

AIXTRON Investor Presentation

IR Presentation – 9M/2016

(FSE: AIXA, ISIN DE000A0WMPJ6; AIXC, ISIN DE000A2BPTY0; NASDAQ: AIXG, ISIN: US0096061041)

Additional information

This document is for informational purposes only and is neither an offer to purchase nor a solicitation of an offer to sell securities. The takeover offer for the outstanding ordinary shares (including ordinary shares represented by American depositary shares) of AIXTRON SE commenced on 29 July 2016. The terms and conditions of the takeover offer have been published in, and the solicitation and offer to purchase ordinary shares (including ordinary shares represented by American depositary shares) are made only pursuant to, the offer document and related offer materials prepared by Grand Chip Investment GmbH and as approved by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, "BaFin"). AIXTRON SE intends to file a Solicitation/Recommendation Statement on Schedule 14D-9 with the SEC with respect to the takeover offer; in addition, AIXTRON SE's Management Board and Supervisory Board will publish a statement pursuant to Sec. 27 of the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz, WpÜG). The offer document for the takeover offer (in German and in English) containing the detailed terms and conditions of, and other information relating to, the takeover offer, among other things, has been published on the internet at www.grandchip-aixtron.com.

Acceptance of the takeover offer by shareholders that are resident outside Germany and the United States may be subject to further legal requirements. With respect to the acceptance of the takeover offer outside Germany and the United States, no responsibility is assumed for the compliance with such legal requirements applicable in the respective jurisdiction.

The Tender Offer Statement (including the offer document, a related letter of transmittal and other related offer materials) and the Solicitation/Recommendation Statement, as they may be amended from time to time, as well as the Management and Supervisory Board's statement pursuant to Sec. 27 WpÜG contain important information that should be read carefully before any decision is made with respect to the takeover offer because they, and not this document, govern the terms and conditions of the takeover offer. Those materials and other documents filed by Grand Chip Investment GmbH or AIXTRON SE with the SEC are or, in the case of the Management and Supervisory Board's statement pursuant to Sec. 27 WpÜG, will be available at no charge on the SEC's web site at www.sec.gov. In addition, Grand Chip Investment GmbH's Tender Offer Statement and other documents it will file with the SEC will be available at www.grandchip-aixtron.com.

In this document, unless the context otherwise requires, references to "AIXTRON", "the AIXTRON Group", the "Group" or "the Company" are to AIXTRON SE and its consolidated subsidiaries. References to "Management" are to the Executive Board of AIXTRON SE.

Cautionary statement regarding forward-looking statements

This document contains forward-looking statements, including statements regarding the expected consummation of the proposed transaction and AIXTRON SE's future performance, which involves a number of risks and uncertainties, including the satisfaction of closing conditions for the transaction, the possibility that the transaction will not be completed, the failure to retain key AIXTRON SE employees, customers and partners, uncertainty regarding the anticipated benefits of the transaction and the failure of the parties to achieve anticipated goals of the transaction, and other risks and uncertainties discussed in AIXTRON SE's public filings with the SEC, including the "Risk Factors" section of AIXTRON SE's Form 20-F filed on February 23, 2016, as well as the offer document to be filed by Grand Chip Investment GmbH, the Solicitation/Recommendation Statement to be filed by AIXTRON SE and the statement pursuant to Sec. 27 WpÜG to be published by AIXTRON SE's Management and Supervisory Board. These documents and statement are based on current expectations, assumptions, estimates and projections, and involve known and unknown risks, uncertainties and other factors, many of which are outside the control of AIXTRON SE and Grand Chip Investment GmbH, that may cause results, levels of activity, performance or achievements to be materially different from any future statements. These statements are generally identified by words or phrases such as "believe", "anticipate", "expect", "intend", "plan", "will", "may", "should", "estimate", "predict", "potential", "continue" or the negative of such terms or other similar expressions. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results and the timing of events may differ materially from the results and/or timing discussed in the forward-looking statements, and you should not place undue reliance on these statements. AIXTRON SE undertakes no obligation to revise or update any forward-looking statements as a result of new information, future events or otherwise, unless expressly required to do so by law. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates.

Due to rounding, numbers presented throughout this presentation may not add up precisely to the totals indicated and percentages may not precisely reflect the absolute figures for the same reason.

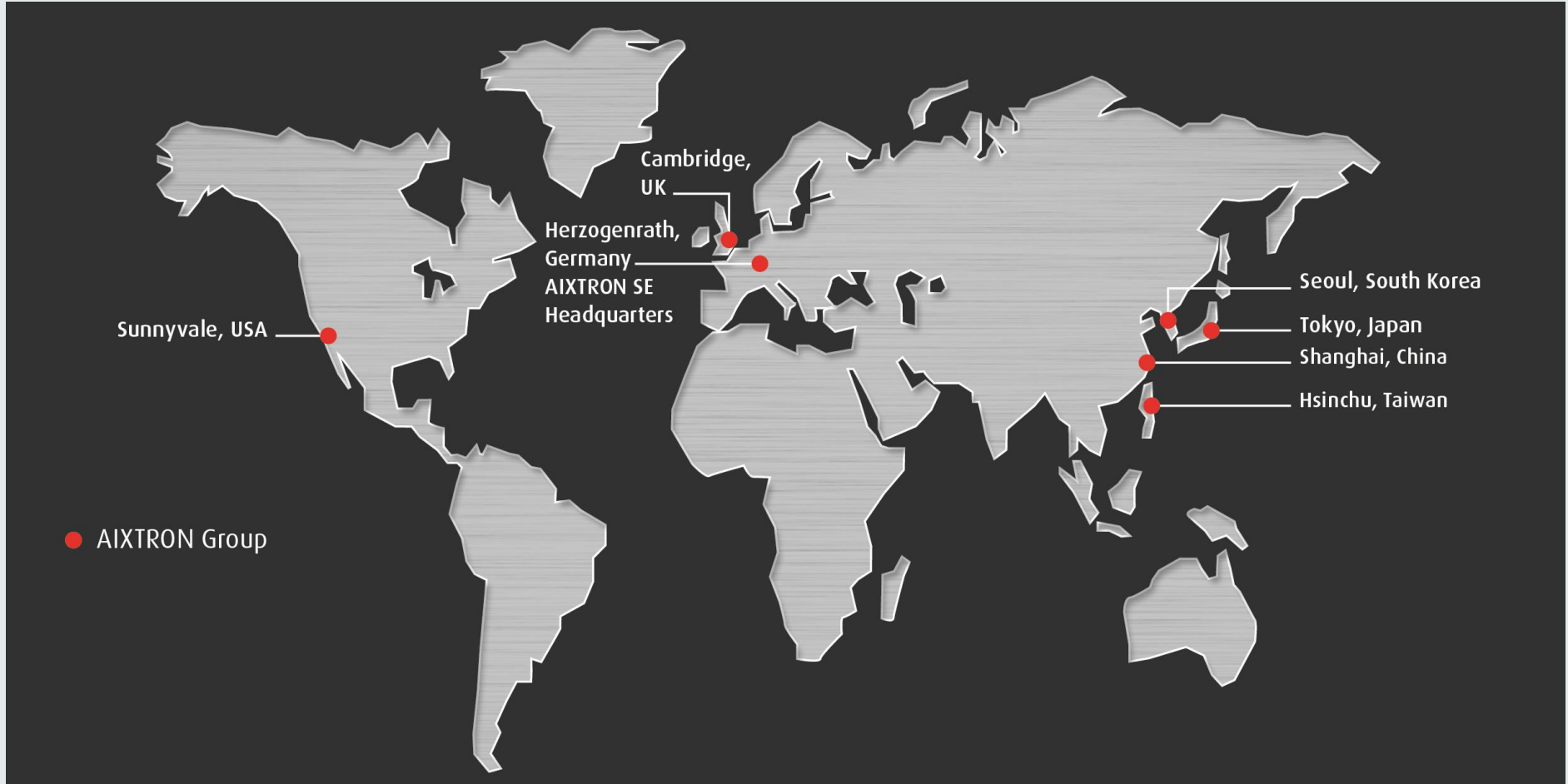
Our registered trademarks: AIXACT[®], AIXTRON[®], Atomic Level SolutionS[®], Close Coupled Showerhead[®], CRIUS[®], Gas Foil Rotation[®], Optacap[™], OVPD[®], Planetary Reactor[®], PVPD[®], TriJet[®]

Who we are



- Headquarters based in Herzogenrath, Germany
- Worldwide presence with 12 sales/representatives offices and production facilities
- Company founded in 1983 – over 30 years of experience
- ~710 employees
- Technology leader in deposition systems
- More than 3,000 deposition systems delivered all over the world
- State of the art R&D center and demo facilities
- Annual R&D budget of approx. € 55-65 Million

Global Presence



Our Vision

Technology. Materials. Performance.

Technology.

We are the **recognized technology leader** in complex material deposition.

Materials.

We **enable our customers** to successfully shape the markets of the future, exploiting the potential offered by **new materials**.

Performance.

We **deliver the performance** driving **economic success** through our expertise, our employees and the quality of our products.

Our Technology. Your FUTURE.

AIXTRON

Compound Semiconductors

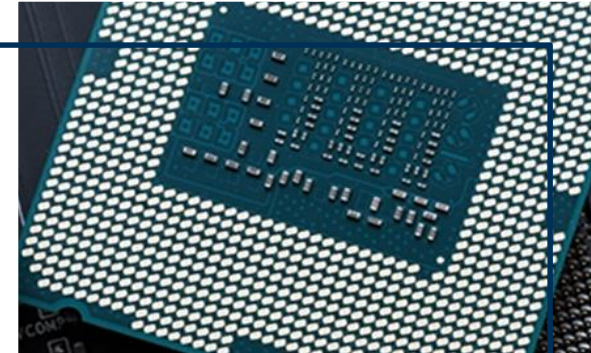
Silicon Semiconductors

Organic

Carbon



LED Lighting



Memory & Logic



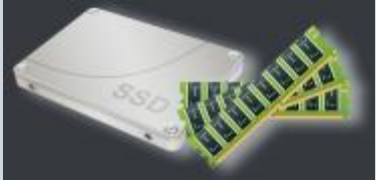




OLED



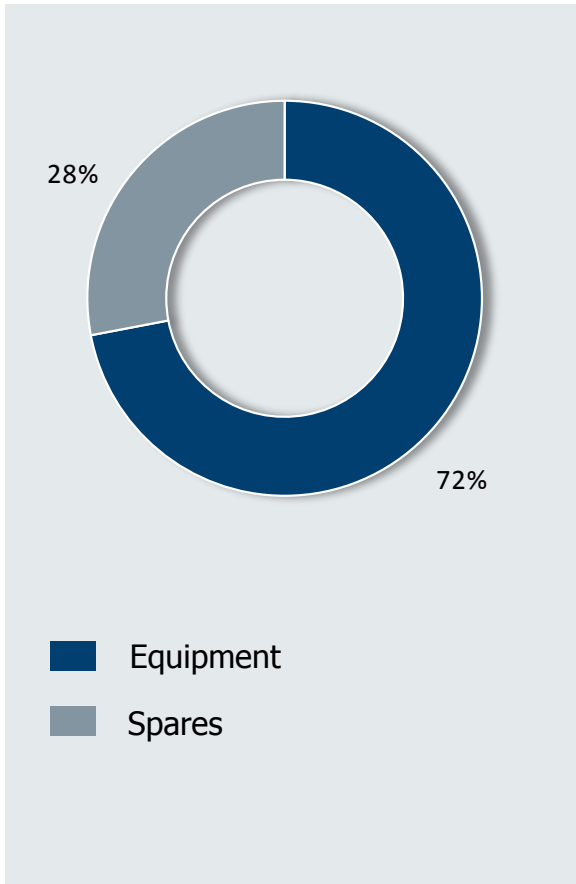
Power Management

Our Technology Portfolio

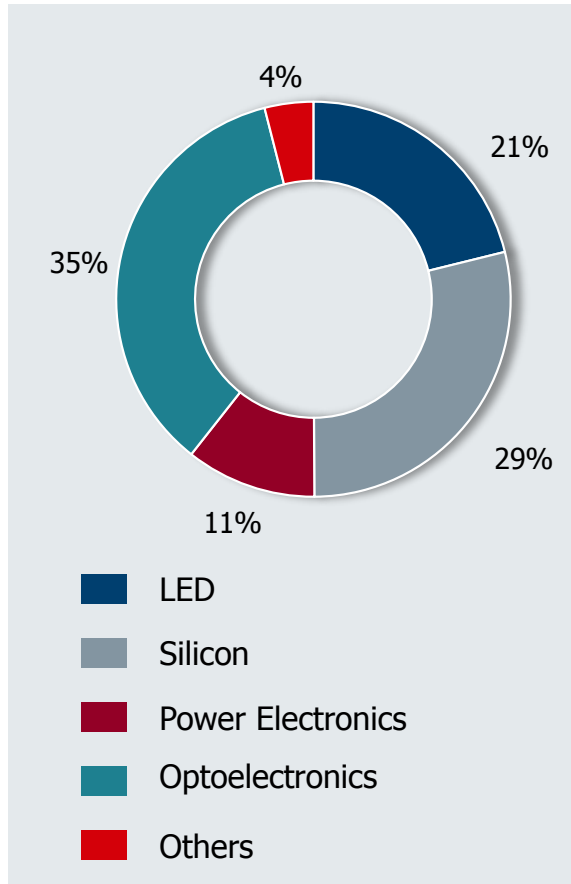
Compound Semiconductors		Silicon Semiconductors	Organic	Carbon
MOCVD		ALD/MOCVD	OVPD®/PVPD®/TFE	PECVD
LEDs, Lasers and Optoelectronics	Power Management GaN / SiC	Silicon Semiconductors	Organic Electronics	Graphene, CNTs and CNWs
<ul style="list-style-type: none"> • LEDs for display: TVs, mobile phones, tablets, etc. • LEDs for lighting • LEDs for automotive • LEDs for datacom • Lasers for telecom, consumer electronics • Photovoltaics 	<ul style="list-style-type: none"> • RF transistors • AC-DC converters • DC-DC converters • Solar inverters • Motor drives in industrial applications automotive and consumer electronics 	<ul style="list-style-type: none"> • DRAM Dielectric and Metal Electrode • Flash Inter Poly Dielectric and Metals • ReRAM and PCRAM Active element and Electrode • Logic Gate stack • Logic High Mobility Channel 	<ul style="list-style-type: none"> • OLEDs for display: TVs, mobile phones, tablets, etc. • Thin Film Encapsulation • OLEDs for lighting • Organic, flexible electronics • Organic Photovoltaics 	<ul style="list-style-type: none"> • Transistors • Interconnects • Flexible Electronics • Energy Storage • Sensors, etc.
				
Established Markets with Fluctuating Demand	Increasing Equipment Demand Expected by: 2015 and beyond	Increasing Equipment Demand Potential for 2015 and beyond	Equipment Demand Expected by: 2016/2017	Increasing Equipment Demand Expected by: 2018 and beyond

Revenue Analysis

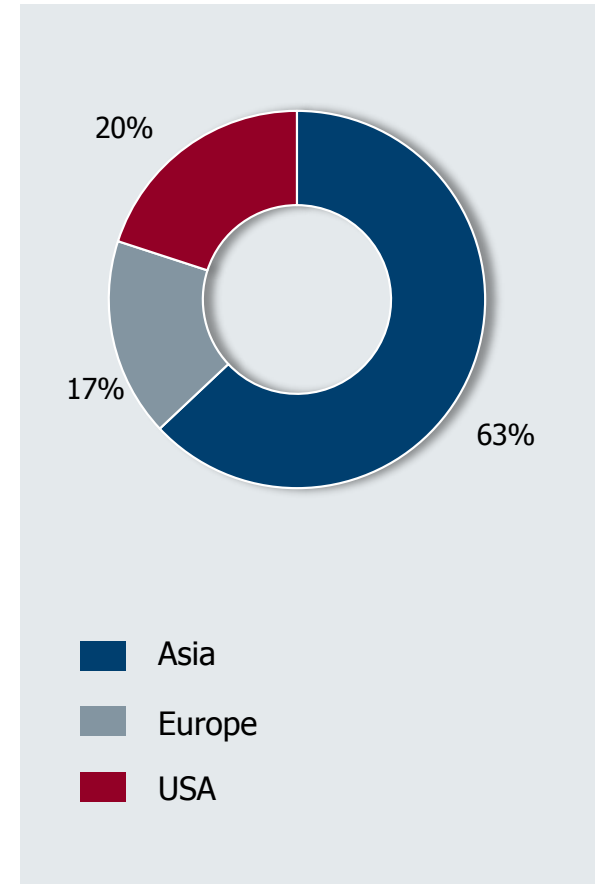
9M/2016:
by equipment & spares



9M/2016:
by end application
(equipment only)



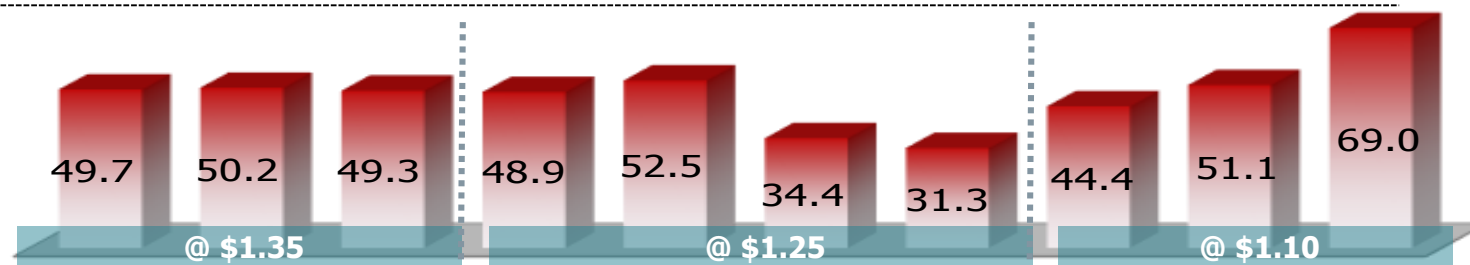
9M/2016:
by region



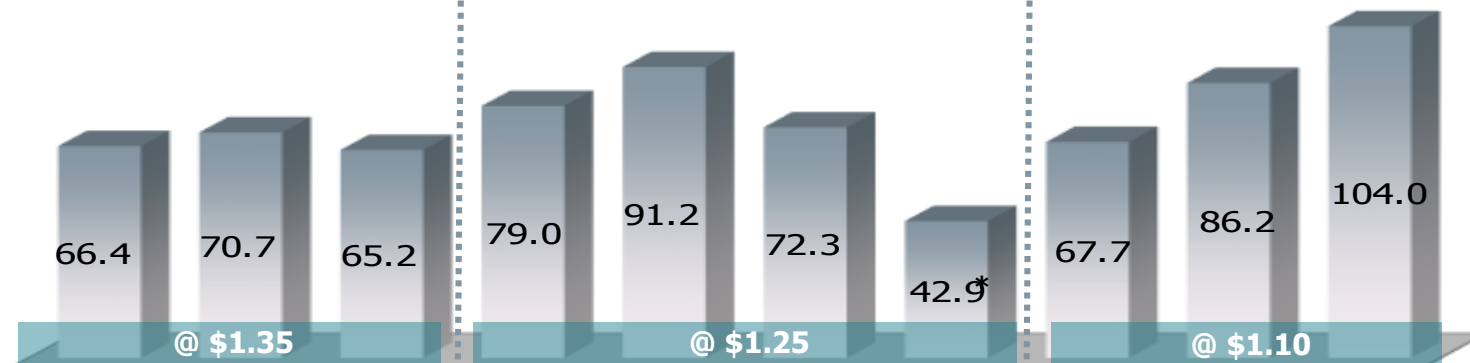
24 - Month Business Development

(€ million)

Equipment (only)
Order Intake

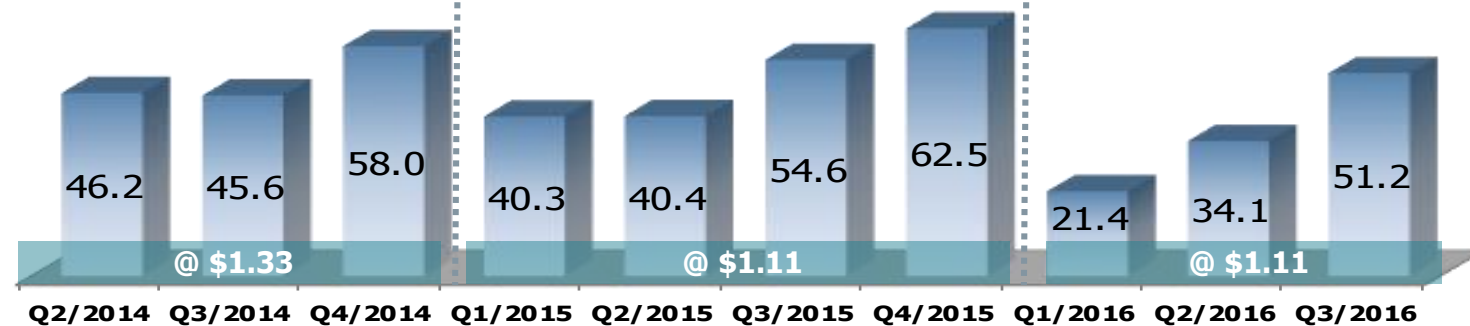


Equipment (only)
Order Backlog



*) revalued on Jan.1, 2016 to €46.7m at \$1.10/€

Total Revenues
(incl. equipment,
service, spare parts)



USD order intake and backlog were recorded at the prevailing budget rate (2016: \$1.10/€)

USD revenues were converted at the actual period average FX rate (9M/2016: \$1.11/€)

Consolidated Income Statement*

(€ million)	9M/16	9M/15	+/-	Q3/16	Q2/16	+/-
Revenues	106.6	135.3	-21%	51.2	34.1	50%
Cost of sales	79.7	105.1	-24%	34.2	27.2	26%
Gross profit	26.9	30.2	-11%	16.9	6.9	145%
Gross Margin	25%	22%	3 pp	33%	20%	13 pp
Selling expenses	9.0	9.0	0%	3.2	2.9	10%
General & admin expenses	12.1	12.1	0%	3.9	4.5	-13%
R&D	39.6	41.1	-4%	13.6	12.7	7%
Net other op.(income)/expenses	(4.5)	(6.7)	-32%	(0.3)	(2.0)	85%
EBITDA	-20.4	-17.6	-16%	-0.4	-8.2	95%
EBIT	-29.3	-25.2	-16%	-3.4	-11.2	70%
EBIT Margin	-27%	-19%	-8 pp	-7%	-33%	26 pp
Result before tax	-28.9	-24.6	-17%	-3.3	-11.0	70%
Pre-Tax Margin	-27%	-18%	-9 pp	-6%	-32%	26 pp
Net result	-30.4	-27.3	-11%	-3.8	-11.1	66%
Net Return on Sales	-28%	-20%	-8 pp	-7%	-33%	26 pp

*) rounded figures; may not add up

Consolidated Statement of Financial Position*

(€ million)	30/9/16	31/12/15	30/9/15
Property, plant & equipment	75.6	81.3	80.9
Goodwill	73.8	75.9	75.7
Other intangible assets	5.5	6.4	6.4
Others	3.6	3.9	4.6
Non-current assets	158.5	167.6	167.6
Inventories, WIP & Finished Goods	79.1	70.8	87.0
Trade receivables	30.4	26.0	22.9
Others	7.1	8.2	7.5
Cash & Cash Equivalents incl. CD	163.5	209.4	243.5
Current Assets	280.1	314.4	361.0
Shareholders' equity	359.9	396.5	396.5
Non-current liabilities	3.0	3.6	3.1
Trade payables	12.6	9.8	16.5
Advance payments from customers	41.3	24.0	84.8
Others	21.9	48.0	27.7
Current liabilities	75.8	81.8	129.0
Balance Sheet total	438.7	482.0	528.6

*) rounded figures; may not add up

Consolidated Statement of Cash Flows*

(€ million)	9M/16	9M/15	Q3/16	Q2/16
Cash Flow from operating activities	-35.0	-13.5	4.3	-19.9
Cash Flow from investing activities	39.3	11.1	12.9	19.3
Cash Flow from financing activities	0.3	-0.2	0.2	0.1
Exchange rate changes	-3.5	3.5	-0.9	0.1
Net change in Cash & Cash Equivalents	1.1	0.9	16.5	-0.4
Cash & Cash Equivalents (beginning of period)	116.3	116.6	100.9	101.3
Cash & Cash Equivalents (end of period)	117.4	117.5	117.4	100.9
Change in Cash deposits	-46.6	-27.5	-14.2	-20.1
Free Cash Flow**	-38.0	-22.3	3.0	-20.7
Capex	3.0	10.3	1.3	0.8

*) rounded figures; may not add up

***) Acquisition cost adjusted; Operating CF + Investing CF + Changes in Cash Deposits

Market Prospects

Short-Term

- Further increasing adoption of LEDs for Solid State Lighting
- Increasing demand adoption of optoelectronic components for tele- and data communication applications
- Increased emergence of wide band gap GaN or SiC based devices for energy efficient power management
- Development of next generation NAND and DRAM memory devices
- Further progress in the development of GaN-on-Silicon LEDs and Wafer Level Packaging

Mid- to Long-Term


- Development of new wide-band-gap applications such as RF and System-on-Chip with integrated power management
- Progress in the development of large area OLED devices requiring efficient deposition technologies
- Progress in the development of flexible and rigid OLED devices requiring thin-film encapsulation
- Increased development activity for specialized compound solar cell applications, e.g. multi junction, CPV
- Increasing requirements for High-k and interconnects, implying a new approach to production technologies
- Progress in the development of future logic chips applying wide band gap and high electron mobility materials (III-V-on-Silicon)
- Development of applications using Carbon Nanomaterials (Carbon Nanotubes, Carbon Nanowires, Graphene)
- Development of alternative LED applications such as Visual Light Communication technology



Our *technology*. YOUR FUTURE.


AIXTRON – Key Enabler for Innovative Future

New Complex Materials




Compound Semiconductors

- GaAs/ GaN (Sensors)
- GaN/SiC (RF/Power – Mobile)
- GaAs/InP (Laser - Datacom)
- GaN (LED – LiFi)



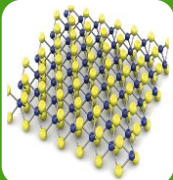
Silicon Semiconductors

- III-V (Next-generation Logic – Real-time Processing)
- Innovative materials (Memory - Big Data)



Organic

- Display, Lighting
- Flexible Electronics
- Organic Photovoltaics



Carbon Nano Structures

- Graphene (Energy Storage)
- 2D materials (Smart Sensors, Energy Storage)

Tech Trends

AIXTRON
Our technology. Your future.



Compound Semiconductors – MOCVD

Two Reactor Technologies — Planetary Reactor® & Close Coupled Showerhead® (CCS)

- Addressing multiple industries
- Established industry standard & market leading
- Configurable, extendable common platform
- Introduced the latest MOCVD technology - AIX R6

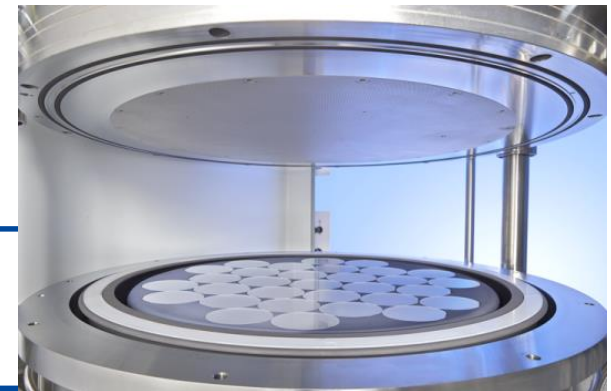
Planetary Reactor®
AIX G5+, 5x8



- Unique Planetary reactor design
- Horizontal reactor type

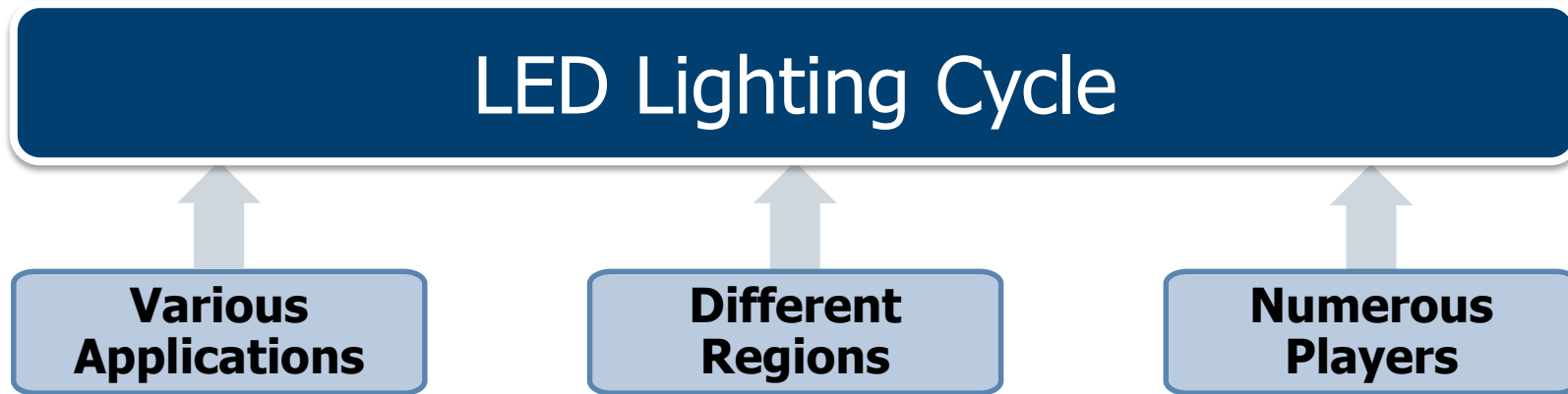
- Patented CCS Technology
- Vertical reactor design

Close Coupled Showerhead®
AIX R6, 31x4"

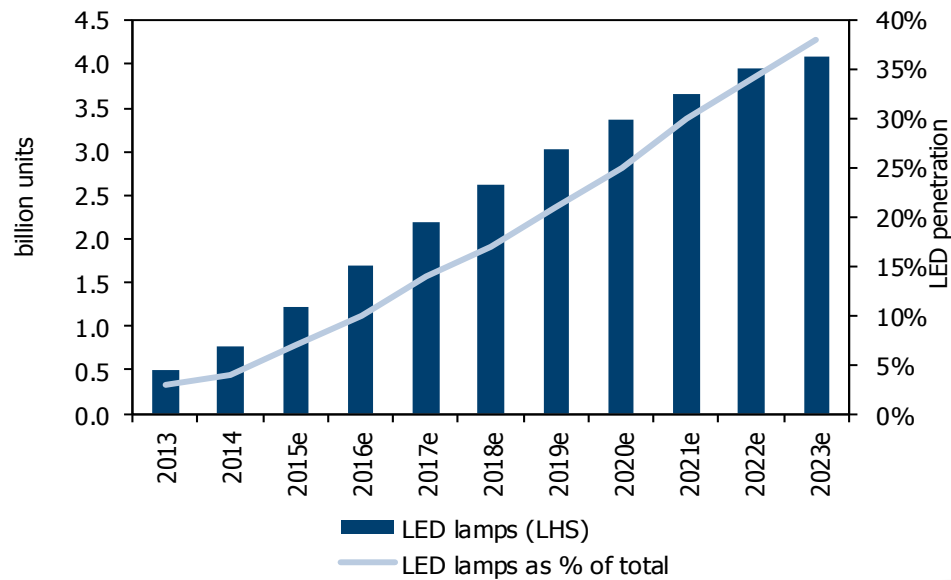


LED Lighting Market – Multiple Tipping Points

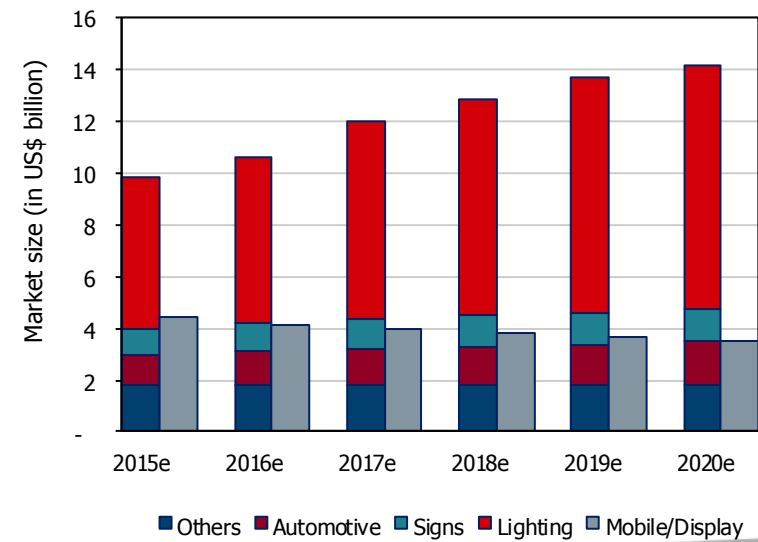
Source: AIXTRON, IHS 2016, Strategies Unlimited



Global LED lamp shipments

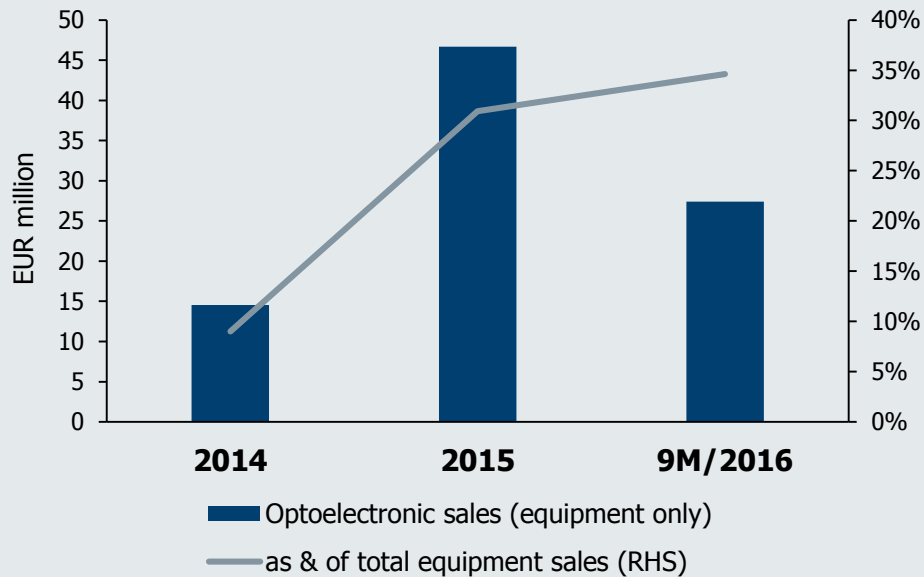


LED Market Forecast



Compound Semiconductors – Increasing Demand in Optoelectronics

AIXTRON – Optoelectronics equipment revenues



Telecom/Datacom/Wireless

- Data center
- Broadband
- FTTH
- 3G → 4G → 5G
-



Automotive






- Connected cars
- ADAS / Lidar
- 3D gesture control
-



Consumer Electronics

- Internet 4.0
- Laser processing
- Optical sensing
- Imaging
- Security
-

Compound Semiconductors – Wide Band Gap (WBG) Power Electronics

Consumer Electronics & IT		Automotive	Energy	Industrial
Power Management		Power Switching		
30V	600V	1.2 kV	≥2kV	
<ul style="list-style-type: none"> • Electronic appliances • Computing • Wireless charging • Power supplies • PFC 	<ul style="list-style-type: none"> • Infotainment • GPS • Connected car • Autonomous driving • EMI/EMC • Adaptive cruise control 	<ul style="list-style-type: none"> • General automotive electronic • HEV/EV • Charging station • Inverter / motor drives • Converter • Radar test applications 	<ul style="list-style-type: none"> • Power Grid / Smart meter / appliances • Solar / Wind inverters • Solar / Wind power DC distribution • storage • UPS 	<ul style="list-style-type: none"> • UPS • Industrial machines • Building • Mining, oil, gas power generation • Shipping/Rail 
GaN	GaN / SiC		SiC	

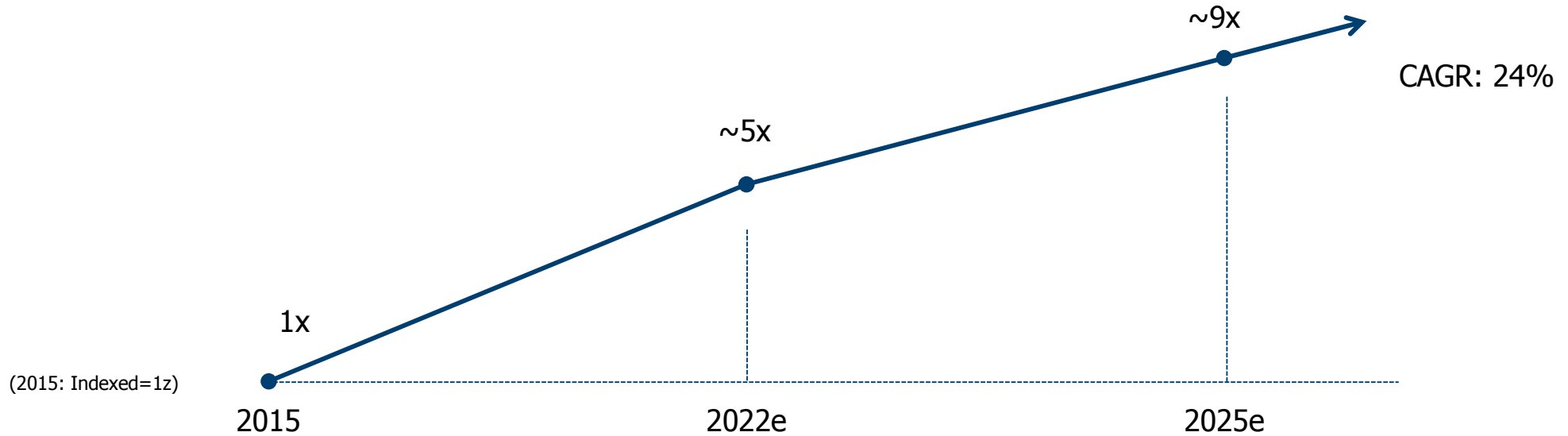
Volume segment

Niche segment

Compound Semiconductors – Wide Band Gap (WBG) Power Electronics

Source: DOE, IHS 2016

WBG GaN and SiC based Power Management Device Shipments



WBG Power Electronics: Smaller, Faster, and More Efficient

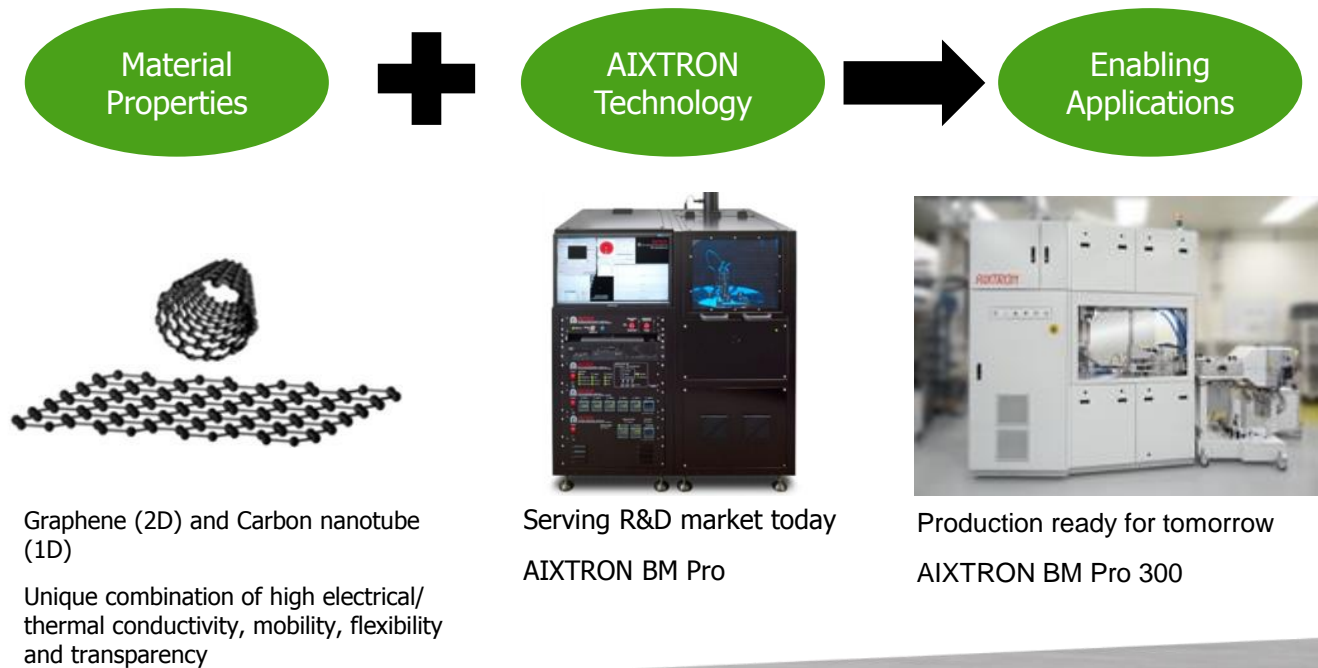
Carbon Nanomaterials – PECVD

Graphene and Carbon Nanotube Deposition Systems

- Proprietary thermal and plasma enhanced chemical vapour deposition technology
- Excellent uniformity and reproducibility with fast turnaround cycle times
- BM platform: BM R&D (2-inch), BM Pro (4-inch and 6-inch), BM GB (4-inch glovebox), BM HT (high temperature, 1,700C), BM300T (300mm)
- Graphene and carbon nanotube films for electronics, energy storage, thermal management, sensors and flexible/transparent applications

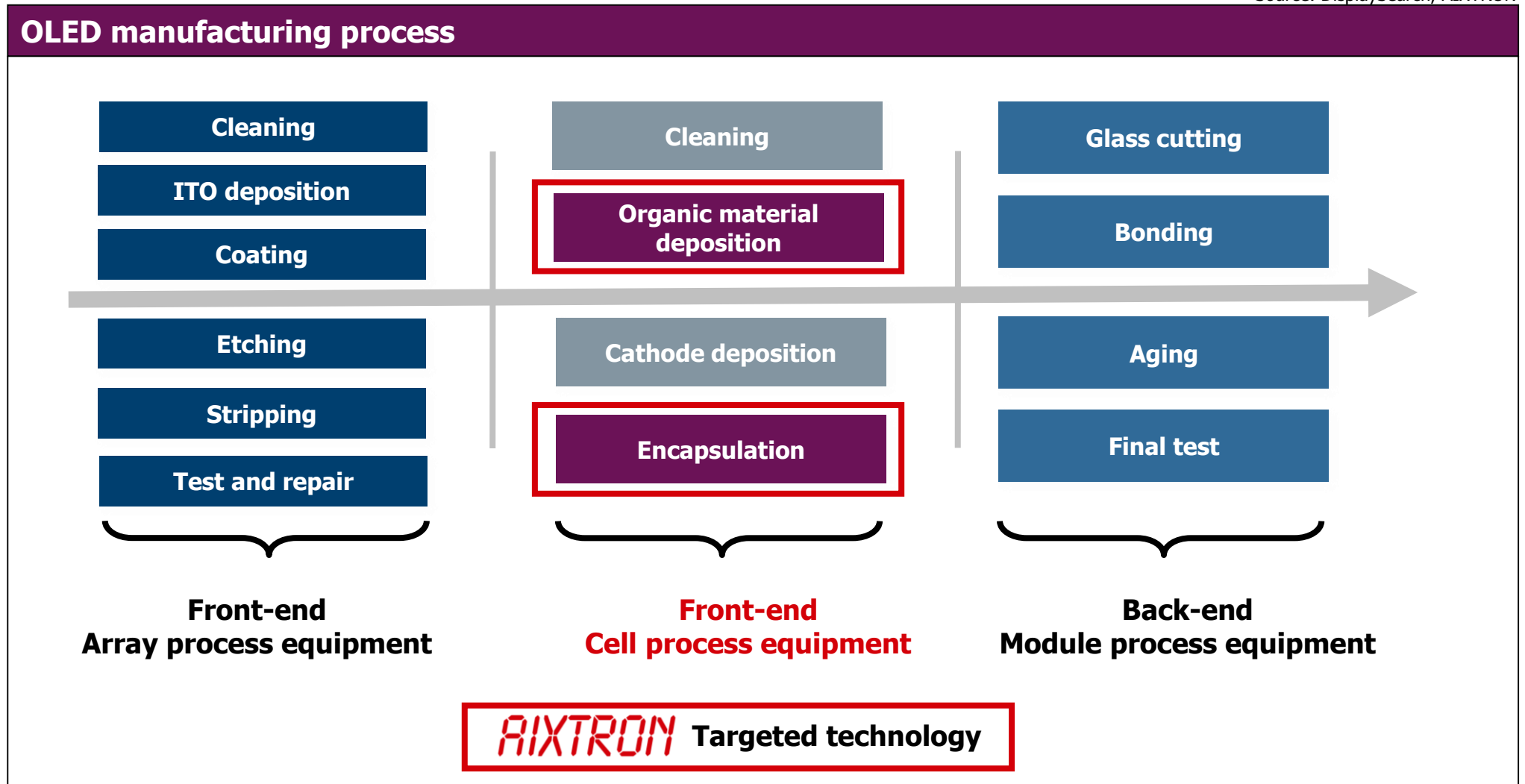
Product features

- Fast response heater and turnaround
 - Thermal CVD
 - Substrate and top heating
-
- Closed loop infrared wafer temperature control
 - Plasma enhanced CVD with frequency control
 - Flexible processing for different applications
-
- Low cost of ownership
 - Easy maintenance and cleaning
 - User management features and growth library



Organic Electronics – OVPD[®] + Encapsulation

Source: DisplaySearch, AIXTRON



Organic Electronics – OVPD®

Product Description – OVPD

- Proprietary carrier-gas enhanced gas phase deposition approach for organic thin films*
- Based on AIXTRON's core competence of carrier gas enhanced vapour phase deposition
- Free scalability: suitable for all relevant substrate generations
- Manufacturing technology applicable for OLED displays, OLED lighting, organic semiconductors, and organic photovoltaic
- Proprietary STExS™ evaporation source technology: low thermal stress, high rates, continuous operation

"Disruptive deposition technology for cost efficient OLED manufacturing"

Product Features

- High deposition rates for high throughput
 - Reduced thermal stress for organic materials
-
- High material utilization efficiency
 - Flexible process control
-
- Simplified scaling due to
 - Close Coupled Showerhead and
 - Decoupled source technology
-
- Flexible integration solutions batch and inline
 - Reduced number of deposition chamber and footprint
 - Scalable: Available for substrate sizes up to Gen8.5 (=2.3 x 2.5 m²)



OVPD demonstrator OLAD (Organic Large Area Demonstrator)
(optimized for Generation 8.5 substrate sizes)

Organic Electronics – OPTACAP™ PECVD

Product Description – OptaCap™ PECVD

- Proprietary PECVD technology based on linear plasma sources
- Based on AIXTRON's core competence of carrier gas enhanced vapour phase deposition
- Free scalability: suitable for all relevant substrate generations
- Manufacturing technology applicable for barrier applications, i.e. thin film encapsulation: highly flexible, low film stress, high transparent, high water and oxygen permeation barrier,

"Disruptive deposition technology for cost efficient deposition of flexible barrier films"

Product Features

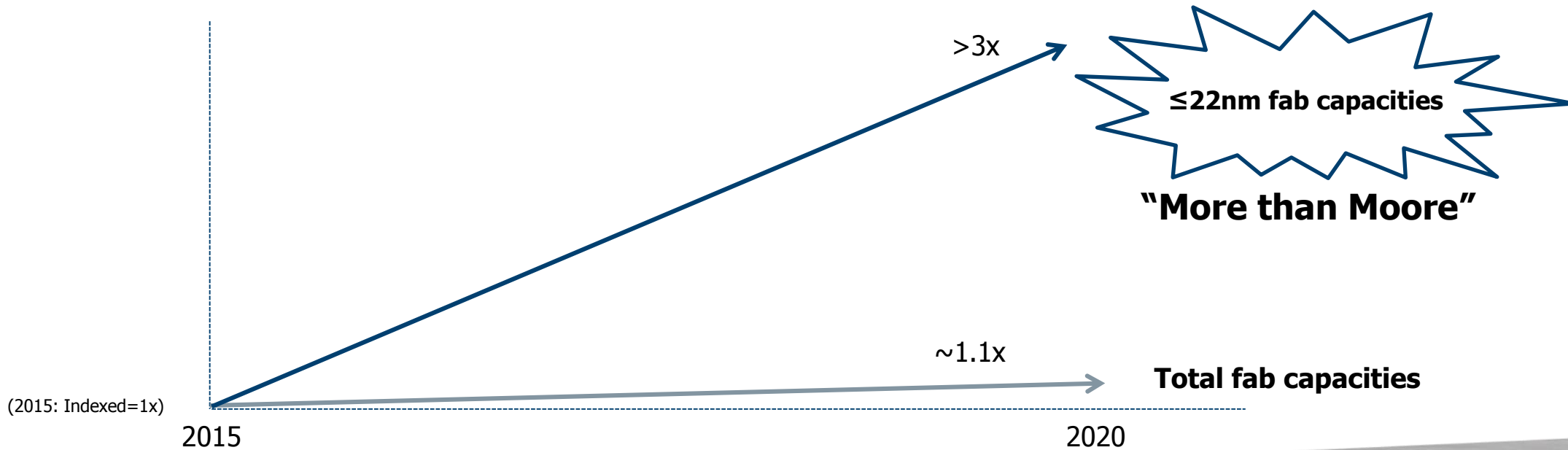
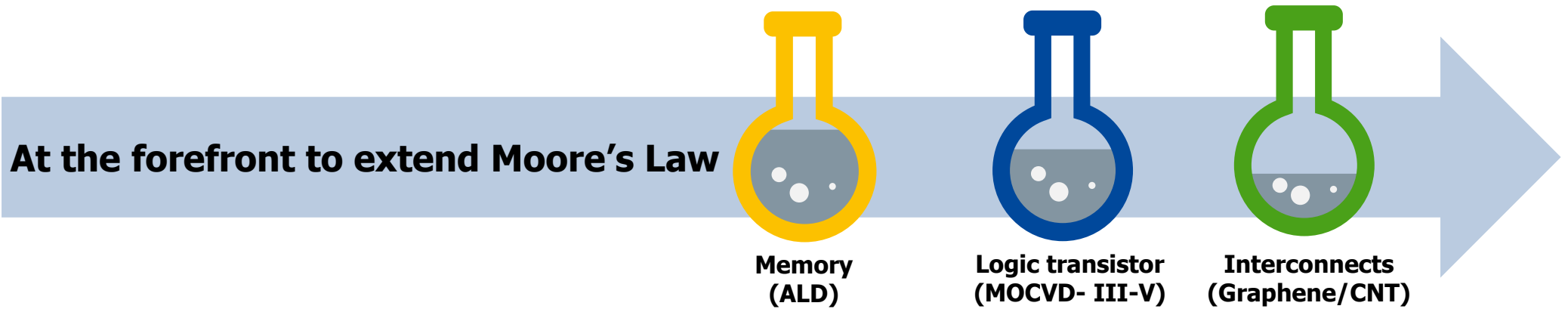
- High deposition rates for high throughput
- Flexible process control
- Simplified scaling due to
 - Linear PECVD source technology
 - Multiple source configurations
- Scalable: Available for substrate sizes up to Gen3.5, future: up to Gen8.5
- Highly flexible SiNx-based barrier films at high rates
- Low temperature process (<80°) with low film stress



OPTACAP-200
200x200 mm² Substrates

Silicon Semiconductors – Leading Edge Technologies

Source: Gartner 2016



Silicon Semiconductors – ALD

Product Description – ALD

- 300mm ALD Technology
- QXP-8300 Mini-batch system
- High throughput : 2 Process Chambers – 8 stations
- Up to 3 vaporizers and one bubbler
- Applications : DRAM, Logic and Flash High k Dielectric
Metal electrode : ReRAM and PCRAM Active elements
- Proven in HVM with >40% lower CoO and >90% Uptime in DRAM and Flash Fabs

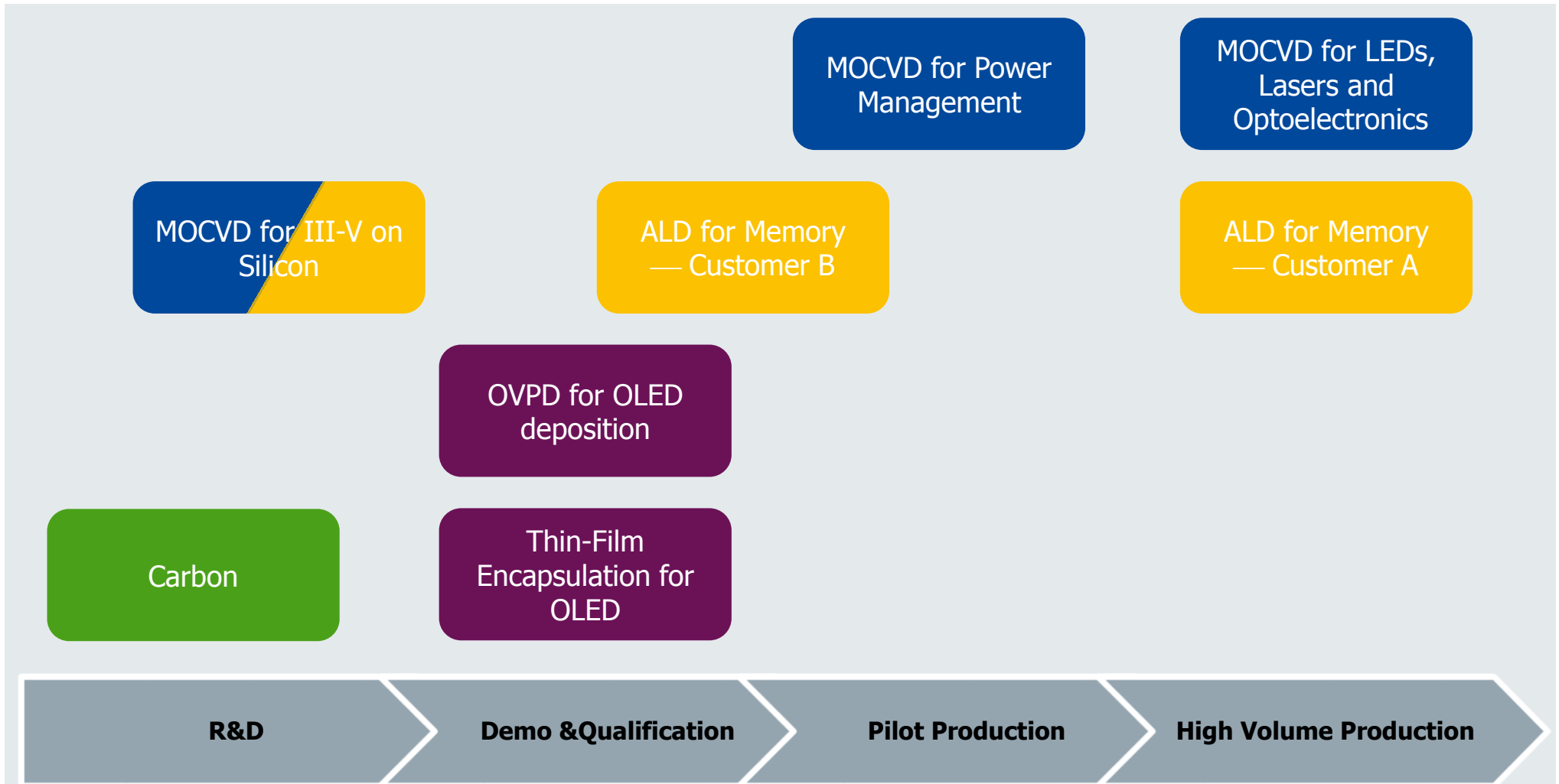
“Best-in class technology, state of the art deposition system, lowest CoO”

Product Features

- Up to 3 patented TriJet vaporizers
- Small volume confined process space ensure short ALD cycle time
- > 40 % less precursor consumption
- Efficient purge
- Isolated multi wafer processing with > 40% higher throughput
- Close Coupled Showerhead for uniform distribution
- Flexibility and ease of maintenance



Technology Position

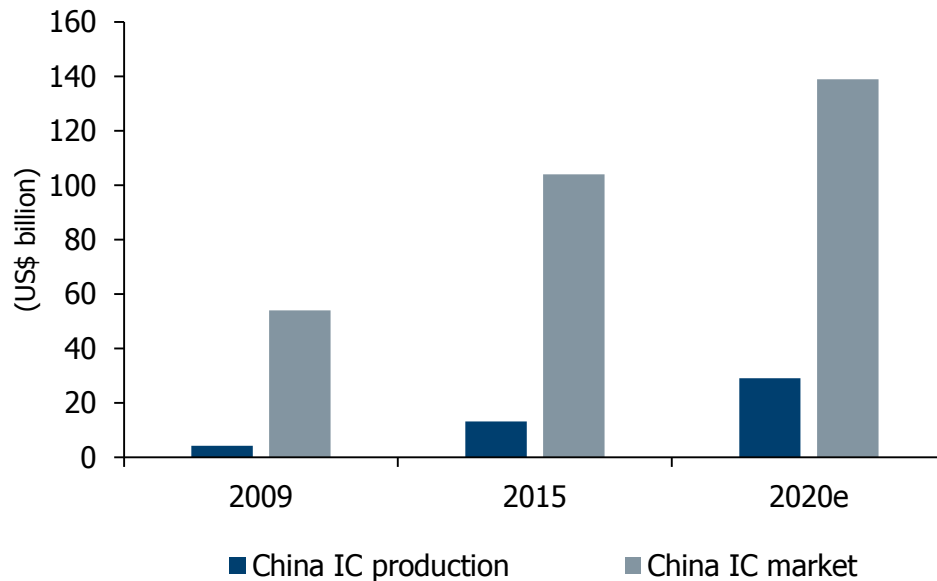


Semiconductor Growth Opportunities in China

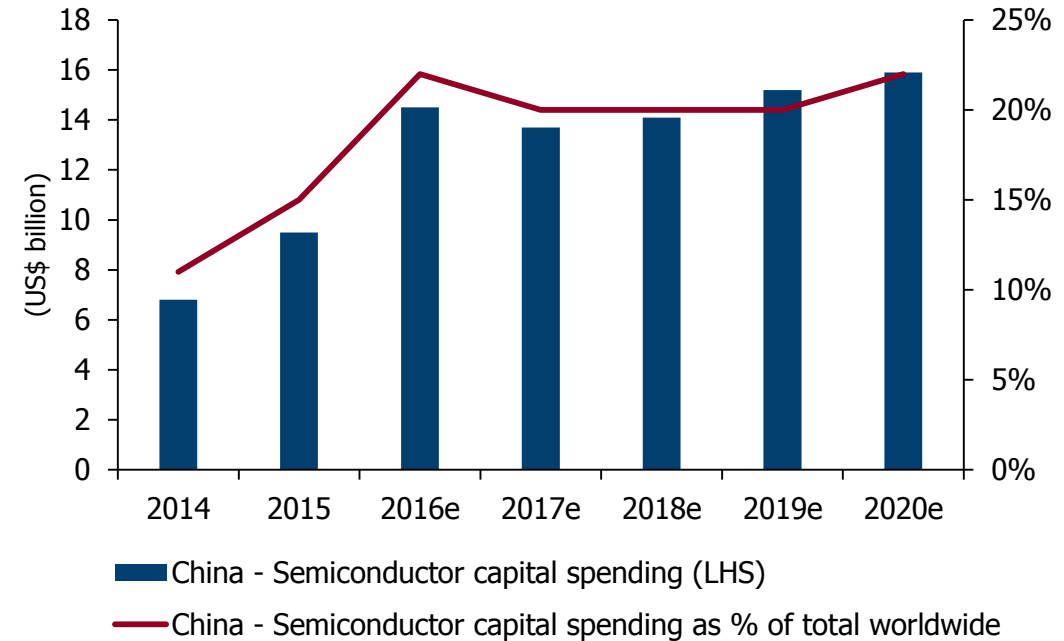
Source: Gartner 2016; IC insights 2016

- China domestic IC production is expected to increase and gradually narrow the IC consumption/production gap ratio.
- 2016e semiconductor capex in China is estimated to be doubled than 2014. 2017e-2020e annual spending to maintain at a similar high level.

China – IC market vs. IC production trends



China - Semiconductor capital spending



Consolidated Income Statement*

(€ million)	2015	2014	2013
Revenues	197.8	193.8	182.9
Cost of sales	147.9	154.1**	204.7**
Gross profit	49.8	39.7**	-21.8**
Gross Margin	25%	21%	-12%
Selling expenses	11.5	14.1**	14.5**
General & admin expenses	16.3	19.3	18.2
R&D	55.4	66.7	57.2
Net other op.(income)/expenses	-6.7	-2.2	-16.0
EBITDA	-16.4	-41.3	-67.9
EBIT	-26.7	-58.3	-95.7
EBIT Margin	-14%	-30%	-52%
Result before tax	-26.0	-57.1	-95.2
Pre-Tax Margin	-13%	-29%	-52%
Net result	-29.2	-62.5	-101.0
Net Return on Sales	-15%	-32%	-55%

*) rounded figures; may not add up

***) 2013 and 2014 figures changed to be comparable with 2015

Consolidated Statement of Financial Position*

(€ million)	31/12/15	31/12/14	31/12/13
Property, plant & equipment	81.3	77.3	79.9
Goodwill	75.9	64.8	64.1
Other intangible assets	6.4	2.5	3.1
Others	3.9	4.6	5.7
Non-current assets	167.6	149.2	152.7
Inventories, WIP & Finished Goods	70.8	81.7	66.2
Trade receivables	26.0	26.3	27.7
Others	8.2	8.3	10.3
Cash & Cash Equivalents incl. CD	209.4	268.1	306.3
Current Assets	314.4	384.4	410.5
Shareholders' equity	396.5	415.7	465.4
Non-current liabilities	3.6	1.3	2.4
Trade payables	9.8	16.4	13.5
Advance payments from customers	24.0	66.9	46.2
Others	48.0	33.2	35.7
Current liabilities	81.8	116.5	95.4
Balance Sheet total	482.0	533.5	563.2

*) rounded figures; may not add up

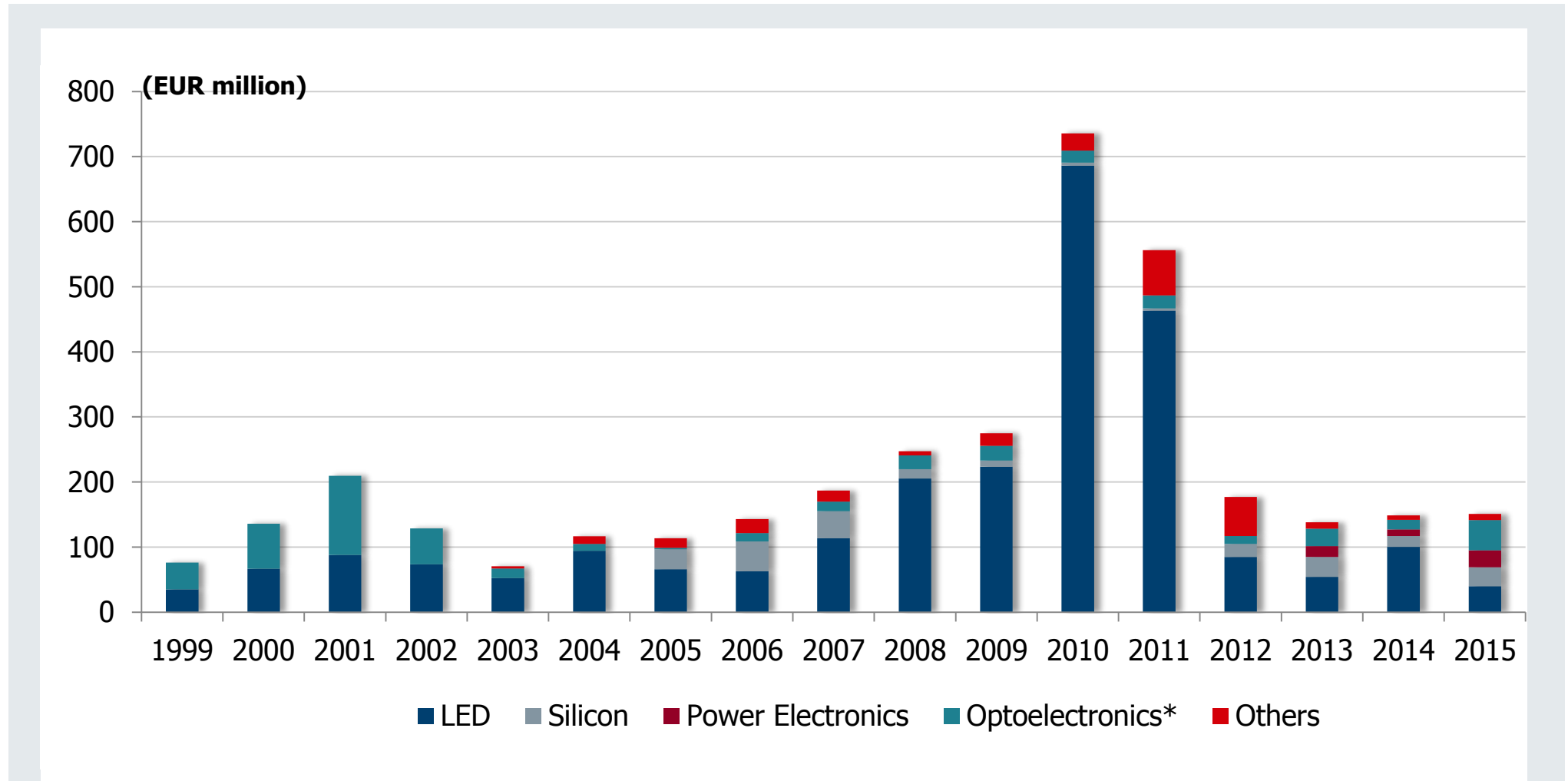
Consolidated Statement of Cash Flows*

(€ million)	2015	2014	2013
Cash Flow from operating activities	-45.7	-33.8	8.2
Cash Flow from investing activities	41.2	-23.2	-39.7
Cash Flow from financing activities	-0.1	0.2	101.6
Exchange rate changes	4.3	5.9	-2.4
Net change in Cash & Cash Equivalents	-0.3	-50.9	67.7
Cash & Cash Equivalents (beginning of period)	116.6	167.5	99.7
Cash & Cash Equivalents (end of period)	116.3	116.6	167.5
Change in Cash deposits	-60.5	9.9	30.4
Free Cash Flow**	-57.3	-47.0	-1.1
Capex	13.3	13.4	10.1

*) rounded figures; may not add up

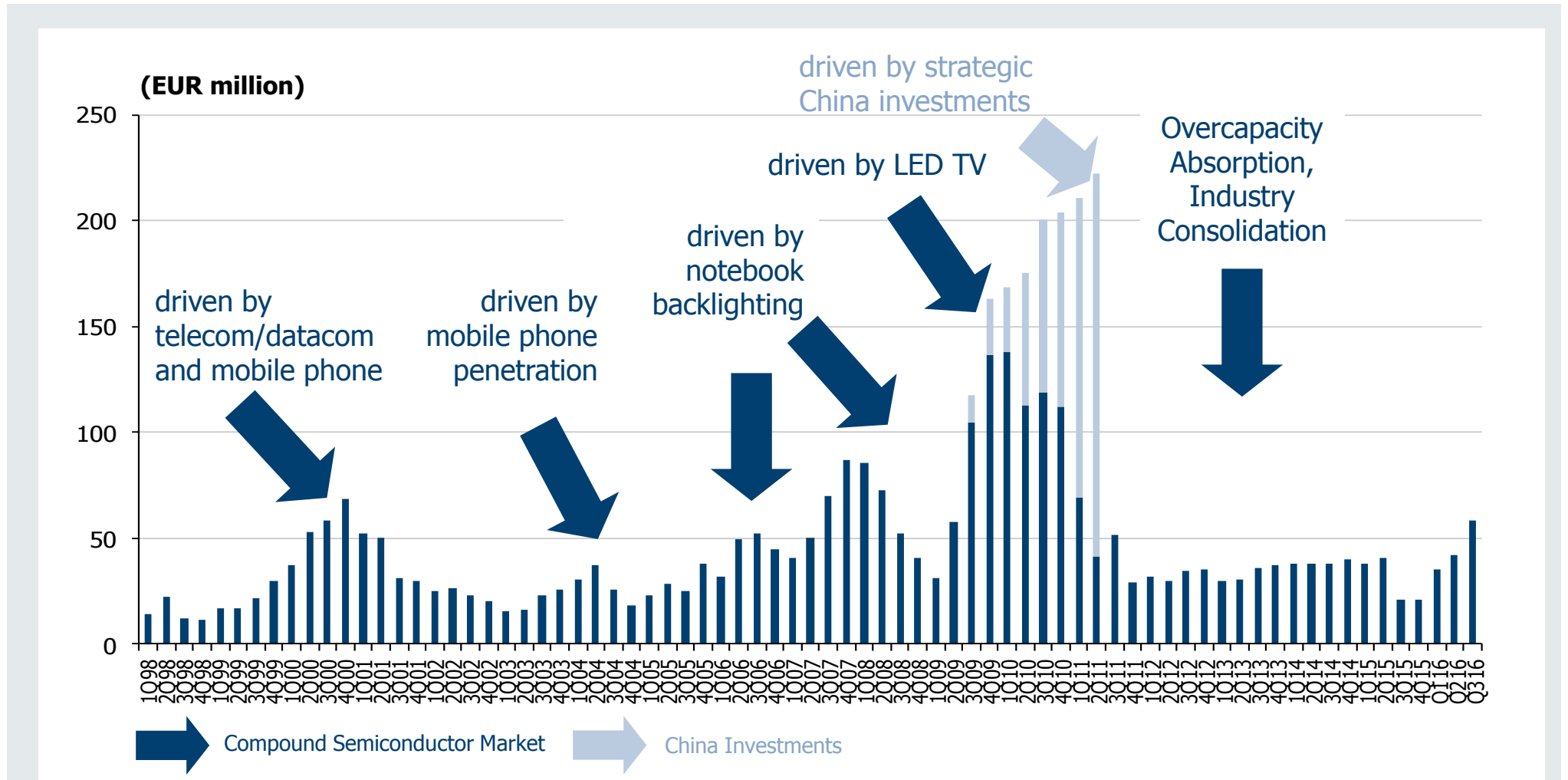
***) Operating CF + Investing CF + Changes in Cash Deposits, adjusted for acquisition effects

Annual Equipment Revenues by Application (excl. spares)



* Optoelectronics includes applications in Consumer Optoelectronics, Telecom/Datacom, Solar, etc.

Equipment Order Intake per Quarter



Global Presence



AIXTRON SE Headquarters
Herzogenrath, Germany

Core of AIXTRON's activities is the Technology and R&D Center near Aachen.

Focus on engineering and process development in MOCVD and organic semiconductors.



AIXTRON Ltd.
Cambridge, United Kingdom

Focus on key MOCVD reactor component technology, carbon-based nanotechnology systems, state of the art innovation and production of R&D tools.



AIXTRON Inc.
Sunnyvale, California, USA

Focus on silicon applications for leading suppliers of DRAM and CMOS.

Financial Calendar & Contact Data

- February 2017 FY/2016 Results, Conference Call
- April 2017 Q1/2017 Results, Conference Call
- May 2017 Annual General Meeting, Aachen
- July 2017 H1/2017 Results, Conference Call

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