

Successful EV Deployment Experiments

International Electric Car Conference

November 2010 - Groningen



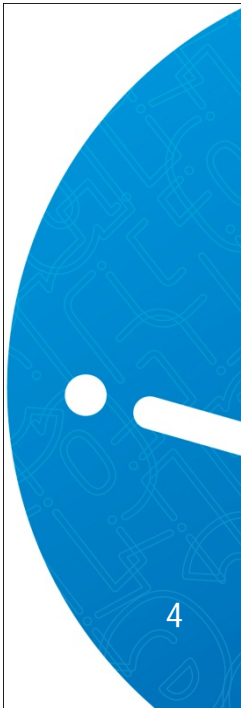
Content of today's session

- **Jan Schoormans, 3 Roadmaps on the Userperspective**
- **Dirk Jan van Swaay, Business case**
- **Maarten Linnenkamp, Amsterdam**
- **Colin Herron, Infrastructure**

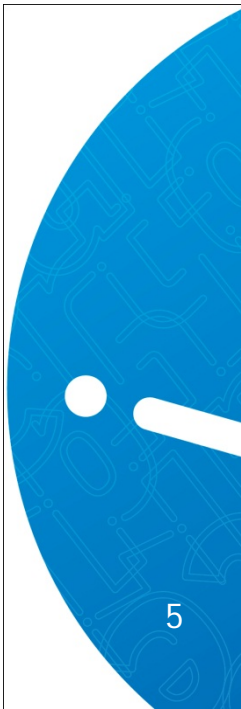
Innovation in electric mobility in the Netherlands

- **Main drivers for electric mobility until 2020**
- **Main challenges and innovations needed**
- **Innovation strengths and roadmaps in the Netherlands**

Very Important E-Mobility Drivers

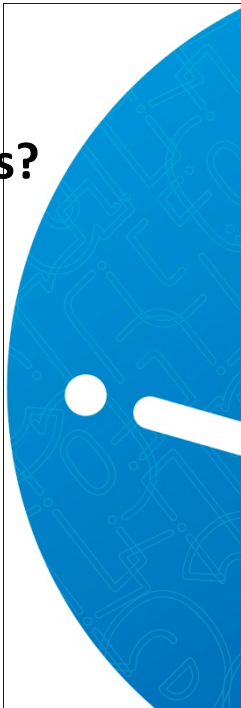


Very Important E-Mobility Drivers: satisfied users



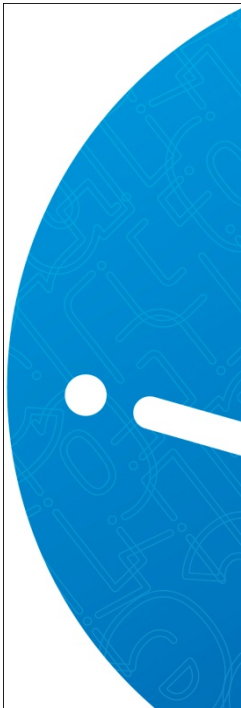
3 Roadmaps on the userperspective: method

- **Step 1: Literature and expert analysis to define R&D challenges**
- **Step 2. Roadmap definition of three innovation routes**
 - **What is an acceptable / optimal charging solution for different user groups?**
 - **What is a competitive car design for different users groups?**
 - **What is an acceptable financial solution for different user groups?**

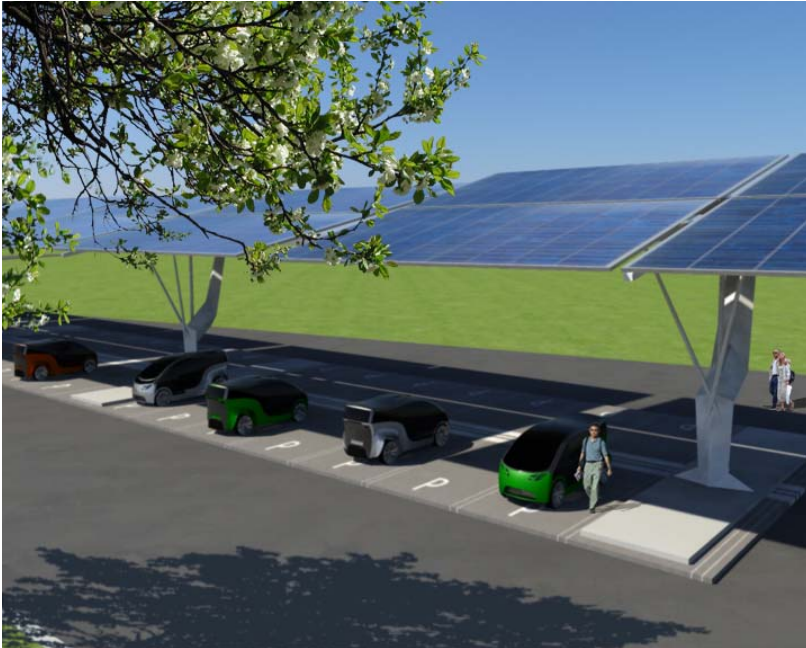


What is a workable charging solution for different user groups?

Roadmap for research and design 1

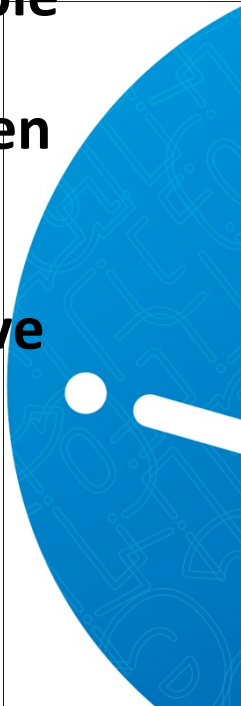


What is a workable charging solution for different user groups? Roadmap 1 for research and design



What is the optimal charge solution for different user groups? Roadmap for research and design I

- User needs:
 - Charging has to be **Simple, Available, Save** and **Fast**
- Research and design questions:
 - How to create simple, available, speedy and reliable systems?
 - Product / use definition: where, how and when to charge?
 - Infrastructure (snellaad), smart grids, inductive systems?



What is a competitive car for different users groups? Roadmap for research and design II



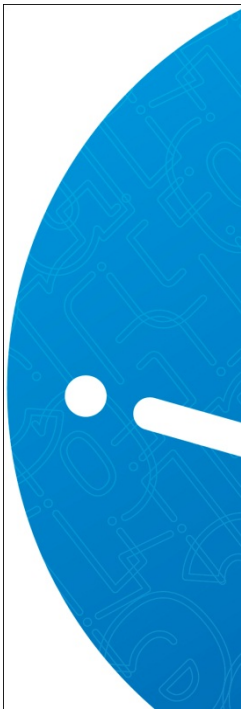
What is a competitive car for different users groups? Roadmap for research and design II



What is a competitive car for different users groups?

Roadmap for research and design II

- User needs:
 - Competitive cars are needed
- Research and design questions:
 - What are the **minimum car requirements** (radius, size, traction, second-hand value, quality of the batteries) for different user groups?
 - What (negative) **emotions** are related to E-cars?

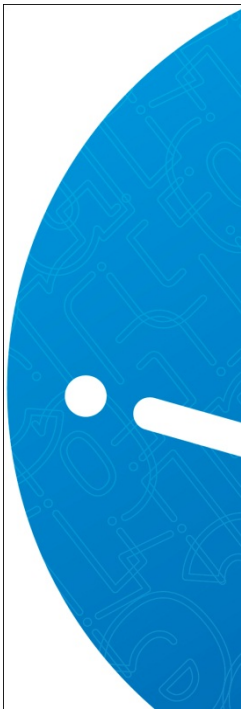


What is the optimal financial solution for different user groups? Roadmap for research and design III



What is the optimal financial solution for different user groups? Roadmap for research and design III

- User needs:
 - E-cars need to be **cost effective!**
- Research and design questions:
 - How do different user groups evaluate direct / indirect costs: design different payment systems?
 - How to optimize use efficiency of cars: speed charging, range extenders



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