Revolution: Alternative Fuels, Autonomous Driving, and the Digitization of the Vehicle
The biggest auto show in the world takes place every other year in Frankfurt on a fairgrounds site aptly called the Messe. With nearly a dozen separate buildings, some given over completely to large auto groups like VW, the show presents a challenge both to exhibitors and attendees alike to not only cover all the ground, but make sense of what’s going on in a business undergoing change at a speed and scale not seen since its infancy.

Some manufacturers, like Volvo, Nissan, Peugeot and Fiat Chrysler, have decided to forgo the expense and take a pass on the show. Since it is their home show, however, the German makes will be out in full force with multiple introductions of significant models and concepts that herald the coming technological revolution in both vehicles and automobility.
Automotive News

In Frankfurt, electric parade looking a lot like 2009

The run-up to this week’s Frankfurt auto show has been all about electric vehicles — and not just new EVs but new EV strategies. It feels like the 2009 Frankfurt show.

Automotive News | September 11, 2017 - 12:01 am EST

Wait, weren’t autonomous vehicles supposed to be all the rage?

But the run-up to this week’s Frankfurt auto show has been all about electric vehicles — and not just new EVs but new EV strategies. It feels like the 2009 Frankfurt show.

The show that year was summed up in one word: “electrification.” Virtually every manufacturer unveiled a vehicle using the latest battery technology. Among the concepts in 2009 were the Audi e-tron, Mercedes-Benz Vision S 500 Plug-in Hybrid, Toyota Prius Plug-in Hybrid and the Volkswagen E-Up pure-electric version of VW’s Up city car. Oh, and Tesla’s Model S.

Now EVs are the talk of Frankfurt again.

As part of the show buildup, BMW Group last week announced it will offer 25 electrified vehicles, including 12 EVs, by 2025. Mercedes-Benz said it will showcase its upcoming EQ subbrand for electric cars with the EQ A concept — and, by the way, plans 10 long-range electric vehicles by 2025.
Is Mazda the Savior of the Internal Combustion Engine?
Automaker cracks the HCCI code and we sample an early interpretation

By: Michael Whiteley | Photography by: The Manufacturer | September 11, 2017

Audi on fuel cells: Maybe later
September 23, 2017 @ 12:01 am

David Undercoffler

For now, Audi is focusing on electric vehicles such as the Q7 e-tron.
CALIFORNIA CONSIDERING A BAN ON COMBUSTION-ENGINE VEHICLES

Stefan Ogbac Words - September 26, 2017

State looking to push EVs to improve air quality
<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Image of Fuel Pump</th>
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<tbody>
<tr>
<td>Biodiesel</td>
<td><img src="image1" alt="Biodiesel Pump" /></td>
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<tr>
<td>Electricity</td>
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<tr>
<td>Propane</td>
<td><img src="image6" alt="Propane Pump" /></td>
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</tbody>
</table>
Green Car Share Rising – Uncorrelated with Gas

*HYBRID CUVs: Kia Niro, Acura MDX, Toyota RAV4, Rogue
**Bolt, and Tesla (which holds 47% share of EV market)
Kia’s Commitment to Efficiency

- Optima Hybrid: 42-MPG
- PHEV: 29-mile AER

93-mile range

- $32.9k→$37.9k
- Lease for $179/month

All-New Niro hybrid crossover

Niro hybrid engine; 6-DCT transmission

State-of-the-art R&D
Mercedes-Benz F 015
SAE Levels of Automation

Driver is continuously exercising longitudinal AND lateral control

Driver is continuously exercising longitudinal OR lateral control

Driver has to monitor the system at all times

Level 0: Driver Only

Level 1: Assisted

Level 2: Partial Automation
SAE Levels of Automation

**Non-Monitored Driving**

- **Non-Monitored Driving**
  - **Eyes Off**
  - **Hands Off**

**Vehicle Role**

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>Conditional Automation</td>
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<tr>
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<td>System has longitudinal AND lateral control in a specific use case. System recognizes the performance limits and requests driver to resume control within a sufficient time margin.</td>
</tr>
<tr>
<td>4</td>
<td>High Automation</td>
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<tr>
<td></td>
<td>System can cope with all situations automatically in a defined use case.</td>
</tr>
<tr>
<td>5</td>
<td>Full Automation</td>
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<tr>
<td></td>
<td>System can cope with all situations automatically during the entire journey. No driver required.</td>
</tr>
</tbody>
</table>
Kia’s $10.2B Investment in new technology

• NEW GREEN CARS, NEW GREEN TECH
  • +25% fuel economy by 2020
  • Next-gen hybrids, EVs, PHEVs, FCEVs
  • 70% of internal combustion engines redesigned by 2020
  • 11 Green cars in 2020, from four 2016 (globally)

FIRST TO EMERGE
• NEW OPTIMA PHEV
  • Class-leading 29-mile AER (610-mile range)
• NEW NIRO - DEDICATED HYBRID CROSSOVER
  • 50-MPG, Crossover design
• NEXT-GEN EVs
• 2020 NEW FUEL CELL
  • State-of-the-art … 400+ mile range