



Exchange knowledges and techniques on roads and road transportation



WORLD ROAD ASSOCIATION



www.piarc.org

PIARC Special Project “Electric Road Systems”

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Decarbonization of Road Freight



PIARC's key missions and organization

- Be a **leading international forum for analysis and discussion** of transport issues related to roads
- Identify, develop, and disseminate **best practice** and **give better access to international information**
- Consider the needs of **developing countries and countries in transition**
- Design, produce, and promote **efficient tools for decision making** in road and transport engineering and policies.
- 121 National governments, members from 140 countries
- 1200 experts currently mobilized in TCs and WGs
- Operations guided by a **4-year Strategic Plan**



Electric Road Systems PIARC Special Project

PIARC has launched in October 2017 a Special Project called
“Electric Road Systems: a solution for the future?”

Objectives:

- Draw current practices on **ERS all over the world** including TRL (*Technology Readiness Level*)
- **Engage with different stakeholders:** road administrations, road construction companies, vehicles manufacturers, researchers, power supply companies...
- **Produce an holistic vision of ERS:** different technologies (conduction and indication in different positions), different vehicles (cars and HVs) construction and operation phases, road safety, tunnels, landscape impact, etc. including impact of rival technologies such a long autonomy batteries.
- **Produce an objective recommendation to NRA about engaging ERS or not.**



Electric Road Systems

Schedule and methodology

Final report expected by October 2018 in English, French and Spanish, available for free at www.piarc.org

- A total of 24 case studies in 12 countries plus two global initiatives have been analysed.
- Ongoing survey online to stakeholders with more than 150 answers from more than 40 countries.
- 114 literature reviews and classified

Electric Road Systems Preliminary results (1)

Potential impacts of ERS according to stakeholders:

Impact	Significant Adverse Impact	Adverse Impact	No Impact	Minimal Benefit	Significant Benefit
Greenhouse Gas Emissions	3%	2%	3%	15%	78%
Local Air Quality	4%	1%	4%	18%	73%
Operation, Costs for Road Admin	20%	33%	16%	16%	15%
Vehicle Operating Cost	3%	17%	16%	31%	33%
Noise	2%	3%	16%	31%	48%



Electric Road Systems Preliminary results (2)

Ranking of top challenges for ERS implementation:

- 1- Installation Cost & Maintenance Costs
- 2- Impact on Road Infrastructure
- 3- Regulatory and Business Model
- 4- User Acceptance and Public Opinion
- 5- Technical Feasibility
- 6- Increased Electricity Demand
- 7- Safety and Security
- 8- Ownership and Political Influence
- 9- Reliability and Availability of Road Network



Electric Road Systems Preliminary results (3)

Technology Readiness Level (TRL) and time for deployment according to stakeholders:

	TRL Level (1-9)	Years to Deployment
Inductive (Static)	6.5 ++	2.2 --
Inductive (Dynamic)	5.0 +	5.5 -
Conductive (Dynamic Overhead)	5.9	4.1
Conductive (Dynamic In-road)	5.2	5.5
Conductive (Static Overhead)	6.8	2.3
Conductive (Static In-Road)	5.7 +	4.0 -



Thank you for your attention



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