



› NEW ENGLAND – GERMANY ENERGY TRANSITION FORUM

Clean Transport of the Future

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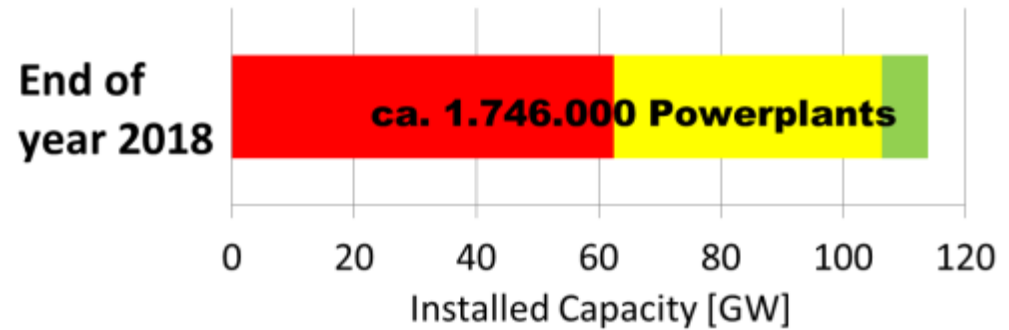
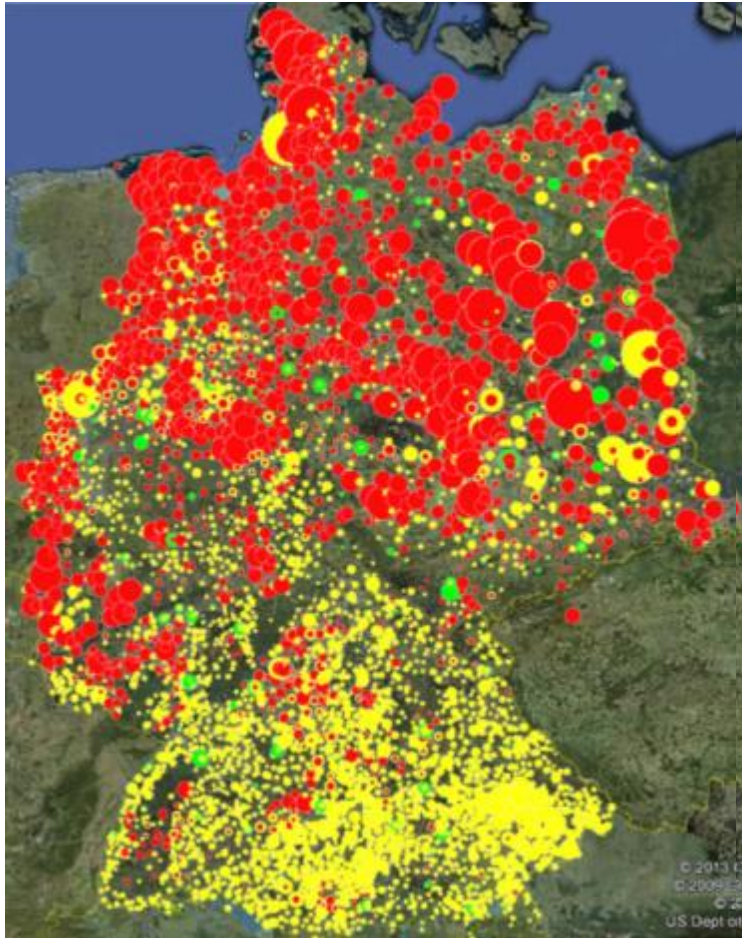
[German Association of Local Public Utilities]

Head of Unit

Grid Management

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Changing the Energy System - A brief history of renewable energy in Germany



Wind-Power

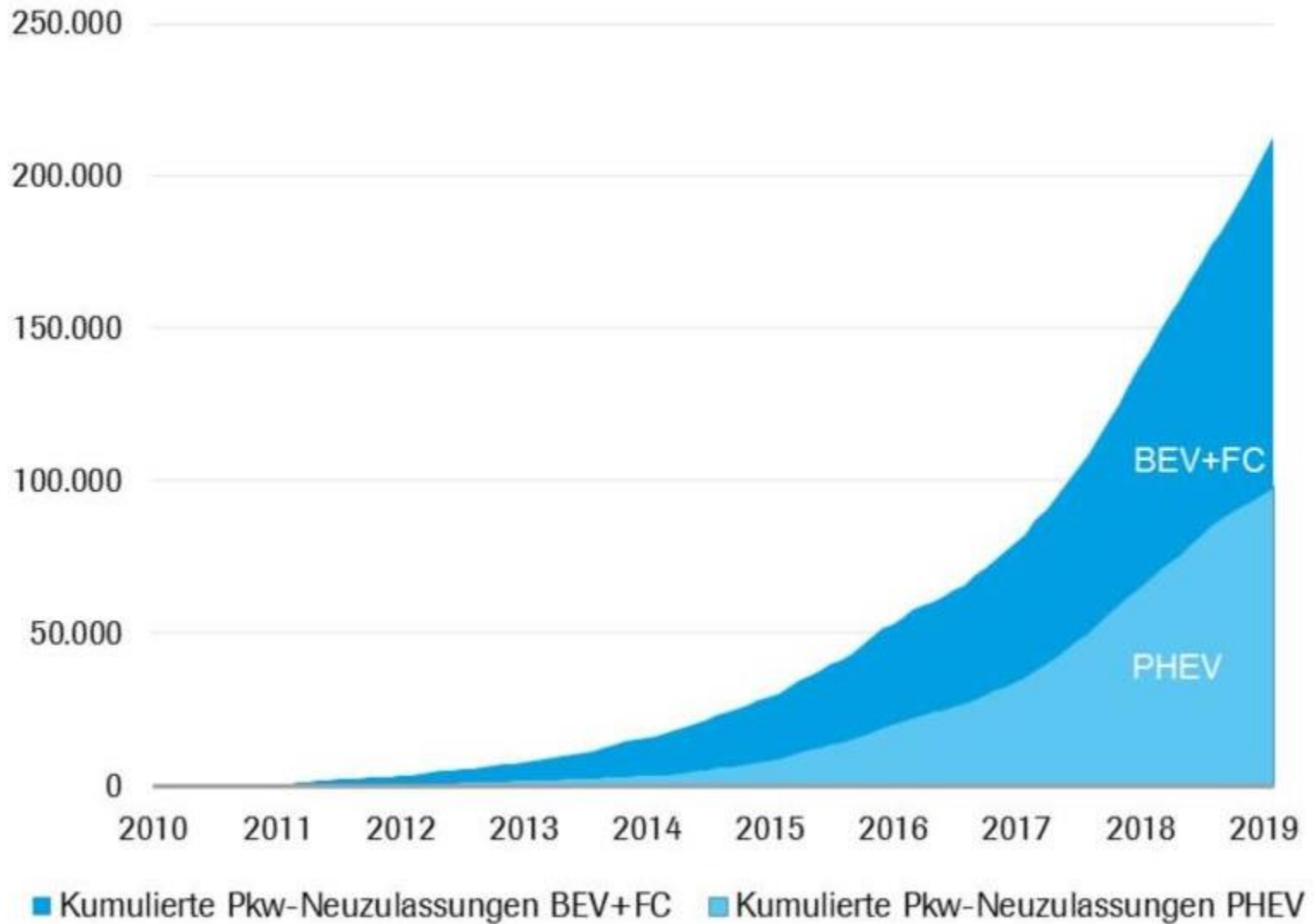
Photovoltaik

Biomass

Circle area is proportional to the installed capacity

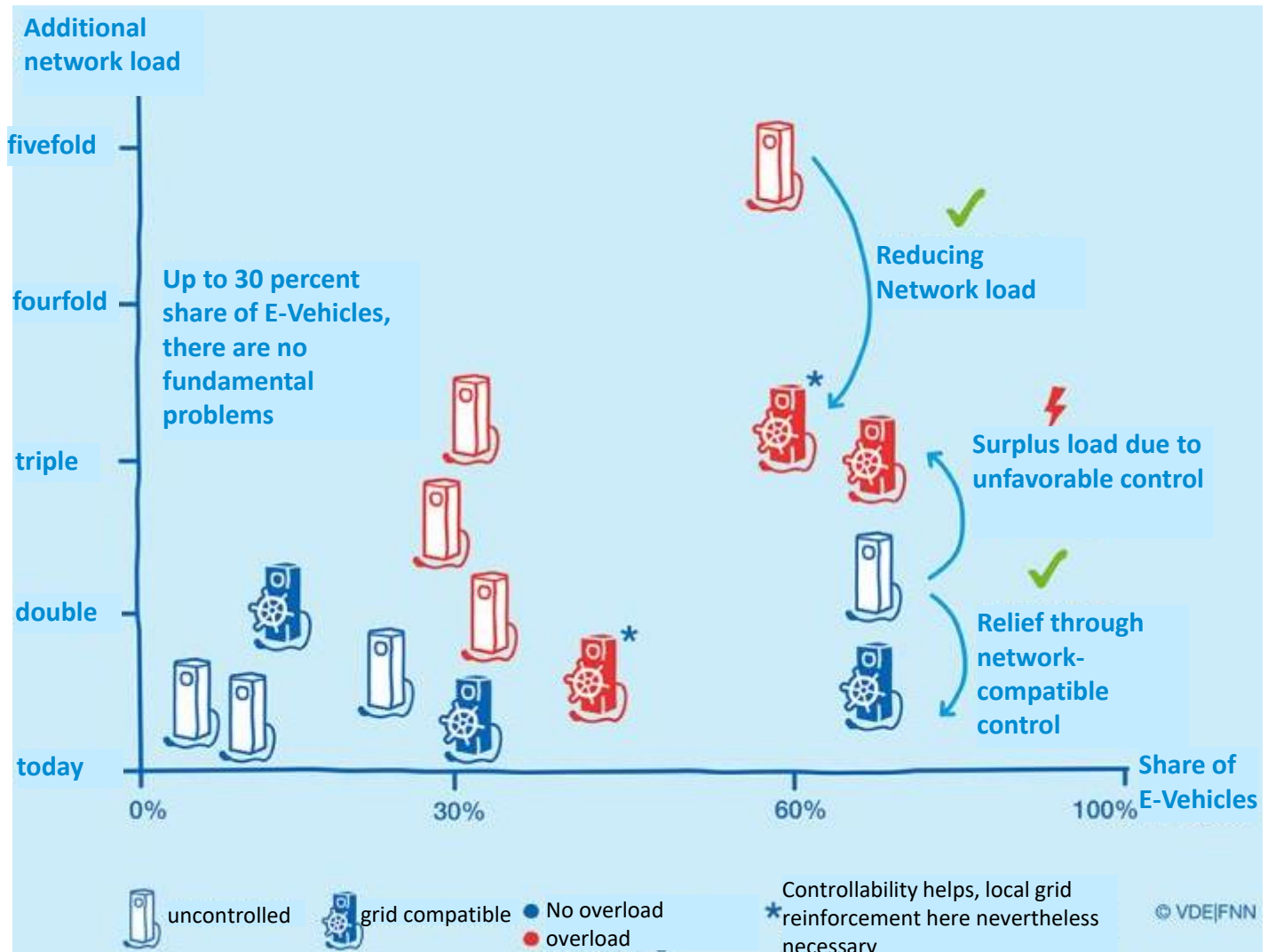
source:
50HertzT, TenneT,
Amprion, TransnetBW
own data

Accumulated new registrations of e-vehicles in Germany



Source: VDA

Rise of e-mobility – results of metastudy: Network-efficient charging reduces additional network load



Main Conclusiones - DSOs are the enabler of e-mobility

Conclusions from the German “red flag report”* (German platform „future of mobility (federal government):

- › The **generation of electricity from renewable sources will not be a bottleneck** even with more dynamic growth rates of e-mobility.
- › **Local bottlenecks** - due to power overload or voltage range deviations - **may appear soon in certain types of local area networks** - esp. rural or suburban areas with many e-vehicles connected to one long cable
- › Crucial for **DSOs** is how many **electric vehicles in a local area network will charge simultaneously and with high power.** → Data is key!

Practical conclusions directly from DSOs:

- › **Fast charging** takes place e.g. in **medium voltage levels** (in Germany 10 – 30 kV)
- › **High voltage** (110 kV) and **medium voltage-grids** basically have reserves
- › **Charge@home** and **Charge@work** will be the preferred variants and will dominate the loading process
- › **Challenge in LV grids** is **mastery of peak loads** (thermal capacity of the equipment is the limiting factor in most cases) –**urgent need for DSO-controlled charging**
- › **Enable the DSO using flexibility can nearly halve the additional investment costs!**

*Source: NPM – WG5 – red flag report

Thank you for your attention



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