AIXTRON Investor Presentation



IR Presentation – H1/2016 (FSE: AIXA, ISIN DE000A0WMPJ6, NASDAQ: AIXG, ISIN: US0096061041)

RIXTRON

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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 WpUG 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 forwardlooking 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
- ~720 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. € 60 Million



Global Presence





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RIXTRON

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.

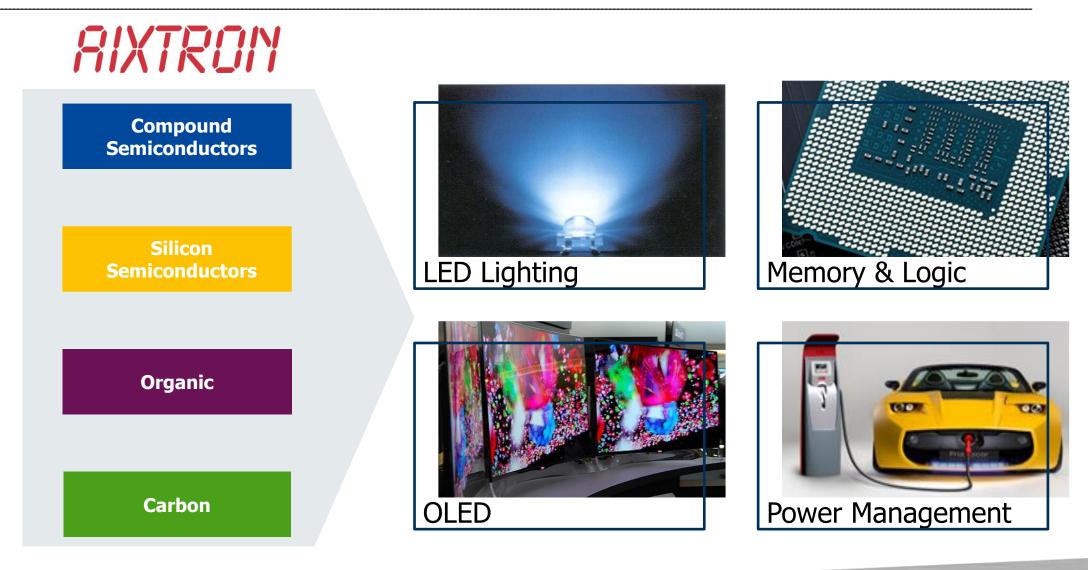
We deliver the performance driving economic success

through our expertise, our employees and the quality of our products.

Our technology. YOUR FUTURE.



Our Technology. Your FUTURE.





Our Technology Portfolio

Compound Sem	iconductors	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
 LEDs for display: TVs, mobile phones, tablets, etc. LEDs for lighting LEDs for automotive LEDs for datacom Lasers for telecom, consumer electronics Photovoltaics 	 RF transistors AC-DC converters DC-DC converters Solar inverters Solar inverters Motor drives in industrial applications automotive and consumer electronics 	 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 	 OLEDs for display: TVs, mobile phones, tablets, etc. Thin Film Encapsulation OLEDs for lighting Organic, flexible electronics Organic Photovoltaics 	 Transistors Interconnects Flexible Electronics Energy Storage Sensors, etc.
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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



RIXTRON

Bidder	Grand Chip Investment GmbH, c/o Paul Hastings (Europe) LLP, Siesmayerstraße 21, 60323 Frankfurt am Main, Germany
Target company	AIXTRON SE, Dornkaulstraße 2, 52134 Herzogenrath, Germany
Securities sought in the Takeover Offer	All no-par value registered shares in AIXTRON, including all no-par value registered shares represented by American Depositary Shares (ADSs), including dividend entitlement.
Offer Consideration	EUR 6.00 (in words: Euro six) per AIXTRON Share in cash.
	AIXTRON ADSs will be converted into and paid out in USD.
Offer Conditions	(i) A minimum acceptance threshold with a target shareholding of at least 67,632,213 AIXTRON Shares (corresponding to 60 per cent of the total number of AIXTRON Shares issued on the Announcement Date); (ii) approval or clearance of the Transaction, as applicable, from regulatory authorities in Germany, the United States and PRC; (iii) no material adverse change in the closing quotations of DAX and TecDAX; and (iv) no increase in AIXTRON's share capital other than to settle existing and exercised stock options.
	The Offer Conditions have to be satisfied by 28 February 2017, at the latest.
Acceptance Period	10 weeks, i.e., from July 29, 2016 to October 7, 2016, 24:00 hrs local time Frankfurt am Main, Germany / 6:00 p.m. local time New York, United States, respectively (unless extended by law).

* The overview has been inserted for reasons of clarity and comprehensibility and does not contain all relevant information relating to the Takeover Offer. AIXTRON Shareholders should not solely rely on this overview in their own interest but should fully and thoroughly assess this Statement and the Offer Document.



Transaction could provide AIXTRON with the relevant support to successfully develop full technology roadmaps and to better access growth markets:

- → GCI has committed to support AIXTRON to continue developing existing product lines, for its customers' benefit and to maintain the existing global set up.
- → GCI has also committed that the IP portfolio is to remain with and be used solely by AIXTRON while protecting sensitive and confidential customer information.
- → AIXTRON could expand its presence, especially in China which would allow better exploitation of the most significant growth opportunities.
- \rightarrow The fairness opinion of J.P. Morgan supports that the transaction reflects a fair and adequate offer price.
- → Alternative Scenarios would either be very risky or would result in smaller AIXTRON with reduced growth potential

Executive and Supervisory Boards Recommend Acceptance of the Takeover Offer, Works Councils also Welcome the Transaction



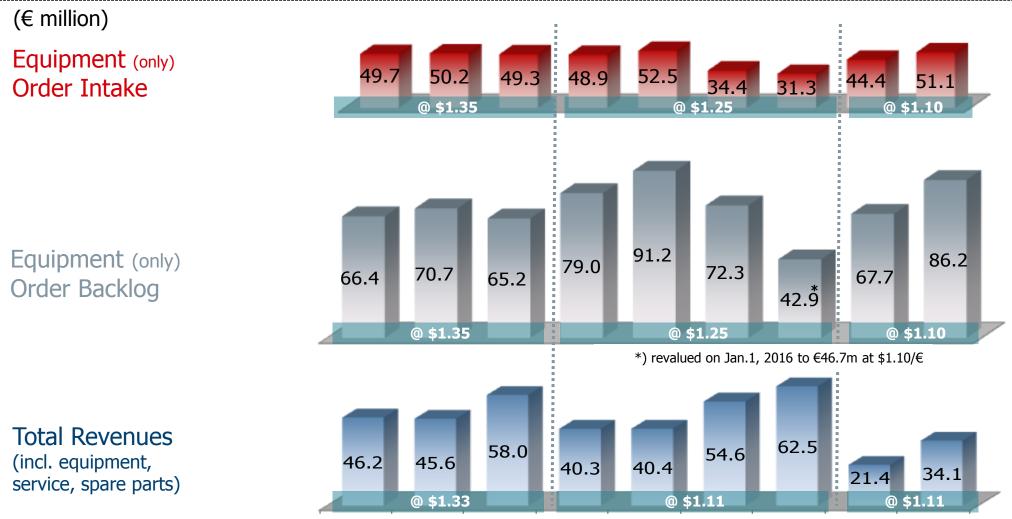
OPERATIONS

Revenue Analysis

H1/2016: H1/2016: H1/2016: by end application (equipment only) by equipment & spares by region 4% 20% 20% 34% 35% 55% 25% 30% 66% 10% LED Silicon Asia Equipment **Power Electronics** Spares Europe **Optoelectronics** USA Others



24 - Month Business Development



Q2/2014 Q3/2014 Q4/2014 Q1/2015 Q2/2015 Q3/2015 Q4/2015 Q1/2016 Q2/2016

USD order intake and backlog were recorded at the prevailing budget rate (2016: $1.10 \in$) USD revenues were converted at the actual period average FX rate (H1/2016: $1.11 \in$)

RIXTRON

Consolidated Income Statement*

(€ million)	H1/16	H1/15	+/-	Q2/16	Q1/16	+/-
Revenues	55.5	80.7	-31%	34.1	21.4	59%
Cost of sales	45.5	68.3	-33%	27.2	18.3	49%
Gross profit	10.0	12.4	-19%	6.9	3.1	123%
Gross Margin	18%	15%	3 рр	20%	15%	5 рр
Selling expenses	5.8	6.3	-8%	2.9	2.9	-3%
General & admin expenses	8.3	8.5	-3%	4.5	3.8	17%
R&D	26.0	27.6	-6%	12.7	13.3	-5%
Net other op.(income)/expenses	(4.2)	(3.3)	-27%	(2.0)	(2.2)	13%
EBITDA	-20.0	-21.8	8%	-8.2	-11.7	30%
EBIT	-25.9	-26.7	3%	-11.2	-14.7	24%
EBIT Margin	-47%	-33%	-14 pp	-33%	-69%	36 рр
Result before tax	-25.6	-26.2	2%	-11.0	-14.6	25%
Pre-Tax Margin	-46%	-33%	-13 pp	-32%	-68%	36 рр
Net result	-26.6	-27.6	4%	-11.1	-15.5	28%
Net Return on Sales	-48%	-34%	-14 рр	-33%	-72%	39 рр

*) rounded figures; may not add up



Consolidated Statement of Financial Position*

(€ million)	30/6/16	31/12/15	30/6/15
Property, plant & equipment	77.2	81.3	80.6
Goodwill	74.4	75.9	77.1
Other intangible assets	5.8	6.4	5.7
Others	3.6	3.9	4.8
Non-current assets	161.0	167.6	168.2
Inventories, WIP & Finished Goods	78.2	70.8	85.8
Trade receivables	22.2	26.0	23.5
Others	7.9	8.2	9.4
Cash & Cash Equivalents incl. CD	161.3	209.4	255.4
Current Assets	269.6	314.4	374.1
Shareholders' equity	365.2	396.5	398.6
Non-current liabilities	2.9	3.6	3.8
Trade payables	11.0	9.8	12.6
Advance payments from customers	29.5	24.0	95.1
Others	21.9	48.0	32.2
Current liabilities	62.5	81.8	139.9
Balance Sheet total	430.6	482.0	542.2

*) rounded figures; may not add up



Consolidated Statement of Cash Flows*

(€ million)	H1/16	H1/15	Q2/16	Q1/16
Cash Flow from operating activities	-39.3	-6.4	-19.9	-19.4
Cash Flow from investing activities	26.4	8.9	19.3	7.1
Cash Flow from financing activities	0.1	-0.2	0.1	0.0
Exchange rate changes	-2.6	5.2	0.1	-2.7
Net change in Cash & Cash Equivalents	-15.4	7.5	-0.4	-15.0
Cash & Cash Equivalents (beginning of period)	116.3	116.6	101.3	116.3
Cash & Cash Equivalents (end of period)	100.9	124.1	100.9	101.3
Change in Cash deposits	-32.4	-22.5	-20.1	-12.2
Free Cash Flow**	-41.0	-12.3	-20.7	-20.3
Сарех	1.7	7.4	0.8	0.9

*) 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

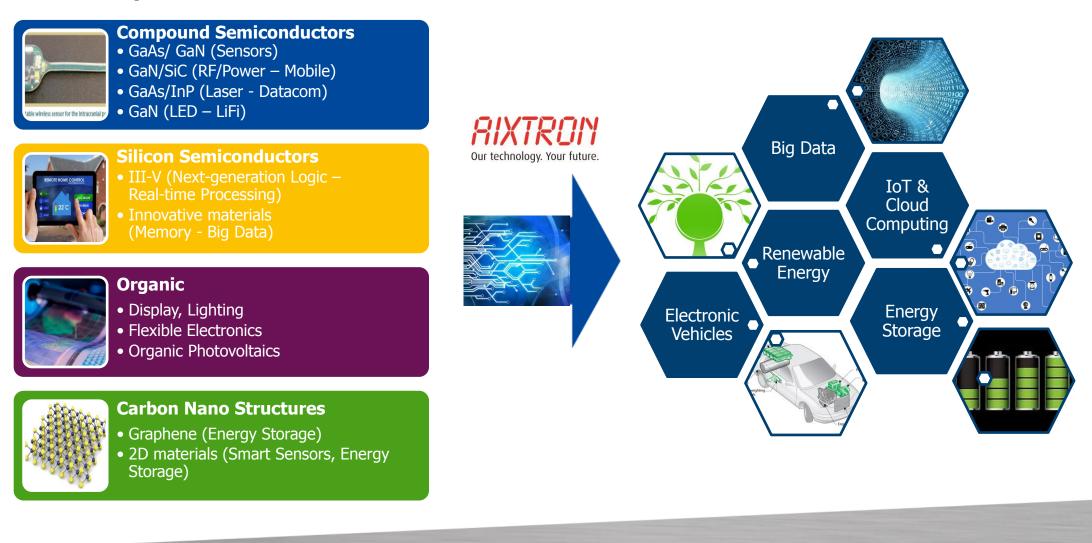


Our technology. YOUR FUTURE.



AIXTRON — Key Enabler for Innovative Future

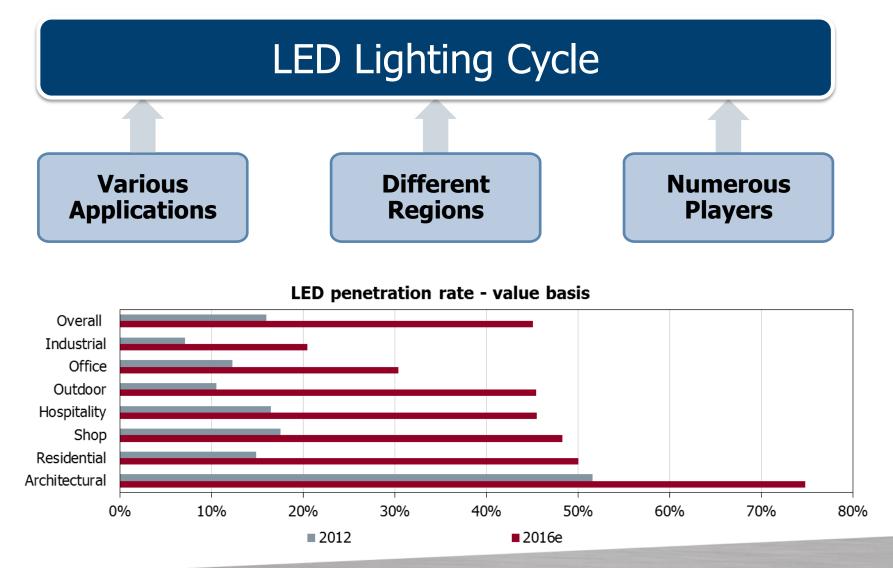
New Complex Materials



Tech Trends

LED Lighting Market: Multiple Tipping Points

Source: : AIXTRON, McKinsey 2012



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billion units

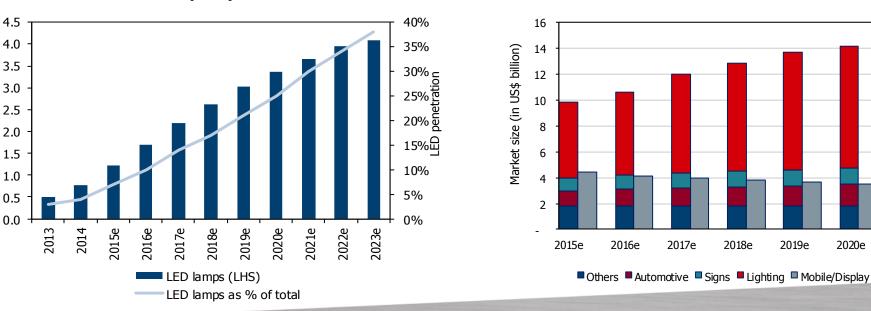
LED Lighting Market Estimates

Global LED lamp shipments

Source: IHS 2016, Strategies Unlimited

Globalization and urbanization to drive LED lighting opportunities:

- Emerging countries: need for energy efficient lighting solutions
- Developed countries: SSL driven by expanding renovation market
- Outdoor: Early adoption streetlight replacement market
- Commercial: LED Light Bulb reaching price tipping point



LED Market Forecast

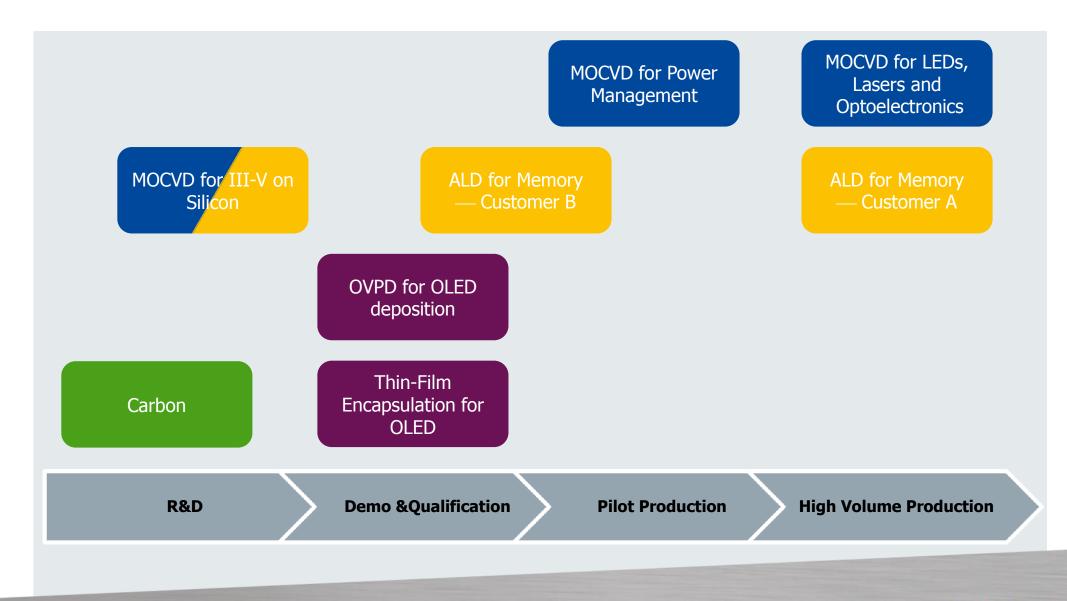
2018e

2019e

2020e



Technology Position

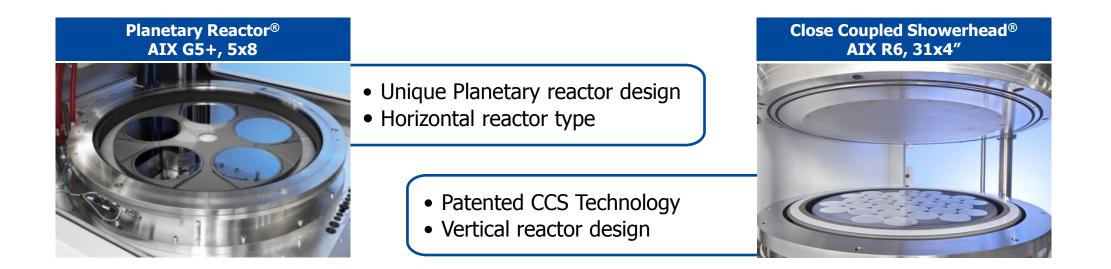




Compound Semiconductors – MOCVD

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



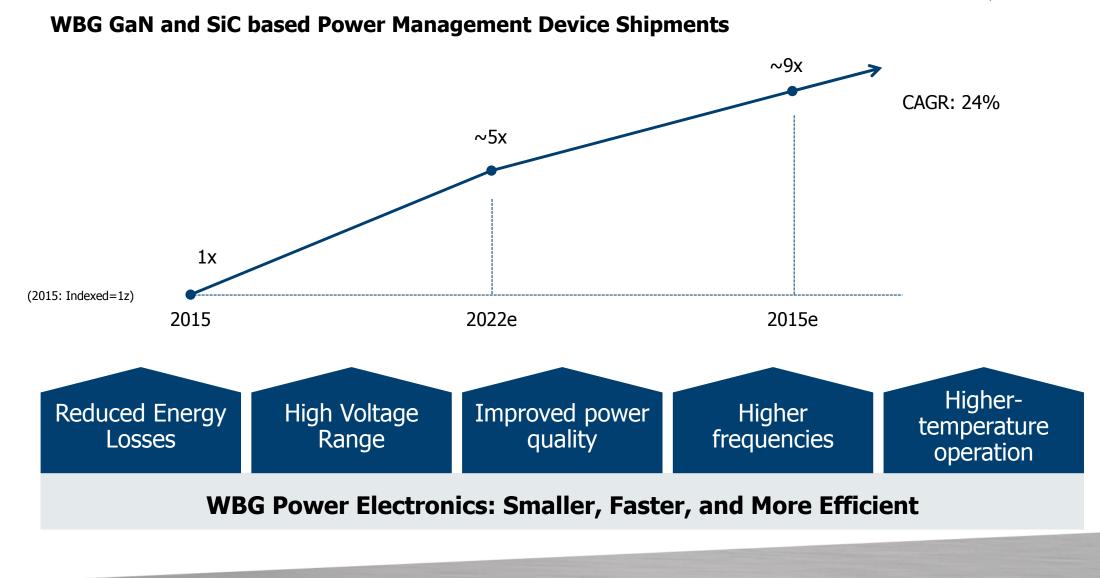


Compound Semiconductors – Wide Band Gap (WBG) Power Electronics

nagement 600	V	Power Switching 1.2 kV	≥2kV
	v	1.2 kV	≥2kV
 Infotainment GPS Connected car Autonomous driving EMI/EMC Adaptive cruise control 	 General automotive electronic HEV/EV Charging station Inverter / motor drives Converter Radar test applications 	 Power Grid / Smart meter / appliances Solar / Wind inverters Solar / Wind power DC dis tribution storage UPS 	 UPS Industrial machines Building Mining, oil, gas power generation Shipping/Rail
G	aN / SiC		SiC
Niche segment			
	 Connected car Autonomous driving EMI/EMC Adaptive cruise control 	 Connected car Autonomous driving EMI/EMC Adaptive cruise control Converter Radar test applications 	 HEV/EV Autonomous driving EMI/EMC Adaptive cruise control Inverter / motor drives Converter Radar test applications UPS

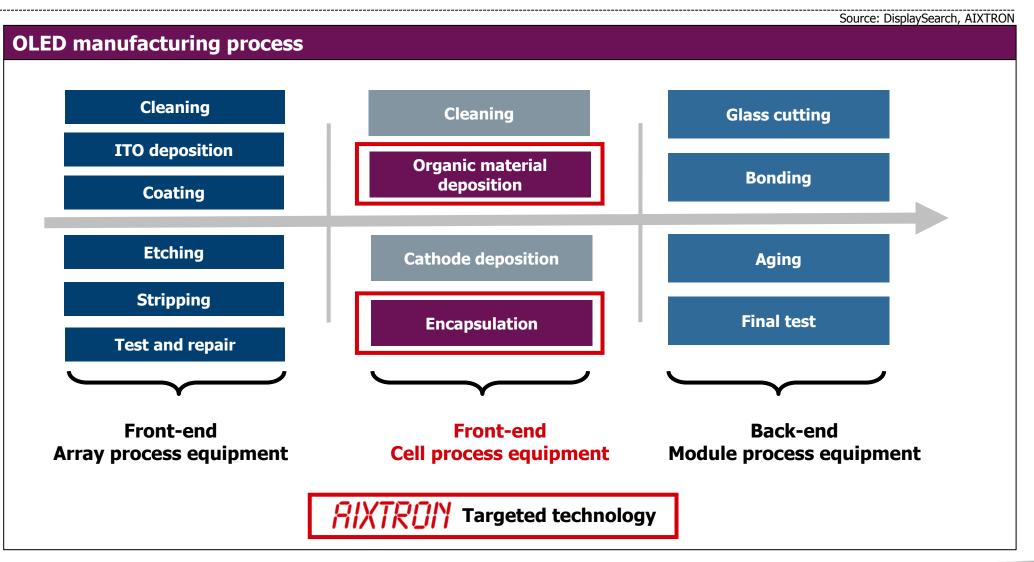
Compound Semiconductors – Wide Band Gap (WBG) Power Electronics

Source: DOE, IHS 2016



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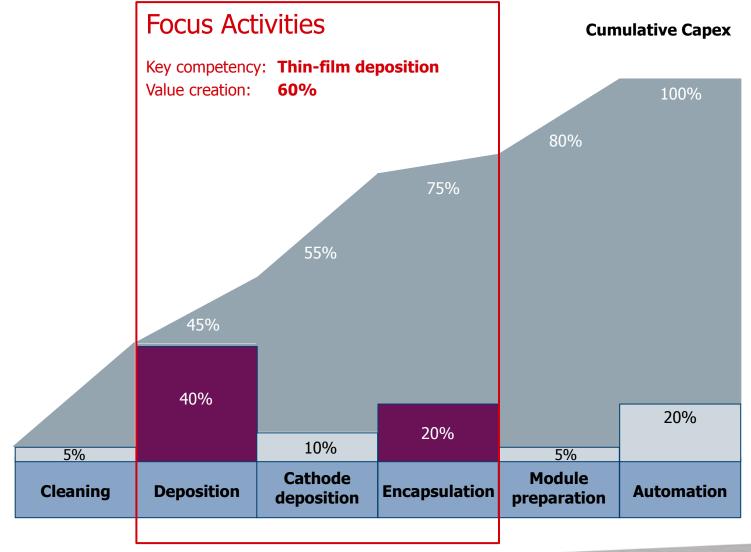
Organic Electronics – OVPD® + Encapsulation



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Organic Electronics – Front-end Process Equipment

Source: IHS; AIXTRON internal estimates





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"

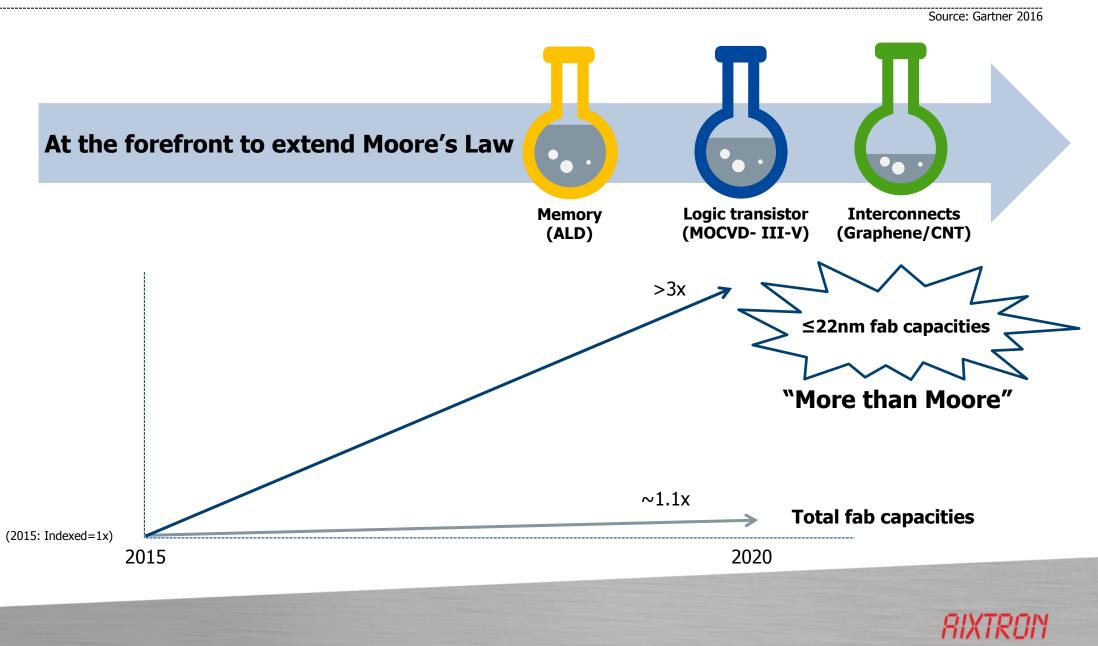
Product Features

- 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





Silicon Semiconductors – Leading Edge Technologies



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

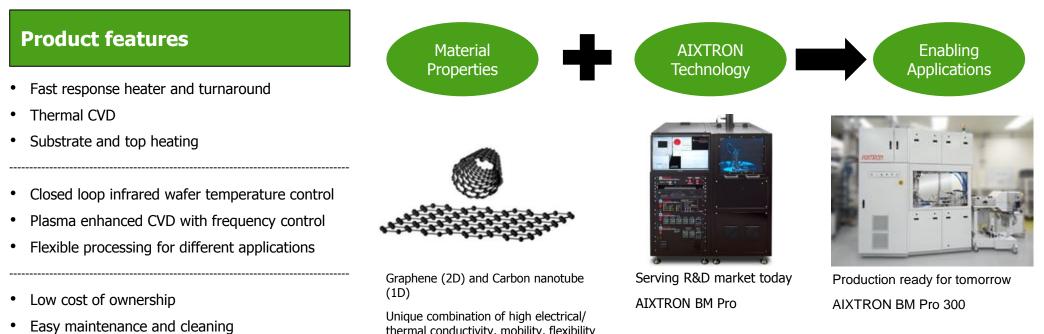




Carbon Nanomaterials – PECVD

Graphene and Carbon Nanotube Deposition Systems

- Proprietary thermal and plasma enhanced chemical vapour deposition technology ٠
- Excellent uniformity and reproducibility with fast turnaround cycle times ٠
- 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 ٠



User management features and growth library

thermal conductivity, mobility, flexibility and transparency



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*

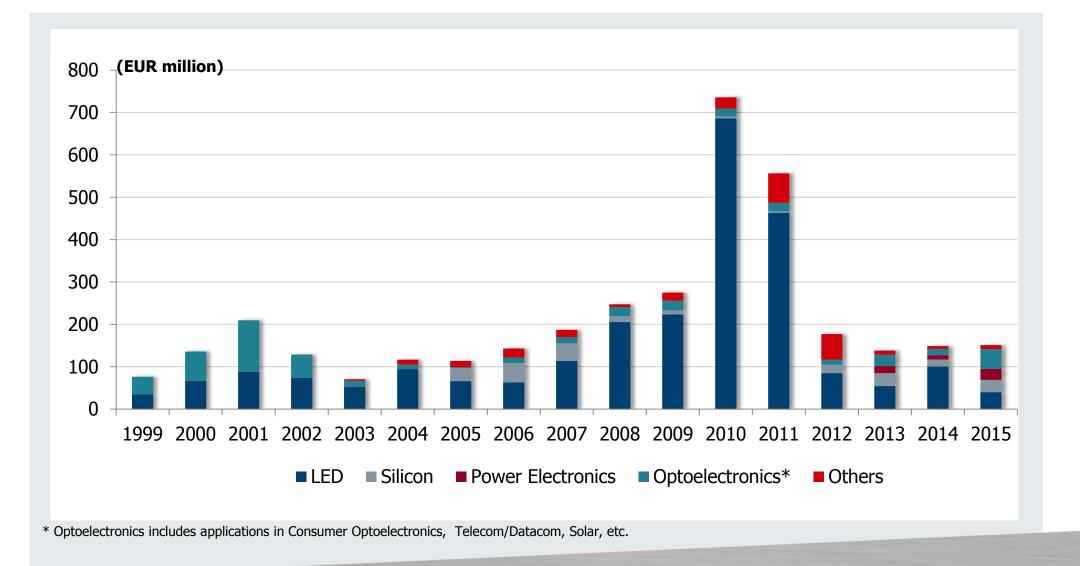
(€ million)	2015	2014	2013
Cash Flow from operating activities	-45.7	-33.8	8.2
Cash Flow from investing activities	41.2	-23.2	-39.7
Cash Flow from financing activities	-0.1	0.2	101.6
Exchange rate changes	4.3	5.9	-2.4
Net change in Cash & Cash Equivalents	-0.3	-50.9	67.7
Cash & Cash Equivalents (beginning 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
Сарех	13.3	13.4	10.1

*) rounded figures; may not add up **) Operating CF + Investing CF + Changes in Cash Deposits, adjusted for acquisition effects

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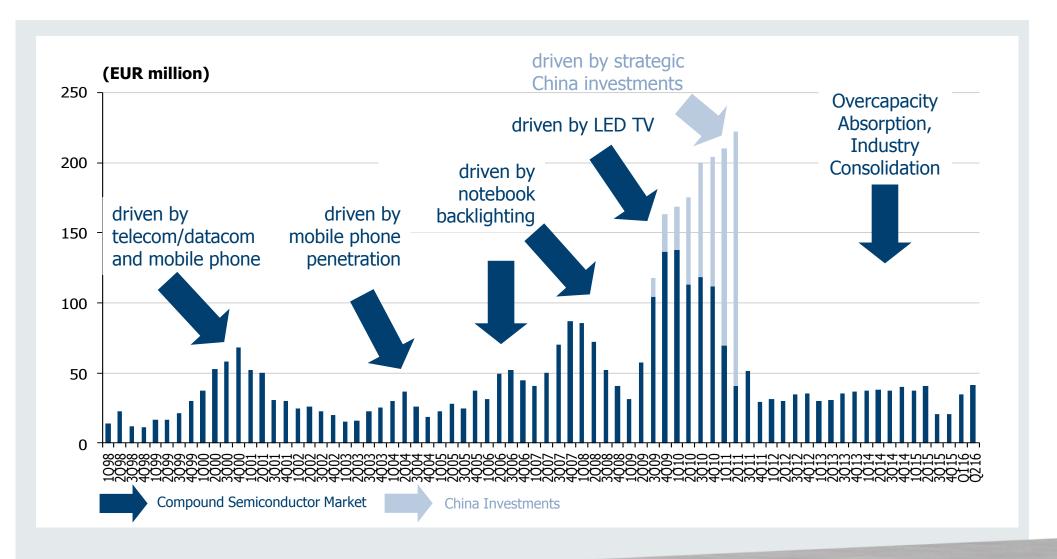
OPERATIONS

Annual Equipment Revenues by Application (excl. spares)





Equipment Order Intake per Quarter





ABOUT AIXTRON

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, carbonbased 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.



- November 8, 2016 9M/2016 Results, Conference Call
- February 2017 FY/2016 Results, Conference Call
- May 2017 Annual General Meeting, Aachen

For further information please contact:

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Thank you very much for your attention.

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