

Legal and regulatory challenges in the use of multi-purpose electric infrastructure

3rd ELIPTIC webinar
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Overview



- I. Introduction
- II. Opening up the black box
- III. New market roles and their legal implications
- IV. Energy storage and regenerative braking
- V. Policy Recommendations

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Introduction I



- PT grid is used for multiple purposes
 - Rail-bound public transport
 - E-mobility
 - PT Company uses battery operated electric busses
 - PT Company or third parties install public charging stations
 - Energy storage (battery storage and flywheel storage)
 - Electricity recovered by regenerative braking is fed into the PT grid
 - Interactions between PT Grid and public electricity grid

Introduction II



- Use of multipurpose electric infrastructure means to connect the energy sector and the public transport sector
- It seems unclear if current energy law is suitable to properly rule out the interface between these two sectors
 - Legal uncertainties & risks
 - Complex and sometimes excessive requirements (reporting, measurement, energy regulation)
 - exposure to multiple taxation

Overview



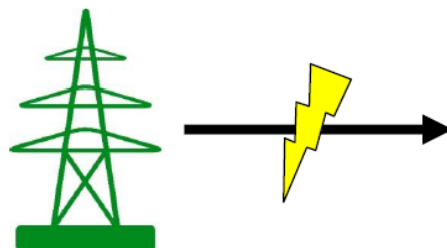
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Current practice: PT grid as black box

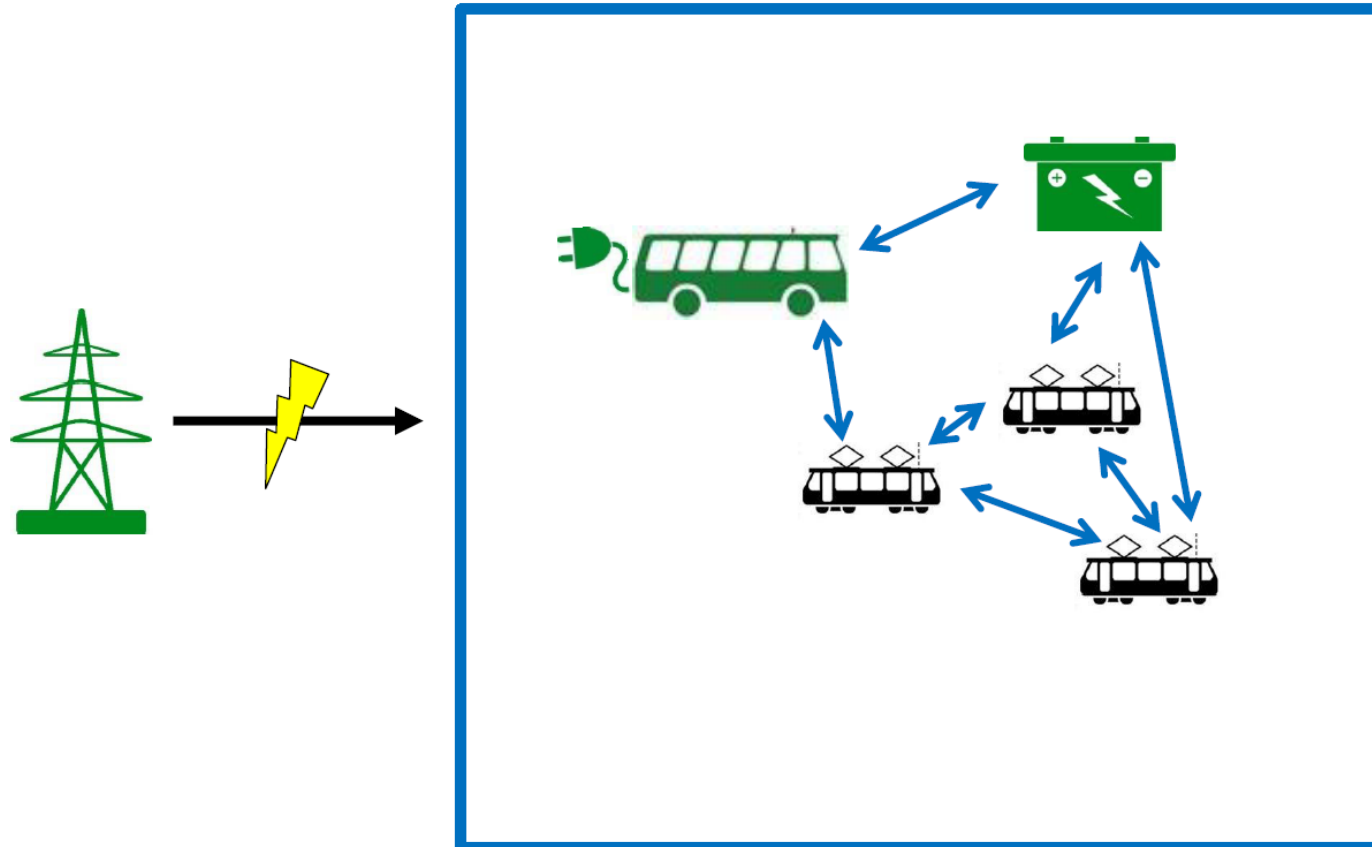


Assumption:

- PT operator is final consumer of electricity

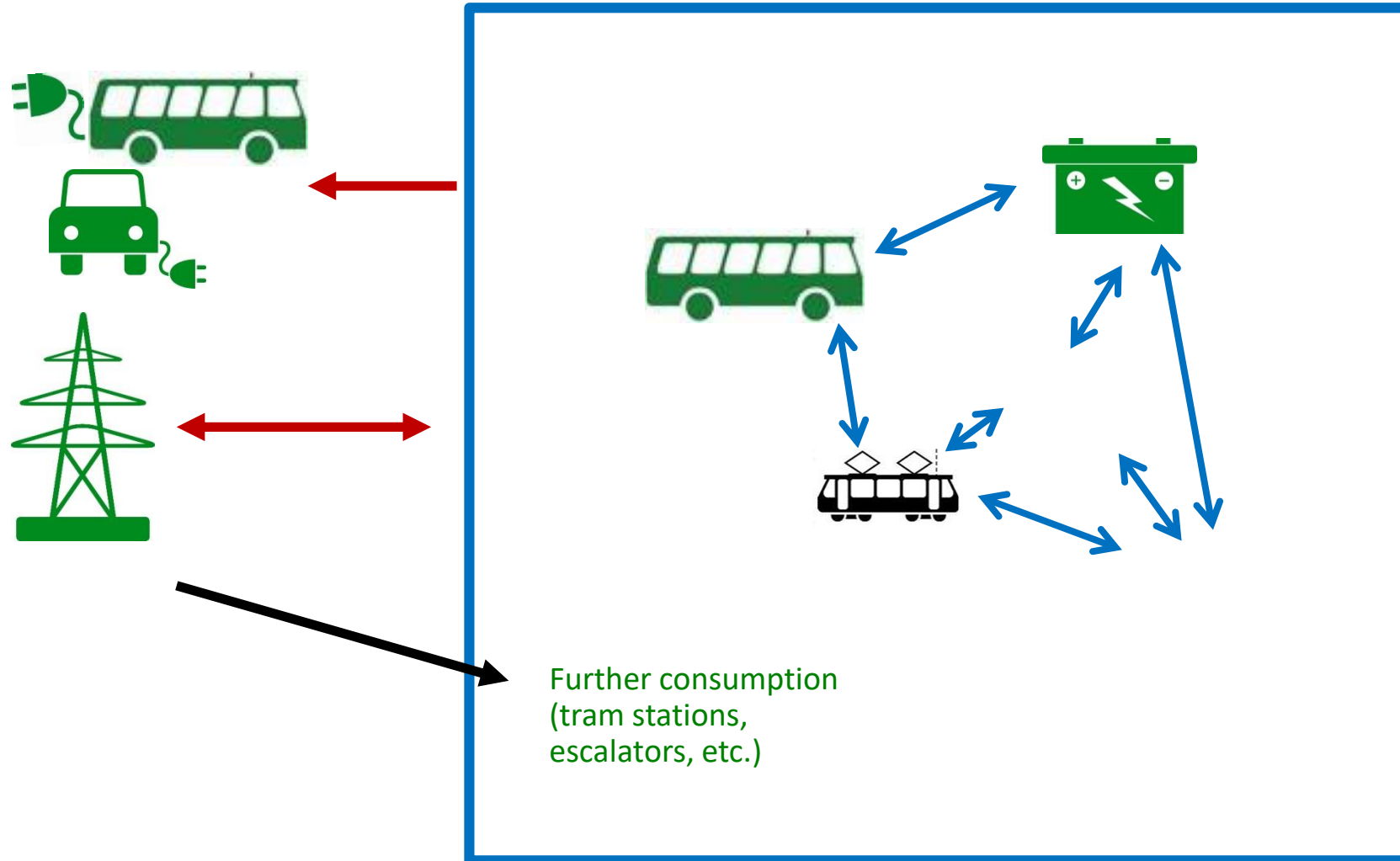


Opening up the black box



future e-mobility requirements

→ there is no “blackbox” anymore



Legal questions and challenges



Is there a suitable legal framework for

- energy storage?
- Recovery and use of brake energy?
- Charging e-busses and other electric vehicles with electricity taken from the PT Grid?
- Selling of electricity to third parties?
- Feeding recovered brake energy and energy taken out of storage facilities into the public electricity grid?

New challenges:

- How can PT operator distinct the different processes of energy consumption and energy generation?
- Set up of a coherent metering concept
- Distinction between discounted electricity consumption and non-discounted energy consumption
- How can PT operator avoid multiple taxation and levies?
- New market role for PT operators: 1. energy utility and 2. operator of a general supply network (that may underly regulation and supervision)
- Interactions between PT grid and public electricity network

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New market role: operator of a public distribution network



- Current legal status of PT grids seems unclear
 - customer system for the company's own supply?
 - ... untouched by energy regulation
- If PT grid becomes a public distribution network, energy regulation applies
 - Obligations towards other stakeholders (e.g. granting of grid access, transparency, no discrimination)
 - Network charges
 - Reporting obligations
 - And so on...



New market role: electricity supplier

- Obligation to pay EEG levy
- Compulsory registration at the network operator
- Electricity tax: Compulsory registration at the main customs office
- Further regulations apply to suppliers concerning electricity labeling, accounting, contracts, etc.
- Electricity fed into the public electricity network
 - Balancing
 - Grid services
 - Power purchase agreement / exchange authorization



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Challenge: regenerative braking



- Brake energy recovery
 - Trams generate electricity by recuperation / brake energy recovery
 - Recovered electricity is either used in the tram (heat) or gets fed into the PT grid (and then consumed by other trams)
- Legal questions
 - Do trams classify as electricity-generating units?
 - If so, what legal stipulations apply to the electricity generated by recuperation? (self supply, EEG levy, multiple taxation)?
 - Can trams be considered „kinetic storage facilities“ in order to apply Section 61k EEG 2017 and avoid multiple exposure to EEG levy? If so, how does this work (measurement concept, accounting, conversion losses)?

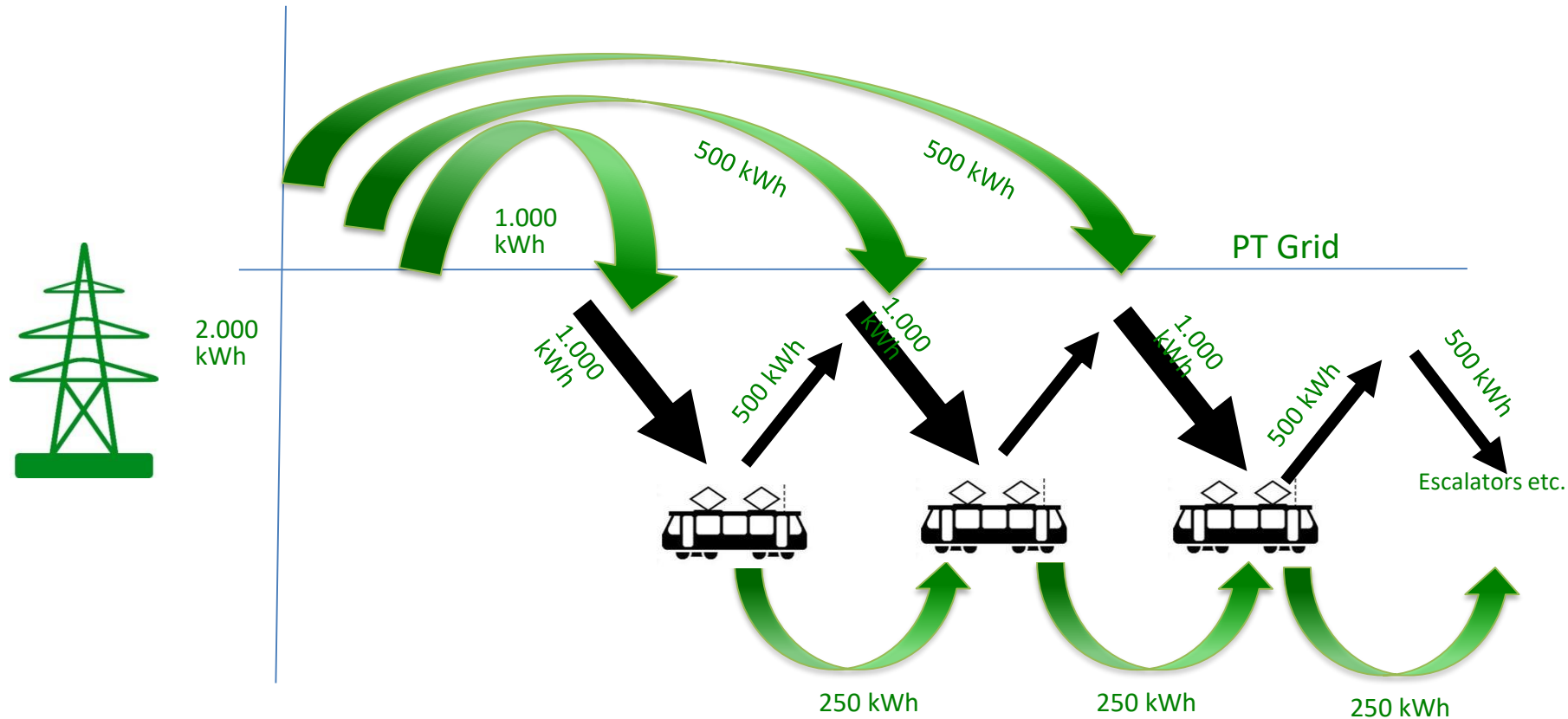
Introducing: EEG levy for the consumption of energy



- 2018: 6.792 Cent per kWh
- General principle: 100 percent of EEG levy for each kWh of electricity consumed within Germany
- Applies for **any energy consumption**, even for the consumption of energy that is not taken from the electricity grid
- Some exemptions and limitations in case of self-supply, no exemptions for delivery
- Limitation of EEG levy for railways
 - Only applies to „electricity that was consumed directly for the railway transport operation“
 - Energy consumption of at least 2 GWh
 - Limitation to 20 per cent
- Two main challenges:
 - Avoid multiple exposure to EEG levy
 - Distinguish discounted from non-discounted energy consumption



EEG levy for 2.000 or for 3.500 kWh?



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Policy recommendations for multi-purpose electric PT infrastructure



Need for a clear framework that regulates the role of public transport operators working on the intersection of mobility and energy:

- Clarity about requirements
- PT operators should not face risk to lose public subsidies
- New e-mobility related technologies and applications need to be covered by energy law (energy storage, recuperation, etc.) without excessive measurement requirements
- Reduce complexity of legal requirements



Thank you very much for your attention!

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