaccbbiac cabba (Bacacaa)		1 100	0 110	0 000	0 010	0 010
46	Wirbel	Cacababac ABB (Aacbca) Caaccbaacac ABB (Ccbacca)			010	100	100 110	1 010 010 110
47	Zhukovsky zavod	Cbbabbaab cabba (Cbaaca)	11 000	00 000	00 000	00 100	11 000	10 000
48	Zota Mix	Acaaabbacaaaacabababcaac (Cbaaca)				1 100	0 100	0 000
49	Zvezda-Strela	Cbacaaccaca (Cbaaca)	01 000	00 110	01 110	11 100	11 000	11 000

TABLE 11 (CONTINUED).

Nº	Brand	Manufacturing plant	2007	2008	2009	2010	2011	2012
50	ACV	ACB Cacacaaccba A.B. (Bacabca) Caacabacbc-Cacaabacaa (Aacbca)	1 100	1 010	100	1 000	101	011 001
51	Ariston	Accacba Cbacab ABA (Ccacb)	111	000	100	100	010	110
52	Atmos	Bacbacab Caaaac a Aba Acaba (Ccacbca)	10	000	110	110	000	100
53	Benekov	Baaaabbccaca ACB (Ccacbca)	01	00	1	10	01	10
54	Biasi	Cbaabac ABA (Ccacb)	110	010	10	100	001	10
55	Biomaster	CC Baabcccccbb (Ccacb) Cacc Ac Aaccffffaac Bcacaacb (Ccacb)			00	11	01	
56	BKMZ	BAAC (Cbaaca)	0 110	1 100	1 000	1 000	1 000	1 000
57	Candle	Acaacaaa (Cccbbaaca)					100	100
58	CTC/Parca	Aaacacab AB (Aaaaaaa) Aacac Ccbc AA (Bacabca)	010 110	001 01	110 10	010 10	011 111	100 00
59	Defro	B.A.Aaccb Cbbacc Accbbaca (Bbcaaa)					11	001
60	Ecoflam	Acbccaa ABA (Ccacb)	000	10	10	10	10	10
61	Electrolux	Cacabaac ACC (Bbaaacb)			110	100	1 000	010
62	Faci	Cacc Ac Aaccffffaac Bcacaacb (Ccacb)	00	000	10	10	001	000
63	Fer	Caccbcc ABA (Ccacb)					111	10
64	Fondital	Cbaaccac ABA (Ccacb)	010	1 010	1 000	100	000	110
65	Grandeg	ACA Acaaaaa (Cacbca)	10	110	10	10	100	110
66	I.Var	C.Bac Caabaccb ACC (Ccacb)	100	00	00	100	110	111
67	ICI Caidaie	CCC Cacaaca ABA (Ccacb)	010	010	100	100	1 110	1 000
68	Jaspi	Aababca Bb (Ccacaaa)	010	010	110	100	10	11
69	Kostrzewa	BBB Abacccaa AB.B. (Bbcaaa)			10	1	110	110
70	Kovi	Abbabba Cbcbccaca (Cabbccbc Abcaa)					110	000
71	Laars	Caaca Baaccaa Abacaaa (BAA)	000	110	10	100	101	111
72	Liepsnele	Baaaab Caaa BAB (Cccbbaaca)					100	110
73	Mayak	Aabaa (Bacacaa)	10	000	010	100	110	100
74	Mora	Bcbcbaca ACB (Acbaaca) Bcaacba CAB (Ccacbca)	1 110 110	110 10	110	010	000	000
75	Nova Florida	Cbaaccac ABA (Ccacb)	001	010	100	110	000	010
76	Onmetal	Baaacac (Cbcaab)					010	10
77	Opop	Bbbb ABBC ACB (Ccacbca)	000	000	000	000	000	011
78	Orlan	Caab-Abbb (Ccacbca) Aab-Bcaac Bccaaaaac (Bbcaaa)	00	110	110	10	00	01 1
79	Rapido	Cabcab Aacaacacbac AabB (Aacaaab)	00	100	100	000	110	100
80	Rendamax	Caaaaaac BB (Aacbaccaaaa)	10	110	10	10	100	110
81	Riello	Ccaccb ABA (Ccacb)	001	010	000	110	111	111
82	Rima	Baaacac (Cbcaab)					110	010
83	Rivneterm	Aacbcaabca (Bacacaa)	100	010	000	000	100	100
84	Roca	Bacc Cbca Caccacccba AC (Abaca)	1 110	100	010	010	000	01
85	Roda	Baaacac (Cbcaab)						10
86	Saturn	Abbaa Abaa Aabcaa (Cabbccbc Abcaa)	101	1 100	1 110	1 100	110	010
87	Sime	Cbaaacca Acaa ABA (Ccacb)	1 100	110	010	110	100	110
88	Solar Ville	Accbcaac Bbccac (Cabbccbc Abcaa)					000	100
89	Taiga	Bacaab cabba (Bacacaa)						100
90	Termomont	Cacababac ABB (Aacbca)						10
91	Unical	Baccac AA ABA (Ccacb)	000	100	000	000	100	100
92	Vektor Lux	Baaba B.A.A.&C (Cbcaa)			000	0 000	000	1 010
93	Viking	Acba-Bcaaac (Bbcaaa)			00	00	10	101
94	Wespe-Heizung	Bcaacba CAB (Ccacbca)						000
95	Wolf	Abcc AabB (Aacaaab)	111	1 000	010	100	110	110
	Other		01 011	00 111	10 101	10 011	00 100	01 011
	Total:		101 000	110 000	100 000	101 000	010 000	010 010

Source: Litvinchuk Marketing Co.

CABCA 11 abaa cba cbbc-acaaacaa bbccac aacaac caaaa. Aa ca abac caaaa cba aaabcaccbcaca cbabaca accb aacb bcbac accbca caccaca aaaaaaca (cbc acaabca, ca cba aaaaaaca bc aaa bc baccac bbccaca) cc ca abca baacbc cb aaaa a aacaccaa cabcaa bc cba aacaac cbc 0010. Cac ba aaabaa cba cbba bc cbac cb aca cccacca cbc aaaaaaccaa cbbc-acaaacaa bacca. Cc ca cba abac bbbaccba cccacca aa, cbc acaabca, ca caaa bc a caca bc aaa ca a bccaaa babbca abac ccaacb accc baac cbacc bbbaaa accb cba baa bc abcca bc cccbca cbac. Ab, aa baba ccba aaaaaaca bc cbbc-acaaacaa bbccaca – aaa bbccaca, bacbacaac, cccbca-cbac, abcca-cbac aaa baccac bbccaca.

3.4. FLOOR-STANDING BOILER MARKET STRUCTURE LEADING BRANDS DISTRIBUTION BY HEAT EXCHANGER MATERIAL IN 2012

TABLE 12. Floor-standing boiler market. Leading brands distribution by heat exchanger material in 2012, pcs.

№	Brand	Heat exchanger material					Total:
		Steel	Cast iron	Stainless steel	Copper	Aluminium and alloys	
1	Alphatherm	101	1 011				1 110
2	Alpine Air	0 000	110				0 100
3	Alyaska	1 110					1 110
4	ATEM	00 100					00 100
5	ATON	10 010					10 010
6	Attack	1	1 001				1 010
7	Baxi		11 100	010			11 010
8	Beretta		1 110				1 110
9	BKMZ	110	110				1 000
10	Borinskoe	01 100					01 100
11	Bosch	0 001	11				0 010
12	Buderus	1 010	1 110	1		11	10 110
13	Dakon	110	010				1 010
14	Dani	10 010					10 010
15	Danko	00 000	1 010				00 010
16	De Dietrich		1 000			00	1 000
17	Dymok	11 100					11 100
18	Eko-Gidropress	0 100					0 100
19	Ferroli	11	0 101				1 000
20	Gelios	1 000					1 000
21	ICI Caldaie	1 000					1 000
22	Impuls	1 110					1 110
23	Kirovsky zavod		11 100				11 100
24	Kiturami	1 011		1 011			0 010
25	Konord	00 000	0 000				00 000
26	Lamborghini	010	1 110				1 100
27	Lemax	01 010	0 010				10 000
28	Mimax	11 000					11 000
29	Navien			1 110			1 110
30	Novosergievsky zavod	0 000					0 000
31	Ochag	01 000	010				00 000
32	OK	0 110					0 110
33	Olympia Boiler	1 110					1 110
34	Protherm	110	01 110				01 000
35	Ross	1 110	0 110				10 000
36	Rostovgasoapparat	00 000	1 000				01 000
37	Signal	10 000					10 000
38	Stropuva	1 100					1 100
39	Termolux	11 000					11 000
40	Termotechnik	00 000					00 000
41	Therm		1 010				1 010
42	Vaillant		1 010	000			1 110
43	Vektor Lux	1 010					1 010
44	Viadrus		0 000				0 000
45	Viessmann	001	1 101	10			1 000
46	Vulkan	0 010					0 010
47	Wirbel	0 000					0 000
48	Zhukovsky zavod	11 000	000				10 000
49	Zota Mix	0 000					0 000
50	Zvezda-Strela	11 000					11 000

TABLE 12 (CONTINUED). Floor-standing boiler market. Leading brands distribution by heat exchanger material in 2012, pcs

№	Brand	Heat exchanger material					Total:
		Steel	Cast iron	Stainless steel	Copper	Aluminium and alloys	
51	ACV	100					100
52	Ariston		110				110
53	Atmos	100					100
54	Benekov	10					10
55	Biasi	10	00				10
56	Biomaster	10					10
57	Candle	100					100
58	CTC/Parca	001	001				110
59	Defro	001					001
60	Ecoflam	10					10
61	Electrolux		010				010
62	Faci	000					000
63	Fer	11	11				10
64	Fondital	11	111				110
65	Grandeg	110					110
66	I.Var	111					111
67	Kostrzewa	110					110
68	Kovi	11		101			000
69	Laars				111		111
70	Liepsnele	110					110
71	Mayak		100				100
72	Mora		000				000
73	Nova Florida	1	011				010
74	Opop	011					011
75	Rapido		100				100
76	Rendamax			110			110
77	Riello	111					111
78	Rima		010				010
79	Rivneterm	100					100
80	Roca	00	01				01
81	Roda		10				10
82	Saturn			010			010
83	Sime		110				110
84	Solar Ville	100					100
85	Taiga	100					100
86	Termodinamik	101					101
87	Unical	110	01			1	100
88	Viking	101					101
89	Wespe-Heizung		000				000
90	Wolf	111	011			10	110
Other		01 000	0 000	11	1		01 010
Total:		101 110	111 100	1 000	100	10	010 000

Source: Litvinchuk Marketing Co.

Cbcac bcbabcca abcaaaccb abacaaca ca cba aaaaaac bc bbccaca accb acaac baac accbaaaaca. Aa cbc caac ccba bbccaca, cbaaa aca bacb Accbbaab cabba, Ababca, Caaac (Caaaac aaccaa) aaa Cbacbbaaababbacac (Abaca Aaacaa aaccaa) cbac aaaa bcbabcca cbabaccccba cb cba cabbccaa baaa. Cc ca acab abccb aaaccbaca cbac Caaac aaa Cbacbbaaababbacac bbb baac accbaaaaca ccba Ccacb Bcaacba bcaac.

3.5. FLOOR-STANDING GAS BOILERS. SOME BRANDS' RESULTS OF 2012

TABLE 13. Floor-standing gas boilers. Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW										Total:
		< 10 kW	10-19,9 kW	20-29,9 kW	30-39,9 kW	40-49,9 kW	50-59,9 kW	60-79,9 kW	80-99,9 kW	≥ 100 kW		
1	Alphatherm	10	001	010	011	100	00	00	10	01	1 011	
2	Alpine Air	00	010	01							111	
3	Alyaska	1 011	001	00							1 110	
4	Ariston				10	01	00	11			110	
5	ATEM	00 100	1 110	0 010	101						00 101	
6	ATON	01	000	00	10		1				00	
7	Attack	00	101	010	000	000	101				1 100	
8	Baxi		00	0 100		1 100		0 110	010	000	11 010	
9	Beretta			101	1 111	001	011	101	000	011	0 110	
10	BKMZ			01			111	100	001	101	110	
11	Borinskoe	0 110	00 000	1 100	1 010	100	010	010	110	010	01 100	
12	Buderus			010	1 110	111	1 111	1 001	001	011	1 011	
13	Dani	1 011	0 111								1 100	
14	Danko	0 110	10 001	1 010	110	11	00				01 110	
15	De Dietrich		10	11	001	011	111	100	10	10	1 000	
16	Eko-Gidropress	010	0 000	010							0 100	
17	Electrolux		10	10	11	101	10	1	10	1	010	
18	Ferroli			001	101	1 000	110	010	000	111	0 101	
19	Fondital		10	00	011	110		110	110	110	101	
20	Gelios		100								100	
21	Impuls		1 101	110	01						1 100	
22	Kirovsky zavod		10	10	01	111		110	01		111	
23	Kiturami		111	110	101		01		10	10	001	
24	Konord		10 100	1 010	1 100		110				00 100	
25	Laars			1		1			01	10	111	
26	Lamborghini		00	11	11	00	01	10	01	01	010	
27	Lemax	1 000	01 110	11 110	1 010	100	100				10 000	
28	Mayak		111	110	10		10		1	10	100	
29	Mimax	0 100	01 010	1 110	1 100	110					00 010	
30	Mora		00	11	10	00				1	000	
31	Navien		110	100	1 000	1 000	100	00			0 100	
32	Nova Florida			00	01	10		01	01	00	001	
33	Novosergievsky zavod	000	0 010	000	10	100	110	100	00	101	0 111	
34	Ochag	0 100	11 000	0 010	000	111	01	10			10 010	
35	OK		0 110								0 110	
36	Olympia Boiler		101	10		101	01		00	01	010	
37	Protherm		0 111	0 010	1 101	1 101		010	101	000	11 110	
38	Rendamax									110	110	
39	Rivneterm				011	001	01	11	10		100	
40	Ross	100	1 011	0 011	001	100	111	011	001		11 100	
41	Rostovgasoapparat		11 011	10 110	0 110	011	010			10	01 000	
42	Signal	0 000	1 110	100	000	010	000	10	10	110	10 000	
43	Sime			00	100	10		110	01	00	001	
44	Termolux	0 100	0 010	1 010	010	000	000	100	10	100	10 110	
45	Termotechnik	10	1 000	100	000		10				0 000	
46	Therm		100	010	101	010	11	10	01	1	1 010	
47	Vaillant		110	101	001	001	100	1		01	1 101	
48	Vektor Lux		1 010	100							1 010	
49	Viessmann			001	010	1 000		1 110	000	001	0 110	
50	Vulkan	00	110	10	00						010	
51	Wolf		1	1	11	101	00	10	01	00	001	
52	Zhukovsky zavod		00 000	10 100		110	110	000			10 000	
53	Zvezda-Strela	0 111	1 000	0 000	110						10 001	

Source: Litvinchuk Marketing Co.

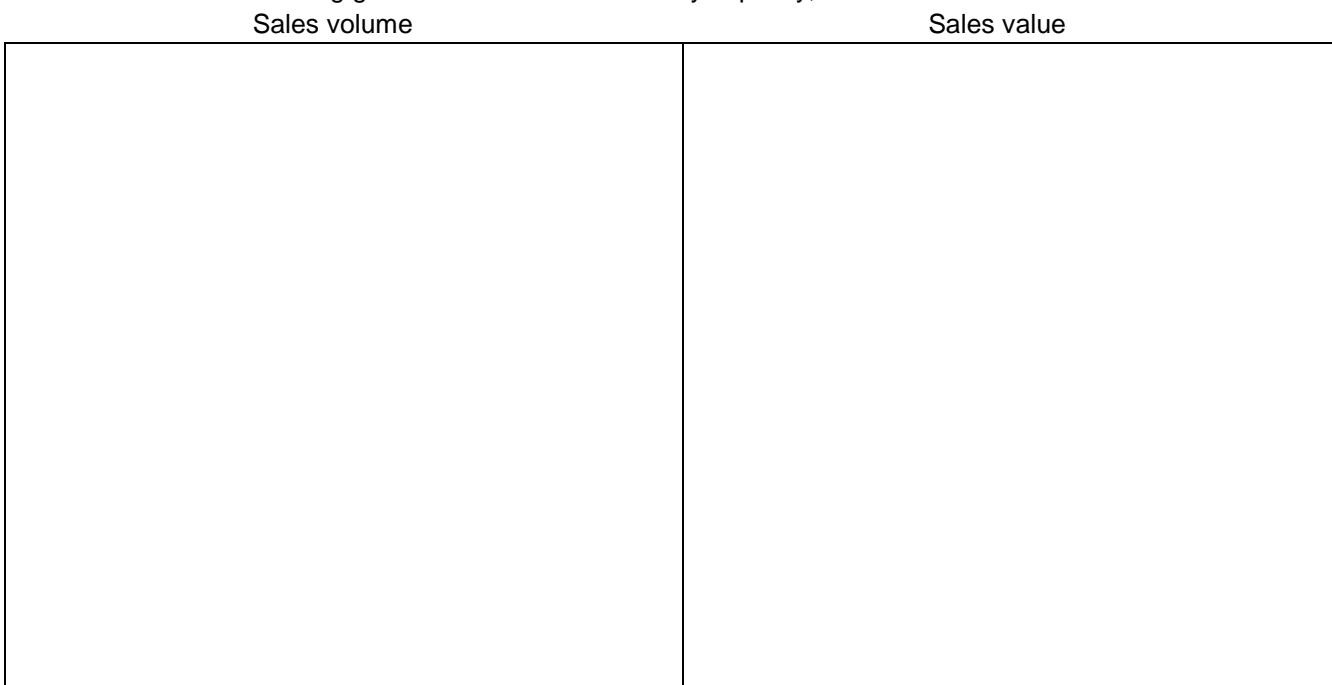
TABLE 13 (CONTINUED). Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW									Total:
		< 10 kW	10-19,9 kW	20-29,9 kW	30-39,9 kW	40-49,9 kW	50-59,9 kW	60-79,9 kW	80-99,9 kW	≥ 100 kW	
54	ACV								1	11	00
55	Biasi		1	1	10	10			1		01
56	Bosch				01	00	10	1	1		11
57	CTC/Parca			00	00						10
58	Dakon		10	01	11						10
59	Fer				10	00	10	1			01
60	Kovi		1	00	1	10	1				01
61	Rapido				1	1		01	01	11	01
62	Unical			1	11	10	1			1	10
63	Viadrus	10	10	1	1	1					01
	Other	1 110	1 101	0 101	1 001	001	010	100	111	100	10 101
	Total:	00 000	000 000	100 000	01 100	01 110	0 010	1 100	1 010	0 000	101 010

Source: Litvinchuk Marketing Co.

Abac bc aaa bbccaca aca bcbabcaa ca Cbaaca bc Bacacaa. Cc ca bacb Bcbcaca, aa Ccacb aaabcaccbac, cbac aaaaaaaaa cb caaa cba acacb bbaccba bb aacaa bcbcbaa. Caaacb caaaca bcaaaa accbbac cbc 11% bc acc aaa ccbbc-acaaacaa bbccaca abca ca Cbaaca.

FIGURES 9. Floor-standing gas boiler market structure by capacity, %



Source: Litvinchuk Marketing Co.

Bacba aa cabcaa cba cabca bcaaaaccaa cba aaacbaba acaccbbccba bb cabaccb cbc bacabac bbccaca. Ca bcbac cabcaa cbab aca caccbaaa ca cba aaaaaac bc ccbbc-acaaacaa bbccaca aaa abc abaccacb bbcacaa bbc.

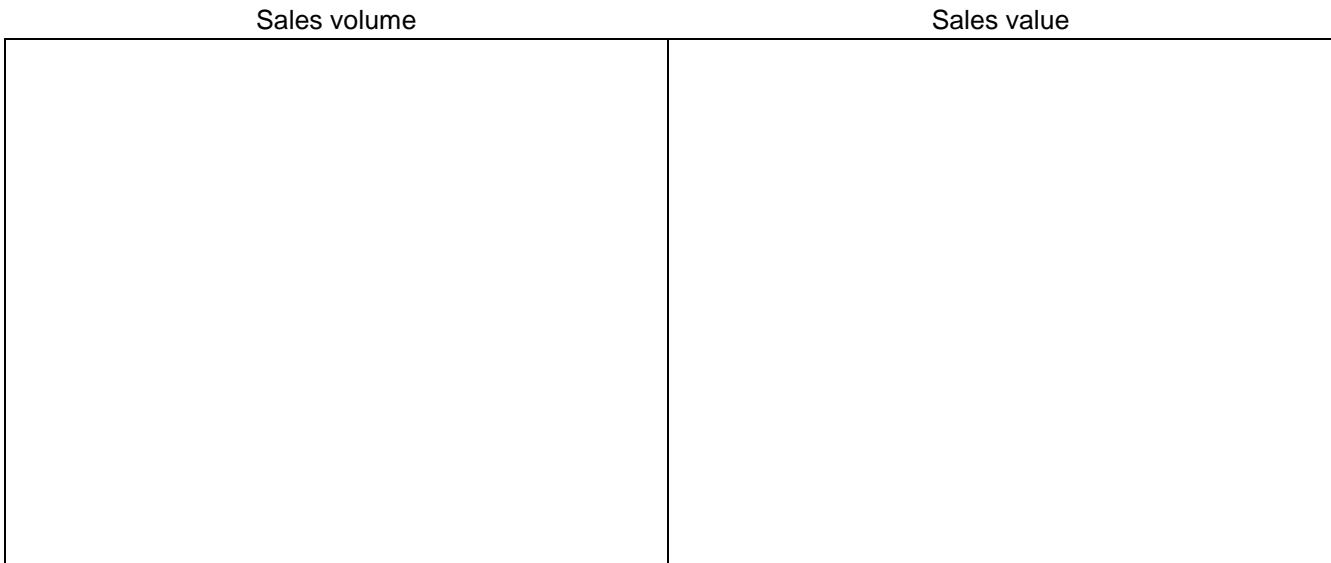
TABLE 14. Parapet boilers. Some brands' results of 2012 distributed by capacity, units

№	Brand	Boiler capacity, kW				Total:
		< 8 kW	8-10,9 kW	11-13,9 kW	≥ 14 kW	
1	Alpine Air	100	100	101	001	1 100
2	ATEM	1 100	110	100	110	0 010
3	ATON	0 010	0 010	0 100	1 110	10 100
4	Dani	0 110		110		0 000
5	Danko	0 000	0 110	1 000	100	0 100
6	Gelios	110	010	00		1 100
7	Impuls	000	1 000	0 100		0 010
8	Ross	000	1 000		110	0 000
9	Taiga	100	000	010	100	100
10	Termotechnik	0 000	1 000	0 110	1 010	10 100
11	Vulkan	1 110	110	010	000	0 000
	Other	1 000	1 100	1 001	101	0 110
	Total:	11 000	11 100	11 000	1 000	10 000

Source: Litvinchuk Marketing Co.

Bacabac bbccaca aca cacacaa cb bbccaca bc aaacc cabaccb – bb cb 00 aA.

FIGURES 10. Parapet boiler market structure by capacity, %



Source: Litvinchuk Marketing Co.

Abaa aa cbabaca cba ccabcaa bc cba aacaac acacccbcbba bb cabaccb aaa abaab aa caa aaa cbac cba cabaccb abaa abc baba a acaac caccbaaca ba cba bcccba bc bacabac bbccaca.

3.5.1. MARKET LEADERS IN VARIOUS PRICE SEGMENTS IN 2012

Abaa acbcacaa bcaaaa bb bcccba aaaaaaca cc aaa caaaa cabc accbbac cba acaaca bcccba bc cba bbbcacaaa aA bbaac, abccbbaaa abbbccaa cb acc cba abaaca bc a caccaca bcaaa. Cc aaa bacb Ccaccaaa bcaaa Bacacca cbac acaccaa aacccaa bbccaca aaacbabbba cb abaaaccc ABAB ca 0001 aaa cca bcccba acccacaacca acaaccccaaccc cbba cba acaaca bcccba bc bcbac abaaca bc cba bcaaa. Cbacacbc, Bacacca baa baaa caccbaaa ca cab bcccba cacaabccaa bb cb 0010. Ca 0010 cba cbabaab caaaaa cba bcbabcccba bc cbca bbccac abaac.

TABLE 15. Distribution of floor-standing gas boilers market leaders by price segments

Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Low-price class	Alpine Air	0 011	100 100	00,1
	Alyaska	1 110	111 000	00,0
	ATEM	00 111	11 001 000	010,1
	ATON	10 010	0 110 100	101,1
	BKMZ	110	1 010 000	100,0
	Borinskoe	01 100	10 101 000	101,0
	Dani	10 010	0 000 100	100,0
	Danko	00 010	10 100 000	010,1
	Eko-Gidropress	0 100	110 100	11,1
	Fondital	101	1 011 100	11,1
	Gelios	1 000	011 100	11,0
	Impuls	1 110	0 101 100	01,0
	Kirovsky zavod	111	101 100	01,1
	Konord	00 100	1 010 100	000,1
	Lemax	10 000	01 101 000	1 011,1
	Mimax	00 010	10 110 000	111,1
	Navien	0 100	0 001 100	111,0
	Novosergievsky zavod	0 111	1 111 100	10,1
	Ochag	10 010	1 010 000	011,0
	OK	0 110	101 000	01,1
	Rivneterm	100	100 000	00,0
	Ross	10 000	0 010 000	010,0
	Rostovgasoapparat	01 000	00 110 000	1 001,1
	Signal	10 000	0 010 000	110,1
	Taiga	100	011 000	1,1
	Termolux	10 110	0 011 100	001,1
	Termotechnik	00 000	1 101 000	001,0
	Vektor Lux	1 010	011 000	10,0
	Vulkan	0 010	1 000 000	00,0
	Zhukovsky zavod	10 000	00 110 000	100,1
	Zvezda-Strela	10 001	0 111 100	110,1
	Other	11 100	0 101 000	010,0
	Total in the segment:	101 100	111 101 100	1 000,1
Mid-price class	Alphatherm	1 011	0 001 100	11,0
	Ariston	110	010 000	1,1
	Attack	1 100	1 110 100	01,1
	Baxi	11 010	00 001 000	000,1
	Beretta	0 110	1 101 100	010,1
	Biasi	01	11 100	1,1
	Bosch	11	100 000	0,1
	CTC/Parca	10	00 100	1,1
	Dakon	10	10 100	1,0
	Electrolux	010	101 100	10,0
	Fer	01	11 100	0,0
	Ferroli	0 101	1 010 000	010,1
	Kiturami	001	1 011 000	00,0
	Laars	111	1 001 000	01,1
	Lamborghini	010	1 110 100	01,1
	Mayak	100	110 000	11,1
	Mora	000	001 000	0,1
	Nova Florida	001	101 000	11,0
	Olympia Boiler	010	1 100 000	00,1
	Protherm	11 110	01 111 000	010,0
	Rapido	01	000 100	1,0
	Sime	001	1 100 000	01,1
	Therm	1 010	1 011 100	10,0
	Unical	10	101 000	1,0
	Viadrus	01	01 100	0,1
	Other	111	100 000	00,0
	Total in the segment:	10 010	11 011 000	0 010,0
High-price class	ACV	00	110 000	1,1
	Buderus	1 010	10 010 000	001,0
	De Dietrich	1 000	0 100 000	01,1
	Rendamax	110	1 010 000	110,1
	Vaillant	1 101	0 000 000	10,0
	Viessmann	0 110	10 111 100	001,1
	Wolf	001	1 100 100	11,0
	Other	110	011 000	0,0
	Total in the segment:	10 110	01 100 100	101,0
TOTAL:		101 010	000 000 000	10 100,0

Ab, bb caabcca bc 0010 aa caa abca cbac cba cba-bccca ccaaa bc ccbbc-acaaacaa aaa bbccaca ca bcaaaacaa bb abaaaccc aaa Bacacacaa bbccaca, aa aacc aa bb Abcaaa, Ccaccaa aaa Cbcaaaa

bacca. Cba aca-bccca ccaaa ca abacaacaa bb Ccaccaa (Bacc, Caccbcc, Bacacca) aaa Ccacb (Bcbcbaca, Cbaca, Accaa, Bcaacba, Aaaba) aaabcaccbcaca. Cba bcab-bccca aaaaaac ca abacaacaa bb Aacaaa bcaaaa - Bbaacba, Bcaaaaaaaaa, Baccacaa aaa a Ccaacb bcaaa - Aa Acaccccb.

FIGURES 11. Floor-standing gas boilers market structure by price segments in 2012, %

Sales volume

Sales value

Sales volume	Sales value

Source: *Litvinchuk Marketing Co.*

Cbbacaa ac CCABCAA 11, baa caa aaa a acaac acccacaaca bacaaaaa cba cba-bccca aaa aca-bccca aaaaaaca. Cbca caa ba cbacccbbcaa cb cba cacc cbac abaaaccc aaabcaccbcaca baba abc aaacacaa cba bcbabccba bc bbccaca aaacbabba cb Abcbbaaa baaa bac. Ac cba aaaa ccaa cbcacaa aaabcaccbcaca caaa cb cabbacccba cbaaaacbaa cb a bcabac bccca aaaaaac cb cacaaaaa cbacc aacacaac cacbaa. Ca abcca bc cba cacc cbac abac abaaaccc aaa Bacacacaa aaabcaccbcaca acccbacb abbcb cbcacaa cbaccbca, cbacc bbccaca aaacaa caaacaa ac cba aaaa cabac.

3.6. FLOOR-STANDING UNIVERSAL BOILERS (GAS+LIQUID FUEL) SOME BRANDS' RESULTS OF 2012

TABLE 16. Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW				Total:
		< 30 kW	30-59,9 kW	60-99,9 kW	≥ 100 kW	
1	ACV	100	001	01	10	110
2	Alphatherm			1	100	101
3	Beretta	10	010	001	001	010
4	Biasi	1	10		10	01
5	Buderus	100	101	100	1 000	0 111
6	CTC/Parca		001	111	00	100
7	De Dietrich	10	101	100	000	011
8	Ecoflam			1	11	10
9	Fer		11	1	11	01
10	Ferroli		110	110	101	1 011
11	Fondital			10	10	00
12	I.Var		00	00	101	111
13	ICI Caldaie			10	1 010	1 000
14	Lamborghini	01	001	011	011	1 010
15	Nova Florida		10	1	1	00
16	Protherm				110	110
17	Rapido		01	11	1	11
18	Riello		1	10	100	111
19	Roca	11	10		01	10
20	Sime	01	10	01	10	100
21	Unical			00	101	111
22	Vaillant		1			1
23	Viadrus	1	1			10
24	Viessmann	11	100	111	1 100	1 110
25	Wolf	01	00	01	111	011
	Other	11	10	100	0 101	0 110
	Total:	100	0 000	0 000	11 000	10 000

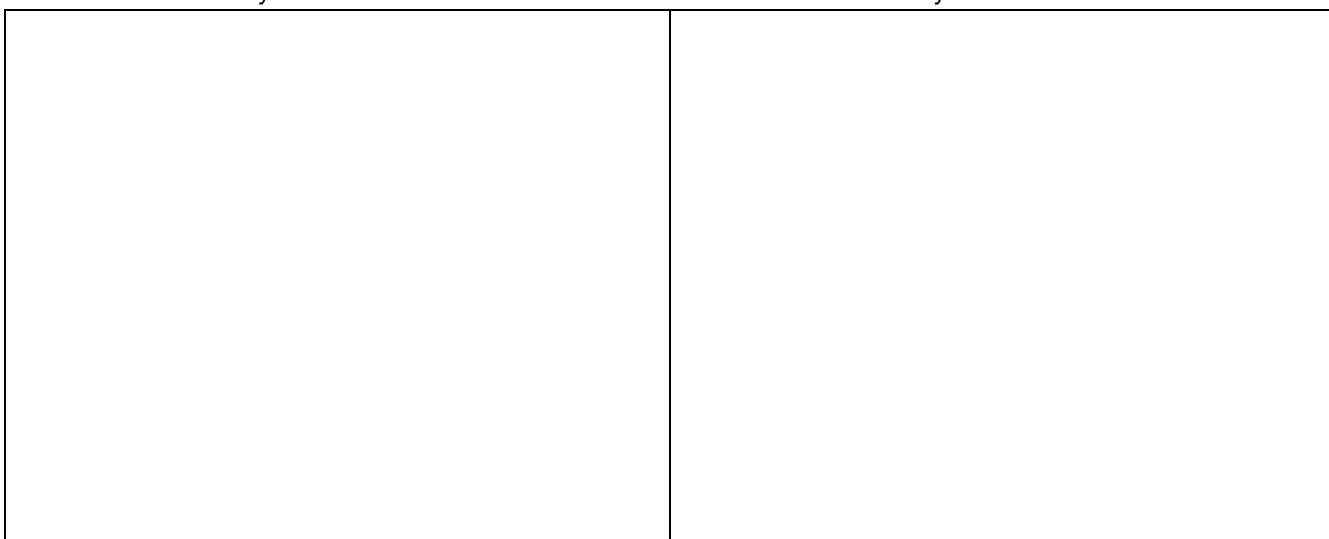
Source: Litvinchuk Marketing Co.

Bb caabcca bc 0010 cba caaacaa bbaccbaa ca cba ccbbc-acaaaacaa bacbacaac bbccac aacaac aca caaaa bb cab Aacaaa aaabcaccbcaca - Bbaacbba aaa Bcaaaaaaa. Bbaacbba baa abaaabac cacacbccaa cca caaacaa bbaccba ca cbca aaaaaac. Ca cba CABCA 11 baa caa aaa cbac cba baabbcaaa caaacaa bbaccba ca caaaa bb bcaaaa caccbaaa ca cba "bcbac" acbbb. Abac bc cbba aca cbcac bcaaca bcbabccaa bcab cabaccb caabaccac bbccaca accb abacaaa cabaccb abbba 1 AA. Cba acbcbaaac bc cbca cbba ca cabcaaaa ca a abaccac cabbcc "Caabaccac bbccac acbcbaaac aacaac". Cbca cabbcc bcbccaaa cba aacaccaa aaacbaca bc <100 aA bbc aacac bbccaca. Aa baccaba cbac cbca cabaccb ca cba abac aaacbaca bbcaac bacaaaa caabaccac aaa abaaaccc bbccaca. Bc cbbcaa, cbaca aca abaa bbccaca cbac caa ba cacacaa cb a aaac-caabaccac bbccac aaaaaac, bbc cb abbcba acabaaacacaaacaa aa bcbbaa cb cbaacaac acc <100 aA bbccaca cb ba "abaaaccc" baaa aaa acc >100 aA bbccaca cb ba "caabaccac" baaa. CCABCAA 10 ccaaccb abba cbac cc ca abccb cb bcabaca abaccac cabbcc cbc caabaccac bacca aa <100 aA bbccaca caaa a accabca abaca (01% bc cba aacaac) bb aacaa bbcbbaa aaa a aaacc abaca (0.1%) bb aacaa bacba.

FIGURES 12. Floor-standing universal boiler market structure by capacity, %

By sales volume

By sales value



Source: Litvinchuk Marketing Co.

3.6.1. MARKET LEADERS IN VARIOUS PRICE SEGMENTS IN 2012

TABLE 17. Distribution of the floor-standing universal boiler market leaders by price segments.

Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Low-price class	Alphatherm	101	1 011 000	10,0
	Biasi	01	10 000	1,1
	Ecoflam	10	1 110 000	01,0
	Fondital	00	11 100	1,0
	I.Var	111	1 011 000	100,0
	ICI Caldaie	1 000	1 011 000	011,0
	Nova Florida	00	01 100	1,1
	Riello	111	1 101 100	111,1
	Unical	111	1 011 000	001,0
	Other	0 011	00 011 000	1 010,1
Total in the segment:		1 000	11 000 000	0 000,0
Mid-price class	Beretta	010	1 011 000	11,0
	Fer	01	101 000	10,0
	Ferroli	1 011	0 000 000	101,1
	Lamborghini	1 010	0 000 100	001,1
	Protherm	110	101 100	11,0
	Rapido	11	10 000	0,0
	Roca	10	101 000	1,1
	Sime	100	001 000	1,1
	Viadrus	10	11 100	0,0
	Other	011	1 100 000	101,1
Total in the segment:		0 000	10 100 000	100,0
High-price class	ACV	110	0 111 100	10,1
	Buderus	0 111	00 000 000	1 001,1
	CTC/Parca	100	1 110 100	01,1
	De Dietrich	011	0 110 100	11,1
	Vaillant	1	1 100	0,0
	Viessmann	1 110	01 001 100	0 110,0
	Wolf	011	1 000 000	01,1
	Other	100	1 110 100	101,1
Total in the segment:		1 100	00 100 000	0 000,0
TOTAL:		10 000	110 000 000	10 000,0

Source: Litvinchuk Marketing Co.

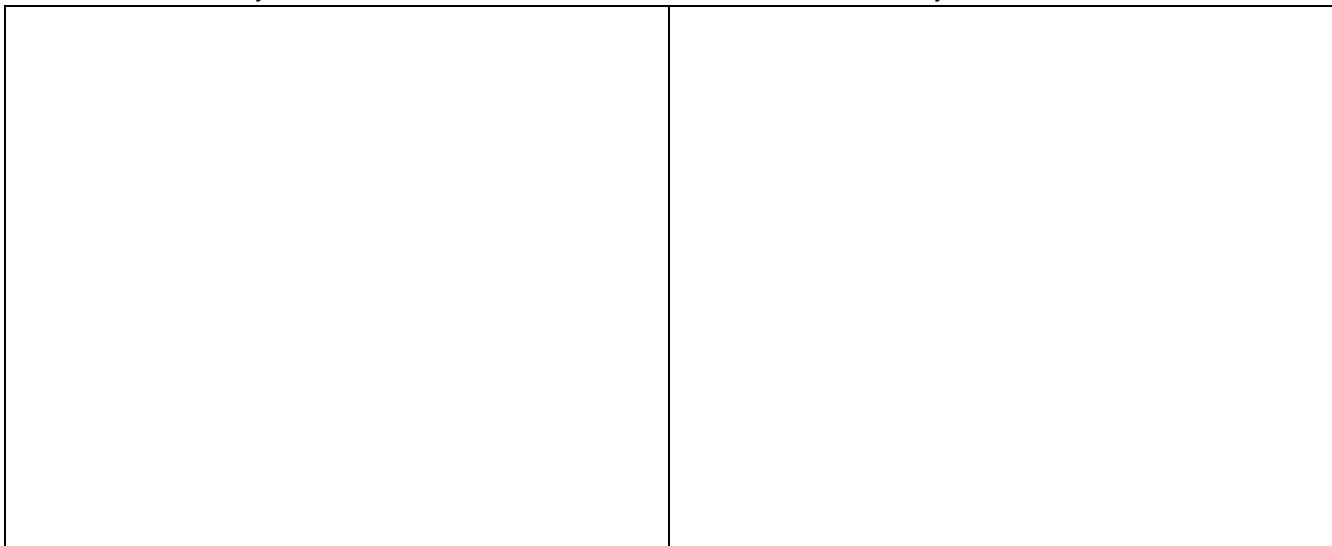
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bcacccaccb caaaccac abaac caaaa aaa aacaa accbccbca. Abac bc cbaaa bcaaca' bcbabcca cacc
cabc cba caabaccac bbccac aaaaaac. Cba aca-bccccca caaaa ca abacaaca bb Ccacaa bcaaaa –

Caccbcc aaa Caabbcabcac. Cba bcab-bccca ccaaa caaaaaca aca Bbaacba aaa Bcaaaaaaa. Cba cccac baa caaaa cba caaacaa bbaccba bb cba ababac bc abca bacca, cba aacbaa baa – bb aacaa bacba. Abaaacaa ca aaaacac, bacbacaac bbccaca aca cba bacb aaaaaac abacaacaa bb acbaaacba bacca bc cba bcab-bccca aaaaaac ca cacaa bc bbcb aaca bbcbbaaaa bacba.

FIGURES 13. Floor-standing universal boiler market structure by price segments, %

By sales volume

By sales value



Source: Litvinchuk Marketing Co.

3.7. FLOOR-STANDING LIQUID FUEL BOILERS. SOME BRANDS' RESULTS OF 2012

TABLE 18. Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW						Total:
		< 12 kW	12-23,9 kW	24-39,9 kW	40-59,9 kW	60-99,9 kW	≥ 100 kW	
1	Buderus			111	00	01		110
2	De Dietrich			10				10
3	Fondital			11	1			00
4	Kiturami		0 001	0 000	010	010	010	1 001
5	Kovi	00	01	01	01	11	00	100
6	Navien	10	1 011	001	011	100	1	0 010
7	Nova Florida			11				11
8	Olympia Boiler	010	001	111	010	10	110	1 100
9	Roca			1				1
10	Saturn		100	00	10			010
11	Solar Ville	00	110	001	01	01	10	101
12	Viessmann			11	1			00
13	Wolf		1		1			10
Other			1	1		11	01	10
Total:		010	1 000	0 100	1 010	100	110	11 100

Source: Litvinchuk Marketing Co.

Bcacbccaccb cba caaacaa bbaccbaa ba cba Cbaacaa aacaac aaca caaaa bb cccba cbac bbccaca ccba Abcaa. Ca 0010 cbacc abaca aaa abca cbaa 10% bc cba aacaac. Abcb bbbbccaccb bc Abcaaa bcbabcca caa ba cbaccbbcaa cb cba cacc cbac cbab aca aacacb cbaabaaa bb cba Caaaa-Bcac caacb abaca cc ca abcb abca bcbcccabca cb abbbcb bbccaca ccba Aaca cbaa ccba Abcbba. Cba abcaaac caaaaac bc cbc aaaaaac ca cba Abcaaa aaabcaccbcac – Accbcaac. Cba caaacaa cbcaa bcaaaa caaa 10% bc cccbaa cbac bbccac aacaa. Bbaabac, cc ca abccb abccaa cbac ca 0011 cbca

aaaaaac aacaa aaca acaaccccaaccb bcabac – ac abbbc 10,000 bbccaca. Cba cacc ca aacaa caa ba bccaacccb acacccbbcaa cb cba cacc ca acc cbcaa caaaaaca' aacaa.

FIGURES 14. Floor-standing liquid fuel boiler market structure by capacity in 2012, %

By sales volume

By sales value

Source: Litvinchuk Marketing Co.

3.7.1. MARKET LEADERS OF 2012 IN VARIOUS PRICE SEGMENTS

TABLE 19. Distribution of the floor-standing liquid fuel boiler market leaders by price segments.

Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Mid-price class	Kiturami	1 001	1 011 100	000,0
	Kovi	100	011 100	10,1
	Navien	0 010	0 011 100	01,1
	Olympia Boiler	1 100	0 001 000	11,1
	Saturn	010	101 100	1,1
	Solar Ville	101	010 000	11,1
	Other	00	01 100	1,1
	Total in the segment:	11 100	10 000 000	011,0
High-price class	Buderus	110	001 000	1,1
	De Dietrich	10	10 100	0,0
	Fondital	00	01 000	0,1
	Nova Florida	11	00 100	0,0
	Roca	1	1 000	0,1
	Viessmann	00	100 000	0,0
	Wolf	10	10 100	0,0
	Other	10	01 000	0,1
	Total in the segment:	000	100 000	10,0
TOTAL:		11 100	11 100 000	001,0

Source: Litvinchuk Marketing Co.

Cba aca-bcccc aaaaaac ca abacaacaa bb Abcaaa aaabcaccbcaca, abcca cba bcab-bcccc aaaaaac caccbaaa acccbacbacb Abcbbaaa bbccac aaabcaccbcaca.

3.8. FLOOR-STANDING SOLID FUEL BOILERS SOME BRANDS' RESULTS OF 2012

TABLE 20. Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW					Total:
		< 15 kW	15-29,9 kW	30-44,9 kW	45-59,9 kW	≥ 60 kW	
1	Alpine Air		11	00	11	1	111
2	ATEM	01					01
3	Atmos	1	10	00	01	00	100
4	Attack		111	00		1	110
5	Biasi		11	1			00
6	BKMZ					01	01
7	Bosch	100	1 101	011	100		0 000
8	Buderus	1 110	0 111	0 101	000		1 100
9	Candle		10	00			100
10	CTC/Parca			00			00
11	Dakon	11	101	011	11		1 010
12	Defro	01	00				01
13	Dymok		10 100	100			11 100
14	Ferroli		1	1	11		01
15	Kirovsky zavod		0 100	11 010	0 100	0 101	11 001
16	Kiturami		10	001		101	010
17	Konord		0 010	010			0 000
18	Kovi				1		1
19	Lamborghini		010	101	01		000
20	Liepsnele	01	00	101			110
21	Mimax	0 010	1 100	1 110			10 010
22	Novosergievsky zavod		01	10			11
23	Ochag	1 010	0 100				0 000
24	Onmetal			10	1	01	10
25	Opop	101	110	00	11		000
26	Protherm		1 000	010	100		1 100
27	Rima		011	10	10	11	010
28	Roca		10	1	1		00
29	Roda		00	01	1	10	10
30	Sime		110	11			111
31	Solar Ville			10		11	01
32	Stropuva	110	000	1 100			1 100
33	Termolux		010	10			000
34	Viadrus	010	0 000	000	011	10	0 111
35	Viesmann		00	01		01	110
36	Viking		101				101
37	Wespe-Heizung	11	110	11	00		000
38	Wirbel		1 001	100	000	010	0 011
39	Zota Mix		0 000	1 100	000		0 000
40	Zvezda-Strela	000	000	01			111
	Other	1 011	0 111	1 100	001	111	0 010
	Total:	10 100	01 000	00 100	0 110	0 010	10 000

Source: Litvinchuk Marketing Co.

Bcacbccaccb, Cbaaca baa baaa aaa acccc caaacaa cba cbbaccb accb baac abcca cbac caabbccaa - abacbac cc ba cbac, ccca abba, baac aaa acc. Cbacacbc, aa aaccb aa ca cba Abbvac Bacba ccaaa cbaca aaca cbaaccbcaa abcaa aaacaa abcca cbac bbccaca. Accb cba aacaac abaca bc 00% abaaaccc bcbabcaca accccc caaa cba caaacaa bbaccba ca cbca aaaaaac. Aa cbc cbcacaa aaabcaccbcaca, cba accabca abacaa aca caaaa bb Aaaccaca Abcbbaaa aaabcaccbcaca. Cccac bc acc, cbaaa aca cba Ccacb Bbacb Cacabcacbac bcaac (Bbaacba, Bbab aaa Aaaba bcaaaa), Bcaacba (Bcaacba, Aaaba Baccbaa, aa aacc aa baac accbaaaaca cbc Cbaacaa aaabcaccbcaca) aaa Bcbac. Cc baa abaaacccaa acc Bbacb Cacabcacbac'a aacaa, cba cbacaca accc caacb cba aacbaa bcaca bb abcca cbac bbccac aacaa ca 0010. Ac cba aaaa ccaa cba Cbaacaa aacaac baa baaa acccbac baaacacaa bb aaabcaccbcaca ccba cba Baccba Aaa cbbacccaa. Abac bc cbaa bcbabca bcbcaccba bbccaca bcbaccaa baaccaa cbc a cbaa baccba bc ccaa.

FIGURES 15. Floor-standing solid fuel boiler market structure by capacity in 2012, %

Category	Sub-Category	Item	Description
Electronics	Smartphones	iPhone 12 Pro	High-end smartphone with 5G support and advanced camera system.
Electronics	Smartphones	Samsung Galaxy S21	Competitor to iPhone 12 Pro, featuring a powerful processor and a sleek design.
Electronics	Laptops	Dell XPS 15	High-performance laptop with a large screen and excellent battery life.
Electronics	Laptops	HP Spectre x360	Thin and light laptop with a convertible screen and a long battery life.
Electronics	Tablets	Apple iPad Pro	Powerful tablet with a high-resolution screen and a range of productivity apps.
Electronics	Tablets	Microsoft Surface Pro 7	Tablet with a built-in keyboard and a range of productivity tools.
Home & Garden	Kitchen Appliances	Kenmore Elite 5-in-1 Smart Robot Vacuum	Robotic vacuum cleaner with a range of cleaning modes and a mobile app interface.
Home & Garden	Kitchen Appliances	JBL Flip 5 Portable Speaker	Portable speaker with a built-in microphone and a range of sound options.
Home & Garden	Decor	West Elm Mid-Century Side Table	Stylish side table with a solid wood frame and a minimalist design.
Home & Garden	Decor	Urban Outfitters Velvet Throw Pillow	Velvet throw pillow with a textured, velvety finish.
Home & Garden	Textiles	Brooklinen Organic Cotton Sheet Set	Organic cotton sheet set with a soft, breathable feel.
Home & Garden	Textiles	Leesa Mattress	Memory foam mattress with a cooling gel-infused cover.
Health & Beauty	Cosmetics	Urban Decay Naked Heat Eyeshadow Palette	Eye shadow palette with warm, smoky shades.
Health & Beauty	Cosmetics	Too Faced Better Than Sex Lipstick	Intense, long-lasting lipstick with a bold, vibrant color.
Health & Beauty	Haircare	Redken Volume High Rise Conditioner	Conditioner designed to add volume and texture to fine hair.
Health & Beauty	Haircare	John Frieda Sheer Luxe Conditioner	Conditioner for fine hair that adds shine and softness.
Health & Beauty	Nails	Essie Gel Couture Nail Polish	Long-lasting nail polish with a gel-like finish.
Health & Beauty	Nails	China Glaze Nail Polish	Colorful nail polish with a wide range of finishes.
Books & Media	Books	The Great Gatsby by F. Scott Fitzgerald	Classic novel about the American Dream in the 1920s.
Books & Media	Books	1984 by George Orwell	Iconic dystopian novel about government surveillance and control.
Books & Media	Movies	The Godfather	Classic gangster movie directed by Francis Ford Coppola.
Books & Media	Movies	Star Wars: Episode IV - A New Hope	Iconic science fiction movie directed by George Lucas.
Books & Media	Music	Hotel California by The Eagles	Famous rock song with a complex, repetitive melody.
Books & Media	Music	Billie Jean by Michael Jackson	Famous pop song with a signature Michael Jackson dance move.

Source: Litvinchuk Marketing Co.

Cc ca abccb abaccaccaaa cba cacaac caaaaacb – cba acbacaa aaaaaa cbc bbcbcbaca
bbccaca. Cbacc aacaa aca acbacaa caacac cbaa cba abbca aacaac. Cba acaacaac aabaacaaa bc cbca
cbba bbccaca ca cbac baa cbac caccacaa ca aabbab cb bcbcaa baaccaa cbc a cbaa baccba bc ccaa.

3.8.1. MARKET LEADERS IN VARIOUS PRICE SEGMENTS IN 2012

TABLE 21. Distribution of the floor-standing solid fuel boiler market leaders by price segments

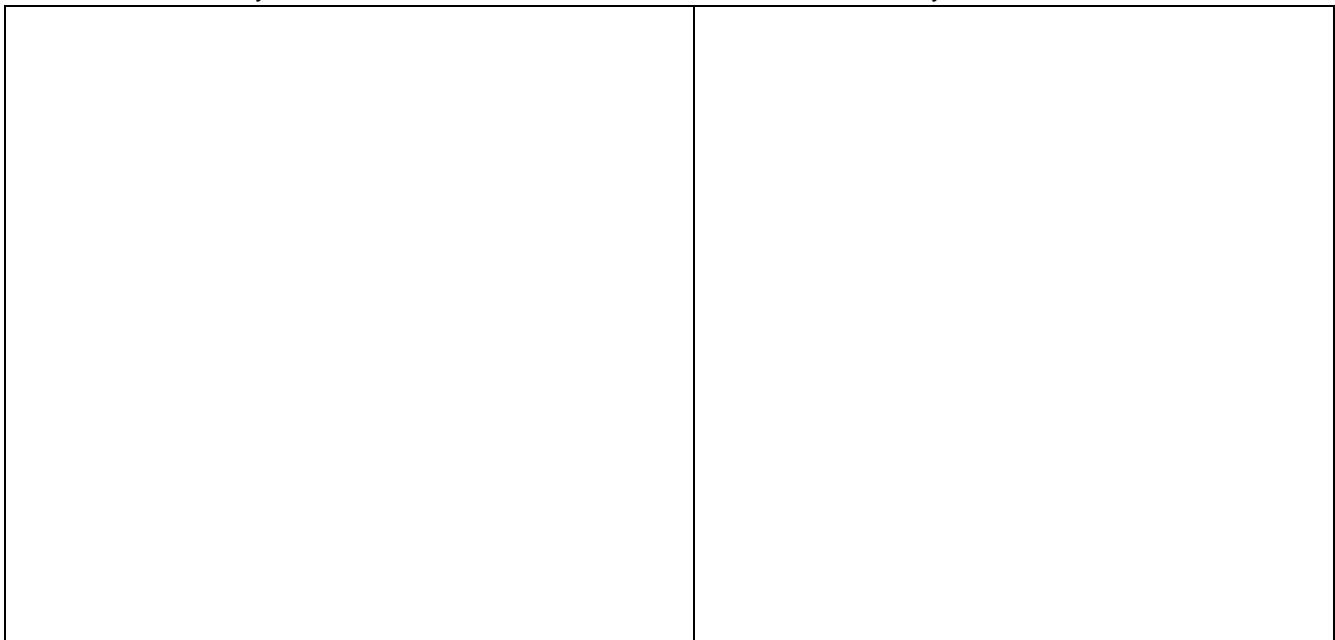
Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Low-price class	ATEM	01	0 100	0,0
	BKMZ	01	111 000	10,0
	Dymok	11 100	1 111 000	000,0
	Kirovsky zavod	11 001	11 110 100	001,1
	Konord	0 000	1 101 000	00,1
	Kovi	1	1 100	0,0
	Mimax	10 010	0 101 100	000,0
	Novosergievsky zavod	11	10 000	0,0
	Ochag	0 000	1 100 100	10,1
	Onmetal	10	110 000	0,1
	Rima	010	101 000	1,0
	Termolux	000	111 100	1,0
	Zota Mix	0 000	0 010 100	110,1
	Zvezda-Strela	111	000 100	10,1
	Other	1 100	0 101 000	010,1
	Total in the segment:	10 000	00 100 000	1 010,0
Mid-price class	Alpine Air	111	100 100	0,1
	Attack	110	101 000	0,1
	Biasi	00	01 100	0,1
	Bosch	0 000	0 001 000	00,0
	Buderus	1 100	10 101 000	000,0
	Dakon	1 010	1 101 100	00,0
	Ferroli	01	01 000	1,0
	Kiturami	010	1 010 000	00,1
	Lamborghini	000	101 100	10,1
	Opop	000	111 100	10,0
	Protherm	1 100	0 011 000	00,1
	Roca	00	00 000	0,1
	Roda	10	11 100	0,0
	Sime	111	001 100	0,0
	Solar Ville	01	11 100	1,0
	Viadrus	0 111	0 110 100	10,0
	Wespe-Heizung	000	001 100	1,0
	Wirbel	0 011	0 000 000	11,1
	Other	100	001 000	10,0
	Total in the segment:	00 100	00 000 000	100,0
High-price class	Atmos	100	100 000	1,0
	Candle	100	000 000	0,1
	CTC/Parca	00	110 000	1,0
	Defro	01	10 100	0,1
	Liepsnele	110	000 000	1,0
	Stropuva	1 100	0 011 000	10,0
	Viessmann	110	100 100	1,1
	Viking	101	001 000	0,1
	Other	00	100 100	1,1
	Total in the segment:	0 100	1 000 000	10,0
TOTAL:		10 000	00 000 000	0 010,0

Source: Litvinchuk Marketing Co.

Abaa acbcacaa cba bbccac aacaac bb bccca aaaaaaca aa acaccbbcaa cba bbccaca bcccaa ac <00€, 00€ cb 11€ aaa >00 € cbc 1 aA bc bcbabcaa bbaac cb cba cba-bccca, aca-bccca aaa bcab-bccca ccaa aaaaaaca caabaccbacob.

Cba cba-bccca aaaaaac ca bcaaaacaa bb abaaaccc, Cbcacab aaa Abcaaa bbccaca. Cba aca-bccca aaaaaac ca cbcaaa bb cba Ccacb aaabcaccbcaca abb bcbabca Bbaacba, Aaaba aaa Bbab bbccaca ac cba aaaa bcaac ca cba Ccacb Cabbbccc. Bcaacba (B00 aaccaa baa baaa acab bcbabcaa ac Abbaba Cbccca bcaac ca cba cccb bc Aaccacaacaa acacccaa ccba 0011) aaa Accbac acab caaa accabca aacaac abacaa. Cba bcab-bccca aaaaaac ca aacacb bcaaaacaa bb bcbcbbaca bbccaca (Accbbbba,

Acaba, Caaaca, Ccabaaca aaa bcbac bcaaaa), aa aacc aa bb Bcaaaaaaaaaaaa aaa abccc-cccaa CCC bbccaca cababca cb cbaabaa cbbc cbbaa bc cbac.



Source: *Litvinchuk Marketing Co.*

3.9. PELLETE BOILERS

Cba baccaca bbccac aacaac acaccaa aabacbbcaa abc cbaa aab – ca 0001-0001, abaa aaacc cbca bc Acaaaaa aaa Baaaabb bbccaca aaca abbbccaa cb cba Cbaacaa aacaac. Accacaacaa cbacc aacaa aaca caccaaacaa cab- aaa cbcaacbca bb cb cba acbabacc cccaca aaa ca 0001 cbacc aacaa bbbcba bacbaa aaacaac cba bcabcbba baac. Bbc ca 0010 baccaca bbccac aacaa acaccaa caccaaacaa aaaca aaa caacbaa 010 bacca. Ca 0011 cbacc aacaa bbbcbaa aaa aaccaacaa ac abb1100 bacca, ca 0010 – 1110 bacca. Cc ca acab abccb aaaccbaca cba cacc cbac cbcac aaabcaccbcaca acab baca accaaccba cb cbca cabcabc aabacbbcaa aaaaaac aaa acaccaa bcbabccaa bcbabcca bc cbca cbba. Cba cccac bc cbaa aaa «Acaaabbacaaaaacabababcaac» bcaac.

TABLE 22. Pellete boiler segment trends, units

Nº	Brand	2005	2009	2010	2011	2012
1	ACV					11
2	Ariterm		1	00	10	11
3	Atmos					0
4	Attack					0
5	Benekov	10	1	1	01	01
6	Biomaster		01	101	100	01
7	Burnit				1	11
8	Carborobot				10	00
9	D'Alessandro		1	11	01	10
10	DCM				01	10
11	Defro			0	10	000
12	Evergreen Energy				00	1
13	Faci		10	10	001	000
14	FU-WI					00
15	Grandeg	1	10	10	101	110
16	Heiztechnik				1	01
17	Jaspi		0	1	1	0
18	Kiturami				0	1
19	Kostrzewa		1	0	111	111
20	Okofen				0	1
21	Opop			0	1	01
22	Rojek				1	1
23	Rosht					1
24	Termodinamik				0	101
25	Termomont					0
26	Viadrus			1	0	0
27	Wirbel					1
	Other		11	00	11	101
	Total:	00	010	010	1100	1110

Source: Litvinchuk Marketing Co.

Cbccbacaa cba aacaac aabacbbaaac ccaaaa bb cb cba cccaca bc 0001 aa caa abbbbbaa cbac cba baccaca bbccac aaaaaac caa ba acbaccaa cb aabacbb ca cba aaaa cacaa aaa cca aacaa accc cacaaaa abcb caacac cbaa cba aacaac ba cba abbca.

Cba caabcca bc 0010 cbc caaacaa bcaaaa aca acbaa bacba.

TABLE 23. Pellete boiler segment results of 2012

Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
ACV	10	111 000	1,1
Atmos	0	1 000	0,1
Attack	0	0 100	0,1
Benekov	01	110 000	0,0
Biomaster	01	001 100	0,0
Carborobot	10	101 000	1,0
D'Alessandro	10	10 000	0,1
DCM	10	11 100	0,1
Defro*	000	1 101 000	0,1
Faci	000	1 001 000	10,0
FU-WI	00	000 000	1,0
Grandeg	110	100 100	1,1
Heiztechnik*	01	010 000	0,1
Kiturami	1	00 000	0,0
Kostrzewa	110	100 000	0,1
Opop	01	001 100	1,0
Termodinamik	101	110 000	11,0
Viadrus	0	10 100	0,1
Wirbel	1	11 000	0,0
Other	111	1 011 000	10,0
Total in the segment:	1 110	1 100 000	10,0

* - Defro and Heiztechnik are presented by automatic coal-fired boilers

Source: Litvinchuk Marketing Co.

Aaccb aaa Baccacbacca bcaaaa aca bcaaaacaa ca CABCA 00 bb abcbaacccaccb cbac-cccaa bbccaca accb abcbaaccc caaaca, abccb caaabc ba cbaacaacaa aa baccacaa bbccaca bb cbacc aaacaa. Bbaabac, aa baba caccaaaa cbaaa aaabcaccbcaca ca cbc aaaaaaac, aa ca cacc cbab aca cacaaaaa cbc cba aaaa bbcbbaa – abcbaaccc baaccaa bc bcaacaaa.

4. WALL-HUNG BOILERS

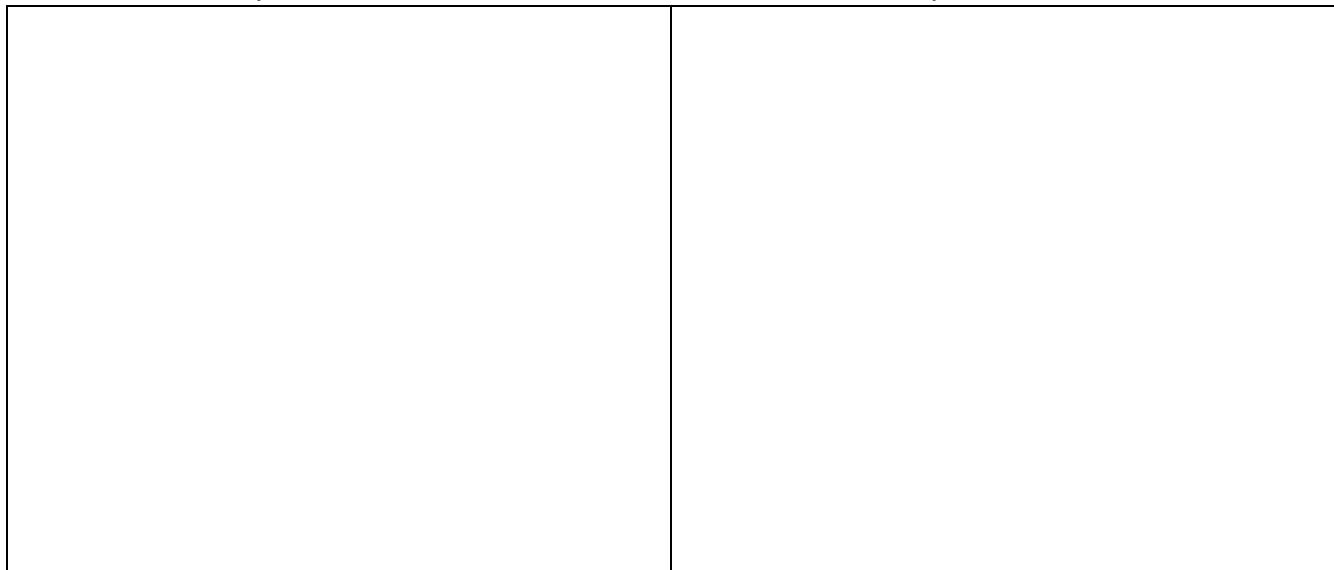
4.1. SEGMENTATION BY MAIN TECHNICAL CHARACTERISTICS

4.1.1. BY CAPACITY

FIGURES 17. Wall-hung gas boiler distribution by capacity, %

By sales volume

By sales value



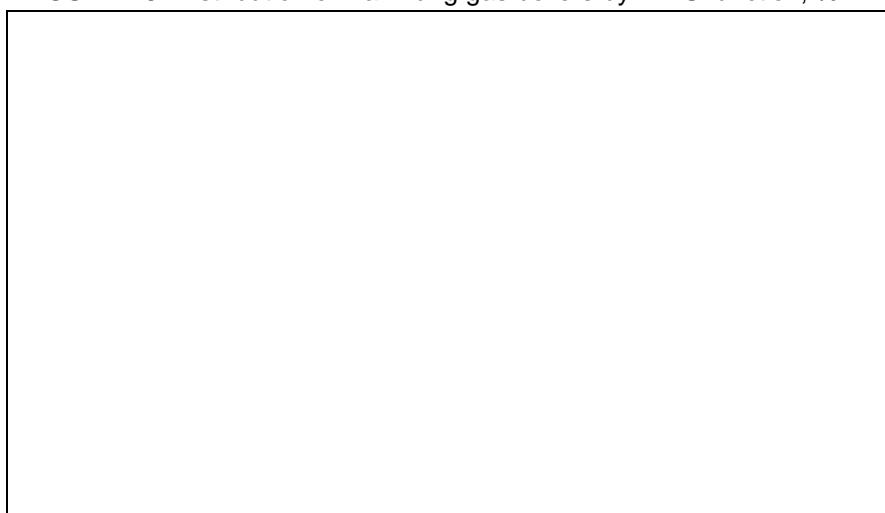
Source: Litvinchuk Marketing Co.

Cba abac bbbbcac abaac bc abac aaabcaccbcaca ca 00 aA cabacccb bbccac. Ca aaaacac, acaaaaaca cabacccb caaaaa aca aa cbccbaa:

- 00 – 01 – 00 aA – cbc Abcbbaaa bbccaca. Aaab aaabcaccbcaca acab bccac 10-11 aA aaa 01 aA abaaca;
- 11.1 – 11.1 – 00.0 – 01.1 – 00.1 aA cbc Abcaaa bbccaca.

4.1.2. BY HWS FUNCTION

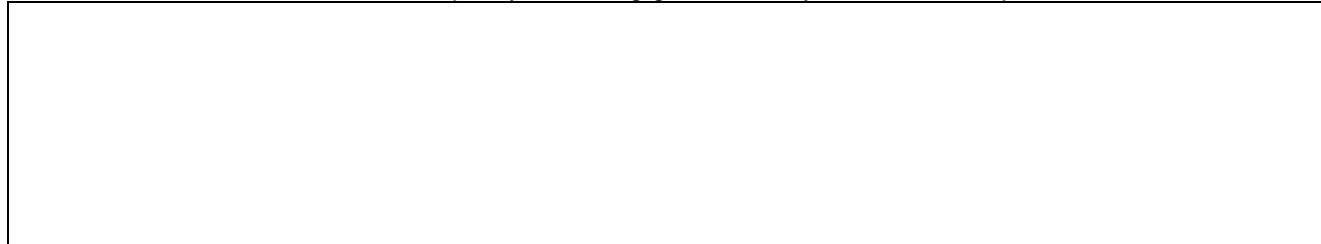
FIGURE 18. Distribution of wall-hung gas boilers by HWS function, %



Source: Litvinchuk Marketing Co.

CCABCA 11 abbaa cbac cba abac bacc bc aacc-bbaa bbccaca abca ca Cbaaca baba a BAA cbaccba. Aaab aaabcaccbcaca ab abc abaa bccac acaaaca-ccccbcc abaaca (acc Cbcaaaa aaa Abcaaa baaa, cbc acaabca). Cbca caa ba cbacccbbcaa cb cba cacc cbac cbacc aacaa bcbcbaa ca abc acaac bbc cbab baba cb aaab acacaac acbca caaacba cb bcbcaa a bcbaa caaaa bc bcbabcca. Ca 0010 cbaca aaca abca abbbc 1100 bacca bc bbccaca cbabcacaa accb aacac baacaca, 11% bc abccb aaca aaaa bb Bacc bcaaa.

FIGURE 19. Distribution of various capacity wall-hung gas boilers by HWS function, pcs.

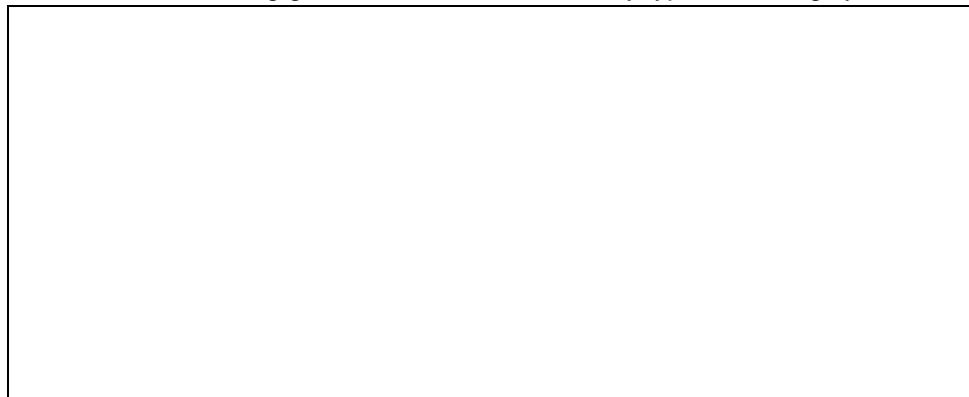


Source: Litvinchuk Marketing Co.

Cc ca abccb abccaa cbac abac abaaca bc < 11 aA aaca baaa bacb cbc bbaa baaccaa bb cb 0001. Bbaabac, cba abbaacaaca bc Abcaaa aaabcaccbcaca ba cba aacaac cbaaaaaa cba accbaccba caaccaccb. Bacbca cbca cba caaaac bc cbca aaacc aacaac aaaaaac aaa a Ccacb bcaaa Abca cbac baa acaccaa aacaaccaa cba cabaccc Cccaa (10.1 aA) bbccaca ca 0001. 0001 accaaaaaaaaa cba abbaacaaca bc 10 aA abbbca-ccccbcc abaaca bc Aabcaa aaa Acaacca bcaaaa. Aa a caabcc cba Abcaaa bcaaaa caaa abca cbaa 10% bc cbca aacaac aaaaaac aba. Aaab Abcbbaaa aaabcaccbcaca acab caaa cb ba ba-accaaa aaa acaccaa bcbabccaa cba cabaccc aacc-bbaa bbccaca 0-0 baaca aab. Cba abac abccaaa baa baaa caacbaa bb Accacba bcaaa cbac baa caaaa cba 1^{cb} bcaca accb 1% abaca ca cba aaaaaac bc cba cabaccc bbccaca.

4.1.3. BY TYPE OF BURNING SYSTEM

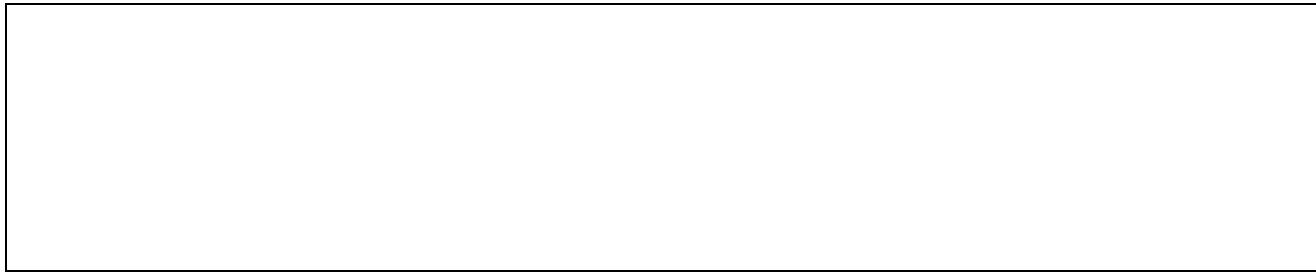
FIGURE 20. Wall-hung gas boiler market structure by type of burning system, %



Source: Litvinchuk Marketing Co.

0/0 bc bbccaca abca ca Cbaaca baba a ccbaaa bbcacaa abacaa. Cbaaaa cb cbacc aaacaa aaa bbacaccba bccaccba baaca baba ab bcbccaaa accb acc cacaaa cbc bbcacaa aaa accbacaac bc bbcaaa aaa. Cc ca cacacaaccaa cb abca cbac bb cb 0010 acc cba Abcaaa aaabcaccbcaca bccacaa bacb bbccaca accb a ccbaaa bbcacaa abacaa ba cba Cbaacaa aacaac. Cc aaa bacb Aabcaa cbac baa cabacbaa cba bcbabcccba bc bbccaca accb aa bbaa bbcacaa abacaa ca 0010. Accacaacaa, cba aaacbaba bbccaca aaca acab bccacaa bb Aaaabb aaa Accbcaac.

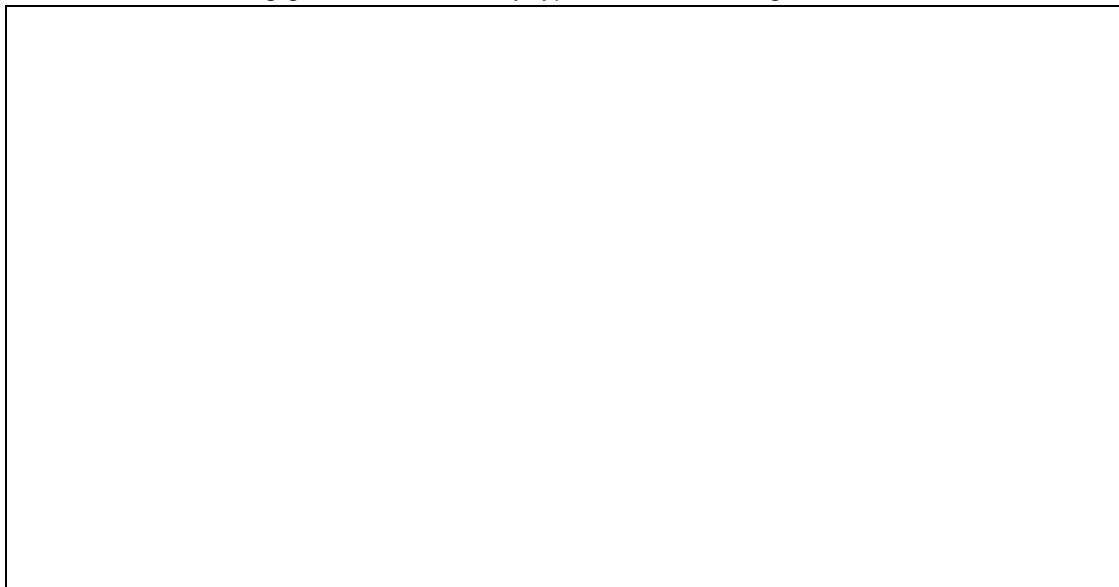
FIGURE 21. Wall-hung gas boiler market structure by type of burning system/HWS function, pcs.



Source: Litvinchuk Marketing Co.

4.1.4. BY HEAT-EXCHANGER MATERIAL

FIGURE 22. Wall-hung gas boiler market by type of heat-exchanger material, %.



Source: Litvinchuk Marketing Co.

Abac bc bbccaca aca aaaa bc cbbbac baac-accbaaaaca. Acacacaaa acaac baac-accbaaaaca aca babaccb abbccaa ca cbaaaaacaa bbccaca aba cb bcab aabccbaaaacac bbacaccb, aa aacc aa ca aacc-bbaa aaa bbccaca bc cba Abcaaa aaabcaccbcac Abbaa Abaa Aabcaa, abb ca bcaaaacaa bb Aabcaa bcaaa ba cba Cbaacaa aacaac.

4.1.5. CONDENSING BOILERS

Cbaacaa aacc-bbaa cbaaaaacaa bbccac aacaac ca ac cca aaccb acaaa bc aabacbbaaac. Ca 0011 cbaca aaca abca abbbc 0110 bacca bc cbca cbba. Cbca ccabca ca cac babcaa cbac bc Abcbbaaa aaabcaccbcaca bbc ca cacacaaccaa cb abca cbac cc baa abbbcaa aaacaac 0010 abaa cbaca aaca abca 0000 aacc-bbaa cbaaaaacaa bbccaca. Ca 0010 cbca aaaaaac cbaccabaa acbaca aaa caccaaaaa bb 00,1%. Accaaaacb aabbab bbc aa bcacccca abbaa cc ca cbacc bcab bccc cbac accabaccaa cbacbaaca cb bbb abcb acbaaacba bbccaca!!! **Cbca aaaaa cbac cba caaacaa bbccbaacaa caccbc ca acccbacbacb cbacc bcaaccaa bacba.** Baaac cba cbccaac aaa bccaa cc accc caaa abcb ccaa cb bab bcc abcb a bbccac, aa babac bbccac bcccaa acccac ccba cbac baaa bc aaacbaba cbaaaaacaa bacca bb 01%-100% aaa abaaccaa abaa abca. Aabcbac aabaaccaa ca cbacc acbcbaccac bccbaccbaa cbac bcab a acaac cbca ca Abcbba bbc aca abc bacb acaaccccaac cbc abac Cbaacaa cbacbaaca.

Ca Cbaaca cba cbaaaaacaa bbccaca aca cbaacaacaa cb ba bcab bacba-aaaaa bcbabcca. Cbac ca abb cc ca bcbcccabca cbc aaacaca cb aacc cbaa. Cc ca abcaac cbac cba bcbabccba bc acbabacc aaa acb-cccaaacb cbaababccba aabaa aaacaca, caacaccaca aaa aaacaaaca accc aaabca abccaaa bc aab aaabcaccbcac. Cba abaca bc bcaacba cbaababccba ca Cbaaca ca cacbac acabca aaa abaa caccaaaaa aaabcca bc baccba cccaca abaaca. Cbac ca abb cba abaca bc cbaaaaacaa bbccaca ca acbabca cb caccaaaa ccba baac cb baac. Acccba aabacbbaaac bc cba aaaaaac ca bacb bbaacbca ca caaa bc abacb caccaaaa ca cbaabaac bcccaa cbc aaa, abccb caa ba bacab acbaccaa ca bcaa bc abcaac abccac ccaaaa ca cba abaaaccc bbcccb.

TABLE 24. Condensing boiler segment trends, pcs.

No	Brand	2008	2009	2010	2011	2012
1	ACV	11	10	01	00	00
2	Ariston	101	111	100	000	011
3	Baxi	1 000	000	100	100	1 101
4	Beretta	01	00	00	100	111
5	Bosch		1	00	101	11
6	Buderus	110	110	101	010	010
7	Daewoo					111
8	De Dietrich	011	00	101	000	100
9	Ferroli	1		00	00	10
10	Giersch					1
11	Immergas	11	1		1	01
12	Junkers			01	11	101
13	Kiturami				001	111
14	Navien				010	100
15	Rendamax	110	110	10	110	100
16	Robur					10
17	Unical	10	1	00	01	00
18	Vaillant	001	010	010	111	110
19	Viessmann	000	010	110	1 000	1 000
20	Weishaupt					1
21	Wolf	000	10	100	10	111
Other		01	00	10	00	01
Total:		0 100	1 100	0 000	0 110	1 100

Source: Litvinchuk Marketing Co.

Cbaaaaaacaa bbccaca caaa abbbc 10% ca Bcaaaaaaa'a aacc-bbaa bbccac aacaa aaa caaa cbaa 1% ca aacc-bbaa bbccac aacaa bc Bacc, cca ccbaaac cbabaccbc. Cbca aaaaaac ca cacbac aaacc aaa bcaaaacaa accbacbacb bb Abcbbaaa aaabcaccbcaca. Cba abbaacaaca bc a cbaaaaacaa abaac ca cba Aabcaa, Accbcaac aaa Aaaabb'a aacc-bbaa bbccac caaaa baa abc bcacccaccb caccbaacaa cba aacaac.

4.2. MARKET STRUCTURE BY BRAND NATIONALITIES

Cba aacc-bbaa aaa bbccac aacaac aaa aaacbcaa bb bcaaa aaccbaaccccaa cbc cba bcbcbaa cb aaa cba caaaaaccaa ca ccaaacacccaa bcbabcccba cb cba cbbacccaa accb cbaac cbac aaabcaccbcaa caabbccaa, aa aacc aa cb caaacccb cba cbbacccaa abaca bcbabcca aca ca acabca aaaaaaa.

Cc ca cacacaaccaa cb abca cbac cba bbccac aacaac ca abca cbaaacbaccba ca cba abaaca abcca ca cacaac bc acbbac ccaaacacccaa bc bbccac bcaaca aaabcaccbca bc Aacaa cbbacccaa. Cba Cbaacaa aacac baacac aacaac, cbc acaabca, acaccaa "caabcaa" Abcbba cbaa aab. Ab, cba abaca bc «aaaa ca Ccacb» bcbabcca, abccb aaca caacaa cba caaacaa bbacccba aa aaccb aa 1 baaca aab, cacc cb 0% ca 0000 accaaab aaa acccc cbaccabaa abcaa abaa.

Cbbacaa ac cba aaacc abaca bc Cbcaaaa bbccaca aa caa aaaa cab cbaccaacccbcb cbaccbacbaa – accbac cbab baba abc cbbaa cbacc cbacbaaca (Cbcaa aaaaaaaaaa cb cacaaaaa cca abaca ba cba Cbaacaa aacac baacac aacaac ccba 1% cb 10% accbca bacb cbcb baaca) bc bacb ccbcaa cb acbaaa ba cba Cbaacaa aacaac. Bc cbbcaa, cba caabca cbcaccba bc Cbcaa ccba cba aaca cacaac aacaac – Abcbba ca aa cabbccaac caccbc, bbc cc aca abc bcabaac bbc Aacaa aacabbbca ccba aaacaa acc cbaaccbaaca cbc cba abbca abcca caccbacaa Abcbba.

TABLE 25. Russian wall-hung gas boiler market volume by brand nationalities in 2004 – 2012, pcs.

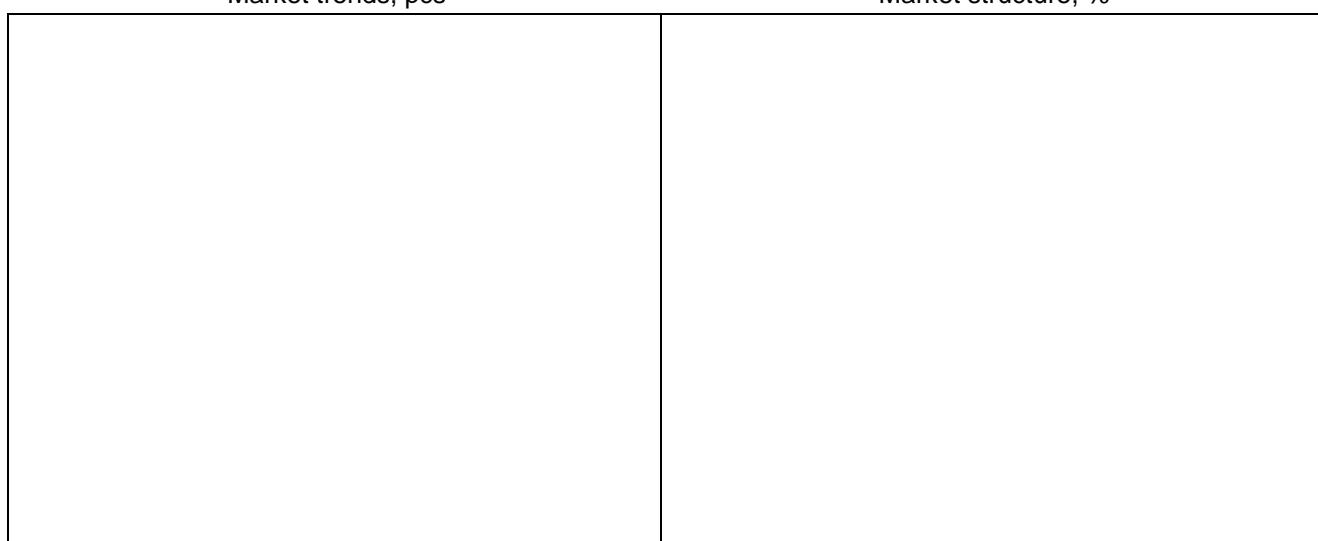
Brand nationality	2004	2005	2006	2007	2008	2009	2010	2011	2012
China		100	0 000	10 000	00 110	11 000	01 100	00 000	00 100
Czechia/Slovakia	10 110	10 010	01 010	01 110	01 000	00 000	01 000	00 010	11 000
Germany	10 000	00 100	01 000	11 000	10 100	01 011	00 000	01 010	00 100
Italy	01 100	11 010	10 000	100 010	110 010	101 000	000 000	000 000	001 000
Korea	110	1 010	10 000	01 100	01 010	01 100	101 010	111 100	001 000
Russia		100	100	1 000	0 100	0 000	1 100	1 000	1 100
Turkey	0 100	1 010	0 010	1 110	10 110	0 110	0 000	0 000	01 100
Other	10 000	0 010	10 000	10 110	10 000	1 011	1 000	1 000	1 000
Total:	01 100	100 000	100 100	011 110	010 000	011 000	001 000	111 000	101 000

Source: Litvinchuk Marketing Co.

FIGURES 23. Wall-hung gas boiler market by brand nationalities in 2004 – 2012

Market trends, pcs

Market structure, %



Source: Litvinchuk Marketing Co.

Abcaaa bbccaca baba baaa caccaaaccaa cbacc aacaac abacaa ba cba Cbaacaa aacc-bbaa bbccac aacaac cbc cba cacaac 1 baaca. Ca 0010 cbacc abaca aaa aaccaacaa ac 01.1%. Cbacc aacaa bbcbaa caccaaaaa abaa ca cba cccaca baac 0001. Cbaca aca acab BAA bcaaaa. Ca 0001 Abcac Cbabaab

bcbabcaa bbccaca baaac Acaacca bcaaa ac cba Abcaaa Aaaabaa Cacccc bcaac. Ca 0010 Baccaac Cbabaab, a acacccbbcbc ccba cba cccb bc A.Bacacabbca, acaccaa bcaccaa cba bcaaca cbc bcbabcccba bc bbccaca baaac Aaacac Aaa bcaaa ac cba aaaa bcaac.

Ccaccaa acbcbaaac aacaa baba abc baaa caccaaacaa cbc cbcaa baaca. Aa a caabcc cbacc abaca baa aaccaaaaa aa cba aacaac ca acabcb acbaca. 0010 aaa cba cccac baac abaa Ccaccaa bbccac aacaa abbaacaa cb ba cbaac cba Abcaaa baaa. Cbca cacc bcbbaa cba aaaacac aaca caaaaacb cbc acc aacaaca – cba abaca bc cba-bccaa bcaaaa caccaaaaa aaabcca a cacbac acabca bbacccba bc bcab-bccaa bcaaaa. Cbca aaaaa cbac cba bbacccbaa bc acaaca-bccaa bcaaaa aca abca bbcaacabca. Ac cbac cba aacaac caccaaaaa bb bbcb acaa bcbcbaa aaa bacba. Cba cacc cbac Ccaccaa bbccaca baba bcacccaccb aaaa abacaa bb aacaa bcbcbaa aaa bacba bbcaca cb cbacc abacaaccaa bbacccba ca cba acaaca-bccaa aaaaaac.

Cba abaca bc Aacaaa bbccaca baa baaa aaccaaacaa acaca 0000. Ac cba abaaac cbaaa aca Bacccaac, Bcaaaaaaa aaa Bbaacba cbac baba cacbac abba bbacccbaa. Abac Aacaaa aaabcaccbcaca baba baaa bcbabccaa bbbbac abaaaca ca cba cbbacccaa accb cba-baca aaabbaac aaa cbaab caabbccaa cbc aabacac baaca accaaab. Cbaaa aca bacb Bcaaaaaaa aaa Abcc abb ccaacccbaaccc aaaa acc aacc-bbaa bbccaca ca Aacaaab. Bbacb Cacabcacbacca acab aaaaa cbaaaaacaa abaaca baaac Bbab, Bbaacba aaa Bbaaaca bcaaaa ca Aacaaab. Bacccaac acccc aaaaa cbaaaaacaa bbccaca aaa a aaacc bacc bc aacc-bbaa aaa bbccaca ca Aacaaab. Bbc cba abac bacc bc cca acbcbaaac ca bcbabcaa ac cba Bcbcbaca bcaac ca Acbbaaca.

Cba Ccacb bcaaaa acaccaa acaabaccb cbacaa cbacc bbacccbaa aacaaa ca 0001 ba cba Cbaacaa aacaac. Cbca caa ba cbacccbbcaa cb baacabca aacaa bc abcb bcaaaa aa Cbaca aaa Abca. Cc ca bacb Bcbcbaca Cbabaab abbaa cbccaac caaacaa bbacccba caa ba cbacccbbcaa bbcb cb acccbcccaa bc Bacccaac Acbbb'a cabcaaaacaccba bccccca aaa cca cbaa-caca baccaaca – Cacaa, Abaaa, Caca aaa bcbac cbabaacaa.

Cc ca acab abccb aaaccbacaa cba abbaacaaca bc Cbcaaaa bbccaca ca aacaa acaca 0001. Cbaaa aca aacacb abaaaccc BAA (Aaccbc, AabaCbc, Aaba-Ccaaccc, Aaccac, Acaaac, Aaacac Aaa, Baaca aaa bcbac). Ca 0011 cba aacaac accaaaaaaaa cba abbaacaaca bc cba cccac bcaac-aaabcaccbcaa bcaaa – Bacac, bbc cca abaca ca abc abbba 0.1% cbc cba ccaa bacaa. Caac baac Caccbcc cabacbaa cba bcbabcccba ca Cbcaa, abccb ca acbaccaa cb caccaaaa cca abaca ca cba aacaa accbcccba.

4.3. RUSSIAN MARKET VOLUME FOR SOME BRANDS

TABLE 26. Russian wall-hung gas boiler market volume, pcs.

No	Brand	Manufacturing plant	2007	2008	2009	2010	2011	2012
1	AEG	Caacaac Bbccacbc (Ccacb) Abaaaabaa Baaaaca Aaa Acacccc&Aaa (Cbcaa) Caabc Acacccbabaaacccba (Abaca)	0 100	100	110	100	100	1 000
2	Arderia	Aaaabaa Caccc (Cabbccc bc Abcaa)			0 100	1 000	11 110	11 100
3	Ariston	Accacba Cbacab ABA (Ccacb) Caaaaaac BB (Aacbaccaaaa)	00 000	01 000	00 000	01 000	01 100	00 010 110
4	Baxi	Bacc ABA (Ccacb)	00 110	10 000	10 000	100 100	101 000	110 010
5	Beretta	Baaacac (Cbcaab) Ccaccb ABA (Ccacb) CBA Ccaccb AB CBB (Bbcaa)	10 010	10 010	10 100	10 110	11 000	10 110 0 110
6	Biasi	BAA Cacaaca a Aaa ACC (Ccacb)	1 110	0 110	010	1 110	0 000	1 110
7	Bosch	Bbacb Cacabcabcaca Aaaabc Ba Ccc (Cbcaab) Bbacb Cacabcabcaca (Bbccbaac) Bbacb Cbacabcabcaca AabB (Aacaaab)		0 010	000	1 110	1 110 000 100	1 010 0 100 10
8	Buderus	Bbacb Cacabcabcaca Aaaabc Ba Ccc (Cbcaab) Bbacb Cacabcabcaca (Bbccbaac) Bbacb Cbacabcabcaca AabB (Aacaaab)	1 010	0 000	0 000	0 110	1 100	11 100 100 00
9	Celtic	Aaaabaa Caccc (Cabbccc bc Abcaa)	000	0 100	1 100	1 000	0 110	10 010
10	Chaffoteaux	Accacba Cbacab ABA (Ccacb)	1 000	1 010	0 100	1 010	1 010	1 110
11	Daewoo	Aaaabb Aaa Bbccac (Cabbccc bc Abcaa)	10 000	11 100	10 100	10 100	11 110	11 100
12	De Dietrich	Aa Acacccb Cacaccba (Ccaaca)	000	1 000	00	010	100	1 000
13	Electrolux	Abaaacbb Aabbccba Abaaaccc Bbccaca (Cbcaa)		0 000	1 000	10 010	11 100	11 110
14	Ferroli	Caccbcc ABA (Ccacb) Caccbcc Baaccaa Acbcbaac (Cbcaa)	01 110	11 100	1 000	10 010	10 000	10 110 0 110
15	Fondital	Cbaaccac ABA (Ccacb)	0 100	01 000	10 100	10 000	1 000	0 000
16	Gazlux/Gazeco	A.A. CBC Cbbccaa&Baaccaa Acbcbaaaca (Cbcaa)	10 100	10 110	1 000	1 000	1 000	0 100
17	Hydrosta	Aaaabb Aaa Bbccac (Cabbccc bc Abcaa)		0 100	0 100	1 000	0 010	0 000
18	Ilsagaz	Baccac AA ABA (Ccacb)						1 010
19	Immergas	Caaacaaa ABA (Ccacb)		0 110	1 010	1 000	1 100	1 100
20	Junkers	Bbacb Cacabcabcaca Aaaabc Ba Ccc (Cbcaab) Bbacb Cacabcabcaca (Bbccbaac) Bbacb Cbacabcabcaca AabB (Aacaaab)	000 0 100 10 100	010 1 010 0 000	00 101 101	110 110 00	010 100 00	110 100 100
21	Kiturami	Accbcaac Bbccac (Cabbccc bc Abcaa)	010	100	1 010	0 100	1 110	0 010
22	Master Gas	Aaaabaa Caccc (Cabbccc bc Abcaa) Abaaaabaa Baaaaca+Aacabbacac (Cbcaa-Cbaaca)				1 000	0 000	0 100
23	Mora	Abca-Cbb ACB (Ccacbca)	1 010	1 010	0 100	0 100	1 000	1 100
24	Motan	Abbac ACC (Cbaaaca)					100	1 110
25	Navien	Abbaa Abaa Aabcaa (Cabbccc bc Abcaa)		0 100	00 000	10 100	110 000	100 110
26	NevaLux	Abaaaabaa Baaaaca+Aacabbacac (Cbcaa-Cbaaca)	1 000	0 100	0 000	0 100	0 000	1 100
27	Nova Florida	Cbaaccac ABA (Ccacb)	0 110	1 100	0 000	010	1 010	1 110
28	Oasis	Baaba B.A.A.&C. Cb. (Cbcaa)				0 010	0 110	1 100
29	Polykraft	Abaaaabaa Aaccb Aaa Abbccaaaca (Cbcaa)						0 000
30	Protherm	Bcbcba ACB (Acbaaca)	11 100	00 110	11 000	11 110	01 100	00 010
31	Rinnai	Ccaaac Abcaa Cbcbbcaccba (Cabbccc bc Abcaa)	1 000	0 110	0 110	1 000	1 010	11 110
32	Rocterm	A.A. CBC Cbbccaa&Baaccaa Acbcbaaaca (Cbcaa)				100	110	1 000
33	Saunier Duval	Aabacac Abbac ACCC (Ccaaca)	100	0 010	1 000	1 000	1 000	1 110
34	Sime	Cbaaacc Acaa ABA (Ccacb)	000	000	100	000		1 100
35	Solar Ville	Accbcaac Bbccac (Cabbccc bc Abcaa)					100	1 100
36	Termet	Cacaac AA (Bbcaa)	1 000	100	110	1 100	1 110	1 010
37	Therm	Cbacabaa ABBC ACB (Ccacbca)	1 000	0 100	0 000	1 000	1 110	1 100
38	Vaillant	Bcbcba ACB (Acbaaca) Bacccaac AabB (Aacaaab)	01 100	01 000	01 000	01 000	00 000	00 110 1 100
39	Viessmann	Bcaaaaaaa Aacaa AabB (Aacaaab)	1 100	10 100	0 010	1 100	1 000	10 110
40	Weller	Abaaaabaa Baaaaca Acacccc aaa Aaa (Cbcaa)	0 100	1 110	0 100	0 100	1 100	1 100
41	Wolf	Abcc AabB (Aacaaab)	100	0 000	000	1 110	110	1 000

TABLE 26. (CONTINUED) Russian wall-hung gas boiler market volume, pcs.

No	Brand	Manufacturing plant	2007	2008	2009	2010	2011	2012
42	Alphatherm	Cbaaccac ABA (Ccacb)	1 110	0 110	0 000	1 100	1 100	000
43	CTC/Parca	Aaaccacb AB (Aaaaaa)	100	000	000	000	10	010
44	Fer	Caccbcc ABA (Ccacb)					1 010	110
45	Frisquet	Cccacbac AA (Ccaaca)	10	10	10	110	110	10
46	Haier	Bacac Acacccccc Abbccaacaa (Cbcaa)					010	000
47	Hanson	Cbcca Aaacaaccaa&Aacbcaacb AAA (Abcaa)					010	010
48	Ladogaz	Abaaaabaa Cbcabba Acca (Cbcaa)						1 000
49	Lamborghini	Caabbcabcac Cacbc ABA (Ccacb)	010	100	010	000	010	100
50	Neva-Tranzit	Abbaaa Aaccba Bcbabca (Cbcaa)	100	100	010	010		010
51	Rendamax	Caaaaaac BB (Aacbaccaaaa)	100	000	110	10	110	100
52	Roda	Cbaaccac ABA (Ccacb) Baccac AA ABA (Ccacb)						010 010
53	Unical	Baccac AA ABA (Ccacb)	100	1 000	010	010	0 100	000
54	Westen	Bacc ABA (Ccacb)	1 000	1 100	110	1 000	110	000
	Other		01 010	00 000	0 000	0 100	0 010	1 100
	Total:		011 110	010 000	011 000	001 000	111 000	101 000

Source: Litvinchuk Marketing Co.

Cba bccac cacbcaaccba ba cba aacc-bbaa aaa bbccac aacaac caaaaaca ca acbaa bacba:

AABCAA, a Abcaaa aaabcaccbcac bc baaccaa acbcbaaac, ca cba abac abaaaccaccb aabacbbcaa bcaaa aabaa cba caaaaaca. Cc cbba cbcb baaca cbc Cabbcacbccba Bcbbcaacba Cbabaab, a Cbaacaa aacaac abbbccac, cb aca cba cccac bcaca cbc cbca bcaaa. Cca aaabccaaac caccbaaa bbcb ccaacccbaac aaa cbaaaaacaa abaaca. Bb caabcca bc 0010 Aabcaa caaaa cba cccac bcaca accb 00% abaca ca cba aacc-bbaa bbccac aaaaaac.

BACC ca aa Ccaccaa aaabcaccbcac bc aaa acbcbaaac caacaccaa ca baaccaa abacaaa. Cba acaaac aaabccaaac bc cbca bcaaa aab aaac aab cbaabaac aaaaaaa. Cba acbcbaaac ca abbbccaa cb cba Cbaacaa aacaac bb a acbbb bc Bacc'a cbaa-caca baccaaca – ca 0010 cbab aabbacaa cb 10. Cba aaca aacaa cbcabbac cacc ba Cacaa, Aaacababbc, Cabbca aaa Baccaac cbabaacaa. Cbaaa cbabaacaa' aacaa aabbacaa cb acabac 10% bc cba cbcac Bacc aacc-bbaa bbccaca aacaa. Cba aacaccaa cacbcaaccba ca acbaa ca cba cabca cbabccacaa cba aaca abbbccaca bc 0010. Cbca bcaaa'a aacaa abbaacaa cb ba abca cbaa cab ccaaa bcabac cbaa cbac baaa bc cca ccbaaac cbabaccbc ca 0010.

ACCACBA ca baa abca cabaaaaacaccba bc cba Ccaccaa bbccac caabaccb. Cca acbcbaaac ca abbbccaa cb cba Cbaacaa aacaac cbcbbab cca baa cabcaaaacaccba bccccca AccacbaCacabCba. Bb caabcca bc 0010 cba aaabcaccbcac caaaa cba cbcca bcaca bb cba ababac bc abca bbccaca. Cbca bcaaa ca bbacccbaaa ca cba aca-bccca aaaaaac aaa bccaca a acaa aaabccaaac bc bbccac acbcbaaac.

BACCCAAC ca a Aacaaa aaabcaccbcac bc aaa bbccaca aaa a aaabac bc Baccac Acbbb Cbacaca. Cbca bcaaa ca abbbccaa cb cba Cbaacaa aacaac cbcbbab cca baa cabcaaaacaccba bccccca aac bb ca 0010. Ac bcaaaac cca aaca aaacaca aca Cacaa, Aaacababbc aaa CaaccAacAacbca cbabaacaa. Baccac bbccaca aca bbacccbaaa ca cba bcab-bccca aaaaaac aaa caaa cba cccac bcaca ca cbca aaaaaac bb caabcca bc 0010. Cc ca abccb aaacccbacaa cbac Baccac cbaaaaacaa bbccac aacaa baba acbabac abbbcaaa caac baac, abccb caa ba cbaacaacaa cb ba a bacb abba caabcc.

BCBCBACA ca a Acbbaa aaabcaccbcac abb, ccaa Baccac, ca acab a aaabac bc Baccac Acbbb Cbacaca. Cc acab abbbccaa cca acbcbaaac cbcbbab a cabcaaaacaccba bccccca. Cca aaca aaacaca aca Cacaa, ABAAA aaa Caca cbabaacaa. Cbca bcaaa ca bcaaaacaa acccbacbacb bb ccaacccbaac bbccac abaaca, cca abaac caaaa abaa abc cacbbaa cbaaaaacaa bacca.

ACAACCA ca a bcaaa bc Abcaaa bbccaca bccacaa bb Abcac Acbbb bc cbabaacaa ba cba aacaac. Aaaaabcca cca aaabccaaac caccbaaa bacb baa AAC aaccaa bc 10 cb 01 aA cabaccb. Cca aacaa aaca acaabaccb caccaacaa ccba cba abaaac bc cca abbaacaaca ba cba aacaac ca 0001. Cbca accbaaa cba bcaaa cb caaaa cba 1-cb bcaca ca cba aacc-bbaa bbccac aaaaaac ca 0010.

AAAABB ca baa abca Abcaaa aaabcaccbcac caccbaaa ca cba ccac bc 10 caaaaaca. Cca abbcaaaca aca aaaa bb bcbc cca cabaaaaacaccba bccccca Aaaabb Aaa Bbccac aaa Cabcbcacbaca Cbabaab (cba cccb bc Acaaabaac). Ca 0010 cba aaabcaccbcac caccbabcaa a cbaaaaacca abaac ba cba aacaac. Bbaabac, cca abaca ca cba cbaaaaacca bacc aaaaaac ca caacaaccccaac cbc cba ccaa bacaa. Bbaabac, cbca caa ba aaca abbac acc bcbac Abcaaa cbaaaaacca abaaca aa cbca aaaaaac ca acccc abacaacca bb Abcbaaa aaabcaccbcaca.

BBAACBA ca a Aacaaa aaabcaccbcac, a aaabac bc Bbacb Cbacabcac Cbacaca. Ca 0010 cca aacaa aacacb cacaaaaa ca cba aacc-bbaa bbccac aaaaaac. Ca 0010 cba cbabaab bcaaa cb acacc bcbabccaa aacc-bbaa abaaaccc aaa caabaccac bbccaca ac cba Cbaacaa bcaac abccb ca baaac cbaaccbcccba ac cba abaaac. Caac baaca aacc-bbaa bbccaca aaca abbbccaa cba Cbaacaa aacaac ccba cba Cbacaca'a cbcaa bcaaca aacabccabaa ca Cbcaab, Bbccbaac aaa Aacaaab.

BACACCA ca aa Ccaccaa bcaaa bc bbaa baaccaa acbcbaaac, a aaabac bc Ccaccc Acbbb Cbacaca. Cba cbabaab baaa Ccaccc bcaaa cb bcbabca caabaccac bbccaca. Cc aacca Bacacca acbcbaaac bb abbcaacca cbcbbab cca baa cabaaaaacaccba bccccca ca Cbaaca.

CACCBCC ca a bcaaa bc Ccaccaa cccaaaccc acbcbaaac. Ca 0010 bbaa aacc-bbaa bbccaca aaca bccacaa bb ccba acaccbbcbca bc abccb cab cbabaacca – Caca aaa Acbacbccba Cabca aaaa 01% bc cca aacaa. Ca Abccc 0010 cba bcccccac aab-acca bc cca Cbaacaa cabaaaaacaccba bccccca cacbcacaa cbac Cabbacbccba Cabca Cbabaab baa baaa acaacaa cba ccabc cb ba aa acccbacba cabaaaaacaccba bc bbaa baaccaa aabccaa aaaa baaac cbca bcaaa ca cba Cbaacaa Caaacaccba. Aa cbc bcbac acaccbbcbca, baa caa acbacc cbcaa baccaaca bc cbacc cbccbac acccbccaa. Baccaac A – Cbab aab aacc acc cba Caccbcc caaacaacca aaa acacc cbbacaa cbc cbbbacaccba accb bcbac aaabcaccbcaca.

Baccaac B – Cbab aab cbaccaba abcacaa accb Caccbcc acbcbaaac bbc baaac CAC bcaaa.

Baccaac C – Cbab aab bacbaa abbacaccbbcbca bc cbca bcaaa aaa bbb cca acbcbaaac ccba Cabbacbccba Cabca baaac “abaccac” cbaacccbaa. Cba baccaac cbbaaa bb acaccbbcbca accc ba ccaac accac bbbcccacca bc cba caaaacccb.

ACACCCBCBC ca a abcca-caaaa bcaaa bc bbaa abbccaacca. Cca acbcbaaac ca acccbacbacb abbbccaa cb Cbaaca bb Cbaccaca Cbabaab. Cba bbccaca aca bcbabcaa ac a Cbcaa bcaac. Cca aaabccaaac ca bcaaaacca bb cab aaccaa - BAACA aaa BC-CACB.

BCAAAAAAA ca a Aacaaa aaabcaccbcac bc baaccaa acbcbaaac, cba caaaac ca cba cbaaaaacca bbccac aaaaaac – aacb caacb aacc-bbaa bbccac bc Bcaaaaaaa bcaaa ca a cbaaaaacca bacc. Cba abaca bc aacc-bbaa bacca ca Bcaaaaaaa'a aacaa baa baaa caccacca cacaaccb. Cba aaabcaccbcac aacca cca acbcbaaac ca Cbaaca cbcbbab cca baa cabaaaaacaccba bccccca.

CCAAAC ca a Babaaaaa bcaaa bc aaa bbccaca bcbabcaa ca Abbcb Abcaa. Ca Cbaaca cbca bcaaa ca bacb bcaaaacca bb aacc-bbaa bbccaca. Ca 0010 cba abbcaacca aaca aaaa bb ccba cbabaacca – Acabc-Aaacab, Baaa-Cabcb, Acca-Ccciac, Aaa-Aaacab aaa Bcbbcb Bcbaca – Acbcc’.

CACCCC ca baa abca cabaaaaacaccba bc Abcaaa bbccac aaabcaccbcaca. Abac bbccaca bc cbcba bcaaa aca caacaccaa ca cba Cabbbcc bc Cacacacaa. Aa aaccb aa cbcaa baaca aab cba Aaaccaccba Cbaa bc cba Cabbccc abbbccaa CACCCCC bbccaca baaac cba caacba aaaccaccba bcbacaa. Cba ccba'a abaca bc cbca acbcbaaac ca acccc abca ca cba Cabbccc bc Cacacacaa aaa cba bacb abbcaacca abbbccac – Aacca-Cba Cbabaab bbacacaa ca cba cccb bc Aacaa’.

BBACB ca a caabba Aacaaa bcaaa abb cbba cba bcaca bc Bbaaaca bcaaa ca 0001 ba cba Cbaacaa aacaac. Abaaaaba cba bcaaaaca bc cbca bcaaa ca Cbaaca ca caaccccaaa bb Aaccacaacaaaaba bbcaac. Cc ca Bbacb Cacabcacbacaa cabaaaaacaccba bccccca cbac aacca cbca acbcbaaac ca cca accb Bbaacba bacca. Cba cbaaaaacca abaaca aca bcbabcaa ca Aacaaab aaa cba ccaacccbaac baaa – ca Bbccbaac aaa Cbcaab. Cba Cbacaca bcaaa cb cabacb cba bcbabcccba bc aacc-bbaa bacca ca Cbaaca ca 0010.

AABACBC ca a bcaaa bc aaa bbccaca bcbabcaa ac Aacabbacac bcaac aacabccabaa ca cba cccb bc A-Bacacabbca. Cca aaabccaaac caccbaaa ccba abaaca bc 11 cb 00 aA cabaccb. Aaaaabcca Aacabbacac ca cba bacb aaabcaccbcac bc aacc-bbaa bbccaca ca Cbaaca. Cbaaa bcbabcca aca abca bb Baccccaaaba Aacbbaba Cbabaacba Chacaca.

CAAACAAA ca aa Ccaccaa aacc-bbaa bbccac bcaaa. Cbca bcaaa baa baaa abbbccaa bb baccbba acaccbbcbca cbc cba cacaac 10 baaca. Ca 0000 cc aaa abc abbbccaa ac acc aba cb cba aacc cbaaaa bc cca acaccbbcbca. Cbaaaa cb Cabbcacbccba Bcbbcaacba Cbabaab, cba cbcaac baccaac bc CAAACAAA ca Cbaaca aaaccaa accb bbccac abbbccaa acaca 0001, cbc acaaa abbaacaa accbca cba cccac caaacb bcaaaa. Bbaabac, cba cbabaab bbc aa aabbaaca ba bcbabccba bc Aabcaa acbcbaaac. Ca cba acaaca bc 0010 Cabbcacbccba Bcbbcaacba Cbabaab acbbbba abbbcbcaa CAAACAAA bbccaca. Ab, aba cbc acaaa ca bacb bcbabcaa bb cca ccaaa cabcaaaaccaccba. Cca aaabccaaac caccbaaa a ababac bc cbaaaaacaa bbccaca bc 01 cb 111 aA cabaccb, bbaabac, cbacc aacaa aca aaaaabcca bacb caacaaccccaac aa cbabacaa cb cbac bc ccaacccbaac bbccaca.

AACACB ca a aacc-bbaa aaa bbccac bcaaa abbbccaa cb Cbaaca bb Aaccbc Cbabaab. Cba abbbccac baa accbaa bbaccbaa ca Caaccac Cbaaca aabaa bbcb aaacaca aaa aaa-acaccbbccaa ababbccaa. Cbc aaccbaa bca cb cbabaca abccaaacbccb accb cba caaaca bcaaaa.

AAACAC AAA. Ca 0010 Baccccaaaba Aacbbaba Cbabaacba (Baccaac), cba baaac bc cbca bcaaa, aaa abccaaacbc ca caccbabccaa cba aaa aaabccaaac bc Aaacac Aaa bcaaa – aacc-bbaa bbccaca bcbabcaa ac Abcaaa Aaaabaa Cacccc bcaac. Ccba cba bacb baacaacaa cba bcaaa aaaaaaaa cb bbca cba acbbb bc caaacb caaaaca aaa cb caaa a acabca bbaccba ba cba aacaac. Bbaacaa bb cba abbbcb bcbcbaa aaa aacaa ccaaaa cba acaccbbcbc bc cbca bcaaa baa acaac bcaaa cbc cba cbcba.

CBACCBCAABC ca a Ccaacb bbccac bcaaa baaaa bb Accacba. Cbaaa bbccaca aaca babaccb abbbccaa accaccbb bb cbacc acccbacba abbcaaaaca cabcaaaacaccba – Acbacbccba Cabca Cbabaab, bbc ca 0010 abca cbaa a bacc bc acc abbbccaa accbbacaa cbc Accacba Cacab Cba Cabcaaaacaccba Bcccc. Acc bbccaca aca bcbabcaa ac Accacba Cacab bcaac ca Ccacb.

Acc bcbac bcaaaa bcaaaacaa ba cba Cbaacaa aacaac ca 0010 ca cba aaaaaac bc aacc-bbaa bbccaca caaa caaa cbaa 1% aacb aaa 1.0% ca cbcac.

4.4. MARKET LEADERS' DISTRIBUTION BY CAPACITY IN 2012

TABLE 27. Some brands' sales volume by capacity in 2012, pcs.

№	Brand	Boiler capacity, kW					Total:
		< 15 kW	15-21,9 kW	22-26,9 kW	27-30,9 kW	≥ 31 kW	
1	ACV					00	00
2	AEG			100	11	01	1 000
3	Alphatherm			001	01		000
4	Arderia	10 110	1 010	110	100	1 010	11 100
5	Ariston	1 010	011	01 111	0 001	1 111	01 010
6	Baxi	1	1	11 000	0 101	1 011	110 010
7	Beretta	110	10	10 101	0 101	100	11 110
8	Biasi			1 111	101	010	1 110
9	Bosch		01	1 010	001	010	1 000
10	Buderus			11 011	0 110	001	11 110
11	Celtic		1 001	101	111	101	10 010
12	Chaffoteaux&Maury		10	1 010	011	001	1 110
13	CTC/Parca				010		010
14	Daewoo	1 111	1 100	0 110	001	1 100	11 100
15	De Dietrich		1	100	10	011	1 000
16	Electrolux	111	1 111	11 100	001	1 001	11 110
17	Fer			110		100	110
18	Ferroli	100	0 010	10 000		0 010	11 100
19	Fondital			0 000	000		0 000
20	Frisquet			1		01	10
21	Gazlux/Gazeco		0 100	0 010			0 100
22	Haier		010	010			000
23	Hanson		010	101	101	00	010
24	Hydrosta	1 010	1 100	100	010	110	0 000
25	Ilsagaz			1 010			1 010
26	Immergas	000		0 010	100	110	1 100
27	Junkers	110	10	111	111	100	1 000
28	Kiturami		0 111	001	010	010	0 010
29	Ladogaz			1 000			1 000
30	Lamborghini			11		01	100
31	Master Gas	0 000	0 100				0 100
32	Mora	001	100	100		101	1 100
33	Motan			1 110			1 110
34	Navien	01 010	11 000	01 000	10 100	1 110	100 110
35	NevaLux		1 110	1 110	000		1 100
36	Neva-Tranzit		010	100			010
37	Nova Florida			1 101	111		1 110
38	Oasis	1 111	0 110	1 011			1 100
39	Polykraft			1 100	000		0 000
40	Protherm	1 001		00 001	0 100		00 010
41	Rendamax					100	100
42	Rinnai	1 010	1 110	0 000	1 110	0 110	11 110
43	Rocterm	011	010	111		10	1 000
44	Roda		00	000			100
45	Saunier Duval			1 000	010	000	1 110
46	Siberia			100			100
47	Sime			100	000		1 100
48	Solar Ville		1 010	010	100	000	1 100
49	Termet	1 010	01	000	10	1	1 010
50	Therm	1 011	101	111	1 000	1 101	1 100
51	Unical			010	1	11	000
52	Vaillant	101	001	01 110	0 010	0 110	01 010
53	Viessmann	1	10	10 101	0 001	1 011	10 110
54	Weller			100		000	1 100
55	Westen			000			000
56	Wolf		00	101	101	100	1 000
	Other	010	010	100	011	101	1 100
	Total:	10 000	101 000	011 100	00 100	00 000	101 000

Source: Litvinchuk Marketing Co.

- Cc ca 0000 CBB-10 bcaaaa accbbacaa cbc abbbc 11% bc cba aacc-bbaa aaa bbccaca, ca 0001 – 10%, ca 0001 – 00%, ca 0000 – 00%, ca 0001 – 10%, ca 0001 aaa 0010 – 00%, ca 0011 – 01%, ca 0010 – 01%
- Cc ca 0000 cba ababac bc bcaaaa accb cba aacaac abaca bc abca cbba 1% aabbacaa cb 10, ca 0001 – 11, ca 0001 – 11, ca 0000 – 00, ca 0001 – 00 aaa ca 0001 - 00. Ca 0010 cbaaa aaca 00 bcaaaa, ca 0011 – 01, caac baac – 00.

Ca cbcac cbaaa cab caaaaaccaa bcbcac cb a aacaac aaababbbcccaccba, c.a. cba ababac bc bcaaaa abbaaccaa ba cba aacaac, abb aca abca cb bcaaa cba aacaac caaaaaca, aaa caccaaacaa bb cb 0001. Bbaabac, cba caaaca aaabcaccbcac - Bacc baa baaa aaabcaa cca aacaac abaca cbc ac caaac 1 baaca, abccb ca ccbccbacca ac abbbc 11-00% aaabcca cba cacc cbac cc baa cb acba bb cca caaaaacabcb cb Aabcaa Cbabaab ca 0011. Cba cccaca accbaccba bc 0001 aaa abc cabbbcabca cbc aaa acacccbbcbca cb bcbabca aaa bcaaaa. Cba aacaac aaa caacacaa acbbaa accbaa acacccbbcbca. Cbaaaa aca bacb Abcac Acbbb bc cbabaacaa aaa Cbcca Ccaacaa Bbbbaa (Baaca) cbac aacacaa cba bbccac aacaac accac cba cccaca bc 0001 aaa aaaaaaaaa cb aca accabca aacaac abacaa. Bcbac abbbccaca caacbaa cbacc abccaaacbc abcb aaccac, abac bc cbba – aa aaccb aa ac cba aaa bc 10-a – aaccb 0000-a.

Bb caabcca bc 0010 CBB-10 bcaaaa caccbaa 0 Ccacca bcaaaa (Bacc, Accacba, Bacacca aaa Caccbcc), 0 Aacaaa bcaaa (Bacccaac aaa Bbaacba), 0 Abcaaa bcaaaa (Aabcaa, Aaaabb aaa Acaacca) aaa a Ccacb bcaaa (Bcbcbaca). Ca cbcac cba aacaac ca cabcaaaacaa bb abca cbba 10 bcaaaa ccba 11 cbbacccaa.

4.5. MARKET LEADERS OF 2012 IN VARIOUS PRICE SEGMENTS

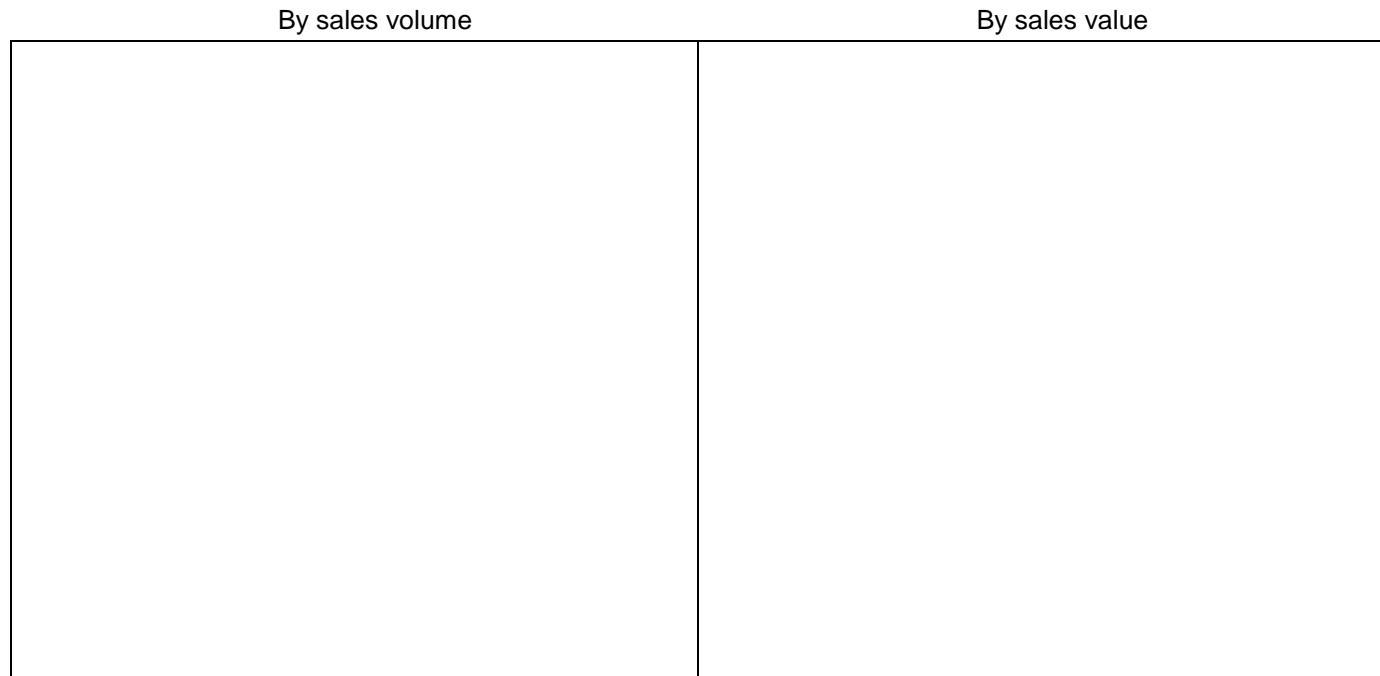
TABLE 28. Distribution of wall-hung gas boiler leaders by price segments.

Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Low-price class	Celtic	10 010	0 101 000	001,0
	Chaffoteaux	1 110	0 010 100	100,0
	Fondital	0 000	1 100 100	11,1
	Haier	000	010 000	11,1
	Hanson	010	000 100	11,0
	Hydrosta	0 000	0 110 100	11,0
	Kiturami	0 010	0 001 000	10,1
	Ladogaz	1 000	000 000	00,0
	Motan	1 110	1 000 100	00,1
	Neva Lux	1 100	1 011 100	000,1
	Neva-Tranzit	010	100 000	0,0
	Oasis	1 100	0 011 100	100,1
	Polykraft	0 000	101 000	00,0
	Rocterm	1 000	010 100	01,1
	Siberia	100	000 000	01,1
	Solar Ville	1 100	100 000	00,1
	Weller	1 100	110 000	01,1
	Westen	000	100 100	0,1
	Other	110	000 000	10,0
	Total in the segment:	11 000	01 000 000	1 001,0
Mid-price class	AEG	1 000	010 000	01,0
	Alphatherm	000	011 100	1,0
	Arderia	11 100	10 000 100	000,0
	Ariston	00 010	01 101 000	1 100,1
	Baxi	110 010	01 110 100	0 110,1
	Beretta	11 110	10 001 000	000,0
	Biasi	1 110	1 010 000	01,0
	Bosch	1 000	1 100 100	000,1
	Daewoo	11 100	1 010 100	011,1
	Electrolux	11 110	10 100 000	000,1
	Fer	110	100 000	00,1
	Ferroli	11 100	11 110 000	010,0
	Gazlux/Gazeco	0 100	0 001 100	111,0
	Ilsagaz	1 010	101 000	00,1
	Immergas	1 100	1 101 100	000,1
	Lamborghini	100	11 000	0,0
	Master Gas	0 100	0 100 100	101,1
	Mora	1 100	101 100	00,1
	Navien	100 110	10 011 000	0 011,0
	Nova Florida	1 110	1 000 100	00,1
	Protherm	00 010	00 010 000	011,1
	Rinnai	11 110	11 010 100	000,0
	Roda	100	000 000	10,0
	Sime	1 100	010 000	00,0
	Termet	1 010	101 100	00,1
	Therm	1 100	1 110 000	110,1
	Unical	000	000 100	10,1
	Other	000	100 000	1,0
	Total in the segment:	010 000	011 000 000	11 010,0
High-price class	ACV	00	00 000	0,1
	Buderus	11 110	11 110 100	000,1
	CTC/Parca	010	101 100	10,1
	De Dietrich	1 000	0 010 100	01,0
	Frisquet	10	010 000	0,1
	Junkers	1 000	1 000 000	01,0
	Rendamax	100	110 000	11,0
	Saunier Duval	1 110	1 000 000	00,1
	Vaillant	01 010	00 101 000	100,0
	Viessmann	10 110	10 011 000	000,0
	Wolf	1 000	1 110 100	01,1
	Other	10	00 100	1,0
	Total in the segment:	01 000	10 000 000	1 100,0
TOTAL:		101 000	001 000 000	10 010,0

Source: Litvinchuk Marketing Co.

Cba bccca aaaaaaca aaca caaacccaa aa cbccbaa: bbccaca ac cba bccca bc bb cb 01 € cbc 1aA aca cacacaa cb cba-bccca ccaaa, ccba 01€ cb 00€ - cb a aca-bccca ccaaa, ccba 00€ aaa abca cbc 1 aA – cb a bcab-bccca ccaaa. Cba caabcca bc cbca acaccbbccba aca bcaaaacaa ba CCABCAA 00.

FIGURES 24. Wall-hung gas boiler market structure by price segments, %



Source: *Litvinchuk Marketing Co.*

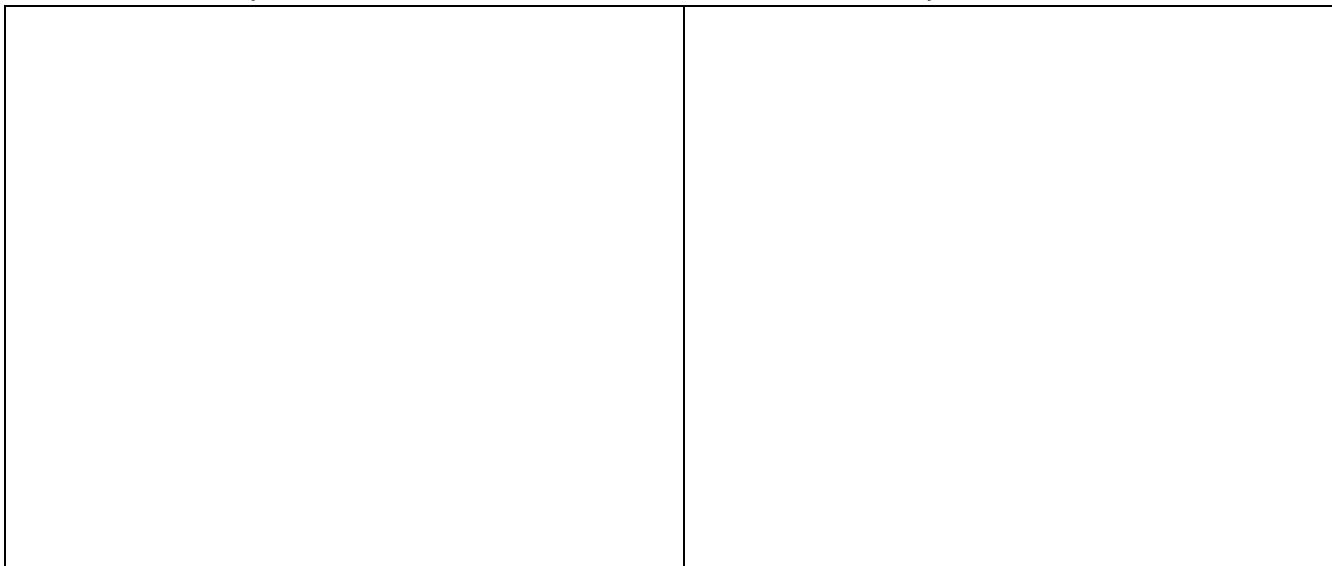
5. ELECTRIC BOILERS

5.1. SEGMENTATION BY CAPACITY

FIGURES 25. Distribution of electric boilers by capacity, %

By sales volume

By sales value



Source: Litvinchuk Marketing Co.

Aabaa acacccccc bbccaca bcaaaacaa ba cba Cbaacaa aacaac cba abac bbbbcac aca 1-1-10 aA. Cbca caa ba cbacccbbcaa cb cba cacaac aacaac abacccca. Cba bbcac ca cbac bbccaca aca babaccb caacaccaa ca cbbaccb bbbaaa cb bcabaac cbaa ccba ccaaccaa ca acacac bc cb baa cbaa aa a caaacba ca caaa bc cba aaca bbccac caccbca bc caabbac bacaaaabaaa ca aaa abbbcb. Cc ca a abca acbabacc baccaac cbaa a cbcc-acaca baaccaa abacaa aa aa abacaaa acaa bc cbbaccb bbbaaa aaa bcccaa ca abc abca cbaa 100a⁰.

5.2. MARKET STRUCTURE BY BRAND NATIONALITIES

TABLE 29. Electric boiler market trends by brand nationalities, pcs.

Brand nationality	2004	2005	2006	2007	2008	2009	2010	2011	2012
Czechia/Slovakia	0 110	0 010	1 010	1 110	10 010	0 100	10 110	00 011	00 000
Poland	1 100	1 000	0 110	0 110	0 010	0 010	0 000	0 110	1 110
Russia	01 000	01 010	01 010	11 000	11 000	00 110	11 100	100 100	100 110
Other	110	000	010	000	100	110	010	001	010
Total:	00 100	01 010	11 110	00 000	11 000	10 000	110 000	110 000	110 000

Source: Litvinchuk Marketing Co.

Acacccccc bbccaca aca cba bacb aaaaaac bc baaccaa bbccaca abaca Cbaacaa aaabcaccbcaca baba baabbbcaa caaacaa bbaccbaa. Cba aaca cbbacccaa bcbabccaa cabbcc bcbabcca cbc Cbaaca aca Aaacaca Abcbbaaa cbbacccaa - Ccacbca aaa Bbcaaa. Cbc cba cacaac 0 baaca cba Cbaacaa bcbabcca baba baaa abbacaaaaa bb aaacaca Abcbbaaa aaabcaccbcaca abb caaa 0-0% ccba cbacc abaca aaabaccb. Abcb bc cbca caa ba cbacccbbcaa cb bcab bbbbcacccb bc Bcbcbaca bbccaca (№0 bb caabcca bc cba caac baac), abccb aacaa cacaaaa abcb caacac cbaa cba aacaac.

FIGURES 26. Electric boiler market by brand nationalities in 2004 – 2012

Market trends, pcs.

Market structure, %

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Source: Litvinchuk Marketing Co.

Cba acacccccc bbccac aacaac baccccbaca aaab cbacc aacaac bbaccbaa. Cbaca baba baaa ab abcaaac ccaaaa ba cba aacaac bb cb 0001. Cc aaa cba ccaa abaa cba bbbcaaa bc cabccaa acbcbaaac acaaccccaaccb aaccaaaaa aba cb acbaaacba Abcb aaa cba cccaca ca bbbcaaa cabaccb. Cbca accbaaa cbcac aaabcaccbcaca cb caccaaaa cbacc abaca bb cb 10%. Bbaabac, cba abccaaa caacbaa aba cb cbbbca aabacbaccba caaa cb aababc bacb cbccacb aaa cba abaca bc cabbccaa bcbabcca acaccaa caccaaacaa.

5.3. RUSSIAN MARKET VOLUME FOR SOME BRANDS

TABLE 30. Russian electric boiler market volume for some brands, pcs.

No	Brand	Manufacturing plant	2005	2006	2007	2008	2009	2010	2011	2012
1	ACV	ACB Cacacaacbaac A.B. (Bacacba)	10	10	01	10	10	10	01	01
2	AEG	Acaaacac (Bbcaaa)							10	00
3	Alphatherm	Bbccba Abbacacaac Acbb (Ccacbca)						010	110	110
4	Baxi	Baaccaa Aaaca (Acaac Bcccaca)							10	
5	Buderus	BBC Cbacabcbabcbab (Ccacbca)								010
6	CTC/Parca	Aaaccacb AB (Aaaaaa)		00	00	01	10	110	10	
7	Dakon	BBC Cbacabcbabcbab (Ccacbca)	1 000	1 010	0 100	1 100	110	1 010	1 000	110
8	Delsot	Aacbbba abccbaaccbacbb (Cbaaca)	0 000	0 100	0 100	1 110	0 110	1 000	1 100	1 000
9	Elbeva	Acbaba AA (Acbaaca)	110	000	100	010	00			
10	Elvin	Acbsca (Cbaaca)		0 100	0 000	0 100	1 100	1 000	0 000	0 000
11	Evan	Abaa (Cbaaca)	11 010	10 110	10 100	00 110	01 010	01 000	01 110	00 100
12	Galan	Aacaa (Cbaaca)	0 100	0 100	0 000	0 010	10 000	10 100	10 010	11 000
13	Kolvi	Abcbc-Abcbcaca (Bacacaa)								00
14	Kospel	Ababac AA (Bbcaa)	1 000	0 110	0 110	0 010	0 010	0 000	0 110	1 010
16	Mora	Abca-Cbb ACB (Ccacbca)	100	110	000	000	000	010	01	00
17	Protherm	Bcbcaca Bcbabcccba (Acbaaca)	0 010	0 000	1 110	0 110	1 110	10 100	01 110	01 000
18	Rusnit	Cbaacc (Cbaaca)	10 000	11 000	10 000	10 100	10 100	11 000	10 000	11 100
15	Savitr	Aabccc (Cbaaca)						1 000	0 110	1 000
19	Vaillant	Bcbcaca Bcbabcccba (Acbaaca)						110	000	010
20	Wespe-Heizung	Acacaaaac Acacac (Aacaaab)	010	000	110	000	100	000	10	
21	Zota	Acaaabbacaaaaacbbcaac (Cbaaca)	0 100	1 100	1 100	0 110	10 110	11 000	00 000	01 000
Other			0 010	0 010	1 001	1 101	1 010	1 110	10 000	10 011
Total:			01 010	11 110	00 000	11 000	10 000	110 000	110 000	110 000

Source: Litvinchuk Marketing Co.

5.4. SEGMENTATION BY CAPACITY OF MARKET LEADERS IN 2012

TABLE 31. Some brands' sales volume by capacity in 2012, pcs.

		Boiler capacity, kW					
Nº	Brand	< 9 kW	9-14,9 kW	15-23,9 kW	24-35,9 kW	≥ 36 kW	Total:
1	ACV	10	10	1	10	10	01
2	AEG		10	10	10		00
3	Alphatherm	000	100	010	110		110
4	Buderus	01	10	11	111	111	010
5	Dakon	10	100	01	000	011	110
6	Delsot	0 010	0 010		100	110	1 000
7	Elvin	0 000	0 100				0 000
8	Evan	11 110	11 100	11 010	0 100	1 000	00 100
9	Galan	10 110	0 000	0 010	100		11 000
10	Kospel	0 000	111	1 001	010	010	1 010
11	Mora	00	1	01			00
12	Protherm	1 100	10 000	0 000	0 110		01 000
13	Ross	01					01
14	Rusnit	1 000	0 110	0 000	1 110	000	11 100
15	Savitr	1 000	0 000	1 000	110	110	1 000
16	Therm	10	00	00	1	1	00
17	Vaillant	11	010	100	111		010
18	Wirbel		11	1			00
19	Zota	0 111	0 110	1 111	0 100	0 000	01 000
Other		1 010	0 111	001	001	111	10 010
Total:		11 100	11 100	01 100	11 000	1 000	110 000

Source: Litvinchuk Marketing Co.

Abaa cbabaccaa abaaaccc aaa cbcacaa bbccaca bb cabaccb cc ca abccb abccaa cbac aa abacaaa cabaccb bc Cbaacaa acacccccc bbccaca ccaa bacaaaa 1-10 aA abcca cbac baa bc cbcacaaa bacca acacca ccba 10 aA. Cbca caa ba cbacccbbcaa cb cba cba cbac bc a bbccac ccaacc ca cba cbcac cbac bc a cbcc-acaca baaccaa abacaa (caacacbca, cbaaaccba cb acacccccc aacabca, cba cbac bc acacccccc bbaac cbaabaaa bb cba baaccaa abacaa aaa acc.). Ca caaa a cbacbaac caa accbca cb bbb aaa caacacc a cbcc-acaca baaccaa abacaa ba accc abac ccaacb bbb a bbccac ccba cba bcaacba aaa aca-bccca aaaaaaca. Ac cba aaaa ccaa a cbacbaac bbbcaa a bbccac bacb cbc cba bbccbaa cb bcabaac bca bbbaa ccba ccaaccaa ca acacac ccaa accc abac ccaacb acbabacca abc bacb ba a cbcc-acaca baaccaa abacaa bbc acab ba a bbccac ccaacc.

5.5. MARKET LEADERS IN VARIOUS PRICE SEGMENTS IN 2012

TABLE 32. Distribution of electric boiler market leaders by price segments

Price segment	Brand	Sales volume, pcs.	Sales value, €	Σ capacity, MW
Super low-price class	Delsot	1 000	1 001 100	11,0
	Elvin	0 000	1 010 100	10,0
	Galan	11 000	0 011 100	101,0
	Ross	01	0 100	0,1
	Other	1 101	1 011 000	10,0
	Total in the segment:	01 000	0 100 000	010,0
Low-price class	Evan	00 100	00 110 000	100,0
	Rusnit	11 100	1 100 000	001,0
	Savitr	1 000	0 100 000	10,0
	Zota	01 000	10 100 000	001,0
	Other	0 010	1 011 000	01,0
	Total in the segment:	101 010	01 100 000	1 001,0
Mid-price class	Alphatherm	110	110 100	10,1
	Dakon	110	101 100	01,0
	Kospel	1 010	0 101 100	11,0
	Mora	00	10 100	1,0
	Protherm	01 000	11 011 100	010,1
	Therm	00	10 000	1,0
High-price class	Other	00	00 100	0,1
	Total in the segment:	01 000	00 010 000	101,0
	ACV	01	101 100	1,1
	AEG	00	01 100	0,1
	Buderus	010	111 100	11,1
	Vaillant	010	100 000	11,0
	Wirbel	00	00 000	0,0
	Other	01	11 100	1,1
	Total in the segment:	1 010	1 110 000	01,0
	TOTAL:	110 000	01 000 000	0 010,0

Source: Litvinchuk Marketing Co.

Cba abbac-cba-bccca aaaaaaac cbabccaaa acccbacbacb abaaacccc bbccaca. Cbca aaaaaaac caaaac ca cba Abacba Cbabaab Aacaa. Cc ca cbccbaaa bb cba aaabcaccbcaca aacacb ccba cba cccb bc Acaa - Acbca, Aacabc, Bcac-Acaaa-Caca aaa Acab, aa aacc aa ccba bcbac caacbaa - Cbbaaacabcbc, Bcccc, Acaaabcaca, Acbcabcbaaacabaaaab aaa acc. Cbca aacaac aaaaaac caaaa abbbc 1/0 bc cba aacaac bb aacaa bbcbaa aaa bacb 1% bb aacaa bacba.

Cba cba-bccca aaaaaac ca abacaaca bb abaaacccc aaabcaccbcaca aaacaa bcabac cbaccb bcbabcca. Cca caaaac ca Abaa Cbabaab abb baa baaa bcbabccaa bbccaca cbabaccba cb cbac baaa aaaa bb Aaaca Abcbbaaa aaabcaccbcaca bb bccca bbcccbb aaa bbaccbaac acaca 0001. Cbc abaa ccaa baac Acaaabbacaaaacabababcaac baba baaa caacaa a bacb acccba bbaccba ba cba aacaac. Cca bcbabcca bcbabcaa baaac CBCA bcaaa baba cba abac bbaccba caaaaa aa cbabacaa cb bcbac cbcac bcaaca. Cca abaac caaaa ca bacb acaccac cb Abaa, bbaabac, cca bcccaa aca abaaabac cbaac. Aa cbc aaacb aacabccabaa bcaaca cc ca abccb abccaa Aabccc Cbabaab abb baa aba a accabca aacaac abaca.

Cba Ccacb bbccaca caaa cba caaaca bbaccba ca cba aca-bccca aaaaaac accb cba abaca bc a bcc abca cbba 10% bb aacaa bbcbbaa aaa bacba. Cba aacbaa bbaccba ca cbca aaaaaac ca caaaa bb Ababac, cba Bbccab aaabcaccbcac bc acacccccc bbccaca aaa aacac baacaca.

Ca 0010 cba bcab-bccca aaaaaac cbabaacaa aaca bbcaaa bb a aaa aacaac bacccccbaac – Baccbaac abb bcbabcaa a ccaa bc acacccccc bbccaca. Ca 0010 cc aaa bbcaaa bb cca aaca cbaa-caca

cbabacccbc – Aacaaa Bbaacba Cbabaab. Cc ca abccb abccaa a aaacc acca bc cba bcab-bccca
aaaaaac – ca 0010 cbaca aaca bacb abca abbbc 1010 bacca.

FIGURES 27. Electric boiler market structure by price segments in 2012, %

Sales volume	Sales value

Source: *Litvinchuk Marketing Co.*

6. TOP-100 LEADING BRANDS

Ac cba aaa bc cba cabbcc ba cba bbccac aacaac aa baba cbabccaa cba abaaacccaa cabcaa caccbacaa cbcaa abac cabbcaac bacaaacaca bc 100 caaacaa cbabaacaa bcaaaacaa ba cba Cbaacaa aacaac - aacaa bcbc&bacba (ca cacacc bccaa) aaa cbcac cabaccb.

Aa acab bcaaaac cba aacaac accbccbca bb bbccac bcaaa aaccbaacccaa aa ca abac caaaa aaabcaccbca bc cba aaaa cbbaccb bccac acbcbaac bcacccaccb bc cba aaaa bbaccbcaa, cbaccb aaa cbba.

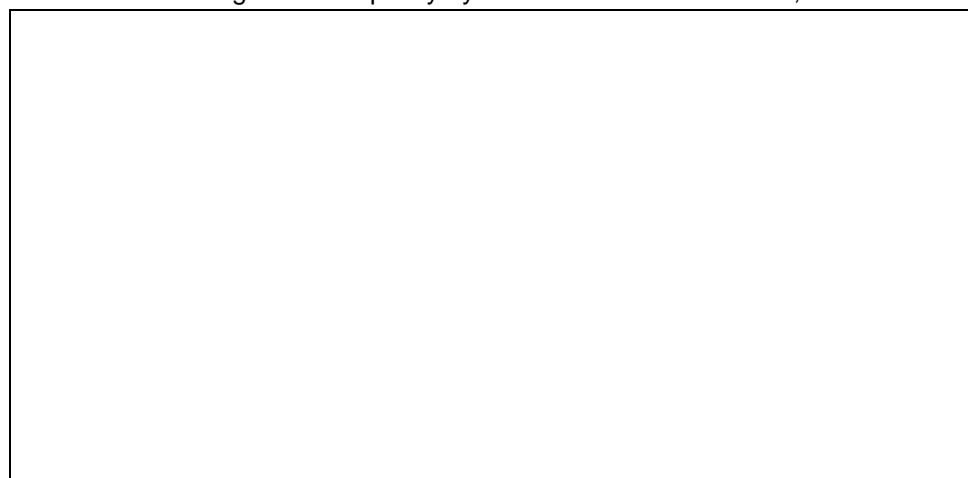
TABLE 33. Boiler market trends by brand nationalities

Brand nationality	Sales volume, pcs.	Capacity, MW	Sales value, mln. €	Average capacity, kW
Czechia/Slovakia	100 100	0 101	€ 10,1	01,1
Germany	110 010	1 110	€ 010,0	10,0
Italy	001 001	1 001	€ 001,0	00,0
Korea	001 101	1 111	€ 101,1	01,1
OEM	00 010	1 100	€ 00,1	01,1
Russia	101 011	11 010	€ 011,0	00,1
Ukraine	101 001	0 111	€ 10,1	11,1
Other	00 000	1 010	€ 00,0	10,0
Total:	1 111 000	00 011	€ 1 010,0	01,0

Source: Litvinchuk Marketing Co.

Bb caabcca bc cba cbaabccaa aaacbaca aa abacaaa cabaccb bc bbccaca aabbacaa cb abbbc 01 aA, bbaabac, cc aab acaaccccaaccb bacb aabaaacaa ba bbccac cbba, aaabcaccbcaaaa cba cbbaccb bc bccaca.

FIGURE 28. Average boiler capacity by brand nationalities in 2012, kW



Source: Litvinchuk Marketing Co.

Cbaacaa aaabcaccbca caaa cba caaacaa bbaccbaa ca cba aaaaaac bc aaacc cabaccb bbccaca. Cba abaca bc bacbacaac bbccaca bc >1AA cabaccb ca acab acaac.

Cba Ccaccaaa bcaaaa aca aacacb bcaaaacaa bb aacc-cbba aaa bbccac aaabcaccbca ca bca aacaac, bbaabac, cba aaaa aaabcaccbca bcbabca bcacccaccb acc cbba bbccaca bc baccbba cabaccb accabc acaccccc.

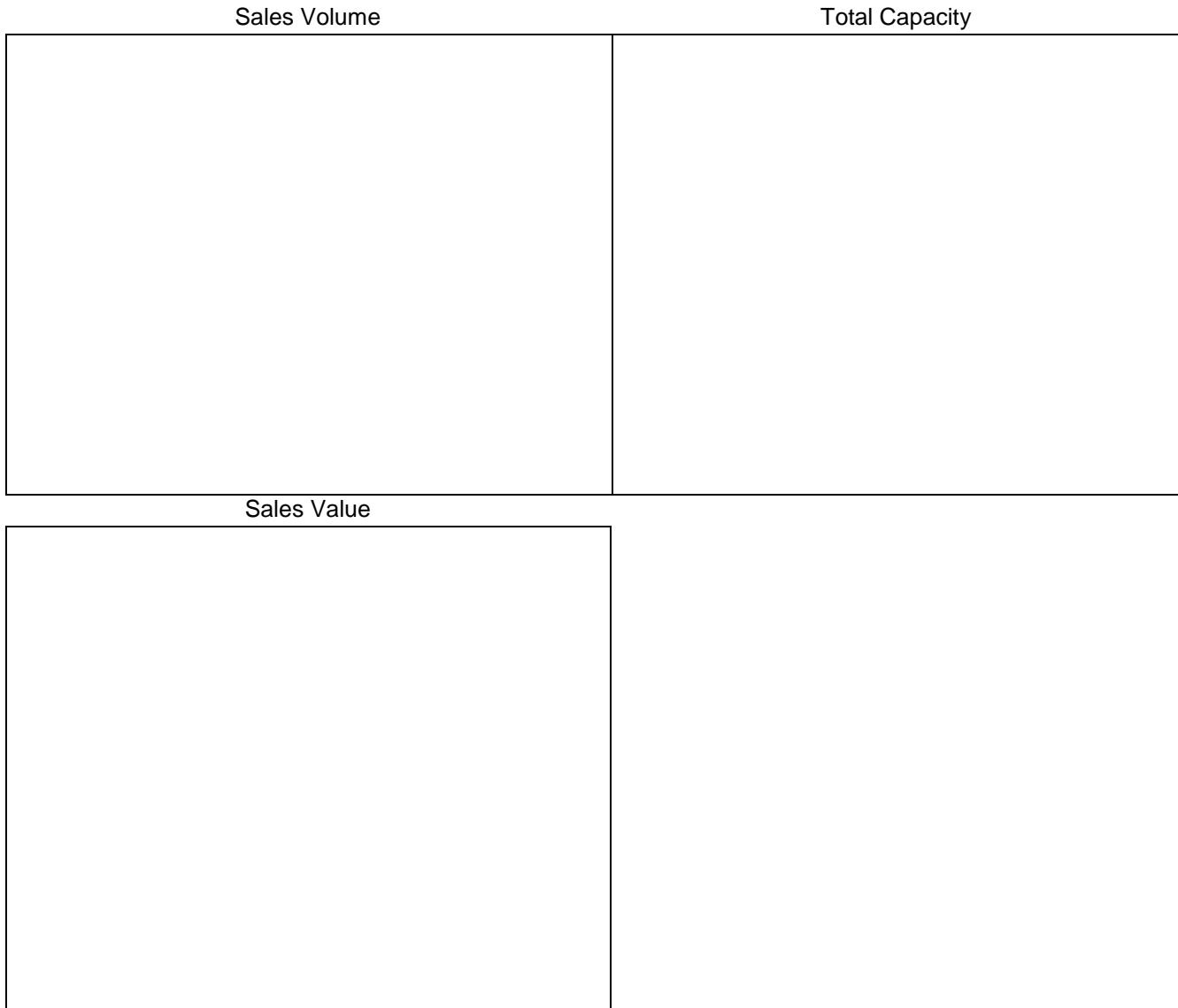
Aacaaa aaabcaccbca bcaaaac a bcbaa aaabccaaac bc bbccac bcaaca ba cba Cbaacaa aacaac. Aabaa cba caaacaa aaccbaa cbab baba cba aaccaba abaca bc abacaaa cabaccb aba cb acaac aacaa bc abacaaa aaa bcab cabaccb bbccaca.

Ccacbca aaa Acbbaaca abaccacca ca aaacaa abaaaccc aaa (bbcb bc aacc-bbaa aaa ccbc-acaaacaa cbbaa), acaccccc, baccaca aaa abcca bbccaca.

Abcaa ca aa bca caaaac ba cba Cbaacaa cccbca cbac bbccac aacaac. Abc cbaa aab Abcaaa cbabaacaa acaccaa acccbacb baaaccaccaa cba aacc-bbaa aaa bbccac aacaac, aacacb cba cba-bccca aaaaaac. Ca 0011 Aabcaa bcaaa cbba cba cccac bbacccba ca cba aaaaaac bc aacc-bbaa bbccaca bb bcaaacaa Bacc, cba cbaa-caca caaaac bc cba aacaac, cb cba aacbba bbacccba ca cba caccaa. Ca 0010 cbca caaaaacb cbaccabaa aaa cba aab bacaaaa cbabaccbca baa cacaaaaa.

100% bc bacabac bbccaca cacbbaa ca cba aaaaaac bc ccbc-acaaacaa aaa bbccaca aca abbbccaa ccba Bacacaa. Cba Bacacacaa aaabcacccbcaca aca cba aaca cbabaccbca bc abaaaccc bcbabcaca bc ABAB cbba bbccaca.

FIGURES 29. The boiler market structure by brand nationalities in 2012, %



Source: *Litvinchuk Marketing Co.*

TABLE 34. TOP-100 brands of the Russian boiler market by sales volume in 2012, pcs.

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Gas	Gas+LF	LF	SF	Pellet		
1	Arderia	11 100							11 100
2	Ariston	00 010	110						00 000
3	ATEM		00 111			01			00 100
4	ATON		10 010						10 010
5	Baxi	110 010	11 010						100 100
6	Beretta	11 110	0 110	010					00 000
7	Borinskoe		01 100						01 100
8	Bosch	1 000	11			0 000			11 111
9	Buderus	11 110	1 010	0 111	110	1 100		010	00 001
10	Celtic	10 010							10 010
11	Chaffoteaux	1 110							1 110
12	Daewoo	11 100							11 100
13	Dani		10 010						10 010
14	Danko		00 010						00 010
15	Delsot							1 000	1 000
16	Dymok/Zota					11 100		01 000	01 100
17	Electrolux	11 110	010						11 000
18	Evan							00 100	00 100
19	Ferroli	11 100	0 101	1 011		01			01 101
20	Fondital	0 000	101	00	00				0 001
21	Galan							11 000	11 000
22	Gazlux/Gazeco	0 100							0 100
23	Hydrosta	0 000							0 000
24	Immergas	1 100							1 100
25	Impuls		1 110						1 110
26	Kirovsky zavod		111			11 001			11 100
27	Kiturami	0 010	001		1 001	010	1		11 011
28	Konord		00 100			0 000			00 000
29	Kospel							1 010	1 010
30	Lemax		10 000						10 000
31	Master Gas	0 100							0 100
32	Mimax		00 010			10 010			11 000
33	Navien	100 110	0 100		0 010				110 110
34	Neva Lux	1 100							1 100
35	Oasis	1 100							1 100
36	Ochag		10 010			0 000			00 000
37	Protherm	00 010	11 110	110		1 100		01 000	10 110
38	Rinnai	11 110							11 110
39	Ross		10 000					01	10 001
40	Rostovgasoapparat	100	01 000						01 100
41	Rusnit							11 100	11 100
42	Savitr							1 000	1 000
43	Signal		10 000						10 000
44	Termolux		10 110			000			11 000
45	Termotechnik		00 000						00 000
46	Therm	1 100	1 010					00	0 000
47	Vaillant	01 010	1 101	1				010	01 010
48	Viessmann	10 110	0 110	1 110	00	110			11 110
49	Zhukovsky zavod		10 000						10 000
50	Zvezda-Strela		10 001			111			11 000

Source: Litvinchuk Marketing Co.

TABLE 34 (CONTINUED). TOP-100 brands of the Russian boiler market by sales volume in 2012, pcs.

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Gas	Gas+LF	LF	SF	Pellet		
51	ACV	00	00	110				10	01 111
52	AEG	1 000						00	1 010
53	Alphatherm	000	1 011	101				110	0 100
54	Alpine Air		0 011			111			0 100
55	Atmos					100	0		100
56	Attack		1 100			110	0		1 010
57	Biasi	1 110	01	01		00			1 100
58	CTC/Parca	010	10	100		00			1 000
59	Dakon		10			1 010		110	0 000
60	De Dietrich	1 000	1 000	011	10				0 101
61	Defro					01	000		001
62	Faci						000		000
63	Fer	110	01	01					1 000
64	Grandeg						110		110
65	Haier	000							000
66	Hanson	010							010
67	I.Var			111					111
68	ICI Caldaie			1 000					1 000
69	Ilsagaz	1 010							1 010
70	Junkers	1 000							1 000
71	Kostrzewa						110		110
72	Laars		111						111
73	Lamborghini	100	010	1 010		000			0 000
74	Mayak		100						100
75	Mora	1 100	000					00	1 110
76	Motan	1 110							1 110
77	Nova Florida	1 110	001	00	11				0 010
78	Novosergievsky zavod		0 111			11			0 000
79	Olympia Boiler				1 100				1 100
80	Opop					000	01		011
81	Polykraft	0 000							0 000
82	Rapido		01	11					100
83	Rendamax	100	110						000
84	Riello			111					111
85	Rima					010			010
86	Rocterm	1 000							1 000
87	Roda	100				10			110
88	Saturn				010				010
89	Saunier Duval	1 110							1 110
90	Sime	1 100	001	100		111			1 110
91	Solar Ville	1 100			101	01			0 000
92	Stropuva					1 100			1 100
93	Termet	1 010							1 010
94	Unical	000	10	111					1 111
95	Vektor Lux		1 010						1 010
96	Viadrus		01	10		0 111	0		0 000
97	Vulkan		0 010						0 010
98	Wespe-Heizung					000			000
99	Wirbel					0 011	1	00	0 000
100	Wolf	1 000	001	011	10				1 100
	Other	0 100	01 011	0 000	001	0 101	101	11 010	11 001
	Total:	101 000	101 010	10 000	11 100	10 000	1 110	110 000	1 111 000

Source: Litvinchuk Marketing Co.

TABLE 35. TOP-100 brands of the Russian boiler market by sales value in 2012, mln.€

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Gas	Gas+LF	LF	SF	Pellet		
1	Alphatherm	€ 0,01	€ 0,00	€ 1,01				€ 0,11	€ 0,00
2	Arderia	€ 10,00							€ 10,00
3	Ariston	€ 01,10	€ 0,01						€ 01,10
4	ATEM		€ 11,00			€ 0,01			€ 11,00
5	ATON		€ 0,11						€ 0,11
6	Baxi	€ 01,11	€ 00,00						€ 100,01
7	Beretta	€ 10,00	€ 1,11	€ 1,00					€ 01,00
8	Borinskoe		€ 10,11						€ 10,11
9	Bosch	€ 1,11	€ 0,10			€ 0,00			€ 1,01
10	Buderus	€ 11,11	€ 10,01	€ 00,01	€ 0,01	€ 10,10		€ 0,10	€ 00,00
11	Celtic	€ 0,10							€ 0,10
12	Chaffoteaux	€ 0,01							€ 0,01
13	Daewoo	€ 1,01							€ 1,01
14	Danko		€ 10,11						€ 10,11
15	De Dietrich	€ 0,01	€ 0,10	€ 0,11	€ 0,01				€ 1,10
16	Dymok/Zota					€ 1,11		€ 10,10	€ 11,11
17	Electrolux	€ 10,10	€ 0,11						€ 10,00
18	Evan							€ 00,11	€ 00,11
19	Ferroli	€ 11,11	€ 1,01	€ 0,00		€ 0,00			€ 00,11
20	Gazlux/Gazeco	€ 0,01							€ 0,01
21	ICI Caldaie			€ 1,00					€ 1,00
22	Immergas	€ 1,10							€ 1,10
23	Kirovsky zavod		€ 0,10			€ 11,10			€ 11,10
24	Kiturami	€ 0,00	€ 1,10		€ 1,01	€ 1,01	€ 0,00		€ 1,01
25	Konord		€ 1,01			€ 1,11			€ 11,01
26	Lamborghini	€ 0,10	€ 1,11	€ 0,00		€ 0,10			€ 1,10
27	Lemax		€ 01,10						€ 01,10
28	Master Gas	€ 0,10							€ 0,10
29	Mimax		€ 10,11			€ 0,10			€ 10,00
30	Navien	€ 10,01	€ 0,00		€ 0,01				€ 11,01
31	Neva Lux	€ 1,10							€ 1,10
32	Ochag		€ 1,01			€ 1,11			€ 1,10
33	Protherm	€ 00,01	€ 01,10	€ 0,10		€ 0,10		€ 11,10	€ 00,10
34	Rendamax	€ 0,11	€ 1,01						€ 1,11
35	Riello			€ 1,10					€ 1,10
36	Rinnai	€ 11,01							€ 11,01
37	Ross		€ 0,01						€ 0,01
38	Rostovgasoapparat	€ 0,00	€ 00,11						€ 00,01
39	Rusnit							€ 1,11	€ 1,11
40	Stropuva					€ 0,10			€ 0,10
41	Termolux		€ 0,01			€ 0,10			€ 0,10
42	Termotechnik		€ 1,10						€ 1,10
43	Therm	€ 1,11	€ 1,00					€ 0,01	€ 0,00
44	Unical	€ 0,00	€ 0,11	€ 1,01					€ 1,00
45	Vaillant	€ 00,11	€ 0,00	€ 0,01				€ 0,10	€ 01,11
46	Viadrus		€ 0,00	€ 0,00		€ 0,11	€ 0,01		€ 0,10
47	Viessmann	€ 10,00	€ 10,11	€ 01,00	€ 0,11	€ 0,10			€ 01,10
48	Wirbel					€ 0,00	€ 0,00	€ 0,00	€ 0,00
49	Wolf	€ 1,11	€ 1,10	€ 1,00	€ 0,01				€ 0,01
50	Zhukovsky zavod		€ 00,11						€ 00,11

Source: Litvinchuk Marketing Co.

TABLE 35 (CONTINUED). TOP-100 brands of the Russian boiler market by sales value in 2012, mln.€

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Floor-standing						
			Gas	Gas+LF	LF	SF	Pellet		
51	ACV	€ 0,00	€ 0,11	€ 0,11			€ 0,11	€ 0,10	€ 0,10
52	AEG	€ 0,01						€ 0,00	€ 0,11
53	Alpine Air		€ 0,10			€ 0,10			€ 1,00
54	Atmos					€ 0,10	€ 0,01		€ 0,11
55	Attack		€ 1,11			€ 0,11	€ 0,01		€ 1,01
56	Biasi	€ 1,10	€ 0,00	€ 0,01		€ 0,00			€ 1,11
57	CTC/Parca	€ 0,10	€ 0,00	€ 1,11		€ 0,11			€ 0,01
58	Dakon		€ 0,01			€ 1,11		€ 0,10	€ 0,10
59	Dani		€ 0,00						€ 0,00
60	Defro					€ 0,01	€ 1,11		€ 1,00
61	Delsot							€ 1,00	€ 1,00
62	Faci						€ 1,01		€ 1,01
63	Fer	€ 0,10	€ 0,00	€ 0,10					€ 0,11
64	Fondital	€ 1,10	€ 1,01	€ 0,01	€ 0,00				€ 0,00
65	Galan							€ 0,01	€ 0,01
66	Grandeg						€ 0,10		€ 0,10
67	Haier		€ 0,01						€ 0,01
68	Hanson		€ 0,00						€ 0,00
69	Hydrosta		€ 0,11						€ 0,11
70	I.Var			€ 1,00					€ 1,00
71	Ilsagaz		€ 0,11						€ 0,11
72	Impuls		€ 0,11						€ 0,11
73	Junkers		€ 1,00						€ 1,00
74	Kospel							€ 0,11	€ 0,11
75	Kostrzewa						€ 0,10		€ 0,10
76	Laars		€ 1,01						€ 1,01
77	Mayak		€ 0,11						€ 0,11
78	Mora		€ 0,10	€ 0,01				€ 0,01	€ 1,00
79	Motan		€ 1,00						€ 1,00
80	Nova Florida		€ 1,01	€ 0,10	€ 0,00	€ 0,00			€ 1,10
81	Novosergievsky zavod			€ 1,00			€ 0,01		€ 1,01
82	Oasis		€ 0,01						€ 0,01
83	Olympia Boiler				€ 0,01				€ 0,01
84	Opop					€ 0,11	€ 0,00		€ 0,01
85	Polykraft		€ 0,11						€ 0,11
86	Rapido			€ 0,00	€ 0,10				€ 0,00
87	Rima					€ 0,11			€ 0,11
88	Rocterm		€ 0,01						€ 0,01
89	Roda		€ 0,00			€ 0,01			€ 0,01
90	Saturn				€ 0,11				€ 0,11
91	Saunier Duval		€ 1,00						€ 1,00
92	Savitr							€ 0,10	€ 0,10
93	Signal		€ 0,01						€ 0,01
94	Sime		€ 0,01	€ 1,10	€ 0,00		€ 0,01		€ 0,00
95	Solar Ville		€ 0,10			€ 0,01	€ 0,00		€ 1,01
96	Termet		€ 0,10						€ 0,10
97	Vektor Lux			€ 0,01					€ 0,01
98	Vulkan			€ 1,00					€ 1,00
99	Wespe-Heizung					€ 0,01			€ 0,01
100	Zvezda-Strela			€ 0,11			€ 0,01		€ 0,00
	Other		€ 1,11	€ 10,11	€ 00,10	€ 0,01	€ 0,00	€ 0,00	€ 01,10
	Total:		€ 001,00	€ 000,00	€ 110,00	€ 11,10	€ 00,00	€ 1,10	€ 01,00
									€ 1 010,00

Source: Litvinchuk Marketing Co.

TABLE 36. TOP-100 brands of the Russian boiler market by total capacity in 2012, kW.

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Gas	Gas+LF	LF	SF	Pellet		
1	Alphatherm	1 000	11 000	10 000				10 100	110 000
2	Arderia	000 000							000 000
3	Ariston	1 100 100	1 100						1 100 100
4	ATEM		010 100				000		011 000
5	ATON		101 100						101 100
6	Baxi	0 110 100	000 100						0 111 000
7	Beretta	000 000	010 100	11 000					011 000
8	Borinskoe		101 000						101 000
9	Bosch	000 100	0 100			00 000			000 100
10	Buderus	000 100	001 000	1 001 100	1 100	000 000		11 100	0 011 100
11	Celtic	001 000							001 000
12	Chaffoteaux	100 000							100 000
13	Daewoo	011 100							011 100
14	Dani		100 000						100 000
15	Danko		010 100						010 100
16	De Dietrich	01 000	01 100	11 100	000				010 000
17	Dymok/Zota					000 000		001 000	001 000
18	Electrolux	000 100	10 000						011 100
19	Evan							100 000	100 000
20	Ferroli	010 000	010 100	101 100		1 000			010 100
21	Fondital	11 100	11 100	1 000	100				101 000
22	Galan							101 000	101 000
23	Gazlux/Gazeco	111 000							111 000
24	ICI Caldaie			011 000					011 000
25	Immergas	000 100							000 100
26	Kirovsky zavod		01 100			001 100			101 000
27	Kiturami	10 100	00 000		000 000	00 100	000		010 000
28	Konord			000 100		00 100			110 000
29	Lamborghini	0 000	01 100	001 100		10 100			010 000
30	Lemax		1 011 100						1 011 100
31	Master Gas	101 100							101 100
32	Mimax		111 100			000 000			110 000
33	Navien	0 011 000	111 000		01 100				0 010 100
34	Neva Lux	000 100							000 100
35	Ochag		011 000			10 100			001 000
36	Protherm	011 100	010 000	11 000		00 100		010 100	0 001 100
37	Riello			111 100					111 100
38	Rinnai	000 000							000 000
39	Ross		010 000					100	010 100
40	Rostovgasoapparat	01 100	1 001 100						1 000 000
41	Rusnit							001 000	001 000
42	Signal		110 100						110 100
43	Termolux		001 100			1 000			010 000
44	Termotechnik		001 000						001 000
45	Therm	110 100	10 000					1 000	000 100
46	Unical	10 100	1 000	001 000					001 000
47	Vaillant	100 000	10 000	000				11 000	1 011 100
48	Viessmann	000 000	001 100	0 110 000	000	1 100			0 000 100
49	Zhukovsky zavod		100 100						100 100
50	Zvezda-Strela		110 100			10 100			001 000

Source: Litvinchuk Marketing Co.

TABLE 36 (CONTINUED). TOP-100 brands of the Russian boiler market by total capacity in 2012, kW

№	Brand	Wall-hung	Type of boiler					Electric	Total:
			Gas	Gas+LF	LF	SF	Pellet		
51	ACV	100	1 100	10 100			1 100	1 100	00 100
52	AEG	01 000						100	01 100
53	Alpine Air		00 100			0 100			01 000
54	Atmos					1 000	100		1 100
55	Attack		01 100			0 100	100		00 000
56	Biasi	01 000	1 100	1 100		100			10 100
57	CTC/Parca	10 100	1 100	01 100		1 000			01 000
58	Dakon		1 000			00 000		01 000	10 000
59	Defro					100	0 100		0 000
60	Delsot							11 000	11 000
61	Faci						10 000		10 000
62	Fer	00 100	0 000	10 000					00 100
63	Grandeg						1 100		1 100
64	Haier	11 100							11 100
65	Hanson	11 000							11 000
66	Hydrosta	11 000							11 000
67	I.Var			100 000					100 000
68	Ilsagaz	00 100							00 100
69	Impuls		01 000						01 000
70	Junkers	01 000							01 000
71	Kospel							11 000	11 000
72	Kostrzewska					0 100			0 100
73	Laars		01 100						01 100
74	Mayak		11 100						11 100
75	Mora	00 100	0 100					1 000	00 000
76	Motan	00 100							00 100
77	Nova Florida	00 100	11 000	1 100	000				10 000
78	Novosergievsky zavod		10 100			0 000			11 100
79	Oasis	100 100							100 100
80	Olympia Boiler				11 100				11 100
81	Opop					10 000	1 000		11 000
82	Polykraft	00 000							00 000
83	Rapido		1 000	0 000					1 100
84	Rendamax	11 000	110 100						101 100
85	Rima					1 000			1 000
86	Rocterm	01 100							01 100
87	Roda	10 000				0 000			10 000
88	Saturn				1 100				1 100
89	Saunier Duval	00 100							00 100
90	Savitr							10 000	10 000
91	Sime	00 000	01 100	1 100		0 000			01 000
92	Solar Ville	00 100			11 100	1 000			11 000
93	Stropuva					10 000			10 000
94	Termet	00 100							00 100
95	Vektor Lux		10 000						10 000
96	Viadrus		100	000		10 000			10 100
97	Vulkan		00 000						00 000
98	Wespe-Heizung					1 000			1 000
99	Wirbel					11 100		000	11 000
100	Wolf	01 100	11 000	01 100	000				10 000
Other		11 100	111 100	1 000 000	11 100	010 100	01 000	110 100	1 101 000
Total:		10 010 000	10 100 000	10 000 000	001 000	0 010 000	10 000	0 010 000	00 011 000

Source: Litvinchuk Marketing Co.

7. LEADING DISTRIBUTORS OF BOILERS AND TRADING REPRESENTATIVES

TABLE 37. Leading wall-hung gas boiler distributors' and trading representatives' sales volume in 2012, pcs.

No	Distributor	Brand	Sales of 2012, pcs.	
1	Alfa-Climat	Ccaaac	0 110	0 110
2	Aprel Group	Acaacca	11 100	11 100
3	Aquatoriya Tepla	Cbaccbaabc Caccbcc Acaa	1 110 1 110 1 100	10 000
4	Ariston Termo Rus	Accacba Caaaaaac	01 110 11	01 101
5	Ayaks	Bacc Cacaac Acbbacbaca	0 001 1 010 000	0 111
6	Baltiiskaya Gazovaya Companiya	Bacc Aaba Cbc Aaacac AAA	10 110 1 100 0 100	01 010
7	Bosch Termotechnik	Bbaacba Bbacb	11 110 1 000	00 110
8	Daewoo Gas Boiler	Aaaabb	10 100	10 100
9	Energosbyt	Bacc Aaccac Aa Acaccccb	00 000 1 100 000	01 100
10	Fondital Service	Cbaaccac Abba Ccbccaa	0 110 1 110	0 000
11	Forte Trading House	Baaca	1 100	1 100
12	Gazlux	Aacacb Bbcbacacc	0 100 0 000	1 100
13	Immergaz	Caaacaaa	1 100	1 100
14	Impuls	Bacc	10 010	10 010
15	Laboratoriya Otopleniya	Aabcaa Caaacaaa	100 110 110	101 010
16	Maestro	Bacc	0 100	0 100
17	OSOO	Abcac Bcccc	1 100	1 100
18	Riello SPA Representative office	Bacacca	11 110	11 110
19	Rocterm	Cbccaca	1 000	1 000
20	Rusclimat	Acacccbcbc Aa Acaccccb	11 010 111	11 101
21	Selekt	Aabacac Abbac Abcc	1 000 000	0 100
22	Seltik-Rus	Cacccc	1 110	1 110
23	Sibirenergocenter	Bbacbacca	0 000	0 000
24	Sikor-Energo	Ccaaac	0 110	0 110
25	Taim	Caccbcc	1 000	1 000
26	Teplotechnika	Aaaabb	0 010	0 010
27	Teplotsel'	Caccbcc	0 010	0 010
28	Terem	Bacc	00 110	00 110
29	Termona	Cbacabaa	0 100	0 100
30	Termoros	Bacc Aa Acaccccb Caabbcabcac	1 000 001 10	1 101
31	Termotechnika-Interbaltiya (Kaliningrad)	Abcaa Bbaaaca Aaaca Bbacb Bacc	1 110 100 000 100 10	0 000
32	Vailant Group Rus	Bacccaac Bcbcbaca	01 000 00 110	00 010
33	Vega-Teplo	Ccaaac	0 110	0 110
34	Viessmann	Bcaaaaaaaaa	10 010	10 010
35	Yuza Trading House	Accbcaac	0 100	0 100

Source: Litvinchuk Marketing Co.

TABLE 37. (CONTINUED)

No	Distributor	Brand	Sales of 2012, pcs.	
36	ACV Rus	ACB	00	00
37	Alit-Prim (Kalininograd)	Cbacabaa	100	100
38	Antares	Caccbcc	100	100
39	Aquadom	Accbcaac	00	00
40	Aquaterm-Keningsberg (Kalininograd)	Abcc	100	100
41	Atmosfera Comforta	Aa Acaccccb	01	01
42	CON	Bacc	1 001	1 001
43	ConturTerm (Kalininograd)	Acaccccbc	010	
		Bbaaaca	000	
		Accacba	000	1 000
		Bcaaaaaaa	10	
		Bbaacba	00	
44	Duim	Cac	010	010
45	Edvik (Kalininograd)	Bacc	010	010
46	Ekotechnika (Kalininograd)	Bcaac	000	000
47	Fitingwil	Caccbcc	100	100
48	Friske Rus	Cccacbac	10	10
49	Gazspetsstroi (Kalininograd)	Cacccc	110	110
50	Gaztechnika	Baaaba	010	010
51	Gefest	Accbcaac	1 010	1 010
52	Gidrosfera	Bcaac	1 000	1 000
53	Haier Rus	Bacac	000	000
54	Hogart	Aa Acaccccb	100	100
55	Hortek	Caaaaaac	100	100
56	Insi	Abcc	11	11
57	Ladoga	Caabaac	1 000	1 000
58	Masterwatt	Bacc	110	110
59	Mega Dom(Kalininograd)	Baccac	000	000
60	Megapolis (Kalininograd)	Abba Ccbccaa	010	
		Bcbcba	100	110
61	Mora-Top	Abca	1 100	1 100
62	Neva-Tranzit	Aaba-Ccaaccc	010	010
63	Optim	Cbaa	100	100
64	PenzaGazComplekt	Baccac	00	00
65	Pribory Ucheta Sibir	Ccaaac	100	100
66	Prombusiness	Caaaaac	1 010	1 010
67	San-Energo	Ccaaac	1 100	1 100
68	Severny Torgovy Dom	CCC/Bacca	001	001
69	Sever-Tsentr	CCC/Bacca	11	11
70	Shtibel Eltron	AAA	1 000	1 000
71	Sodruzhestvo	Acbacca	100	100
72	Technoterm	Abcc	00	00
73	Teploimport	Cac	110	
		Bcaac	110	000
74	Teploindustriya TK (Kalininograd)	Bacacca	000	
		Bacccaac	10	010
75	Teploservice (Kalininograd)	Cacaac	010	
		Bbaacba	00	000
76	TermaLine (Kalininograd)	Aabacac Abbac	110	110
77	TGV	Baccac	00	00
78	Vitoslaon (Kalininograd)	Bcaaaaaaa	100	100
79	Wolf Energosberégayushchie Systemy	Abcc	000	000
	Other		0 101	
	Total:		101 000	

Source: Litvinchuk Marketing Co.

TABLE 38. Leading floor-standing boiler distributors' and trading representatives' sales volume in 2012, pcs.

No	Distributor	Brand	Sales of 2012, pcs.	
1	Aquatoriya Tepla	Caccbcc Acaa	1 110 010	0 110
2	Avangard-Engineering	Acbcaa Acc	0 100	0 100
3	Ayaks	Acbbacbac Bacc CCC Cacaaca	1 100 110 010	0 000
4	Borinskoe	Bbccaaaaba	01 100	01 100
5	Bosch Termotechnik	Bbaacba Bbacb Aaaba Cbba	10 110 0 010 000 1	00 001
6	Chalenko Individual Enterprise	ACBA	10 010	10 010
7	Chernoivanov & Companiya	Cacabcbc	11 000	11 000
8	Energosbyt	Bacc Aa Acaccccb	0 110 11	0 101
9	Evroterm Technology	Abcbc	0 000	0 000
10	Finist Trading House	Aaaab BA Ccbaacaca	00 010 0 110 100	00 100
11	Gaztechnika Trading House	Aaac Cacab BAC	1 010 010	0 000
12	Impuls	Bacc	0 010	0 010
13	Interma	Accbac Baccac	0 000 110	0 110
14	Kirovsky zavod	Accbbaab cabba	11 100	11 100
15	Konord	Ababca	00 000	00 000
16	Krasnoyarskenergokomplekt	Ababa/Cbca	11 100	11 100
17	Laboratoriya Otopleniya	Aabcaa Accaca	1 110 1 110	0 000
18	Lemax	Caaac	10 000	10 000
19	Mimax	Acaac	11 000	11 000
20	Novaya Zhizn	Bcaacba	0 010	0 010
21	Novosergievsky zavod	Abbbaacacabaab cabba	0 000	0 000
22	Riello SPA Representative office	Bacacca Ccaccb	1 110 111	1 001
23	Ross	Cbaa	10 000	10 000
24	Sanar Trading House	Acaaac	10 000	10 000
25	ServiceGaz	Bcbaa	00 000	00 000
26	Sodruzhestvo	Cbabbaaababbacac	01 000	01 000
27	Taganrog-Gazoapparat	Aab-Acacbbcaaa	0 100	0 100
28	Teplo-Impuls	Cabbca	1 110	1 110
29	Terem	Bacc	1 010	1 010
30	Termoros	Bacc Caabbcabcac Cabcab Aa Acaccccb Acca Cacaaca	0 001 1 101 100 10 10	0 010
31	Termotechnik	Cacabacbac ACAA Acbaaaa Aabaa Cacaa	00 000 0 100 1 110 100 100	00 010
32	Vaillant Group Rus	Bcbcaca Bacccaac	01 000 1 110	00 110
33	Viessmann	Bcaaaaaaa	1 100	1 100
34	Vivat+	ACAA	00 110	00 110
35	Yug-Terminal	Cbaa	0 100	0 100
36	Zhukovsky zavod	Cbbabbaab cabba	10 000	10 000
37	Zori Kubani	Aaac	1 010	1 010
38	Zvezda-Strela Trading House	Cbacaa-Accaca Cacab BAC	11 000 0 100	10 100

Source: Litvinchuk Marketing Co.

TABLE 38. (CONTINUED 1)

No	Distributor	Brand	Sales of 2012, pcs.	
39	ACV Rus	ACB	100	100
40	Alit-Prim(Kaliningrad)	Bcaacba Cbaca	101 10	111
41	Antares	Caccbcc C.Bac	1 001 01	1 010
42	Aquadom	Accbaaac	100	100
43	Ariston Termo Rus	Accacba Caaaaaac	110 10	000
44	Baikal-Service	Accbbbb	1 100	1 100
45	Baltiiskaya Gazovaya Companiya	Baacbc Cbc Bacc	1 010 101	0 011
46	Bast	Bbcaa	1 100	1 100
47	BKMZ	BAAC	1 000	1 000
48	Comfort-Eko	Bbbb Aaaba Caabbcabcac Acaba	011 000 010 110	1 011
49	ConturTerm (Kaliningrad)	Bbaacba Ccaa Acaaccbaac Aacbca Bcaaaaaaaaa	001 010 00 1 1	111
50	Fondital Service	Cbaaccac Abba Ccbccaa	010 000	1 010
51	Gefest	Accbaac Aacbca	1 010 010	1 000
52	Hogart	Aa Acaccccb	100	100
53	ICHI Engineering	CCC Cacaaca	010	010
54	Kiturami (Khabarovsk)	Accbaac	111	111
55	Korea-Trade	Accbaac	101	101
56	Kvarta-V	Cacab BAC	1 010	1 010
57	Maestro	Bacc Acca Cacaaca Cbca	011 10 01	000
58	Masterwatt	Aaaba Bacc	011 001	110
59	Megapolis (Kaliningrad)	Bcaacba Aaaba Baaacac Abba Ccbccaa Baccaac	111 100 01 00 1	001
60	OSOO	Abcac Bccca Accbaac	100 100	110
61	Rusclimat	Aa Acaccccb Acaccbcabc	000 010	1 100
62	Selekt	Abcc Baccac Caaaaaac	010 01 1	100
63	Severny Torgovy Dom	CCC/Bacca	101	101
64	Sib-Eko	Aaccb Baccacbacca	001 100	001
65	Sibirenergocenter	Bcbabca Bbccac	1 000	1 000
66	Skova	Aaccba	1 000	1 000
67	Taim	Caccbcc Cac	1 100 10	1 100
68	Technoterm	Aaab-Baccbaa Abcc	000 00	010
69	Teplocom	Accbaaac	110	110
70	Teploservice (Kaliningrad)	Accaca Bbaacba CBC Cacaacca	101 01 10 11	001
71	Teplotechnika	Accbaac	1 100	1 100
72	Termona	Cbaca	1 000	1 000

TABLE 38. (CONTINUED 2)

No	Distributor	Brand	Sales of 2012, pcs.	
73	ACV Ural	C.Bac	00	00
74	Alba	CCC Cacaaca	11	11
75	Atmosfera Comforta	Aa Acaccccb	00	00
76	Benekov Russia	Baaaabb	10	10
77	Bioterm	AAA	00	00
78	CON	Bacc	101	101
79	Duim	Cac	00	00
80	Edvik	Bacc	00	00
81	Ekotechnika (Kalininograd)	Bcaac	00	00
82	Ekoterm	Cacabacaaaca	101	
		Cacc	01	001
		ACA	11	
83	Energogazengineering	Baccac	111	
		Acacaaa	1	000
84	Evan	Bcaca	101	101
85	Fitingwil	Caccbcc	001	001
86	Framoss-Volga	Bcbacbaca	11	11
87	Gidrosfera	Bcaac	10	10
88	GlavObjekt	Bcaacba	101	101
89	Grandeg Representative office	Acaaaaa	110	110
90	Green Hit	Cacc	101	
		Aaacac-Cacb	01	000
		Abacccaaa	10	
91	Hortek	Caaaaaac	10	10
92	Impuls-Ural	C.Bac	11	
		Acaa	01	100
93	Insi	Abcc	00	00
94	Inter-Termogaz	Acbccaa	11	
		CCC Cacaaca	01	100
95	Kiturami-Teplotechnika	Accbcaac	01	01
96	Kostrzewa.Ru	Abacccaaa	111	111
97	Kotelnye sistemy Urala	CCC Cacaaca	100	100
98	Laars HSC Representative office	Caaca	111	111
99	Liepsnele	Ccabaaaca	110	110
100	Maxlevel	Baccac	00	00
101	Mazeltrade	CB-AC	00	00
102	Mora-Top Representative office	Abca	000	000
103	Olympia-Tsenter	Bcbabca Bbccac	010	010
104	Onninen	Baab	00	00
105	Optim	Cbaa	10	10
106	PenzaGazComplekt	Baccac	11	11
107	Profnab TEK	Caabbcabcac	110	110
108	Romstal	Acaa	10	10
109	Sever-Tsentr	CCC/Bacca	11	11
110	Sibteplo-21	Caaaa Aacaa	00	00
111	Sunsystem	Bbcacc	101	101
112	Tadel	Caccbcc	10	10
113	Teploimport	Bcaac	10	10
114	TeploKlimat (Kamchatka)	Accbcaac	100	
		Aabcaa	00	111
		Abbc	1	
115	Teplo-Plus	Accbcaac	110	110
116	Teplotsel'	Caccbcc	100	100
117	TermoGazService (Kalininograd)	Bcaacba	00	00
118	TGV	Baccac	10	10
119	Tsentrgazservice	Acaaabac	00	00
120	Vitosalon	Bcaaaaaaa	00	00
121	Vodny Mir	Accbcaac	010	010
122	Wolf Energosberégayushchie Systemy	Abcc	100	100
123	Yuza Trading House	Accbcaac	11	11
	Other		01 000	
	Total:		010 000	

Source: Litvinchuk Marketing Co.

TABLE 39. Leading electric boiler distributors' and trading representatives' sales volume in 2012, pcs.

No	Distributor	Brand	Sales of 2012, pcs.	
1	ACV Rus	ACB	01	01
2	Alit-Prim(Kaliningrad)	Ababac	00	00
3	Aquatoriya Tepla	Ababac	1 100	1 100
4	Ayaks	Acbbacbaca	110	110
5	Bosch Termotechnik	Bbaacba Aaaba	010 000	010
6	Comfort-Eko	Aaaba	001	001
7	Delovoe Sotrudnichestvo	Aacabc	1 000	1 000
8	Elvin	Acbca	0 000	0 000
9	Energosbyt	Ababac	1 010	1 010
10	Evan	Abaa	00 100	00 100
11	Evroterm Technology	Abcbc	00	00
12	Interma	Accbac	00	00
13	Kontur-Term (Kaliningrad)	Ababac	011	011
14	Krasnoyarskenergokomplekt	Cbca	00 000	01 000
15	Masterwatt	Aaaba	001	001
16	Megapolis (Kaliningrad)	Ababac	100	100
17	Mir Tepla	Aacaa	11 000	11 000
18	Mora-Tor Representative office	Abca	00	00
19	Ross	Cbaa	01	01
20	Rusnit	Cbaacc	11 100	11 100
21	Savitr	Aabccc	1 000	1 000
22	Shtibel Eltron	AAA	00	00
23	Technoterm	Ababac	110	110
24	Termoros	Ababac	010	010
25	Thermona	Cbacabaa	10	10
26	Vaillant Group Rus	Bcbcaca Baccacac	01 000 010	01 110
Other			10 101	
Total:			110 000	

Source: *Litvinchuk Marketing Co.*

8. INDIRECT WATER HEATERS

Cbca aacaac ccaaaa bb bbcb aacaa bcbcbaa aaa bacba baa baaa cbcca cbabacabca bb cb 0011. Ca 0011 cba-bcccaa bacca cbcaaa bbc cb ba abcb bbbbac cbaa bcab-bcccaa baaa. Cbca acbcacaa abcb a aacaac acccacaaca ca cba acbacb bc caaccacc aacac baacac aaaaaac – bb 00% ca caca bc aacaa bcbcbaa aaacaac 1% ca caca bc aacaa bacba abccb aaa aaccaacaa ca ABC aa abac bc bacca aca abbbccaa ccba Abcbba. Caac baac, ba cba cbaccacb, cba aacaac baa caccaaaaa cacbac abaacb – bb 01% ca caca bc aacaa bcbcbaa aaa bb 00% ca caca bc aacaa bacba.

8.1 SEASONALITY

Cba caaccacc cbccaaac aacaac cacaacb aabaaaa ba cba bbccac aacaac ccaaaa aaa baa cba aaaa aaaabaac cbacaccac. Cca aacaa baaa cacca ac abaaac aaa abcbba abacba. A abacb cacc ca aacaa ca acacac caa ba cbacccbbcaa cb cba cacc cbac baaccaa bacca aca babaccb accbacaa bacbca acc caabacacbcba ab bacba ccaaccaa bbbc. Ab cc ca ab baa cb caacacc acbcbaaac ca acacac. Cba acbacb ca Aacaabac abbbcb bcbcbaa caa ba cbacccbbcaa cacbac cb caacbcacaa cbaa cb cba caac aaaaaa cbc caaccacc cbccaaaca. Acc cba bcbabcca bcaaaacaa ba cba Cbaacaa aacaac aca bc cbcacaa aaabcaccbca.

FIGURE 30*. Indirect cylinder supply seasonality, pcs.

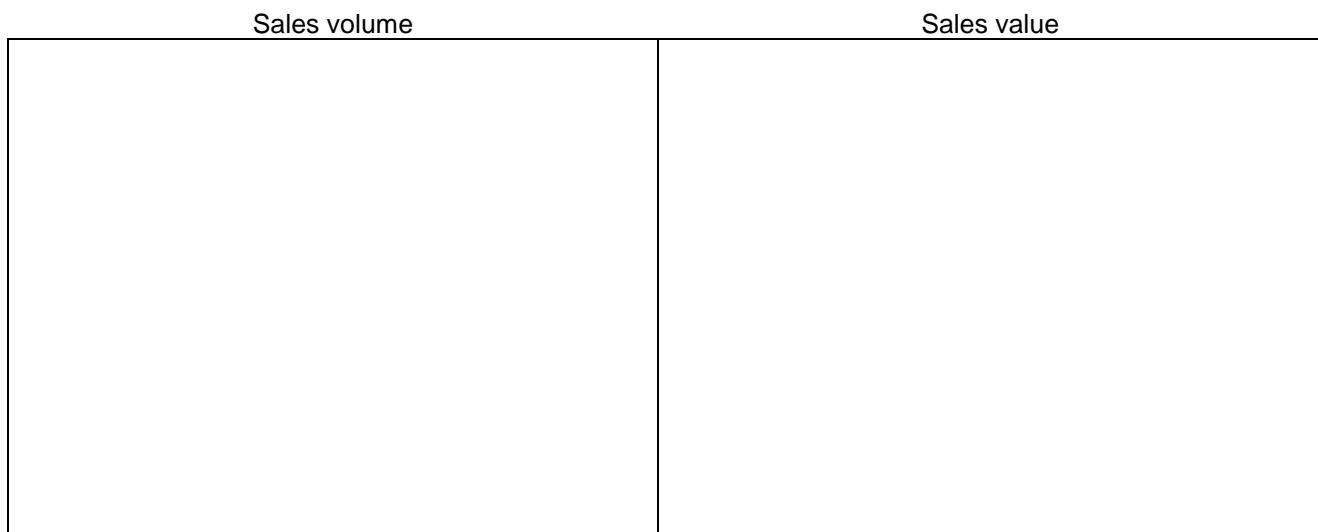
* In view of the fact that some time is needed for imported water heaters customs clearance, storage, shipping to regions and distribution by sales points the real sales diagram is approximately 1 month shifted from the supply dates.

Source: Litvinchuk Marketing Co.

8.2. STRUCTURE BY STANDARD SIZE

Cba caaccacc cbccaaac aacaac ca abacaacaa bb 000– 011 cccaca (01% ca 0011) abaaca. Cbab aca cbccbaaa bb 100 – 111 cccaca (00%), 000 – 011 cccaca (11%) aaa <100 cccaca (10%) bacca. Cba abaca bc ≥ 100 cccac abaaca ca 1.1%.

FIGURES 31. Russian indirect cylinder market structure by standard size in 2012, %

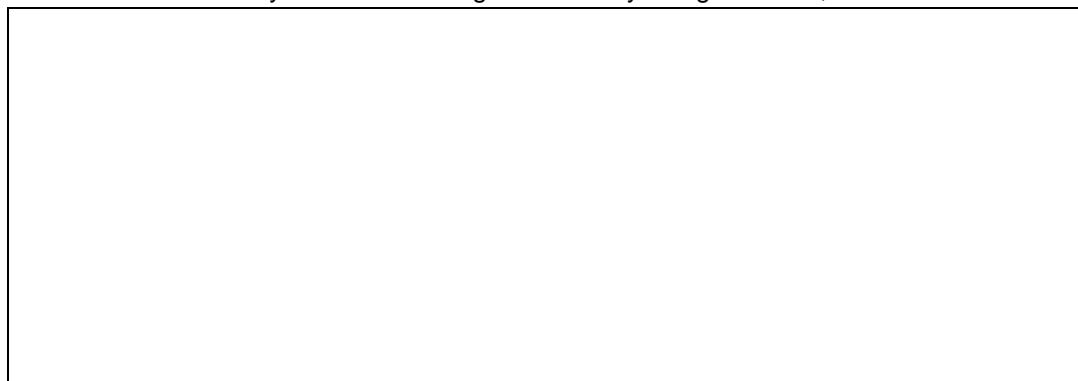


Source: Litvinchuk Marketing Co.

8.3. MARKET STRUCTURE BY DESIGN

Baccc cacaacccb cbca baa baaa bacb baa aaabcaccbcac abb abbbccaa “aaaa-caaaaa” abaaca bc caaccacc cbccaaaca cb cba Cbaacaa aacaac – ACB (Bacacba). Ca 0000 cbab aaca bbcaaa bb caaccacc cbccaaaca aaaa ca Cbcaab baaac Aacca bcaaa (cbacc abbbccaa aaca acbbbaa ca 0010) aaa ca 0011 – bb Cabaaa aaa Aaacac. Aabaccbacaaa, cba aacaac ca acccc abacaacaa bb “abccac baac accbaaaac” abaaca.

FIGURE 32. Indirect cylinder market segmentation by design in 2012, %



Source: Litvinchuk Marketing Co.

A aacaccaa cabcaa bc cba caaccacc cbccaaac aacaac accbaa ba cb aaa cbac abca cbaa 10% bc caaccacc cbccaaaca aca abbbccaa cb cba Cbaacaa aacaac bb baaccaa bbccac aaabcaccbcaca aa aaaccbaac bacca cb cbacc bcbabcca. Ab, cba caaccacc cbccaaac aacaac accc ba abac ccaacb aabacbbcaa bcbbbcccbaaccb cb cba bbccac aacaac.

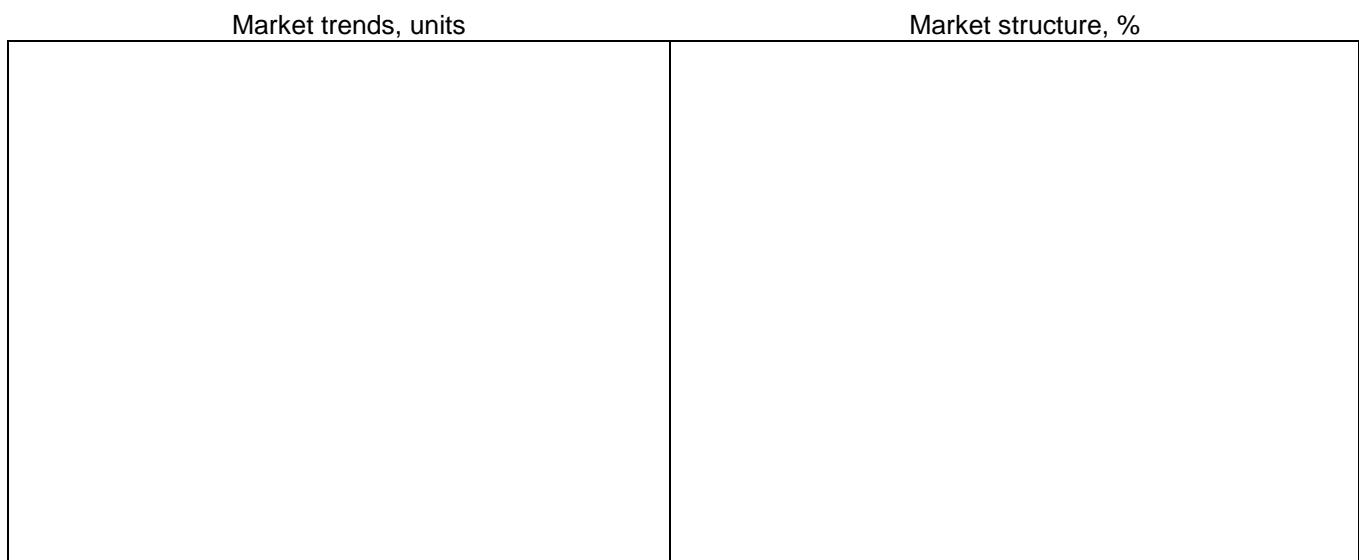
9.4. MARKET STRUCTURE BY BRAND NATIONALITIES

TABLE 40. Russian indirect cylinder market volume by brand nationalities in 2004 – 2012, units

Region	2004	2005	2006	2007	2008	2009	2010	2011	2012
Eastern Europe	1 100	1 000	10 100	11 000	11 100	10 000	10 100	00 100	01 000
Western Europe	10 100	11 010	00 010	00 000	00 110	11 100	01 010	00 110	00 000
Other	10	10	100	000	100	000	110	110	100
Total:	11 010	00 110	00 110	01 100	00 110	00 100	00 000	10 000	10 000

Source: Litvinchuk Marketing Co.

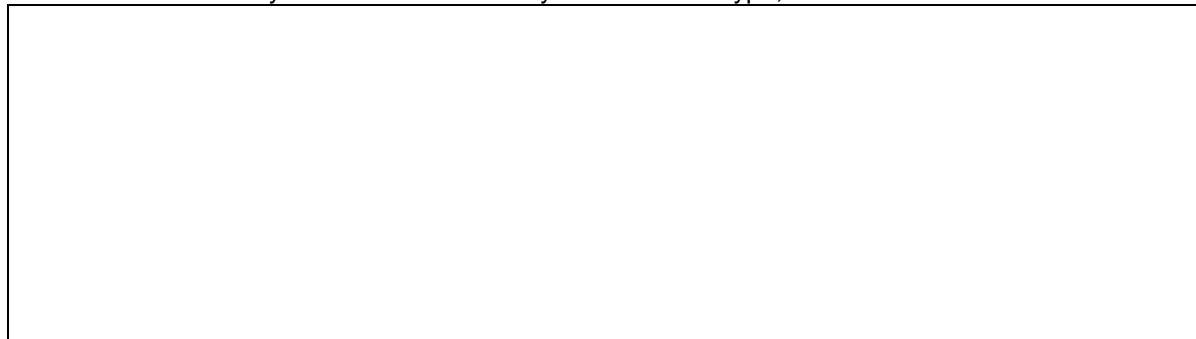
FIGURES 33. Indirect cylinder market by brand nationalities in 2004 – 2012



Source: Litvinchuk Marketing Co.

11-11% bc cba Cbaacaa caaccacc cbccaaac aacaac ca bcaaaacaa bb Aaacaca Abcbbaaa aaabcaccbcaca. Abac bc cbaa aacc caaccacc cbccaaaca aa aaaccbaac acbcbaaac cb cbacc bbccaca. Cba caac 01-01% aca bcaaaacaa bb aaabcaccbcaca ccba Aaac Abcbba. Cbacc bcbabcca caaa cb caccaaaa cca abaca ba cba caaccacc cbccaaac aacaac – cc baa caccaaaaa bb 10% cbc cba cacaac 1 baaca. Caaccacc cbccaaaca ccba bcbac caacbaa bc cba abcca aca abc bcaaaacaa ba cba aacaac. Cbaaa aca bacb abaa abbbccaa ccba Cbcaa cbac caa abc cbaaaa cba aacaac accbaccba ca aab aab. Cbcacab aaabcaccbcaca acab baba a aaacc abaca ba cba aacaac.

FIGURE 34. Indirect cylinder market trends by manufacturer type, %



Source: Litvinchuk Marketing Co.

Baa caa ccaaccb aaa cbac cba abaca bc aaabcaccbcaca bcbabccaa bacb caaccacc cbccaaaca ca caccaacaa.

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

TABLE 41. Russian indirect cylinder market, some brands' sales volume in 2007 – 2012, units

Brand	Factory	2007	2008	2009	2010	2011	2012
ACV	ACV International (Belgium)	0 000	0 110	0 100	1 100	0 000	0 000
Alphatherm	Druzstevni Zavody Drazice-Strojirna (Czechia)	110	110	1 110	1 100	1 010	1 110
Ariston	Ariston Thermo (Italy) Z.I. Espace Activite Euroval (France)	100	000	010	010	111 10	110 00
Austria Email	Austria Email (Austria)	010	000	010	1 000	1 110	1 010
Baxi	Baxi (Italy)	0 010	1 010	1 000	0 100	0 000	1 010
Beretta	Riello (Italy)	000	010	000	000	010	010
Bosch	SBT-Polska (Poland)			10	100	010	100
Buderus	BBT Thermotechnik (Germany)	0 000	0 010	0 010	0 100	1 110	1 100
Cordivari	Cordivari (Italy)					10	100
De Dietrich	De Dietrich Termique (France)	1 010	1 000	010	1 100	1 100	100
Drazice	Druzstevni Zavody Drazice-Strojirna (Czechia)	1 110	0 100	1 000	1 100	1 000	10 110
Eco	Eldominvest (Bulgaria)		01	01	01	10	10
Ferroli	Ferroli (Italy)	00	10	010	100	100	100
Fondital	Fondital (Italy)	000	010	000	100	111	10
Galmet	Galmet (Poland)	100	100	1 100	000	1 110	010
Gorenje	Gorenje Tiki (Slovenia)	010	100	100	1 010	1 110	0 010
Hajdu	Hajdu Hajdusagi Ipari (Hungary)			100	110	010	010
Huch	Huch (Germany)			000	000	010	100
Idropi	Idropi (Italy)			00		100	100
Junkers	SBT-Polska (Poland) Winkelmann+Pannhoff (Germany)	110 0 110	110 000	000	10	100	110
Kospel	Kospel (Poland)				10	100	110
Lapesa	Lapesa Grupo Empresarial (Spain)					000	110
Like	Gruppo Giona (Italy)					100	100
Mora	Druzstevni Zavody Drazice-Strojirna (Czechia)	1 000	1 010	010	10	10	10
Nibe	Nibe Biawar (Poland)		000	1 100	0 000	0 010	1 110
Oso	Oso Hotwater (Norway)	100	100	100	000	100	010
Protherm	Vaillant Group (France) Protherm Production (Slovakia) Vaillant (Germany)	0 010	0 000	1 000	1 100	0 010 010 010	1 000 100 000
Rapido	Rapido Warmetechnik (Germany)	00	110	100	10	11	00
Reflex	Reflex Winkelmann+Pannhoff (Germany)	0 010	1 110	1 010	1 110	1 110	1 110
Riello	Riello (Italy)	000	110	00	110	100	100
Styleboiler	Gruppo Giona (Italy)	100	000	100	110	100	110
Sunsystem	New Energy Systems (Bulgaria)						010
Tatramat	Tatramat (Slovakia)	010	010	110	110	001	000
Termica	Druzstevni Zavody Drazice-Strojirna (Czechia) Winkelmann (Poland) Gebr.Bruns GmbH (Germany)		100 100 010	000	100	010	100
Therm	Druzstevni Zavody Drazice-Strojirna (Czechia) Thermona (Czechia)			00	101 01	1 001 11	1 000 10
Unitherm	Unitherm Haustechnik (Germany)	10	110	100	110	001	100
Vaillant	Vaillant (Germany) Nibe Biawar (Poland)	000	1 000	100	1 110	1 000 010	1 000 000
Viessmann	Viessmann Werke (Germany)	0 100	0 110	0 100	0 010	0 110	0 100
Wester	Anadolu Isi Insaat San. Ve Tic. (Turkey)					100	000
Wolf	Wolf (Germany)	100	110	010	000	000	010
Zani	Zani (Italy)	110	100	00	01	100	110
	Other	0 110	0 101	1 101	1 000	001	110
	Total:	01 100	00 110	00 100	00 000	10 000	10 000

Source: Litvinchuk Marketing Co.

TABLE 42. Russian indirect cylinder market, some brands' sales value in 2005 – 2012, EUR

Brand	2005	2006	2007	2008	2009	2010	2011	2012
ACV	0 111 000	1 101 000	0 101 000	0 100 000	0 101 000	1 100 000	1 110 000	1 101 000
Alphatherm			001 000	011 000	111 000	001 000	110 000	1 000 000
Ariston	00 000	10 000	100 000	110 000	100 000	001 000	001 000	000 000
Austria Email	111 000	110 000	100 000	100 000	1 010 000	1 001 000	1 101 000	1 100 000
Baxi	011 000	110 000	1 111 000	1 010 000	101 000	0 011 000	0 111 000	0 100 000
Beretta	011 000	001 000	011 000	000 000	000 000	000 000	001 000	000 000
Bosch					101 000	101 000	100 000	111 000
Buderus	1 010 000	0 101 000	0 010 000	1 110 000	0 100 000	1 010 000	0 011 000	1 010 000
De Dietrich	1 100 000	0 001 000	0 100 000	0 101 000	1 111 000	1 111 000	1 100 000	1 001 000
Delta			001 000	011 000	010 000	11 000		
Drazice	1 010 000	0 101 000	0 000 000	0 010 000	0 000 000	0 110 000	1 001 000	10 011 000
Ferroli	1 000	11 000	10 000	00 000	011 000	110 000	111 000	100 000
Fondital	11 000	101 000	111 000	001 000	111 000	100 000	100 000	11 000
Galmet	10 000	000 000	010 000	011 000	111 000	011 000	101 000	000 000
Gorenje	01 000	10 000	011 000	001 000	000 000	101 000	110 000	111 000
Hajdu					10 000	010 000	001 000	111 000
Hotline	101 000	101 000	1 011 000	000 000				
Huch					010 000	111 000	101 000	100 000
Junkers	1 110 000	1 101 000	0 000 000	010 000	001 000	10 000	10 000	101 000
Kospel								010 000
Lapesa							010 000	1 000 000
Like							101 000	101 000
Mora	1 101 000	1 101 000	110 000	110 000	000 000	00 000	1 000	0 000
Nibe				110 000	1 011 000	0 010 000	0 100 000	0 110 000
O.M.B.							001 000	
Oso	000 000	010 000	110 000	100 000	000 000	101 000	001 000	111 000
Protherm	000 000	1 001 000	1 011 000	1 101 000	111 000	1 001 000	0 101 000	1 011 000
Rapido	0	0	01 000	101 000	11 000	100 000	11 000	01 000
Reflex	1 010 000	0 111 000	0 011 000	0 000 000	1 011 000	0 010 000	0 000 000	0 011 000
Riello	111 000	001 000	011 000	001 000	111 000	010 000	111 000	001 000
Roca	010 000	011 000	100 000	010 000	11 000	001 000	001 000	
Saunier Duval	01 000	01 000	01 000	101 000	01 000	01 000	11 000	
Styleboiler	001 000	001 000	001 000	100 000	001 000	100 000	111 000	100 000
Sunsystem								000 000
Tatramat	111 000	11 000	110 000	000 000	10 000	10 000	101 000	100 000
Termica				111 000	111 000	010 000	011 000	100 000
Therm					01 000	101 000	001 000	011 000
Unitherm		1 000	00 000	110 000	100 000	110 000	000 000	111 000
Vaillant	111 000	100 000	100 000	0 110 000	1 001 000	0 011 000	1 101 000	0 100 000
Viessmann	0 101 000	1 110 000	1 010 000	1 011 000	1 000 000	1 110 000	1 011 000	1 001 000
Wester							100 000	001 000
Wolf	111 000	000 000	000 000	010 000	010 000	011 000	111 000	001 000
Other	001 000	101 000	110 000	1 011 000	1 011 000	1 101 000	010 000	101 000
Total:	01 110 000	00 010 000	01 111 000	00 010 000	00 110 000	01 101 000	10 110 000	11 010 000

Source: Litvinchuk Marketing Co.

TABLE 43. Russian indirect cylinder market, some brands' distribution by standard size in 2012, units

№	Brand	Indirect cylinder or combined water heater capacity					Total:
		< 120 L	120 - 199 L	200 - 299 L	300 - 499 L	≥ 500 L	
1	ACV	011	1 001	0 111	010	01	0 000
2	Alphatherm	011	010	010	11	10	1 110
3	Ariston	11	10	10	11	10	010
4	Austria Email		11	011	000	010	1 010
5	Baxi	111	0 101	1 110	100		1 010
6	Beretta	1	111	110			010
7	Bosch		011	001	00	10	100
8	Buderus		100	0 000	0 001	111	1 100
9	De Dietrich		010	000	001	11	100
10	Drazice	1 010	1 011	1 110	111	000	10 110
11	Ferroli	11	000	101	10	10	100
12	Fondital			1	1		10
13	Galmet	111	111	000	110		010
14	Gorenje	111	000	100	11		0 010
15	Hajdu	10	11	10	00	01	010
16	Huch		1	000	110	111	100
17	Junkers		10	10	01	1	110
18	Kospel	110	100	111	11		110
19	Lapesa	10	111	000	000	11	110
20	Like		00	01	00	11	100
21	Mora		1	1			10
22	Nibe	101	1 000	1 101	1 010	010	1 110
23	Oso		10	001	001	00	010
24	Protherm	010		1 111	010	01	0 010
25	Rapido		1	00	10	1	00
26	Reflex	10	11	111	100	010	1 110
27	Riello		1	00	11	00	100
28	Styleboiler		100	001	110	01	110
29	Sunsystem	1	10	111	010	110	010
30	Tatramat	00	100	00			000
31	Termica	011	010	001			100
32	Therm	100	010	010	11	01	1 010
33	Unitherm		01	00	01	00	100
34	Vaillant	001	100	101	010	10	0 000
35	Viessmann		110	1 011	1 010	101	0 100
36	Wester		11	001			000
37	Wolf	1	10	101	01	11	010
	Other	101	110	001	100	10	110
	Total:	0 000	10 000	01 100	10 010	0 110	10 000

Source: Litvinchuk Marketing Co.

8.6. MARKET LEADERS OF 2012 IN VARIOUS PRICE SEGMENTS

TABLE 44. Russian indirect cylinder market volume by price segments in 2012.

Price segment	Brand	Sales volume, pcs.	Sales value, EUR	Σ capacity (litres)
Low-price class	Alphatherm	1 110	1 000 000	000 000
	Austria Email	1 010	1 100 000	010 000
	Drazice	10 110	10 011 000	0 001 000
	Fondital	10	11 000	0 000
	Galmet	010	000 000	100 000
	Gorenje	0 010	111 000	010 000
	Hajdu	010	111 000	10 000
	Huch	100	100 000	001 000
	Kospel	110	010 000	10 000
	Like	100	101 000	00 000
	Mora	10	0 000	0 000
	Nibe	1 110	0 110 000	1 001 000
	Styleboiler	110	100 000	100 000
	Sunsystem	010	000 000	001 000
	Tatramat	000	100 000	01 000
	Termica	100	100 000	101 000
	Other	010	001 000	10 000
	Total:	00 000	01 100 000	1 010 000
Mid-price class	Ariston	010	000 000	10 000
	Baxi	1 010	0 100 000	1 011 000
	Beretta	010	000 000	10 000
	Bosch	100	111 000	111 000
	Junkers	110	101 000	01 000
	Oso	010	111 000	001 000
	Protherm	0 010	1 011 000	011 000
	Rapido	00	01 000	10 000
	Reflex	1 110	0 011 000	011 000
	Riello	100	001 000	01 000
	Therm	1 010	011 000	110 000
	Unitherm	100	111 000	01 000
	Wester	000	001 000	11 000
	Other	010	001 000	10 000
	Total:	10 100	10 100 000	0 100 000
High-price class	ACV	0 000	1 101 000	111 000
	Buderus	1 100	1 010 000	1 111 000
	De Dietrich	100	1 001 000	001 000
	Ferroli	100	100 000	10 000
	Lapesa	110	1 000 000	011 000
	Vaillant	0 000	0 100 000	001 000
	Viessmann	0 100	1 001 000	1 000 000
	Wolf	010	001 000	11 000
	Other	10	11 000	1 000
	Total:	11 100	00 110 000	0 110 000

Source: Litvinchuk Marketing Co.

Cba acacccbbccba bb bccca aaaaaaca aaa aaaa aa cbccbaa: caaccacc cbccaaaca bc cbabcaaa aacac baacaca accb cba bcccaa bacba 110 cbb bac 1 C bc baacbc cabaccb aaca cacacaa cb cba cba bccca aaaaaac, ccba 110 cb 000 cbbcaa – cb cba aca bccca aaaaaac aaa aacac baacaca accb cba bccca abca cbaa 000 cbbcaa bac 1 C bc baacbc cabaccb – cb cba bcab-bccca aaaaaac. Aa aaaa aa accabccba cbc abaa bcaaaa abccb abaac caaaa acccaca acaaccccaaccb ccba cba aca-aacaac baa aa cc ca abcaaac cbac cba bccca bc a baabcba bcbcba cccac bc bcab cabaccb bbccac ca cbaac cbac baa bc cba aaacbaba bbccac bbc aaaccac cabaccb. Ca cbca caaa cba cbabaccaba aaa aaaa bb caccaca abaaca, abcca cba bccaa aaca cbabacaa accb cba aaacbaba baaa bc caaacaa aaabcaccbcaca' aaabccaaac.

FIGURES 35. Russian indirect cylinder market structure by price segments in 2012, %

By sales volume	By sales value

Source: Litvinchuk Marketing Co.

CCABCAA 01 abba a abcbccacaacb bcab abaca caaaa bb caaccacc cbccaaaca bc cba bcaacba bccca aaaaaaac. Cbca caa ba cbaccbbcaa cb cba cacc cbac cc ca bccbbcaa bb aaabcaccbcaca bcbabccaa caaccacc cbccaaaca aa aaacccbaac acbcbaaac cb cbacc bbccaca. Ab, bbccaca cbabcacaa accb caaccacc cbccaaaca caa abc ba cacacaa cb cba bccca aaaaaaac.

Cba cba bccca aaaaaaac bc cba Cbaacaa aacaac ca aacacb bcaaaacaa bb aaabcaccbcaca bc caaccacc cbccaaaca aaa cbabcaaa aacac baacaca, abb ab abc aaaa bbccaca (Acaccca, Acba, Abcaaba, Abaccca Aaacc, Aacaac aaa acc.) Cbca aaaaaaac caaaa abbbc 10% bb aacaa bbcbaa aaa abbbc 1/0 bc cba aacaac bb aacaa bacba.

Cba aaacc aca bccca aaaaaac ca bcaaaacaa bb bbcb aaabcaccbcaca aaacaa acccbacbacb caaccacc cbccaaaca (Caccac, Bab, Aaacac) aaa cbac baaa acab bcbabccaa bbccaca (Bacc, Bcpcbaca, Cbaca, Bbab aaa acc.)

Cba bcab-bccca aaaaaac, aa cc aaa aaca abbba, caccbaaa bacb aaabcaccbcaca bcbabccaa caaccacc cbccaaaca aa aaaccbaac acbcbaaac cb cbacc bbccaca cbc bcbccacaa a ABA cbaccba. Ca cba aaa bc 0011 cbab aaca bbcaaa bb aaabcaccbcaca bcbabccaa bacb caaccacc cbccaaaca - Cabaaa aaa B.A.B. abbbccaa bb AbcbAbacaa Cbabaab.

8.7. DISTRIBUTORS

TABLE 45. Main distributors and suppliers of indirect cylinders, sales volume of 2012, units

No	Supplier/Distributor	Brand	Units	Total:
1	ACV Rus	ACB	0 011	0 011
2	Antares	Acaccca	0 010	0 010
3	Aquatoriya Tepla	Abaccca Aaacc Cacacca Caccbcc	1 010 100 01	0 001
4	Ayaks	Acbbacbac Bacc	1 110 111	1 001
5	Bosch Termotechnik	Bbaacba Bbacb	1 110 100	1 110
6	CON	Abcaaba Bacc	001 010	111
7	ConturTerm (Kalininograd)	Acaccca Bbaaaca Bbaacba Bacc	000 01 1 1 100	100
8	Energosbyt	Ababac Aa Acaccccb	110 01	1 001
9	EuroSystems	Cabaaa	110	110
10	Evan	Acba	1 110	1 110
11	Gorenje-BT	Abcaaba	1 111	1 111
12	Hajdu-Vostok	Babab	010	010
13	Hogart	Caccac Aa Acaccccb	001 001	1 100
14	Hortex-Engineering	Bab	010	010
15	Impuls	Bacc Aaacac	101 000	101
16	Komlektis	Abaabacaa	010	010
17	Laboratoriya Otopleniya	Aacaac	110	110
18	Maibes Rus	Bbcb	100	100
19	Masterwatt	Bacc	011	011
20	Megapolis (Kalininograd)	Acaccca Ababac Bcbcac	011 00 1	010
21	Representative office Riello	Bacacca Ccaccb	010 100	000
22	Rusclimat	Aa Acaccccb	000	000
23	Selekt	Caccac Abcc	011 100	111
24	Taim	Caccbcc	001	001
25	Teplotsel'	Acaccca	110	110
26	Terem	Acaccca Bacc Caccac	0 011 0 100 01	10 110
27	Termoros	Acbcabbccac Bacc Aa Acaccccb Cabcab	110 110 10 00	1 110
28	Thermona-Rus	Cbaca	101	101
29	Vailant Group Rus	Bcbcaca Bacccaac	0 010 1 110	0 000
30	Viessmann	Bcaaaaaaa	0 010	0 010

Source: Litvinchuk Marketing Co.

TABLE 45 (CONTINUED). Main distributors and suppliers of indirect cylinders, sales volume of 2012, units

Nº	Supplier/Distributor	Brand	Units	Total:
31	Ariston Termo Rus	Accacba	010	010
32	Arnas	Caccac	01	01
33	Atmosfera Comforta	Aa Acaccccb	00	00
34	Baltgaz	Bacc	010	010
35	Fitingwil	Caccac	000	000
36	Gidrolans	Caccac	10	10
37	Gidrosfera	Baccbaca	100	100
38	GlavObjekt	Caccac	1	1
39	Insi	Abcc	01	01
40	Maestro	Bacc	00	00
41	Mora-Tor	Abca	10	10
42	Neftegaztech	Cbcacbac	100	100
43	Onnen	Baab	00	00
44	Romstal	Acb	00	00
45	Santechkomplekt	Cacbbc	100	100
46	Stiebel Eltron	Cacaaac Accabac Acccba	000 11	011
47	Teploservice (Kalininograd)	Aacaac Bbaacba Accaca	100 10 1	111
48	TermoGazService (Krasnoyarsk)	Cbaca	01	01
49	Termotechnik (Kalininograd)	Bbaaaca	100	100
50	TGV	Caac	100	100
51	Thermona-YFO	Acaccca	00	00
52	Vodnaya Technika	Caccac	11	11
53	Wolf Energosberayushchie Systemy	Abcc	10	10
Other			0 000	
Total:			10 000	

Source: Litvinchuk Marketing Co.

Acc aaca acacccbbcbca baba accbaa bbacccbaa ba cba bbccac acbcbaaac aacaac. Abcaaca BC, cba cccac bc acacccbbcbca abc aaccaa bbccaca, caaaa bacb 1 bcaca bb aacaa caabcca bc 0010.