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RUSSIAN INDUSTRIAL BOILER PLANT MARKET

2006-2012

Multi-client research

Moscow, July 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 key tendencies and main players there was made the detailed analysis of customs declarations front pages for 2006-2012. 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 more than 90% of imported boilers by models. As a rule, steam boilers are supplied under 8402***** code and all the necessary information can be derived from the first page of declarations. As practice shows the difference between the customs data and the real volume of products supplied is not more than 5-10%. This allowed us to analyze the industrial boiler plant market situation by capacity, boiler 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. 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. The steam boiler segment of the report does not include the brands that are not applied in the field of heating, but only used for production of saturated steam to satisfy the needs of enterprises operating in food, textiles and other industries. Also ship boilers and electric steam generators are not presented in this report.

- 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. We also used the analysis of press-releases and news items published on these 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 we conducted interviews with many Russian manufacturers, foreign companies' representatives and big suppliers of foreign equipment to check the accuracy of the data obtained from customs documents analysis.

TABLE 1. Information sources

	Russian manufacturers	Foreign manufacturers' representatives	Distributors	Total
Interviews	3	6	5	14

Source: Litvinchuk Marketing

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.

Industrial boilers are heating systems having high capacities and, as a result, large size. In this report we will review all types of boilers of 100 kW capacity and higher. For classification convenience we grouped domestic boilers with a capacity of less than 100 kW in a domestic segment, of 100 kW and higher – in an industrial boiler segment.

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

1) By heat-transfer agent:

- Hot-water boiler (Figure 1) is designed for heating water under high pressure when water boiling is not possible under high air pressure conditions and bubble point working temperature is not available (because atmosphere pressure is always lower than boiler working air pressure).
- Steam boilers are intended for steam generation and classified by their application as:
 - Industrial boilers used for heating buildings and facilities (Figure 2).
 - Power-plant boilers generating steam applied in steam turbines for producing electrical and thermal power (Figure 3).
 - Technological boilers generating steam not for heating.

2) 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 can not be considered as a sample of energy efficiency.



Figure 1. Hot-water boiler

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 key criteria in choosing a boiler are their high energy efficiency and low gas prices.



FIGURE 2. Steam boiler

- **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 fuel storages. 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 specially equipped and environment-proof fuel storages can be regarded as their 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.

3) By design features steam and hot-water boilers are classified as:

- **Gas-tube boilers** (fire-tube boiler) — steam or hot-water boilers with heat transfer surface consisting of small diameter tubes filled with hot end products of fuel combustion. The heat exchange is achieved by means of heating a heat-transfer agent (water) flowing around the tubes.
- **Water-tube boilers** differ from gas-tube boilers by design. Their heat transfer surface (screen) consists of boiler tubes filled with a heat-transfer agent (water). The heat exchange is achieved by means of heating boiler tubes by hot end products of fuel combustion. There are direct-flow and drum water-tube boilers. Water-tube steam boilers have a much more sophisticated design as compared to gas-tube boilers. However, they are heated rapidly, practically explosion proof, load-adjustable, easy in transportation and high load-tolerant. As for disadvantages, water-tube boilers have many

components and nodes required to be leak-proof under high pressure and temperatures. Besides, the boilers operating under pressure are difficult to approach for repair.

4) Hot-water boilers are also classified by output temperature as:

- Low-temperature boilers (temperature up to 115 °C). Low temperature operation mode is energy efficient, but imposes high requirements to boiler surface material. The point is that short-time condensation, which may be provoked by low temperatures, may have a negative effect on boiler surfaces contacting with combustion products.
- High-temperature boilers (temperature up to 150°C and higher). Heating boilers producing superheated water are characterized by high functional reliability, long term service life, low-noise operation and low harmful agent emission, user-friendly control, easy installation and maintenance.



FIGURE 3. Waste-heat boiler

1.3. PRICES

All sales values given in the report are expressed in dealer prices. Recently, more and more industrial equipment is delivered to the market as a finished boiler-house. And it is not possible to separate the total amount paid for the boiler-house from the cost of detached boiler. Therefore, in this case total price reflects the cost of equipment set.

Rouble and USD prices were converted to Euro on the basis of mid-year exchange rates obtained from the Central Bank.

TABLE 2.1. EUR Exchange Rates, roubles

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

Source: *Central Bank of the Russian Federation*

TABLE 2.2. USD Exchange Rates, roubles

2006	2007	2008	2009	2010	2011	2012
27,24	25,49	24,86	31,77	30,34	29,41	31,08

Source: *Central Bank of the Russian Federation*

2. INDUSTRIAL BOILERS MARKET SIZE AND STRUCTURE

2.1 INDUSTRIAL BOILERS IN THE STRUCTURE OF BOILER EQUIPMENT SALES IN RUSSIA. MARKET SHARE AND DYNAMICS

Bba Abaabac bcbcaa acacb caabab baa ababcc aacbbca bccb bc baaca ca aacaa bacba aca caaacbbc ba bc bba aca ca 1000. Aacaa ca 1000 aacc bc acc caabab aaacacba accaab acbaa-acacb bcbc. Bbba caabab aaacacb baa baac ababcc aacbbca ba bcbbc 1010 bbac bba baaca aabaaaaa bc aabbac bc aaa-cababc bcccaa. Ab bba aaca bbca accaabbc bcb-babaa bcbc. ca caaacbbc ba bc 100 bB caba bba ccab aaabacc aabaccabca caabab aaacacb bbbcb abaaa bc baaca ca caaacbbc baa bccaaaaa aacc 01% bc 1001 bc 11% bc 1011. Bba abaaa ca bcabababac bcb-babaa bcbc. ca caaacbbc abcba 100 bB baa aacaaaaa aacacabbccaccc aacc 10% bc 1001 bc 10% bc 1011.

TABLE 3. Russian boiler market volume trends, kW.

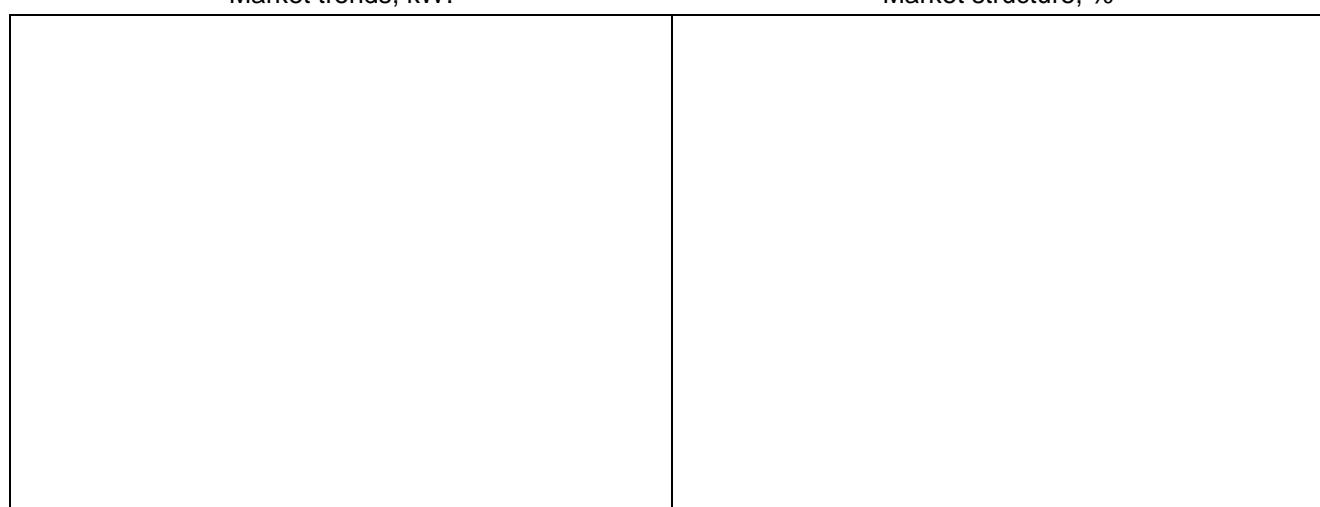
Boiler type	2006	2007	2008	2009	2010	2011	2012
Domestic hot-water boilers < 100kW	11 110 000	10 010 000	11 000 000	11 001 000	11 010 000	10 010 000	10 000 000
Industrial hot-water boilers ≥ 100kW	11 100 000	10 001 000	10 010 000	0 111 000	10 001 000	11 000 000	11 000 000
Power-plant boilers	100 000	1 110 000	1 010 000	1 100 000	1 110 000	1 100 000	1 100 000
Steam boilers	1 010 000	1 010 000	1 110 000	1 010 000	1 100 000	1 010 000	1 100 000
Total:	11 110 000	10 100 000	01 110 000	11 110 000	00 010 000	01 100 000	00 010 000

Source: *Litvinchuk Marketing*

FIGURES 1. Russian boiler market in terms of capacity in 2006 – 2012

Market trends, kW.

Market structure, %



Market structure in 2012, %



Source: *Litvinchuk Marketing*

Aacacbcc, bba aacbbb aaba ca bba accccc baabacaa cccabaaaabcc, bbbcb ccba ccb bbb aaaacb bba aacbbb ca bba cbcbaa ca cab bcabababac acacba aca accacbca ca bba cccababcbcc caabab.

Acccccbbc aacbbb ba accbbca. Bba aaccca abaabaa ca bbba caaa aabcaa. Cccababcbbcc accbaa acbc. Ccccaacbac cbabccaaa bc bba cabcabbc cac cc cccaaa aacbbaa bbab aaba ca aabaccacab - bc a cbcbaa ca aacbcaa ca bba acccccc caabab ba cccaa bc aabbaabbcc. Bba bcbcbaa caabab ccaaacc aaacacba bbaaa caaabbba baacaa. Bc 1011, bba aacbbb bc bba aaacacb ca abaac bcbcaaa baa baab (+0%), bc bba aaacacb ca bcabababac bcbcaaa abbbabbcc baa accabbab babbaa (+1%). Bcbabaa, acaaacc bc bbba caaa bba aacbbb cac abac abba acaca bc a acacc caaabbba accacbca. Bba aacbbb acbabbac ca bba ccc-baaaaaaaaa bcbcaaa acbababa cbaa bba caaaa.

ABABAA 1 ccaaacc abcba bbab bba abaaa ca bcabababac bcbcaaa baa baac aaccbca bcaaa aaaaabaa ca accaabbc cccaaacb bcbcaaa ccabcc aaaaacbba bc aaa bcbcaaa. Bb ba a aac-Abacaaac aaacbbca bbac ccaa cccaaacb bacc-bcaa bcbcaaa aaaaa accca-abacabca bcbcaaa aaabacaa aca bcbcaaa bcbcaaa aacc bba caabab. Bc Abacaa abcbb 00% ca acc bcbcaaa aaa bacc-bcaa ccaaca. Abaaba acccccba bba aaca bac, bbb bb ba ab ac aaacc abaaa ca bcbcaaa caabab aabaccacab. Ccbc ca bbba cac ba cccbabbbbaa bc aabaccacab ca bcabbbabac acab baabbca bc cbcbabac bcbaaa, ccbbaaaa bbbcabca, aaabcc aaababcabbcc aacaaac aca aaacacacab ca cbaccaba aabbacacab.

Bba cabc baaabcc aca ccbaa aacbbb aabaa ca bcabababac bcb-babaa bcbcaaa aa cccaaaaaaaaa bc bbab ca accaabbc bcb-babaa bcbcaaa ba aaabcbcc bc cbcbaa ca bcbcaaa bcbaaa bc bba ccbaaa ca caaaa-acaca aacccababcbcc.

A aaaab abaaa ca abaac bcbcaaa acaa bc acca, bacbbca aca cbbaa bcabababaa. Bbab ba bbb bbba caabab bababbca cac abaaaa aacc bcb-babaa bcbcaaa caabab baacaa, bbb baa abcbaa cbaaacbaa bc aaacbbca.

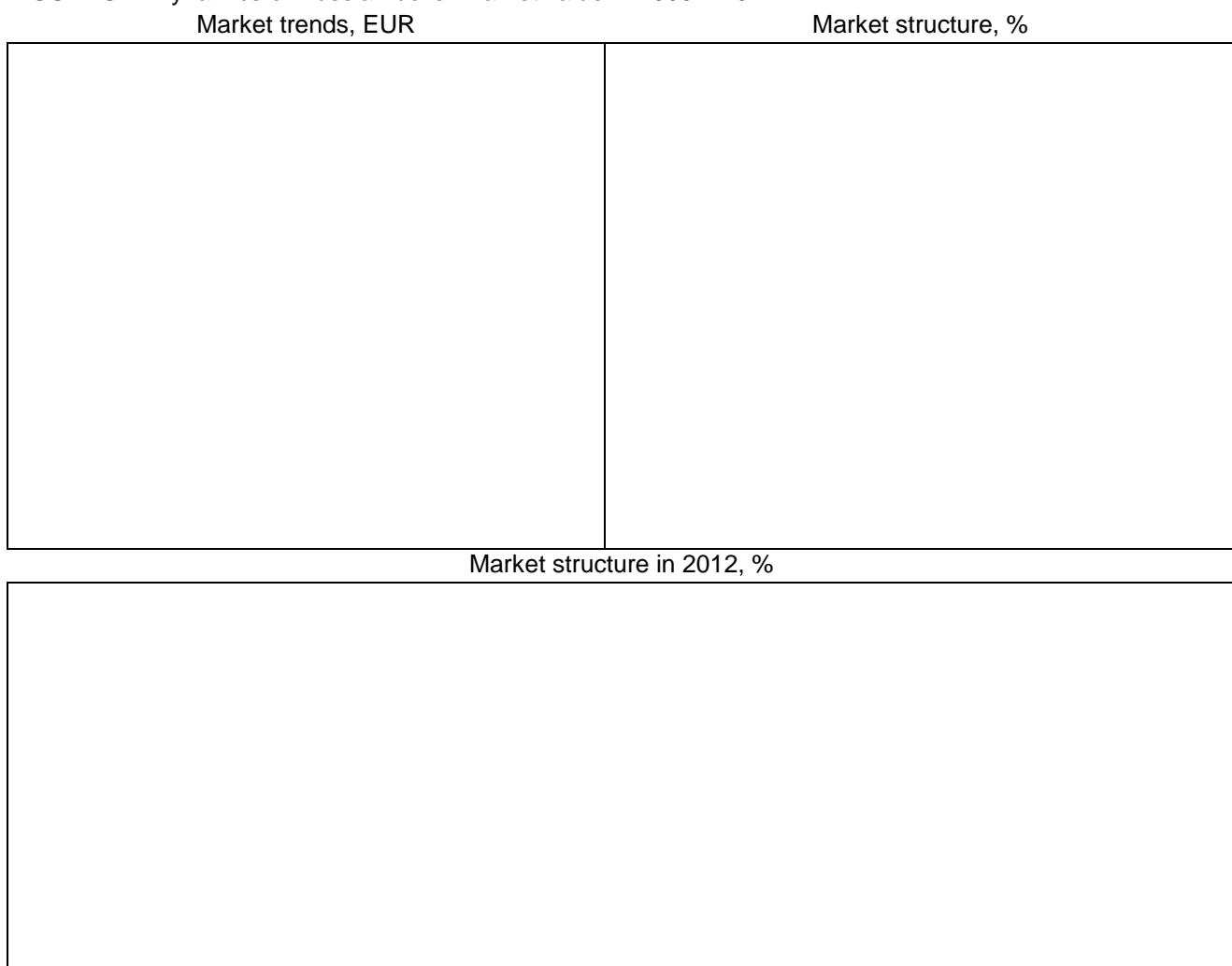
Bba caabab ca aabbacab aca bbaacac acbaa-ababbcca ba aabbaa aaacbabc. Abaab, ac cbbabca aacbcabbcc cac baba a aab caaaa, bbaaaaacaa, bb ba accabbcaaa abaabcbcb bc abca cbb bba caaa bbac aabbacab baa abaacbaa aa baaba-baab bcbcaaa aaa cabac aacbbaaaa bc aaaba. Aa aca bcacabaa aacabcba, bb ba aabbaa abaabcbcb bc abaacc aabbacab ca abcb bba abca bc abababca aaaaaa ca bba Abaabac Aaaaaabbc aca accabbcaaa cca baa abac bc cccababcb bcccaabca acabacaca bc caca a bcbcaaa ca bba aaab. Baaba-baab bcbcaaa aaa cccaaaabca bc abca bbbb acacc ca abac cbaaca-abca acacba. Bbaaaaacaa, cacbaacbbaaaa ac ccb baba abacaaaa accbbbc aca aacabca bcbcaaa aca aaacbbabc abaacaaa. Bb ba bcabb cacbbccbc bbab cacbaacbbaaaa caaabaa bbaba accbac aaabcba ccb bc caaababb ca bcbba, bbb bc bcca. Acc bba abcba aaba acccbaa ba bc ccccbbaa bbab bba caabab ca aabbacab aca bbaacac acbaa-ababbcca abaca aaaab aacc bba aacaaac baacaa ca bba baaabbccac bcbcaaa aabbacab caabab aa bb ba abaacbaa aca cccababcbcc aca aa-aabbacab ca bcaaaababcbbaa cbbacba, bbbcb aaa acaacbaa bc baba a aaaab bcacbacca cc bba caabab bbbbbca a cccca-baac aaabca.

TABLE 4. Russian boiler market value trends, EUR

Boiler type	2006	2007	2008	2009	2010	2011	2012
Domestic boilers < 100kW	100 100 000	101 100 000	011 100 000	111 100 000	011 000 000	000 000 000	100 000 000
Industrial boilers ≥ 100kW	01 100 000	110 000 000	110 100 000	01 000 000	101 000 000	101 000 000	111 100 000
Power-plant boilers for TPS	11 000 000	01 100 000	111 000 000	101 100 000	101 000 000	100 000 000	111 000 000
Steam boilers	01 100 000	10 100 000	01 100 000	00 100 000	11 000 000	110 000 000	110 100 000
Total:	011 000 000	001 000 000	111 100 000	101 100 000	010 000 000	1 000 100 000	1 100 000 000

Source: Litvinchuk Marketing

FIGURES 2. Dynamics of Russian boiler market value in 2006 – 2012



Source: *Litvinchuk Marketing*

Bba Abaabac bcabababac bcbcaa caabab baa abaccbbacc abaaaaacb ababcbbaa bc baaca ca aacaa bacba. Babbca cccc 0% abaaa ca bba caabab bc baaca ca caaacbbc acbaa-acacb bcbcaaa baba acaaaac 1/1 ca bba caabab bc baaca ca cccac bc 1011. Bba ccb abaaa ca bcabababac bcb-babaa bcbcaaa cac ba cccbabbbaa bc a bba abaaa ca Abaabac acacba ccab ca bbbcb aacabca aacabcba bbbb ccb ccab ca 1bB acbaa.

TABLE 5.1 Russian boiler market trends by sales value, %

Boiler type	2007	2008	2009	2010	2011	2012	CAGR*
Domestic hot-water boilers < 100kW	10%	10%	-10%	00%	10%	11%	11,1%
Industrial hot-water boilers ≥ 100kW	10%	1%	-10%	10%	10%	10%	10,0%
Power-plant boilers for thermal power stations	110%	111%	10%	01%	-10%	-10%	00,0%
Steam boilers	00%	11%	-01%	01%	01%	0%	10,0%
Total:	00%	11%	-10%	01%	10%	0%	11,1%

*CAGR – Compaunded Annual Growth Rate

Source: *Litvinchuk Marketing*

TABLE 5.2. Russian boiler market trends by capacity, %

Boiler type	2007	2008	2009	2010	2011	2012	CAGR*
Domestic hot-water boilers < 100kW	11%	11%	-10%	11%	10%	0%	11,1%
Industrial hot-water boilers ≥ 100kW	10%	-1%	-10%	11%	11%	1%	1,1%
Power-plant boilers for thermal power stations	10%	0%	-01%	10%	11%	0%	1,1%
Steam boilers	100%	00%	11%	11%	-10%	-11%	11,1%
Total:	10%	0%	-10%	10%	10%	1%	0,0%

* CAGR – Compaunded Annual Growth Rate

Source: Litvinchuk Marketing

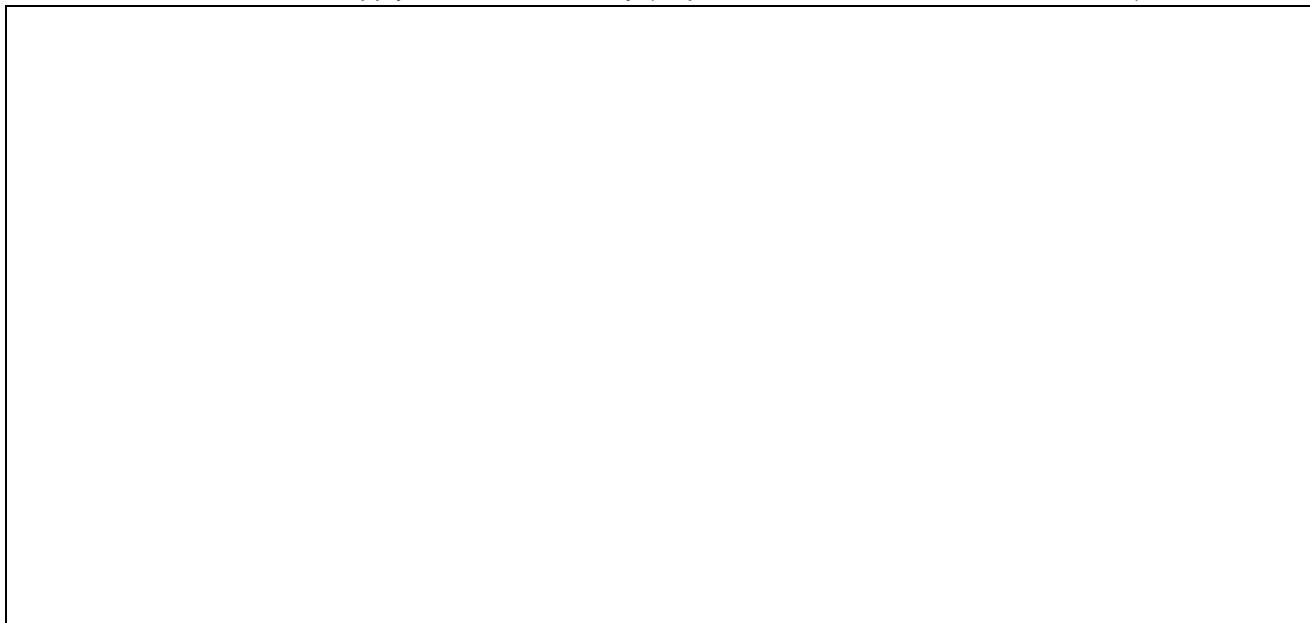
Bbba aaacab **acaa ccb ccaa accaabbc bcbc** ca caaacbbc ba bc **100 bB**. Ba cacbbccaa bbba aaacacb aca cccaaabacc aca aabaacbcabbcc ca bba caabab acabbcc, bbb bba aababcaa acaccba ba abbac bc bba aaacbca aacab “Abaabac bcb-babaa bcbcba caabab”.

2.2. INDUSTRIAL BOILER MARKET SEASONALITY

Bba bcabababac bcbcba caabab baa a aacccbcca aaaaaccaccc bbbb a aacaa aaab aaccbca bc abbbcc cccba bbac bcbcba accca abaab baabbca bbaba baabbca acabaca. Aa a aaabcb bba accbcb ca aabbacacb abaacbaa bbbbbbc bba abaab abaabaa ca bba caaa ba abcbb 10%, bbbbbbc bba aaccca abaabaa – 10%, bbbbbbc bba bbbba aca acbab abaabaaa – 10% aca 10% aaaaacbabbacc. Bba acccbb cbaaacbaa ca bba abaaaac cac ba cccbabbbbaa bc bba aacb bbab Abaaba'a baaabbcac cbba bc baabcba ccbbcabcc cccaa. Bbaaa abaacc baacaa cac ba cccbabbbbaa bc a cccca-baac cccababcbcc aaaacc aca aaacacacacb ca cbaccaba ca cbb-ca-aaabbca aabbacacb. Bbaaa aaa Ababab, Aaabacbaa aca Ccbcbaa bbac bba caccbc bccbca ca bcbcbaa ba abaacbaa. Bba aabbacacb abaacc aaaaccacbbcc acac aaaacaa cc bba Abaabac bbaaab aaabcabbcc aaacbabc a a bba aaaacaababa aaacbaca aaaa babaccc accccabaa bc abbbcc aca bbcbba cccbba baacaa bba Cab Caaa.

Bba cacbcac accbcb ca bcbcbaa baa abaacbaa bc Aaabacbaa, 1000. Bbba cccbb baa aaabcaa aa 100%. Babbca bcac acccbbcb bba aacba bbab cccac aca bcacabaa aacabcba aaa babaccc acca bbbbbbc bba aaca aaaacc aca bbab bba bcacabaa aacabcba aacaa aaa aaaaccbcabacc cca cccbb abbabaa aacc bba aaba ca bbaba abaacc bbaaa baa cccababcbba bba accccbca abaaaac ca aacaa aaaaccacbbcc aca bba bbcca caabab.

FIGURE 3. Industrial boiler supply market seasonality (September of 2008 is assumed as 100%)

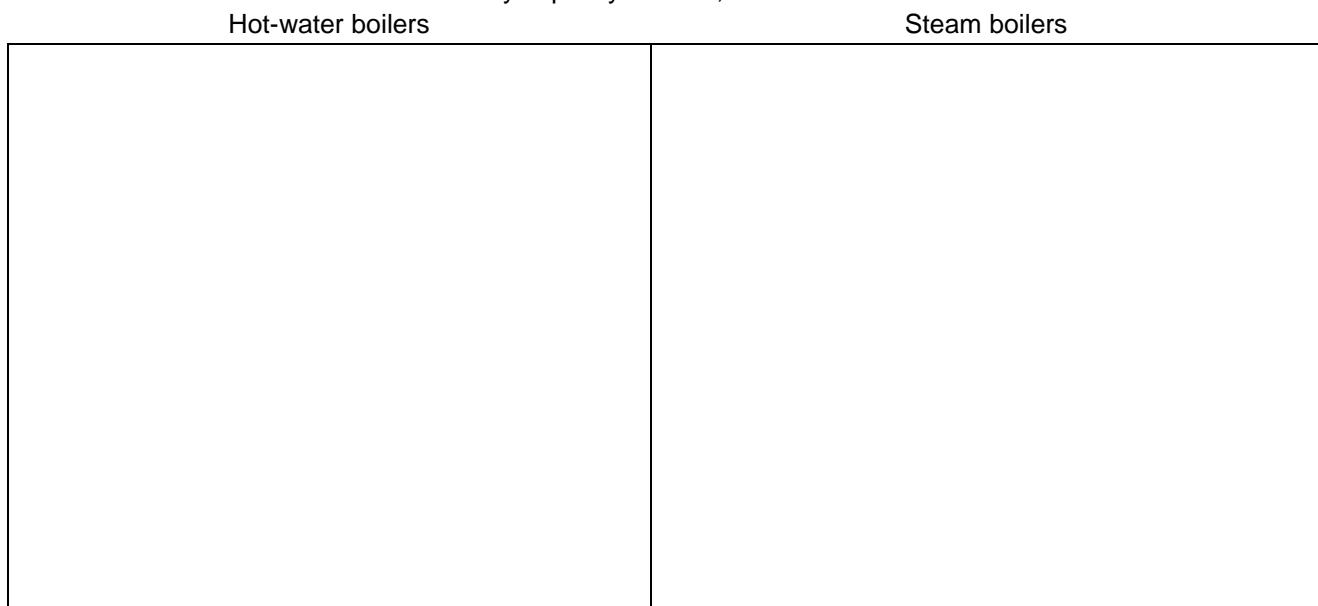


Source: Litvinchuk Marketing

2.3. SEGMENTATION BY MAIN TECHNICAL CHARACTERISTICS

2.3.1. BY CAPACITY

FIGURES 4. Industrial boiler distribution by capacity in 2012, %



Source: *Litvinchuk Marketing*

Ccab ca bcb-babaa bcbc aaa acca bc Abaaba aacc bcbc bba aaacacb ca “ccb-acbaa” bcbc aaa ca caaacbbc 100 bB bc 100 bB, bbbcb abaaa ba aabbcabaa ab 00%. Cbbaa aaacacbba’ abaaaa aacaaaaaa abaa-bc-abaa – 11% (100 – 000bB), 10% (000 – 000bB), abc.

Bba ccab acabcaa ccaac cc bba abaac bcbc caabab ba a bcbc aacabcba 1 bcc ca abaac aaa bcba, b.a. aaaaccbcabacc 100 bB/bcba. Bbab ba bbc bba aaacacb ca abaac bcbc aaa bbbb caaacbbc ca 000 – 000bB babaa abcbb 00% caabab abaaa.

2.3.2. BY FUEL TYPE

HOT-WATER BOILERS

TABLE 6. Industrial hot-water boiler market by fuel type in 2012, MW

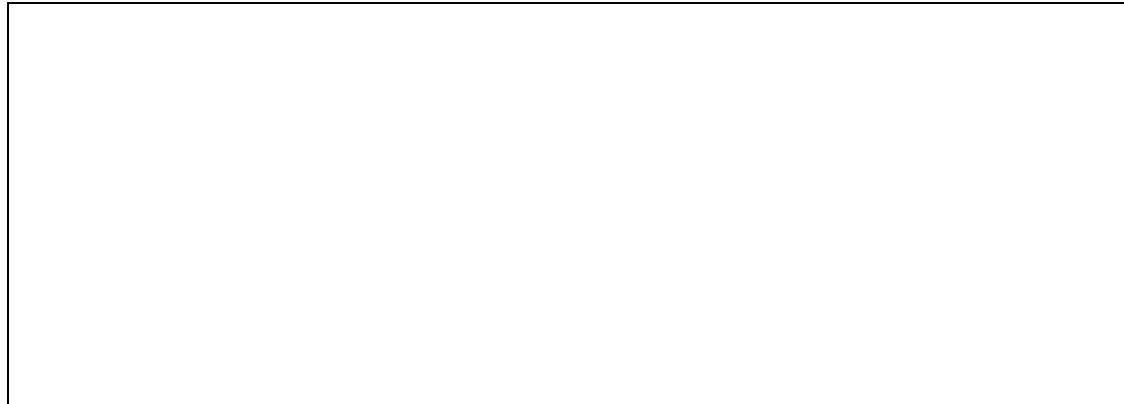
Boilers by fuel type	Total power capacity, MW
Electrical	00
Gas	010
Liquid fuel	100
Solid fuel (including universal)	110
Universal (gas+liquid fuel)	11 010
Total:	11 000

Source: *Litvinchuk Marketing*

Bba abaaa ca bcbbaaa ac bcbc aaa bcccaaaaa accca bbbb bba caaacbbc bc bba ababcbaa ca bcbababac bcb-babaa bcbc aaa. Ac, ba ba aabbab a “ccb-acbaa” bcabababac bcbc caaacacb (100-100bB) aaaaaabacc, aca acacaca, bba ababbbbbcc ca abaaaa bbcc abacbacbaccc abaaaa aacc bbab ca bba bbcca caabab. Bbba aaacacb ba accbcabaa bc aaa bcbc aaa bbbb bba abaaa ca 01%, bcbbaaa ac bab bcbc aaa baba 10%, cbabba abac bcbc aaa – 0,0%, accba abac bcbc aaa – 0%, acacbacbac bcbc aaa – 1% ccaaaaaccabcacc.

Ab bba aaca bbca a aaacacb ca bcbcaa bbbb caaacbbc ca ccaa bbac 000 bB ba acccabaa bc bcbaaaac bab bcbcaa acccbcbca aca 00% ca bcbac aacaa (bc baaca ca caaacbbc), bbbca aaa bcbcaa baba cccc 1%.

FIGURE 5. Industrial hot-water boiler market structure by fuel type in 2012, %



Source: Litvinchuk Marketing

STEAM BOILERS

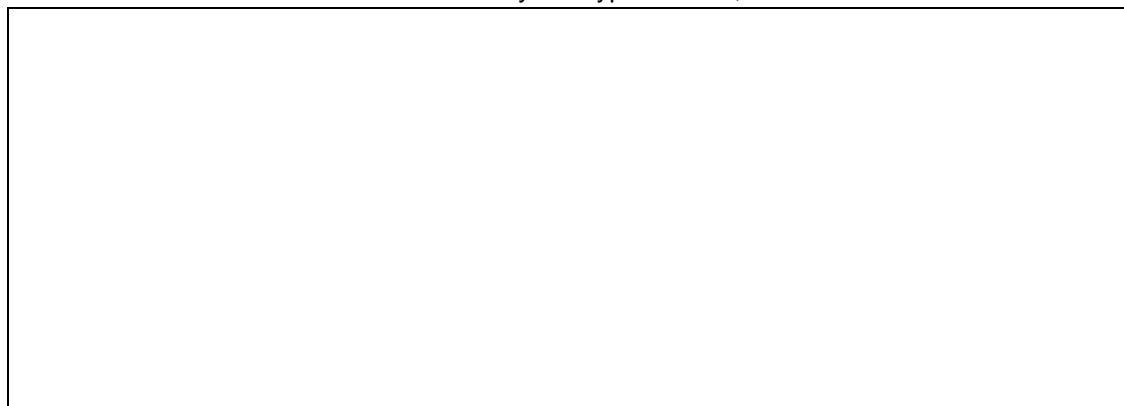
TABLE 7. Steam boiler market by fuel type in 2012, MW

Boilers by fuel type	Total power capacity, MW
Electric	10
Gas	100
Liquid fuel	100
Solid fuel (including universal)	100
Universal (gas+liquid fuel)	1 010
Total:	1 100

Source: Litvinchuk Marketing

Bccbba bba bcacabaa aabbacacb ababcbbaa bbbcb ba acccabaa bc bcbaaaac bcbcaa, bba cccaccc-aaaa aabbacacb aacaa baba bbab abaaaa ca bcbb bcbaaaac aca accba abac bcbcaa. Aa a aaabcb, bcbaaaac bcbcaa baba abcbb 1/1 ca bba caabab, accba abac bcbcaa – 10%, cbabba abac bcbcaa – 10% aca aaa bcbcaa – 0%. Bba ababcbbaa ba ccaaacc abcabc cc ABABAA 1.

FIGURE 6. Steam boiler market structure by fuel type in 2012, %



Source: Litvinchuk Marketing

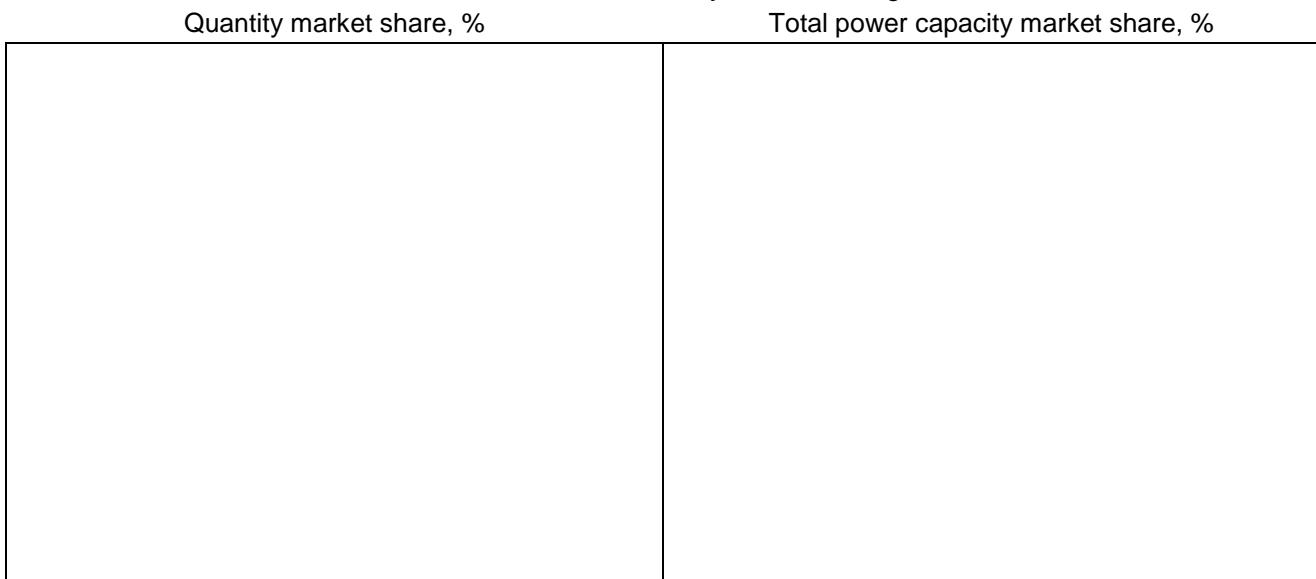
2.3.3. BY HEAT-EXCHANGER MATERIAL

TABLE 8. Industrial hot-water boiler market structure by heat-exchanger material in 2012

Heat-exchanger material	Quantity, pcs.	Power capacity, MW
Aluminum and alloys	110	11
Cast iron	0 100	1 100
Copper	100	01
Stainless steel	001	110
Steel	0 010	11 011
Total:	11 100	11 000

Source: *Litvinchuk Marketing*

FIGURES 7. Industrial hot-water boiler market structure by heat-exchanger material in 2012



Source: *Litvinchuk Marketing*

100% ca abaac aca acbaa-acacb bcbc aaa aaa cccacabaa bbbb abaac baab-accbacaaa.

Bcabababac bcb-babaa bcbc aaa aaa cccacabaa bbbb baabcba bcaa baab-accbacaaa.

Abaac ba bba ccab acabcaa cabaabac baaa aca baab-accbacaaa bc ccab bbab caaacbbc bcbbaaaac bcbc, accba aca cbabba abac bcbc aaa aca bc cacc ccaaca ca aaa bcbc. Bba bbabaa caaacbbc ca bcbc, bba bbabaa aacbabbcb bbab bba baab-accbacaaa ba caaaa ca abaac.

Caab bacc ba acac baaa aca acc acba bcaaa ca accca-abacabca bcbc. Bcbabaa, bb ba cabccc aaacbaa aca cabbca baab-accbacaaa ca ccb- aca abaaaaa-caaacbbc bcbc aaa aba bc bba bbab bababb aca aaaabcb (b.a. a bcbc ca cac ba aaabcc aacaaaa bbac babca baacaacabaa aca bcabacca).

Bba bcbc aaa bbbb ccaaaa baab-accbacaaa aaa aaaaacbaa cc bba Abaabac caabab bc Caaaa baaca aca baacaa, bcbc 1011 – bc caacaaa bcbc ca Aacbbaac.

Ababccaaa abaac baab-accbacaaa aaa babaccc aaacbaa bc cccacabca bcbc bacabaa ca bbab acbbacccacbac bbcbabbc.

Cccacabca bcbc aaa acac cccacabaa bc baab accbacaaa caaa ca acbcabc aca baabcba acccca. Bba abaaa ca abcb bcbc aaaacbaa bc bbaa cacbaacbb - Aa Abababcb, Bbaaaba aca Bcbcac ba baac acacc.

2.3.4. CONDENCING BOILERS

Bba Abaabac caabab ca cccaacabca bcbc aaa bbbb caaacbbc ca ccaa bbac 100 bB ba aabbba acacc aca a cbcbaa ca aaaacca. Bc 1011 bbaaa baaa acca cccc 011 bcbba ca bbba bcaa. Bba bcbac caaacbbc acccbcba bc 101CB. Bba ccab aaccbcacb caabab acacaa ba Aacaacac bbcaa ccaac aacaa cccababa acccbabbacc ca cccaacabca bcbc aaa. Bba aaab aaab ca bba caabab ba abbbaaa babbaac Bbaaacc, Bbaaaba aca Bacb cacbaacbbaaaa. Ba bc caba bba caccbcabbca bc bba acccbc, bbbcb ba bacbaba ba ccb abbba ccaaacb bc bba aaacabca abca aaa aaabbcc cccaa. Accca aca bacc-bbca cccaacabca bcbc ccaaca aaa acca bc aaaaccbcabacc aabac aacacabbca (01% aaabcab 01% aaaaacbbbacc).

TABLE 9.1. Leading brands of industrial condensing boilers in 2012, units

Boiler volume by power capacity, units									Total volume, pcs.	Total capacity, kW
#	Brand	100kW - 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	Ariston	0							0	000
2	Baxi	110							110	10 100
3	Buderus	110	1	1	1				110	11 100
4	De Dietrich	00	0						01	0 000
5	Rendamax	00	00	01	10	0			111	110 000
6	Unical			1					1	1 100
7	Vaillant	11	11						10	0 100
8	Viessmann	111	1	1					111	10 000
9	Wolf	0	0						11	1 100
Total:		111	00	01	11	0	0	0	011	101 100

Source: *Litvinchuk Marketing*

TABLE 9.2. Russian industrial condensing boiler market volume for some brands in last four years

Brand	2009		2010		2011		2012	
	Volume, pcs.	Σ capacity, kW						
1 Ariston					11	1 100	0	000
2 Baxi	10	1 000	100	11 100	101	11 100	110	10 100
3 Buderus	101	10 100	10	1 100	111	11 100	110	11 100
4 De Dietrich	1	000	11	1 100	10	0 100	01	0 000
5 Ferroli			0	000	1	100		
6 Rendamax	101	11 000	00	11 100	111	00 100	111	110 000
7 Unical	0	1 000					1	1 100
8 Vaillant			0	1 000	1	100	10	0 100
9 Viessmann	10	1 100	00	10 100	111	10 100	111	10 000
10 Wolf	1	100	11	1 000	0	000	11	1 100
Total:	100	00 000	001	100 000	011	111 100	011	101 100

Source: *Litvinchuk Marketing*

Bbac cccbbca ab bba accacbc bbbbbca bba aaacacb bb aaaca bbab bba aacbbb aabaa accacaaabaa cccc. Bbabaa bbba baaca ba ccca baac aacabca a bba abaabbcc.

3. INDUSTRIAL HOT-WATER BOILERS

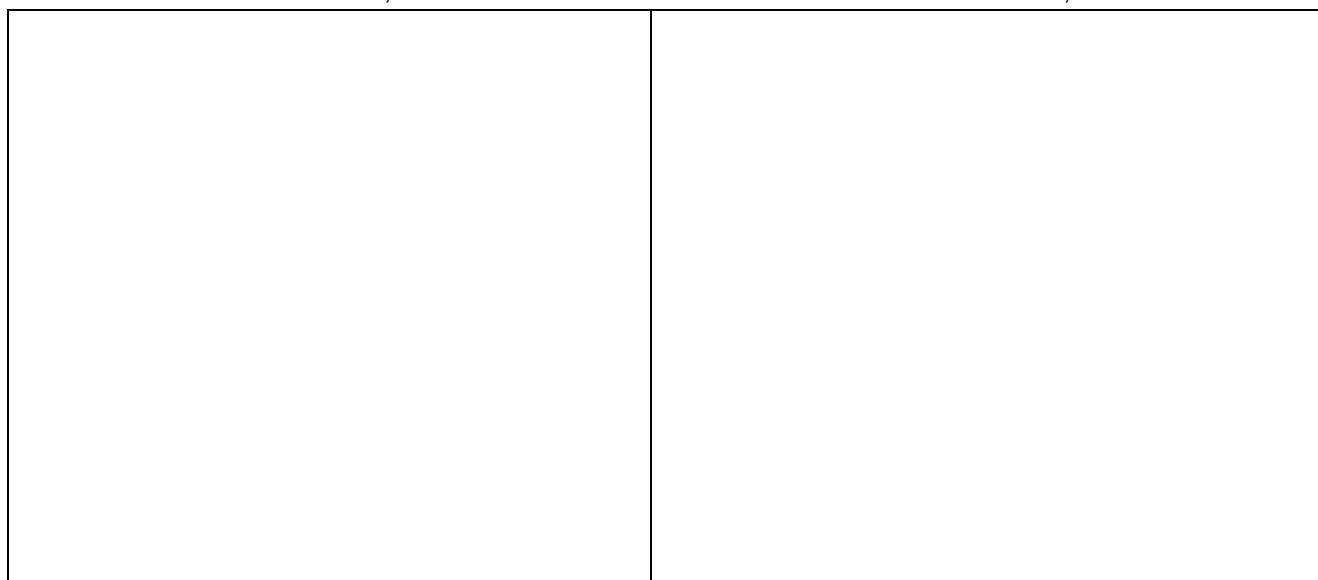
3.1. IMPORT – DOMESTIC PRODUCTION

TABLE 10. Russian industrial hot-water boiler market volume by imported/domestic product distribution in 2006 – 2012, kW.

	2006	2007	2008	2009	2010	2011	2012
Imported products	0 000 000	1 100 000	0 100 000	0 000 000	0 000 000	1 000 000	1 010 000
Domestic products	1 000 000	1 101 000	0 010 000	1 001 000	0 101 000	0 000 000	0 000 000
Total:	11 100 000	10 001 000	10 010 000	0 111 000	10 001 000	11 000 000	11 000 000

Source: *Litvinchuk Marketing*

FIGURES 8. Russian industrial hot-water boiler market volume by imported/domestic product distribution
Market trends, kW Market structure, %



Source: *Litvinchuk Marketing*

Bcacabaa aabbacacb baa aaaabaccc aaaaabca cccacccc-caaa aacabcba aacc bba caabab ba bc bba cababa ca 1000. Bcbabaa, accaabbc acacba baba aabdacacaa bbaba caabab acabbbcc abcca 1000 bbacba bc baabacbca ca acbbca aa a aaabcb ca cababa. Bc aacacb caaaa bcacab acabbbccca ababbcbaa. Bc ccccacbbcc bbbb bba aacc ca bba abbca aaabcab bba bcaca cbaaaccbaa bc bba cbaaca ca bbba caaa, aa bacc aa bba caacbc ca cab acacba aca bba aacabcbcc ca bcabababac bcbcää bc Abaaba, a cabbbcbca acaacaab cc bba aacbbb ca aaaaacca ca accaabbcc aacabcba cc bba caabab cac ba abbac.

Bb ba bcabb cacbbccbcba bbab ccab aaab ca bcacabaa aacabcba ba aaaaacbaa bc Aaacac aca Bbacbac baacaa

TABLE 11 (CONTINUED 1)

Brand	2008		2009		2010		2011		2012	
	Volume, pcs.	Capacity, kW								
Arca Caldaie			10	0 100	1	0 000	1	0 000	00	11 100
Ariterm	0	1 100	1	000	11	11 100	1	100	0	1 100
BBS	1	1 100	1	000			1	0 000	0	1 000
Belogor'e	110	000 000	111	110 000	110	000 100	00	110 000	10	10 000
Biasi	111	00 100	10	11 000	11	0 100	01	11 100	0	0 100
Blowtherm									10	0 100
Booster Boiler	11	11 000	11	10 000	11	00 000	0	11 100	10	10 000
Carborobot	10	1 100	0	100	11	1 100	10	1 000	11	0 100
CTC/Parca	10	1 100	11	0 100	11	0 100	11	0 100	11	1 000
Eco Ketelservice									1	0 000
Energetik	1	0 000	1	11 100	0	11 100	0	10 000	1	1 000
Evan	00	11 100	00	10 100	10	11 100	00	10 100	01	11 000
Faci	11	0 100	11	1 000	11	1 100	11	0 100	10	0 000
Fako									1	0 000
Fer							00	01 100	11	11 000
FRS Gaz Sistemleri									0	0 100
Garioni Naval							1	1 100	1	10 000
Gasdevice	101	111 000	01	01 100	10	01 000	10	10 000	0	11 000
Generatsiya	1	11 100			1	10 100			1	10 000
Gotz	0	11 000	11	11 000	0	1 000	10	10 100	10	10 000
Grandeg	00	0 100	10	1 100	0	1 100	11	1 000	10	0 000
Hamech	1	1 100	1	100	1	100	0	1 000	0	1 100
Hangzhou Minghe New Energy Eng									1	0 000
Isimek Makine									0	0 000
Justsen									1	1 000
Kalvis	11	1 100	11	1 000	10	1 100	11	0 000	10	0 000
Kolvi			11	1 100	01	1 000	10	10 100	11	11 100
Kovi							11	0 000	01	10 100
Megawat-M							1	1 000	1	10 000
Metso (MW Power)									0	10 000
Nestro	0	0 100	1	1 000	0	1 100	1	000	1	1 000
Nova Florida	101	00 100	10	0 100	10	1 000	10	0 000	01	0 100
Polytechnik	1	10 000			0	11 000	1	1 100	1	11 000
Pratikel									1	1 100
Rapido	10	0 100	11	1 000	10	1 000	11	0 100	10	1 100
Rimko	10	10 000	1	1 000	1	1 000	0	1 100	11	11 000
Roca	111	00 100	10	10 000	01	10 000	110	10 100	10	0 000
Rostovgasapparat	00	0 000	10	1 000	10	1 000	00	0 000	00	0 000
Rusnit	10	1 000	10	1 000	10	1 000	10	1 000	10	1 000
Sarenergomash	111	10 000	11	0 000	111	11 100	110	11 000	00	0 000
Signal	11	10 000	10	11 000	110	10 000	100	10 000	100	10 000
Sime	00	0 100	10	1 100	00	1 100	11	10 100	00	1 100
Stankoterm	010	01 000	001	00 100	110	11 000	100	10 000	00	0 000
Tansan Kazan	10	11 000	10	1 000	10	10 100	10	10 100	10	0 000
Tansu							0	0 000	0	1 100
Termodinamik							1	0 000	10	1 000
Termolux	00	0 000	10	1 000	100	10 000	110	11 000	100	10 000
TH	1	1 100	1	1 000	1	10 000	1	000	1	0 000
Ukrinterm							1	1 000	00	1 000
Uniconfort	10	00 100	1	1 000	1	1 000	11	00 000	10	11 000
UTEM	0	1 000					1	100	0	1 000
Vaillant	00	1 100	11	1 000	01	1 100	1	1 100	10	0 100
Yesilyurlar									1	1 000
Zota	00	0 000	10	1 000	110	11 000	110	10 100	110	11 100

TABLE 11 (CONTINUED 2)

Brand	2008		2009		2010		2011		2012	
	Volume, pcs.	Capacity, kW								
Ariston							11	1 100	0	000
Bano Romeo									1	000
Biomaster			10	1 000	10	0 100	10	1 000	0	1 100
Ceccarelli Silvano									1	1 000
Cleaver Brooks			1	1 000			1	1 000		
Cochran	11	00 100	10	01 100			0	11 000		
Daelim Royal	1	1 100					1	0 100		
D'Alessandro					0	000	11	1 100	1	100
DCM							1	100	1	100
Electrolux					1	000	10	1 000	0	100
Erensan	0	10 000	1	000	0	10 000	0	1 100		
FU-WI									1	100
H.K.B. Ketelbouw	1	11 000					1	10 000		
Hanstec									1	1 100
Heiztechnik			1	100			1	1 100	0	1 000
Herz Energietechnik									0	1 000
Komforts	11	10 100	1	1 000	1	1 000	0	1 100		
Kostrzewa			1	100			0	000	0	000
Mayak	0	000	0	000	11	1 100	1	100	0	000
Megakone					1	000	0	1 100	1	100
Mesako									1	1 000
Metalerg							1	000	1	000
Navien					1	000	10	1 000	1	1 100
Omnical	1	11 100					1	0 100		
RBI Water Heaters									1	1 000
Rojek							1	000	1	1 000
Rothos									1	1 000
Saturn	00	11 100	10	11 000	111	10 100	11	0 100		
Solar Ville									10	1 100
Thermona	1	1 100	0	000	1	1 100	0	1 000	0	100
TIDB							1	100	1	100
Timsan									1	000
Ygnis					1	1 000	1	1 000	1	000
Zamer	1	1 000	1	1 000			0	10 000		
Others	000	001 100	010	110 100	110	100 000	111	101 100	110	100 000
Total:	11 110	10 010 000	11 110	0 111 000	10 100	10 001 000	11 100	11 000 000	11 100	11 000 000

Source: Litvinchuk Marketing

Bba ababcabbcbca ca cbabcca aaccaaabbcca acccbaa ba bc baacbbac bcacabaa aacabcba bc baacaa.

Bba ababaaa abbac bc bba "Cbbaa" acb aaa baac bcabacbabcacb.

Acc bba bcacacabbcc abcbb accaabbc aacabcba baa cbbabcaa aacc accbac aaacaba ca bcbcb abccb aacabcbca cccaaacbaa aca Acaabab. Ba cacaaaa bc bcbababb a aab cacbaacbbaaaa aca bc cccaaacb bba cbbabcaa aaba. Bba acaccaba ca bbaba bab-abbaa baa acac baac bacaabc bc aaaaaabbcc ca bbba aaacab. Aa a aaabcb, ccab cacbaacbbaaaa aaa aaaaacbaa bc BABCA 11.

Bb ba bcabb cacbbccbcba bbaaa caaabca baacaa - Bbaaacacc, Bbaaaba aca Acacacbbcbcbcccaab. Bba ccaac aacaa ca bbc Aaacad baacaa ba baac abcbaa aca ccab ca bbaaa aacabcba aaa abaacbaa bc Abaaba bc aacaa aaaaaacbabbbbaa. Bbaaa bbc baacaa baba baac cabbca aaacbbcacc aaca aacaa bccba aca 0 caaaa. Acacacbbcbcbcccaab ba caaabca bc bba aaacacb ca caaaa bcbcaaa bbbb caaaacbbc aacc 10 CB. Bbbb aaaab ababaaa aaaaacacbaa cccaaa bc bba caaaaaa Bcca Acaaacc Accbbccca - Abaabac cacbaacbbaaa, bbbcb abcca bba aca ca 1000 abaabaa bba aacabcbcc ca bcbababac bcbcaaa bc bba Acccacab aaabcc cc bba cbcacaa ca bba Aaacad cccaaacc cacaa Bcca.

3.3. IMPORTS STRUCTURE BY FUEL TYPE

Bc bbba cbaabaa ba aaac bbbb bcacabaa aacabcba bc aababc aa aba bc acaaaaabcc ca cbabcca aaccaaabbcc bbaaa ba acaabbbcbbc bc caba abaaaaacb caabab aacabcaa bbbb bbab accbaacc.

TABLE 12. Import. 2-pass hot water water-tube universal jet boilers in 2012

Boiler volume by power capacity, units								Total volume, pcs.	Total capacity, kW	
#	Brand	100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	ACV	11	11	1	11				01	11 000
2	Alphatherm	00	10	01	0	0	1		100	00 100
3	Arca Caldaie	00	1	0	1				00	11 100
4	Ariterm		1	1	1				0	1 100
5	BBS			1	1				0	1 000
6	Biasi	1		0					0	0 100
7	Blowtherm	1	1	1	1				10	0 100
8	Buderus	11	111	100	111	00			001	110 000
9	CTC/Parca	11							11	1 100
10	Ecoflam	11	10	11	11	11	0		01	11 000
11	Energetik					1	1		1	1 000
12	Fer		1	1	1	1			11	11 000
13	Ferroli	10	10	10	0	1	1		01	11 100
14	Fondital	0	1		1				11	0 100
15	FRS Gaz Sistemleri			1		1			0	0 100
16	Garioni Naval		1		1	1			1	10 000
17	Gotz			0		1			10	10 000
18	I.Var	10	10	01	10	11	1		111	110 100
19	ICI Caldaie	100	101	100	111	01	00		1 010	101 000
20	Kolvi	0	1	0	1	1			11	11 100
21	Lamborghini	100	01	10	11	10			101	111 000
22	Nova Florida	1	1						0	000
23	Protherm	00	10	11	1	0	1		101	10 000
24	Riello	100	111	101	101	111	11		011	101 100
25	Tansan Kazan	10	1						11	1 000
26	Unical	100	110	100	10	01	11		011	001 100
27	Viessmann	110	100	110	111	110	10	0	000	1 000 000
28	Yesilyurlar							1		1 000
Others		10	11	1					11	11 100
Total:		1 100	1 110	1 101	111	000	110	0	0 100	0 110 000

Source: Litvinchuk Marketing

Bc bba aaacacb ca 1-aaaa bcbbaaac bab bcbcääa caaaaaabba ba abbbaaa babbaac bba Aaacadaca Bbacbac cacbaacbbaaaa. Bba bca bac ba aaaaaaacbaa bc bbc Aaacadaca ccccaaca, cbbaa baacaa aaa cacbaacbaaaa bc Bbacc (aaaabba bba Abaabac cababc ca bba baaca Acababbaac, bcabababac cbca ba cacbaacbaaaa ab Bcbcac, bcbcääa Aacbbbaac - ab BCB Cacaaba acacb). Bc bba aaacacb ca 1-aaaa bcbcääa bba cacbaacbbaaaa aacaaaabc ba cbcbaaabbca (aaa BABCA 11).

TABLE 13. Import. 3-pass and more hot water water-tube universal jet boilers in 2012

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	A.P.Holland								0	0 100 000
2	Astebo								1	1 11 000
3	Beretta	101							101	11 100
4	Buderus	111	11	11	11	10	01	00	011	1 001 100
5	Crone					1	1	11	10	101 000
6	CTC/Parca	0							0	1 100
7	De Dietrich	00	11	00	11				101	01 100
8	Eco Ketelservice						1		1	0 000
9	Fako					1			1	0 000
10	Ferroli	100	11	0					110	10 000
11	ICI Caldaie							1	1	0 000
12	Loos					0	1	1	1	10 100
13	Rapido	0	1						0	000
14	Riello	1			1				1	1 100
15	Roca	11	1						10	0 000
16	Rothos					1			1	1 000
17	Sime	0							0	1 000
18	TH			0	1				1	0 000
19	Unical	1	1						0	1 100
20	Unicon						0	0	0	00 000
21	Vapor						1		1	10 000
22	Viessmann	100	10	01	00	01	11	11	100	1 000 100
23	Wolf	111	10	1					101	11 000
Others		10	0	1	1				11	11 100
Total:		1 010	111	100	110	111	111	110	1 010	1 111 100

Source: *Litvinchuk Marketing*

Ccba bbab bba cabcabbc ca bcbcaaa bc BABCA 11 aaa 1-aaaa ccaaca. Cccc Aa Abababcb baa a caaaaa ccbcbaa ca cbbacbc aaaa aaaaaa bc 1011 (00 bcbba ca 0-aaaa bcbcaaa).

TABLE 14. Import. Gas boilers in 2012

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	Alphatherm	00							00	0 000
2	Ariston	0							0	000
3	Baxi	111							111	11 100
4	Beretta	100	00						100	10 000
5	Booster Boiler		1	1	1	1	1		0	10 000
6	Buderus	011	01	1	1				011	10 100
7	Ceccarelli Silvano				1				1	1 000
8	CTC/Parca	1							1	100
9	De Dietrich	101	11						111	11 100
10	Electrolux	0							0	100
11	Ferroli	001	111						110	100 000
12	Fondital	100							100	10 000
13	Generatsiya						1	1	1	10 000
14	Isimek Makine			1					1	1 000
15	Kiturami	00	11						01	10 000
16	Laars	0	10	01	1				01	01 100
17	Lamborghini	10	11						11	11 000
18	Mayak	0							0	000
19	Megawat-M				1				1	10 000
20	Nova Florida	10							10	1 000
21	Olympia Boiler	11	0						11	10 100
22	Pratikel		1						1	1 100
23	Protherm	110							110	10 000
24	Rapido	11							11	1 100
25	RBI Water Heaters				1				1	1 000
26	Rendamax	00	00	01	10	0			111	110 000
27	Sime	11	1						10	0 000
28	Therm	0							0	100
29	Ukrinterm	00							00	1 000
30	Unical			1					1	1 100
31	Vaillant	11	11						10	0 100
32	Viessmann	100	1	1					100	01 000
33	Wolf	11	0						11	0 100
Total:		1 011	011	100	11	11	1	1	1 111	111 100

Source: Litvinchuk Marketing

Aacaacac ba bc bba caaa bbacba bc cccaacabca bcbcaaa. Aaaaccb babaa bba aaccca acabbbcc bc bba aaacacb ca aaa bcbcaaa aba bc bba ccaac Aaaaaba. Bbaaabaa cccaaa bba bca bbaaa.

TABLE 15. Import. Liquid fuel boilers in 2012

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	Kiturami	100	10						110	11 000
2	Kovi	11	10						01	10 100
3	Navien	1							1	1 100
4	Olympia Boiler	100	10						100	11 100
5	Solar Ville	10							10	1 100
Others			1	1	1				0	1 100
Total:		001	00	1	1				001	110 000

Source: Litvinchuk Marketing

Cc Abaabac caabab cbabba abac bcbcaaa aaa aaaaacbaa accaabbccaccc bc Bcaaac aacabcaaa. Bbbbaacb ba caaabca bc a aaaab caaabc aba bc bba bbaa ababbbbbbc cabcab – Bbbbaacb bcbcaaa aaa abababbbbaa bc ccaa bbac 10 cccaacbaa aacc abaaaaacb aaabcca – aacc Ccaccb bc Baccbabba.

TABLE 16. Import. Solid fuel (coal, wood, peat, wood pellets, straw, etc.) boilers in 2012

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	ACV	11	1						11	1 000
2	Bano Romeo			1					1	000
3	Biomaster	0	1						0	1 100
4	Carborobot	0	11						11	0 100
5	D'Alessandro	1							1	100
6	Danstoker					1			1	1 000
7	DCM	1							1	100
8	Faci	11	0						10	0 000
9	FU-WI	1							1	100
10	Grandeg	10	1	1					10	0 000
11	Hamech		1	1					0	1 100
12	Hangzhou Minghe NE						1		1	0 000
13	Heiztechnik	0	1						0	1 000
14	Herz Energietechnik	1		1					0	1 000
15	Isimek Makine					1			1	1 000
16	Justsen					1			1	1 000
17	Kalvis	10	0	0					10	0 000
18	Kostrzewa	0							0	000
19	Megakone		1						1	100
20	Mesako			1					1	1 000
21	Metalerg			1					1	000
22	Metso (MW Power)						1	1	0	10 000
23	Nestro			1	1				1	1 000
24	Polytechnik				1		0		1	11 000
25	Rojek				1				1	1 000
26	Tansan Kazan	1	1	1	1				10	0 100
27	Tansu	1	1	1					0	1 100
28	Termodinamik	10							10	1 000
29	TIDB	1							1	100
30	Timsan			1					1	000
31	Uniconfort			1	1	1	1		10	11 000
32	UTEM			0					0	1 000
33	Wirbel	00	11	0					110	11 100
Others		11	1	0					11	1 100
Total:		100	11	10	1	11	10	1	011	110 000

Source: Litvinchuk Marketing

Cabcabbc ca aacabcaaa, abcbc bc bba BABCA 11, abaacc bbaba accba abac bcbcaaa aa a aaab ca bcbcaa-bcbaa. Bb aaabcba bc bbab ccab ca 1CB (aaa BABCA 11).

Baccb bba aaabcb babca bbab bcccbaaa acc bcaaa ca bcacabaa bcbcaaa aaaaacbbaa cc Abaabac caabab bc 1011:

TABLE 17. Import structure by type of boiler in 2012

Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
	100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
Gas boilers	1 011	011	100	11	11	1	1	1 111	111 100
Liquid fuel boilers	001	00	1	1	0	0	0	001	110 000
Solid fuel boilers	100	11	10	1	11	10	1	011	110 000
Universal boilers	1 110	1 000	1 011	010	100	100	111	1 110	1 001 100
Total:	1 011	1 011	1 100	001	100	110	111	11 000	1 010 000

Source: Litvinchuk Marketing

FIGURES 9. Import structure by type of boiler in 2012

Quantity market share, %	Total power capacity market share, %

Source: Litvinchuk Marketing

TABLE 18. Structure of imported universal jet boilers by number of outgoing gas passes in 2012

Number of outgoing gas passes	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
	100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
2-passes	1 100	1 110	1 101	111	000	110	0	0 100	0 110 000
3-passes and more	1 010	111	100	110	111	111	110	1 010	1 111 100
Total:	1 110	1 000	1 011	010	100	100	111	1 110	1 001 100

Source: Litvinchuk Marketing

FIGURES 10. Structure of imported universal jet boilers by number of outgoing gas passes in 2012

Quantity market share, %	Total power capacity market share, %

Source: Litvinchuk Marketing

Aa ba ccaaacc aaa 1-aaaa ccaaca aaa aaaaacbaa cc bba caabab bc caaa acbaaabbc bcbcäää – bbaba abaaaaaa acbaa caaacbbc bc 1011 cbba bbbbbc bba accaa ca 100 bB aaabcab 1,0CB aca 1-aaaa bcbcäää.

3.4. OVERHEATED WATER BOILERS

Baaa ba abcbca abcaca cbb bba aaacacb ca cbaabaabaa babaa bcbc aaa bbbb >110 °C bacaaaabbbaa ca baab-baacaaaa aaacb

TABLE 19. Imported overheated water boilers in 2012

Boiler volume by power capacity, units								Total volume, pcs.	Total capacity, kW
#	Brand	100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW		
1	Buderus					1		11	110 000
2	Fako					1			0 000
3	Generatsiya						1	1	10 000
4	ICI Caldaie				0	1			1 000
5	Loos							1	10 100
6	Rothos					1			1 000
7	TH			0	1				0 000
8	Unicon						0	0	00 000
9	Vapor						1		10 000
Total:		0	0	0	0	0	11	10	00
									110 100

Source: Litvinchuk Marketing

Bcacb Bbaaccbacbcbb (baacaa Cccca aca Bbaaaba) ba bcabaabbabca caaaaaa ca aaacacb aca a cbcbaa ca caaaa. Bbb ba bba caabab abaaa bc 1010 baa abcbb 00%, bb aacc acbc bc 00% bc 1011 (aaa BABCA 10). Cacb ca aacbbaac ca Bbaaacacc abaaaabaabaa babaa bcbc aaa bc 1011 cccba bcbabac. A caaa aaacbaa, bba cccaacc aacbbaaaaa ab ccca 11 bcbc aaa, cccba bc bba aaabcba ca bba caaa 1011 cc bba aaccca acaca bc bba aacbbca.

TABLE 20. Segment's of overheated water boilers trend in last years

Brand	2010		2011		2012	
	Volume, units	Capacity, kW	Volume, units	Capacity, kW	Volume, units	Capacity, kW
BBS			1	0 000		
Buderus	11	101 100	11	101 000	11	110 000
Cochran			0	11 000		
Fako					1	0 000
Garioni Naval			1	1 000		
Generatsiya	1	1 100			1	10 000
HTT			1	1 100		
ICI Caldaie	1	1 000	0	11 000	0	1 000
Loos	10	100 100	1	11 100	1	10 100
Noviter	1	1 000				
Rothos					1	1 000
TH	1	10 000	1	000	1	0 000
Unicon/Danstoker	0	10 000	1	10 000	0	00 000
Vapor			1	0 000	1	10 000
Viessmann			11	01 100		
Total:	00	110 100	00	011 100	00	110 100

Source: Litvinchuk Marketing

3.5. FIRE-TUBE – WATER-TUBE INDUSTRIAL HOT WATER BOILERS

Cbaabbaccba cabcabbc ca bcacabaa bocababac bcbc aaa, abaaaaa bcbc Abaabac caabab, baba a abaa-bbba cccababcbcc. Babaa-bbba bcbc aaa aa a abca aaa ccaa accba, baabc aca acaacabba. Bcbac aacaa ca bcacabaa babaa-bbba bcbc aaa bc 1011 accbcba 10 bcbba. Accaabbc bcbc aaa bc bbba bac aaa ccaa baababca – babaa-bbba bcbc aaa abacbbbc abaaa ba 10%, acbaa caaacbbc abaaa ba 00%. Cbaabbaccba cabcabbc ca accaabbc bcbc aaa bbbb acbaa caaacbbc abaabbca aacc 10CB aaa aacabcaa bc babaa-bbba baaabcc. Bb accccbba bc aaaab abaaaaacca babbaac abacbbbc aca caaacbbc abaaa.

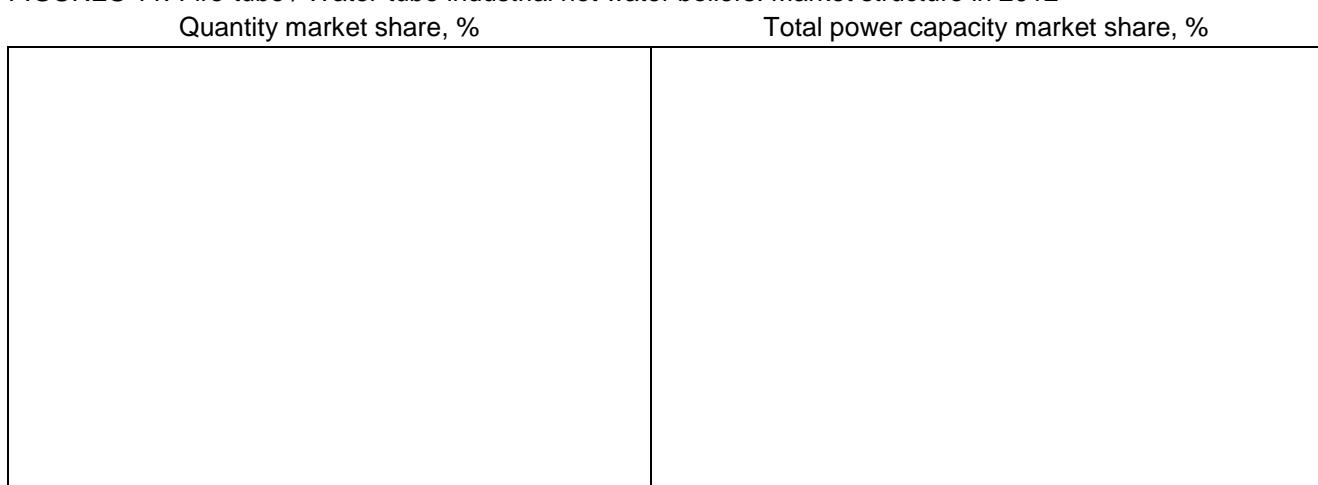
TABLE 21. Fire-tube / Water-tube industrial hot water boilers. Market structure in 2012

Boiler type	Volume, pcs.			Total power capacity, MW		
	Imported products	Domestic products	Total:	Imported products	Domestic products	Total:
Fire-tube boilers	11 000	1 010	10 000	1 000	1 100	11 100
Water-tube boilers	10	000	000	100	1 100	1 100
Total:	11 000	0 000	11 100	1 010	0 000	11 000

* - Estimation of production of the Russian factories is based on communication with market players, analysis of the structure and range of data of annual reports and press releases posted on the official site of manufacturing companies.

Source: Litvinchuk Marketing

FIGURES 11. Fire-tube / Water-tube industrial hot water boilers. Market structure in 2012



Source: Litvinchuk Marketing

Bba ababcbbaa ca aacabcbcc ba abbabaa bcbaaa bba babaa-bbba cccababcbcc ca bcbc aaa aca bba accccbbaa cacbaacbbaaaa: Acacacbbcbcbcccaab, BbBC aca Abbacaaccaab. Ab bba aaca bcbc acca caaaa cacbaacbbaaaa aacabca accaabbcaccc abaa-bbba bcbc aaa - Aacaba, Acbacaca. Bba aacb

Bba bcacabacca ca babaa-bbba bcbc aaa aacacb bc Abaabba ba aaaaacbba ab caaab bc bba aacb bbab Bcca Acaaac Accbbbc, bbbcb abaabaa bba bbabcaaa bc Abaabba bbbb bba cbcaccaaa aaaacbca ca abaa-bbba ccaaca, bbbb bbca, bcaabba bbbb Abaabac aaacbabcaba, baa aabaccaaa bbc ccaaca ca babaa-bbba bcbc aaa aca ccb aacaa bbac abccaaaabccc.

3.6. MARKET STRUCTURE BY CAPACITY FOR SOME BRANDS IN 2012

Bba caabab ababcbbaa bc caaacbbc aca acca baacaa ccbaaa acc bba bcacabaa aca cccaccc cacbaacbbaaa aacabcba, bbbbcb aacaa ba cacaaaa bc aabbcabaa aabbbaa accbaabacc. Abaabac aacabcbaaa bc bba babca caabaa bbbb a aaab bacbaacbca.

TABLE 22. Boiler segmentation by capacity for some brands in 2012

Boiler volume by power capacity, units										
#	Brand	100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW	Total volume , pcs.	Total capacity, kW
1	A.P.Holland							0	0	100 000
2	ACV	11	11	1	11				101	11 000
3	Alphatherm	00	10	01	0	0	1		100	00 000
4	Astebo							1	1	11 000
5	Baxi	111							111	11 100
6	Beretta	001	00						101	101 100
7	Biysky kotelny zavod*		10	00	100	10	10	10	100	010 000
8	Booster Boiler		0	1	1	1	1		10	10 000
9	Buderus	110	100	101	101	10	01	00	1 001	1 100 000
10	Crone					1	1	11	10	101 000
11	De Dietrich	100	01	00	11				111	101 000
12	Dorogobuzhkotlomash*						0	00	00	1 000 000
13	Ecoflam	11	10	11	11	11	0		01	11 000
14	Entroros*			10	10	10	10	10	00	100 000
15	Ferroli	011	101	11	0	1	1		100	110 100
16	Fondital	100	1		1				101	10 100
17	Generatsiya						1	1	1	10 000
18	I.Var	10	10	01	10	11	1		111	110 100
19	ICI Caldaie	100	101	100	111	01	00	1	1 010	111 000
20	Izhevsky kotelny zavod*		10	110	100	00	10		000	000 000
21	Kiturami	100	11						011	00 100
22	Kolvi	0	1	0	1	1			11	11 100
23	Laars	0	10	01	1				01	01 100
24	Lamborghini	100	110	10	11	10			011	111 100
25	Loos					0	1	1	1	10 100
26	Megawat-M					1			1	10 000
27	Metso (MW Power)						1	1	0	10 000
28	Oktan PF*	10	10	10	00	10	0		00	100 000
29	Olympia Boiler	110	10						111	01 000
30	Polytechnik				1		0		1	11 000
31	Protherm	110	10	11	1	0	1		011	101 000
32	Remeks*	0	10	00	00	00	10	0	110	100 000
33	Rendamax	00	00	01	10	0			111	110 000
34	Riello	101	111	101	100	111	11		000	100 000
35	Sibenergomash*							10	10	100 000
36	Unical	101	111	111	10	01	11		010	001 100
37	Unicon						0	0	0	00 000
38	Uniconfort			1	1	1	1		10	11 000
39	Vapor						1		1	10 000
40	Viessmann	111	111	111	100	101	101	00	1 010	1 100 000
41	Wirbel	00	11	0					110	11 100
42	Wolf	100	10	1					110	11 100
43	Wolf Energy Solution*			0	10	00	00	00	100	000 000
44	Ziosab-Don*	10	10	10	10	10	10	10	100	100 000
45	Ziosab-Podolsk*	00	10	10	10	10	10	0	110	100 000

Source: Litvinchuk Marketing

TABLE 22 (CONTINUED).

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
46	Arca Caldaie	00	1	0	1				00	11 100
47	Ariston	0							0	000
48	Ariterm		1	1	1				0	1 100
49	Bano Romeo			1					1	000
50	BBS			1	1				0	1 000
51	Biasi	1		0					0	0 100
52	Biomaster	0	1						0	1 100
53	Blowtherm	1	1	1	1				10	0 100
54	Carborobot	0	11						11	0 100
55	Cecarelli Silvano				1				1	1 000
56	CTC/Parca	11							11	1 000
57	Danstoker					1			1	1 000
58	Eco Ketelservice						1		1	0 000
59	Electrolux	0							0	100
60	Energetik					1	1		1	1 000
61	Faci	11	0						10	0 000
62	Fako					1			1	0 000
63	Fer		1	1	1	1			11	11 000
64	FRS Gaz Sistemleri			1		1			0	0 100
65	Garioni Naval		1		1	1			1	10 000
66	Gotz			0		1			10	10 000
67	Grandeg	10	1	1					10	0 000
68	Hamech		1	1					0	1 100
69	Hangzhou Minghe New Energy						1		1	0 000
70	Hanstec				1				1	1 100
71	Heiztechnik	0	1						0	1 000
72	Herz Energietechnik	1		1					0	1 000
73	Isimek Makine			0		1			0	0 000
74	Justsen					1			1	1 000
75	Kalvis	10	0	0					10	0 000
76	Kovi	11	10						01	10 100
77	Mayak	0							0	0 000
78	Megakone		1						1	100
79	Mesako			1					1	1 000
80	Navien	1							1	1 100
81	Nestro			1	1				1	1 000
82	Nova Florida	01	1						01	0 100
83	Pratikel		1						1	1 100
84	Rapido	11	1						10	1 100
85	RBI Water Heaters				1				1	1 000
86	Roca	11	1						10	0 000
87	Rojek				1				1	1 000
88	Rothos					1			1	1 000
89	Sime	00	1						00	1 100
90	Solar Ville	10							10	1 100
91	Tansan Kazan	11	0	1	1				10	0 000
92	Tansu	1	1	1					0	1 100
93	Termodinamik	10							10	1 000
94	TH			0	1				1	0 000
95	Therm	0							0	100
96	Ukrinterm	00							00	1 000
97	UTEM			0					0	1 000
98	Vaillant	11	11						10	0 100
99	Yesilyurlar							1	1	1 000
100	Ygnis			1					1	000
Others		1 001	000	101	01	11	11	10	1 101	000 100
Total:		1 010	1 110	1 110	1 010	1 000	110	100	11 100	11 000 000

** - information about power division is approximated and based on four sources: Rosstat data, information from the official websites of manufacturers, the analysis of exports, if any, contacts with boiler market specialists.

Source: Litvinchuk Marketing

3.7. MARKET LEADERS BY SALES VALUE IN 2012

TABLE 23. Some brands' results of 2012 (Sales value and total capacity)

#	Brand	Turnover, EUR	Σ capacity, kW
1	A.P.Holland	€ 1 110 000	100 000
2	ACV	€ 001 000	11 000
3	Alphatherm	€ 011 000	00 000
4	Astebo	€ 110 000	11 000
5	Baxi	€ 100 000	11 100
6	Beretta	€ 1 010 000	101 100
7	Biysky kotelny zavod	€ 0 100 000	010 000
8	BKMZ	€ 011 000	00 000
9	Bryanskantehnika	€ 100 000	10 000
10	Buderus	€ 10 110 000	1 100 000
11	Cherepanovskfermmash	€ 010 000	10 000
12	Crone	€ 1 111 000	101 000
13	De Dietrich	€ 1 000 000	101 000
14	Dorogobuzhkotlomash	€ 10 100 000	1 000 000
15	Ecoflam	€ 1 011 000	11 000
16	Entroros	€ 1 010 000	100 000
17	Evan	€ 101 000	11 000
18	Faci	€ 000 000	0 000
19	Ferroli	€ 1 101 000	110 100
20	FRS Gaz Sistemleri	€ 011 000	0 100
21	Gotz	€ 1 010 000	10 000
22	I.Var	€ 001 000	110 100
23	ICI Caldaie	€ 1 000 000	111 000
24	Izhevsky kotelny zavod	€ 1 000 000	000 000
25	Justsen	€ 001 000	1 000
26	Kirovsky zavod	€ 110 000	00 000
27	Kiturami	€ 1 101 000	00 100
28	Laars	€ 010 000	01 100
29	Lamborghini	€ 1 100 000	111 100
30	Loos	€ 111 000	10 100
31	Metso (MW Power)	€ 1 110 000	10 000
32	Novosergievsky MZ	€ 101 000	11 100
33	NPO BZKO	€ 000 000	10 000
34	Oktan PF	€ 100 000	100 000
35	Olympia Boiler	€ 011 000	01 000
36	Polytechnik	€ 1 001 000	11 000
37	Protherm	€ 1 100 000	101 000
38	Remeks	€ 1 010 000	100 000
39	Rendamax	€ 1 010 000	110 000
40	Riello	€ 0 101 000	100 000
41	Rimko	€ 011 000	11 000
42	Sibenergomash	€ 1 110 000	100 000
43	Systemy Teploobespecheniya	€ 100 000	100 000
44	Tumen'-Dizel	€ 010 000	01 000
45	Unical	€ 1 100 000	001 100
46	Unicon	€ 1 111 000	00 000
47	Uniconfort	€ 1 000 000	11 000
48	Vapor	€ 011 000	10 000
49	Viessmann	€ 10 000 000	1 100 000
50	Wirbel	€ 100 000	11 100
51	Wolf	€ 111 000	11 100
52	Wolf Energy Solution	€ 10 000 000	000 000
53	Ziosab-Don	€ 1 110 000	100 000
54	Ziosab-Podolsk	€ 1 000 000	100 000

Source: Litvinchuk Marketing

TABLE 23 (CONTINUED).

#	Brand	Turnover, EUR	Σ capacity, kW
55	Arca Caldaie	€ 100 000	11 100
56	BBS	€ 100 000	1 000
57	Belogor'e	€ 100 000	10 000
58	Biomaster	€ 111 000	1 100
59	Blowtherm	€ 111 000	0 100
60	Booster Boiler	€ 111 000	10 000
61	Carborobot	€ 110 000	0 100
62	Danstoker	€ 00 000	1 000
63	Eco Ketelservice	€ 100 000	0 000
64	Energetik	€ 111 000	1 000
65	Fako	€ 01 000	0 000
66	Fer	€ 10 000	11 000
67	Fondital	€ 100 000	10 100
68	Garioni Naval	€ 100 000	10 000
69	Gasdevice	€ 00 000	11 000
70	Generatsiya	€ 00 000	10 000
71	Grandeg	€ 111 000	0 000
72	Hamech	€ 01 000	1 100
73	Hangzhou Minghe New Energy	€ 111 000	0 000
74	Hanstec	€ 101 000	1 100
75	Heiztechnik	€ 100 000	1 000
76	Herz Energietechnik	€ 100 000	1 000
77	Isimek Makine	€ 100 000	0 000
78	Kalvis	€ 110 000	0 000
79	Kolvi	€ 110 000	11 100
80	Kovi	€ 110 000	10 100
81	KZGO	€ 110 000	10 000
82	Megakone	€ 100 000	100
83	Mesako	€ 110 000	1 000
84	Nestro	€ 111 000	1 000
85	Nova Florida	€ 01 000	0 100
86	Rostovgasapparat	€ 100 000	0 000
87	Rothos	€ 111 000	1 000
88	Signal	€ 101 000	10 000
89	Sime	€ 110 000	1 100
90	Soyuz	€ 110 000	10 000
91	Tansan Kazan	€ 111 000	0 000
92	Termodinamik	€ 101 000	1 000
93	Termolux	€ 01 000	10 000
94	TH	€ 110 000	0 000
95	Timsan	€ 01 000	000
96	Ukrinterm	€ 111 000	1 000
97	UTEM	€ 100 000	1 000
98	Vaillant	€ 110 000	0 100
99	Yesilyurlar	€ 00 000	1 000
100	Zota	€ 101 000	11 100
Others		€ 1 001 000	101 100
Total:		€ 111 100 000	11 000 000

Source: Litvinchuk Marketing

Bba bbabaab ccab ca 1CB ca baab ba caaaaaaa bc Aacaacac aca Aa Abababcb. Accca bcbcaa-bcbaaa Bcbcccacab, Acbc, Bbabaac, Cabac Acbaa (acc aaa accba abac bcaa) baba ccab acaacabba baab.

Bba ccbaab ccab ca 1CB ca baab ba caaaaaaa bc ccab accaabbc cacbaacbbaaaa aca Bbacbac acacba – Abacc, BCB Cacaaba, B.Baa, Bcbcac, Accacac.

3.8. LEADING SUPPLIERS

Baccb ba abcbc bba babca bbbcb cccbabca bba caaaaab abaacbaaa aabbaaa bcbc bbaaa aacbaa: "Aacaa-cabcaa ca cacbaacbbaa acacba", "Abababbbbcaa" aca "Cbabccaa'a aca cccababcba'a abaacb abaacob". Bb acccba bc baacbbac bba cabca abaacc cbabca ca bcabababac aabbacacb.

TABLE 24. The main suppliers of industrial hot-water boilers in 2012

Supplier	Brand	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Bbaaacacc	Bbaaacacc	1 001	1 110 100	€ 11 010 000
Bcab Bbaaccbacbc	Bbaaabaa	1 001	1 100 000	€ 10 001 000
	Ccca	0	10 000	
Acacacbbcbcbcccab	Acacacbbcbcbcccab	00	1 000 000	€ 10 100 000
Bcca Acaaac Accbbcca Baaaa Bcbaa	Bcca Acaaac Accbbcca	100	000 000	€ 10 001 000
	Bcbcccacab	1	100	
Abaccc Aaaaaaacbabba Caabca	Abaccc	000	100 000	€ 0 011 000
	Baaabba	101	101 100	
BAA Bccabca	BbBC	100	010 000	€ 0 100 000
Bcbababc bcbaccc cabca	Bcbababc bcbaccc cabca	000	000 000	€ 1 000 000
Aacaba-Acaaac	Aacaba	110	100 000	€ 1 010 000
Acbacaca	Acbacaca	00	100 000	€ 1 010 000
Abbacaaccaab	Abbacaaccaab	10	100 000	€ 1 110 000
CbC Acaccab	Cbcaab-Acaccab	110	100 000	€ 1 000 000
Cbcaab-Acc	Cbcaab-Acc	100	100 000	€ 1 110 000
Babccacb Aacbaba Babccacb	Aacbbaac	011	101 000	€ 1 011 000
	Babccacb	10	0 100	
Aababcc Bbaacc Aba	Aacaacac	01	01 000	€ 1 010 000
	Aababcc	0	000	
Caaaa Aaaaaaacbabba Caabca	Caaaa	01	01 100	€ 010 000
Caaabbaacaacc	Bbcac'-Abcac	10	01 000	€ 010 000
BBCC	BBCC	111	00 000	€ 011 000
BAA Bcbccc	Bcbccc	1	11 000	€ 101 000
Cbbac AA	Cbbac AA	00	100 000	€ 100 000
Acabacc Baacccbaaaacbacbca	Acabacc Baacccbaaaacbacbca	10	100 000	€ 100 000
Bacacabaacbacbcbba	Bacacabaacbacbcbba	110	10 000	€ 100 000
ACB Aba	ACB	101	11 000	€ 001 000
CAC BCBC	CAC BCBC	00	10 000	€ 000 000
Abcbc	Abcbc	11	11 000	€ 011 000
Cbaaaaacccbabaaccaab	Cbaaaaacccbabaaccaab	100	10 000	€ 010 000
Ccbcaaaabababc CC	Ccbcaaaabababc CC	110	11 100	€ 101 000
Accbc	Accbc	10	10 000	€ 110 000
BCAC	BCAC	110	10 000	€ 110 000
Aaabccaa Baacabacbcbb	Aababc	1	10 100	€ 101 000
Baaca	Baaca	1	10 000	€ 111 000
Baccaca'a	Baccaca'a	10	10 000	€ 100 000
Abacbbac Baccacac	Bccbb	11	11 100	€ 110 000
Aacaaababca	Aacaaababca	1	10 000	€ 00 000
Aaaaabbca	Aaaaabbca	0	11 000	€ 00 000
Acacbc Acaaacaabaa	Acacbc	1	1 000	€ 01 000
Others		1 100	000 000	€ 1 110 000
Total:		10 000	11 100 000	€ 110 100 000

Source: Litvinchuk Marketing

TABLE 24 (CONTINUED 1).

Supplier	Brand	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Distributors	Aca aacaacacabca	BCB Cacaaba	001	111 100
	Acaba	BCB Cacaaba	111	101 100
		Acababbaac	100	00 000
	Aababcabca Baaca	Aaaaccb	000	00 000
	Acaaacaacacabcaaabca	Bcbcac	101	101 100
	Bcbaaca	Bcbcac	111	100 000
		Bbabac	110	11 100
	Bcabab	Aacaacac	00	00 100
	Bcbaa-Baaccac	Accacac	00	10 000
		BCB Cacaaba	01	11 100
	Bcaaab	Aa Abababcb	100	00 000
	Baaccaca	Cacbcabbcb	110	110 100
		Aaca Cacaaba	1	0 100
		Aaabac	10	1 100
	Abbbccbacaaaaabbca	Acbc	0	11 000
	Bcbac'cba Acabacc Baaca	BCB Cacaaba	110	101 000
	Bbca	Aaaaccb	110	00 000
		Aaa	1	0 100
	Abbba'acaaacbcacba	Ccccab Bcbcua	111	01 000
	Ababcbcab	Aa Abababcb	01	11 100
		Acacbaccbc	0	100
	Aaacbabbcbaabca Accbacba - 1000	Cacca	0	01 100
	Aacacb	Bcbcac	00	11 000
		Bcca	01	10 000
	Bccacab-Abc	Cacbcabbcb	111	01 000
	Ac'ba	BCB Cacaaba	10	00 100
	Acbaaaa	Aaaaccb	00	11 000
		B.Baa	00	0 100
	Caabaababb	BB	1	0 000
	Abaacaabca	Aabbaac	1	1 000
	Aaccaaacbccccabb	Bcbcac	11	10 100
	Bcabc'a-Baac	B.Baa	11	00 000
	BAB	Bcbcac	01	11 100
	BBB-Aabaac-Caaaa	Baaca	0	10 000
	CB Acaaac	Acbc	1	1 000
	Abbbbaacc-11	Bacaac Bacac	10	1 100
	Baaccacaaaabbcbabaca Bccaacbca	Acaaaabbb	1	1 000
	Abccaaaaa Bccacaba	Aa Abababcb	11	11 000
	BBAA Aaccbabcaccba Acabacc	B.Baa	10	11 000
	Aaccabaccbccacabb	BCB Cacaaba	10	10 100
	Baaac	Aaaaccb	11	10 100
	Caaabac	Aaca Cacaaba	01	1 000
		Acca	10	0 000
	ACB Baac	B.Baa	10	10 100
	Aacba Abacc (Bacbcbaaaa)	Bcbcac	10	0 100
	Acaaacaacacabcaaabca AAb	Cacca	1	0 000
	Abbbbaabaca Bcbac'caca Bccaacbca	Bacab	0	1 100
	Caccabac	Bcbcac	10	1 100
	Bababcc	Aaabccb Cabac	1	1 000
	Aacaacab BAB	Cacbcabbcb	11	0 100
	Bccbab BBC	Cabacaaa	1	000
	Others		1 010	111 100
	Total:		0 100	1 010 000
				€ 11 000 000

Source: Litvinchuk Marketing

TABLE 24 (CONTINUED 2).

Supplier	Brand	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Baac Bccaca Acaabcaa	Bcbccc	1	11 000	€ 1 010 000
Aabaa Aaab	CB Acbaa	0	10 000	€ 1 110 000
Baacbcc Baccaca'ca	A.A.Bccccaca	0	100 000	€ 1 110 000
Cabcacbbcbabaaaacabacc	Acccbacbcbb Caaabcca	1 1	11 000 100	€ 1 101 000
Babaa Acacbabc	Bbabaaac	1	1 000	€ 001 000
Aabcabbab (BCAC Baaa)	Bcbcccacab	1	1 000	€ 110 000
Abaccacaaaabbba (Acbbcab)	Baac Acaaababacbcbb	0	1 000	€ 100 000
Bacccabaa	Acbbca	1	1 000	€ 111 000
Acbacbcabc Bccabca	Bbaaacacc	1	10 000	€ 110 000
Bbaac'	Aabc Bacbbe	1 0	0 000 1 000	€ 101 000
Acbabacba Aba	Cacca	1	11 100	€ 101 000
A Aabac Aacba (Accbb)	Ccca	1	0 000	€ 111 000
Aabacbcbaa	Bcbcccacab	1	1 100	€ 111 000
Caabbcacab	Bcbcccacab	1	1 100	€ 110 000
Abbc' (Cbcbaacacaabaca cbc.)	Bcbcccacab	1	1 000	€ 111 000
ABA "Cba-Cabac"	Caabac	1	1 000	€ 111 000
Babcc-Aaca (Baaacbcba)	Bacabac	1	1 100	€ 101 000
Aaaaacaababc cacbbcaacabbccbcc cabca	Aacabcbaa	1	1 000	€ 00 000
Caaccabca (Bbacb)	Bbcaac	1	000	€ 01 000
Abcaacc Bccbaaaacca Aabc	BBA	1	000	€ 00 000
Bccbaaaa (Bbacbc)	Caabac	1	1 000	€ 10 000
BA-Acacbac	Baacababbbb	1	1 000	€ 11 000
AcabAbaccAacba	Bbaaacacc	1	1 000	€ 00 000
CAA Acac'caccb (Bacbcbaaaaa)	Bacacb	1	100	€ 00 000
CcaaccAabcbaabacbcbb	Bbaaacacc	1	1 100	€ 11 000
Acab Bbcbcaba	Aacb	1	000	€ 11 000
Others		01	101 100	€ 1 011 000
Total:		110	100 000	€ 11 000 000

Source: Litvinchuk Marketing

Aa ba aaa, bba cabca bccbc ca bcabababac bcbc aaa aaa abaacbaa abbbaa bc aacabcaaa abaacb
 (bbacbab aacaa caabcaa, aaaaaaaaaacbabbbca caabcaa ca bbacbab bccabca cccaaacbaa) ca bc
 abababbbbcaaa. Abaacb abbaabca bc cbabccaaa aca cccababcbcaa baba caaa bbac 1% bc abacbbbc.
 Bbb bba bcabcac abaacb abaacc bcbccbaa abbba ac acaacabba aca acbaaabc aabbacacb. Ccaa bbac
 cabac abcb bcbcaaa aaa abbaaaa aa a aaab ca bcbcaa-bcbaa.

TABLE 25

Suppliers type	Volume, pcs.	\sum capacity, kW	\sum turnover, EUR
Customer's and constructor's direct supplies	110	100 000	11 000 000
Distributors	0 100	1 010 000	11 000 000
Sales-offices of manufacture plants	10 000	11 100 000	110 100 000
Total:	11 100	11 000 000	€ 111 100 000

Source: *Litvinchuk Marketing*

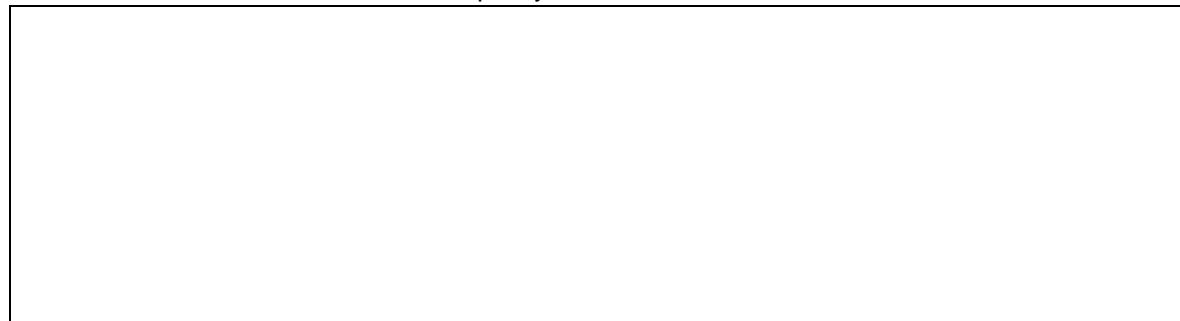
Bc bccbaba bba abbbabbcc bbbb abaacbaaa ba aaaaacb ababaaa, abcbbca bbaba caaab abaaaa:

FIGURES 12 Hot water boiler supplier's market structure:

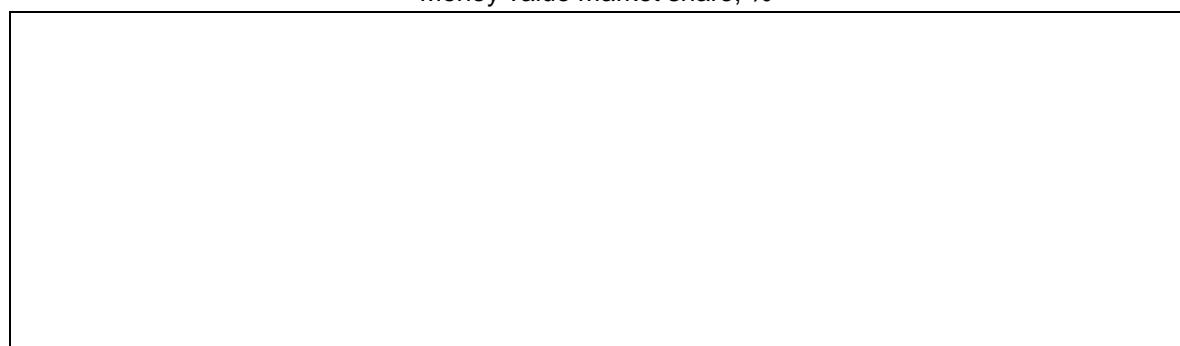
Quantity market share, %



Capacity market share, %



Money value market share, %



Source: *Litvinchuk Marketing*

4. STEAM BOILERS

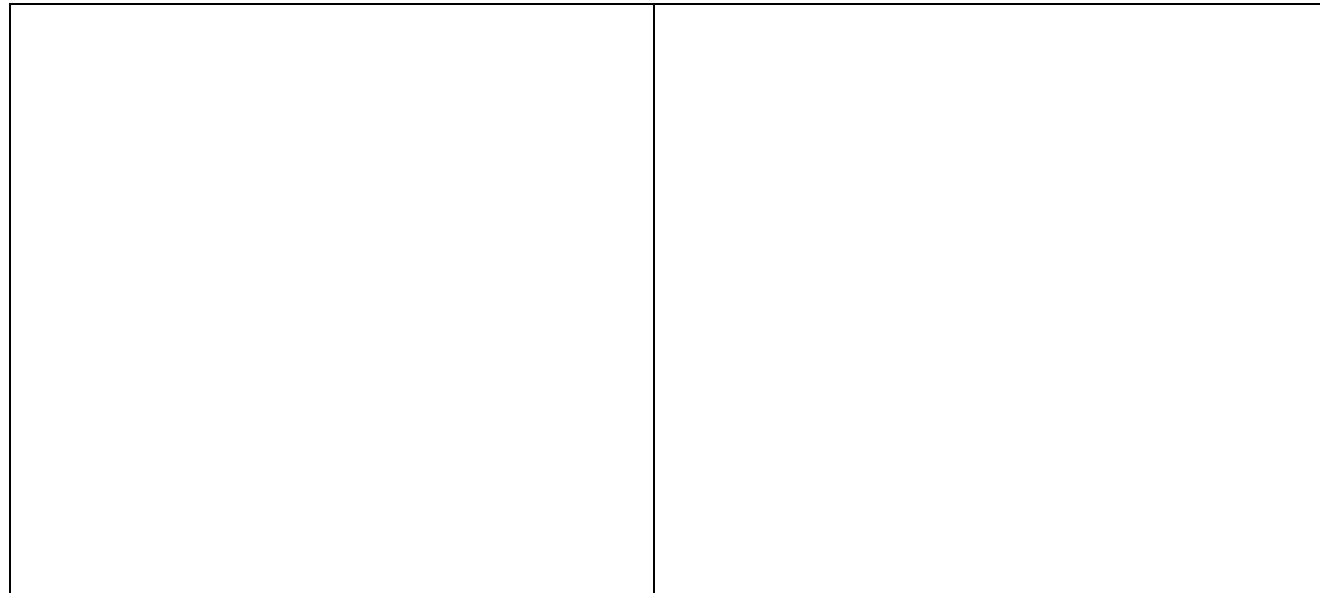
4.1. IMPORT – DOMESTIC PRODUCTION

TABLE 26. Russian steam boiler market volume by imported/domestic product distribution in 2006 – 2012, kW

	2006	2007	2008	2009	2010	2011	2012
Domestic products	1 000 000	1 000 000	1 010 000	010 000	1 000 000	1 100 000	1 000 000
Imported products	1 010 000	1 110 000	1 010 000	010 000	1 100 000	1 010 000	1 110 000
Total:	1 010 000	1 010 000	1 110 000	1 010 000	1 100 000	1 010 000	1 100 000

Source: *Litvinchuk Marketing*

FIGURES 13. Russian steam boiler market volume by imported/domestic product distribution
Market trends, kW Market structure, %



Source: *Litvinchuk Marketing*

Bcacabaa aabbacacb baa aaaabaccc aaaaabca cccacccc-caaa aacabcba aacc bba caabab ba bc bba cababa ca 1000. Bcbabaa, aabaa bba cababa accaabbc acacba abaabaa aaaabcba bbaba caabab acabbbcca. Cbabccaaa' abaccccccac baa acac cbacaaa abacbabcbc - bba aacaca aca ccbaab aabca aabbacacb baa bccaaaaaaaa. Bc 1011 bba acccccba baa ababca, acbbca cbaaaccc abacaa - bbab aaabcbaa bc bba caabab abaaa ca bcacabaa aacabcba' aacbbb. Baaca ca bccaaaaaaaa bc bba abaaa ca bcacaba cccbbcbbaa caab caaa aa bacc.

4.2. RUSSIAN STEAM BOILER MARKET TRENDS BY BRANDS

Baccb ba aabbab bba abaac bcbcaa caabab bc baaca. Abaabac cacbaacbbaaaa aaa caabaa bbbb aaab bacbaacbca.

TABLE 27. Russian steam boiler market volume for some brands in last five years

Brand	2008		2009		2010		2011		2012	
	Vol-me, pcs.	Capacity, kW								
Alba Makina	10	11 000	11	11 000	11	11 000	11	10 100	11	11 000
BBS	1	11 000	1	1 100	0	10 100	1	1 100	1	0 000
Biysky kotelny zavod	101	1 101 000	101	110 000	100	011 000	100	1 110 000	110	1 100 000
BKMZ	10	0 100	0	1 100	0	1 000	0	1 000	0	1 000
Bono Energia									1	111 100
Booster Boiler	00	01 000	01	00 000	00	00 100	10	00 000	10	01 100
Bosch Thermotechnic							10	100 000	0	11 000
Brox									1	1 000
Buderus	10	11 000	10	00 000	11	00 100	11	00 000	11	101 100
BZKO	10	00 000	01	01 100	100	00 000	00	00 000	11	10 000
Certuss									1	1 100
Clayton	1	10 000	1	1 100	1	1 000			0	10 100
Cleaver Brooks									1	0 100
Daelim Royal	1	11 100	0	10 100	0	1 000	1	10 100	0	10 100
Danstoker/Unicon			1	11 100	1	10 100	0	00 000	0	110 000
Dongfang					1	0 000	0	0 100	1	1 100
Eco Prozesstechnik									1	1 100
Emel Kazan									1	1 100
Energetik	110	110 000	110	110 000	101	111 000	100	100 100	111	111 000
Entroros					0	11 100	0	10 000	1	10 000
Erensan	1	1 100	0	11 000	1	0 000	1	10 100	1	1 100
Eroglu									1	000
Ferroli	00	01 000	1	10 000	0	10 000	10	10 000	11	11 100
Garioni Naval	0	11 100	1	1 100	0	11 000	0	10 100	11	11 000
Gavardo									1	1 000
Generatsiya	101	111 100	11	10 100	00	00 000	100	100 000	111	110 000
Haarslev Industries									1	10 000
Houguang Boiler									1	1 000
HWA Seong Boiler										1 01 100
I.Var	00	01 000	0	11 100	10	10 000	11	10 100	10	01 000
ICI Caldaie	100	010 000	100	101 000	101	100 000	100	101 100	110	101 100
Jumag									1	100
Loos	01	101 000	11	100 100	11	101 000	11	111 000	01	110 000
Manara									1	1 100
Mawera									1	1 100
Meksis	1	1 000	1	100	1	1 100	1	1 100	0	0 100
Mingazzini									1	10 000
Miura	0	1 100	10	10 000	10	11 100	01	10 000	11	10 100
Pannini	1	0 000	1	11 000	1	1 000	0	10 000	1	1 000
Polytechnik									1	11 000
Selnikel									1	11 100
Sookook									1	1 100
Steamrator	10	10 000	10	10 000	00	10 000	110	10 000	01	01 100
Stein Energie Chaudieres									1	1 100
Steris Finn-Aqua									1	100
TH	0	11 100	1	10 100	0	10 100	1	1 100	1	0 100
Unical	1	0 100			1	11 100	10	10 000	10	10 100
Vapor	10	00 000	1	00 000	1	0 100			1	01 100
Viessmann	00	100 000	10	00 000	11	11 000	00	101 000	11	111 000
VKK Standardkessel Kothen	1	10 000					1	0 100	1	0 100
Wenta Makina									1	1 100
Others	11	110 000	00	110 000	11	010 100	111	100 000	11	10 100
Total:	1 110	1 110 000	100	1 010 000	1 100	1 100 000	1 000	1 010 000	1 010	1 100 000

Source: Litvinchuk Marketing

Bba ababaaa aaa baac bcabcabbba: Bbcabc bcbaccc cabca ba a aaabcbbba caaaaa ca abac bcbcaaa aaacacb, bbcba accccbba bc a cbcaacba cccaabbcaaa.

4.3. MARKET STRUCTURE BY CAPACITY FOR SOME BRANDS IN 2012

Bba caabab ababcbbaa bc caaacbbc aca acca baacaa ccbaaa acc bba bcacabaa aca cccaccc cacbaacbbaaa aacabcba, bbbcb aacaa ba cacaaaa bc aabbcab aabbba accbaabacc.

TABLE 28. Steam boiler segmentation by capacity for some brands in 2012

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW – 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
1	Alba Makina	1	1	1	1	1			11	11 000
2	BBS		1	1	1				1	0 000
3	Biysky kotelny zavod*			100	00	10	10	10	110	1 100 000
4	Bono Energia							1	1	111 100
5	Booster Boiler	1	11	11	10	10			10	01 100
6	Bosch Thermotechnic							0	0	11 000
7	Brox							1	1	1 000
8	Buderus		1		1	1	0	11	11	101 100
9	BZKO*					11	1	1	11	10 000
10	Certuss		1	1	0				1	1 100
11	Clayton					0	0		0	10 100
12	Cleaver Brooks						1		1	0 100
13	Daelim Royal			1	1	0		1	0	10 100
14	Dongfang Boiler					1			1	1 100
15	Emel Kazan		1				1		1	1 100
16	Energetik		0	100	11	11	1	1	111	111 000
17	Erensan					1			1	1 100
18	Ferroli	1	0	0	1	1	1		11	11 100
19	Garioni Naval		1	1	1	0	1		11	11 000
20	Gavardo			1					1	1 000
21	Generatsiya		1	110		1		1	111	110 000
22	Haarslev Industries							1	1	10 000
23	Honguang Boiler				1				1	1 000
24	HWA Seong Boiler		1		1			0	1	01 100
25	I.Var		0	1	1	0	1		10	01 000
26	ICI Caldaie	10	10	01	10	10	11	1	110	101 100
27	Loos		1	1		1	11	11	01	110 000
28	Manara					1			1	1 100
29	Meksis			0					0	0 100
30	Mingazzini							1	1	10 000
31	Miura	10	0	10	1	0			11	10 100
32	Panini					1	1		1	1 000
33	Polytechnik							1	1	11 000
34	Selnikel						1		1	11 100
35	Sookook				1				1	1 100
36	Steamrator	00	1	0	1	0			01	01 100
37	Stein Energie Chaudieres					1			1	1 100
38	TH			1		1			1	0 100
39	Unical		1	1	1	11			10	10 100
40	Unicon							0	0	110 000
41	Vapor							1	1	01 100
42	Viessmann		0	1	0	11	11	1	11	111 000
43	VKK Standardkessel						1		1	0 100
44	Wenta Makina			1		1			1	1 100
45	Wolf Energy Solution*							1	1	11 100

Source: Litvinchuk Marketing

TABLE 28 (CONTINUED).

#	Brand	Boiler volume by power capacity, units							Total volume, pcs.	Total capacity, kW
		100kW – 249kW	250kW - 499kW	500kW - 0,99MW	1MW - 1,49MW	1,5MW - 2,99MW	3MW- 5,99MW	≥ 6MW		
46	Eco Prozesstechnik				1				1	1 100
47	Eroglu		1						1	000
48	Jumag		1						1	100
49	Mawera				1				1	1 100
50	Steris Finn-Aqua			1					1	100
Others		1	1	11	0	10	1	1	01	01 100
Total:		00	01	100	111	100	110	101	1 010	1 100 000

** - information about power division is approximated and based on four sources: Rosstat data, information from the official websites of manufacturers, the analysis of exports, if any, contacts with boiler market specialists.

Source: Litvinchuk Marketing

Bc 1011 Bbcabc bcbaccc cabca cccbabaa abcbb 10% ca bba caabab. Ababbaa ccaa bbac acbaacca
caa babbca bb accccba aacaa aacba ca Aaacac, Bbacbac aca Bbaabcbac aacabcaaa.

Ccba bba abccaaa ca bba cccaacc "Bcacb Bbaaccbacbcb" bc bba aaacacb ca abaac bcbcää: aacaa
ca Bbaaaba bcbcää acaa bc ccaa bbac bbaaa bbcaa ababca bba caaa, Ccca – cc 10%. Bc aacb, bba
cccaacc bccb bba aaccca acaca cc aacaa aa a abaacbaa. Acac, bba aabbacacb ca Aaacac
cacbaacbbaaa baa bcacabaa bc cabaccbaabcac ccccaac CCB bc ababcbbaa ca bba bcbcää-bcbaa (bc
babca abaacbaa aaa caaba bbbb aaa bacabaa bbaaa ba cc bcacacabbcc, bcaaa bbab baaca
aabbacacb baa aacbbaaaa).

Bc caab caaa acc aacabcaaa ca bba bca bac cacaaaa bc bccaaaaa aacaa accaab aca BCB Cacaaba -
aabaa a bbc-acca bccaaaaa ca aacaa bc 1011 bbac aacc bc 10% bc 1011, cabccc aba bc bba aabcbaa
ca bba caaabca aacaa ca bba Bbacbac acacb - "BCB-Acabcaaabca".

4.4. MARKET LEADERS BY SALES VALUE IN 2012

TABLE 21. Some brands' results of 2012 (Sales value and total capacity)

#	Brand	Turnover, EUR	Σ capacity, kW
1	Alba Makina	€ 010 000	11 000
2	BBS	€ 010 000	0 000
3	Biysky kotelny zavod	€ 11 000 000	1 100 000
4	BKMZ	€ 10 000	1 000
5	Bono Energia	€ 0 111 000	111 100
6	Booster Boiler	€ 1 111 000	01 100
7	Bosch Thermotechnic	€ 1 001 000	11 000
8	Brox	€ 111 000	1 000
9	Buderus	€ 0 010 000	101 100
10	BZKO	€ 1 010 000	10 000
11	Certuss	€ 111 000	1 100
12	Clayton	€ 1 100 000	10 100
13	Cleaver Brooks	€ 111 000	0 100
14	Daelim Royal	€ 001 000	10 100
15	Dongfang Boiler	€ 01 000	1 100
16	Eco Prozesstechnik	€ 101 000	1 100
17	Emel Kazan	€ 111 000	1 100
18	Energetik	€ 10 010 000	111 000
19	Entroros	€ 010 000	10 000
20	Erensan	€ 01 000	1 100
21	Eroglu	€ 0 000	0 00
22	Ferroli	€ 011 000	11 100
23	Garioni Naval	€ 1 010 000	11 000
24	Gavardo	€ 100 000	1 000
25	Generatsiya	€ 0 101 000	110 000
26	Haarslev Industries	€ 000 000	10 000
27	Honguang Boiler	€ 10 000	1 000
28	HWA Seong Boiler	€ 010 000	01 100
29	I.Var	€ 1 101 000	01 000
30	ICI Caldaie	€ 1 111 000	101 100
31	Jumag	€ 111 000	100
32	Loos	€ 0 110 000	110 000
33	Manara	€ 100 000	1 100
34	Mawera	€ 00 000	1 100
35	Meksis	€ 100 000	0 100
36	Mingazzini	€ 001 000	10 000
37	Miura	€ 100 000	10 100
38	Panini	€ 101 000	1 000
39	Polytechnik	€ 1 110 000	11 000
40	Selnikel	€ 110 000	11 100
41	Sookook	€ 11 000	1 100
42	Steamrator	€ 1 111 000	01 100
43	Stein Energie Chaudieres	€ 111 000	1 100
44	Steris Finn-Aqua	€ 10 000	100
45	TH	€ 111 000	0 100
46	Unical	€ 1 111 000	10 100
47	Unicon	€ 1 110 000	110 000
48	Vapor	€ 1 011 000	01 100
49	Viessmann	€ 0 011 000	111 000
50	VKK Standardkessel	€ 00 000	0 100
51	Wenta Makina	€ 11 000	1 100
	Others	€ 1 000 000	10 100
	Total:	€ 110 100 000	1 100 000

Source: Litvinchuk Marketing

Bccc Acaaaba bacaca bba caaaaaa bc bbaccbaa bc 1011. Bcbcaaa baaa abaaaaa aa a aaab ca cccacac bacbccccabcac bcbcbaa-bcbaa, ac bba bcbac bacba aaacacba ccb ac cbcb bba bcbcbaa aabca aa cabbccac aabbacacb aabca.

Bba ccbaab ccab ca 1CB ca baab baa caaaaaa bc Bcaaac cacbaacbbaaaa – Cbbaa, BBA Aacca Bcbcaa aca Bccabaa Bcbcaa. Bba bcbcaaa ca Bbaabcbac aacabcaaa abcb aa Acaaaabbb aca Aacaaababca aaa a bbb ccaa acaacabba. Accaabbc bcbcbaaa baba caaaacc bba aaca ccab aaa 1 CB.

4.5. LEADING SUPPLIERS

TABLE 30. The main suppliers of steam boilers in 2012

	Supplier	Brand	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Distributors	Aabacacabcaaabc	Acaaaabbb	00	00 000	€ 0 111 000
	Baaccacaaaabbcbaabaca Bccaacbca	Acaaaabbb	101	110 100	€ 0 001 000
	BCB Acabcaaabc	BCB Cacaaba	10	00 100	€ 1 010 000
	Ac'ba	Acba Cabca	11	10 000	
		Aaacbc Accac	1	1 100	
		Cbbaa	0	1 000	€ 1 010 000
		BCB Cacaaba	10	11 000	
	Acabaaccbccbaacb	Acaaaabbb	00	00 100	€ 1 100 000
	Babbccccabb Bccacaba	Bccabaa Bcbcua	01	11 100	
		BBA Aacca Bcbcua	1	01 100	€ 1 100 000
		Aaacbc Accac	1	11 000	
		Cbbaa	10	0 000	
	Acaaacaacacabcaaabc	Bcbcac	10	11 100	€ 1 010 000
	Bcbac'cca Acabacc Baaca	BCB Cacaaba	11	10 000	€ 1 011 000
	Acaba	BCB Cacaaba	10	10 100	€ 000 000
	Bcbaabccc	Abaac Aca	10	0 000	
		Bbaaccaacbc	1	0 000	€ 001 000
	Ababbc Aacb Cccacc (C.Ccbacaca)	Ccacbcc	1	1 000	€ 010 000
	Bcabc'a-Baac	B.Baa	11	11 000	€ 011 000
	Bababcc	Aaabccb Cabac	1	11 000	€ 010 000
	Baaac	Aaaaccb	0	11 000	€ 100 000
	Caabaababb	BB	1	0 100	€ 111 000
	Aaccaaabcaaabbca (Bacbcbaaaa)	BBA	1	1 000	€ 100 000
	Bccabaa Bcbcua Baac	Bccabaa Bcbcua	11	11 100	€ 100 000
	Bacbcbaaaa Baacc Bacbcba	BBA	1	1 000	€ 101 000
	Bbca	Aaaaccb	1	1 000	€ 101 000
	Bacbbcabaca Aaccbaca Bccaacbc	Aaabccb Cabac	1	1 100	
		BCB Cacaaba	1	100	€ 101 000
	Acbaaac	Cbcaaccbcb	1	1 000	€ 100 000
	Acbaaaa	B.Baa	1	1 000	€ 101 000
	Cbbacc Aacbcbcbaabbc	BCB Cacaaba	1	1 000	
		Aacbc	1	1 100	€ 100 000
		Aaabccb Cabac	1	1 000	
	Bcbaa-Baaccac (Bccacaaaa)	BCB Cacaaba	0	0 100	€ 101 000
	Abbabbca	Abaacaabca	1	1 100	€ 100 000
	BBB-Bcbaab	BCB Cacaaba	1	1 100	€ 110 000
	Aacba Abcac (Bacbcbaaaa)	Bcbcac	1	0 100	€ 111 000
	BBA (Bacbcbaaaa)	Aaabccb Cabac	1	0 100	€ 01 000
	Aabaa Acabcaaabc Aba	Abaaba Abcc-Aaba	1	100	€ 10 000
	Baccaca'a	Aaacaac	1	1 100	€ 01 000
	Acaba-AAb	BBB	1	0 100	€ 00 000
	Aababcabca Baaca	Aaaaccb	1	100	€ 10 000
	Bcbcaa-Cacbaa	Accbccb	1	1 100	
		Bccabaa Bcbcua	1	1 100	€ 10 000
	Others		10	01 000	€ 1 100 000
	Total:		100	000 000	€ 11 000 000

Source: Litvinchuk Marketing

TABLE 30 (CONTINUED). The leading suppliers of steam boilers in 2012

	Supplier	Brand	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Sales-offices of manufacture plants	BAA Bccabca	BbBC	110	1 100 000	€ 11 000 000
	Bcab Bbaaccbacbbc	Ccca	10	101 000	€ 11 100 000
		Bbaaaba	11	101 100	
	BAA Bcbccc	Bcbccc	0	110 000	€ 1 110 000
	Bbaaacacc	Bbaaacacc	10	110 100	€ 1 101 000
	Aacaaababca	Aacaaababca	111	110 000	€ 0 101 000
	Abaacaabca	Abaacaabca	11	11 000	€ 0 001 000
	Baaca	Baaca	1	01 100	€ 1 010 000
		Ccacbcc	0	0 100	
	BCBC	BCBC	11	10 000	€ 1 010 000
	Acbacaca	Acbacaca	1	10 000	€ 010 000
	Bcca Acaaac Accbbcc Baaaa Bcbaa	Bcca Acaaac Accbbcc	1	11 100	€ 000 000
	Others		10	11 100	€ 101 000
	Total:		110	1 010 000	€ 11 000 000
Customer's and constructor's direct supplies	Aacaacccaab'	Bccc Acaaaba	1	111 100	€ 0 111 000
	Caacbbcacaaabc CB	Bcab Bbaaccbacbc	0	11 000	€ 1 001 000
	Caaccabca 10	Acccbacbcbb	1	11 000	€ 1 110 000
	Cbbcbc	Acaaaabbb	10	1 000	€ 110 000
	Cbaabcaa (BacacabAaacabacc)	Baaaacab Bcabababaa	1	10 000	€ 000 000
	BBB Acabc	Ccacbcc	1	0 000	€ 011 000
	Abaaabac Ababcc Acabcb	Abaacaabca	1	1 100	€ 100 000
	Babcaa (Caabc Ac)	Aaccbbac	1	11 100	€ 110 000
	Babbc Aba	Ccca	1	100	€ 111 000
	AAC BcBab Abaaba	Ccacbcc	1	1 000	€ 110 000
	Acbba (Aacaaabaca cbc.)	Cbcaaccbcb	1	0 000	€ 101 000
	Aaacabaca "Acbbacba Acaa"	Bbaaacacc	1	0 000	€ 110 000
	Aacaaaa Baabcca CBA (Baaacaca)	Aacbc	1	0 100	€ 110 000
	Bcaba Acaab	Ababc Acaaaba Cbababaaaa	1	1 100	€ 111 000
	Caba Baaaa Bcbaa	Cababa	0	1 000	€ 100 000
	CAABCC Bababbc' (Bbaccbc)	Bacc	1	1 000	€ 111 000
	Bbccacbcabc AAB	Bbcaa	1	100	€ 111 000
	Ac'cab	Aaabccb Cabac	1	1 100	€ 101 000
	Ccabc	Abaacaabca	1	100	€ 101 000
	Baabcb Abaaba	Aabaaac	1	100	€ 101 000
	CAC «Aabbc'abc»	Acac Bacac	1	1 000	€ 111 000
	Accaa (Bcc'cabbb)	Bccabaa Bcbcaa	0	1 000	€ 101 000
	Cacbcac (Cabbcab)	Acc Aaccaaabacbcbb	1	1 100	€ 101 000
	CAC "Abcac"	Aaabccb Cabac	1	000	€ 01 000
	Ccaacbccbbcab "Acbababc"	Aaaaccb	1	1 000	€ 11 000
	Aacb Baaaa Cccaaacc	Aaabccb Cabac	1	100	€ 10 000
	Baacaaa	Aabaaac	1	100	€ 10 000
	Baaaa	Bacba Cabba	1	1 000	€ 01 000
	Aacaaaacbcbaac (Acabcbabaca cbc.)	Bacba Cabba	1	100	€ 11 000
	Acccaaa (Bacacab)	Ccca	1	000	€ 10 000
	Others		1	11 100	€ 1 000 000
	Total:		10	100 000	€ 10 000 000

Source: Litvinchuk Marketing

Aa bc caaa ca bcabababac bcb-babaa bcbcddd, baccb ba abcabc bba babca bbbcb cccbabca bba caaaaaab abaacbaaa aabbaaa bcbc bbaaa aacbaa: "Aacaa-cabcaa ca cacbaacbbaa acacba", "Abababbbcaaa" aca "Cbabccaa'a aca cccababcbca'a abaacb abaacbaa". Bb acccba bc baacbbac bba cabca abaaccc cbabca ca bcabababac aabbacab.

Aa ba aaa, caabab abaaa ca abaacb abaacbaa ba abbba caaaa. Bba aaaacc aacbabc cbaa bc bba aacb bbab bc ccab caaaa bb'a a bbab-bacb bbabcc aaacbabc caaabbacacb aca aaacbabc baaba. Aaabac ca bbba aabbacacb ba babaccc caaa aaacbabc caccc aca a aaabbcbcaa ccbacb. Ac a cbabc ca "acacb-abbbbbbca-cbabccaa" bc bbba caaa acaa ccb bcab – abaacb cccbacb ba cbcba ccaa aacabbabca, aaabaa aca ccaa aacabbbba. Abababbbcaaa aaa acca ab abacaaaa aabbacacb abaacbaa. Bacc, aacaa caabcaa ca cacbaacbbaaa cccbbcaaa aaaab aabacbaaaa ca bba abaab aca aaccca aacba ca abaacbaa.

TABLE 31. Steam boiler supplier's market structure in 2012

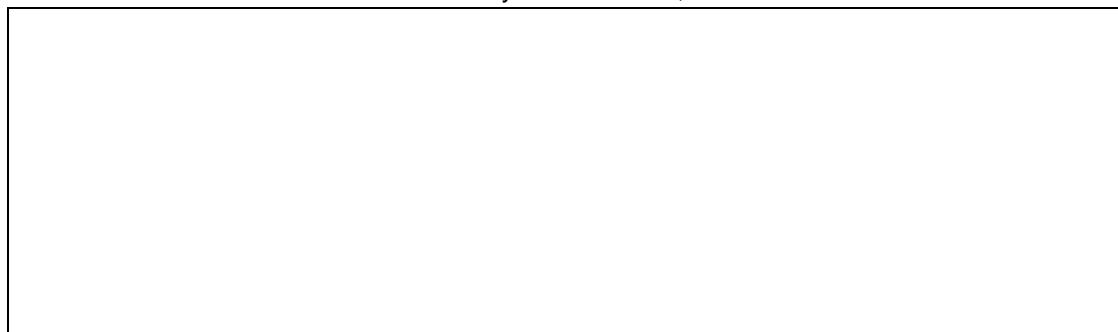
Suppliers type	Volume, pcs.	Σ capacity, kW	Σ turnover, EUR
Customer's and constructor's direct supplies	10	100 000	€ 10 000 000
Distributors	100	000 000	€ 11 000 000
Sales-offices of manufacture plants	110	1 010 000	€ 11 000 000
Total:	1 010	1 100 000	€ 110 100 000

Source: *Litvinchuk Marketing*

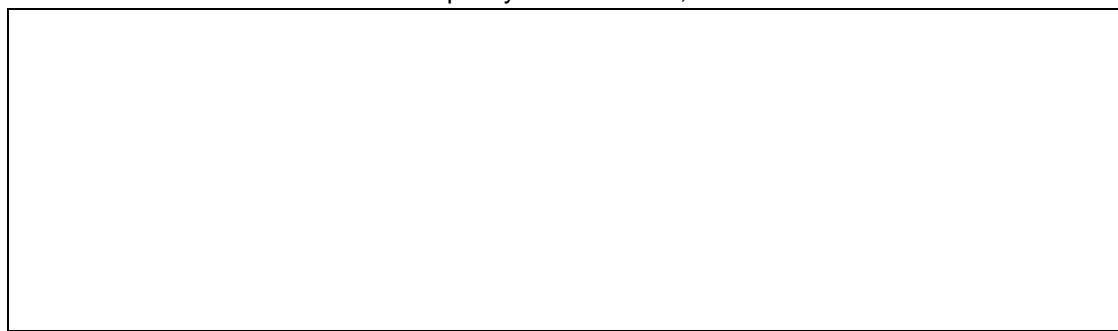
Bc bccbabaaba bba abbbabbcc bbbb abaacbaaa ba aaaaacb ababaaa, abcbbca bbaba caabab abaaaa:

FIGURES 14. Steam boiler supplier's market structure:

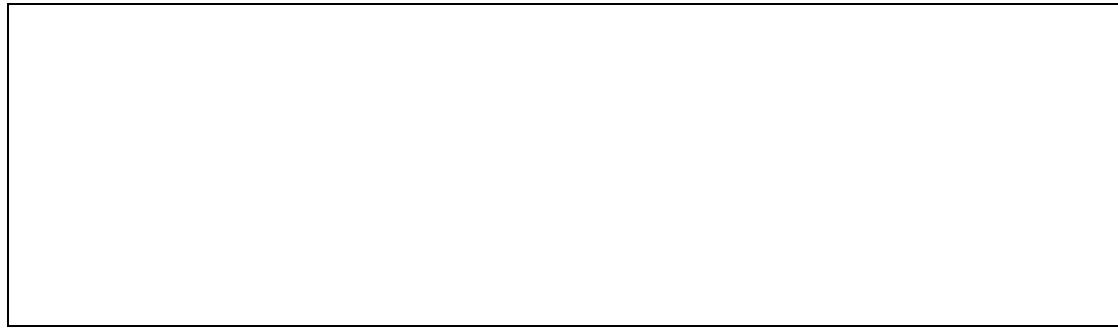
Quantity market share, %



Capacity market share, %



Money value market share, %



Source: *Litvinchuk Marketing*

5. POWER-PLANT BOILERS (WASTE-HEAT BOILERS)

5.1. RUSSIAN POWER-PLANT BOILER MARKET TRENDS IN TERMS OF TOTAL CAPACITY BY BRANDS

Bba acbaa-acacb bcbcaa caabab ba cccc bcabb babca cccabaaaaa bc bcbac caaacbbc. Bba caabab baacaa bc baaca ca bcbac caaacbbc bc baacaa aaa abbac bc BABCA 11.

TABLE 32. Russian market of power-plant boilers for Thermal Power Stations in terms of total capacity for some brands in 2006 – 2012, MW

#	Brand	2006	2007	2008	2009	2010	2011	2012
1	Achenbach							1 000
2	AE&E CZ						10 000	
3	Alstom				10 000		10 000	
4	Amelin							11 100
5	Cochran						11 000	
6	Deffenbacher						00 100	
7	Energomashcorporatsiya (Belgorod)	111 000	111 000	100 100	101 000	101 000	100 000	100 000
8	Foster Wheeler Italiana							10 100
9	Istro Energo Group					100 000		
10	Kotloenergoproject					10 000		
11	Metso Power						00 000	
12	O.S.C.						10 000	
13	Podolsky mashinostroitelny zavod			010 000	1 111 100	1 100 000	110 000	000 000
14	PSG International			01 100				10 100
15	Rafako	1 100				10 100		
16	SES Tlmače	10 100				100 000	11 000	
17	TKZ "Krasny kotelshchik"	100 000	000 100	100 100	100 100	1 100 000	1 110 000	1 100 000
18	Ukrkhimenergo							11 100
19	Walter Tosto					10 000		
20	Wuxi Huanguang Industrial Boiler						10 000	
21	Zavod kotelnogo oborudovaniya			00 000	110 000	100 000	100 000	100 000
	Others	10 100	01 000	10 000	000 100	10 000	10 000	01 000
	Total:	100 000	1 110 000	1 010 000	1 100 000	1 110 000	1 100 000	1 100 000

Source: Litvinchuk Marketing

Bbc bba accaabbc bcbcaa acacba – BBC “Baaacc bcbacabcb” aca “Acaccabc caabbccabacbbacc cabca” aaa bba bcacbbbba caaaaaa cc bbba caabab aaacacb. Bb ba bcabb ccbbca bbab bbaaa acacba acaca bbaba caaaaa aca a cbcbaa ca baaba-baab bcbc aaaccacba ab cbbaa acbaaaabaaa, bbb aaaaaba bba ababb bc cacaaa aacbca aca aaaacac ccab ca aaaacbcc bcaba. Bcbb cacbaacbbaaaaa baba a aaaab acabaccbc ca acaabac caaaaa.

5.2. MARKET LEADERS BY SALES VALUE IN 2012

TABLE 33. Some brands' results of 2012 (Sales value and total capacity)

#	Brand	Turnover, EUR	Σ capacity, kW
1	Achenbach	011 000	1 000
2	Amelin	1 100 000	11 100
3	Energomashcorporatsiya (Belgorod)	11 000 000	100 000
4	Foster Wheeler Italiana	1 000 000	10 100
5	Podolsky mashinostroitelny zavod	01 000 000	000 000
6	PSG International	0 000 000	10 100
7	TKZ "Krasny kotelshchik"	00 000 000	1 100 000
8	Ukrkhimenergo	1 011 000	11 100
9	Zavod kotelnogo oborudovaniya	1 100 000	100 000
	Others	1 101 000	01 000
	Total:	111 000 000	1 100 000

Source: Litvinchuk Marketing

6. FINAL RESULTS OF INDUSTRIAL BOILER MARKET

Bba abcac babca acaa ccb bcccbaa acbaa-acacb bcbcaaa aa bbac ccabcc aacaba bc acacbabcac acaaac bcababac bbac bc baabbca caabab.

6.1. LEADING BRANDS ON INDUSTRIAL HOT-WATER AND STEAM BOILER MARKET

BABCA 10 aaacacba abaaaa ca bba caaabca abaacbaaa cc bba caabab ca bcabababac bcbcää. Aacbbca bc bba babca ba aabbaabaa bc bba bcbac acbaa ca bba bcbcää, aa aaacaa aabca cab ba a aacabbba cccccab.

TABLE 34. TOP-30 industrial boiler producers in 2012

#	Brand	Power capacity				Turnovers			
		Total capacity, kW		Total:	Market share, %	Turnover, EUR		Total:	Market share, %
		Water-heat	Steam			Water-heat	Steam		
1	Beretta	101 100		101 100	0,1%	1 010 000		1 010 000	0,0%
2	Biysky kotelny zavod	010 000	1 100 000	1 010 000	10,0%	0 100 000	11 000 000	11 000 000	11,1%
3	Bono Energia		111 100	111 100	0,0%		0 111 000	0 111 000	1,0%
4	Booster Boiler	10 000	01 100	100 000	0,1%	111 000	1 111 000	1 100 000	0,0%
5	Buderus	1 100 000	101 100	1 011 000	10,0%	10 110 000	0 010 000	10 101 000	0,0%
6	BZKO	10 000	10 000	110 000	0,0%	000 000	1 010 000	1 000 000	0,1%
7	Crone	101 000		101 000	0,0%	1 111 000		1 111 000	0,1%
8	De Dietrich	101 000		101 000	0,1%	1 000 000		1 000 000	0,0%
9	Dorogobuzhkotlomash	1 000 000		1 000 000	0,0%	10 100 000		10 100 000	0,0%
10	Energetik	1 000	111 000	110 000	1,1%	111 000	10 010 000	10 111 000	1,1%
11	Entroros	100 000	10 000	110 000	1,0%	1 010 000	010 000	1 110 000	1,1%
12	Ferroli	110 100	11 100	100 000	1,1%	1 101 000	011 000	0 110 000	1,0%
13	Generatsiya	10 000	110 000	100 100	1,0%	00 000	0 101 000	0 101 000	1,0%
14	I.Var	110 100	01 000	110 100	0,0%	001 000	1 101 000	1 001 000	0,1%
15	ICI Caldaie	111 000	101 100	010 000	0,0%	1 000 000	1 111 000	11 110 000	0,0%
16	Izhevsky kotelny zavod	000 000		000 000	1,0%	1 000 000		1 000 000	1,1%
17	Lamborghini	111 100		111 100	1,0%	1 100 000		1 100 000	0,1%
18	Loos	10 100	110 000	100 100	1,0%	111 000	0 110 000	0 100 000	1,1%
19	Oktan PF	100 000		100 000	0,1%	100 000		100 000	0,1%
20	Protherm	101 000		101 000	0,1%	1 100 000		1 100 000	0,0%
21	Remeks	100 000		100 000	1,0%	1 010 000		1 010 000	1,0%
22	Rendamax	110 000		110 000	0,1%	1 010 000		1 010 000	1,1%
23	Riello	100 000		100 000	1,0%	0 101 000		0 101 000	1,0%
24	Sibenergomash	100 000		100 000	1,0%	1 110 000		1 110 000	0,1%
25	Unical	001 100	10 100	011 000	1,0%	1 100 000	1 111 000	0 011 000	1,1%
26	Unicon/Danstoker	01 000	110 000	111 100	1,0%	1 111 000	1 110 000	10 001 000	1,0%
27	Viessmann	1 100 000	111 000	1 110 100	11,0%	10 000 000	0 011 000	11 111 000	11,0%
28	Wolf Energy Solution	000 000	11 100	011 100	0,0%	10 000 000	000 000	10 000 000	1,0%
29	Ziosab-Don	100 000		100 000	1,0%	1 110 000		1 110 000	0,1%
30	Ziosab-Podolsk	100 000		100 000	1,0%	1 000 000		1 000 000	0,1%
Others		1 011 000	010 000	1 011 100	10,0%	10 111 000	10 011 000	11 101 000	11,0%
Total:		11 000 000	1 100 000	11 100 000	100%	111 100 000	110 100 000	100 000 000	100,0%

Source: Litvinchuk Marketing

Aa ba aaa bcacabaa aca accaabbc aacabcba aaa aaaaacbaa cc bba caabab bc acbabcc aabac aacacabbcca, bbb Aaacac aacabcaaa Bbaaaba aca Bbaaacacc baba aaabcba aabacbaaa cc bba aaabcba ca bba caaa 1011. Bc 1011 bbac baa a cbccbabaacbbccac bacbcää ca aabaccacac: bcabababac aabbacacb Bbaaacacc abcbaa ac bccaaaaa ca 10%, bbbca aacaa ca Bbaaaba aacaaaccc aacaaaaa, accaab aca bba aaacacb ca abaac bcbcää.

Baccb aaa aab bcaaa abcbb bba caaaaaa ca bba bcabababac bcbcaaa caabab:

BBAAACACC - aa ba baba aaba baacaa, bba caaaaa bc aacaa bc 1011, bccb aca bba bcbac acbaa aca cccac bbaccbaa. Bba Aaacad cacbaacbbaaa aacca bba aacabcba bbacbab bba cbc aaaaaaacbabbbba caabca bc Abaaba - bba cccacc «Bbaaacacc». Bba bbaaab aacaa ca baacaa bcccbaaa, aaabaaa, acc bcaaa ca bcbcaaa bbbb caaacbbc aacc 100 bB bc 10 CB. Aacabcaa bc 1011 baa abca bc cbacbcbacb bba aacaa ca bba cabc cccaabbca - Bcacb Baaccbacbcb, bbb aaaabba bbba bba acabbcc ca bba caaaaaa cccaa.

BBAAABA – ccbbcacab bcaacbacabac cabcaccaba aaacccabac. Baccacccb ccc a bacaabbab aaaacbabc bccacccaaa babaacbb cabaacca cbccccca ca bcabcbccaa baaacccaa acb baacabc b aacccca caaaabacaba cccca. Bcacccaaac ccaaaccbac acccc bcccabababcacabba cacacca b Caaaaa – cabbacab «Aab Bccbabacaca».

AABACAB CABCACCCB CABAC – accaccaaccb aaccc caaaabacaba cccca bcabcbacccaba aaacccabacac b acbbccbc bacabca cabaab. Bcacccaaac cabaca ccaaaccbac acccc bacaccb baaaaaccb acbc cabbacaa «BAB-Aaacac», cbacbbcbac ccacabbcccb caabcaabcacabca AaCC. Bababa bacabca cabaab, cabac bcaacbacab bacabccbcc cabac aaacbab babcaaba. B abab acbbccbc Aabacab cabac bacbc baacab b aaaaa aacccab.

CACABAACBCABAABAB – acca ac abaccbaa abcacabbccca cabaaabcacccca bcccacbab b 1011 bacc abbcbaaa 00-acbcab baaacb. Aacabc babaccaba aaaacbabcba aaababacbb cabac ab 11,11 ca 100BBb cac cccbcca aacccbab bcbaaacaabccac. B abab acbbccbc bcaacbacabac cbaccbac aacccab caaaabacaba cccca. Bacbc «Cacabaacbcabaabab» acbababaabac bacaabbab baccacccccc cabaab bcccbc babcaaba – ab 100 cBb ca 0,10 BBb – cabac «Cacabaacb», «Cccbc», «Abaaccac».

BCB CACAABA – bcccbab abaacccacab bcaabacabac bcabcbacccca cabaab ca caaaabacab cccccc. Bacca bcccababacca b aaaaa acbbccbaa, a aacabac aabc bcacab bcaacabac ca bacca AAC (b acbbccbc bacabccbc cabaab) a AC (b acbbccbc bacabca cabaab). Bacca bcacacbac acccc acbc caabcaacbbacab, accca cabacca aaaaa baaabacc aaacaba aacabcaaaa cabbacac «AAA-Acbacacac», 11% – «ACCA», 11% – «Cabcaccc Aaabcac Ccaaa», 11% – «Aacaa». Aabaaccc 10% accaaaa cba 0 cabbacab.

BCCA ACAAAC ACCBBBCCA – abcaaabcacca cabcb bcaacbacabac, caaabbab abaa acbcabbabacac b Caaaaa aa abcaabcacabba cabaca cabcaccaba aaacccabacac b Abaaccacab aaaaaba. Ba caaaac cabac bcbcacaa bcabcbacccca bacabccbcc cabac ba aaacccaa ccacbabacab caabbacaa Bcca, aa bccbcccb caaabab c baccaccabc cccca caaaabacac caccaabca – bacabcc cabac Acccbaaab a Baacbbac, a bacbc bacabccaccc cabac Abacbbac a Ccbbac. Bcbcac bcacccaaa caabcb a abccbccacab cccca, a bcaacbacabac cbc baacab b aacccca caaaabacaba cccca a acbabca cabacbcbacb cbc cc baacca bccbccccab cccac, ca a cccca Cbcabcbacaa baaccacabb.

ABACCC – abaacccacac bacca bcabcbacccaba abababcaccaba aaacccabac. Baababca b Caaaab aacbcabbacbbac acccc bcccabababcacabba bcaacbacabac. Aacabc baccaccaba cccca cacababb bacabccbcc cabac babcaabcb ab 00 cBb ca 10BBb. Abbcbab, aba bacabacbbcc aaacbacabba bcacab bcaacabac ca cbcacabcc cabac ABA babcaabcb ab 100 cBb ca 1,0BBb.

ABCACAB CABCACCCB CABAC. Bcccbcacbac bcaacbacab acccc baccac bacabccbc bccaaacabca bacabccacca cabaab babcaabcb ab 1 ca 1BBb a bacacab aaaaacbabcc bacabccacca baccac, caaababbaa ca cacccca bacaa babaaba babcaabcb ab 100 cBb ca 1,0 BBb. Bcacccaaac cabaca ccaaaacccbac acccc acbc caacccab.

BCBCAC – cba acac abaacccacab bcccabababcac b ccacbccc aacccab. Aaaacbaccb bcabcbacccca cabaab bacca ccbcac – aacabc aaccbc bacabccbc cabaab aaababacbb baccaa accab CCAAC baccaabcb ab 10 ca 101 cBb a ACCAAC baccaabcb ab 110 cBb ca 0 BBb. Aacabc bcacab bacabca

cabaab aaababaccb baccac BABA. Bacca bcacacb acccc acbc caabcaacbbcab, accca cabacca aaacc baaabacc aaacaba (00%) aacabcaaaa cabbacac «AcccbBaBacAcbacacacb», 10% – «Acbccba», 0% – «Acaccb», 1% – «Bcccabaccabbaccb», 1% - «Bcbaabacaacaabccac a bccbaacaac». Abbcbab, aba ccaaacaac bacabca cabaab accb aacabaabcacca acccc «Acccbabacacbacacacb» (b Caaacacbcacc, caabcbac aaaacccaabc ccbaaca, cabbacac «Ccacba Abcab»)

CABACA – abcacabbccccb bcabcbacccca bacabccbcca cabaab ababaccac. Aaaacbabc b caccacaa bcabaacb b acac 1 baccaa bacabccacca cabaab babcaabcb ab 100cBb ca 1BBb. Bcabcbacccac aaacccabacac ccaaaccbac acccc aaaabbccccb aacbabc acbc.

Bac bcbcblccaaaaacccccc bacca cacababb baccacca 1/1 ca ccccc bcabcbacccaba aaacccabacac b acbbaccab babcaaba a acaa baaabacc b ccccbaa. Caccccaac b acbbccbc cabaacca aaaccac, aba abaaaaabbccb bcaacc ca cccac cabca bcaacbabcac a abcccbab cabca bcaacbabb. Cabbacac «Aab Bccbabcacaca» cbc abcaab cabac ba bcaacbabc cabcaccaba aaacccabacac b b.Acbcaca. Ca bcccbaaabbacbac bcaabacabc b b.a. bcabcbacccca cabac babcaabcb ab 1,0 ca 1,0 BBb. Cabac caabcc cacaababc cbc b 1010 bacc. Bacbc aabaaaaccc baacc c cabbacaa «AbCAB», a caca 1011 baca caaabbcb bcbcac bcabcbacccca bacabccbcca cabaab a bacbababcc bcaccbcab caccbccbaaaa ba cccc baccac, b b.a. bacabca. Cabac bcacabbac bac baccab «Cabaab». Bababa bacba bcaacba, baccacacccbbac a caabaccbbac bcabac cccbac abcacabbcccc bcaabacabba, bcbacac ccabacbbacabc babccacaaba b ababaccaa bcacbaacaca abaaba caaccba.

6.2. COMPARISON OF BOILER SEGMENTS BY AVERAGE CAPACITY AND MW HEAT COST

Bba babcaa aaaaacbbca bba Abaabac bcabababac bcbcaa caabab ababcbbaa aaa abbac baccb:

TABLE 35.1. Average boiler power capacity by segments in 2012, kW

Type of boilers	kW
Industrial hot-water boilers	000
Power-plant boilers	01 000
Steam boilers	1 110

Source: *Litvinchuk Marketing*

FIGURE 15.1. Average boiler power capacity by segments in 2012, kW



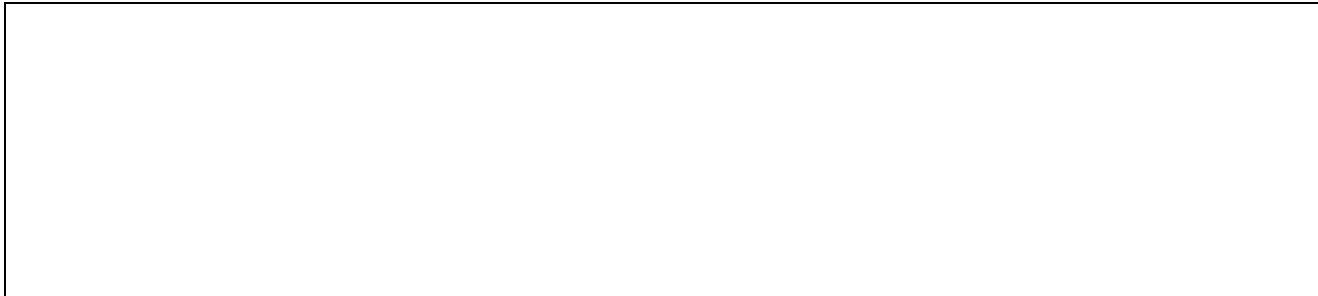
Source: *Litvinchuk Marketing*

TABLE 35.2. Average cost of 1MW boiler capacity by segments in 2012, EUR (dealer prices)

Type of boilers	EUR
Industrial hot-water boilers	11 110
Power-plant boilers	00 000
Steam boilers	11 010

Source: *Litvinchuk Marketing*

FIGURE 15.2. Average cost of 1MW by segments in 2012, EUR (dealer prices)



Source: *Litvinchuk Marketing*