AGENDA

1. WHITE GOODS PRODUCTION
2. SMALL HOME APPLIANCE PRODUCTIONS
3. HVAC PRODUCTION
4. PATENTS IN DURABLE CONSUMER GOODS AND HVAC
5. R&D CENTERS FOR DURABLE CONSUMER GOODS AND HVAC
Türkije is the second-largest producer worldwide, accounting for 7% of global white goods production.

**Key Takeaways**

- 15K Retailer
  - 3500
  - After Sales

- 60K Direct
  - 600K Indirect
  - Employment

- 33 million unit
  - Production

- 23 million unit
  - Export

- 9.5 million Unit
  - Domestic Market

Source: Turkbost, Euromonitor.
TÜRKİYE IS THE SECOND LARGEST PRODUCER IN THE SECTOR

**MAJOR DOMESTIC APPLIANCES GLOBAL PRODUCTION (MILLION UNITS)**

*China Excluded (275 Million Units)*

Source: Euromonitor Database
Turkey is the largest white goods producer in Europe and 2nd largest in the world with a total of almost 60,000 employees.

There are nine significant white good companies that have production facilities in Turkey:

1. **Arçelik**
   - Offers a wide product range with 12 brands (Arçelik, Beko, Grundig etc.). Arçelik A.Ş.' global presence spans more than 50 countries including China and the United States. It operates through its 82 international subsidiaries and over 4,500 branches in Turkey. The company operates 31 production plants and 30 R&D centers in the world.

2. **Bosch-Siemens**
   - The Group, one of the largest white goods manufacturers in Europe, relocated its factory from China to Turkey with a significant investment of 70 million euros. Additionally, Candy Haier Qingdao Haier officially completed the acquisition of the Candy Hoover Group in 2019.

3. **Vestel**
   - Vestel Group of Companies comprises 25 companies, 15 of which are located overseas. With 20,000 employees including 1,800 R&D staff, the company is engaged in efforts that shape our industry. We are bringing our technology to 163 countries of the world.

4. **Whirlpool**
   - Whirlpool manufacturing mainly refrigerator and washing machine with Hotpoint, Whirlpool and Indesit brands. Arçelik signed an agreement to acquire Whirlpool’s enterprise in Manisa. (May 2021)

5. **Silverline**
   - Silverline exports to more than 70 countries. The company is one of the top five hood manufacturers in Europe and one of the top ten in the world and has an annual production volume of 2.3 million.

6. **Kumtel**
   - Kumtel has been among Turkey’s top 500 industrial firms since 2005. In 2016, the company expanded its production and opened a home appliances factory in Ethiopia.

7. **Simfer**
   - Simfer is one of the leading Turkish manufacturer of home appliances with exporting to more than 150 countries and is placed in top 500 industrial corporations in Turkey with a 6 million unit annual production capacity.

8. **Franke**
   - Franke completed the acquisition of the Faber Group in 2004. Franke opened its factory in Manisa with 1.5 million product capacity that is 5th biggest production in the world.

9. **B/S/H/**
   - BSH Group’s largest manufacturing center is located in Çerkezköy, just 80 miles from Istanbul. They serve with main brands (Bosch, Siemens), special brands (Gaggenau) and local brand (Profilo).

Turkish white goods industry exports 75% of its production, mostly to European countries.
WHITE GOODS PRODUCTION IN TÜRKİYE

BELOW MAP SHOWS LOCATION AND PRODUCT LINES OF THE FACILITIES. ISTANBUL, TEKIRDAG, MANISA, ANKARA, ESKİŞEHİR AND KAYSERI HAVE EVOLVED TO BE CLUSTERS FOR WHITE GOODS PRODUCTION.

Source: Turkish Statistical Institute Industry & Services Statistics NACE Rev2 Division 28, Central Bank of Republic of Türkiye
WHITE GOODS IN THE LAST 5 YEARS

PRODUCTION, EXPORT AND DOMESTIC SALES OF 6 MAIN PRODUCTS

PRODUCTION AND EXPORT CAPACITY INCREASED IN 5 YEARS (UNIT)

PRODUCTION (UNIT)

- Oven: 5,285,303 (2019), 6,446,600 (2023) (+14.76%)
- Dish Washer: 7,495,900 (2019), 5,893,647 (2023)
- Dryer: 2,512,367 (2019), 1,181,873 (2023)
- Freezer: 1,181,873 (2019), 2,914,519 (2023)
- Refrigerator: 5,830,636 (2019), 7,715,819 (2023)

EXPORT (UNIT)

- Oven: 5,200,107 (2019), 5,200,107 (2023)
- Washing Machine: 4,775,700 (2019), 4,775,700 (2023)
- Dryer: 2,364,394 (2019), 2,364,394 (2023)
- Refrigerator: 4,777,024 (2019), 4,777,024 (2023)

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis
WHITE GOODS IN THE LAST 5 YEARS

EXPORT OF 6 MAIN PRODUCTS

TÜRKİYE WHITE GOODS EXPORT

<table>
<thead>
<tr>
<th>Product</th>
<th>2019 Unit</th>
<th>2023 Unit</th>
<th>+%6</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREEZER</td>
<td>5,673,874</td>
<td>5,887,459</td>
<td></td>
</tr>
<tr>
<td>OVEN</td>
<td>4,411,664</td>
<td>4,777,024</td>
<td></td>
</tr>
<tr>
<td>REFRIGERATOR</td>
<td>3,931,054</td>
<td>4,006,864</td>
<td></td>
</tr>
<tr>
<td>WASHING MACHINE</td>
<td>717,872</td>
<td>2,363,550</td>
<td></td>
</tr>
<tr>
<td>DRYER</td>
<td>2,364,394</td>
<td>2,364,394</td>
<td></td>
</tr>
<tr>
<td>DISH WASHER</td>
<td>5,200,107</td>
<td>5,200,107</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis, Turkish Electric Electronics Exporter Union Report
With a production capacity of 33 million units, the Turkish white goods industry has emerged as a significant production hub over the last decade. Türkiye has ascended to become the leading country in Europe in the white goods sector.

The Turkish market witnessed an increase in domestic sales from 6.8 million units in 2013 to 9.5 million units by the end of 2023.

As Europe's largest and the world's second largest production base for white goods, the sector accounts for 7% of the world's white goods production.

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### Domestic Sales Increased In 5 Years

<table>
<thead>
<tr>
<th>Product</th>
<th>2019</th>
<th>2023</th>
<th>+%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oven</td>
<td>816.737</td>
<td>1.332.131</td>
<td>66.39</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>1.719.567</td>
<td>2.415.036</td>
<td>40.06</td>
</tr>
<tr>
<td>Washing Machine</td>
<td>766.617</td>
<td>838.106</td>
<td>9.24</td>
</tr>
<tr>
<td>Dryer</td>
<td>166.410</td>
<td>1.064.689</td>
<td>514.30</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>1.933.046</td>
<td>2.590.108</td>
<td>34.10</td>
</tr>
<tr>
<td>Freezer</td>
<td>697.914</td>
<td>816.737</td>
<td>17.30</td>
</tr>
</tbody>
</table>

DOMESTIC SALES (UNIT)

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis, TÜRKSOYO
TÜRKİYE HAS A STRONG INDUSTRIAL BASE WITH A TOTAL PRODUCTION VALUE OF USD 4 BILLION...

- Türkiye is Europe’s manufacturing base for panel radiator, boiler and AHUs.
- The sector in the last ten years to reach USD 1.9 Billion.
- Europe has over 47% share.
Türkije has a strong industrial base with a total production value of USD 3.2 billion...

In addition to the major manufacturers there are some companies which are focusing to manufacture commercial refrigerators as well as deep-freezers in Türkiye.

PRODUCTION CAPACITIES FOR SOME PRODUCTS (UNIT)

- Heat Exchanger
- Split AC
- VRF Indoor
- Fancoil
- Air handling unit
SMALL HOME APPLIANCES PRODUCTION IN TÜRKİYE

TÜRKİYE HAS A STRONG INDUSTRIAL BASE WITH A TOTAL PRODUCTION VALUE OF TRY 4.5 BILLION…

**KEY FACTS**

- **TRY 4.5 billion** total market size
- **80%** capacity utilization rates
- **60% share** of local market in total sales
- **20K** total employment

**MANUFACTURERS ARE MOST DENSELY LOCATED IN FIVE CITIES**

Supply products for the production are mainly flat steel, plastics, copper and aluminum. Istanbul, Bursa, Tekirdag, Manisa, Ankara, Eskisehir, Konya and Kayseri are the clusters for the supply products.

40% of Türkiye's turnover is realized in the Marmara Region where SHA sector has grown more than doubled between 2013-2018 from TRY 2 billion to TRY 4.5 billion.

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis, TURKBESD
World exports of the small household appliances industry reached USD 53 billion. Türkiye’s market size is TRY 4.5 billion. In 2018, 15.2 Mio small household appliances were sold.

NUMBERS OF EMPLOYERS

<table>
<thead>
<tr>
<th>City</th>
<th>Manufacturer</th>
<th>Engineer</th>
<th>Technician</th>
<th>Expert</th>
<th>Worker</th>
<th>Admin. Staff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>İstanbul</td>
<td>214</td>
<td>519</td>
<td>756</td>
<td>603</td>
<td>10.341</td>
<td>1.341</td>
<td>13.774</td>
</tr>
<tr>
<td>Manisa</td>
<td>32</td>
<td>300</td>
<td>203</td>
<td>141</td>
<td>9.650</td>
<td>594</td>
<td>10.920</td>
</tr>
<tr>
<td>Eskişehir</td>
<td>21</td>
<td>384</td>
<td>196</td>
<td>86</td>
<td>6.797</td>
<td>232</td>
<td>7.716</td>
</tr>
<tr>
<td>Tekirdağ</td>
<td>18</td>
<td>330</td>
<td>170</td>
<td>581</td>
<td>5.947</td>
<td>276</td>
<td>7.322</td>
</tr>
<tr>
<td>Kayseri</td>
<td>41</td>
<td>138</td>
<td>59</td>
<td>188</td>
<td>3.716</td>
<td>420</td>
<td>4.562</td>
</tr>
<tr>
<td>Türkiye</td>
<td>525</td>
<td>2.563</td>
<td>2.109</td>
<td>2.325</td>
<td>49.469</td>
<td>4.341</td>
<td>64.272</td>
</tr>
</tbody>
</table>

Source: The Union of Chambers and Commodity Exchanges of Türkiye (TOBB) database
SMALL HOME APPLIANCES FOREIGN TRADE IN TÜRKİYE

EXPORT OF SMALL HOME APPLIANCES INCREASED %15 IN THE LAST FOUR YEARS

Sources: Ministry of Science, Industry and Technology, TURKSTAT, UN Comtrade HS Code 8516
SMALL HOME APPLIANCES PRODUCTION IN TÜRKİYE

1.2 BILLION OUT OF $490 MILLION IMPORTS WERE MADE FROM CHINA. CHINA’S SHARE IN TÜRKİYE’S IMPORTS IN 2023 IS 48%.

EXPORT BY COUNTRIES (%)

- Germany: 11%
- France: 10%
- Russian Federation: 6%
- Spain: 5%
- Italy: 6%
- Greece: 2%
- Poland: 3%

IMPORT BY COUNTRIES (%)

- China: 48%
- Romania: 16%
- Malaysia: 9%
- Spain: 3%
- France: 3%
- Italy: 3%
- Germany: 5%
- Slovenia: 2%
- United Kingdom: 11%
- Russia: 6%
- Greece: 2%
- Poland: 3%
- France: 3%

Sources: Ministry of Science, Industry and Technology, TURKSTAT, UN Comtrade HS Code 8516
RECENT INVESTMENTS IN WHITE GOODS AND HVAC PRODUCTION IN TÜRKİYE

MAJOR INVESTMENTS DONE IN THE RECENT YEARS FOR WHITE GOODS AND HVAC PRODUCTION IN TÜRKİYE:

2021: Arçelik – acquisition of Whirlpool Manisa production facility for **EUR 78.3 Million**

2020: Whirlpool - modernization in Manisa production facility with **TRY 97 Million**

Investment 2019: Bestherm - Ferroli partnership in boiler production at Bursa facility at **EUR 5 Million**

2019: Haier – acquisition of Candy Hoover Eskisehir production facility and expansion with **TRY 850 Million** investment.  
2021: Haier - washing production factory in Eskişehir with an **EUR 40 million** investment.

2019 and 2014: Franke – modernization in Manisa facility around **TRY 75 Million**

2018: Vestel - drying machine investment in Manisa production facility – **750K units**

2018: Mitsubishi – USD 100 Million greenfield investment in Manisa for AC production

2018 and 2013: BSH – modernization in Tekirdag production facility at almost **TRY 2 Billion**

2017 and 2014: Demirdöküm – modernization in Bozüyük production facility at **TRY 52 Million**

Source: Ministry of Science, Industry and Technology, Investment Office Team Analysis, TURKBESD
FROM 2010 TO 2019, THE NUMBER OF DOMESTIC PATENT APPLICATIONS IN THE FIELD OF WHITE GOODS AND HOUSEHOLD ELECTRICAL APPLIANCES INDUSTRY IN TÜRKİYE AMOUNTED TO 5,217

In terms of the number of patents, Arçelik ranks first, followed by Vestel in second place, and BSH in third place.

Sources: Patent Effect, Patent Map of Türkiye as of March 2020
From 2010 to 2019, the number of domestic patent applications in the field of white goods and household electrical appliances industry in Türkiye amounted to 5,217.

Top ten domestic companies that published patent applications in Türkiye (Unit):

1. Arçelik
2. Vestel
3. BHS Türkiye
4. SER Dayanıklı Tüketime
5. TURAS Gaz Aramaturleri
6. Klijasan
7. Uğur Sogutma
8. ARZUM
9. Oztiryakiler
10. Eksen Makine

Top twenty patent filing companies in durable consumer goods and household electrical appliances industry (Unit):

1. Indesit Türkiye
2. Doruk Ev Gerecleri
3. Senur Elektrik Motorlari
4. Femas Metal
5. Hursultan
6. Olimpiyat Dayanıklı Tüketime
7. Fimak Firin Makinalari
8. Ulubas Madeni Esya
9. Erina Mas Makina
10. Inoksan

Source: Patent Effect, Patent Map of Türkiye as of March 2020
AS OF JANUARY 2024, 21 OPERATIONAL R&D CENTER IN DURABLE CONSUMER GOODS INDUSTRY AND 18 OPERATIONAL R&D CENTER IN HVAC INDUSTRY...
AS OF FEBRUARY 2024, 21 OPERATIONAL R&D CENTER IN DURABLE CONSUMER GOODS INDUSTRY AND 18 OPERATIONAL R&D CENTER IN HVAC INDUSTRY...

Source: Ministry of Industry and Technology invest.gov.tr