Conductive charging while driving

Annika Ahlberg Tidblad
Scania CV AB
Challenges:
- very many fast chargers
- large battery quantities
Electric Road Systems (ERS)...

Previously discussed charging via pantograph connection to air wires...

...but conductive charging from a road line is also possible...
Conductive ERS concepts
Benefit with charging "en route"

• Impact on EV business case
  ➢ Utilization of charging infrastructure improved
    ✓ Multiple vehicles can be serviced at the same time
    ✓ Road bound charging technology can be used by both heavy duty vehicles and passenger cars
    ✓ Conductive charging systems expected to be less costly than inductive solutions
  ➢ Potential for battery reduction, up to 80%
    ✓ Cost benefit
    ✓ Material resources/waste management
  ➢ Less need for fast charging systems – potential for improved battery durability

• Convenience
  ➢ Time saving
Estimated costs for different charging solution...

- Battery cost is conservative
- Passenger cars are important for overall economy
Necessary technology:

- Extruded Aluminium
- Insulating material
- Power electronics
- Control technology
- Wirebound and wireless communication
- Power grid technology
- Servo technology
- Metallurgy/corrosion
- Energy metering and cost charging
- Road construction
- Road maintenance
- ...