

SH @ 12th Hydrail, Graz

- **What are Schleswig-Holstein's plans?**
- Dr. Holger Busche, Scientific Advisor,
- Fraktion Bündnis 90 / Die Grünen
- State Parliament of Schleswig-Holstein
- holger.busche@gruene.ltsh.de
- Tel.: +49 431 988 1521

Chess & Cycling to work



hydrail on the move

- four german states buy 40 hydrails
- first operation in 2018

14th IHC in Germany?

- Schleswig-Holstein brings **hydrail** into first competition



<http://money.cnn.com/2017/04/12/technology/germany-hydrogen-powered-train/>
[hydrail@CNN http://youtu.be/U1dCBtx6AGc](http://youtu.be/U1dCBtx6AGc)

Grüne Landtagsfraktion Schleswig-Holstein

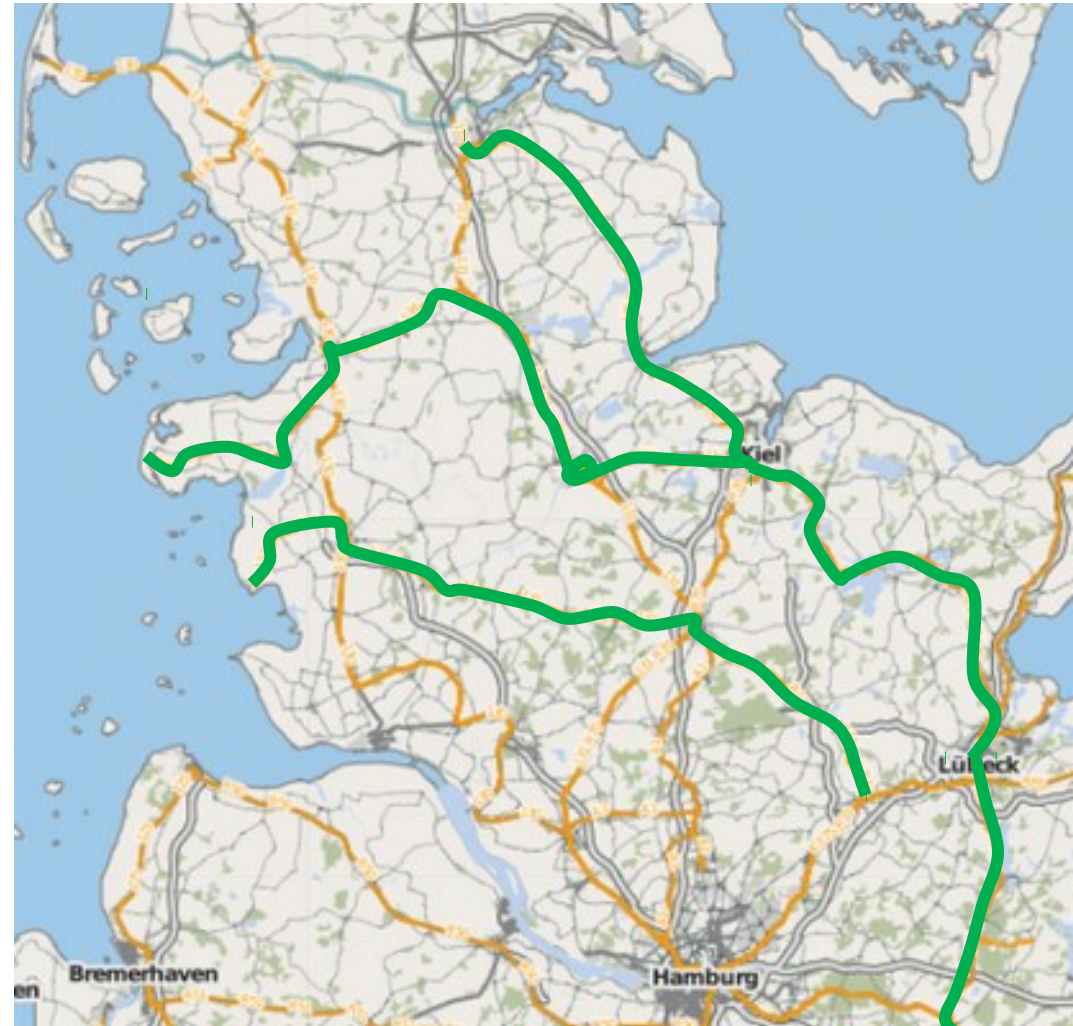
CORADIA iLINT (nip)
Wasserstoff - Energie für die Schiene

Ein Projekt im Nationalen Innovationsprogramm
Wasserstoff- und Brennstoffzellentechnologie

NOV

Tender for 52 Railcars

- line length: 500km
- max. operational length: 160 km
- Frequency: 30'-60'
- Start: 2019/2021
- “emission reduced”



„Jamaica coalition“

Hydrogen mentioned in chapters industry, energy & e-mobility

- „strategy of traction with (catenary free) own electric power without combustion“
- „Especially for railway cooperation with DK“
- This is like our Net25+



Hydrail advantages

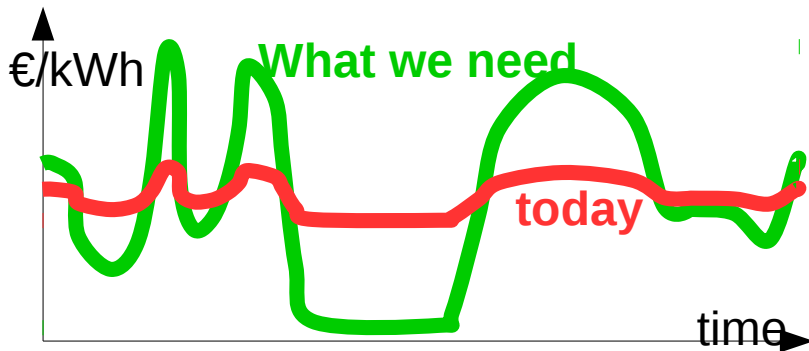
Hydrail enables you to use H₂ from

- natural gas/oil
(unwanted)
- electricity@„any time“
- solar/wind are cheap
- electrolysis produces heat@80°C & oxygen to be sold

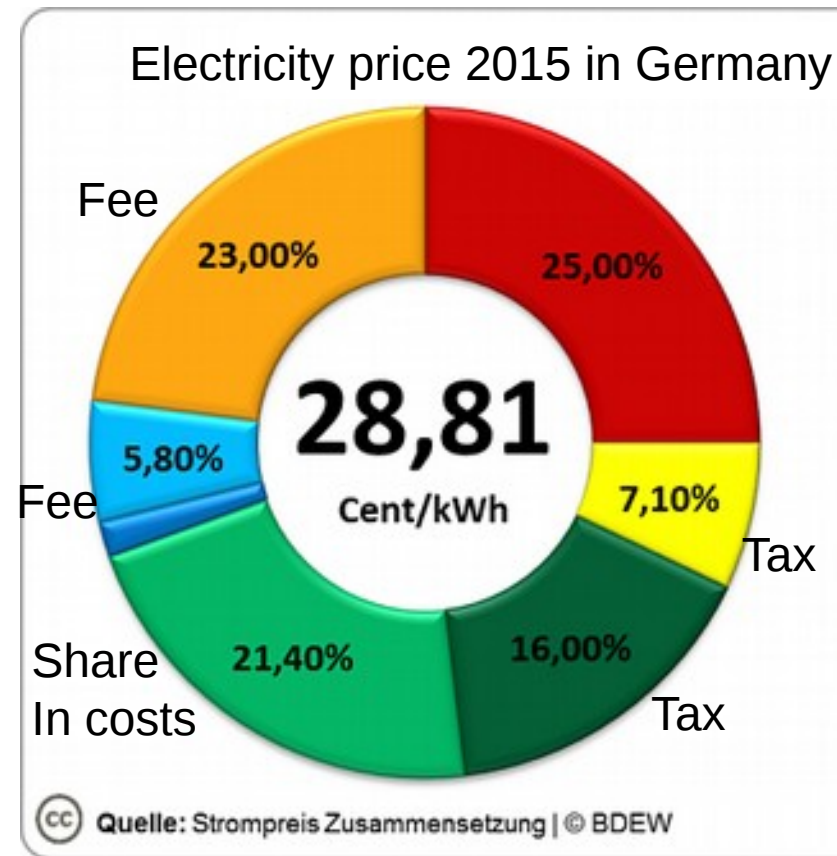


Electricity prices

75% taxes & fees
price change too small
we need fee/tax to „swing“



wind&solar cost 4-7 ct/kWh
of which O&M: <1 ct/kWh



Electricity prices

Renewables & hydrail:

High CAPEX investment

Low & stable O&M

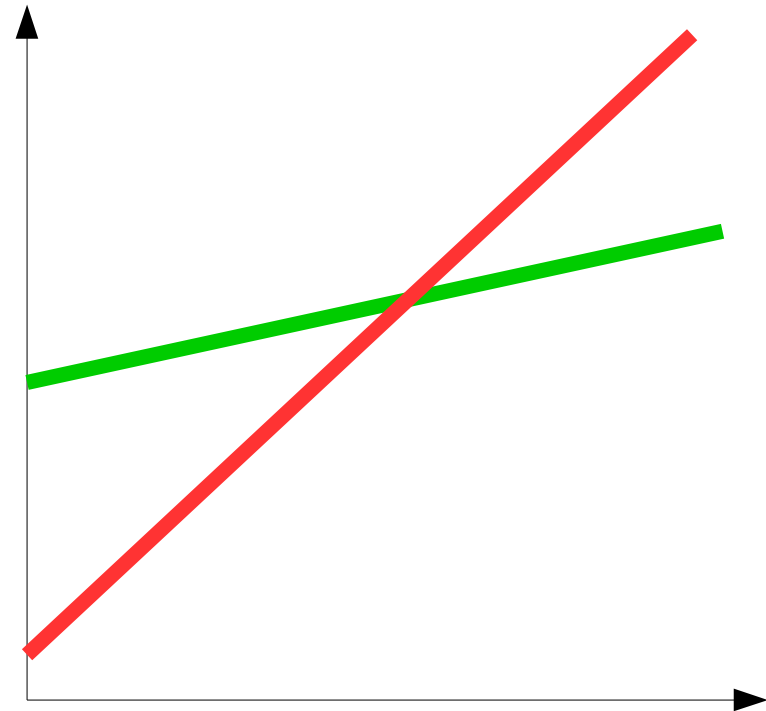
Old energy & diesel trains:

Low CAPEX investment

High & instabel O&M

Politicians prefer to invest

Investment fund MOIN.SH



New mobility: Netz25+

We've got the power
and the strategy!

We are ready and
willing to buy!

Engineers, welcome to
Northern Germany!

I am delighted about
your attention

Grüne Landtagsfraktion Schleswig-
Holstein

