Preparatory study for Kettles implementing the Ecodesign Working Plan 2016-2019

Task 2: Markets

Request for services N° ENER/C4/FV 2019-467/06/FWC 2015-619 LOT1/05 in the context of the Framework Contract N° ENER/C3/2015-619 Lot 1

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                               kettles_en

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

114

115

2. TASK 2: MARKETS

2.1. *Task introduction*

General objective of Task 2:

The objective of Task 2 is to present an economic and market analysis of the products covered in Task 1. The aims are:

- to place kettles (according to the definition provided in 1.2.) within the context of EU industry and trade policy (subtask 2.1);
- to provide market size and cost inputs for the EU-wide environmental impact assessment of the product group (subtask 2.2);
- to provide insight into the latest market trends to help assess the impact of potential Ecodesign measures with regard to market structures and ongoing trends in product design (subtask 2.3, also relevant for the impact analyses in Task 3); and finally,
- to provide a practical data set of prices and rates to be used for Life Cycle Cost (LCC) calculations (subtask 2.4).

2.2. *Subtask 2.1- Generic economic data*

General objective of subtask 2.1:

In the MEErP[1] generic economic data refers to data that is available in official EU statistics (e.g. PRODCOM) and the aim of the subtask is to identify and report the 'EU apparent consumption' or 'sales' which is defined as 'EU production + EU import – EU export'. Also, the average value of each product is verified. The information required for this subtask should be derived from official EU statistics so as to be coherent with official data used in EU industry and trade policy.

Approach:

Data from PRODCOM relevant for the study can be found under the codes:[2]

- 27.51.25.60 - Electric water heaters and immersion heaters (excluding instantaneous water heaters), data from 2011[3].
  This category covers, among others, water kettles and boiling water heaters. A wide range of water heaters regulated by Commission Regulation (EU) No 814/2013[4] and Commission Delegated Regulation (EU) No 812/2013[5] are also included in this NACE category.
- 27.51.25.30 - Electric instantaneous water heaters.
  Here, statistics for hot water dispensers can be fund, but the NACE category includes further types of products.

The indicators available within the PRODCOM codes are displayed in Table 2-1. Besides these indicators, it is important to acquire data concerning the volume of imports and exports. Since such data is available in PRODCOM, one option would be to derive it from other related data sets.

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[1]   see COWI and VHK (ed.) (2011)

[2]   see Task 1 report of this preparatory study

[3]   up to 2010: 27.51.25.50 - Electric water heaters (including storage water heaters) (excluding instantaneous)

[4]   see: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R0814

[5]   see: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R0812

152 **Table 2-1: Indicators available at PRODCOM**

Data field	Definition
EXPQNT	Volume of exports in the unit indicated in UNIT, derived from the External Trade statistics
EXPVAL	Value of exports in Euro, derived from the External Trade statistics
IMPQNT	Volume of imports in the unit indicated in UNIT, derived from the External Trade statistics
IMPVAL	Value of imports in Euro, derived from the External Trade statistics
PRODQNT	Volume of production in the unit indicated in UNIT
PRODVAL	Value of production in Euro

153

154 Based on the indicators shown in Table 2-1, it is possible to calculate the sales or market, as
155 following:

156 **Equation 2-1   SALES = PROD + IMP - EXP**

157
158 Table 2-2 provides an overview of the EU27 statistics for NACE 27.51.25.60 - Electric water heaters
159 and immersion heaters (excluding instantaneous water heaters). The yearly sales have been
160 calculated and they increased from 25 million units in 2011 to 35 million units in 2018,
161 corresponding to an average of 6% increase per year over the same period. A large majority
162 (90%) of the products placed on the EU market are imported.

163 **Table 2-2: EU 27 PRODCOM for NACE 27.51.25.60 - Electric water heaters and immersion**
164 **heaters (excluding instantaneous water heaters) (source: Eurostat 2020)**

PERIOD/ INDICATORS	Exported quantity (million of units) EXPQNT	Value exports (M€) EXPVAL	Imported quantity (million of units) IMPQNT	Value imports (M€) IMPVAL	Produced quantity (million of units) PRODQNT	Value produced goods (M€) PRODVAL	SALES QNT (million of units) calculated	SALES VAL (M€) calculated
2011	6.05	142.09	22.02	226.83	9.04	901.92	25.02	986.66
2012	5.55	149.59	21.76	239.10	6.31	826.09	22.52	915.60
2013	7.30	203.17	25.39	262.36	7.88	925.68	25.97	984.87
2014	6.37	166.80	27.81	277.34	8.30	986.28	29.73	1,096.83
2015	5.71	171.46	28.12	321.50	10.38	1,117.34	32.79	1,267.38
2016	5.70	194.25	27.92	324.36	8.90	1,019.60	31.12	1,149.72
2017	6.49	223.21	29.23	351.89	8.97	1,098.81	31.71	1,227.48
2018	5.83	226.09	31.86	375.93	9.50	1,159.77	35.53	1,309.61

165

166 Statistics on Member States (see Table 2-3) for the year 2018 show some gaps and are difficult to
167 explain, e.g. in Italy, the calculated sales are negative. However, based on these statistics, the four
168 main countries manufacturing this type of products are: Italy (34%), Poland (18%), France (12%)
169 and Bulgaria (11%).[6]

---

[6]   Unfortunately, production statistics from some key countries, like Germany, are missing.

Table 2-3: EU 27 PRODCOM for NACE 27.51.25.60 - Electric water heaters and immersion heaters (excluding instantaneous water heaters), MS & U.K., 2018 (source: Eurostat 2020)

DECL/INDICATORS	Exported quantity (1,000 units) EXPQNT	Value exports (1,000 Euros) EXPVAL	Imported quantity (1,000 units) IMPQNT	Value imports (1,000 Euros) IMPVAL	Produced quantity (1,000 units) PRODQNT	Value produced goods (1,000 Euros) PRODVAL	SALES QNT (1,000 units), calculated	SALES VAL (1,000 Euros), calculated
Austria	493	9,004	1,133	20,263	:	:	-	-
Belgium	974	79,964	1,399	51,220	:	:	-	-
Bulgaria	797	50,828	260	4,859	1,054	76,543	518	30,574
Croatia	66	3,054	401	10,681	69	4,594	403	12,221
Cyprus	-	-	67	896	-	-	67	896
Czechia	2,600	48,709	4,028	49,698	:	:	-	-
Denmark	83	5,368	279	8,266	:	:	-	-
Estonia	4	336	132	4,957	0	48	128	4,669
EU27	5,826	226,090	31,861	375,930	9,496	1,159,770	35,531	1,309,610
Finland	21	1,757	115	7,522	:	9,092	-	-
France	287	41,514	1,787	114,660	1,132	223,695	2,632	296,840
Germany	7,712	115,125	14,822	153,717	:	:	-	-
Greece	17	794	517	9,828	80	5,628	580	14,662
Hungary	507	14,563	701	13,010	:	:	-	-
Ireland	23	1,071	482	7,520	:	:	-	-
Italy	8,436	189,649	2,471	43,324	3,185	216,657	-2,780	70,332
Latvia	35	915	221	5,083	-	-	186	4,169
Lithuania	151	3,512	533	9,561	-	-	382	6,049
Luxemburg	0	13	25	1,432	-	-	25	1,420
Malta	0	8	65	2,546	-	-	65	2,538
Netherlands	2,316	50,462	4,833	65,525	191	124,897	2,707	139,961
Poland	1,672	22,619	4,314	39,975	1,754	37,752	4,396	55,107
Portugal	206	19,720	471	14,212	:	:	-	-
Romania	19	1,065	736	20,602	:	:	-	-
Slovakia	215	8,448	766	8,587	:	:	-	-
Slovenia	226	2,749	1,532	12,207	-	-	1,306	9,458
Spain	421	13,942	2,814	71,952	:	:	-	-
Sweden	351	31,283	723	13,974	:	:	-	-
United Kingdom	707	25,687	6,944	85,580	685	103,868	6,922	163,761

Note: ":" means statistics not available

173 Table 2-4 provides an overview of the EU27 statistics for NACE 27512530 - Electric instantaneous
174 water heaters. The yearly sales have been calculated and show large fluctuations, ranging between
175 1.74 million to 14.58 million of units depending on the year. No clear trend can be observed. The
176 ratio between "imported quantity" and "sales quantity" varies largely, ranging between 35% and
177 117%, with an average of 84% over the last 11 years.

178 **Table 2-4: EU 27 PRODCOM for NACE 27.51.25.30 - Electric instantaneous water heaters**
179 **(source: Eurostat 2020)**

PERIOD/ INDICATORS	Exported quantity (Mio. units) EXPQNT	Value exports (Mio. Euros) EXPVAL	Imported quantity (Mio. units) IMPQNT	Value imports (Mio. Euros) IMPVAL	Produced quantity (Mio. units) PRODQNT	Value produced goods (Mio. Euros) PRODVAL	*SALES QNT (Mio. units), calculated*	*SALES VAL (Mio. Euros), calculated*
2008	0.37	35.28	1.18	35.46	2.51	285.65	*3.33*	*285.84*
2009	0.36	30.72	0.93	35.14	1.94	223.44	*2.51*	*227.86*
2010	0.34	30.39	0.74	35.12	1.58	217.29	*1.97*	*222.02*
2011	1.48	98.15	1.69	42.21	1.53	215.52	*1.74*	*159.58*
2012	2.00	117.00	3.16	43.93	1.53	245.76	*2.70*	*172.69*
2013	0.91	66.11	3.83	43.74	1.67	264.67	*4.60*	*242.29*
2014	1.81	109.86	2.33	47.45	1.48	229.49	*2.00*	*167.08*
2015	1.69	113.60	5.28	56.64	1.45	204.46	*5.03*	*147.50*
2016	1.17	82.13	7.10	72.00	1.57	274.30	*7.50*	*264.17*
2017	0.68	60.07	13.72	72.04	1.55	225.06	*14.58*	*237.03*
2018	1.54	66.85	3.86	78.32	1.42	228.14	*3.75*	*239.61*

180

181 Statistics on Member States for the year 2018 (see Table 2-5) show also many gaps for the
182 production. However, based on these statistics, Poland seems to be the main country
183 manufacturing this type of products in the EU27 covering 31% of the EU27 production.

184

185 **Table 2-5: EU 27 PRODCOM for NACE 27512530 - Electric instantaneous water heaters),**
186 **ember States and U.K., 2018 (source: Eurostat 2020)**

DECL/INDICATORS	Exported quantity (1,000 units) EXPQNT	Value exports (1,000 Euros) EXPVAL	Imported quantity (1,000 units) IMPQNT	Value imports (1,000 Euros) IMPVAL	Produced quantity (1,000 units) PRODQNT	Value produced goods (1,000 Euros) PRODVAL	*SALES QNT (1,000 units), calculated*	*SALES VAL (1,000 Euros), calculated*
Austria	3	273	114	3,838	-	-	*111*	*3,566*
Belgium	161	12,590	100	9,933	:	:	*:*	*:*
Bulgaria	13	348	146	1,915	22	727	*155*	*2,293*
Croatia	2	169	26	867	-	-	*23*	*697*
Cyprus	0	11	31	1,057	-	-	*30*	*1,045*
Czechia	234	3,616	264	4,735	:	:	*:*	*:*
Denmark	15	1,395	13	1,226	-	-	*-2*	*-169*
Estonia	1	132	14	793	-	-	*13*	*661*
EU27	1,535	66,847	3,861	78,321	1,421	228,138	*3,747*	*239,613*
Finland	1	88	23	604	-	-	*23*	*516*
France	395	8,542	279	10,772	:	:	*:*	*:*
Germany	5,514	72,267	1,389	41,219	:	:	*:*	*:*
Greece	12	196	146	1,090	9	824	*143*	*1,718*
Hungary	893	3,757	784	9,271	:	:	*:*	*:*
Ireland	212	10,743	352	18,989	:	:	*:*	*:*
Italy	52	1,941	1,307	12,430	-	-	*1,255*	*10,488*
Latvia	8	711	21	774	:	:	*:*	*:*
Lithuania	10	553	40	2,228	-	-	*30*	*1,675*
Luxemburg	2	285	27	1,259	-	-	*25*	*974*
Malta	0	34	3	195	-	-	*3*	*161*
Netherlands	68	4,092	59	5,427	:	:	*:*	*:*
Poland	770	12,067	930	11,805	434	17,139	*594*	*16,877*
Portugal	78	5,637	242	5,047	:	:	*:*	*:*
Romania	3	104	124	3,141	:	:	*:*	*:*
Slovakia	144	15,769	565	7,069	:	:	*:*	*:*
Slovenia	10	259	74	1,106	-	-	*64*	*847*
Spain	51	1,090	454	16,464	-	-	*403*	*15,374*
Sweden	109	2,402	13	1,789	:	:	*:*	*:*
United Kingdom	*480*	*30,226*	*2,176*	*50,685*	*:*	*113,806*	*:*	*134,265*

187 Note: ":" means statistics not available

188 Even if the PRODCOM statistics cover basically water kettles and similar boiling water products,
189 they have a limited relevance for this study, thus alternative data sources will be used when
190 possible. The main reasons are:

191 • the PRODCOM statistics are not specific enough:
192 – 27.51.25.60 - Electric water heaters and immersion heaters (excluding
193 instantaneous water heaters) covers a wide family of products. Therefore, it is not
194 possible to estimate figures for "water kettles" and for "boiling water heaters", or
195 even for both types of products together.
196 – 27.51.25.30 - Electric instantaneous water heaters: Specific statistics for hot water
197 dispensers cannot be found.
198 • some figures reported are so dynamic and instable that it is difficult to understand them or
199 rely on them. This is specially the case for 27.51.2.5.30.
200
201
202 UNCOMTRADE reports detailed global trade data. UNCOMTRADE is a repository of official
203 international trade statistics and relevant analytical tables. The dataset covers statistics on
204 "Heaters; electric, instantaneous or storage water and immersion heaters" (Commodity Code
205 851610). This Commodity Code includes immersion water heaters and electric kettles (HS
206 85161019), hence including also the products other than the scope of this study. However, it could
207 provide some indications on the possible export and import countries relevant for the EU in 2018
208 for electric kettles.
209
210 In 2018, 9 countries accounted for 67% of the exports of the EU (see Table 2-6) and two countries
211 were responsible for 90% of the imports, of which China accounted for around 80% of the EU
212 imports (see Table 2-7).
213

214 **Table 2-6: Export from the EU of Heaters; electric, instantaneous or storage water and**
215 **immersion heaters (Commodity Code 851610), in 2018 (source: UNCOMTRADE)**

Export countries	Share of EU export [%]
Russian Federation	16.83%
Ukraine	16.65%
USA	8.27%
United Arab Emirates	5.92%
China, Hong Kong SAR	4.96%
Switzerland	4.94%
Serbia	3.54%
Morocco	3.31%
Saudi Arabia	2.67%

216

217 **Table 2-7: Import in the EU of Heaters; electric, instantaneous or storage water and**
218 **immersion heaters (Commodity Code 851610), in 2018 (source: UNCOMTRADE)**

Import countries	Share of EU export [%]
China	79.45%
Turkey	11.20%
Tunisia	2.66%
Egypt	1.94%

219

2.3. *Subtask 2.2- Market and stock data*

221 <u>General objective of subtask 2.2:</u>

222 The objective is to compile market and stock data in physical units for the EU, for each of the
223 product categories defined in Task 1.1 and for the stock, combined with a forecast. Therefore, the
224 following parameters need to be identified:

225 • installed base ('stock');
226 • annual new product sales growth rate (% or physical units);
227 • average economic product life (in years), in service, and a rough indication of the spread
228   (e.g. standard deviation);
229 • total new product sales / real EU-consumption;
230

231 <u>Approach:</u>

232 As mentioned in 2.2, PRODCOM statistics do not provide precise figures for the "electric kettles"
233 market. No further data could be provided by manufacturers (APPLiA[7] and its members).
234 In order to be able to carry out this task, market data at EU level was purchased from GfK[8]. GfK is
235 a well-known market research institute gathering market data which is considered in various
236 Ecodesign preparatory studies. GfK portfolio covers also electric kettles[9] and gathered detailed
237 information related to technical features.
238

239 *2.3.1. Sales*

240 **Kettles**

241 For this study, only aggregated EU data was purchased. EU data from GfK covers data gathered in
242 17 Member States [10] which, in total, corresponds to 91% of the EU households. Hence, the total
243 sales were corrected to have an estimate of the EU 27 figures, by scaling up the GfKs figures on
244 the total number of EU households.
245 As presented in Figure 2-1 and Table 2-8, the market is clearly dominated by water kettles, which
246 make over 99.5% of the market. The other types of electric kettles – hot water dispensers, kettles
247 and hot water dispensers, kettles and milk heaters, kettles and teapots as well as milk heaters –
248 have an extremely marginal market importance. In other words, at EU level, the water kettle
249 market is almost the same as the electric kettle market.

---

[7] see section 2.4.2

[8] see https://www.gfk.com/home

[9] sub categories are: hot water dispenser, kettle and hot water dispenser, kettle and milk heater, kettle and tea pot, milk heater and water kettle

[10] DE, AT, IT, FR, ES, PT, NL, BE, IE, SE, DK, FI, PL, CZ, HU, SK and GR

250 **Figure 2-1: Overview of the EU27 kettle market (based on GfK 2020)**
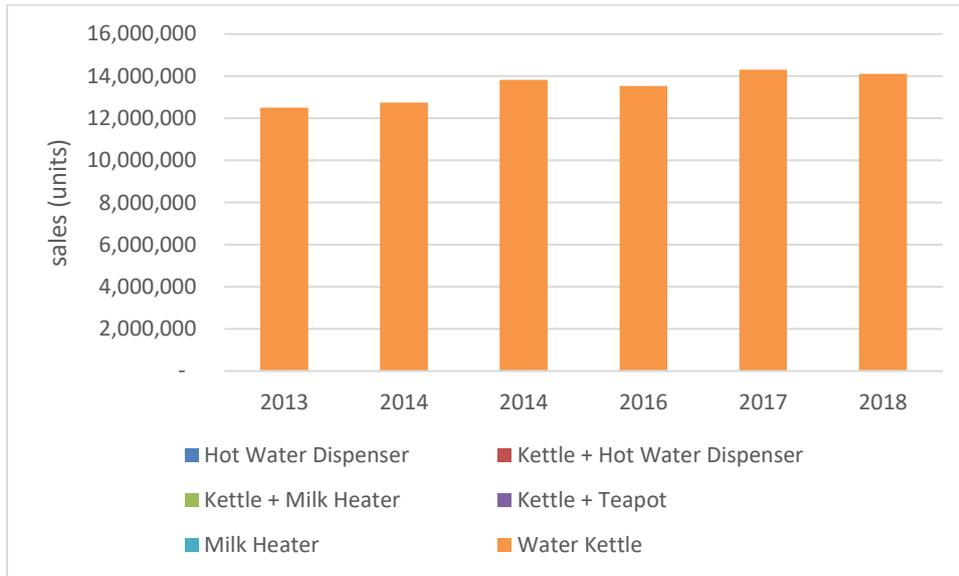
251
252

253 **Table 2-8: Overview of the EU27 kettle market (based on GfK 2020)**

Product category	2013	2014	2014	2016	2017	2018
Hot Water Dispenser	21,563	18,563	17,133	22,421	13,983	19,263
Kettle + Hot Water Dispenser	403	1,442	3,127	779	444	292
Kettle + Milk Heater	415	147	66	279	143	1,959
Kettle + Teapot	1,403	1,007	2,880	3,985	2,490	7,797
Milk Heater	17,692	15,324	17,459	16,520	14,512	14,859
Water Kettle	12,465,663	12,710,124	13,788,260	13,493,268	14,275,653	14,074,792

254

255 Between 2013 and 2018, the sales increased from 12.5 million of units/year to 14.1 million of
256 units/year. Figure 2-7 shows that the sales seem to be driven by the number of households in the
257 EU.

Figure 2-8: Number of water kettles and households in EU27 (source: GfK 2020 and Eurostat 2020)
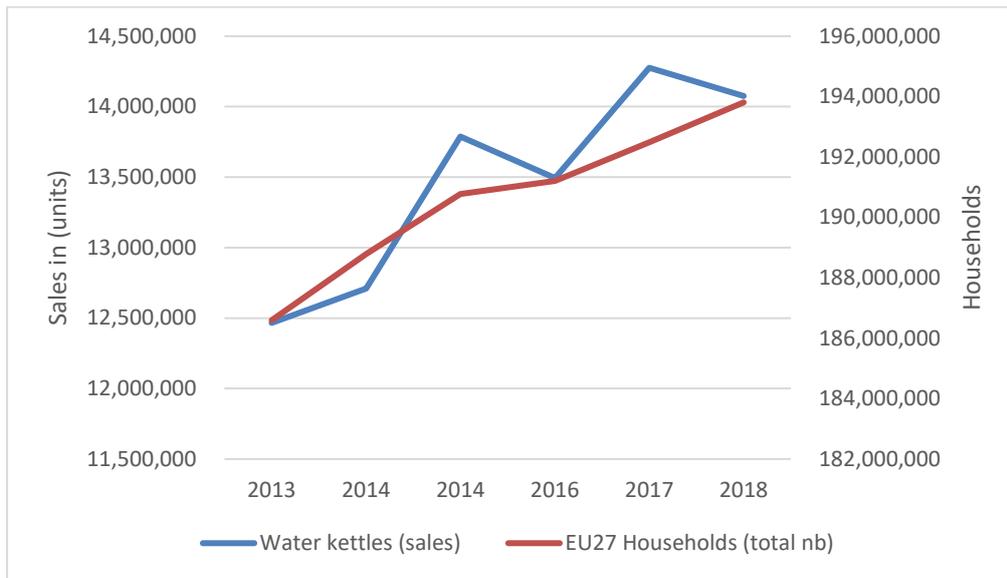
Statista[11] provides also few statistics on the EU27 kettle market and covers all Member States. The EU27-sales amount to around 12 million of units / year (Table 2-9) which is in the range of the GfK figures.

Table 2-9: Overview of the kettles EU27-market (source: Statista 2020)

	2012	2013	2014	2015	2016	2017	2018
Turnover in million €	362.20	365.53	369.03	372.78	376.55	380.61	384.96
Sales in millions of units	11.46	11.60	11.73	11.88	12.02	12.17	12.32
Price per unit in €	31.60	31.52	31.45	31.39	31.32	31.27	31.24

The market shares of each Member State was estimated based on figures gathered by Statista. Table 2-10 presents the market shares according to the relevance of the national market to the EU27 market.

---

[11]   https://www.statista.com/outlook/16021200/102/electric-kettles/europe

270 **Table 2-10: EU27 market shares according to Member States[12] in year 2019 (source:**
271 **Statista 2020)**

Country	Market share (sales)	Country	Market share (sales)	Country	Market share (sales)
Austria	4%	France	18%[13]	Malta	0%
Belgium	4%	Germany	28%	Netherlands	11%
Bulgaria	1%	Greece	2%	Poland	7%
Croatia	1%	Hungary	1%	Portugal	1%
Cyprus	0%	Ireland	1%	Romania	2%
Czech Republic	2%	Italy	10%	Slovakia	1%
Denmark	2%	Latvia	0%	Slovenia	0%
Estonia	0%	Lithuania	1%	Spain	5%
Finland	1%	Luxembourg	0%	Sweden	2%
				U.K.	Equivalent to 24%

272

273 Four countries (Germany, France, Netherlands and Italy) account together for 68% of the EU27
274 market (see Figure 2-2).

275 **Figure 2-2: EU27 market shares according to countries in year 2019 (source: Statista**
276 **2020)**
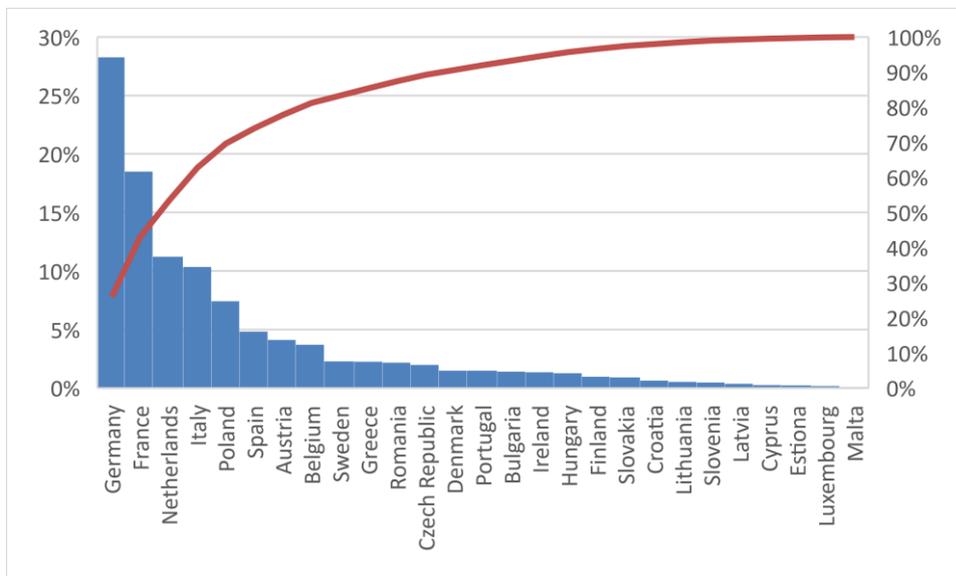
277
278

---

[12]   U.K. is shown just as comparison but is not accounted in the EU27 market

[13]   this roughly matches to 1.9 Mio of water kettles sold in France in 2019, according to GfK, see
https://www.gifam.fr/wp-content/uploads/2020/03/Bouilloire.pdf

279 Prior to the Brexit, U.K. was the largest market in the EU. The current sales represent 24% of the
280 EU27 market.

281

Urns

283 Specific statistics on urns are scarce or almost non-existent. Assuming that urns are kettles with a
284 rated volume > 2.2 litres, the market share in 2018 is 0.2 % of the water kettles (see Table 2-14).

285

Boiling water heaters

287 This kind of product is not sold via the same channels as kettles or other stand-alone appliances,
288 instead, it is sold within a package for a new or retrofitted kitchen. GfK has not systematically
289 covered this product, and Statista has no information on it. Therefore it is very difficult to estimate
290 sales figures.

291 The manufacturer Quooker reports for 2019 a production of 130.000 Quookers per year.[14]
292 However, it is unclear how many are sold on the EU market or how many products deliver only
293 boiled water.[15]

294 The project team assumes that the share of boiling water heaters is 50% and that Quooker – as
295 historical market leader –accounts for around 50% of the EU27 market. Based on these
296 assumptions, around 130.000 boiling water heaters are sold in EU27 in 2019.

297 For all product groups, future sales will be estimated through a stock model (see next section
298 2.3.2) and based on future stock figures.

299

300 *2.3.2.   Stock*

301 In the recent literature, all the figures refer to the estimates from the study on the Ecodesign
302 Working Plan 2015-2017 (BIO 2015), which are presented in Table 2-11.

303 **Table 2-11: EU28 stock (BIO 2015)**

Product group	EU Stock (millions of units)			
	2010	**Today (2015)**	**2020**	**2030**
Kettles	117–200	117–200	119–204	122–208
Instantaneous hot water heaters and dispensers	Not known, no data available			
Commercial urns		2.8-3.0		

304

305 As U.K. accounted for 19% of the EU28 sales, the estimate of the stock for EU27 has to be
306 corrected accordingly. After correction, the EU27 stock is assumed to range between 96 Mio and
307 165 Mio kettles in 2020 (see Table 2-12).

---

[14]   interview with Quooker Germany

[15]   See remark in 2.2

308 **Table 2-12: Estimated EU27 stock (based on BIO 2015)**

Product group	EU Stock (millions of units)			
	2010	Today (2015)	2020	2030
Kettles	95–162	95–162	96-165	99-168
Instantaneous hot water heaters and dispensers	Not known, no data available			
Commercial urns		2		

309

310 **Estimate of the stock with a stock model**

311 In a stock model, the stock is assumed as equal to the cumulated sales over a period
312 corresponding to the technical lifetime of a product and is calculated in each year *y* as follows:

313 **Equation 2-2**

$$stock_y = \sum_{j=y-lifetime+1}^{y} sales_j$$

315

316 **Technical lifetime of kettles**

317 Based on the review carried out in Task 3, a technical lifetime of 6 years is assumed for kettles.
318 The same technical lifetime is assumed for other stand-alone products in this study.

319 **Boiled water heaters**

320 According to the study carried out by VHK 2010 on the boiled water heaters from Quooker, the
321 lifetime of such products is 13.2 years.

322

323 **TRENDS FOR STOCK IN THE FUTURE**

324 The stock in the base year (2018) is calculated based on the historical sales (see Equation 2-2).[16]
325 The equipment rate is calculated over the time and the trend is extrapolated until 2030. The future
326 stock for each product is then calculated on the basis of the equipment rate[17] and number of
327 households (see Figure 2-3 and Table 2-13).

328 Based on the data gathered and assumptions previously made, the stock of water kettles will
329 increase from 83 million units in 2020 to 89 million units by 2030, as a result of the combined
330 effect of the changing number of households in the EU and an increasing equipment rate.

331 The stock figures in 2020 reported in Table 2-12 (96-165 million units, based on BIOS 2015) are
332 16% to 96% higher than those estimated with the stock model (83 million units) of this study. The
333 BIOS figures were not specific to the household sector while the GfK figures don't cover the B2B
334 channel, and therefore underestimate the sales of in the commercial sector. It is therefore

---

[16] As a stock model is used, the stock of one year is always equal to the cumulated sales over the product lifetime.

[17] historical trend is extrapolated

335   assumed that EU27 sales (for all sectors) were 16% higher than the sales reported by GfK in Table
336   2-8.[18]

337   The water kettles will represent over 99% of the electric kettle stock in the future. Among water
338   kettles, 0.2% are urns (see Figure 2-5), accordingly, the stock of urns is around 192,000 units.
339   This figure is considerably lower than the 2 million units mentioned in the study on the Ecodesign
340   Working Plan 2015-2017 (BIO 2015). This gap might lie in the definition of the products: BIO
341   reported the stock of commercial urns, while the estimate in the present report considered large
342   kettles reported by GfK, sold through channels for non-professional customers. The number of urns
343   sold for domestic uses are assumed to be much less than commercial urns purchased by hotels,
344   offices, etc.

345   **Figure 2-3: Estimated EU27 stock of electric kettles (own calculation)**
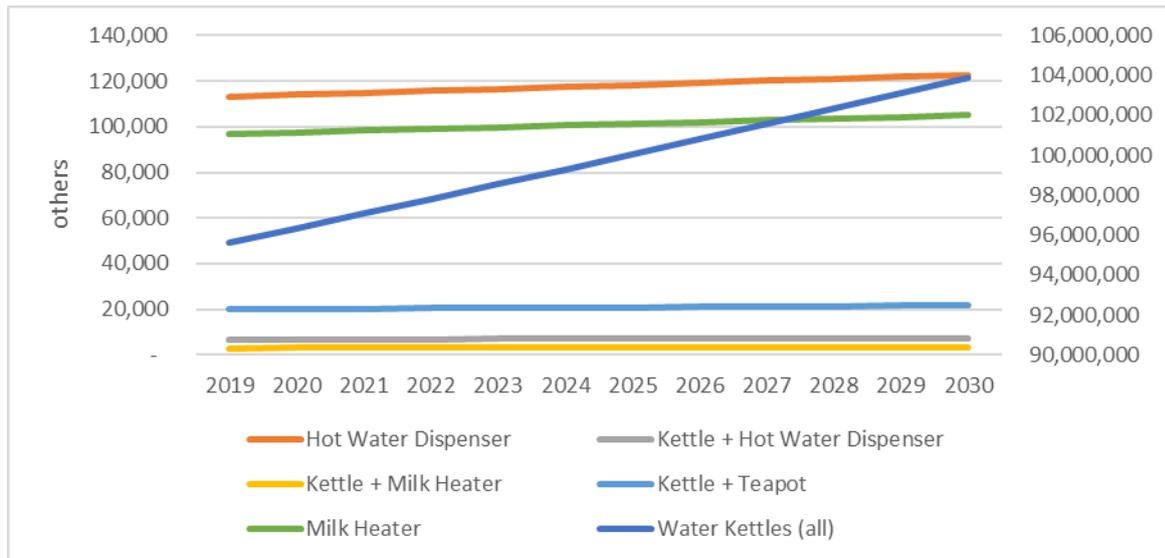
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347

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348 **Table 2-13: Estimated EU27 sales and stock of electric kettles (own calculation)**

		2020	2025	2030
Sales [units]	Hot Water Dispenser	19,417	22,614	21,064
	Kettle + Hot Water Dispenser	1,493	681	399
	Kettle + Milk Heater	169	375	2,006
	Kettle + Teapot	1,158	1,933	8,114
	Milk Heater	16,055	18,859	16,400
	Water Kettle[19],[20]	15,465,579	17,102,074	17,848,846
Stock [units]	Hot Water Dispenser	113,945	118,311	122,844
	Kettle + Hot Water Dispenser	6,763	7,022	7,291
	Kettle + Milk Heater	2,968	3,082	3,200
	Kettle + Teapot	20,086	20,856	21,655
	Milk Heater	97,506	101,242	105,121
	Water Kettle[21]	96,351,249	100,042,983	103,876,167
Equipment rate [%]	Hot Water Dispenser	0.06%	0.06%	0.05%
	Kettle + Hot Water Dispenser	0.00%	0.00%	0.00%
	Kettle + Milk Heater	0.00%	0.00%	0.00%
	Kettle + Teapot	0.01%	0.01%	0.01%
	Milk Heater	0.05%	0.05%	0.05%
	Water Kettle[22]	49.71%	53.25%	57.04%

349

2.4. *Subtask 2.3- Market trends*

351 <u>General objective of subtask 2.3:</u>

352 The purpose of this task is to identify market trends such as:

---

[19] figures are 16% higher than in Table 2-8 to include sales not covered by GfK.

[20] of which 0.2% are urns

[21] of which 0.2% are urns

[22] of which 0.2% are urns

353	•	general market trends (growth/ decline, if applicable per segment), trends in product-design and product-features;
354		
355	•	market channels and production structure; identification of the major players (associations, large companies, share SMEs, employment);
356		
357	•	trends in product design/ features, illustrated by recent consumer association tests
358		(valuable, but not necessarily fully representative of the diversity of products put on the
359		market).

360 *2.4.1.   Market trends*

361 2.4.1.1.   *Water kettles*

362 For most of the features (see Figure 2-4), the market shares are stable over time.

363 **Figure 2-4: Market shares according to water kettle characteristics (source: based on**
364 **GfK 2020)**
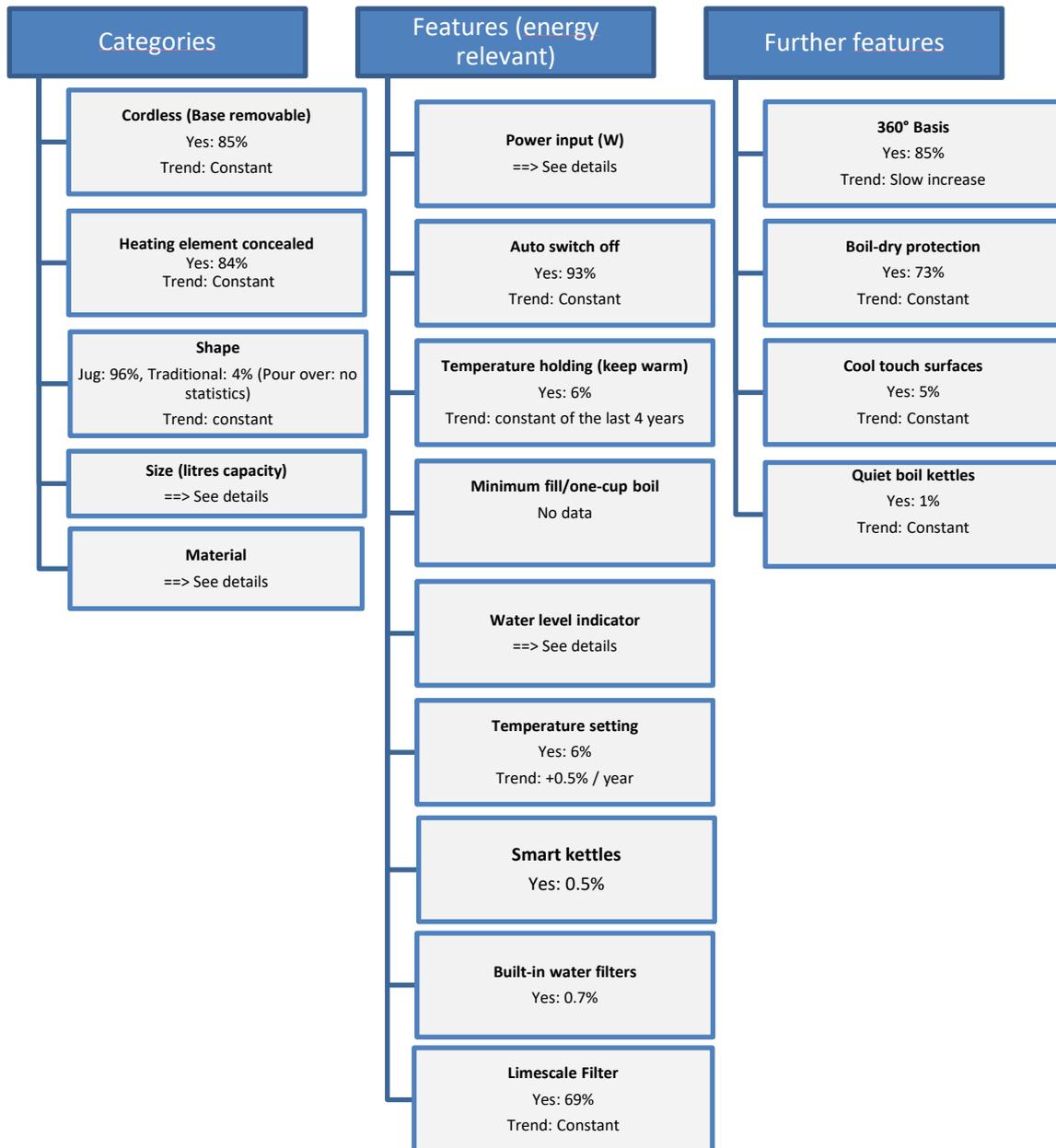
365

366

367   Based on the statistics in Figure 2-5, the product team assumes that:

368   • kettles with the option "temperature setting" have also the option "temperature holding".
369   The market shares (6%) are the same and the required technologies for both features are
370   quite similar.
371   • "360° basis" kettles might have "concealed element". Here, the required technologies are
372   not linked, but the market shares are similar. However low-priced kettles are rather those
373   having none of these features.

374   In the following, some key features or characteristics are analysed and presented more in details.

375   **Rated volume**

376   Figure 2-5 and Table 2-14 present the distribution of the sales in the EU27 according to the rated
377   volume. Over 50% of the water kettles have a volume of around 1.7 litres. Water kettles with a
378   volume of around 1l or 1.5l are the next favourite ones in the EU, with each covering 14% of the
379   market share. Large kettles / urns have less than 1% of the market share, but this kind of
380   appliances might be purchased on non-household consumer market places, which were not covered
381   by GfK.

382   **Figure 2-5: EU27-sales of water kettles according to rated volume (source: GfK 2020)**
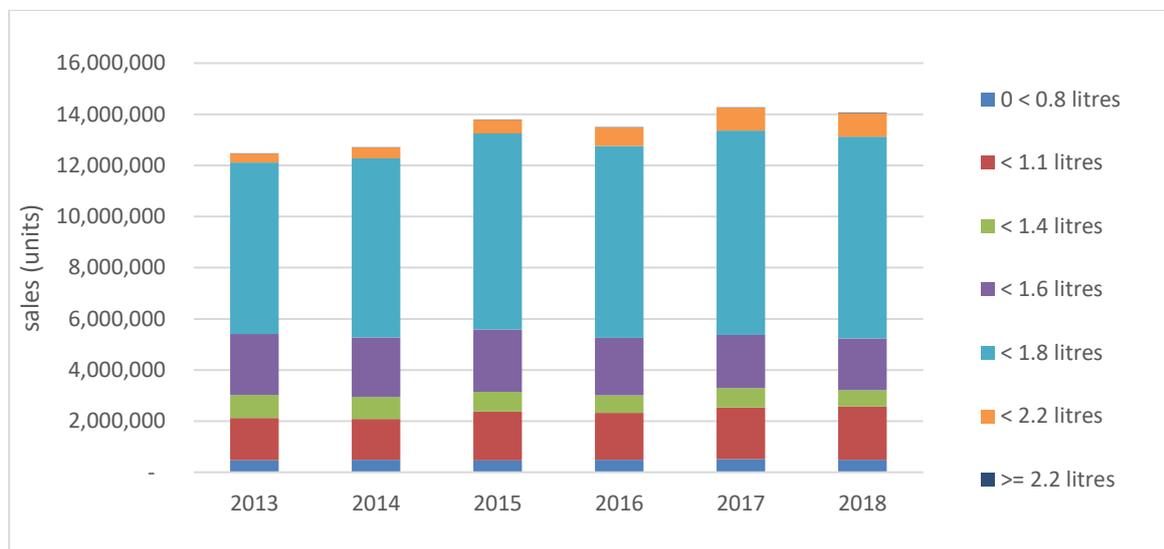
383

384

385   **Table 2-14: EU27 market shares of kettles according to rated volume (source: GfK 2020)**

Volume [litre]	2013	2014	2015	2016	2017	2018
< 0.8	3.77%	3.85%	3.31%	3.62%	3.61%	3.51%
< 1.1	13.31%	12.53%	13.88%	13.64%	14.20%	14.77%
< 1.4	7.14%	6.77%	5.67%	5.07%	5.30%	4.48%
< 1.6	19.15%	18.35%	17.63%	16.61%	14.55%	14.43%
< 1.8	53.83%	55.11%	55.56%	55.61%	55.95%	56.05%
< 2.2	2.73%	3.35%	3.90%	5.40%	6.29%	6.56%
>= 2.2	0.08%	0.04%	0.05%	0.06%	0.11%	0.20%

386

387 **Material of the housing**

388 Figure 2-6 and Table 2-15 provide an overview of the EU market in terms of material of the water
389 kettle housing. In 2018, plastic was the most common material with a 46% market share, although
390 the trend is decreasing. At present, metal is almost on a par (44%) and glass represents 9% of the
391 market with a steady growth since 2013 (1% of the market at that time).

392 **Figure 2-6: EU27 sales of water kettles according to the material of the housing (source:**
393 **GfK 2020)**
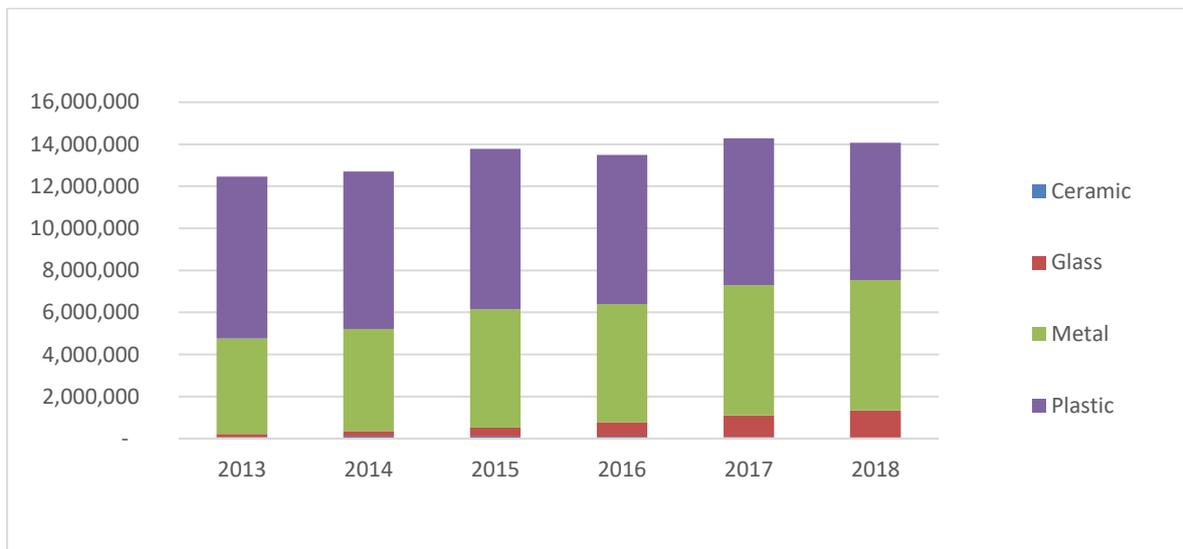
394

395

396 **Table 2-15: EU27 market shares of water kettles according to the material of the housing**
397 **(source: GfK 2020)**

Material	2013	2014	2015	2016	2017	2018
Ceramic	0.52%	0.73%	0.72%	0.67%	0.49%	0.39%
Glass	1.28%	2.05%	3.04%	5.18%	7.18%	9.16%
Metal	36.39%	38.26%	40.90%	41.64%	43.46%	44.05%
Plastic	61.80%	58.96%	55.34%	52.51%	48.86%	46.40%

398

399 **Rated power**

400 As shown in Figure 2-7 and Table 2-16, the power range of 2,200 W -2,400 W is the most popular
401 among water kettles, with 44% of market share in 2018. Kettles with 2,400 W-2,800 W rated
402 power represent 20% of the market. According to GfK, almost no appliance on the EU27 market
403 has more than 3,200 W rated power.[23]

---

[23] Even large kettles (urns) have a power level below 3,200 W. This is due to the fact that urns
have a large volume but their main function is to maintain the water at the desired temperature,
the performance is less focused on the time required to heat the water.

404 **Figure 2-7: EU27-sales of water kettles according to the rated power (source: GfK 2020)**

405

406

407 **Table 2-16: EU27 market shares of water kettles according to the rated power of the**
408 **housing (source: GfK 2020)**

Rated power [W]	2013	2014	2015	2016	2017	2018
< 1,800	14.82%	13.52%	13.43%	12.95%	13.68%	14.24%
< 2,000	2.82%	2.77%	3.05%	3.26%	4.08%	4.55%
< 2,200	20.42%	19.58%	16.39%	14.58%	12.81%	12.21%
< 2,400	33.88%	36.09%	39.53%	43.15%	44.65%	43.93%
< 2,800	21.81%	22.63%	22.27%	21.54%	20.33%	20.42%
< 3,200	6.25%	5.40%	5.33%	4.52%	4.44%	4.66%
>= 3,200	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

409

410 **Water level**

411 Only few water kettles (6%) do not provide any information regarding the water level. This figure
412 was only 3% in 2013 (see Figure 2-8 and Table 2-17).

413 **Figure 2-8: EU27-sales of water kettles according to the water level indication (source:**
414 **GfK 2020)**
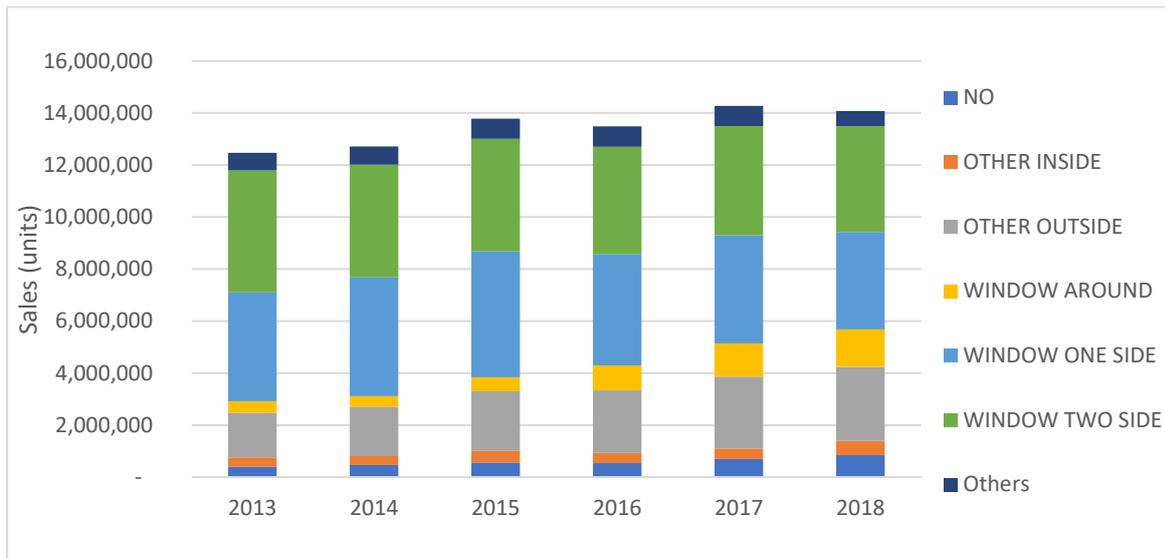
417 **Table 2-17: EU27 market shares of water kettles according to the water level indication**
418 **(source: GfK 2020)**

Water level indication	2013	2014	2015	2016	2017	2018
no	3.22%	3.64%	4.10%	3.99%	4.84%	6.03%
other inside	2.85%	2.75%	3.23%	2.91%	2.91%	3.93%
other outside	13.84%	14.95%	16.55%	17.81%	19.28%	20.09%
window around	3.47%	3.16%	3.96%	7.09%	8.93%	10.31%
window one side	33.63%	35.93%	35.21%	31.68%	29.16%	26.56%
window two side	37.60%	34.11%	31.33%	30.65%	29.47%	28.91%
others	5.39%	5.47%	5.63%	5.86%	5.41%	4.17%

420 2.4.1.2. *Hot water dispensers*

421 **Rated Volume**

422 Figure 2-9 and Table 2-18 present the distribution of the sales in the EU27 according to the rated
423 volume. The minimum volume of water dispenser is 1.4 l. The 1.4-1.6 l range represents roughly
424 20% of the market. Currently, over 2/3 of the hot water dispensers have a rated volume of 1.8 l or
425 more, however, a clear shift from the 1.8-2.2 l range to larger appliances has occurred after 2016.

426 **Figure 2-9: EU27 sales of hot water dispensers according to rated volume (source: GfK**
427 **2020)**
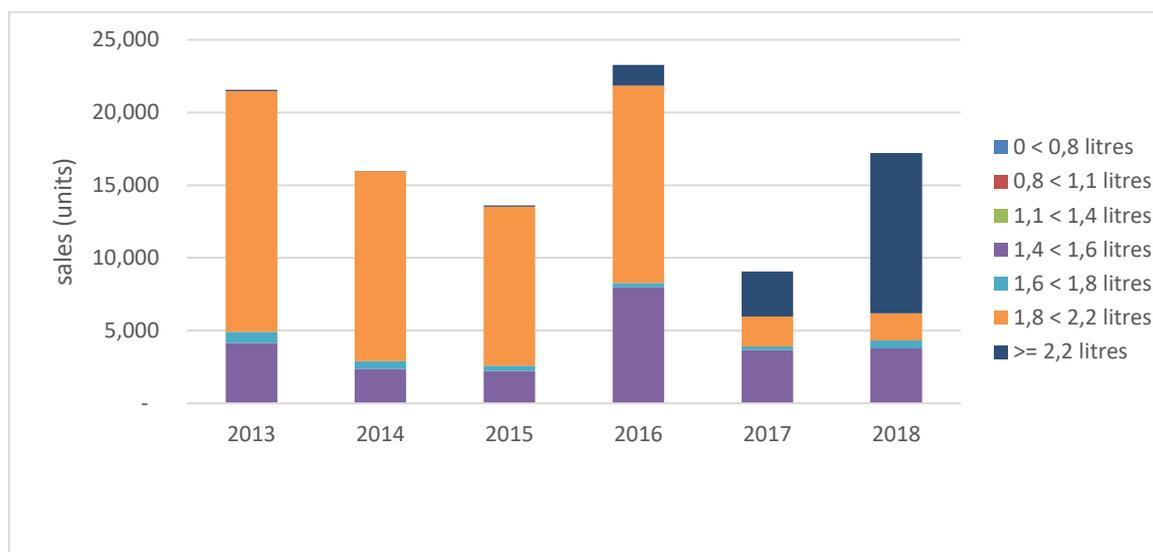
428

429

430 **Table 2-18: EU27 market shares of hot water dispensers according to rated volume**
431 **(source: GfK 2020)**

Volume [litre]	2013	2014	2015	2016	2017	2018
< 0.8	0%	0%	0%	0%	0%	0%
< 1.1	0%	0%	0%	0%	0%	0%
< 1.4	0%	0%	0%	0%	0%	0%
< 1.6	19%	13%	13%	35%	26%	20%
< 1.8	4%	3%	2%	1%	2%	3%
< 2.2	77%	70%	64%	61%	15%	10%
>= 2.2	0%	0%	1%	6%	22%	57%

432

433 **Rated power**

434 As hot water dispensers are a specific type of instantaneous water heaters, the rated power is
435 relatively high. Since 2017, 85% of the hot water dispensers had a typical power of 2,400 W or
436 even higher, as shown in Figure 2-10 and Table 2-19.

Figure 2-10: EU27 sales of hot water dispensers according to the rated power (source: GfK 2020)
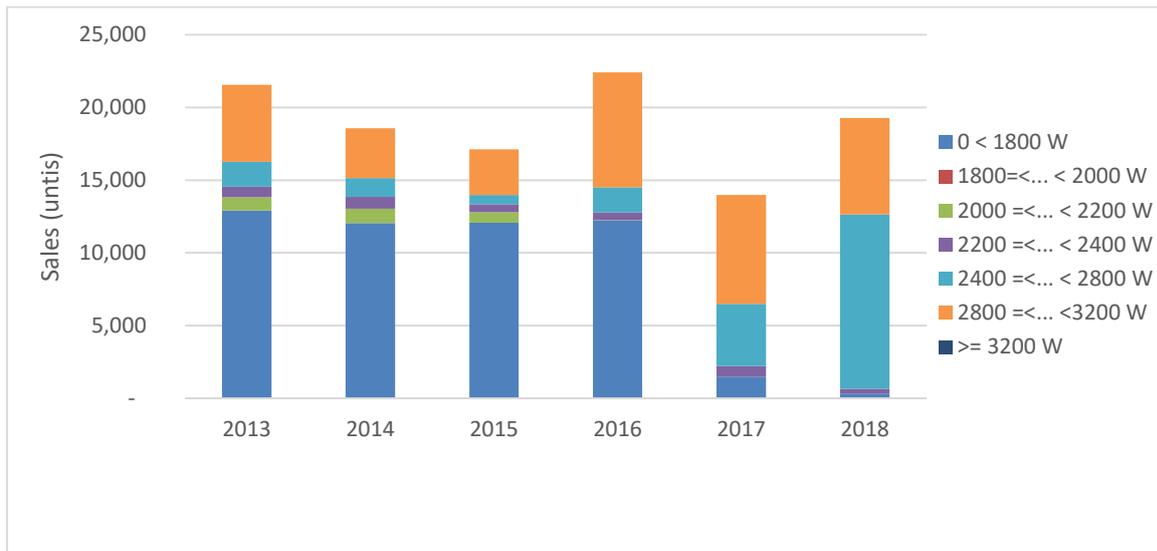
Table 2-19: EU27 market shares of hot water dispensers according to the rated power (source: GfK 2020)

Rated power [W]	2013	2014	2015	2016	2017	2018
< 1,800	60%	65%	70%	54%	11%	2%
< 2,000	0%	0%	0%	0%	0%	0%
< 2,200	4%	5%	4%	0%	0%	0%
< 2,400	3%	4%	3%	2%	5%	2%
< 2,800	8%	7%	4%	8%	31%	62%
<3,200	25%	18%	18%	35%	54%	34%
>= 3,200	0%	0%	0%	0%	0%	0%

2.4.1.3. *Urns*

Water kettles with a maximum capacity of over 2.2 litres are considered as urns in this study. According to GfK figures:

- 71% of the urns sold on the EU27 market have a volume between 2.2 and 5 litres, 29% between 5 and 10 litres
- the typical wattage is between 2,200 W and 2,400 W
- almost all urns have concealed heat elements

2.4.1.4. *Boiling water heaters*

No detailed information on this type of products.

453 *2.4.2.   Manufacturers and trade associations*

454 Since there is no dedicated association representing water kettle manufacturers, the European
455 home appliance industry association APPLiA[24] is the main representative. Some APPLiA members[25]
456 produce small appliances, including water kettles.

457 Many kettle manufacturers are competing on the EU market. Most of them are large enterprises
458 even if there are also small manufacturers in the competition. Since the differentiation of kettles is
459 rather limited, the product group can be considered as homogeneous. Competition in this product
460 category is fierce.

461 According to some EU manufacturers, most of the kettles are developed[26] and produced by only a
462 few Chinese kettle manufacturers. Regarding kettle controls - one of the main components of a
463 kettle - two suppliers (OTTER and STRIX) have a predominant position in the market.

464 Table 2-20 presents key figures of some APPLiA members, which among other produce electric
465 kettles. The annual report of companies was analysed. On average, the net margin is 5% and the
466 turnover per employee is 223,212 €.

467 **Table 2-20: Key figures of some large manufacturers (source: manufacturers)**

Manufacturer	Turnover [M€]	Profit (gross) [M€]	Profit (net) [M€]	Employees	Profit (net) / Turnover [%]	Turnover / employee [€]
Arcelik[27]	5,032	1,616	150	31,534	3%	159,574
Electrolux[28]	11,184	214	171	48,652	2%	229,882
Philips[29]	19,482	1,644	1,173	80,495	6%	242,027
Groupe SEB[30]	7,354	740	380	34,000	5%	216,294
De'Longhi[31]	2,106	280	162	7,850	8%	268,280
Average	9,032	899	407	40,506	5%	223,212

468

469 In addition, APPLiA provides an overview of the home appliance industry in Europe (Table 2-21).
470 The turnover per employee is close to the figures provided in Table 2-20. APPLiA reported that for
471 each direct employee, are 3.4 indirect employees involved. We assume that this last figure might

---

24   https://www.applia-europe.eu/

25   e.g. BSH, Arcelik, Electrolux, Philips, Groupe SEB and De'Longhi

26   based on the specifications of the EU brands

27   http://www.arcelikas.com/UserFiles/file/Annual%20Report_2019_23.03.2020_compressed.pdf

28
      https://www.electroluxgroup.com/annualreports/2019/files/AR_2019/PDF/Electrolux_AnnualReport_2019.pdf

29   https://www.results.philips.com/publications/ar19#highlights

30   https://www.groupeseb.com/en/groupe-seb-brief

31   https://www.delonghigroup.com/sites/default/files/Annual%20Report%202019_2.pdf

472 apply rather for space heating products than for kettles, as maintenance and inspection aspects are
473 not comparable.

474 **Table 2-21: Home appliance industry in Europe, in 2017 (source: APPLiA 2019)**

Category	Value
Turnover in the EU [Mio. €]	50,000
Number of enterprises in the EU	3,453
Number of direct employees	200,960
Number of indirect employees	683,264
Wages & salaries [€]	31,628
Turnover / employee [€]	248,806

475

476 *2.4.3.   Market actors and the role of installers, maintenance companies and inspection*

477 Kettles are stand-alone appliances, purchased in physical or online shops which need neither
478 maintenance nor an inspection by a professional.

479 The situation is more complex for boiling water heaters. The main distribution channel is the
480 kitchen studio, as these systems are purchased when a new (high end) kitchen or a thorough
481 retrofit of the existing kitchen is planned. After the planning of the kitchen, the boiled water heater
482 has to be installed. Regular descaling can be done by customers but every few years, a
483 maintenance is necessary. This is usually carried out by the maintenance service or the trained
484 staff of the manufacturer.

485 **2.5.   Subtask 2.4- Consumer expenditure base data**

486 General objective of subtask 2.4:

487 This task will define:

488   • average EU consumer prices, incl. VAT (for consumer prices)/ excl. VAT (for B2B products),
489   in euros;
490   • consumer prices of consumables;
491   • repair and maintenance costs (euro/product life);
492   • installation costs (for installed appliances only);
493   • indicative disposal tariffs/ taxes (euro/product).

494 For electricity, fossil fuel, water, interest, inflation and discount rates this task will use values from
495 the MEErP methodology, including the average annual price increases mentioned therein. Also an
496 approach will be elaborated for regional differentiation of consumer prices that can be used in a
497 sensitivity analysis in Task 7.

498 Data

499 Here again, the main data sources regarding price information are the figures provided by GfK as
500 well as Statista. In addition and for products not covered by the previous sources, a desk research
501 was carried out to get a rough overview of the market.

502 *2.5.1.   Average EU consumer prices*

503 2.5.1.1.   *Water kettles*

504 Based on the GfK data, the average EU consumer prices for a water kettle was 26 EUR in 2018.
505 Statista reports an average price which is slightly higher: 31 EUR in 2019. However, the price
506 depends on some characteristics (see Table 2-22) and features of the products.

507 **Table 2-22: Average EU price of water kettles according to the max. volume (source: GfK**
508 **2020)**

Volume max [litres]	Price [EUR]
< 0.8	17
< 1.1	23
< 1.4	31
< 1.6	29
< 1.8	28
< 2.2	17
>= 2.2	22

509

510 2.5.1.2. *Hot water dispensers*

511 In 2018, the price for a typical hot water dispenser sold on the EU market was 73 EUR (GfK 2020).
512 However, the price depended on the volume of the tank (see Table 2-23).

513 **Table 2-23: Average EU price of hot water dispensers according to the max. volume**
514 **(source: GfK 2020)**

Volume max	Price [EUR]
0 < 0,8 litres	n.a.
0,8 < 1,1 litres	n.a.
1,1 < 1,4 litres	n.a.
1,4 < 1,6 litres	42
1,6 < 1,8 litres	52
1,8 < 2,2 litres	67
>= 2,2 litres	86

515

516 2.5.1.3. *Urns*

517 Based on a small sample of 13 urns,[32] the average price of an urn was estimated to be 58 EUR.

518 2.5.1.4. *Boiling water heaters*

519 Modell of two manufacturers of boiling water heaters could be fund. On average, the purchase price
520 for the system – providing boiled water only – which includes the tank and the tap is about 1,500 €
521 / system (Table 2-24).

---

[32] own desk research

522 **Table 2-24: Price of boiling water heaters (incl. tap)**

Product	Price [EUR]
Quooker Pro 3[33]	1,120 – 2,290
Grohe Red MONO[34]	1,505

523

524 *2.5.2. Consumer prices of consumables*

525 All appliances consume water and electricity, for which the specific costs are presented in the next
526 section. The yearly costs for water and electricity will depend then on the usage and the
527 performance of each product or base case.

528 2.5.2.1. *General data*

529 • Energy costs (electricity)

530 The most accepted source currently available for such projections is the 'EU Reference Scenario
531 2016 Energy, transport and GHG emissions Trends to 2050'[35] elaborated by the European
532 Commission. This study explains how today's electricity price is composed of several components,
533 see Figure 2-11. Not all components can be taken into account, especially fixed costs that cannot
534 be avoided by energy savings, because there will be a rebound effect in the cost per kWh when the
535 costs have to be distributed across fewer kWh sales. In this model the grid and sales costs increase
536 over time due to the increasing share of RES, and particularly variable distributed RES. Hence it is
537 reasonable to take part of the grid cost into account due to the cost avoidance effect that more
538 efficient transformers will produce.

539 Therefore further tasks can use the PRIMES forecasted average end user prices for households and
540 the service sector as indicated in Table 2-25.

541 **Figure 2-11: Decomposition of electricity generation costs and prices (€ per MWh)**
542 **historical and forecast values (source: PRIMES)**

543

544

---

[33] tank and tap: https://www.quooker.de/preisliste

[34]
https://www.reuter.de/kueche.html/filter/hersteller/grohe/serie/red?adword=google%2FGrohe%20DE%2FGrohe%20Serien%20Kueche%2F%2Bgrohe%20%2Bred
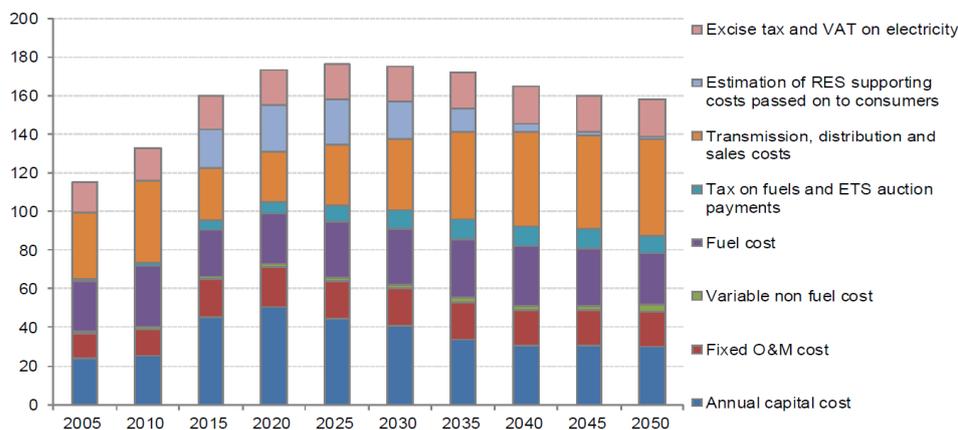
[35] EU Reference Scenario 2016 Energy, transport and GHG emissions Trends to 2050, Main results (2016), available at:
https://ec.europa.eu/energy/sites/ener/files/documents/20160712_Summary_Ref_scenario_MAIN_RESULTS%20%282%29-web.pdf

Table 2-25: Decomposition of electricity generation costs and prices (€ per kWh) historical and forecast values (source: based in PRIMES with data supplied by the EC services)

€/kWh	2020	2025	2030	2035	2040
Average price	0.1532	0.1575	0.1609	0.1654	0.1651
Industry	0.0977	0.0988	0.0999	0.1014	0.1016
Households	0.2032	0.2092	0.2123	0.2171	0.2152
Services	0.1709	0.1760	0.1791	0.1837	0.1824

- Water

EUROSTAT does not gather statistics on water prices but OECD provides some figures (OECD 2015). The prices in selected major EU cities for the year 2013 are shown in Figure 2-12.

Figure 2-12: Water prices in selected major EU cities, 2013 (source: OECD 2015)
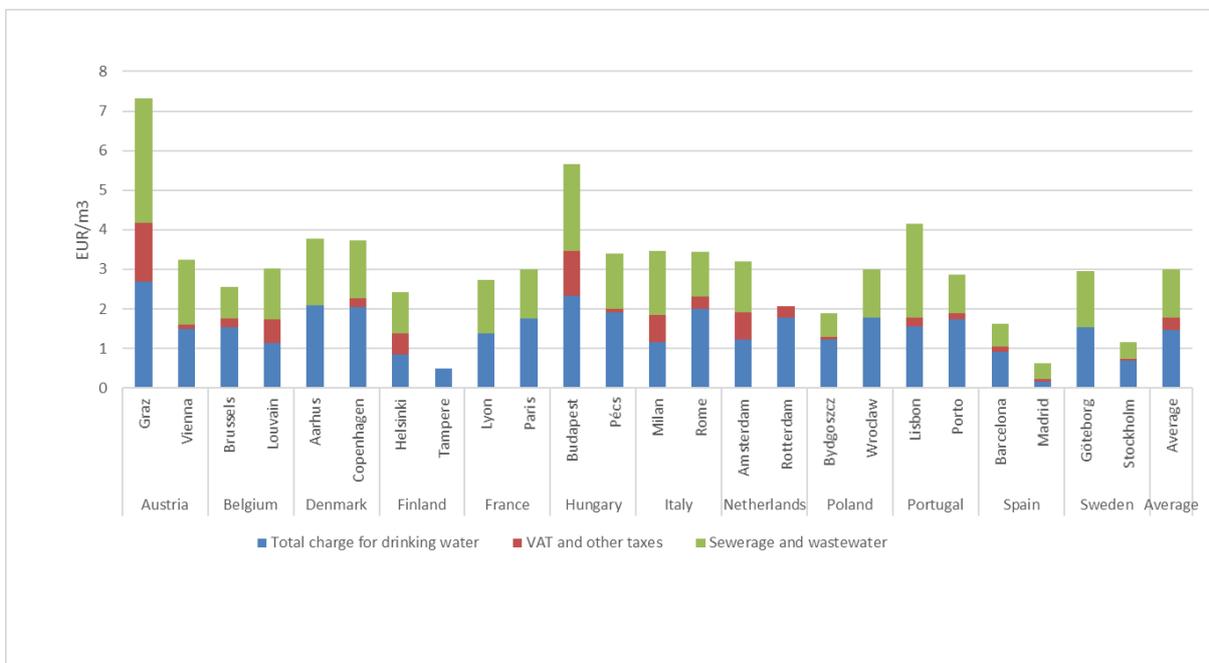
On average on the data shown in Figure 2-12, households paid 2.99 €/m3 incl. costs for sewerage/wastewater and VAT in 2013. An escalation rate of 2.5% will be applied.[36]

2.5.2.2. *Water kettles*

Water kettles are simple appliances. Apart from the electricity and water costs, the running costs consist of decalcifying/cleaning and filters, for the kettles with built-in water filters.

- Descaling/cleaning

---

[36] see (COWI and VHK, 2011)

560 Regular descaling prolongs the life of the kettle and limits the risks of premature breakdown.[37]
561 According to Stiftung Warentest (2013), in regions with hard water, a kettle has to be descaled
562 every 100 l. Manufacturers advice to descale between once every 3 months (soft water) and once
563 every month (hard water). For this purpose, white vinegar or a commercial descaling agent (citric
564 acid based) has to be used.

565 Manufacturers (e.g. Grundig[38]) recommend following descaling procedure (using white vinegar):

566   1. Fill the kettle with water, up to three quarters of the maximum level.

567   2. Add white vinegar or lemon acid in the kettle up to the maximum level.

568   3. Boil the solution (refer to Operation section).

569   4. After the kettle has switched off, unplug the appliance.

570   5. Leave the solution in the kettle for a few hours.

571   6. Pour out the solution and rinse the inside thoroughly.

572   7. Fill the kettle with clean water and boil the water.

573   8. Empty the kettle and rinse it with water again.

574 The price of 1 litre of white vinegar is: 0.40 €

575 The yearly cost related to the cleaning of a water kettle will be:

576   -   white vinegar

577 Assuming that 1 l of white vinegar costs 0.40 €[39], the yearly white vinegar costs are:

578   1/4 x (4 + 12) / 2 x 0.4 = 2 x 0.4 = 0.8 € / litre of rated volume of the kettle

579   -   electricity

580 In addition to white vinegar, electricity costs have to be taken into account for descaling. Following
581 the instructions of manufacturers, boiling twice the total max volume of the kettle is necessary
582 every time the kettle will be descaled. Assuming the kettle will be descaled 8 times a year, the
583 yearly energy costs for descaling will be 16 times the energy consumption of a boiling cycle.

584   -   water

585 The yearly amount of water used for descaling will be:

586   (3/4 + 1) x (4 + 12) / 2 = 14 l / litre of rated volume of the kettle

587
588   • Built-in water filter

---

[37] according to Which?, 'Limescale problems' accounted for 13% of all faults in the Which! survey (and this doesn't account for all problems that may be related to a limescale build-up, such as a faulty lid).

[38] https://grundig-manuals-live.nureg.de/fileadmin/Export/Manuals/WK/WK_7680_BDA.pdf

[39] average price based on a sample of 4 countries (France, Germany, Hungary and Spain), own desk research

589 Some of the water kettles have a limescale filter or cartridge, which is built in the reservoir of the
590 kettle. According to some manufacturers, cartridges have to be replaced every four weeks or 100 -
591 150 litre.[40] The price is around 3 € per cartridge.

592 Accordingly, the annual costs for built-in water filters are 36 €.

593 *2.5.3.   Repair and maintenance costs*

594 In 2019, Which? carried out a survey among its 4,800 members asking them about their
595 satisfaction regarding their water kettle,[41] and reported three major faults:[42]

596 • faulty lid: 15%
597 • broken limescale filter: 14%
598 • leaking: 12 %

599 While leaking is almost impossible to be fixed, faulty lid and broken limescale filter can be easily
600 replaced by end-users, assuming the corresponding spare parts are available.

601 Table 2-26 provides an overview of the price of some spare parts in relation to the price of new
602 kettles:

---

[40] see https://www.brita.com.au/filters-cartridges and
https://www.warenvergleich.de/wasserfilter/?tr_source=google&tr_medium=cpc&gid=EAIaIQo
bChMIjf6orIfC6QIVCLp3Ch1Llg6LEAAYAyAAEgLSTvD_BwE&v=p

[41] Which? (2020)

[42] Other faults can be auto cut-off failing (7% of the reported faults)

603 **Table 2-26: Indicative price[43] of spare parts**

Product	Purchase Price [EUR]	Filter Price [EUR]	Price Share %	Lid Price [EUR]	Price Share %	Other
Bosch TWK6003V01	119.00	3.80	3%	6.00	5%	Base: 11.60
Bosch TWK6004N01	47.00	3.80	8%	4.90	10%	Base: 17.90
Siemens TW86103P	65.00	3.05	5%	n.a.	n.a.	Base: 10.15
Bosch TWK8611P	64.00	3.05	5%	n.a.	n.a.	Base: 31.90
Ritter Fontana 5	125.99	6.00	5%	21.61	17%	Base: 69.00 Water tank: 73.00
Clatronic WK 3445	13.99	3.00	21%	n.a.	n.a.	
Severin WK 3644	15.00	2.00	13%	2.00	13%	
ProfiCook-WKS 1167	51.99	n.a.	n.a.	n.a.	n.a.	
Russell Hobbs 21600-57	36.99	15.00	41%	n.a.	n.a.	
Emerio WD-118981	57.99	n.a.	n.a.	n.a.	n.a.	
WMF Stelio 1,7l	35.41	6.00	17%	n.a.	n.a.	
Russel Hobbs Buckingham 20460-56	49.49	15.00	30%	n.a.	n.a.	
Average			15%		11%	

604

605 However, reparations are carried out only if the costs are low compared to the purchase price.

606 The reparation costs are assumed to be:

607 **Equation 2-3**

608
$$\%P_{reparation} = \sum_{faults} \left(\%P_{\_part} \times \%Occurency\_part\right)$$

609
$$\%P_{reparation} = 15\% \times 11\% + 14\% \times 15\% = 4\%$$

610 In this preparatory study, it is assumed, that reparation costs will correspond to 4% of the
611 purchase costs over the lifetime of the product. This figure seems realistic and reasonable. For
612 simple products, it is accepted that up to around 1/3 of the purchase price is acceptable.[44]

---

[43]   including VAT but excluding shipping costs

[44]   see Task 2 of BIO 2011

613   As the customers can carry out the reparation, no labour costs are assumed.

614   The short desk research of spare part prices showed that:

615   -   water tanks are usually not available as spare parts, even for kettles with glass tanks. The
616   Ritter Fontana 5[45] was the only kettle for which a new water tank can be purchased (58%
617   of the kettle purchase price)

618   –   bases are available. The price for simple bases is much lower than for bases integrating
619   temperature controls (15% vs. 50% of the kettle purchase price)

620   –   shipping prices might be higher than the cost of the spare parts. This might limit the
621   chance for the consumer to decide to purchase a spare part

622

623   *2.5.4.   Installation costs*

624   Not applicable for kettles, hot water dispensers and urns as they are light stand-alone appliances.

625   **Boiling water heaters**

626   In the case of boiling water heaters, an installation is necessary in order to place and connect the
627   system under the countertop / sink unit. According to manufacturers, the installation costs are
628   between 100 € and 200 €, therefore 150 € are assumed.

629   *2.5.5.   Disposal tariffs/ taxes*

630   **Water kettles and hot water dispensers**

631   Water kettles as well as hot water dispensers belong to the WEEE[46] Category 5 "Small equipment
632   (no external dimension more than 50 cm)". According to Annex V of the WEEE directive:

633   *Minimum targets applicable by category from 15 August 2018 for WEEE falling within*
634   *category 5 or 6 of Annex III,*

635   *— 75 % shall be recovered, and*

636   *— 55 % shall be prepared for re-use and recycled;*

637

638   Table 2-27 provides the EEE fees for a kettle. When the fees are not calculated per unit but per kg,
639   a 1.5 kg water kettle was considered.

---

[45]   the only electric kettle awarded by Blue Angel

[46]   Directive on waste electrical and electronic equipment, see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019

640 **Table 2-27: Disposal fee for kettles**

Country	Disposal fee[47]
France[48]	0.30 EUR / unit
Germany[49]	0.12 EUR / unit
EU[50]	0.30 EUR / unit[51]

641

642 For this study, 0.30 EUR disposal fee for a water kettle or hot water dispenser will be considered

643 **Boiling water heaters**

644 According to the figures found in France[52], the disposal fee for boiling water heaters are 3 EUR/unit.

645

2.6. *Subtask 2.5- Recommendations*

647 **General objective of subtask 2.5:**

648 This task makes recommendations with regard to a refined product scope from an economical/
649 commercial perspective (e.g. excluding niche markets) and identifies barriers and opportunities for
650 Ecodesign from the economical/ commercial perspective.

651

652 **General conclusion**

653 This task could provide detailed information on the EU27 market for following products: electric
654 water kettles, hot water dispensers, kettles + hot water dispensers, kettles + teapots. In this task
655 report, urns were assumed to be large electric water kettles between 2.2 litres and 10 litres. A brief
656 insight in the boiling water heater market was also provided.

657 Sales of electric water kettles are in 2020 around 15.5 million units/year and are assumed to grow
658 slowly, reaching 17.8 million units/year by 2030. The stock is assumed to be 96.3 Mio million
659 units/year in 2020. Other product groups are clearly niche markets, representing together 1% of
660 the sales of the electric water kettles.

661 The data gathered by GfK was very detailed in terms of technical details and provided a clear
662 picture of the market and of the trends. Among electric water kettles, 15% have immersed heating
663 elements and 6% pre-set temperatures.

664 Subtask 2.4 shows that the purchase costs for an electric water kettle are low: 26 EUR in the
665 EU27, which is much lower than the costs for a boiling water heater (almost 60 times more
666 expensive).

---

[47] based on the assumption that a kettle weighs 1.5 kg

[48] Eco Participation tariffs: https://www.popai.fr/docs/Bareme_detaille_01032017.pdf

[49] 85 € / t for category 5 , see: https://www.elektrogesetz.de/umsetzung/kosten/

[50] Table 2 in Sousa et al. 2018

[51] Average of the EU MS covered by the study: 0.20 EUR/kg.

[52] Eco Participation tariffs: https://www.popai.fr/docs/Bareme_detaille_01032017.pdf

667 Task 2 figures would support the preliminary conclusions of Task 1, stressing that this preparatory
668 study should focus on electric water kettles only.

669 The task 2 market data is already structured and segmented according to the user data in Task 3
670 and in line with Task 1.

671

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ANNEX A

TableAnnex 2-1: Yearly sales and stock figures for kettles in the EU27 (source: own calculation based on GfK 2020)

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	EU27 Households	182,264,200	183,843,800	185,164,400	186,594,300	188,787,000	190,772,200	191,210,900	192,489,900	193,807,100	195,021,100	196,493,170	197,976,351	199,470,727	200,976,384	202,493,406	204,021,878
sales	Hot Water Dispenser	18,821	18,821	18,821	21,563	18,563	17,133	22,421	13,983	19,263	21,727	19,417	17,993	23,287	14,856	20,143	22,614
	Kettle + Hot Water Dispenser	1,081	1,081	1,081	403	1,442	3,127	779	444	292	628	1,493	3,178	830	496	344	681
	Kettle + Milk Heater	501	501	501	415	147	66	279	143	1,959	352	169	88	302	166	1,982	375
	Kettle + Teapot	3,260	3,260	3,260	1,403	1,007	2,880	3,985	2,490	7,797	1,777	1,158	3,031	4,138	2,644	7,952	1,933
	Milk Heater	16,061	16,061	16,061	17,692	15,324	17,459	16,520	14,512	14,859	18,101	16,055	18,195	17,262	15,259	15,612	18,859
	Water kettles (Gfk)	11,398,757	11,754,393	12,110,028	12,465,663	12,710,124	13,788,260	13,493,268	14,275,653	14,074,792	14,097,053	13,332,396	14,415,229	14,124,970	14,912,123	14,716,066	14,743,167
	Water Kettles (not B2C: +16%)	1,823,801	1,880,703	1,937,604	1,994,506	2,033,620	2,206,122	2,158,923	2,284,105	2,251,967	2,255,528	2,133,183	2,306,437	2,259,995	2,385,940	2,354,570	2,358,907
	Water Kettles (all)	13,222,559	13,635,096	14,047,633	14,460,170	14,743,744	15,994,381	15,652,191	16,559,758	16,326,758	16,352,581	15,465,579	16,721,665	16,384,965	17,298,063	17,070,636	17,102,074
stock	Hot Water Dispenser	112,927	112,927	112,927	115,669	115,411	113,723	117,323	112,485	112,927	113,091	113,945	114,805	115,672	116,545	117,424	118,311
	Kettle + Hot Water Dispenser	6,488	6,488	6,488	5,810	6,171	8,216	7,914	7,277	6,488	6,712	6,763	6,814	6,865	6,917	6,969	7,022
	Kettle + Milk Heater	3,009	3,009	3,009	2,922	2,567	2,132	1,910	1,551	3,009	2,946	2,968	2,991	3,013	3,036	3,059	3,082
	Kettle + Teapot	19,562	19,562	19,562	17,705	15,452	15,071	15,796	15,026	19,562	19,936	20,086	20,238	20,391	20,545	20,700	20,856
	Milk Heater	96,367	96,367	96,367	97,997	97,260	98,658	99,118	97,568	96,367	96,776	97,506	98,242	98,984	99,731	100,484	101,242
	Water kettles (Gfk)	63,058,015	65,191,827	67,325,639	69,459,451	71,482,088	74,227,226	76,321,736	78,842,997	80,807,760	82,439,150	83,061,422	83,688,391	84,320,092	84,956,562	85,597,836	86,243,951
	Water Kettles (not B2C: +16%)	10,089,282	10,430,692	10,772,102	11,113,512	11,437,134	11,876,356	12,211,478	12,614,880	12,929,242	13,190,264	13,289,827	13,390,143	13,491,215	13,593,050	13,695,654	13,799,032
	Water Kettles (all)	73,147,297	75,622,519	78,097,741	80,572,963	82,919,222	86,103,582	88,533,214	91,457,876	93,737,002	95,629,414	96,351,249	97,078,533	97,811,307	98,549,612	99,293,490	100,042,983
equipment rate	Hot Water Dispenser	0.0583%	0.0583%	0.0583%	0.0597%	0.0595%	0.0587%	0.0605%	0.0580%	0.0583%	0.0580%	0.0577%	0.0574%	0.0572%	0.0569%	0.0566%	0.0563%
	Kettle + Hot Water Dispenser	0.0033%	0.0033%	0.0033%	0.0030%	0.0032%	0.0042%	0.0041%	0.0038%	0.0033%	0.0034%	0.0035%	0.0036%	0.0037%	0.0038%	0.0039%	0.0040%
	Kettle + Milk Heater	0.0016%	0.0016%	0.0016%	0.0015%	0.0013%	0.0011%	0.0010%	0.0008%	0.0016%	0.0015%	0.0015%	0.0014%	0.0014%	0.0013%	0.0013%	0.0013%
	Kettle + Teapot	0.0101%	0.0101%	0.0101%	0.0091%	0.0080%	0.0078%	0.0082%	0.0078%	0.0101%	0.0102%	0.0102%	0.0104%	0.0105%	0.0106%	0.0107%	0.0110%
	Milk Heater	0.0497%	0.0497%	0.0497%	0.0506%	0.0502%	0.0509%	0.0511%	0.0503%	0.0497%	0.0496%	0.0496%	0.0495%	0.0494%	0.0493%	0.0492%	0.0490%
	Water Kettles (all)	37.7423%	39.0195%	40.2966%	41.5738%	42.7844%	44.4275%	45.6811%	47.1902%	48.3661%	49.0354%	49.7140%	50.4019%	51.0904%	51.8065%	52.5234%	53.2502%

		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	EU27 Households	205,561,888	207,113,522	208,676,868	210,252,015	211,839,052	213,438,068	215,049,153	216,672,400	218,307,899	219,955,743	221,616,026	223,288,841	224,974,283	226,672,447	228,383,429
sales	Hot Water Dispenser	20,310	18,893	24,194	15,770	21,064	23,541	21,244	19,834	25,142	16,725	22,026	24,511	22,222	20,819	26,135
	Kettle + Hot Water Dispenser	1,546	3,231	884	550	399	736	1,601	3,287	940	607	456	793	1,659	3,346	999
	Kettle + Milk Heater	192	111	326	189	2,006	399	216	136	350	214	2,031	425	242	162	376
	Kettle + Teapot	1,315	3,190	4,298	2,805	8,114	2,096	1,480	3,356	4,465	2,974	8,284	2,267	1,652	3,529	4,640
	Milk Heater	16,819	18,965	18,038	16,041	16,400	19,653	17,618	19,771	18,849	16,858	17,223	20,483	18,455	20,613	19,698
	Water kettles (Gfk)	13,983,388	15,071,134	14,785,826	15,577,968	15,386,936	15,419,102	14,664,404	15,757,312	15,477,183	16,274,543	16,088,770	16,126,233	15,376,893	16,475,158	16,200,448
	Water Kettles (not B2C: +16%)	2,237,342	2,411,381	2,365,732	2,492,475	2,461,910	2,467,056	2,346,308	2,521,170	2,476,349	2,603,927	2,574,203	2,580,197	2,460,303	2,636,025	2,592,072
	Water Kettles (all)	16,220,730	17,482,516	17,151,558	18,070,443	17,848,846	17,886,158	17,010,732	18,278,482	17,953,532	18,878,470	18,662,973	18,706,430	17,837,196	19,111,183	18,792,520
stock	Hot Water Dispenser	119,204	120,104	121,010	121,924	122,844	123,771	124,705	125,647	126,595	127,551	128,513	129,483	130,461	131,446	132,438
	Kettle + Hot Water Dispenser	7,075	7,128	7,182	7,237	7,291	7,346	7,402	7,457	7,514	7,570	7,628	7,685	7,743	7,802	7,861
	Kettle + Milk Heater	3,105	3,129	3,152	3,176	3,200	3,224	3,249	3,273	3,298	3,323	3,348	3,373	3,399	3,424	3,450
	Kettle + Teapot	21,013	21,172	21,332	21,493	21,655	21,819	21,983	22,149	22,316	22,485	22,655	22,826	22,998	23,171	23,346
	Milk Heater	102,006	102,776	103,552	104,334	105,121	105,915	106,714	107,520	108,331	109,149	109,973	110,803	111,639	112,482	113,331
	Water kettles (Gfk)	86,894,942	87,550,848	88,211,704	88,877,549	89,548,420	90,224,354	90,905,391	91,591,568	92,282,925	92,979,500	93,681,334	94,388,465	95,100,933	95,818,779	96,542,044
	Water Kettles (not B2C: +16%)	13,903,191	14,008,136	14,113,873	14,220,408	14,327,747	14,435,897	14,544,863	14,654,651	14,765,268	14,876,720	14,989,013	15,102,154	15,216,149	15,331,005	15,446,727
	Water Kettles (all)	100,798,133	101,558,983	102,325,577	103,097,957	103,876,167	104,660,251	105,450,253	106,246,219	107,048,193	107,856,220	108,670,347	109,490,619	110,317,082	111,149,784	111,988,771
equipment rate	Hot Water Dispenser	0.0560%	0.0558%	0.0555%	0.0552%	0.0549%	0.0546%	0.0544%	0.0541%	0.0538%	0.0535%	0.0533%	0.0530%	0.0527%	0.0524%	0.0521%
	Kettle + Hot Water Dispenser	0.0041%	0.0042%	0.0043%	0.0044%	0.0045%	0.0046%	0.0047%	0.0048%	0.0049%	0.0050%	0.0050%	0.0051%	0.0052%	0.0053%	0.0054%
	Kettle + Milk Heater	0.0012%	0.0012%	0.0011%	0.0011%	0.0011%	0.0010%	0.0010%	0.0009%	0.0009%	0.0008%	0.0008%	0.0007%	0.0007%	0.0006%	
	Kettle + Teapot	0.0111%	0.0113%	0.0114%	0.0115%	0.0116%	0.0118%	0.0119%	0.0120%	0.0122%	0.0123%	0.0124%	0.0125%	0.0127%	0.0128%	0.0129%
	Milk Heater	0.0489%	0.0488%	0.0487%	0.0486%	0.0485%	0.0485%	0.0484%	0.0483%	0.0482%	0.0481%	0.0480%	0.0479%	0.0478%	0.0477%	0.0475%
	Water Kettles (all)	53.9870%	54.7341%	55.4915%	56.2594%	57.0379%	57.8272%	58.6274%	59.4387%	60.2612%	61.0951%	61.9405%	62.7976%	63.6666%	64.5476%	65.4408%

Green: Data from GfK scaled up for EU27

GETTING IN TOUCH WITH THE EU

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