Automotive Conference Call

London, 10 October 2017

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Division President Automotive

Agenda

1. Overview
2. Megatrend 1: ADAS and automated driving
3. Megatrend 2: Clean cars
4. Summary

Please regard the glossary at the end of the presentation.

Disclaimer: This presentation contains forward-looking statements about the business, financial condition and earnings performance of the Infineon Group. These statements are based on assumptions and projections resting upon currently available information and present estimates. They are subject to a multitude of uncertainties and risks. Actual business development may therefore differ materially from what has been expected. Beyond disclosure requirements stipulated by law, Infineon does not undertake any obligation to update forward-looking statements.

Megatrends shaping the automotive market; significantly increasing semi content per car

Enabling safety towards Vision Zero

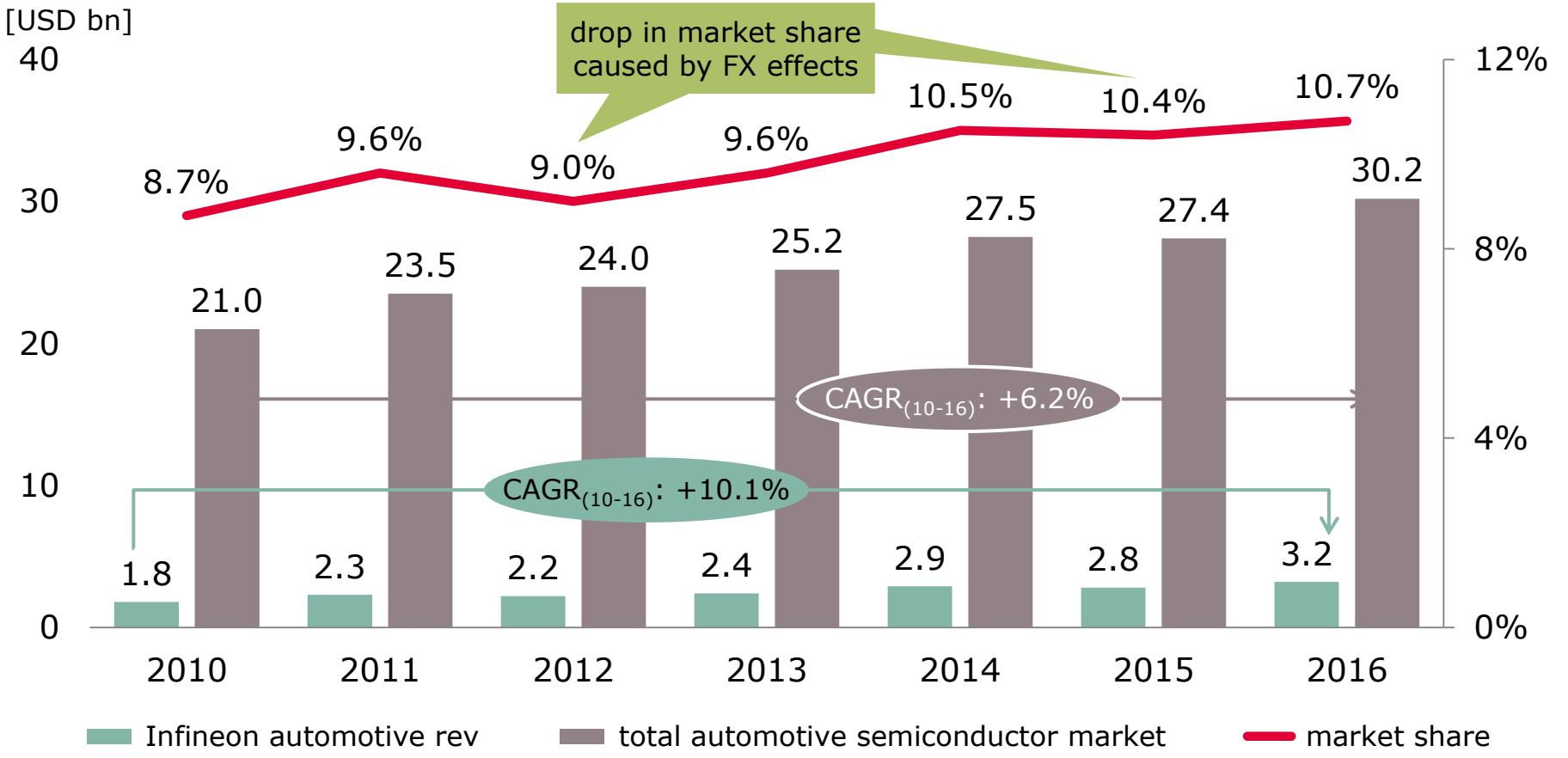
Enabling CO_2 reduction

Enabling the communication of cars

Enabling security in connected cars

Infineon's automotive business is outgrowing the market since 2010

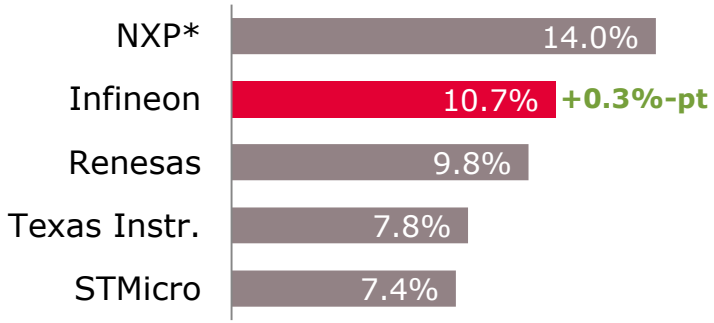
Infineon automotive market share development*



* Infineon automotive revenue as reported to Strategy Analytics incl. revenue from ATV, IPC and PMM. Adjusted to calendar year.
Source: Strategy Analytics, "Semiconductor Vendor Ranking", 2010 through 2016.

Infineon's position in the automotive semiconductor universe

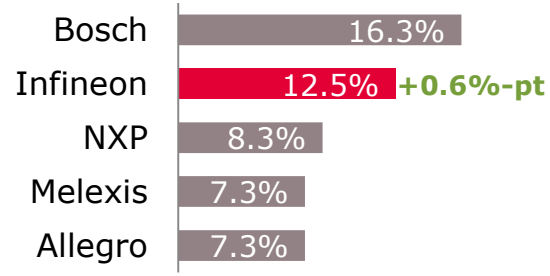
Automotive semiconductors
2016 total market size: $30.2bn



Market share trend

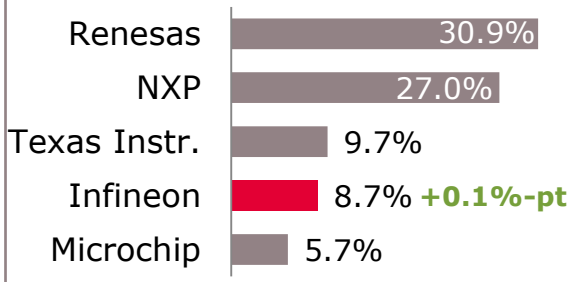
- Infineon benefits disproportionately from the two mega trends
  - ADAS/AD
  - clean cars

Sensors



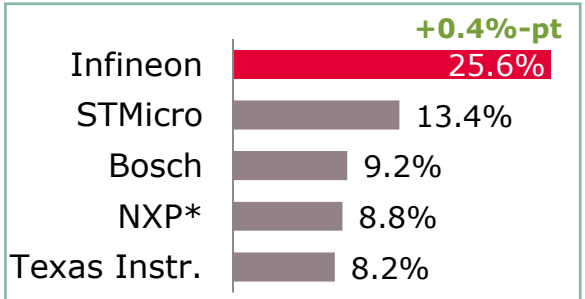
long-term drivers:
- 24 / 77 GHz radar
- lidar

Microcontrollers



long-term drivers:
- ADAS/AD
- Powertrain

Power



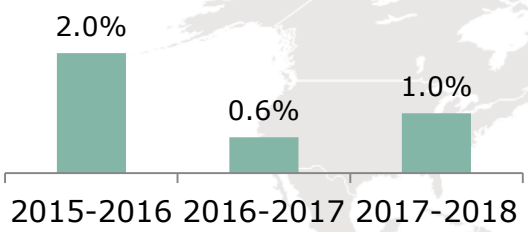
long-term drivers:
- xEV penetration
- EPS
- Lighting

* Divestiture of NXP's Standard Product business ("Nexperia") closed on 16 Feb 2017; hence included in the 2016 ranking.
Source: Strategy Analytics, "Automotive Semiconductor Vendor Market Shares", April 2017

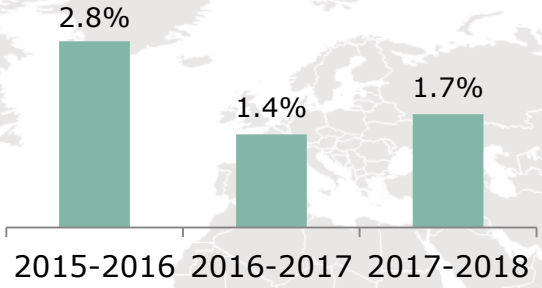
WW car production growth rate expected to be ~2% for 2017 and 2018; China slowing down

Light vehicle market development (car production)

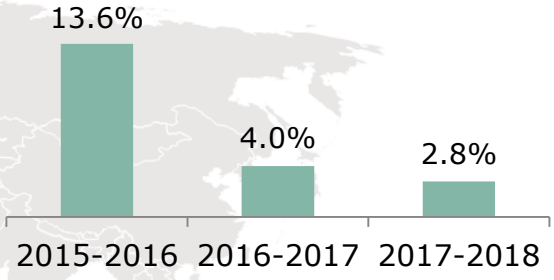
NAFTA (Y-Y)



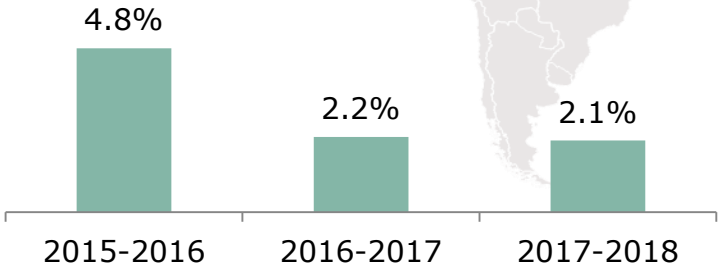
Europe (Y-Y)

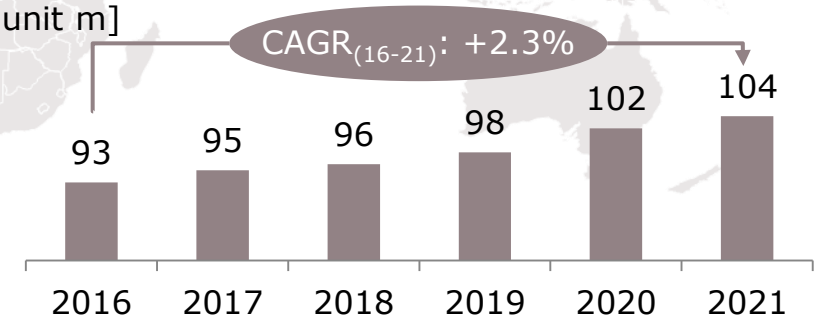


China (Y-Y)



World (Y-Y)





Source: IHS Markit, Technology Group, "Light vehicle production & sales volumes", September 2017 update

Megatrend 1: advanced driver assistance systems and automated driving

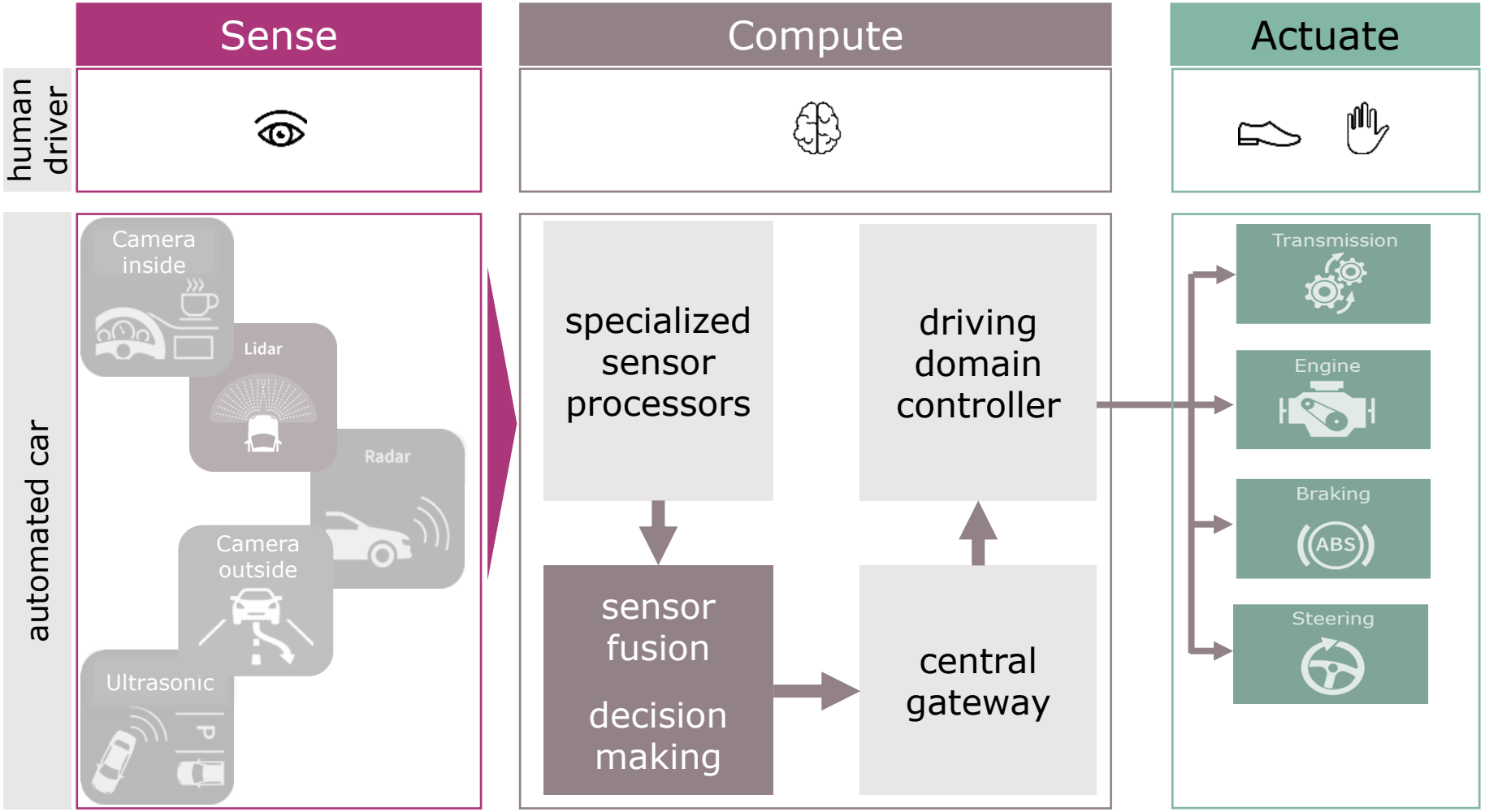
Enabling safety towards Vision Zero

Enabling CO_2 reduction

Enabling the communication of cars

Enabling security in connected cars

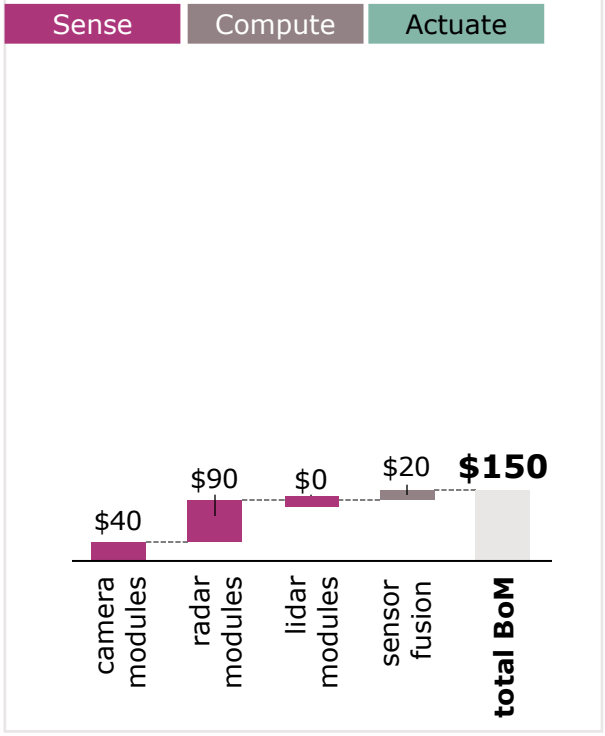
Conceptual overview of an ADAS/AD system



ADAS/AD semi growth driven by radar and camera sensor modules over the next 5 years

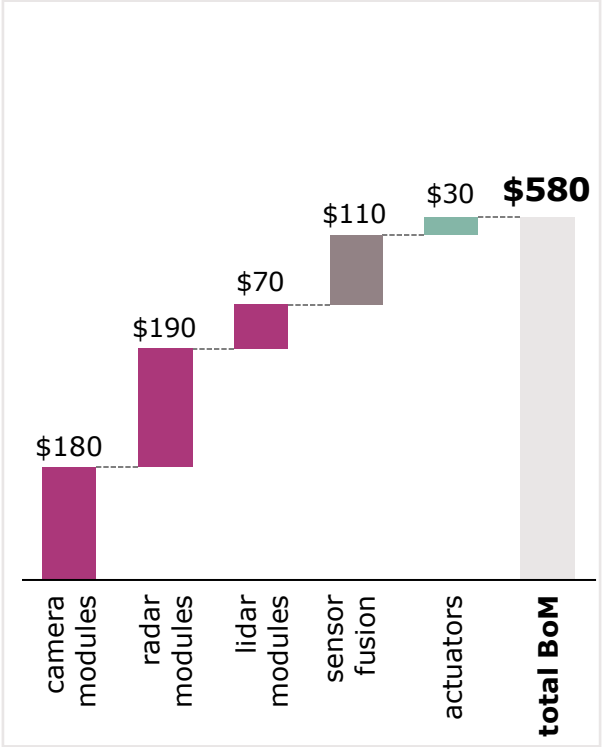
Average semiconductor content per car by level of automation

Level 2 (~2020)



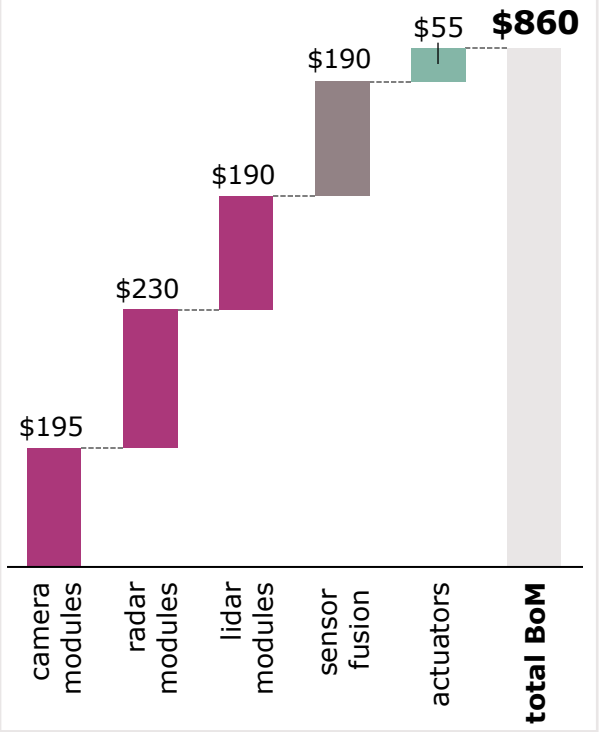
L2 vehicles in 2020:~8m

Level 3 (~2025)



L3 vehicles in 2025: ~3m

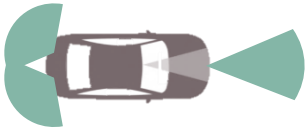
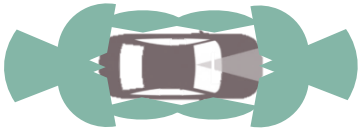
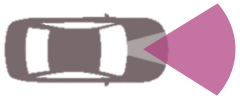
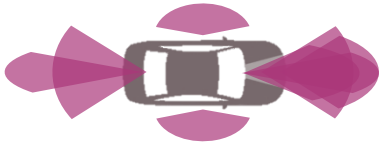
Level 4/5 (~2030)



L4/L5 vehicles in 2030: ~4m

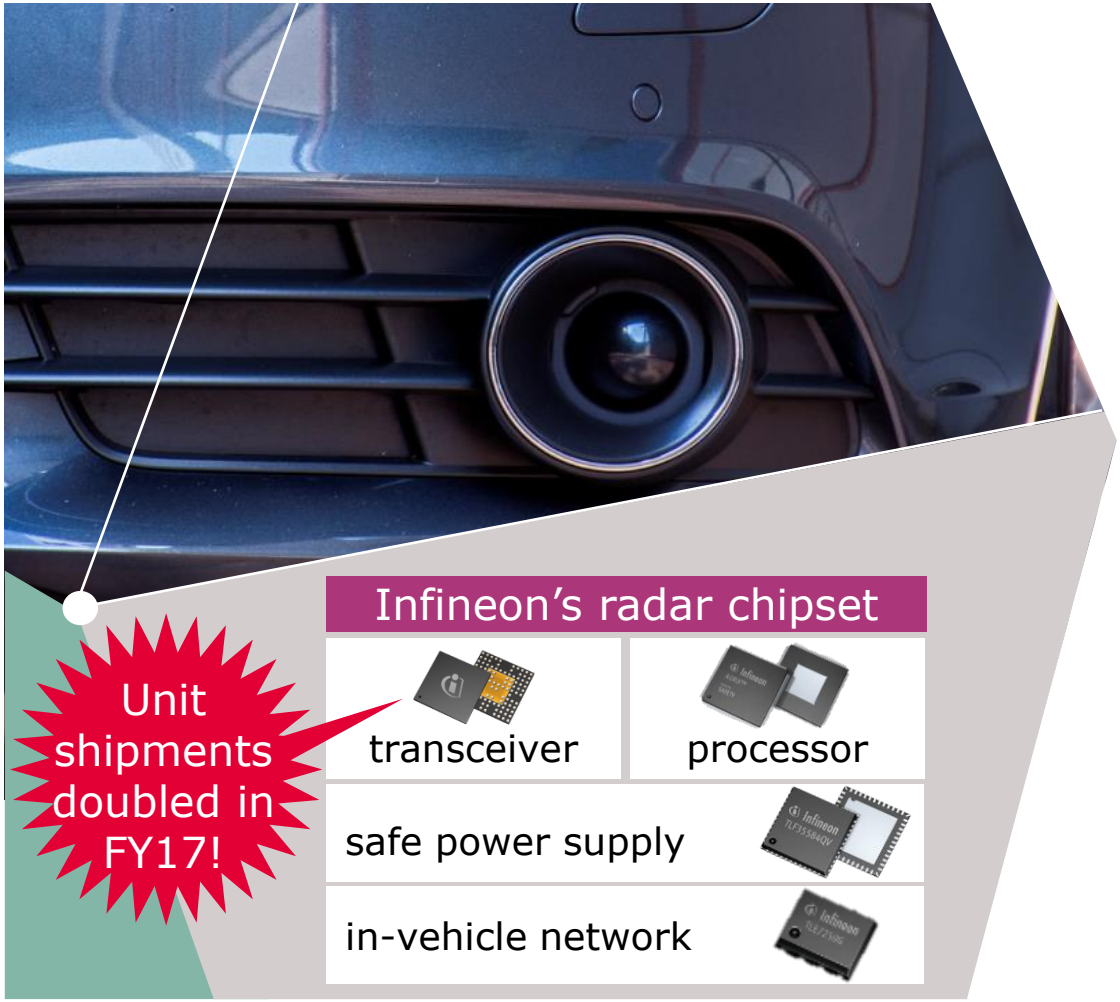
Source: Strategy Analytics; IHS Markit, Technology Group; Infineon.
Bill of material contains all type of semiconductors (e.g. radar modules include µC).

More sensors required for any next level of automation will lead to sensor cocoon in L4/5

	Level of automation		
	Level 2	Level 3	Level 4/5
Application*	Automatic emergency brake/ forward collision warning		
	Parking assist		Valet parking
	Lane keep assist	Highway assist	Highway and urban chauffeur
Radar # of modules**	 ≥ 3	 ≥ 6	 ≥ 10
Camera # of modules**	 ≥ 1	 ≥ 4	 ≥ 8
Lidar # of modules**	0	 ≤ 1	 ≥ 1
Others	Ultrasonic	Ultrasonic Interior camera	Ultrasonic Interior camera V2X

* Source: VDA (German Association of the Automotive Industry); Society of Automotive Engineers
** Market assumption

Infineon’s radar solutions reduce development efforts on customer side



Infineon’s value proposition

- SiGe-based radar solutions are the best solutions on the market
- Infineon’s radar solutions facilitate the system integration at customers and reduce their development efforts
- Infineon’s optimized solutions safeguard component interoperability and comply with functional safety requirements

Introduction of central computers triggers demand for high-perf., fail operational MCUs

decision making

L0 / L1 / L2 vehicles

human acts

L3 / L4 / L5 vehicles

central computer

CPU / GPU

MCU (AURIX™)

camera

radar

lidar

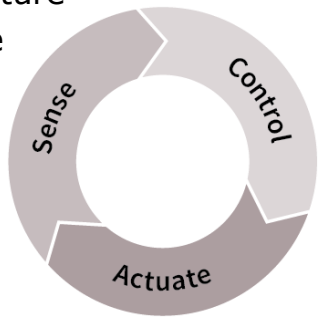
GPS

central computer triggers car operations

basic car functions

classic ECU

› temperature
› pressure
› position
› speed



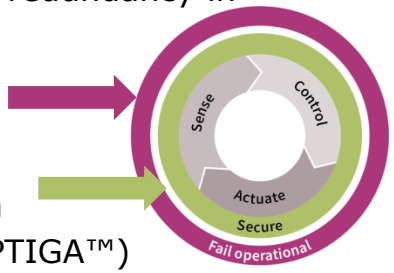
› MOSFETs
› IGBTs
› power ICs

› MCUs, e.g. AURIX™

future ECU = classic ECU

+ higher performance
+ fail operational
+ secure

fail operational systems require redundancy in
› power switches, power supply
› sensors
› MCUs



car security is achieved through
› discrete security controller (OPTIGA™)
› integrated security modules in MCUs (AURIX™)

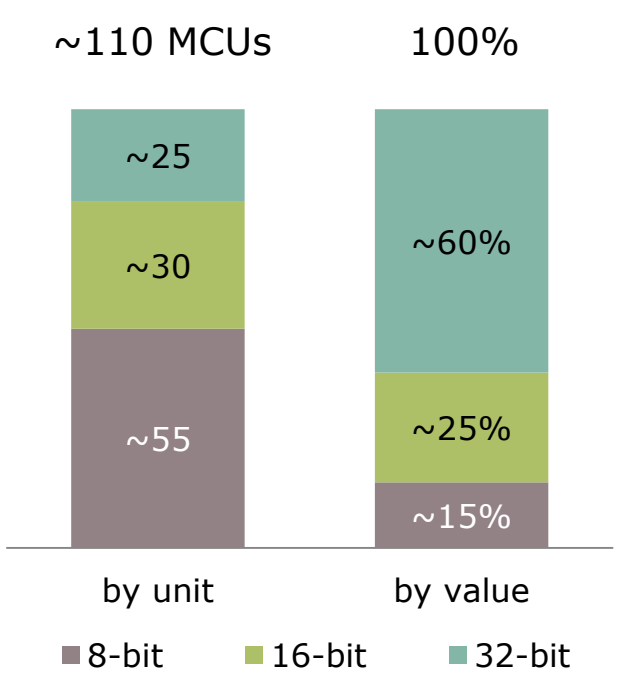
Vast majority of microcontroller units (MCUs) will be used in ECUs

vehicle segments	Light vehicle production	ECU	CC
luxury/premium 	[units m] 2016: 10 total, 0 thereof L3+ cars; 2020: 12 total, 5 thereof L3+ cars; 2025: 14 total, 9 thereof L3+ cars	[MCUs per car] up to **110 MCUs** trend:	[CPU/MCUs per L3+ car] **2 CPUs + 1 MCU**
mid-range 	2016: 66 total, 0 thereof L3+ cars; 2020: 71 total, 0 thereof L3+ cars; 2025: 77 total, 6 thereof L3+ cars	up to **60 MCUs** trend:	**1-2 CPUs + 1 MCU**
economy/low-end 	2016: 17 total, 0 thereof L3+ cars; 2020: 19 total, 0 thereof L3+ cars; 2025: 21 total, 0 thereof L3+ cars	up to **20 MCUs** trend:	**0 CPU 0 MCU**

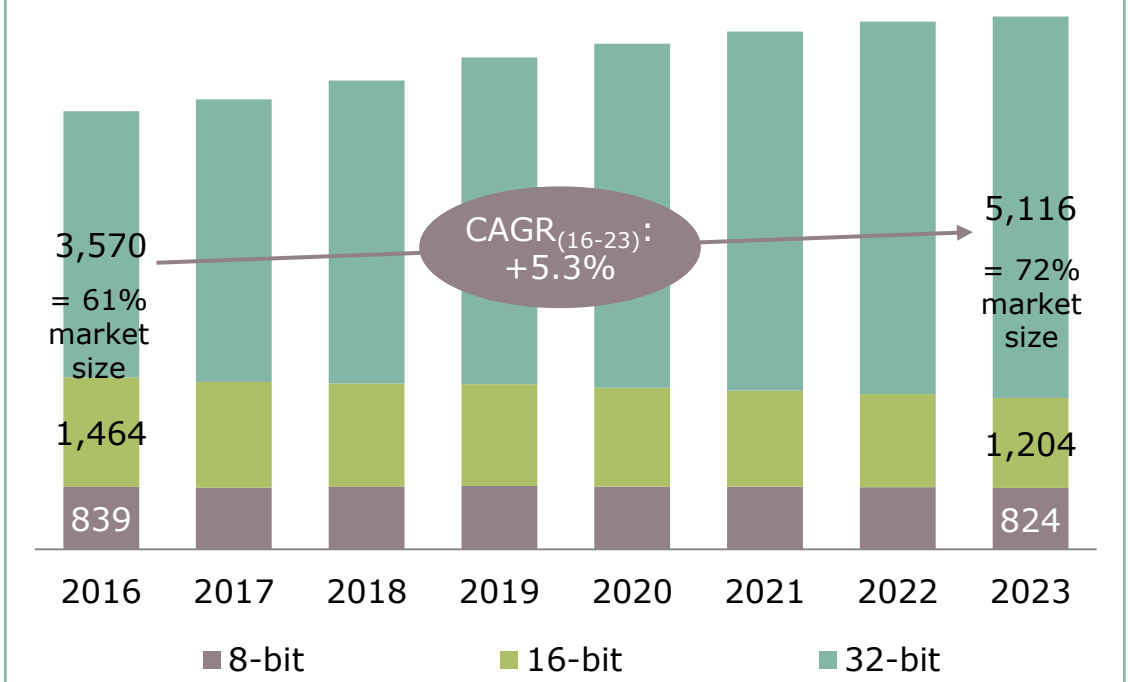
Source: Strategy Analytics, Infineon estimates

32-bit MCUs capture the lion share of $-opportunity in automotive applications

Example: 2016 German premium car with ~110 MCUs in total



32-bit MCU market is the place to be



› Infineon AURIX™ fits to ~90% of all 32-bit use cases and is clearly gaining market share in 32-bit automotive market, e.g. radar signal pre-processing

Source: Strategy Analytics, „Automotive Semiconductor Demand Forecast 2014 – 2023“, January 2017

AURIX™ microcontroller covers ~90% of all 32-bit control and processing use cases

32-bit MCU use cases

Airbag and safety	Powertrain	24 GHz radar
Power steering	xEV inverter control	77 GHz radar
Stability control	Domain control	Advanced lighting
xEV DC-DC & charger	Sensor fusion	Vision safe host

AURIX™ radar controller and chipset

- **Performance**: multi-core microcontrollers supporting latest radar data analysis algorithms
- **Scalability**: portfolio covering basic assist systems up to complex automated driving
- **Safety**: chipset enabling design of safe radar systems up to ISO26262 ASIL-D
- **Security**: Latest crypto-processing technology for protection against hacker attacks

Five major radar system suppliers plan to use AURIX™ 2G radar controller in 2020 onwards

Megatrend 2: clean cars

Enabling safety towards Vision Zero

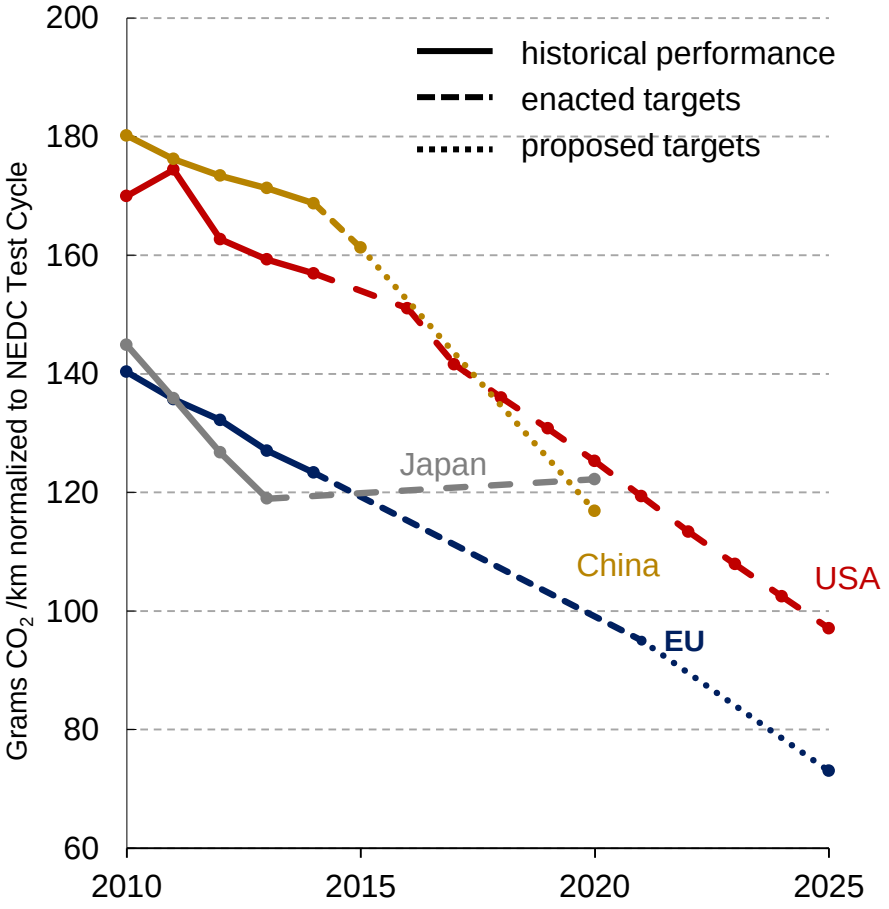
Enabling CO_2 reduction

Enabling the communication of cars

Enabling security in connected cars

CO_2 emission targets are the key triggering points for increase in semiconductors

National fleet emissions



Source: The International Council for Clean Transportation, 2017

CO_2 drives three major trends

(1) Higher efficiency of the 'classic' ICE:

- EPS (electric power steering)
- start-stop
- dual-clutch
- alternator

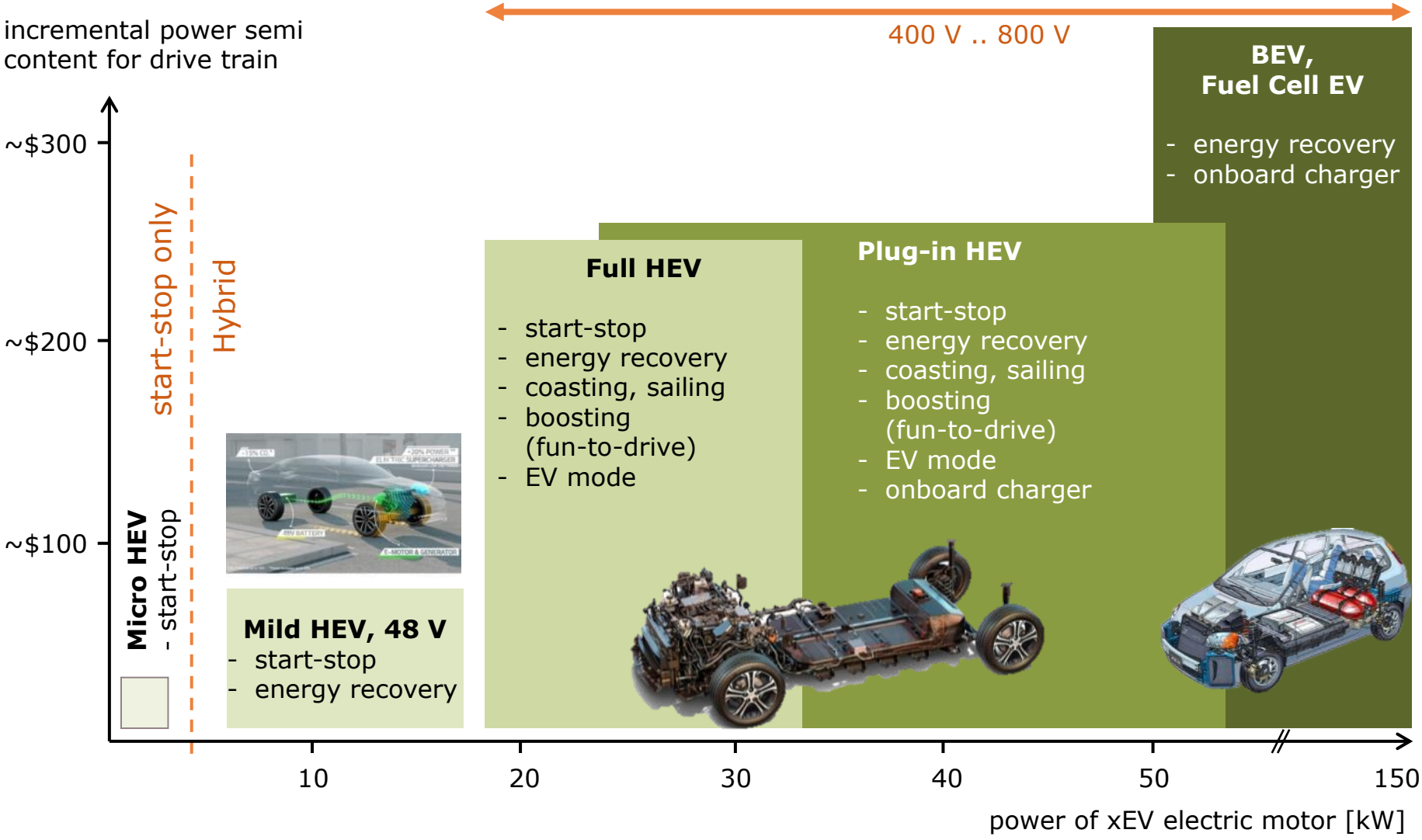
(2) Energy efficiency of body applications:

- power distribution
- electric motors for pumps and fans

(3) Electrification of the drivetrain:

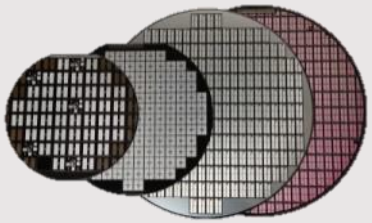
- main inverter
- auxiliary inverter
- onboard charger
- battery management

Power semiconductor demand for all different levels of electrification



Infineon has unparalleled package expertise for high-power main inverter applications

Bare die	Discretes	Scalable products	Plug-n-Play



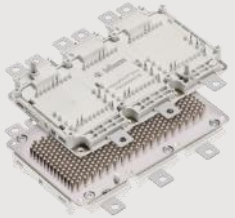
Si bare dies

SiC bare dies

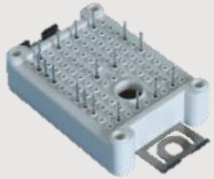
Si IGBT

SiC MOSFET

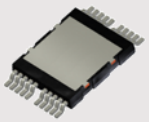
HybridPACK™ Double-Sided Cooling

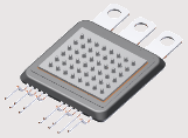


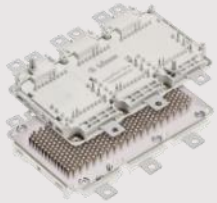
HybridPACK™ solutions



Easy modules





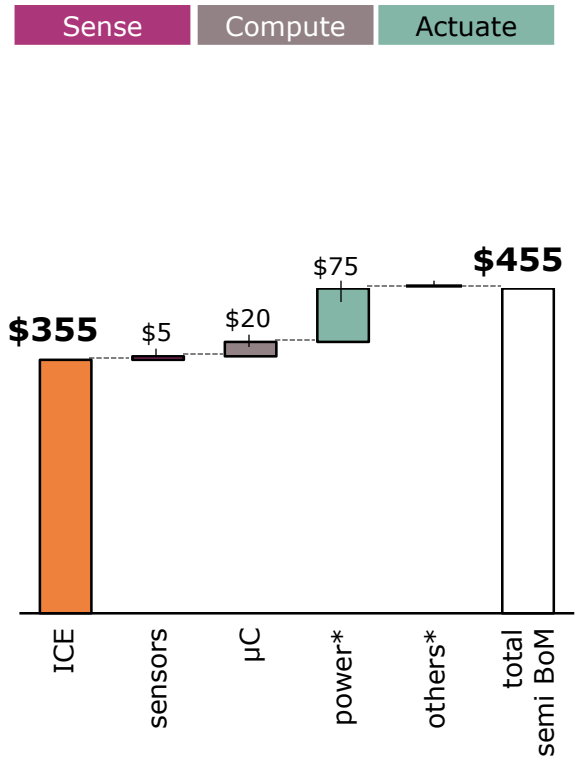


SiC-optimized package solution

The incremental demand of power semi-conductors is a significant opportunity

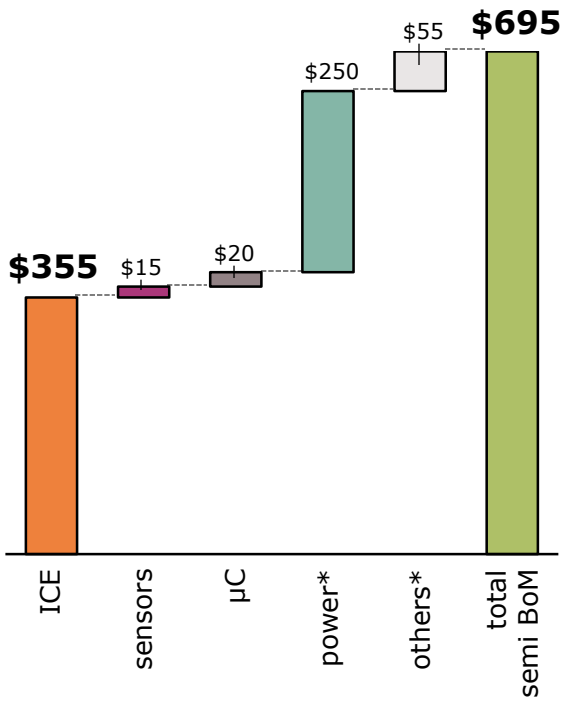
2017 average xEV semiconductor content by degree of electrification

48 V / MHEV



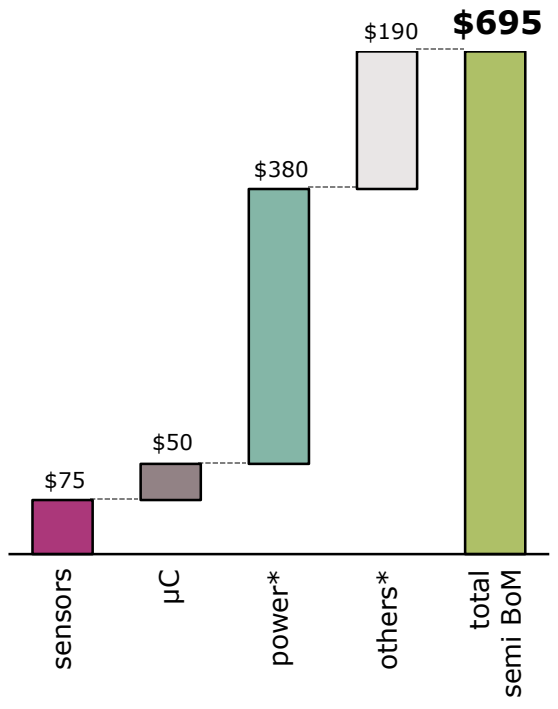
48 V / MHEV veh. in 2025: ~15m

HEV / PHEV



PHEV vehicles in 2025: ~9m

BEV



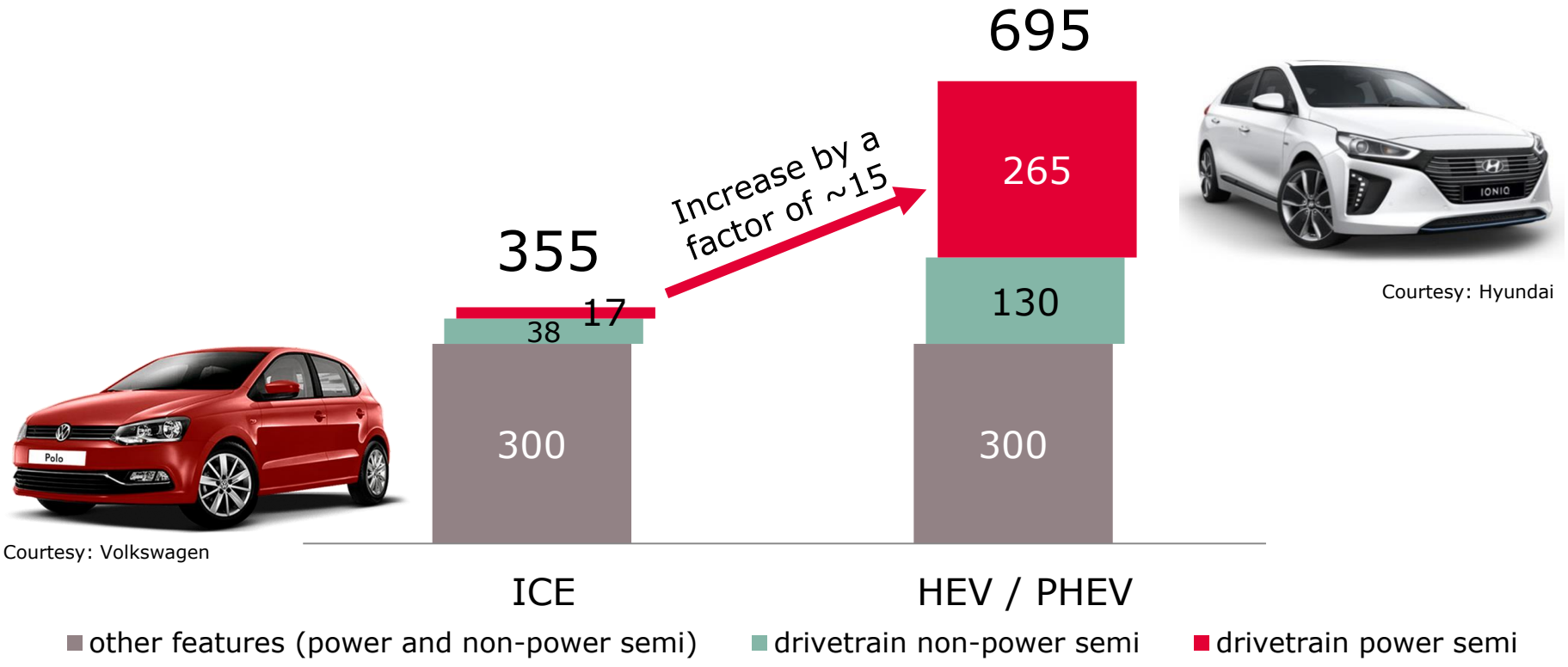
BEV vehicles in 2025: ~6m

Source: Strategy Analytics, "Automotive Semiconductor Content", May 2017; Infineon
* "power" includes linear and ASIC; "others" include opto, small signal discrete, memory

With the transition from ICE to xEV the power semi content in powertrain increases by ~15x

Average semiconductor content by type of car

[USD]



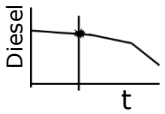
Courtesy: Hyundai

Courtesy: Volkswagen

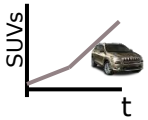
Source: Strategy Analytics, "Automotive Semiconductor Content", May 2017; Infineon

Various market drivers yield a sweet spot for xEV: BEV SUV and PHEV SUV

Consumers



Uncertainty of Diesel future



SUV popularity

Fuel price

Charging infrastructure

Car Manufacturers

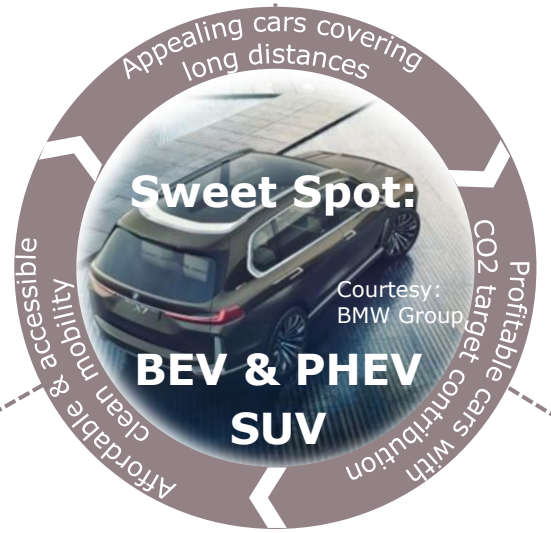
Profitable premium sport brands

Electrification (xEV)

New BEV players/ disruptors

NIO

FMC



China focus on tech leadership

CO2 targets

Diesel ban

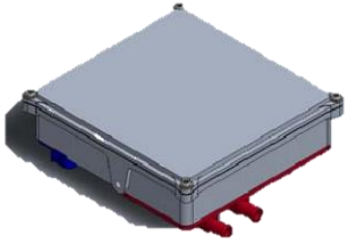
NOx

Politics / Legislation

SiC has some significant advantages over Si but will stay a niche market for some time

SiC versus Si on application level

Onboard charger



Advantages of SiC vs Si

- SiC enables a smaller form factor, less weight and thus lead to CO_2 savings on a "well-2-wheel" basis
- Higher efficiency at high-voltage fast charging
- **volume reduction by 50%**

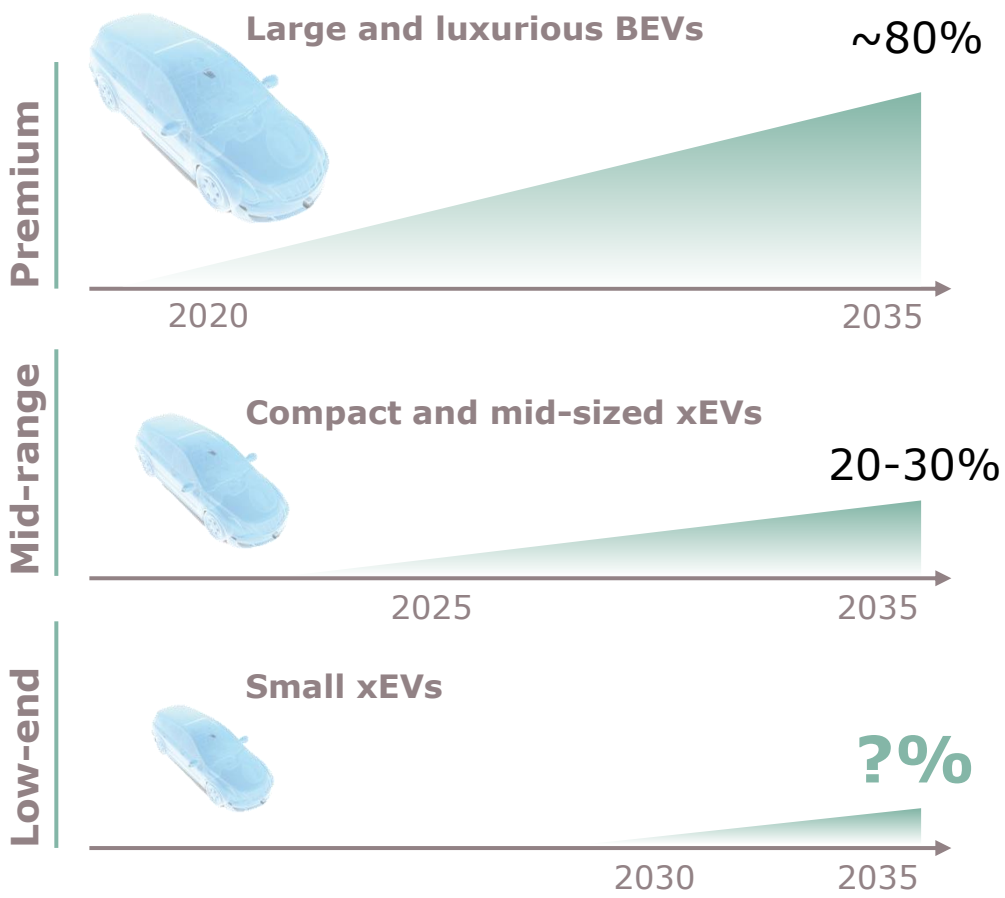
Main inverter

Advantages of SiC vs Si

- High efficiency → higher range; altern.: reduced battery cost for the same range
- Higher power density → higher performance, more flexibility in scalability
- volume reduction by 50% to 80%
- **about 5% efficiency gains in real-life driving cycle**

Premium cars will adopt SiC first in 2020+; mass market will follow not before 2025

Penetration of SiC in main inverters (qualitative forecast only)

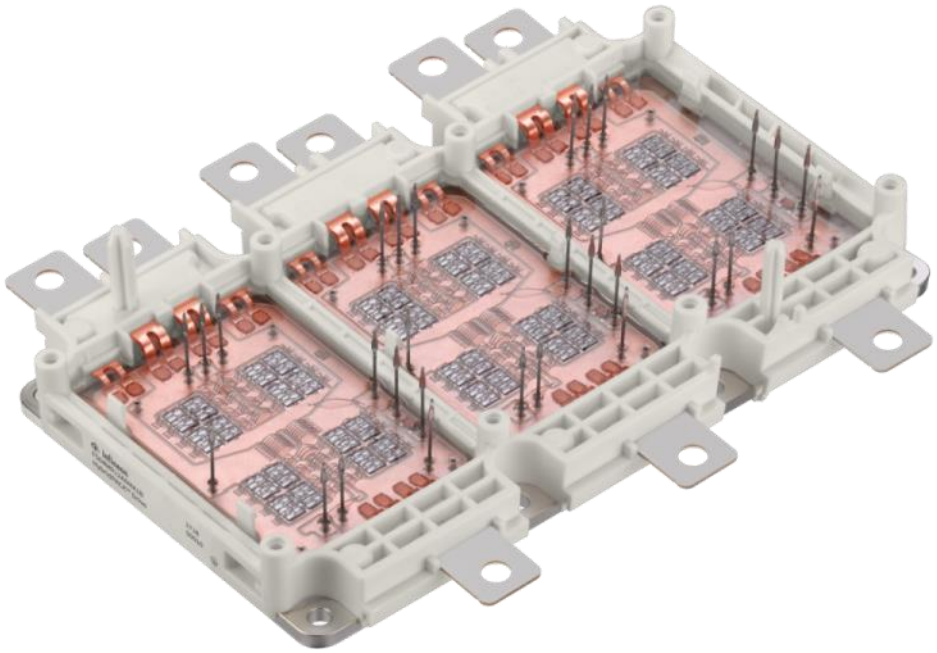


- As cost for SiC will come down over time, advantages such as performance increase, range extension, and faster charging cycles will be highly adopted for premium BEVs
- Advantages of SiC-based main inverters will pay off case-by-case, e.g. PHEV will benefit from smaller form factor
- Si will be more cost competitive for a long time
- It is unlikely that small xEVs will switch to SiC at a large extend

Source: Infineon

Infineon is well prepared for the adoption of SiC power modules in electro-mobility

Infineon demonstrated SiC power module for automotive applications

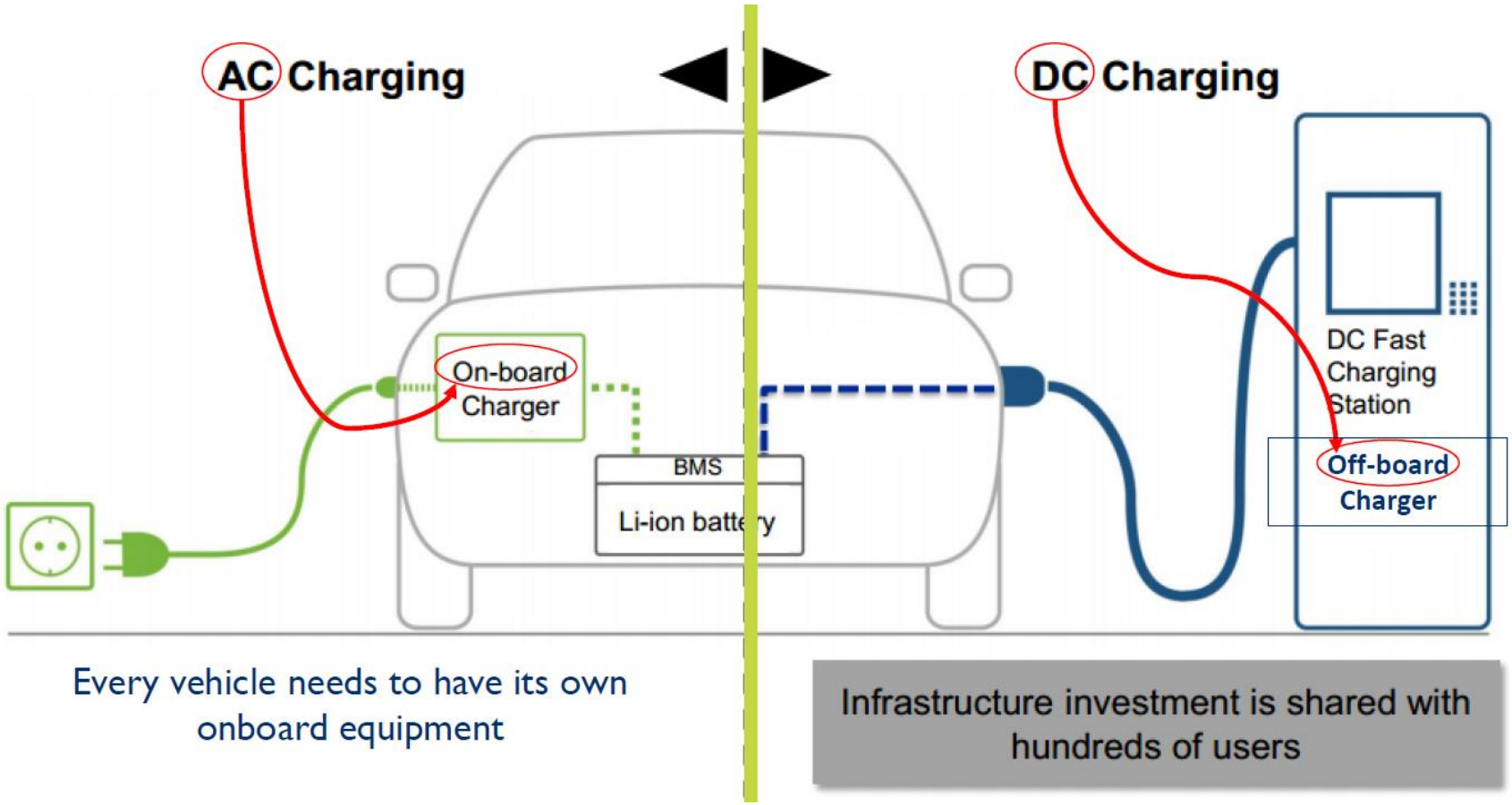


- 3-phase half-bridge module
- Power density doubled compared to IGBT
- HybridPACK™ Drive compatible
- Target applications:
  - Main inverter (300 kW)
  - High-voltage DC-DC converter

- More than 15 leading OEMs and tier-1s are evaluating the Infineon HybridPACK™ Drive CoolSiC™ MOSFET power module

Two types of charging: AC-DC on-board charging and DC-DC off-board charging

EV charging solutions



Source: Yole Développement, "Power SiC 2017: Materials, Devices and Applications", September 2017

Ultra high-power charging stations will use Infineon CoolSiC™ MOSFET technology

First OEM has chosen Infineon CoolSiC™ MOSFET technology for ultra high-power charging stations to shrink size and weight

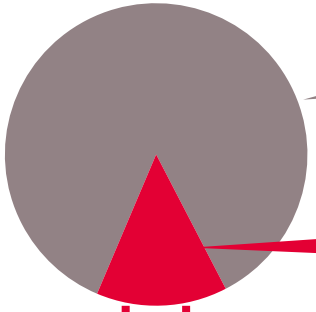
- Ultra high-power charging stations will reduce charging time for 300 km reach from 3 h to 20 min
- Specification: 350 kW; 800 V; 400 A
- Just 5 full SiC power modules (plus 5 driver ICs) are required per station due to extraordinary high performance of the Infineon CoolSiC™ MOSFET
- Infineon starts to deliver in Oct 2017

The project

- A consortium of German OEMs have signed MoU to create highest-powered charging network in Europe
- Goal: quick build-up of sizable number of stations in order to enable long-distance travel for battery electric vehicle drivers through open-network charging stations along highways
- Roll-out plan:
  - start in 2017
  - initially 400 sites in Europe
  - 1,000s of charging points by 2020

2022 trends for SiC in xEV: inverter is leading application; modules are leading form factor

2022 total power semiconductor market in xEV: $1,011m*

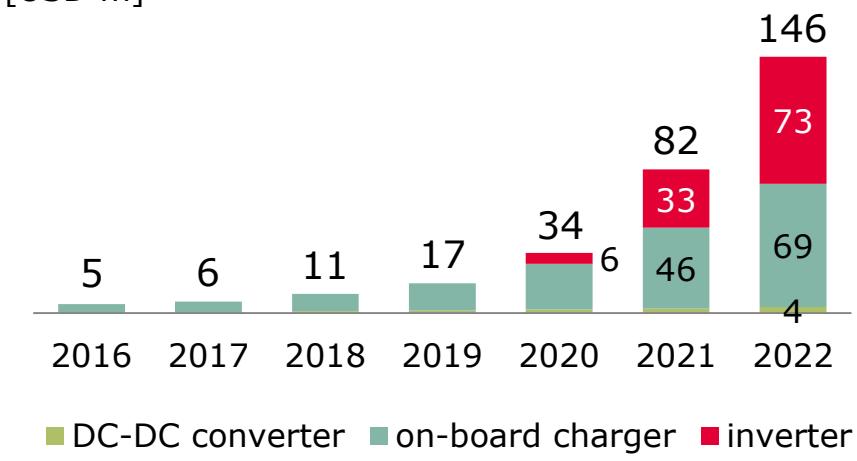


Si IGBTs: $865m (86%)

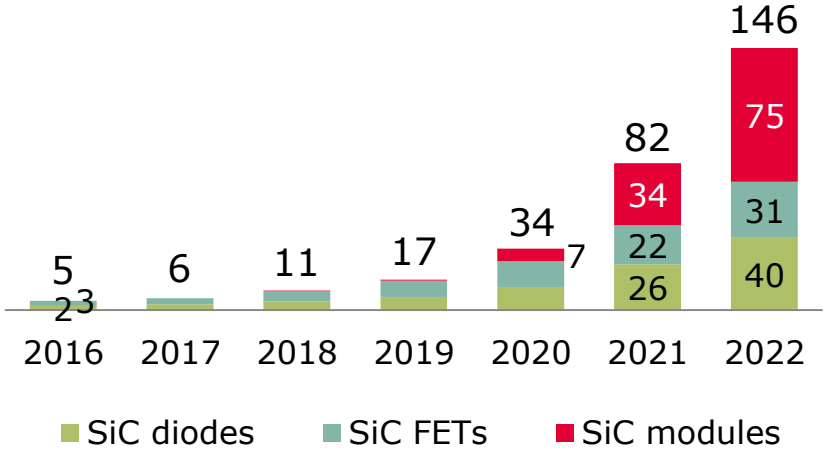
SiC: $146m (14%)

SiC by application**

[USD m]



SiC by product**



* Infineon estimate; incl. discrete IGBTs and IGBT modules, excl. MOSFETs
** Source: Yole Développement, "Power SiC 2017: Materials, Devices and Applications", September 2017

Megatrends shaping the automotive market; significantly increasing semi content per car

Enabling safety towards Vision Zero

Enabling CO2 reduction

Enabling the communication of cars

Enabling security in connected cars

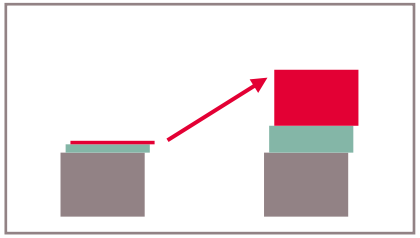
ADAS/AD, clean cars, and adoption of premium features drive growth

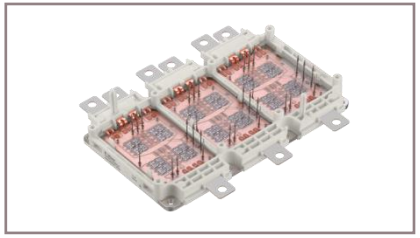
Vehicle production	Drivers for semiconductor content per car		
	Clean cars	ADAS/AD	Comfort, premium
			

› 2% - 3% growth p.a.	› Driven by legislation
	› Improvements of ICE
	› Higher efficiency of all electric consumers
	› Adoption of xEV
		› Today:
		  › crash avoidance
		  › ADAS
		› Tomorrow:
		  › Autonomous Driving
			› Premium cars are early adopters of high-end comfort and safety features
			› Trickling down to mid-range

~8% p.a. through-cycle growth

Summary – high confidence in 8% p.a. through-cycle growth





ADAS/AD:

› Shipments in radar sensor ICs will double in FY17 y-y

› Infineon has developed strong microcontroller product portfolio for radar systems

xEV transition:

› Infineon is the main beneficiary of electro-mobility: power semi content in drivetrain is increasing by ~15x

› Infineon has industry's broadest package portfolio for xEV applications

› Infineon's view on SiC:

– premium cars will adopt SiC first in 2020+; mass market will follow not before 2025

– modules will be the preferred form factor

Part of your life. Part of tomorrow.

Infineon

Glossary

ACC	adaptive cruise control
AD	automated driving
ADAS	advanced driver assistance system
AEB	automatic emergency braking
BEV	battery electric vehicle
BoM	bill of material
CC	central computer
CPU	central processing unit
DPM	digital power management
ECU	electronic control unit
EPS	electric power steering
FCW	forward collision waring
GPU	graphics control unit
HEV	mild and full hybrid electric vehicle
ICE	internal combustion engine

MHA	major home appliances
micro-hybrid	vehicles using start-stop systems and limited recuperation
MCU	microcontroller unit
MHEV	mild hybrid electric vehicle; vehicles using start-stop systems, recuperation, DC-DC conversion, e-motor
OBC	onboard charger
PHEV	plug-in hybrid electric vehicle
SiC	silicon carbide
SiGe	silicon germanium
ToF	time-of-flight 3D sensor
UPS	uninterruptible power supply
V2X	vehicle-to-everything communication
V2V	vehicle-to-vehicle communication
VSD	variable speed drive
xEV	all degrees of vehicle electrification (EV, HEV, PHEV)