PLANZER operating an E-FORCE truck

**Key Words:**
Implementation of low emission technologies, Innovative vehicles, vessels and equipment; Environmental standards and policy

**Description:**
The transport and logistics service provider (LSP) PLANZER in Switzerland ordered an E-FORCE truck from Swiss manufacturer E-FORCE for their fleet. The truck is now fully integrated into their LTL transport operations. PLANZER was founded over 75 years ago in Switzerland. 47 companies with about 4200 employees are integrated into the PLANZER group. They have a fleet of over 1000 trucks. Still, 60% of their transports are sent via the rail network between their connected transport centres. Each night 280 rail wagons with PLANZER shipments are crossing Switzerland.

**Benefits:**
- Ecological truck transports with zero direct emissions
- Low operational costs due to lower brake wear, low energy costs and exemptions in the Swiss distance related heavy vehicle fee (HVF)
- Efficient driving with low noise emissions and high acceleration, drivers are in favour of electric truck use
- Good marketing tool, attracting new customers and demonstrating innovative spirit

**Starting point/objectives/motivation:**
The main motivation of PLANZER was to stay ahead in the industry with future technologies in trucks. Using an electric truck under real operational conditions leads to valuable experience being gained and allows feedback to the developer with potential for improvements. The image effect of using an eco-friendly solution is also a huge bene-fit. PLANZER is the first LTL operator to use the E-FORCE. The E-FORCE received a wave of positive media attention in Switzerland during the initial uptake by a retailer in 2013. Being among the early adopters lead to a beneficial perception among customers and the public.

**Solution:**
The integration of the electric truck into the PLANZER operations is intended to generate valuable experiences with the new technology in the general daily business. Today the use of the truck is mainly limited due to the range limitation of the battery charge. Up to 300km are possible; at PLANZER the daily tour of the E-FORCE averages about 125km. The yearly mileage of the E-FORCE will be around 30,000km.

For now the E-FORCE is mainly operated on runs from the PLANZER transport centres to the city area of Zurich or Basel with about 15-20 stops to load or unload per tour. The high amount of stops and starts necessary on these tours is where the electric engines excel versus diesel trucks due to the good acceleration. Plus in the urban areas the truck is highly visible on its tour for potential customers and the public to see the PLANZER initiative to actively innovate the transport and logistics industry with sustainable solutions.
**Case description (cont.):**

- Two synchronous motors with a total of 300 kW, for a maximum speed of 87 km/h (electronically restricted). The electric motors only weight 45 kg each which partly offsets the high battery weight vs. a diesel engine weight; Single-speed transmission
- 200-300 km range, depending on geography, speed and additional load
- Battery used: two LiFePo4 batteries are used with 120 kWh at 400 V, combined weight of both batteries is 2600 kg. Batteries can be changed in under 5 minutes and can be fully charged within 6 hours
- Total weight 18 t, vehicle weight 8 t, allowing a maximum additional load of 10 t. PLANZER loads a maximum of 6.5 t or 19 pallets which usually suffices in volume and pallet based LTL transports

**More information:**

www.planzer.ch  
www.eforce.ch

**Transport mode or supply chain elements**

*Road/truck* - The truck is in use in intermodal LTL (less-than-truckload) transport, the entire transport chain benefits from the ecological aspects of low WTW (well-to-wheel) emissions

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