Kinetic Energy Recovery Analysis Tool

Analysing energy efficiency techniques

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The research

Comparing recuperation technologies

- ProRail: 30% reduction in energy consumption between 2005-2020*
- Key to: Sustainability, running costs, CO_2 emissions, etc.
- Create overview (energy, economical, implementation, maturity, etc.)
- Technology becomes more mature, is it time to invest?

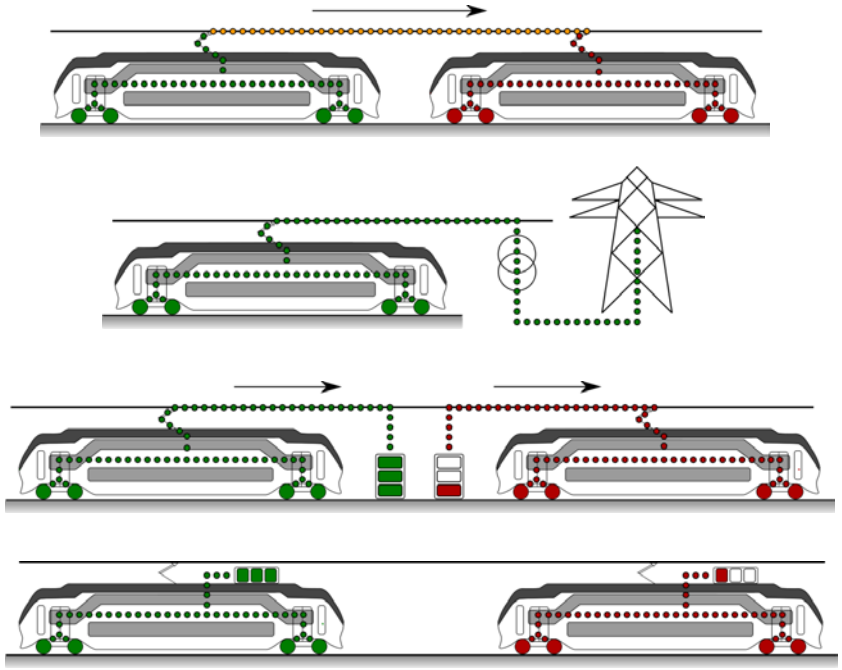
An analysis tool

- Comparison solely based on literature is insufficient
- Solid comparison under equal conditions and equal objectives
- Select the best technology for the Dutch railway system

*MJA3-covenant: ProRail (2012), “Energie-efficiencyplan 2011-2016”.

Recuperation technologies

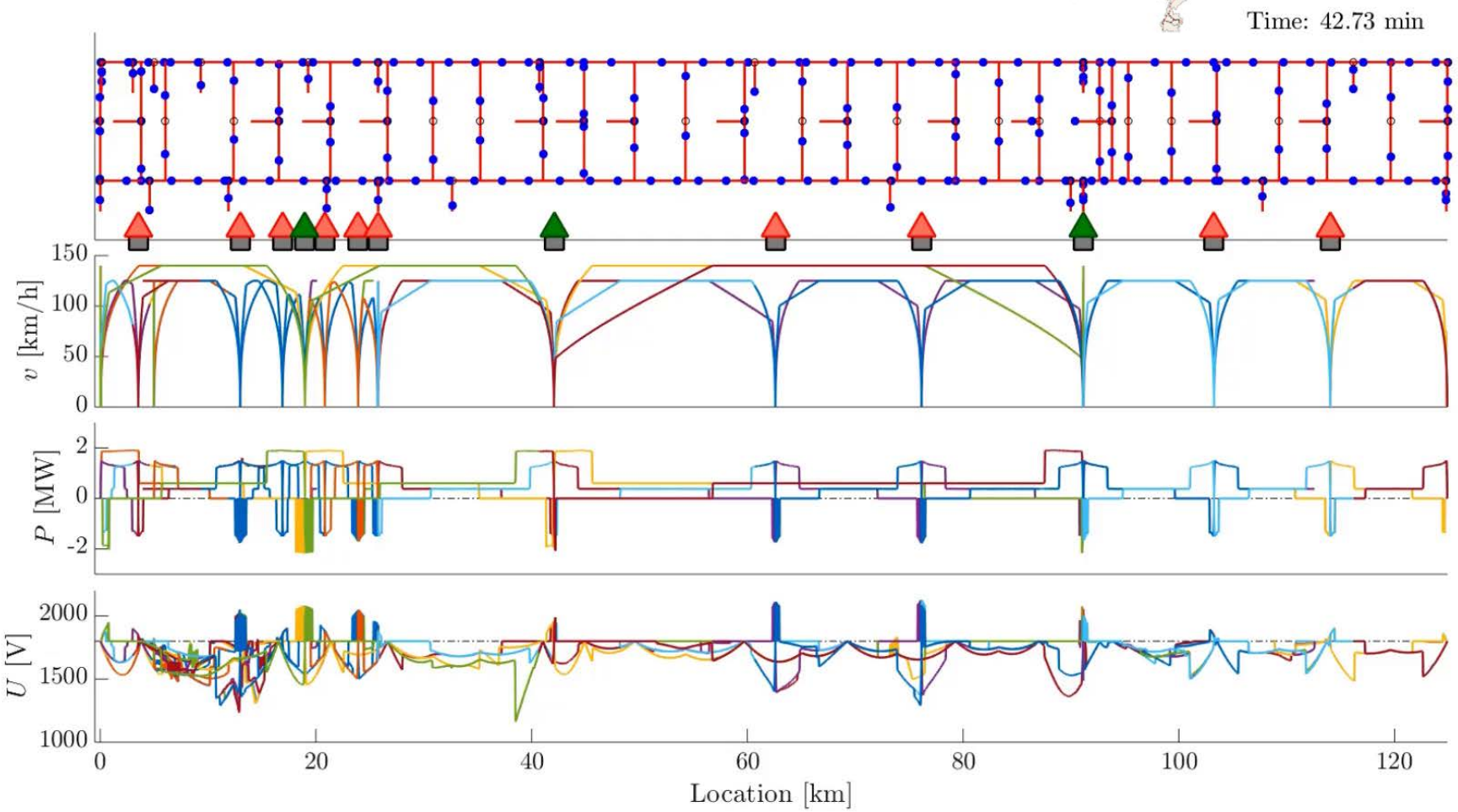
- Intertrain recovery
- Bi-directional sub-station
- Wayside ESS
- On-board ESS



Additional:

- Increase voltage: 1,5kV → 3kV
- Energy efficient driving

One simulation



A tool for…

- Policy makers, select the time to invest
- Solid and valid comparison of energy efficiency techniques
- Determine energy and economical gains
- Engineers, to realize an optimal energy efficient railway system
- A faster implementation of recuperation technologies
- Etc.

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