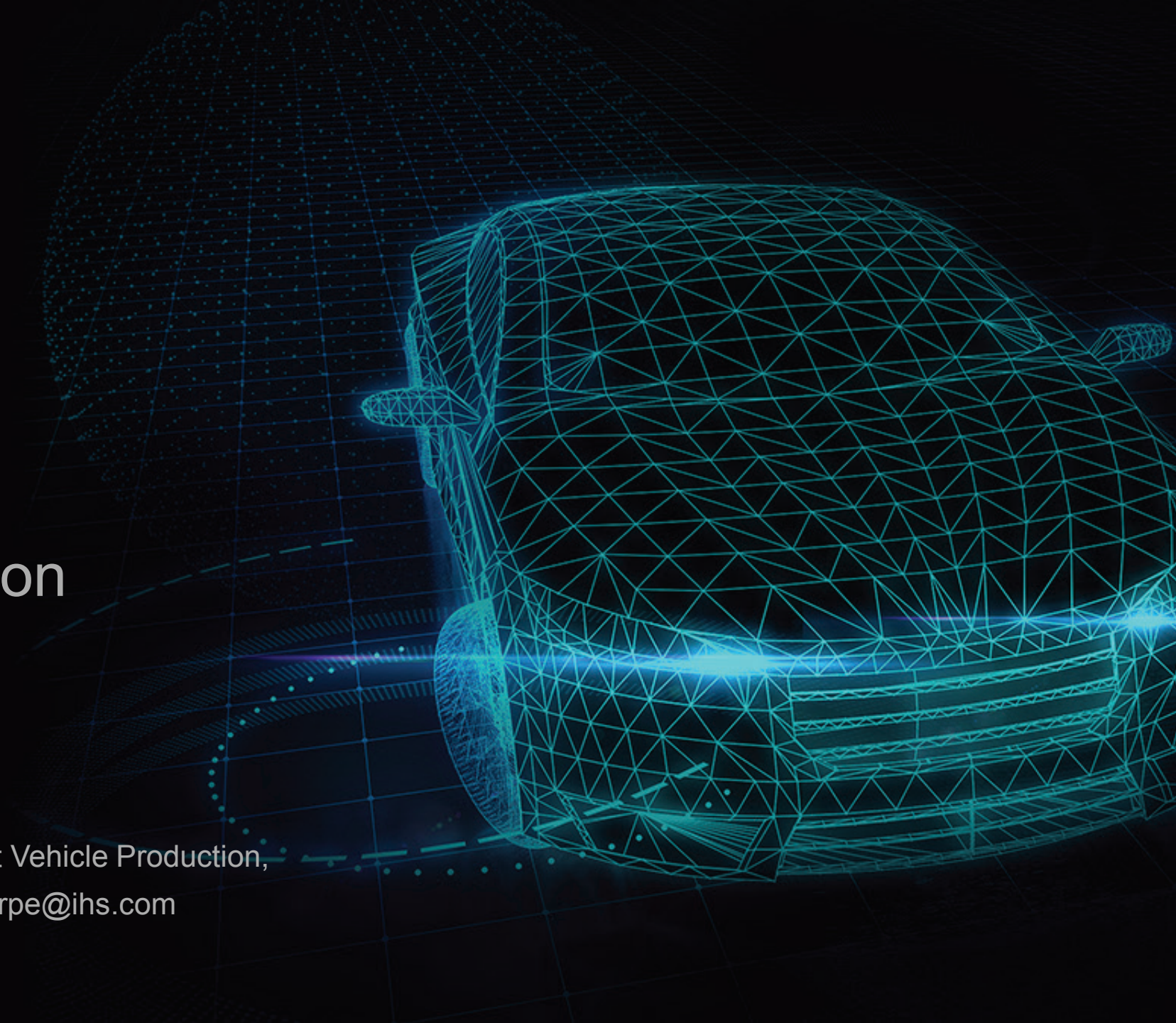




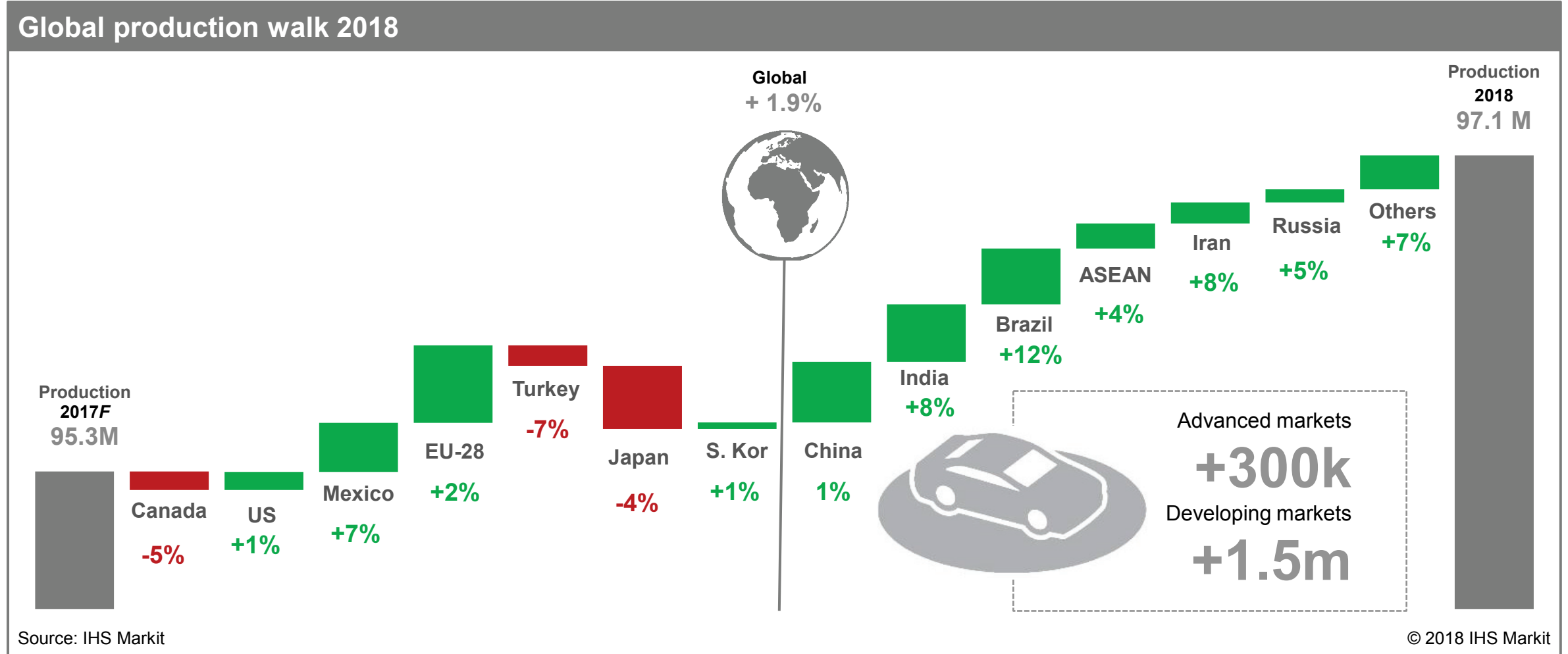
Global Production Outlook

14th January 2018 | SAA

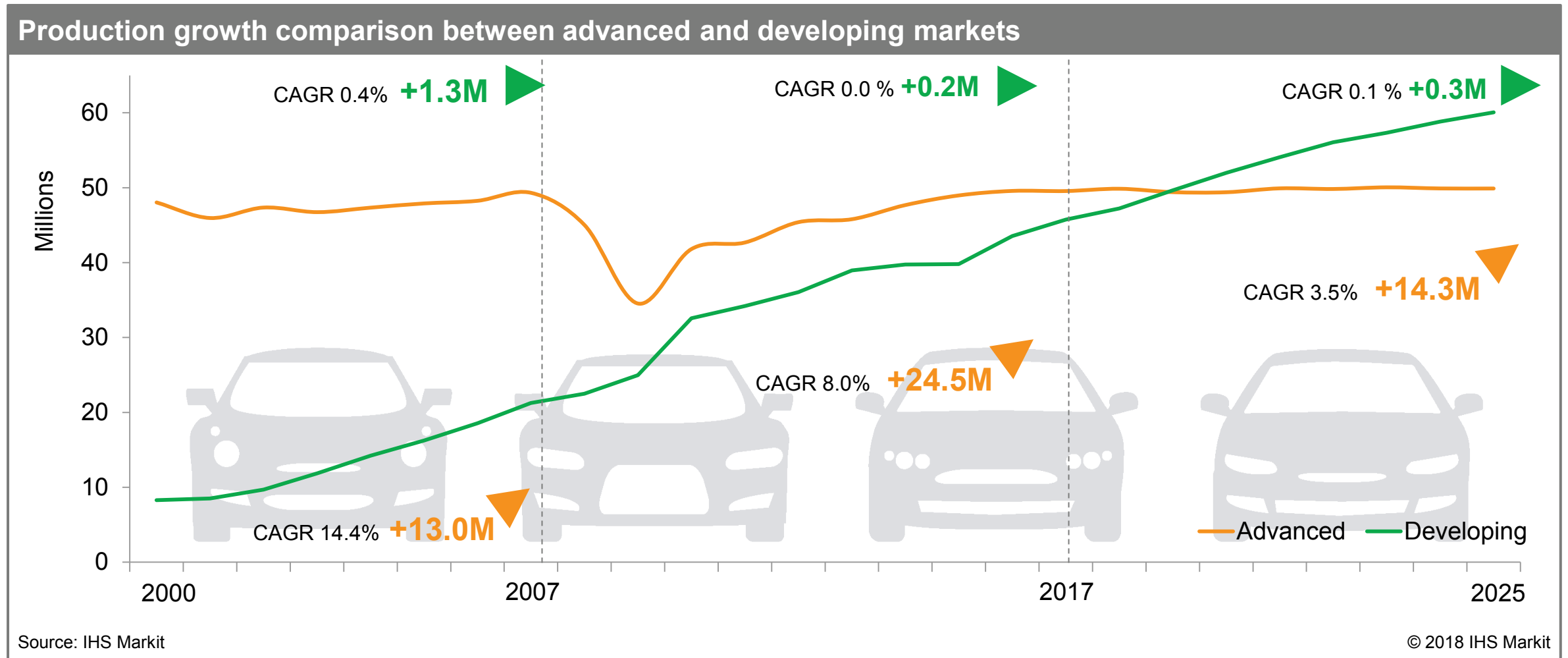
Mark Fulthorpe, Director Light Vehicle Production,
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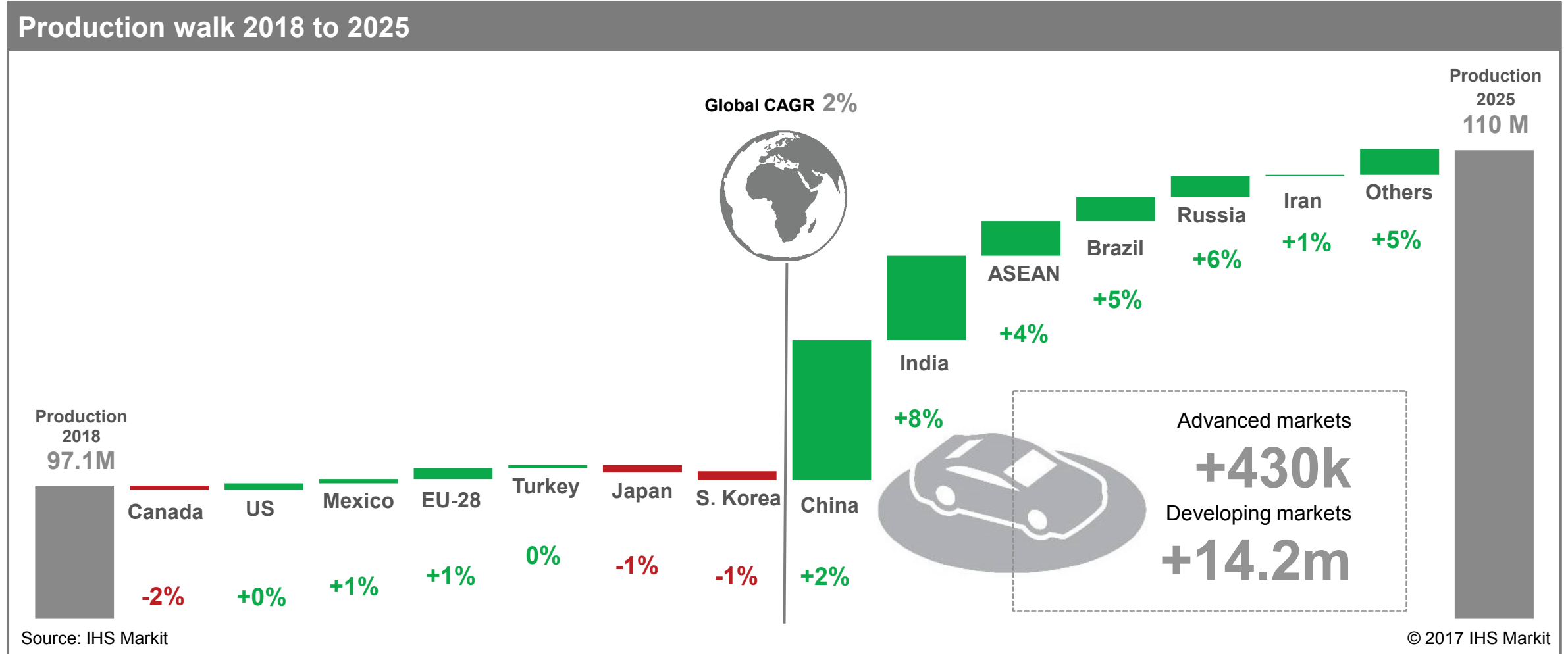
Advanced markets begin to slow and growth returning to developing areas



The post recovery cycle is underway



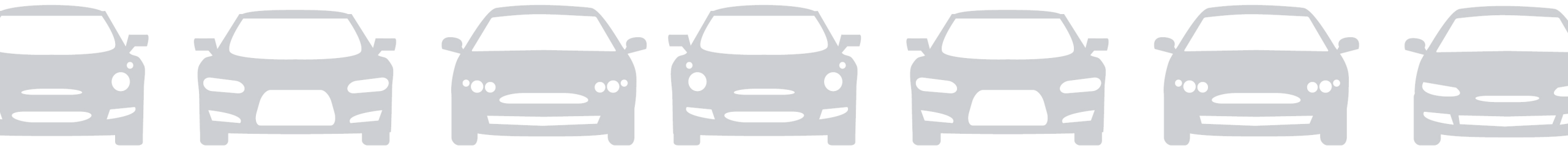
Medium term sees both growth and recovery in developing markets



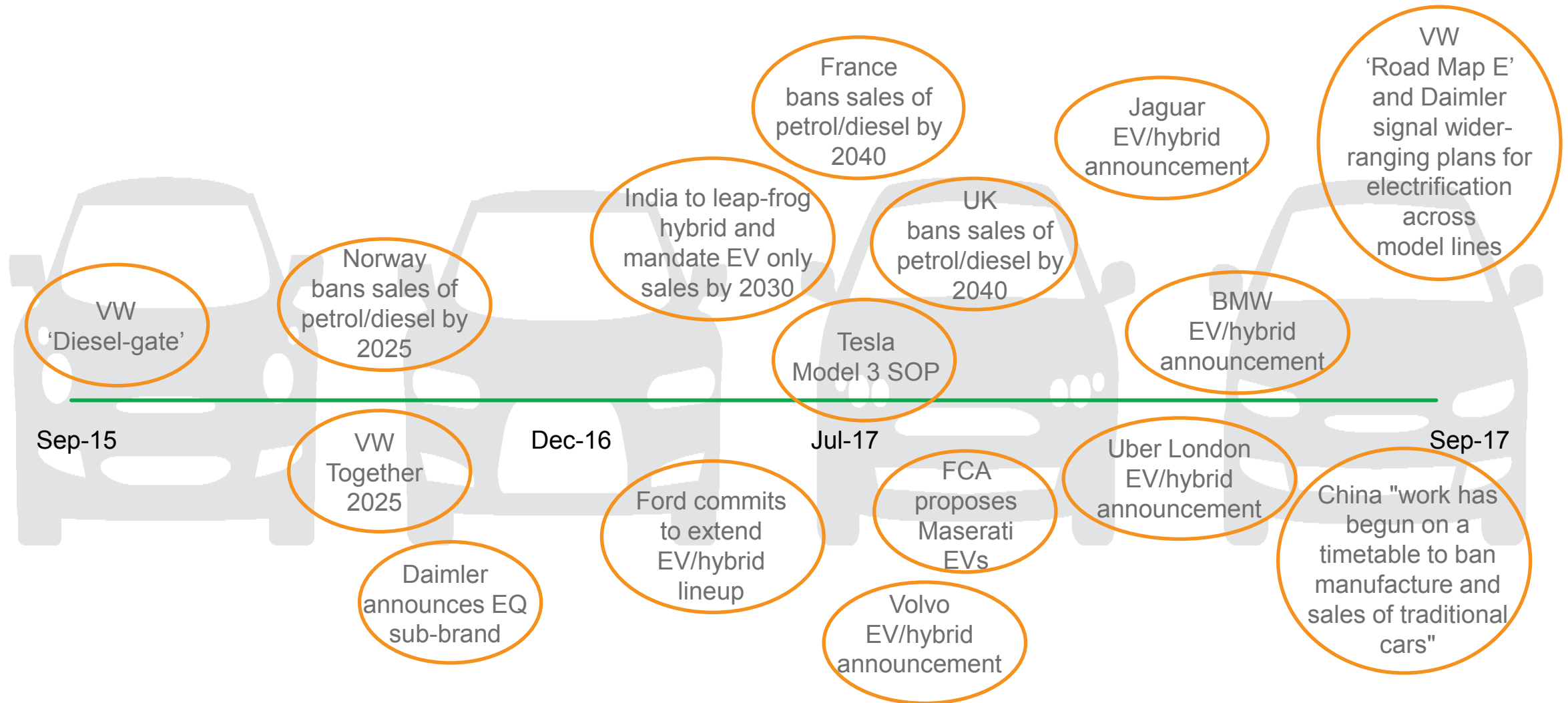


Key challenges affecting the automotive outlook

1. **Global economic growth outlook - no major surprises - solid if unspectacular growth**
2. **US major policy uncertainty (trade/NAFTA/CAFE)**
3. **“Brexit means Brexit” - hard landing or offsetting mechanisms?**
4. **EU/Japan trade deal intensifies pressure on UK sector**
5. **China car tax restored for 2018 – reduces stimulus**
6. **Indian “roller coaster” of structural reforms continues - goods and services tax (GST) fresh challenge after demonetization/remonetization**
7. **Europe's diesel crisis widens - city threats forcing accelerated pivot to electrification**
8. **Battery electric vehicles (BEVs) go mainstream (↑OEMs planning BEVs)**
9. **New mobility revolution gets even more traction with the industry - hype mode?**



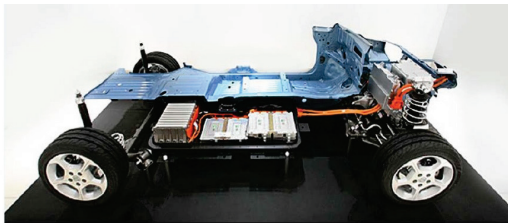
Pace of change demands flexible response



Electrification will be supported in many forms

Conventional platform

Some conventional platforms can implement batteries, but cannot change the overall architecture to form a battery-driven vehicle assembly.



Multi-energy platform

Initially designed to cater to both battery electric and conventional powertrain vehicles. Structure is not skateboard style but is more flexible than a conventional platform



Battery electric vehicle (BEV) platform

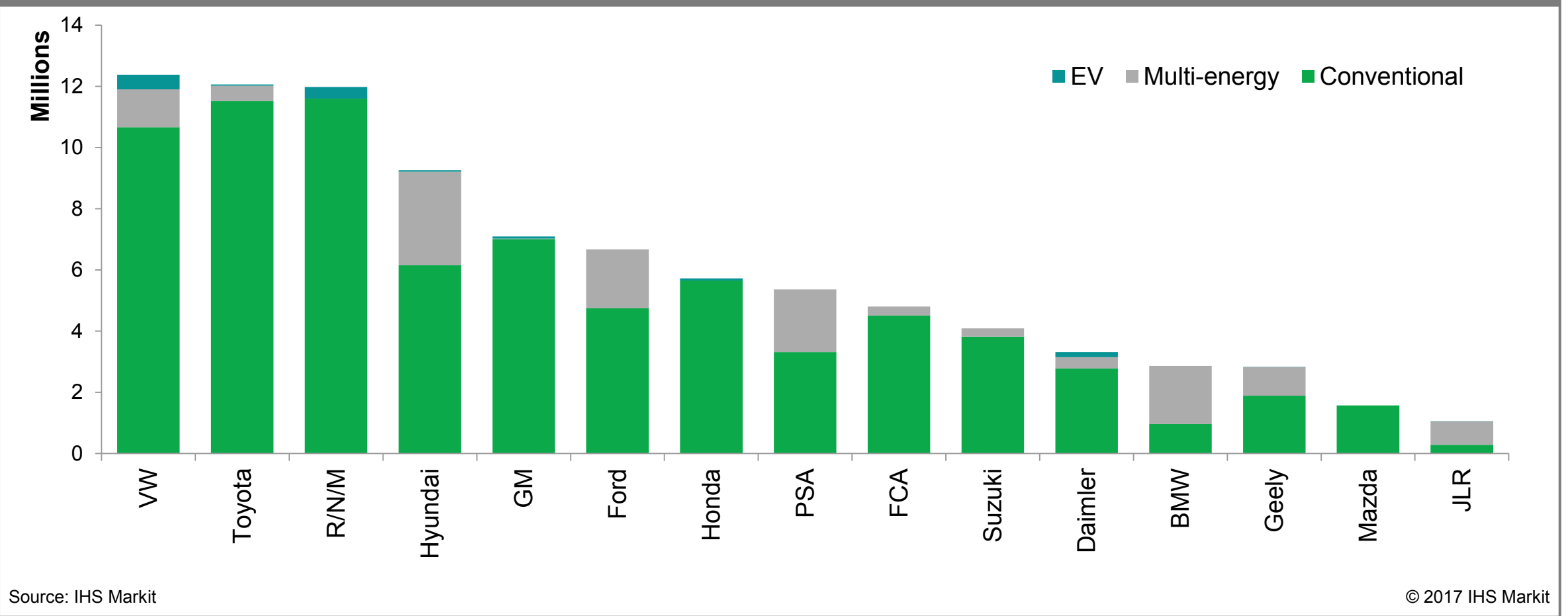
Platform is designed from scratch and only for pure BEV applications. Skateboard-style architecture, allows for more battery capacity and more interior space with the same vehicle size.



Image sources: Nissan Motor Co., Ltd. (left); Volvo Car Group (center); Jaguar Land Rover (right)

Transitional phase to be dominated by conventional platforms

Major platform types in use by 2025



Adjusting global focus and taking stock

General Motors

- Divesting European operations and reducing exposure to South Asia
- Focus on North America and China
- Core-4: Buick, Chevrolet, Cadillac, and GMC
- ‘Positioned for Performance’
- Major acceleration of EV/AV bullish outlook
- New core EV platform builds on experience of Bolt/Ampera-e and will address broad range of segments and derivatives
- Expect platform strategy to be revisited scope of VSS could be reduced and legacy extended

Ford

- Ongoing review of business by new leadership team but expect GM style development and more emphasis on automaker status in the short term
- Singular focus on key markets and products - One Ford replaced with greater regional emphasis
- Hybrid, PHEV, and BEV viabilities changing in view of priorities
- C2 platform major focus for passenger cars and new technology direction. Viability of CD6 platform under scrutiny
- Established j.v. with Zotye in China for NEVs

FCA

- Overtures to GM silenced for now in favor of partner for selected passenger car opportunities but attracting attention from China
- Plans for breakup leave a number of issues unresolved; Jeep the main prize
- Switching to trucks, eases margin and compliance pressure in US market; Dart and Chrysler 200 dropped, major effect on midterm volumes
- Conserving cash, cancelling, deferring program investments
- Giorgio platform deployment narrows

'Big 3' (plus Hyundai) responding to change

Toyota

- Toyota-Mazda: joint investment in US 300k capacity Huntsville AL. programs to be confirmed
- Cautious approach to EV development; in response to Chinese legislation and 'competitive' pressures leads j.v. with Mazda and Denso – expected to drive closer collaboration between Toyota and affiliates
- Daihatsu to lead low-cost efforts
- Ability to be cost-effective in India to be enhanced if access Suzuki supply chain secured. Suzuki to gain powertrain technology in return

Renault/Nissan/Mitsubishi

- Alliance 2022 announces further integration of three main brands creates new global scale that will be further leveraged
- 4 core platforms emerge to cover A, B, C/D and EV segments
- Purchasing, engineering manufacturing and design will be shared as integration becomes clearer and accelerates.
- Mitsubishi focus on ASEAN, PHEVs and pickup trucks operations
- Footprint remains attractive and 'Global Access' business model advances low cost leadership

Honda / Hyundai

- Honda: high risk in continuing to operate as a standalone?
- Faces same challenges as other Japanese OEMs: NAFTA, Europe uncertainties, slowing domestic backdrop
- Accelerating dedicated EV platform development
- Hyundai: advances multi-energy approach to included dedicated EV base.
- Continues to grow overseas and push Genesis as standalone
- China - politics a major challenge

Adding to the hype....

Groupe PSA

- Recent restructuring paying dividends: profitability in Europe,, plus simplification of engineering efforts.
- Opel/Vauxhall assets build scale in Europe. Restructuring inevitable—UK operations at greatest risk as strive to right-size European operations at 800k units per year
- Further platform consolidation will leverage new scale
- Growth in China stalls short term but looks to improve export and regional capabilities – possible NA return in some form

Volkswagen Group

- Strong recovery from diesel crisis; China growth major compensation
- Financial headwinds still loom and will affect longer-term investment
- Aggressive push into electrification supported by both multi-energy and dedicated EV platforms
- Platform flexibility allows variation in mature regions; efforts to make better offer in US market
- Collaboration with Tata stalls will return to global engineering toolbox to address low-cost needs

Premiums

- BMW adding multi-energy platforms alongside dedicated EV base for next phase, help to broaden appeal of next i3
- Daimler threatens wave of electric vehicle launches on a par with VW Group; will move through multi-energy platforms before introducing standalone EV base
- JLR: product proliferation at Land Rover boost Jaguar with EVs
- Volvo enjoying financial support from Geely and opportunity to build scale with the Lynk&Co brand; Polestar adds new element to strategy

China responding too



- Cooperate in innovation: New energy, autonomy, connectivity and light-weighting
- value chain operation: platform coordination, manufacturing, purchasing and logistics
- overseas expansion: taking advantage of belt and road initiative, share overseas manufacturing distribution and partnerships
- work together to promote new business services, vehicle sharing services and finance
- Promote development of domestic industry and automotive brands.

Summary

2018 continues move to a new phase in the global cycle: mature markets will show only limited growth, Brazil and Russia will go through their own recovery cycles and real sustainable growth will be concentrated in the emerging APAC markets

The mature markets once recovery is complete will be increasingly reliant export volumes to support manufacturing levels but this is fragile and the recent experience of Japan and South Korea should be studied in North America and Western Europe; especially as the main export flows remain between mature markets

Industry norms continue to be exposed to legislative change the most obvious currently is the China NEV policy that threatens disruption sourcing and development patterns in the short term

The response to this and other legislative demands may force a more discretionary approach amongst major OEMs with impact on platform strategy. Investment will have to focus on the new technology push.

Global platforms will continue to be part of the OEMs response but geographic reach may be limited and legacy engineering likely extended as transitional phase approaches

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