



We like to move!

Economic – simple – planet friendly

We make city buses CO₂-neutral and ensure clean air. Economical.

Advantages of retrofitting

With the conversion to the CMF drive, you will receive a bus that meets the requirements of the Clean Vehicle Directive. In addition, the bus is economical in fuel consumption, has a long range and can run on liquid biomethane, natural gas or synthetic gas. By retrofitting existing buses, we save valuable resources.

Additional advantages with liquid biomethane (LBM) as fuel

Fuel quality

Our fuel is particularly distinguished by its quality. In addition to an excellent CO₂ balance, its high purity and the maximum possible methane number of 100 ensure residue-free and low-emission combustion. This ensures a long life of the engine.

Regionality and price stability

The regional production of our fuel on the basis of long-term partnerships with our raw material producers enables us to have stable and predictable production costs. Our customers benefit from this through price stability and crisis security.



up to 50 % less noise
than diesel buses



up to 20 % lower total cost of
ownership [TCO] than diesel buses



Clean Vehicle
Directive ready



up to 95 % less particulate
matter than diesel buses



Conversion to the CMF *drive*

The conversion takes place at our strategic partner Lauer & Weiss.

Basic package [for MAN and Mercedes buses]

Our basic package includes the removal of the old diesel powertrain consisting of diesel engine, transmission and rear axle and the installation of our innovative CMF *drive*. This consists of an electric drive axle, a buffer battery, a cryogenic tank and a gas engine generator unit. For an optimal operation the vehicle also gets a new control package.

External package

Our exterior package gives the bus a new look and consists of a repair of flaws in the outer skin, new window seals, new filming and the repair of smaller flaws.

Inner package

Our interior package provides a fresh feeling in the passenger area and consists of a renewal of the seats, a replacement of defective components and the interior lighting as well as a thorough interior cleaning.

Modernization package

Our modernization package includes the replacement of all other wear parts that are not covered by the basic package. As an additional option, we offer to equip the roof with photovoltaic modules for further energy savings.



Vehicle Concept

Fuel tank

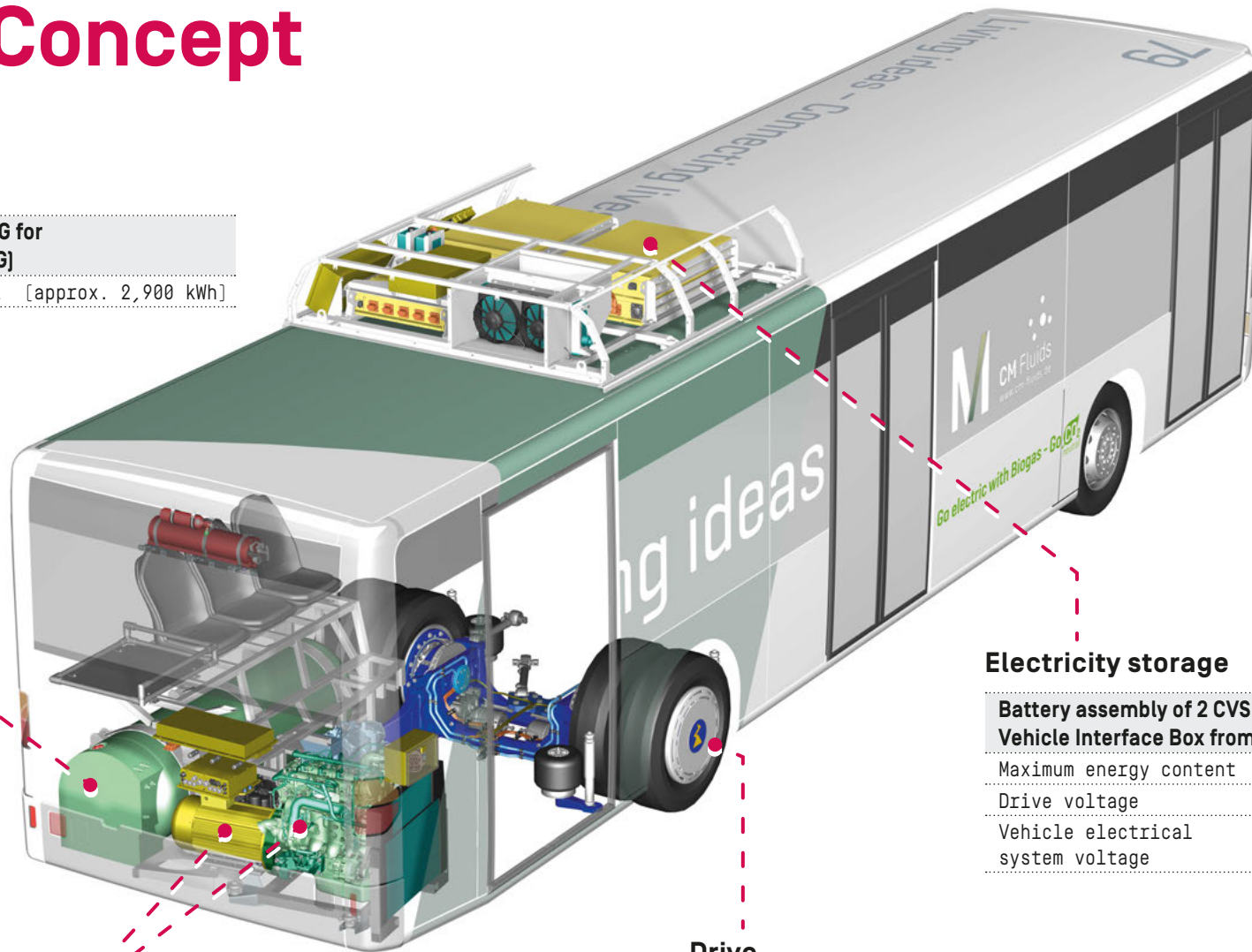
Cryotank LNG D660 PH from SAG for liquid methane [LBM, LNG, LSNG]

Tank capacity approx. 500 l [approx. 2,900 kWh]

Gas engine generator unit [range extender]

Engine S30 ENTG (F1C CNG) from FTP + PME Generator from KW Generator

Motor-generator charging capacity	50 kW @ 1,700 U/min
Exhaust gas after-treatment	3-way catalytic converter
Fuel consumption	209.5 g/kWh



Electricity storage

Battery assembly of 2 CVS batteries + Vehicle Interface Box from Webasto

Maximum energy content	2 x 35 kWh
Drive voltage	max. 800 V
Vehicle electrical system voltage	24 V

Drive

Electrically driven axle with 2 wheel hub motors from Ziehl-Abegg

Nominal power	2 x 120 kW
Nominal torque	2 x 3,700 Nm
Brakes	wear-free braking through recuperation, internally ventilated brake discs, ABS
Tyres	275/70 R 22.5, twin tyres

CO₂-neutral from start to finish: “Well-to-wheel” with liquid biomethane

Regional

The raw material for our fuel is produced in **existing** domestic biogas plants



Ecological

Our biogas is also produced from insect-friendly flowering plants.



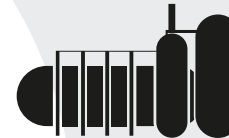
Areas

With 0.5% of agricultural land, all city buses could be supplied in Germany.



Production

We produce our fuel directly at the plants of our raw material suppliers. The CO₂ balance of our fuel can be viewed online and is certified annually.



Delivery

We transport the regionally produced liquid biomethane by tanker lorry to your filling station.



Petrol station

Depending on the size of your fleet, there are various possibilities for a complete fuel supply – for example, via a small container-sized filling station for your depot.

Principle of operation CMF *drive*



Recovering braking energy

When driving downhill or stopping, the vehicle must be braked. The energy released in this process is lost as useful energy in conventional vehicles. Buses with the innovative CMF *drive* can absorb the braking energy and store it temporarily in the buffer battery.

When starting off and driving uphill, the vehicle needs acceleration energy. The CMF *drive* can draw on and use the braking energy previously stored in the battery. This reduces fuel consumption and saves up to 30 % energy.

Increase efficiency

To charge the battery, we use a small gas engine that always runs at optimum efficiency. This means additional energy savings of up to 20 % compared to conventional buses.

Use engine waste heat

The waste heat generated by the gas engine is used to heat the passenger compartment. An additional oil heating system, which is often installed in electric buses, is superfluous with the CMF *drive*.



CM Fluids AG
Lilienthalstr. 17
85296 Rohrbach/Germany

Phone: +49 8442 9678-33
E-Mail: info@cm-fluids.de
Website: www.cm-fluids.de