

Sustainable Mobility

Supplying Clean and Affordable Energy
for TUM's Electric Vehicle MUTE

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1st Colloquium Munich School of Engineering

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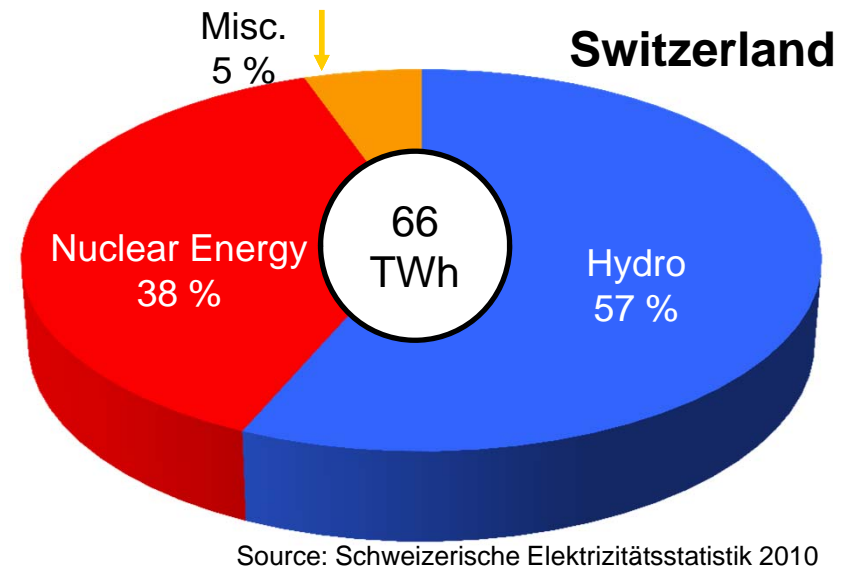
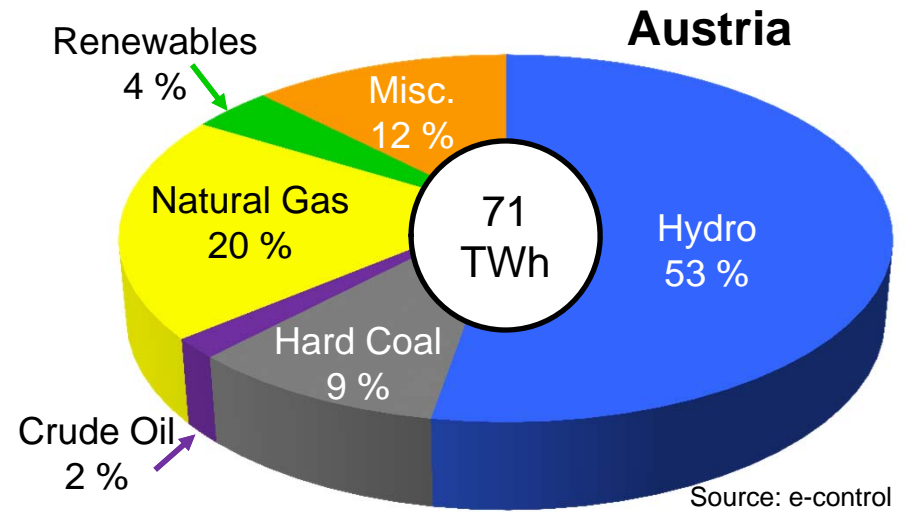
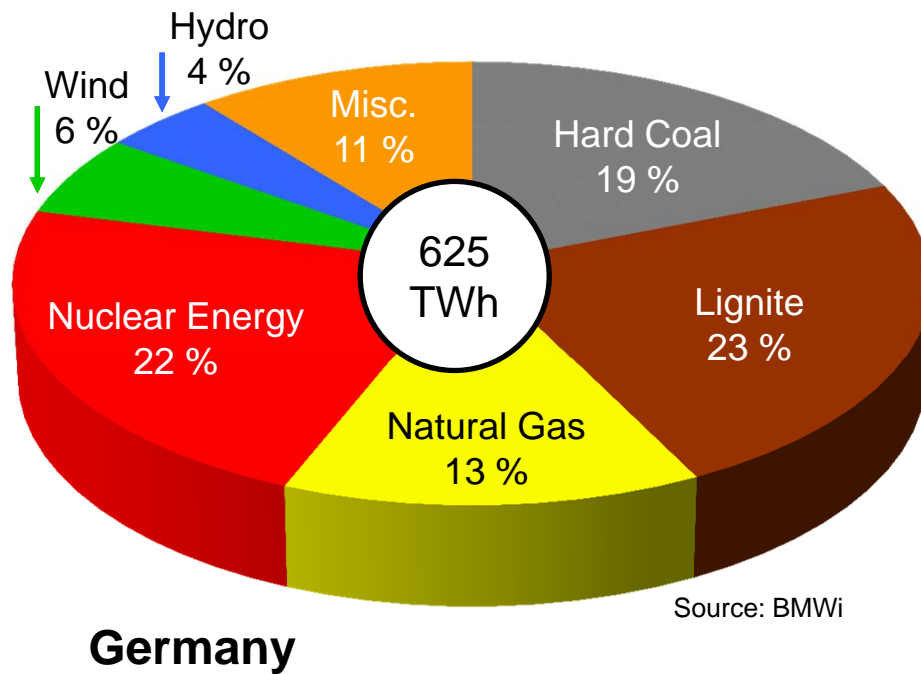
Emissions ?
[gCO₂/km]

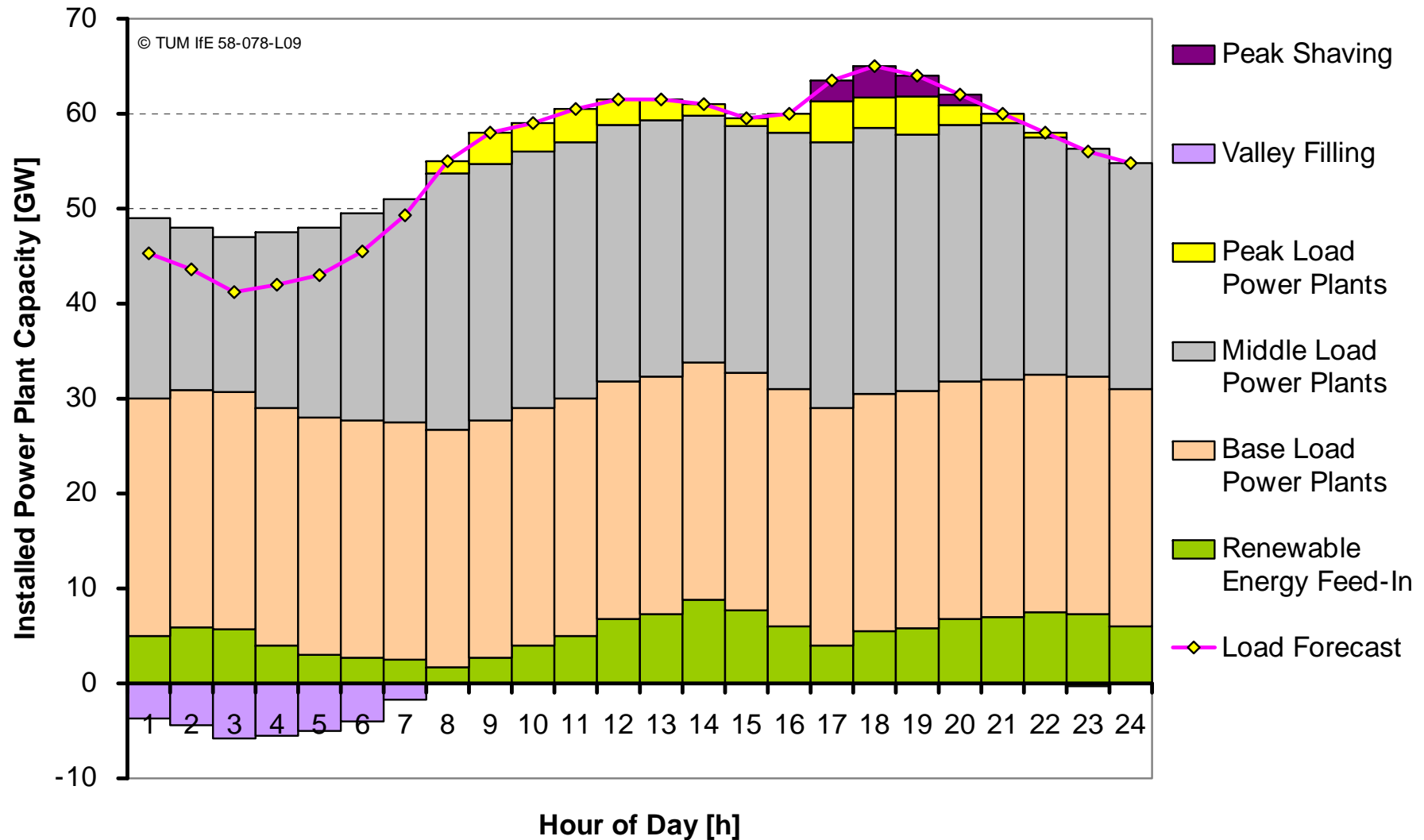
Costs ?
[€/100km]

Final energy demand (plug2wheel): 7,5 kWh/100km
Efficiency plug2wheel: 80 %

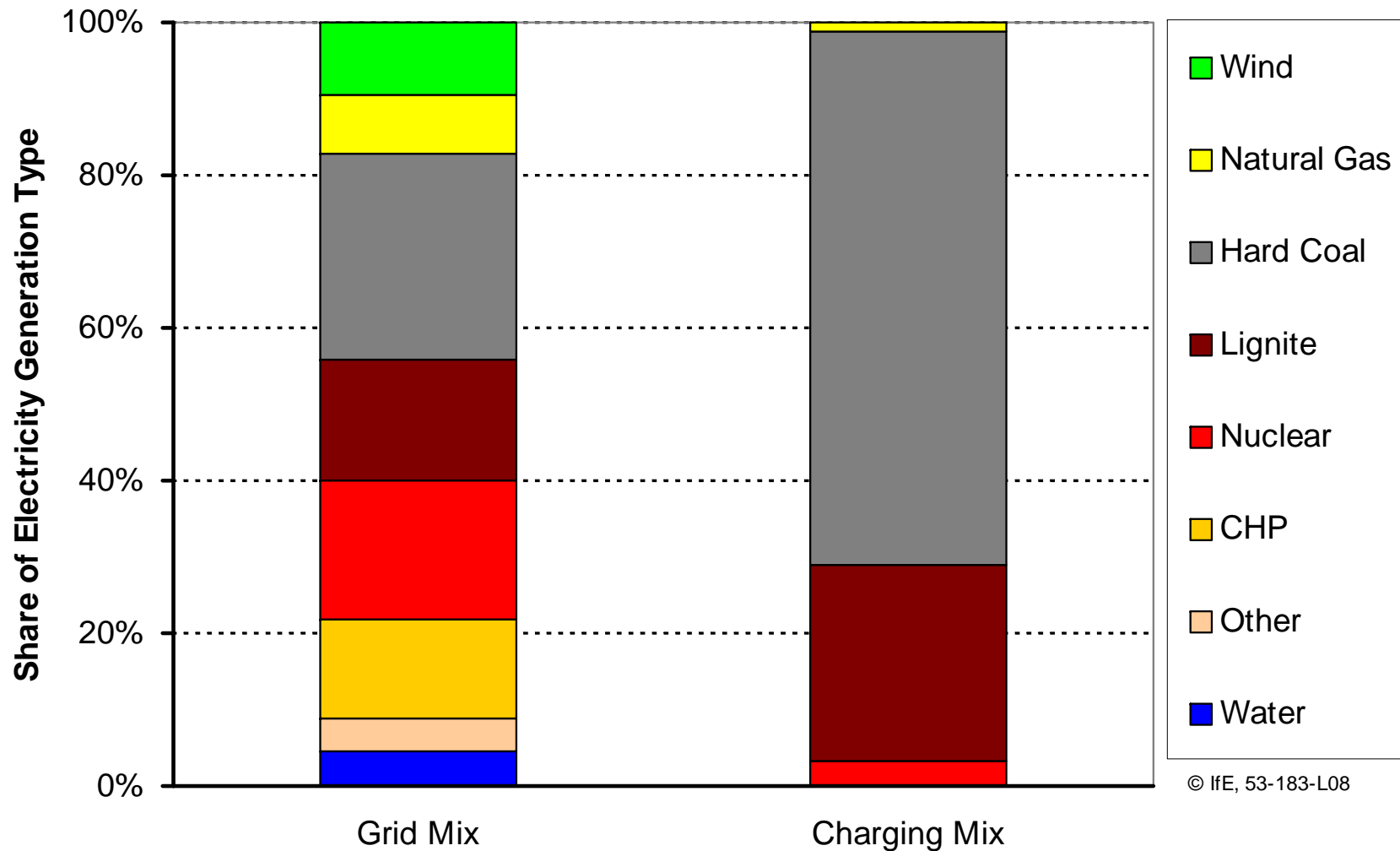


2010 Electricity Generation in Germany, Austria and Switzerland by Source





Composition of the MUTE's Charging Mix in Germany 2015

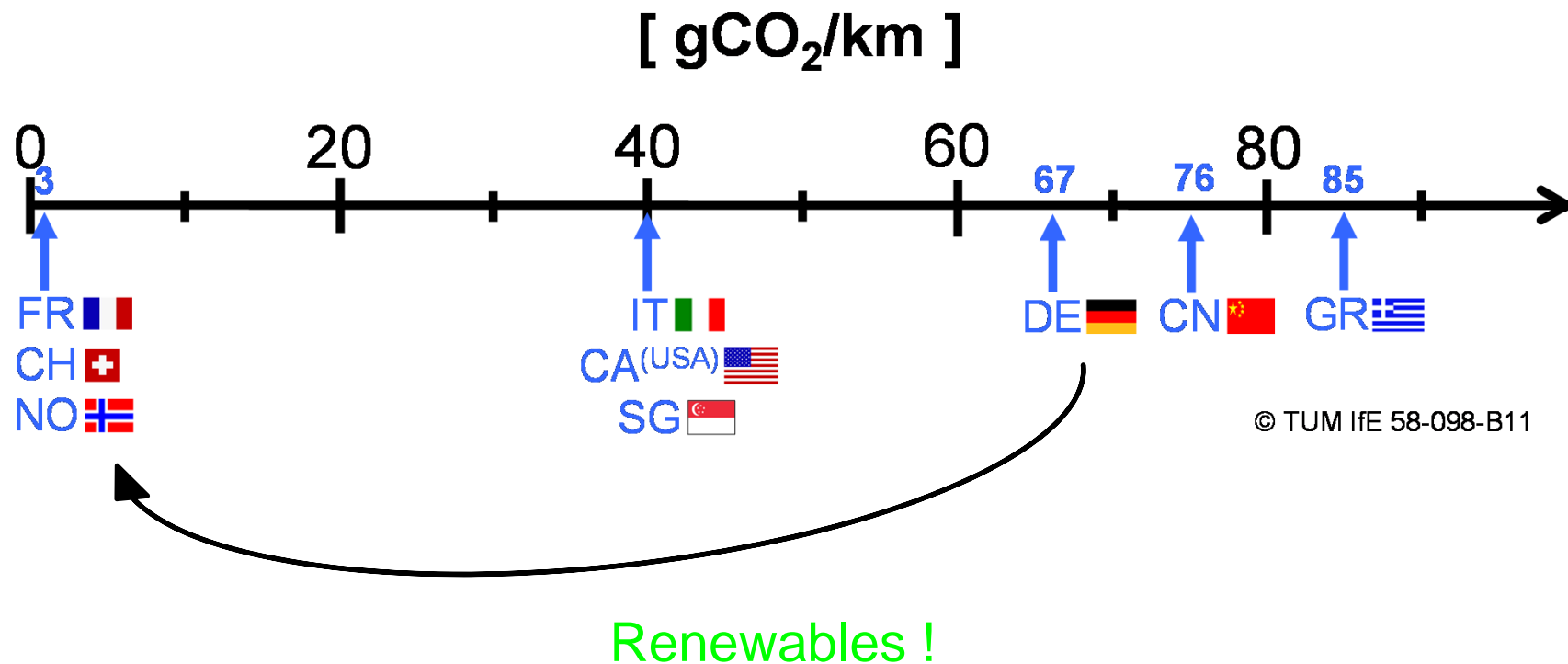


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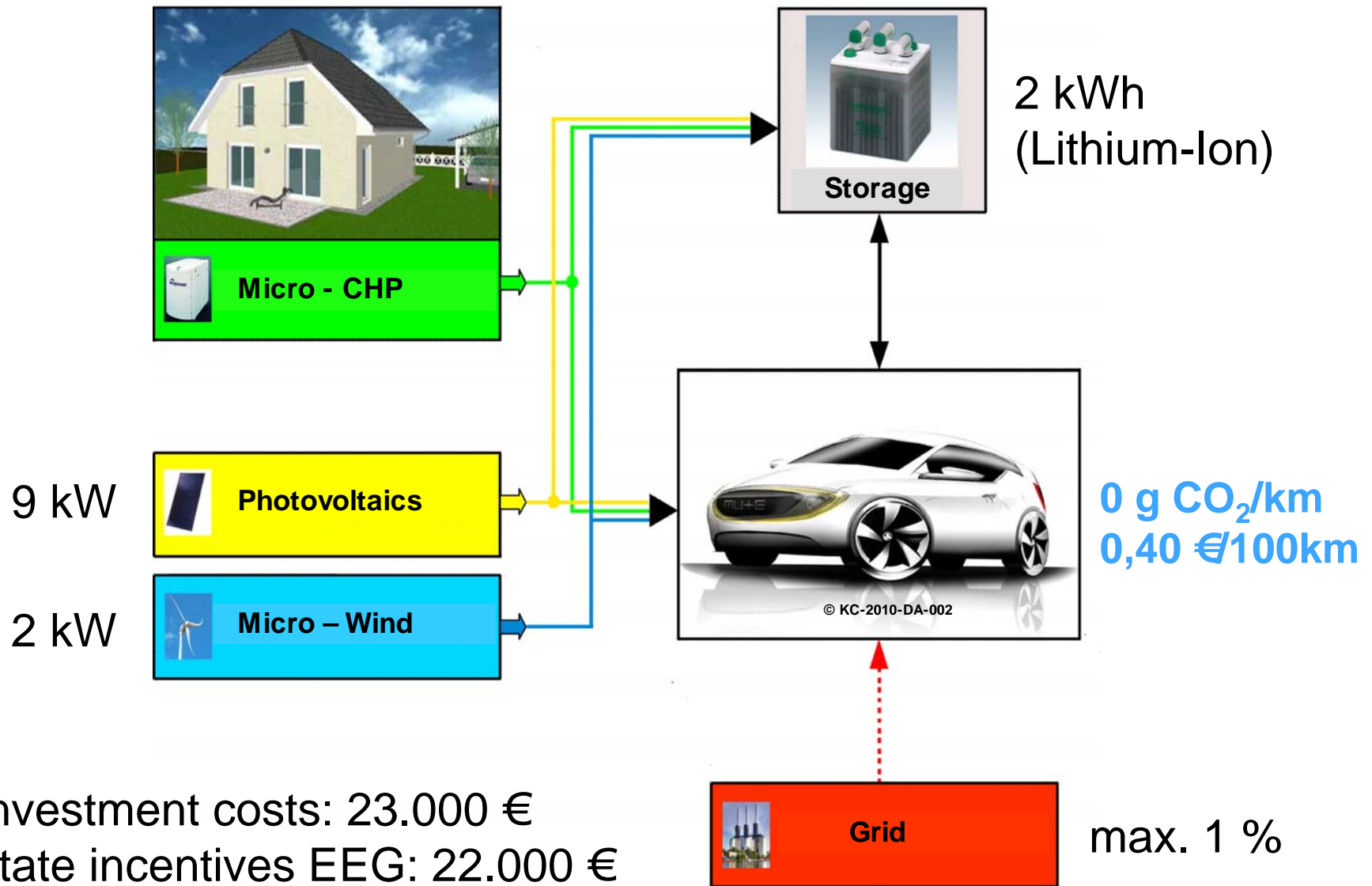
→ 67 gCO₂/km and 1,30 €/100km

EV Emission Scale: Specific CO₂ Emissions Attributable to the MUTE in Various Countries 2015

→ Scenario: controlled charging during off-peak hours

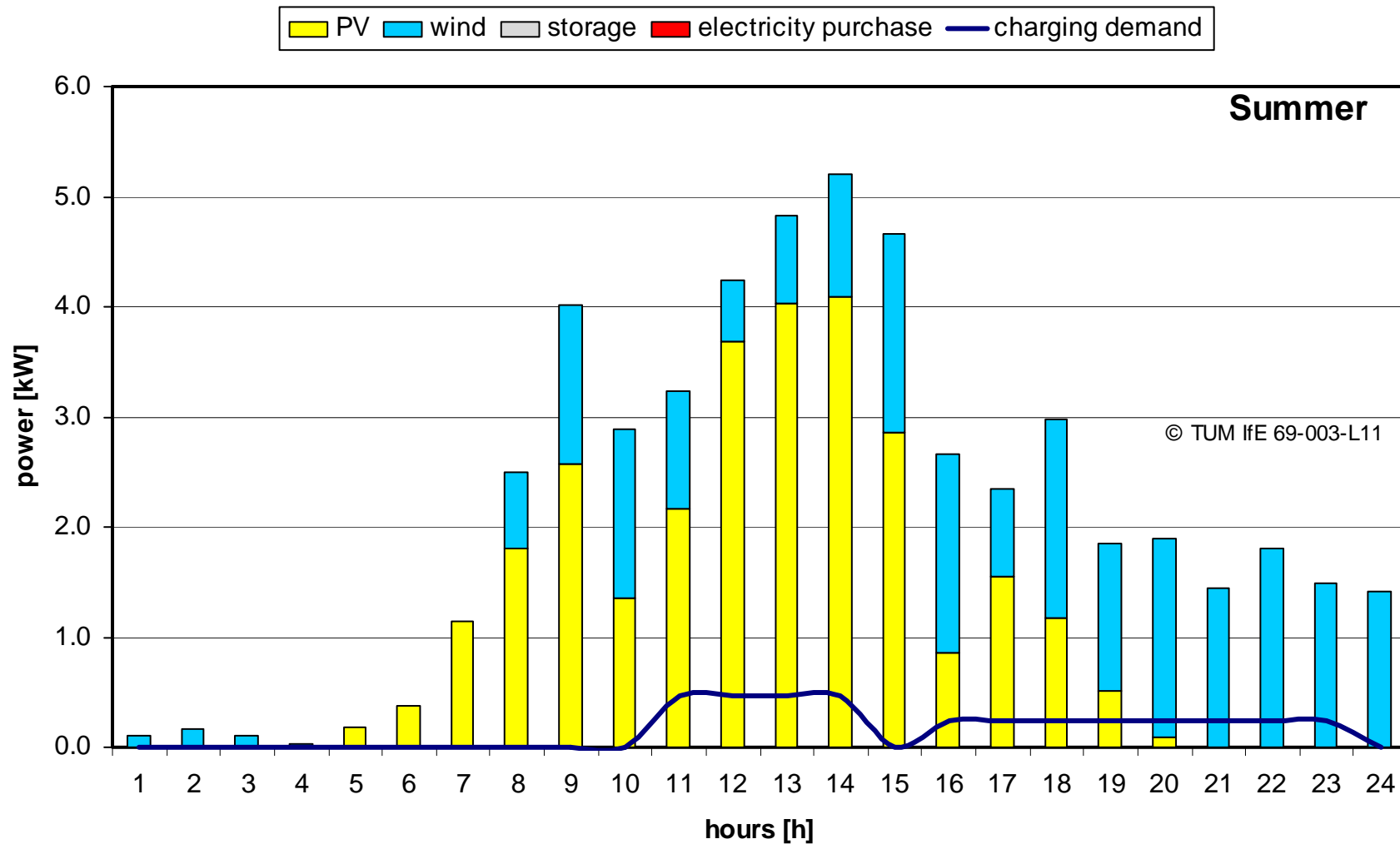


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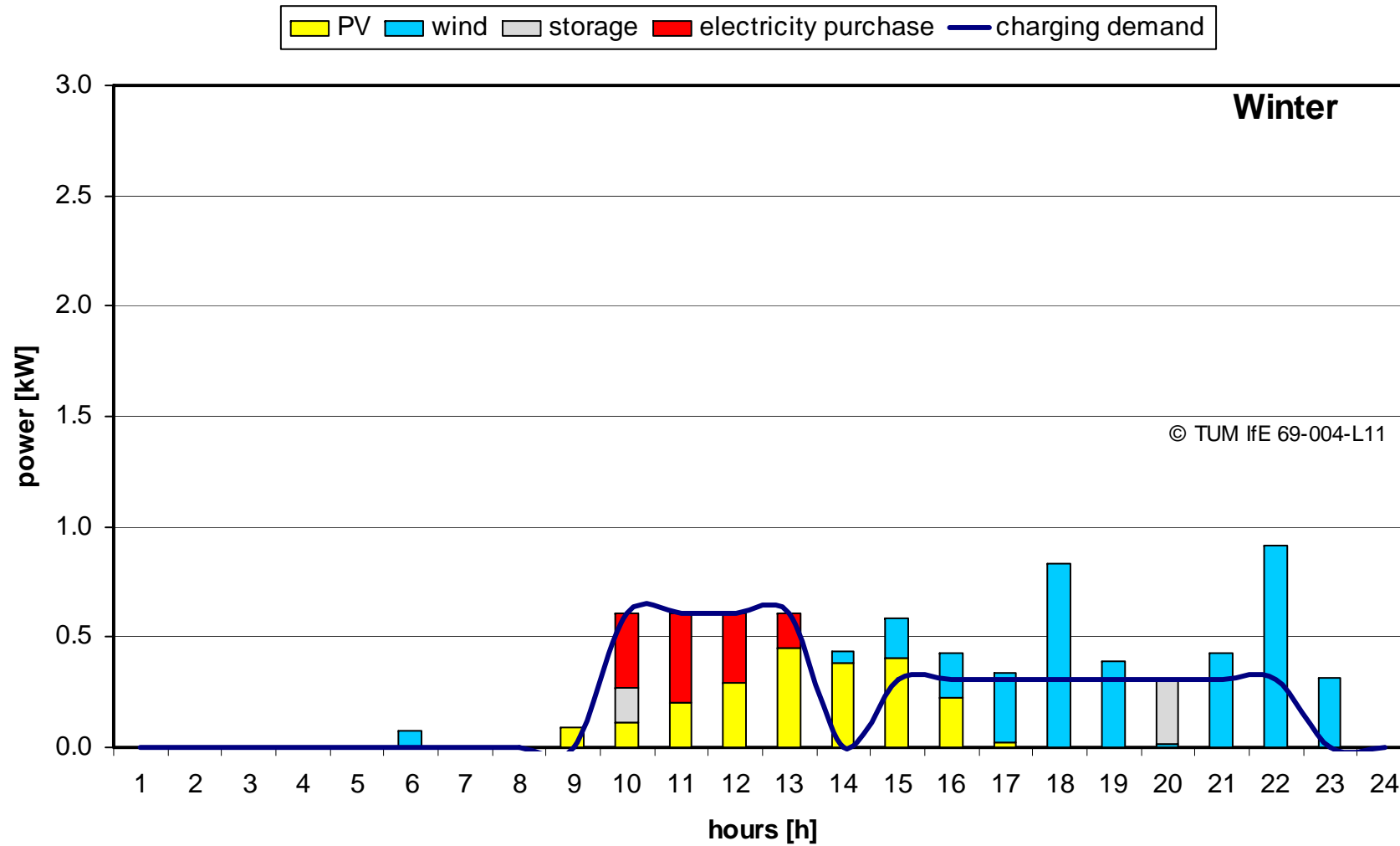


- investment costs: 23.000 €
- state incentives EEG: 22.000 €

Exemplary Coverage of the Charging Demand of the MUTE at a Typical Day in Summer



Exemplary Coverage of the Charging Demand of the MUTE at a Typical Day in Winter





Daimler Smart

ICE
Diesel

88 gCO₂/km

4,50 €/100km



MUTE

Off-Peak Charging
Grid Power Plants

67 gCO₂/km

1,30 €/100km



MUTE

Renewables
Sun, Wind

0 gCO₂/km

0,40 €/100km

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