Strukton POWER

The shift to zero-emission equipment

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Introduction

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Contents

- The shift to zero-emission
- Feasibility study Unimat
- Charging challenges

The shift to zero-emission

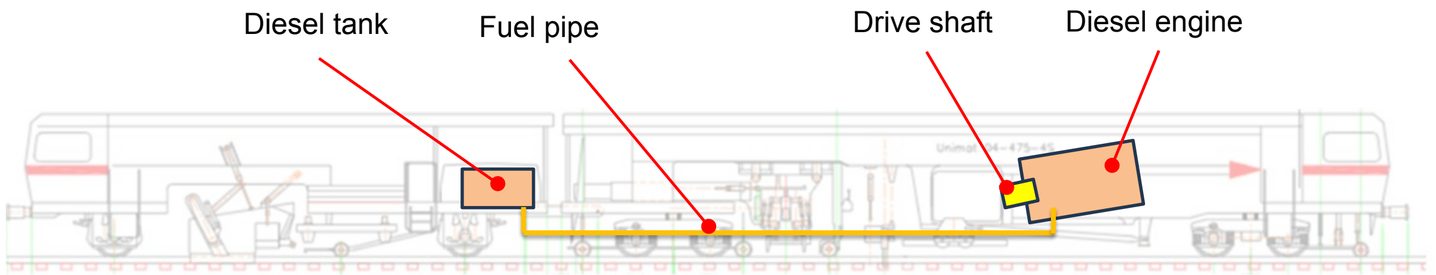
Unimat

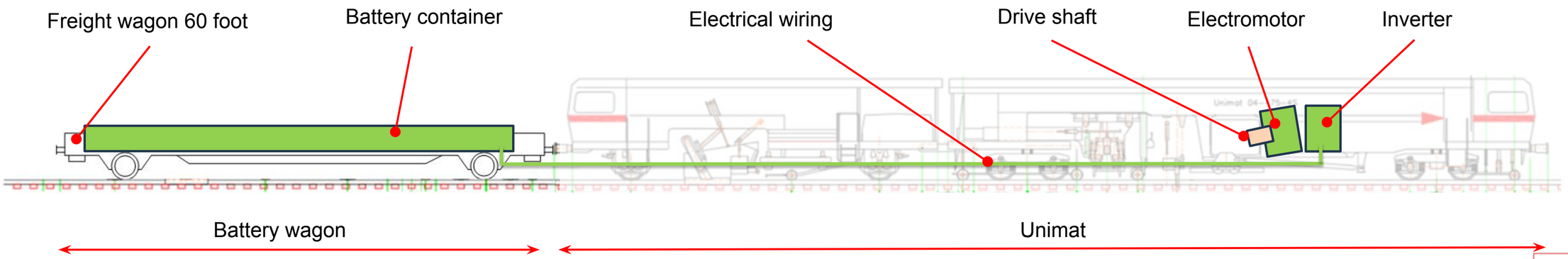
- Hydrolic tamping
- 380kW motor
- 4350L Diesel tank

- 1kg of diesel 12kWh
- 1kg of battery 0.12kWh

- Efficiency diesel 35%
- Efficiency battery 80%

Technical proposal



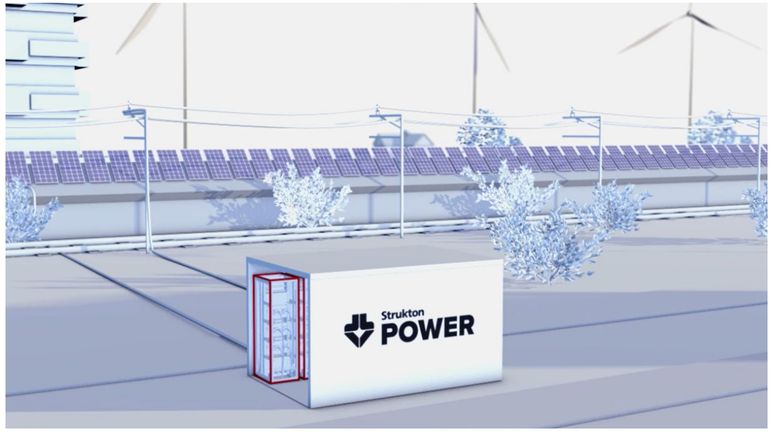


Technical proposal

During work	Unit		Reference
Fossil fuel			
Energy consumption per hour	[kWh/h]	800	= 80 dm^3 per uur; Spec Unimat
Capacity diesel tank	[dm^3]	4000	Spec Unimat
Weight dieseltank	[kg]	4500	Additional weight of tank
Stored energy	[kWh]	40000	= 4000 [dm^3] * 10 [kWh/dm^3]
Consecutive working time	[h]	50	= 40000 [kWh] / 800 [kWh/h]
Batteries			
Energy consumption per hour	[kWh/h]	440	= 340 [kW] / 78%;
Capacity battery container	[dm^3]	42000	12 [m] x 2.5 [m] x 1.4 [m];
Weight battery wagon incl. container	[kg]	40000	
Energy capacity batteries	[kWh]	2200	
Consecutive working time	[h]	5	= 2220 [kWh] / 440 [kWh/h]

The power supply options

- Regular grid connection
- Battery pack
- Catenary connection (Rail Renewable SKID)



Wrap up

- Work together to split non-recurring costs
- Charging from catenary
- Charging with batteries