

Solar-Energie Andresen GmbH

Christian Andresen | Riga | 18.09.2021



Energize Co2mmunity



se•a

solar-energie andresen gmbh

Company overview



- Founded in 2004
- CEOs: Christian Andresen, Christian Gershoff, Dennis Schröder
- 40 employees
- Based in Sprakebüll, North Frisia
- 130 MW_p installed capacity
- 64 MW_p (180 Plants) daily monitored



Engagement in various organisations

Active engagement in organisations focusing on energy turnaround



Overview associated companies

Biogas Andresen GmbH & Co. KG

- biogas plant with 1.7 MW and 3 heating grids

Andresen Johannsen GbR

- cropping farm with 520 ha, cultivation of mainly corn and grain

Johannsens Biohof GmbH & Co. KG

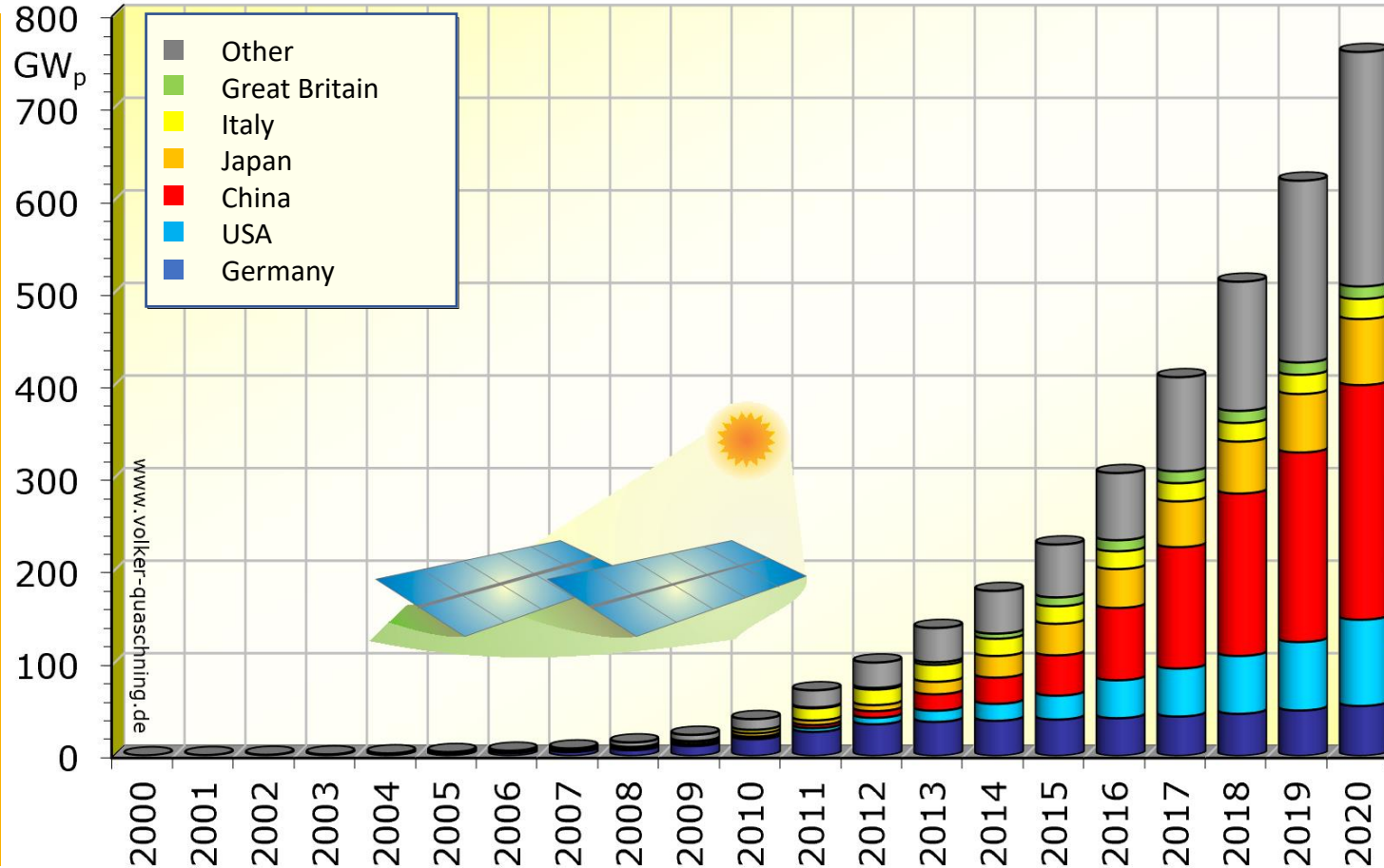
- organic farm with 400 mother cows
- 800 ha grassland und 70 ha agriculture

Johannsens Hofladen

- organic meat and sausages from shorthorn cows and Angeln Saddleback
- homemade and regional products

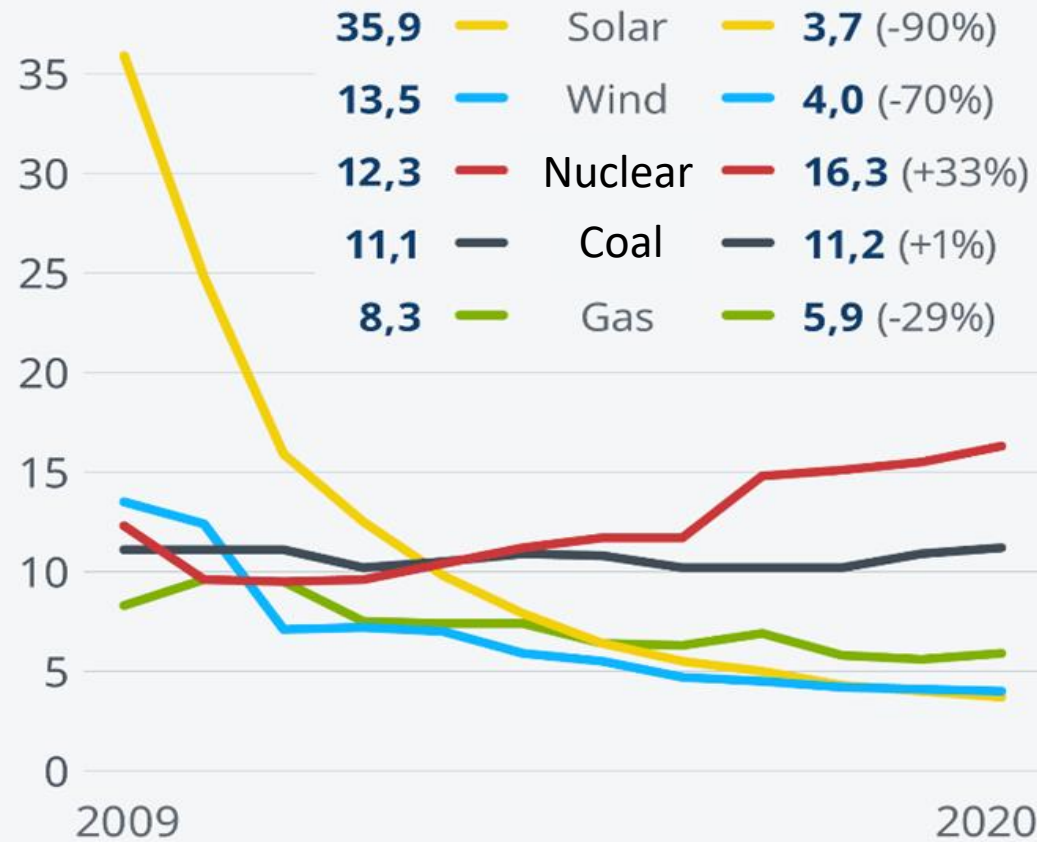


Comparison installed PV-power



source: Quaschnig, Volker, 05/21
<https://www.volker-quaschnig.de/datserv/pv-welt/index.php>

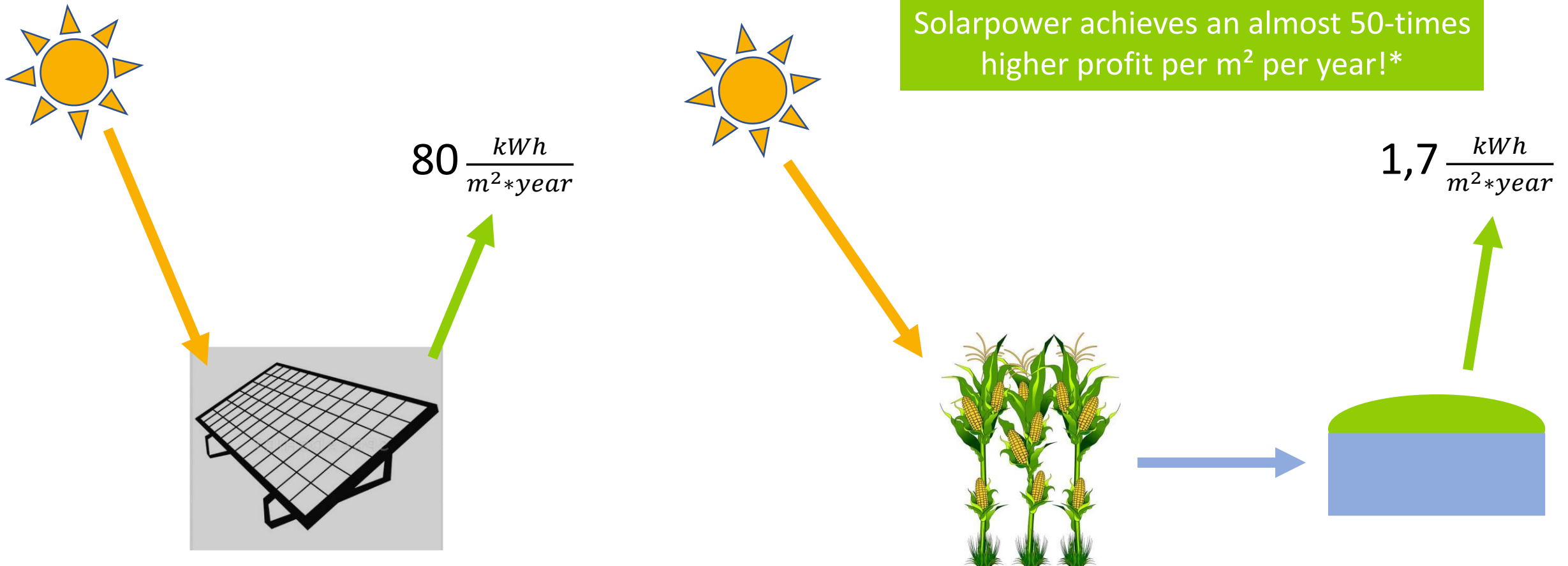
Cost of different energy sources



source: WNI&SR, Lazard

Production cost in \$ cents/kWh

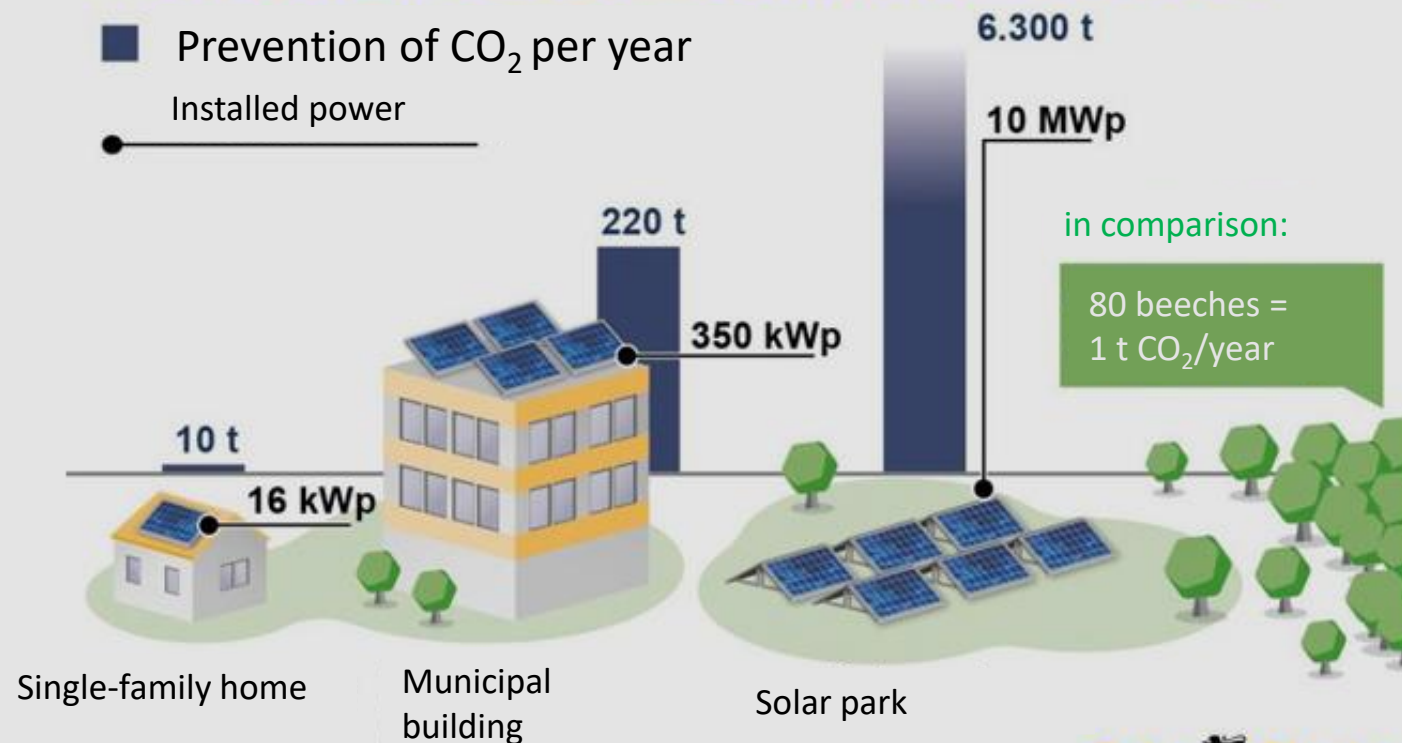
Solarpower vs. Biomass



*recording to Mertens, Konrad „Photovoltaik Lehrbuch zu Grundlagen, Technologie und Praxis“, P.326 ff

PV is reducing CO₂

Photovoltaic reduces carbondioxid emission



Stand: 2/2020 Grafik: infotext-berlin.de

Solar Cluster
Baden-Württemberg

source: Solarcluster Baden-Württemberg, 02/20
<https://solarcluster-bw.de/de/news-detail/neue-zahlen-photovoltaik-reduziert-kohlendioxidausstoß-betraechtlich-249/>

Agricphotovoltaic

seperate land use of 1 ha arable land: 100% potatoes or 100% solar power



1 Hektar

1 Hektar

100 % potatoes or 100% solarpower

mixed land use of 1 ha arable land: 186% land use efficiency



1 Hektar

103% potatoes
83% solar power

source: Illustration Kartoffeln © HappyPictures / shutterstock.com

Organic farm community

Demeter-Hofgemeinschaft Heggelbach / Bodensee



- **0,3 Hektar arable land**
- **5 meters high**
- **solarsystem 194 kilowatt**
- **land use rate 160 %**



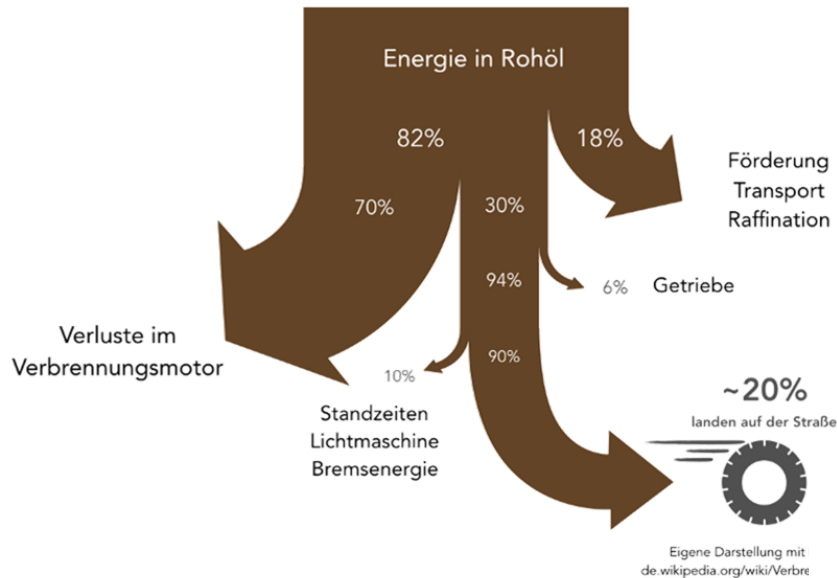
Bifaciale Module set up vertically



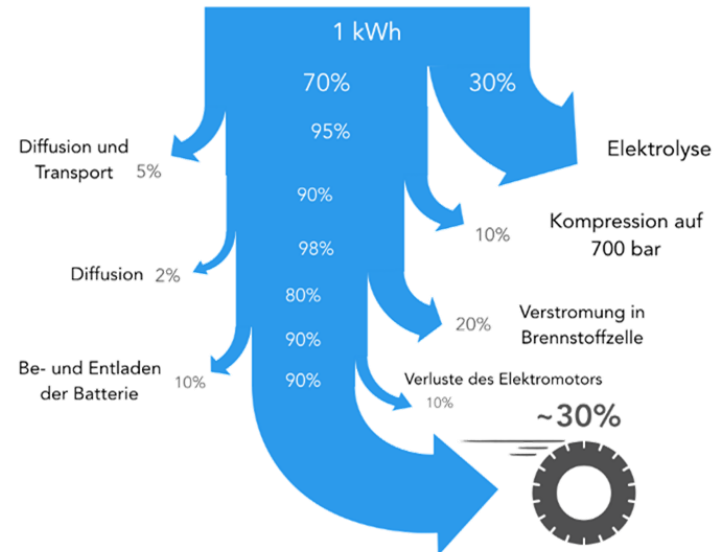
source: Solar-Energie Andresen

Energy balance of

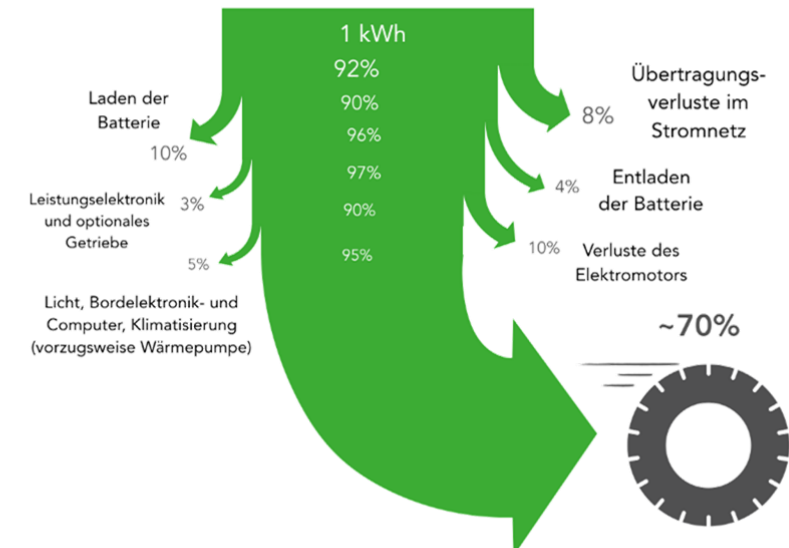
combustion engine
with fossil fuels



hydrogen fuel cell car
with power from renewable sources



electric car
with power from renewable sources



source: von Hohnhorst Brothers, 2018

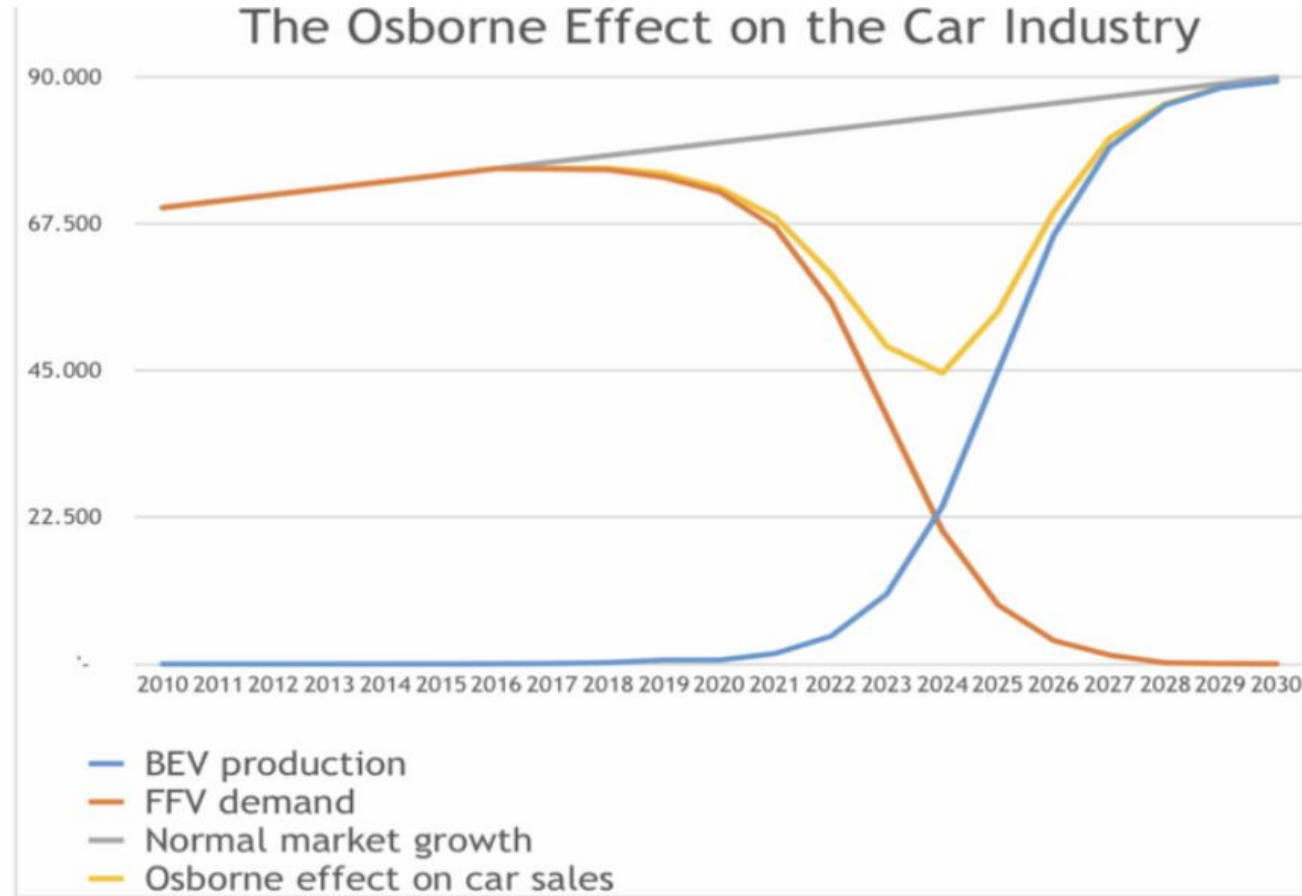
<https://vonhohnhorst.medium.com/die-elektrifizierung-der-mobilit%C3%A4t-warum-die-zukunft-elektrisch-fahren-wird-und-das-schneller-e21e0d98a5f6>

Silently on the road since 2009



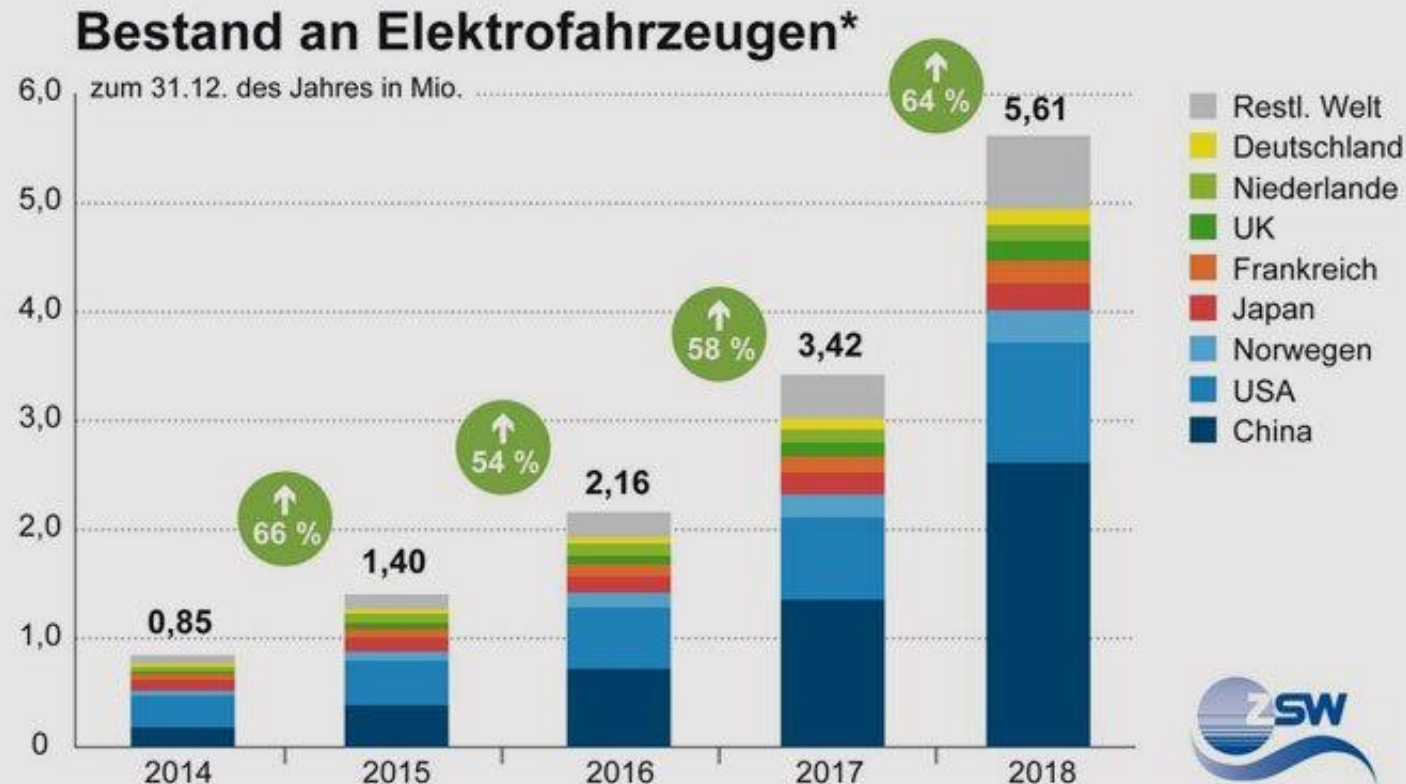
Source: Solar-Energie Andresen

Osborne Effect



source: Clean Technica

Existing electric vehicles



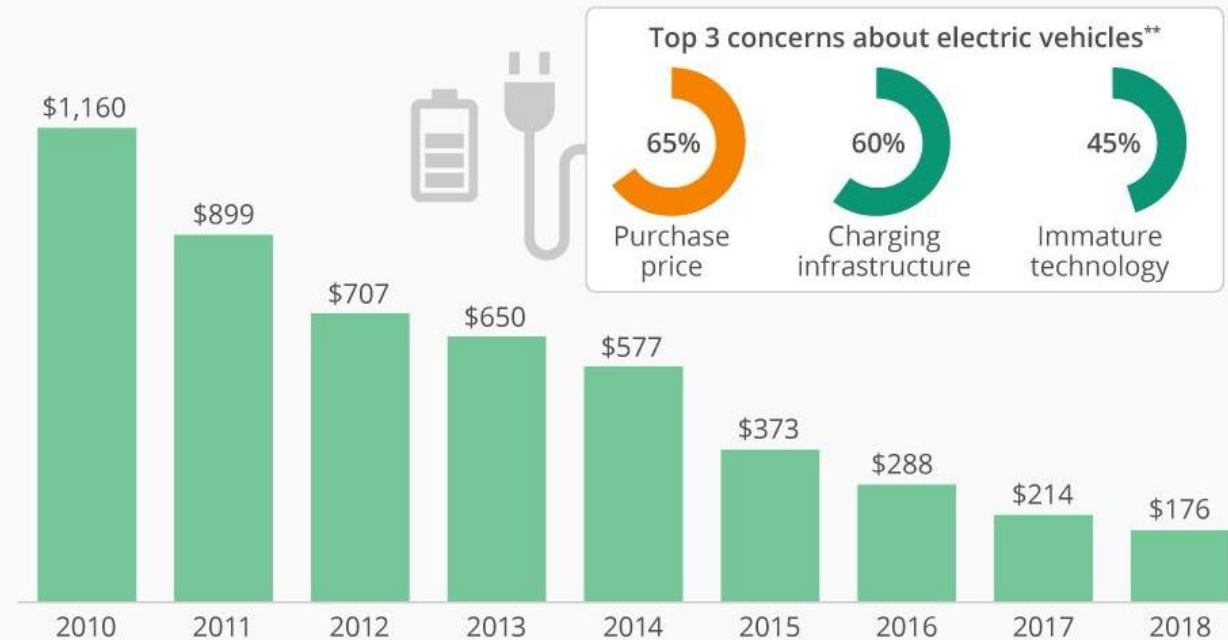
* Elektrofahrzeuge: ausgewertet wurden Pkw und leichte Nutzfahrzeuge mit ausschließlich batterieelektrischem Antrieb oder mit Range Extender sowie Plug-In Hybride.

source: ZSW | Weltweiter Bestand Elektrofahrzeuge 2014 bis 2018

Battery Prices and E-Cars

Can Falling Battery Prices Push Electric Cars?

Average price of battery packs for electric vehicles (\$ per kWh)*



* prices in 2018 dollars; averages weighted based on volumes sold
 ** based on a November 2018 survey of 1,279 vehicle owners in the U.S.
 Sources: CarGurus, BloombergNEF



Electric Cars in Sprakebüll



source: Solar-Energie Andresen

the highest rate of e-cars per citizen in Germany

E-Dörpsmobil Sprakebüll



source: Solar-Energie Andresen

What moves us, drives us.

E-Dörpsmobil Sprakebüll

Booking overview

Dörpsmobil Sprakebüll

Benutzername Passwort Anmelden

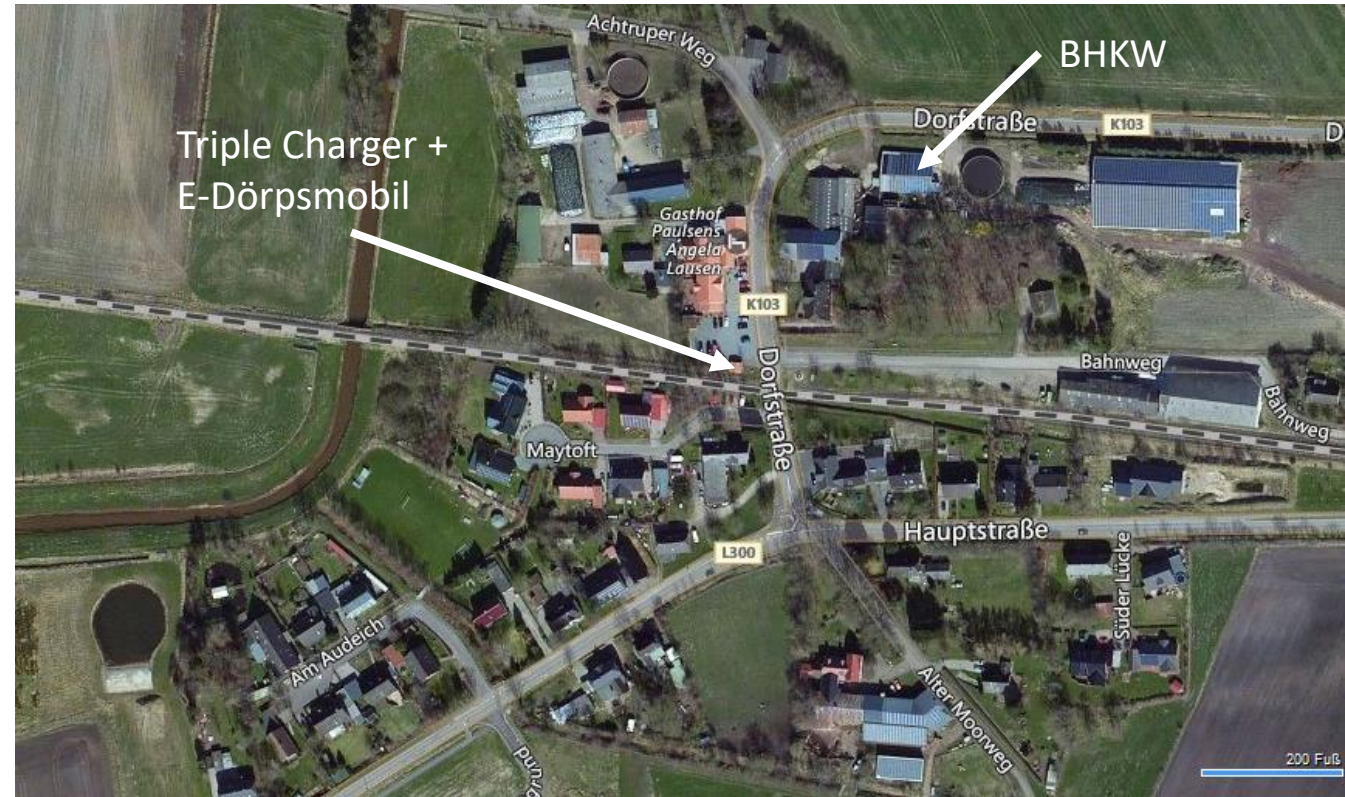
Startseite

Fahrzeugübersicht

Alle Fahrzeuge

Januar

Mo	Di	Mi	Do	Fr	Sa	So
1 14:30 - 15:30	2	3 08:00 - 13:00	4	5	6	7
8	9	10	11	12 17:00 - 18:30	13	14
15 08:00 - 13:00 15:30 - 17:30	16	17	18	19	20 09:30 - 14:30	21
22	23	24	25	26	27	28
29	30	31	1 14:05 - 16:05	2	3	4
5 18:30 - 21:30	6	7	8	9	10 09:00 - 13:00	11



source: bing.com

Leasing Prices E-Cars 2018

	 ZOE Intens	 Kangoo 2/5-Sitzer	 Soul ev	 Ioniq Elektro Trend	 i3	 e-Golf/e-Up	 fortwo/forfour	 Leaf Acenta	 eNV200 Kastenwagen
Reichweite von uns getestet	300 km	200 km	200 km	230 km	180 km	130 km - 250 km	120 km	280 km	220 km
Akku-Kapazität	41 kWh	33 kWh	30 kWh	28 kWh	30 kWh	19-36 kWh	17,6 kWh	40 kWh	40 kWh
Ladeleistung	22 kW	7,7 kW	50 kW	70 kW	50 kW	40-50 kW	6,6 kW	50 kW	50 kW
Kaufpreis ab	25.550,-€ *22.512,-€	23.526,-€ *20.075,-€	25.410,-€	27.983,-€	34.029,-€	25.445,-€ (e-Up)	23.092,-€ (fortwo)	*29.860,-€	*32.881,-€
Leasing ab	*299,-€ 351,-€	*311,-€ 362,-€	275,-€	290,-€ privat 238,-€ Gewerbe	399,-€	299,-€ (e-Up)	165,-€ (fortwo)	*281,-€	*426,-€



source: www.greentec-campus.de

Charging stations

Triple Charger in Schacht Audorf



Source: Solar-Energie Andresen

Office Solar-Energie Andresen



Source: Solar-Energie Andresen

Electric Feed Mixer



source: Siloking

Still no alternative



Source: Solar-Energie Andresen

Volvo BM 120, 23t empty weight, 14m³ shovel

Fendt 100e



INNOVATION
AWARD
AGRITECHNICA
SILVER MEDAL



source: Fendt

100kW Battery, 60kW performance, Typ 2 and CCS

Kramer 5055e in daily use



source: Solar-Energie Andresen

37,5 kWh lead fleece battery, 3-5 hours runtime, 2 x 15kW engine

Plus Energy Vehicle „E-Dumper“



600kWh Battery, 45t empty weight, 120t fully

At a Kabel?

Rostov / Soviet Union:

Electric tractors plow new land "The energy of the Zimlyanskaya power station (Zimlyansk Reservoir) is used in the portable electrical stations of the villages."

Crawler tractor with power cable and plow

Sowjet Tractors until 1950s



source: DEFA Stiftung / John Deere

GridCon John Deere



source: John Deere

- 400kW Power
 - 700V DC Bus
- 1000m Kabel
 - 2500V AC
- 8,5t weight
- GPS steering or Remote
- Overall efficiency 85%

Transformend Diesel Wheelloader with Tesla Batterie



FarmDroid FD20



- Fully automated robot
- Fully automatic sowing and chopping of beets and rape
- 1,6kW PV System
- 2,4kWh Battery
- 700 kg weight
- 3 m wide
- 20 ha capacity



source: Solar-Energie Andresen

along every step of a solar project

consultation | planning | sale | installation | monitoring | service



Thank you for your attention

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