

## Breakthrough in Electric Vehicles

- **Initial fleets of trolley busses in Geneva and Lucerne**
- **In-house production of battery packs with highly efficient modules**
- **Vossloh Kiepe GmbH; additional orders anticipated**

**Delbrück, June 4, 2013 – paragon AG’s young electric-vehicle division has achieved a breakthrough. A publicly listed technology enterprise, paragon is equipping a fleet of trolley busses with its own powerful battery packs – a first. paragon is pursuing the project as part of a long-term partnership with Vossloh Kiepe GmbH, the world leader in electric busses.**

paragon’s electrical vehicle division has been concentrating on manufacturing battery packs, creating a dedicated production facility at its corporate headquarters in Delbrück in 2012. The highly integrated lithium-ion battery packs store energy fed in by the vehicle’s charging system and then distributes that energy to the drive-train components.

The battery-pack facility has already reached full capacity after just a few months of operation and is now undergoing expansion to more than 500 square meters in view of the current influx of orders. Plans are underway to set up a second shift.

+++ Pressemitteilung / Press Information +++

“Electric vehicles are increasingly driving growth for our business. We are promoting energy efficiency and protecting the environment at the same time. The fact that we are doing our own manufacturing provides a boost for Delbrück, and we are adding jobs”, stresses CEO Klaus Dieter Frers.

Vossloh Kiepe of Dusseldorf belongs to the Vossloh Group headquartered in Werdohl, Germany. The Group has annual sales of 1.2 billion euros and employs 5,000 people. Established on July 11, 1888, the Group is divided into a Rail Infrastructure Division and a Transportation Division. Vossloh Kiepe (annual sales of approx. 170 million euros, approx 800 employees) is the Group’s specialist for electrical systems and components.

The initial joint projects involve 42 battery packs with a total capacity of 32 kilowatt hours at a nominal voltage rating of 320 volts. The battery packs, destined for trolley busses in Geneva and Lucerne, weigh approximately 500 kilograms. The order is worth more than 1.6 million euros initially. Delivery of the initial battery packs will commence in the autumn of 2013.

Additional joint projects to outfit trolley busses and electrical busses are in the planning stage. “Together with Vossloh Kiepe, we anticipate sales in the high single-digit millions in fiscal 2014 alone“, explains paragon AG CEO Klaus Dieter Frers.

### **Advantages of the paragon battery packs**

Numerous advantages set paragon battery packs apart. They are based on a system that is unique for its form, consisting of 64 lithium-iron-phosphate cell modules and an independent battery management system. This paragon principle allows for an especially simple and inexpensive modular design which permits paragon to attain the desired battery capacity and nominal voltages without the usual high development costs.

The modules come in a special housing that provides thermal management and controls, allowing paragon to meet the stringent demands of even DIN 26262 for system safety. The lithium-iron-phosphate cells employed remain stable in case of an accident, overcharging, or an internal short circuit so that the dreaded battery meltdown will not occur.

### **Statements by the project partners**

“We are looking forward to our cooperation with Vossloh Kiepe GmbH, one of the main providers of electric vehicles the world over. These initial projects will lay the cornerstone for long-term collaboration”, emphasizes paragon CEO Frers.

+++ Pressemitteilung / Press Information +++

“paragon AG has been a first-class direct supplier to the automobile industry for years and their procedures have been certified. Both of our companies are mid-sized and we both exhibit a hands-on culture. We are already planning other joint projects”, say the general managers of Vossloh Kiepe GmbH, Andreas Bunse and Oliver Völlinger.

#### **Portrait**

Listed in the Prime Standard segment of the German Stock Exchange in Frankfurt, **paragon AG** develops, produces and markets innovative solutions in the field of automotive electronics. The portfolio of the direct supplier to the automotive industry includes products in the business segments sensors, acoustics, cockpit, electromobility and body works kinematics. An outstanding product is the air quality sensor AQS which is by far the world market leader. In addition to its headquarters in Delbrück (North Rhine-Westfalia), paragon maintains branches in Suhl (Thuringia), Nuremberg (Bavaria) and St. Georgen (Baden-Württemberg) and a sales office in Shanghai (China).

#### **Contact**

##### **paragon AG**

Schwalbenweg 29

33129 Delbrück

Tel.: +49 (0) 52 50 - 97 62-0

Fax: +49 (0) 52 50 - 97 62-60

Internet: [www.paragon.ag](http://www.paragon.ag)

E-Mail: [info@paragon.ag](mailto:info@paragon.ag)

##### **Contact for local press**

Matthias Hack

Tel.: +49 (0) 52 50 - 97 62-141

Mobile: +49 (0) 162 1010724

Fax: +49 (0) 52 50 - 97 62-60

E-Mail: [matthias.hack@paragon.ag](mailto:matthias.hack@paragon.ag)

##### **Contact for financial press / investor relations**

Stockheim Media GmbH

Michael Knecht

Tel.: +49 (0) 89 – 200 315 73

Fax: +49 (0) 89 – 813 030 23

E-Mail: [mk@stockheim-media.com](mailto:mk@stockheim-media.com)