Citylog EMF (efficient, modular, flexibel) – Electro-Multifunction-Transportation vehicle

**KeyWords:**
Access to transport networks, infrastructure and nodes; Implementation of low emission technologies; Innovative vehicles, vessels and equipment; Business to customer (B2C) solutions (e.g. e-commerce, last mile delivery);

**CASE QUICK INFO**

**NAME OF CASE**
Citylog EMF

**Description:**
Citylog EMF is a new type of electric freight vehicle developed in Austria by a consortium led by HET. The electric motor propulsion is fuel-cell based, and the vehicle concept consists of a series of ‘self-driven’ vehicles and ‘trailers’ that can be coupled to a train, and un-coupled for loading and unloading operations. The trials in Klagenfurt follow the prototype phase in which the technical feasibility has been demonstrated.

**Benefits:**
- Environmental benefit - CO₂ reduction
- Flexibility of the technology - single vehicles are self-driven
- Vehicles can be linked to a “train”
- 2.2 tonnes load weight capacity per vehicle
- Cost efficient

**Success Factors:**
- Innovative technology with demonstrated feasibility
- Cost efficiency, (asset costs, low fuel-costs)
- Potentially usable in many different fields all over the world
- New drive (hydrogen, fuel cell) for freight / transportation
- Stakeholder participation

**Supported Strategic Targets:**
- Acceptance of the public and the business actors
- Increased efficiency /productivity of logistic processes
- Improved image
- Reduced greenhouse gas emissions
- Reduced noise and pollutant emissions

**Starting Point/Objectives/Motivation:**
The idea of this solution is to produce a flexible, environmentally-friendly and modular built vehicle for transportation of goods in inner cities. Especially in old city centres, freight delivery vehicles have to perform on many small streets and face ever growing access restrictions (e.g. bollards, pedestrian areas, environmental zones). The project leader HET looked for a solution to these problems. The common practice before the implementation of the Citylog EMF is that many trucks and private cars drive in the inner city areas to deliver directly to the shops, private customers and businesses, and these areas suffer from too many vehicles, poor air quality (pollutant emissions), noise, etc.

If shops, restaurants and other businesses would use the Citylog EMF for their deliveries, the city centres would potentially become safer for pedestrians and cyclists, there would be lower CO₂-emissions and citizens would have a better environment to live and work in.

The main innovations of the solution are the fuel cell drive and the electronic shaft. Both are new developments in the vehicle-manufacturing sector. For the start-up phase of the manufacturing of the first series of vehicles, the use by freight operators and wider take-up of the Citylog EMF innovative solution in inner cities, a teamwork of city-management and economic actors (including also shops, restaurants, businesses etc.) is necessary.
Citylog EMF is a type of road train that uses an electronic and not a normal mechanic drawbar. Every vehicle is ‘driving’ itself. Each ‘trailer’ or ‘follower’ vehicle is led by electronic signals to follow the trajectory of the first one, like on rails, but there is no physical drawbar linking the vehicles to each other, because each vehicle is using its separate propulsion unit. Every vehicle can be linked (coupled) or unlinked from the train very quickly. It is possible to load or unload a vehicle with goods for one shop, uncouple the vehicle at the shop, leave it there during the next delivery operation, and take it again on the way back. The fuel cell uses hydrogen as fuel. Brake-energy will be saved and can be used if the vehicle needs more power (e.g. to drive up-hill). Emissions are only water vapour.