



CarmaGreenEV

Clean Vehicle Directive

- ▶ Public Consultation.
- ▶ December 2020.
- ▶ Carma Green EV Ireland Ltd.



Carma Green EV Ireland

- ▶ Carma Green Ireland will be part of the transition from ICE vehicles to ‘Zero Emissions’ public transport in Ireland from 2021 onwards.
- ▶ We are introducing to Ireland the world’s first zero emissions, 6 seat, wheelchair accessible purpose built taxi, the **TX**.
- ▶ The **TX** can be used as *Taxis* in our cities and as *shuttles* in rural areas.

A fleet of green taxis is shown in a factory or assembly line setting. The taxis are parked in a row, and the background features industrial structures and lighting. The image is overlaid with a green geometric graphic on the right side.

Shaping the future

Creating a future proof fleet for
the demands of a sustainable
forward generation



TX is leading the charge

Our Cities are expanding, becoming more congested. Concerns about air pollution are growing. Low emission zones are being introduced. Now, more than ever before, there is a real demand for sustainable mobility solutions that are also reliable, practical and relevant.

TX is purpose-built to answer that demand. Created for smart and sustainable transport, this vehicle fulfils every need: ultra low emissions driving in city centres, longer distance interurban journeys, private transport or ridesharing, utility for businesses and fleets with a safe, personal feel for the passenger.

A close-up photograph of a person's hand interacting with a car's infotainment system. The hand is positioned over a large, dark touchscreen display. The background is slightly blurred, showing the interior of a vehicle. The overall image has a green and black color scheme.

TX is leading the charge

TX is professional and comfortable, with the latest driver assistance features for stress-free journeys. Zero-emissions urban operation is made possible by the fully electric powertrain, and range anxiety is eliminated by the petrol range extender so no where in Ireland is out of bounds.

In today's demanding operating environment, TX makes shuttle transportation simple, helping businesses make a lasting impression with a mobility solution that shapes the future for the better.



**Also introducing the
world's 1st Zero Emissions
1 ton van for intracity and
last mile deliveries.**

This vehicle is proving extremely popular
with Blue Light Organizations, food
distributors, and freezer delivery services.

Rural and School Transport DRT

- ▶ **Demand-Responsive Transport (DRT.)** Is the way Europe is changing, to cater for out of city and rural sustainable transport solutions. We are in discussions with CleverShuttle in Germany who have been successful in 8 rural areas in Germany, and supply the full integrated sustainable transport model. We will adapt their best practice and experience, and apply it to a model which suits Ireland's rural sustainable transport requirements using wheelchair accessible, zero emissions capable, 6 seat, electric taxis.



Bus Connects

- ▶ In Line with 11 German Cities at present and other Cities around Europe and Asia the **TX** is being used in its shuttle variant running along bus corridors and rapid city routes.
- ▶ During the Covid-19 pandemic the **TX** came into its own transferring samples, patients and staff for health services throughout Europe.
- ▶ The **TX** can future proof a transport solution if we have future waves or other Pandemics.
- ▶ The **TX** can be added to Ireland's Planned Bus Connects network, to offer an enhanced rapid service during peak hours with **INTEGRATED CONTACTLESS PAYMENTS.**



Transport Demand-Responsive Case Studies from German Cities' Trials

ESSEN

Driver management – at a 25% margin

 at first 5


LEIPZIG

Expanding our existing local business to DRT

 up to 10

DARMSTADT

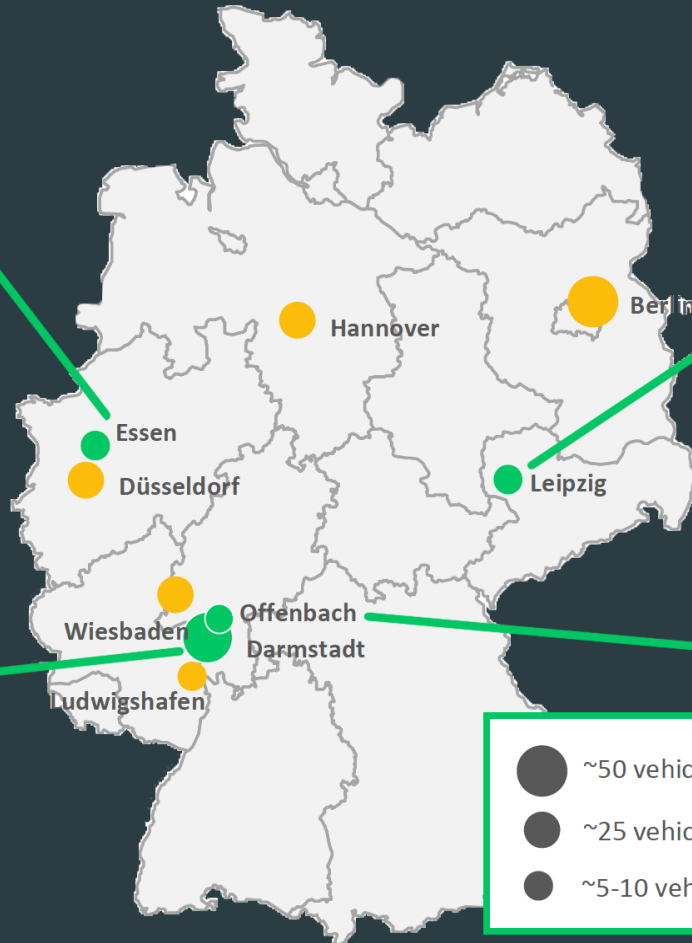
So far largest DRT project in Germany – and a strong signal to the market

 up to 35

OFFENBACH

Our first project in a suburban and rural area

 6



● ~50 vehicles
● ~25 vehicles
● ~5-10 vehicles

GLOBAL FOOTPRINT - 2020 (TX SHUTTLE)



Vn5 Conversion- Temperature Controlled Van



Freezer and Chiller Zero Emissions Vans

Temperature Controlled Van (0° to 28°)

- The VN5 RHD demo (developed with Paneltex and GAH) is with customers (UK leading grocery retailers).
- VN5 LHD Demo (Chiller Van) for Europe will have the ATP certification (required for the European Market) and being developed with Paneltex and ThermoKing.
- *GAH Transportation Refrigeration is an UK based company supplying refrigeration system for vans and trucks.*
- *ThermoKing is an American manufacturer of transport temperature control systems for trucks, trailers, shipboard containers and railway cars, etc.*
- *ATP Certification ensures the insulated body and the refrigeration unit has been tested by a third party and the two have been appropriately matched, which is a requirement within the EU.*

Paneltex





Government *GREEN LINK* Services

- ▶ In consultation with, and approval from Government and relevant departments, we plan to create a booking platform “GreenLink”, exclusively for use of the Government to enable all departments to use sustainable transport for its Taxi, Courier, Blue Light and Medical Delivery Services.
- ▶ This will go some way towards the target of **38.5%** procurement in sustainable transport for Government.

- ▶ An Garda Siochana
- ▶ National Ambulance Service
- ▶ Fire Departments
- ▶ Prison Service
- ▶ City & County Councils
- ▶ Military
- ▶ Blood, Vaccine, Sample & Courier Services

Blue Light Services

- ▶ Ireland has the option of a moratorium on the introduction of electric vehicles for our Blue Light Services.
- ▶ This may in part be due to the lack of available vehicles to fill this need. However their combined total of emissions add significantly to our carbon footprint and also hinder our Government's target of procuring **38.5%** in sustainable Government transport services.
- ▶ We are partnering with **Babcock Engineering**, Europe's foremost vehicle engineering company, who can adapt our VN5 van to emergency vehicles department requirements.
- ▶ We now have the vehicles to fulfil some of the needs of the highlighted sectors.



Blue Light Services

Having undergone strenuous testing, the VN5 zero emissions vehicle is being introduced to Police Forces, Fire Services, Ambulance and First Responder Units throughout Europe beginning middle of Q1 2021.





CarmaGreenEV

Carma Green in conjunction
with Government can begin
the transition to sustainable
transport in Ireland.

Thank you for your time.