Siltronic – a leading producer of silicon wafers

Fact Book
Investor Relations
October 2017
BUSINESS ENVIRONMENT

...operating in a continuous growing and improving environment.........
Increasing demand for electronic devices and new applications drive semiconductor growth, which in turn fuels silicon demand.

Electronics value chain 2016

- **Electronics**
  - USD 1,457bn

- **Semiconductors**
  - USD 327bn

- **Semiconductors silicon wafers**
  - USD 7.2bn

- **Silicon for electronic applications**
  - USD 1.2bn

Source: Electronics (IC Insights), Semiconductors (WSTS, only silicon-based), Silicon wafers (SEMI SMG), electronic applications (WACKER estimate)
Siltronic is a strong wafer supplier with leading-edge technology

Top 5 wafer producers serve more than 90% of market across all diameters

Sources: Companies’ revenue reports 2016, converted to USD million
Value creation at Siltronic
International manufacturing network supports market leadership and business focus

High volume facilities for 300 mm in Germany and Singapore

Among world’s newest & largest fabs in Singapore

SSW majority strengthens fab network and market position

(1) crystal pulling
Customer base well diversified across all major semiconductor
Silicon wafer consumers

Siltronic is a supplier to all top 20 Silicon wafer consumers

Siltronic well positioned at all major Silicon consumers

Top 10 customers represent ~72% of 2016 revenues

Source: Company Information, Siltronic
SILTRONIC - AN INDUSTRY TECHNOLOGY LEADER

......Technological leadership - a constant race for improvement.....
Flatness just one example – A number of key ingot & wafer properties needs to be continuously improved to meet customers’ requirements.

**Ingot**
- doping level
- purity
- oxygen content
- homogeneity

**Wafer**
- edge flatness
- flatness
- uniformity
- surface cleanliness
- shape
- resistivity

**Key properties**
- mechanical stability
“More Moore” – Siltronic’s technology roadmap will stay “One Generation Ahead”

Siltronic’s Design Rule roadmap follows road to “More Moore”

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</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>22 / 16 nm</td>
<td>16 nm</td>
<td>16 / 11 nm</td>
<td>11 nm</td>
<td>11 / 8 nm</td>
<td>8 nm</td>
<td>8 / 5 nm</td>
<td>5 nm</td>
<td>5 / 3.5 nm</td>
<td>3.5 nm</td>
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</tbody>
</table>

300 mm development

- 16 nm ➔ Commercialization
- 11 nm Development ➔ Commercialization
- 8 nm Development ➔ Commercialization
- 5 nm Development Commercialization
Siltronic DR projects develop processes for upcoming wafer requirements one generation ahead

The transition to the next DR typically requires an improvement of critical wafer parameters by ~ 30%!

- Surface defects
- Shape
- Crystal homogeneity
- Surface/bulk metals
- Local/near-edge flatness
  
  Specifications down to 20nm!

How small is 20nm?

20nm height on a wafer ≈ a flat leave on the surface of the Chiemsee.

Image source: www.chiemsee-alpenland.de
Siltronics offers a broad product portfolio to address all high volume wafer types and to meet different application requirements

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Process</th>
<th>Share of portfolio</th>
<th>Product</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>CZ</td>
<td>~60%</td>
<td>Double side polished wafer Epitaxial wafer Argon annealed wafer Ultimate Silicon™</td>
<td>Memory, Logic, Analog</td>
</tr>
<tr>
<td>125 – 200 mm + SD</td>
<td>CZ + FZ</td>
<td>~40%</td>
<td><strong>Standard products:</strong> Polished wafer Epitaxial wafer Cut/lapped/etched wafer</td>
<td>Logic, Analog, Discretes, Microprocessors, Image sensors, Power and opto-electronics, IGBTs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Special products:</strong> Lowly-doped and highly-doped wafer</td>
<td></td>
</tr>
</tbody>
</table>

Note: CZ: Czochralski crystal growing, FZ: Float zone technology
Siltronic is a leader in wafer technology and quality

Technology leadership complemented with the highest level of quality

- First supplier to ship 300mm wafers
- Development of 8 nm design rule started in 2013 (commercialization 2017);
- Concurrently optimizing on 50+ wafer parameters of each design rule
- >400 engineers worldwide
- Approximately 1,700 patents issued and pending (as of Dec. 31, 2016)
- Single wafer traceability for 300mm
- Standardized processes across sites enabling “copy exactly” at product level

- Quality awards from several top semiconductor players
SILTRONIC PERFORMANCE

...well prepared to gain from future growth.....
Siltronic is focused on growing 300mm and attractive 200mm business

Development of total wafer demand per diameter, in million 300mm equivalents per month

Source: SEMI up to June 2017, Siltronic estimates
300mm wafer demand is expected above industry supply capacity, after almost a decade of oversupply

300mm effective capacity vs. demand, kpcs per month

- Gap between supply and demand expected to increase further in 2018

Sources: SEMI, IHS, Siltronic
20 years back more than half of the semiconductor sales was for computing – today's markets are much more diversified

Silicon demand less volatile on broader application and markets

Sources: Computer History Museum, Catalog 107273410, WSTS 2017
Ever new applications for electronic devices and the infrastructure to support them continue to drive silicon demand.
SSDs and industrial applications remain the main drivers for silicon demand. Turnaround in PC and tablet market also helps.

**Computing**
- Servers, mobile PCs and PC upgrades drive demand for SSDs.
- Mobile PC units will decline in 2017 but at the slowest rate in 10 years.

**Mobile Phones**
- Smartphone shipments are expected to grow.
- Technology migrations and content are key for silicon demand.

**Industrial**
- Industrial automation, smart homes and medical electronics will increase silicon demand for industrial applications in 2017.

**Automotive**
- Semiconductor content in new cars grows, driven by electrification, automated driving and connectivity.
- Vehicle production also rises slowly.

Source: IHS Markit Technology (Semiconductor Silicon Demand Forecast Tool, Q1’17 Update)
END MARKETS

... are much more diverse nowadays.
All electronics are based on silicon
Data explosion: An inflation of connected devices and sensors lead to an unprecedented increase of generation of new data

60 ZB of new data will be generated in 2021. Next year, more will be added...

7 billion connected devices creating 60 ZB of data

- Stored locally
- Sent via internet
- Analyzed at point of generation and storage sites
- Stored in the cloud

Transmit, store and process these data fuels silicon demand
Remember the good old Volkswagen Beetle…
Modern passenger cars are stuffed with electronics

- **Powertrain**
  - Engine / emission control
  - Transmission
  - EV/HEV motor

- **Safety and Control**
  - Airbag
  - Parking assistant
  - Rear monitor
  - Collision warning

- **Electronic Systems**
  - Lighting
  - Battery management
  - Starter
  - Diagnostics

- **Chassis**
  - Steering
  - Braking (ABS)
  - Traction control

- **Comfort and Control**
  - Climate control
  - Power doors
  - Power windows
  - Seat adjustment

- **Infotainment**
  - Car audio
  - Car navigation
  - Dashboard

- **Networking**
  - Intra-car (bus system)
  - Car-2-X communication

Source: McKinsey
Carmakers are working intensively on autonomous driving which will need even more silicon for infrastructure and networks.

 Requirement for Connectivity

- High-definition map downloads in real time
- Sensor data uploads for machine learning
- Over-the-air firmware and software updates

 Benefit of 5G Network

- Faster speed: Handle massive amounts of data generated by autonomous cars
- Ultra latency: Max 10 GB per second (600 times faster than today’s LTE*)
- Vehicle-to-vehicle and vehicle-to-infrastructure connectivity: Maximize use of available data, control traffic

Intel® is offering Intel GO™ Automotive 5G platform for automakers’ development

* Fastest average LTE speeds in the U.S.

Source: Audi EMFT-YOLE Sensors for IoT in Munich (Jul 2017); Intel News Fact Sheet (Jan 2017)
Power devices are everywhere – silicon based devices convert electricity multiple times before consumption.

Conversion of electric energy includes changing voltage, frequency and type of current (direct $\rightarrow$ vs. alternating $\sim$).

Voltage ranges from hundreds of kilo Volts in power lines down to below 1 Volt in the logic chips within your smartphone.

Source: Basics of power electronics, Point The Gap
The more power, the more silicon is needed in the inverter: from fractions of a wafer in an e-bike to ~20 wafers in a train.

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>200 mm wafers</th>
<th>Power (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABB electric train</td>
<td></td>
<td>6000</td>
</tr>
<tr>
<td>CAT large mining truck</td>
<td></td>
<td>3500</td>
</tr>
<tr>
<td>Tesla Model X</td>
<td></td>
<td>500</td>
</tr>
<tr>
<td>BMW i3</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>electric bike</td>
<td></td>
<td>0.25</td>
</tr>
</tbody>
</table>

Source: e-bikeshop.co.uk, pickuptrucks.com, abb.com, tesla.com, bmwusa.com, Siltronic estimates
Industrial semiconductor segment comprises a wide range of applications

- **Medical**
  - diagnostics and control
  - imaging equipment
  - laboratory test
  - patient monitoring

- **Building & Home**
  - built in climate control
  - lighting
  - safety & security equipment

- **Aerospace & Military**
  - aircraft systems
  - radar, sonar, avionics
  - missile guidance
  - military grade computers

- **Manufacturing**
  - manufacturing equipment
  - robotics
  - process control equipment
  - measurement instruments
  - motor controls

- **Power & Energy**
  - equipment for energy production and distribution
  - industrial power supplies
  - energy meters

- **Other Industrial**
  - power tools
  - ATMs
  - ships, golf cars, electric bikes and trains

Source: appliedmaterials.com
STAKEHOLDERS’ BENEFITS

...shareholders to benefit from improved financials.....
Financials improved strongly over the last years

<table>
<thead>
<tr>
<th>Adjusted¹ financial figures (EUR mn)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1030.0</td>
<td>875.5</td>
<td>853.4</td>
<td>931.3</td>
<td>933.4</td>
</tr>
<tr>
<td>EBIT</td>
<td>(75.5)</td>
<td>(87.3)</td>
<td>(31.6)</td>
<td>2.7</td>
<td>27.0</td>
</tr>
<tr>
<td>EBIT margin in %</td>
<td>(7.3)</td>
<td>(10.0)</td>
<td>(3.7)</td>
<td>0.3</td>
<td>2.9</td>
</tr>
<tr>
<td>EBITDA</td>
<td>122.5</td>
<td>112.6</td>
<td>117.7</td>
<td>124.0</td>
<td>146.0</td>
</tr>
<tr>
<td>EBITDA margin in %</td>
<td>11.9</td>
<td>12.9</td>
<td>13.8</td>
<td>13.3</td>
<td>15.6</td>
</tr>
<tr>
<td>CapEx</td>
<td>144.3</td>
<td>39.7</td>
<td>40.7</td>
<td>75.0</td>
<td>88.8</td>
</tr>
<tr>
<td>Free cash flow</td>
<td>(134.4)</td>
<td>64.7</td>
<td>86.3</td>
<td>37.4</td>
<td>19.0</td>
</tr>
</tbody>
</table>

¹ figures 2012-2014 adjusted for consolidation effects resulting from acquisition of SSW and restructuring
Successful cost reduction programs continue

Cost savings, in EUR million\(^1\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost Savings (EUR million)</th>
</tr>
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<tbody>
<tr>
<td>2014</td>
<td>~55</td>
</tr>
<tr>
<td>2015</td>
<td>~45</td>
</tr>
<tr>
<td>2016</td>
<td>~30</td>
</tr>
<tr>
<td>2017</td>
<td>15-20e</td>
</tr>
</tbody>
</table>

Additional savings levers:

- Investing in automation in Germany
- Investing in new pullers to improve yields and capabilities
- Poly cost optimization ongoing
- Further productivity increases through various initiatives

\(^1\) Based on prior year cost basis to current year volumes and adjustments to certain current year costs to reflect prior year contractual and economic parameters (e.g. prior year unit labor cost).
A disciplined approach to capital budgeting – priority is to support and secure our business

Capital budgeting priorities

Selective investment in our business
1. Capability improvement
2. Cost reduction
3. Debottlenecking and extensions

Further strengthening our balance sheet
1. High cash position in semiconductors needed
2. Flexibility to quickly execute potential future strategic options

Shareholder remuneration (dividends)

- Continuously
- Strongly improved
- First dividend to be paid in 2018
Outstanding Cost Reduction and Efficiency Improvement Track Record

Number of employees

- From 6,953 in 2002 to 3,757 in 2016, a reduction from 7 to 4 sites.

Variable costs of 300 mm wafer (Germany), in EUR / Wafer

- More than 40% reduction of the variable unit costs in 300 mm wafer from 2010 to 2016.

300 mm Productivity¹ (Germany)

- Almost 100% increase of employee productivity in 300 mm wafer from 2009 to 2016.

¹ Delivered wafer / paid hours (2009 = 100)

Successful restructuring including Germany

Successful restructuring including Germany

Successful restructuring including Germany
Siltronic share price more than tripled since IPO

Share price

IPO Siltronic, 11th of June 2015 (€30 = 100%)

11th of June 2015 = 100%

18th of Sept. 2017 EUR 93.75

11th of Feb. 2016 EUR 12.30

Source: Bloomberg, 18th September 2017
Shareholder structure

Identified freefloat per region (as of March 30, 2017)

- USA: 40%
- UK: 22%
- Germany: 21%
- Rest of World: 14%

pre-IPO: 100%
post IPO: 42.2%
since March 15, 2017: 69.2%

Wacker Chemie: 57.8%
Free Float: 30.8%
Investment Highlights – Siltronic Strengths

1. Strong market position in semiconductor silicon wafer manufacturing

2. Technology and quality leader

3. Supplier to all top 20 silicon wafer consumers with well-established relationships

4. Strong track record in efficiency improvement and cost reduction

5. Strategic supply of high-quality polysilicon at competitive cost

6. Experienced management team and highly skilled workforce
......no change in our proven strategy while enjoying improving returns.....
Siltronic strategy - capitalize on market opportunities while focusing on 300mm & technological leadership by growing with the market

Improve returns, stay ahead in technology and grow with the market

Strategic Focus

- **Benefit** from market growth
- **Ensure** technology & quality leadership
- **Improve** financial performance & cash flow
- **Execute** cost reduction roadmaps & debottlenecking concepts

We continuously increase the value for our stakeholders by providing best-in-class wafers at competitive costs.
# Contact and Additional Information

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## Additional Information

<table>
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<th>ISIN:</th>
<th>DE000WAF3001</th>
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<tr>
<td>WKN:</td>
<td>WAF300</td>
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<tr>
<td>Deutsche Börse:</td>
<td>WAF</td>
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<tr>
<td>Listing:</td>
<td>Frankfurt Stock Exchange Prime Standard</td>
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</table>

## Financial Calendar

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Full Year 2017 Results</td>
<td>March 5, 2018</td>
</tr>
<tr>
<td>Annual General Meeting</td>
<td>April 19, 2018</td>
</tr>
<tr>
<td>Q1 2018 Results</td>
<td>April 25, 2018</td>
</tr>
<tr>
<td>Q2 2018 Results</td>
<td>July 25, 2018</td>
</tr>
<tr>
<td>Q3 2018 Results</td>
<td>October 25, 2018</td>
</tr>
</tbody>
</table>
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