AutoStack-Industrie Zulieferworkshop
Frankfurt, 26.06.2018

Markteinführungsaspekte

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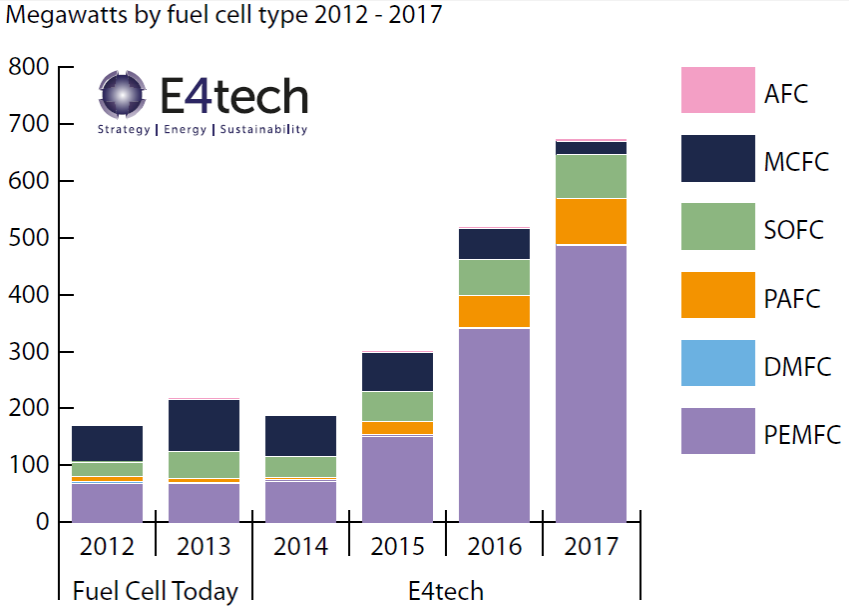
Übersicht

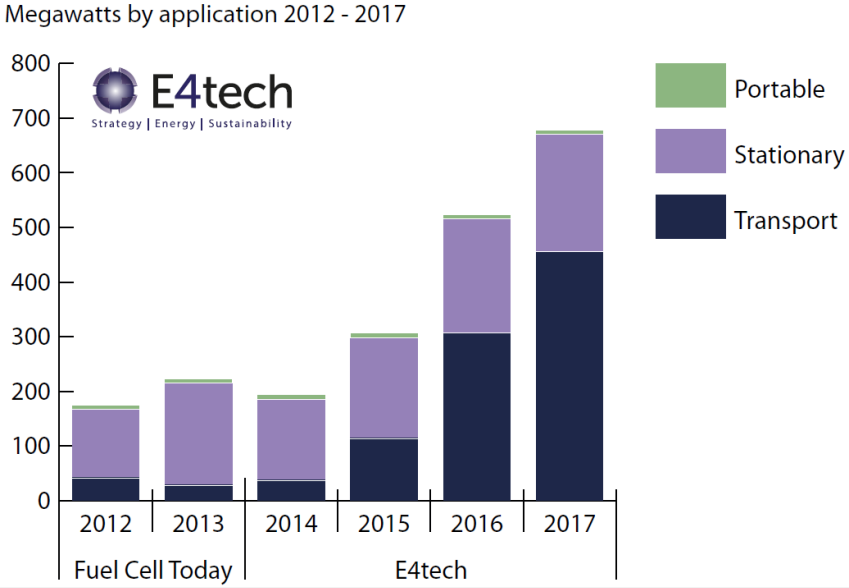
- Der Markt für Brennstoffzellen
- Übersicht zur Roadmaps
- Was im fahrzeugsektor bisher geschah
- Zusammenfassung

Der Markt wächst

PEFC ist die dominierende Technik



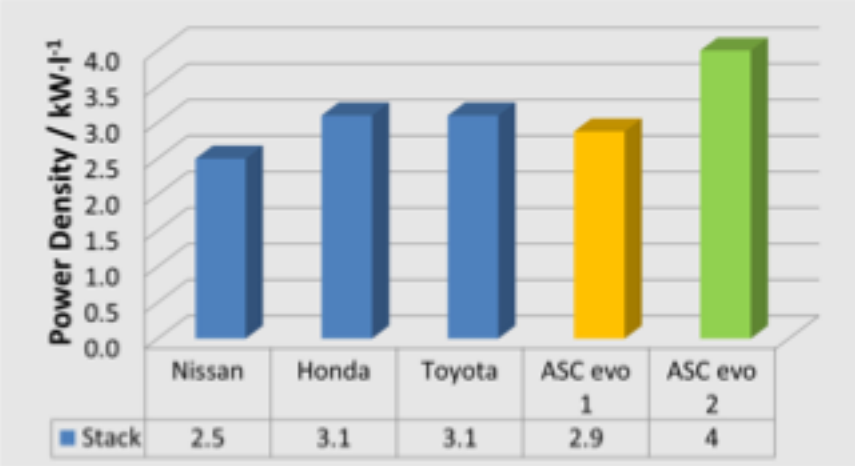
Verkehr dominiert Kumulierte Leistung



E4Tech: The Fuel Cell Industry Review 2017; http://www.fuelcellindustryreview.com/

Voraussetzungen für eine Markteinführung von Brennstoffzellen(fahrzeugen)

- Technologische Reife
  - Leistungsdichte
  - Lebensdauer
- Kosten
  - Kosten für Rohstoffe
  - Herstellkosten
  - Skaleneffekte
- Rahmenbedingungen
  - Verfügbarkeit von Infrastruktur
  - Gesetzgebung
  - Förderung

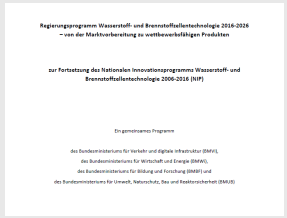
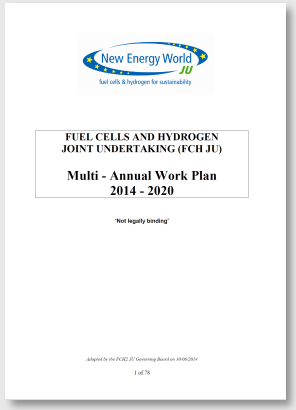
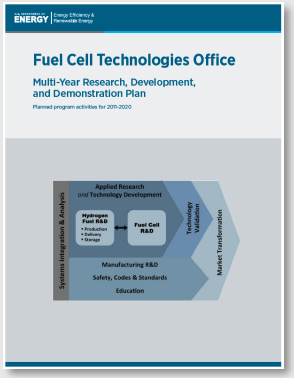
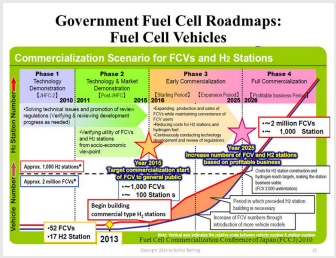
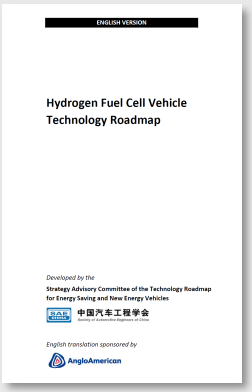


Auszug aus der IEA-Roadmap Hydrogen and Fuel Cells

Country or Region	Running FCEVs (Status 2013)	Planned FCEVs 2015	on the rod 2020
Europe	192	5 000	Up to 350 000
Japan	102	1 000	100 000
Korea	100	5 000	50 000
United States	146	Up to 300	Up to 20 000

IEA Technology Roadmap Hydrogen and Fuel Cells (2015)

Internationale Technologie-Roadmaps

Deutschland	Europa	USA	Japan	China
				
NIP II (2016)	FCH-JU MAWP (2014) Update erwartet	Multi Year Research, Development and Demonstration Plan	Roadmap (2010)	Roadmap (2016)

Zielformulierungen zur Markteinführung (Verkehr)

- Deutschland (NIP II)
  - Schaffung einer bedarfsgerechten Wasserstoffinfrastruktur
  - BZ-Technologie im ÖPNV Schwerpunkt Busse und Bahnen
- EU Horizon 2020 (Multi Annual Work Plan 2014)
  - Demonstration einer hinreichend großen Zahl an BZ-Fahrzeugen (PKW, Bus, Zweirad)
  - Demonstration einer hinreichend großen Zahl modularer, schlüsselfertiger Wasserstofftankstellen
- USA
  - Detaillierte technische Ziele für BZ-Stacks und Systeme
  - Demonstrationsziele und Technologievalidierung reichen bis 2017 und sind überholt
- Japan
  - Beginn der Markteinführung 2015
  - 2025 1 000 Tankstellen ~ 2 Mio BZ-Fahrzeuge
- China
  - 2020 100 Tankstellen 2 000 PKWs 3 000 LKW
  - 2025 300 Tankstellen 40 000 PKWs 10 000 LKW
  - 2030 1 000 Tankstellen Mehr als eine Million Kfz

Der lange Weg zum Markt

2002 F-Cell A-Klasse

2010 F-Cell B-Klasse

2018 F-Cell GLC

???

2015 Mirai

2020 ...

2013 iX 35

2018 NEXO

Jüngere Pressemeldungen
Ankündigungen für 2020 / 2025

Automobile >

Mar 19, 2018

Audi to launch a fuel cell model by 2020

AICON | AUDI | FCEV | FUEL CELLS | GERMANY | RUPERT STADLER

Audi is planning to to take the lead for VW's hydrogen cars and wants to launch a production fuel cell model by 2020, albeit in a small series. Rupert Stadler announced the news at the annual press conference and also said to go serial with their latest autonomous concept.

The Aicon concept had made its debut at last year's IAA, where it displayed no stirring wheel nor pedals. A rather radical autonomous design, at least for a production series in the current regulatory climate. Accordingly, Stadler called it a "luxurious lounge for long-distance travel" which Audi has included in its "longterm production plan".

On a more imminent note, Rupert Stadler confirmed the launch of the e-tron this year and Audi will ask German buyers to pay 80,000 euros for it. He also updated the pre order count with orders from Norway reaching 3,700 units. Furthermore, expect to see a sporty version by 2020, when the e-tron GT is to hit the roads (we reported).

That same year will also see the launch of said small series of a fuel cell Audi. Stadler did not go into detail other than saying that "hydrogen is another perfect energy source for tomorrow's e-mobility."

However, the idea for fuel cell cars is not new for Audi but in fact a refocus. Stadler had announced back in 2016 that Audi would take over the lead in developing fuel cell technology within the VW Group. They had presented the H-tron quattro concept in January 2016 but had not said anything about a series. So 2020 it will be. If in form of the H-tron quattro remains to be seen.

audi-mediacenter.com (in German)

Author: Nora Matthiey *Share article*

https://www.electrive.com/2018/03/19/audi-to-launch-a-fuel-cell-model-by-2020/

BMW to launch fuel cell vehicle in 2025; FCV Rolls-Royce also likely

Development boss Klaus Fröhlich confirms intentions to produce a 'large car with a fuel cell'

BMW revealed an i8-based fuel cell test vehicle in 2015

Tweet
Gefällt mir 17
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by Sam Sheehan
7 September 2017

Follow @autoSamSheehan

BMW will launch a large fuel cell vehicle in 2025 that could rival the upcoming Mercedes-Benz GLC F-Cell.

BMW has been researching fuel cell technology for several years and revealed an i8-based test vehicle in 2015 to illustrate its progress. But, today, the company's development boss Klaus Fröhlich has signalled the brand's intent to put its zero-emission drivetrain technology into production.

"We intend on building a large car with a fuel cell in 2025," he said. "Fuel cells will happen, but how relevant they will be to BMW, we don't know yet."

Fröhlich explained that BMW believed only larger cars such as the X7, which was just leaked onto the internet today, were appropriate for such a powertrain, but added that this meant Rolls-Royce was also likely to benefit from the tech.

https://www.autocar.co.uk/car-news/new-cars/bmw-launch-fuel-cell-vehicle-2025-fcv-rolls-royce-also-likely

Zusammenfassung

- Elektrofahrzeuge mit Brennstoffzellenantrieb erfüllen Erwartungen der Anwender
  - Reichweite
  - Betankungszeit
- Versuchs und Vorserienflotten sind verfügbar
- Öffentliche Programme unterstützen den Infrastrukturaufbau
- Weiter Marktpotenziale: Busse, Lieferfahrzeuge

Automotive FC-Stack 100 kW
(©: ZSW)

Toyota FCV (©Toyota),

Mercedes GLC F-Cell (©Daimler AG)

BZ-Hybridbus (©SWP, dpa)

Vielen Dank für die Aufmerksamkeit

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