

# MAGpie

SMART GREEN PORTS

## DEMO 8 ZERO EMISSION SHUNTING LOCOMOTIVE

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### Introduction

- **Aim of demo** - The aim of Demo 8 is to test the new built zero emission shunting locomotive in real life situation with different loads, weather conditions. The tests will be done in shunting operation and in short haul operation.
- **Value proposition** - The key contribution of this demo is to show that even the last mile of rail transportation on non-electrified railways, can be done with zero emission locomotives.

### KPIs

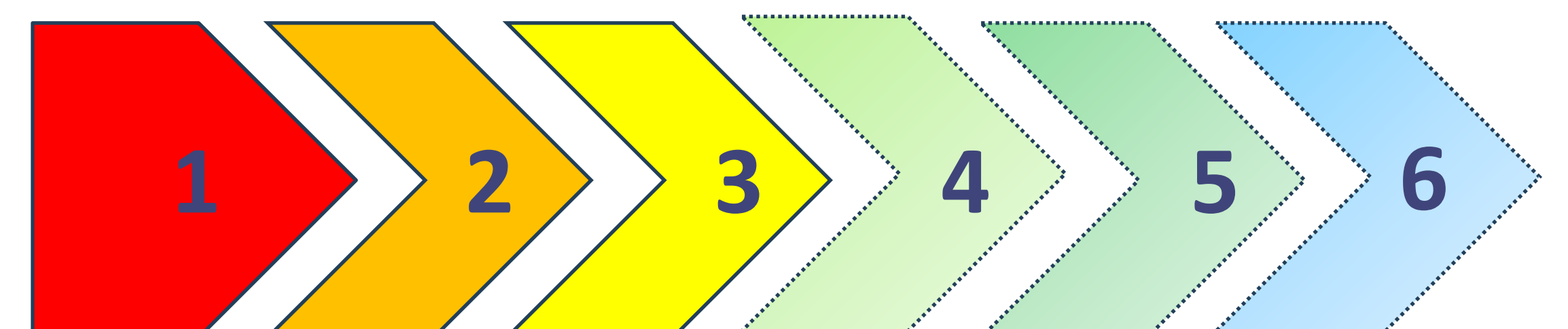
- **GHG:** A diesel shunting locomotive in the Port of Rotterdam consumes yearly about 100.000 liters of diesel with a carbon footprint of around 270 tonnes CO<sub>2</sub> per year. With the zero emission locomotive, charged with green electricity the 270 tonnes of GHG will be avoided.
- **Noise reduction:** There will also be noise reduction as electric traction produces less noise than diesel traction.

### Lessons Learned

- **Barriers** - There have been set backs in the building of the locomotives in China, so we faced a delay of about a half year. Next barrier to overcome is the homologation process, before the locomotives are allowed on the European railway network. This approval process is still going on.
- **Scalability** - A successful pilot, will be noticed by other rail way companies. In the Port of Rotterdam there are now about 40 old diesel locomotives, which could be replaced with zero emission locomotives.

### Current Progress Status

1. Launch of demonstrator; 2. Elaboration of KPIs, Operation characterization and modelling, and ongoing studies; 3. Testing phase in lab and data collection; 4. simulations and testing phase in pilot area; 5. results and commercially available; 6. ready to scale up



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