



Impulse

online

■ Research

*Energy from the deep.
VEM is driving the latest tests.*



Bright red crane load

02



Supporting agriculture

05



Well cooled for both North Sea and the Alps

05



Up front as partner to a wider branch

06

The container with the drive systems is lifted onto the delivery truck at VEM in Wernigerode.



■ Research

Bright red crane load

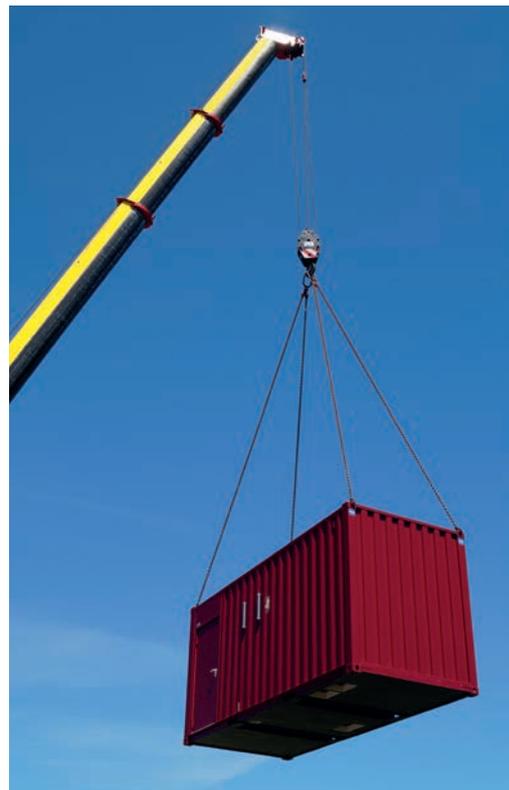
VEM has supplied drive systems in an insulated container for a research centre of the Clausthal University of Technology, where scientists are working on the utilisation of geothermal energy.

The bright red container which floated in by crane over the university research centre "Drilling Simulator Celle" was not to be overseen. It houses VEM frequency converter technology (690 V, Active Front End, THDI less than 5%) with an output rating of 2 x 600 kW for a highly innovative research project of the Clausthal University of Technology.

Together with its partners, the research centre is investigating new approaches for the utilisation of deep-ground resources.

The aim is to develop a method for the economical future harnessing of geothermal energy from deep sources. The modules combined in the simulator, which are in some cases identical to the actually deployed systems, serve to model the interactions of thermal, hydraulic, mechanical and chemical processes. Planned drillings can also be played through virtually in advance.

The extensive measurements required by such studies must not be influenced by disturbances from the frequency converter. For that reason, VEM has incorporated a EMC filter for the public grid. The frequency converter is furthermore water-cooled. That not only raises the energy efficiency, but also provides for quieter operation.



Arrival at the university research centre "Drilling Simulator Celle"

■ Conference

Welcome to Wernigerode

VEM invites friends and partners to its 14th Technical Conference on 15th and 16th September 2015.

“Electric drive systems: Balancing the applicable laws and regulations” is the motto for this year’s annual conference in Wernigerode on 15th and 16th September.

Fulfilment of demands relating to economic efficiency in the context of cost optimisation and ecological compatibility – that is decisive for the sustained competitiveness of companies throughout industry. New approaches in electric

drive technology could help to satisfy such expectations. The 14th VEM Technical Conference will be presenting the latest trends and developments in electric drives and drive systems – as a basis for stimulating discussion between users, manufacturers, suppliers and scientists. Key topics will revolve around the impact of new laws and regulations governing electric drives, for example system approaches and new drive technologies serving the optimisation of energy consumption, the demands placed on drive manufacturers by OEMs, and new findings from the field of materials research.



This year’s Technical Conference will again be discussing the future of drive systems, specifically in the context of applicable laws and regulations

The current agenda can be found on our website:
www.vem-group.com/en/about-vem/fairs-events

■ Service

Electronic catalogue VEM.eKAT^{V10}

Online version to be launched with new functions in the autumn

The final version of the new electronic catalogue VEM.eKAT^{V10} is currently undergoing a two-month phase of pre-launch testing and is scheduled

to come online for customers in the autumn.

The further development of the electronic catalogue (VEM.eKAT^{V10}) is instantly recognisable from its redesigned, user-friendly interface. The

new design also enables new applications. Important settings of the configuration tool remain accessible at all times via a special menu bar. Multiple selections are also possible for many technical parameters. Documents can be downloaded separately or packed into a single ZIP file, and it is furthermore possible to create a project list with different motor types for forwarding to the VEM sales department.

In future, the online catalogue will include also high-voltage machines of the VEM standard series with squirrel-cage and slipping rotor. Here, too, customers can make a preliminary selection, but should then nevertheless submit a corresponding enquiry.

The VEM electronic catalogue can be found [here](#)



■ Power generation

Power station modernisation in the Helmstedt mining area

VEM modernises 5.3 MW drives of boiler feed pumps at Buschhaus Power Station

The Buschhaus base-load power station near Helmstedt has been producing electricity around the clock since 1985. This energy is fed into the 380 kV transmission grid. Operator MIBRAG has now decided to modernise various sections of the power station in order to safeguard reliable operation in the future.

This project also involved three boiler feed pumps with outputs of 5.3 MW each. The contract for modernisation was here awarded to VEM transresch. Engineers from the VEM location in Berlin renewed the control system of the subsynchronous

converter cascades (SCC), which in turn control the speed of the feed pumps. The first SCC was already upgraded in July by incorporating new VEMoDRIVE control electronics into the existing cabinet. The two remaining installations are to follow next year.

It was above all the technical competence of the Berlin specialists which secured the decision in favour of VEM, alongside longstanding experience with SCC-based drive solutions for customers from the Arctic Ocean to the Arabian Peninsula. Through the implementation of innovative concepts and use of the latest system technologies for information processing, the SCC solutions represent the latest state of the art.



The Buschhaus base-load power station in the Helmstedt mining area

■ Welcome to the team

New at VEM

Kathrin Müller



Qualification:

Graduate engineer for ecology and environment protection

Location:

VEM motors Thurm

My first task:

Establishing of an environmental and energy management system compliant with ISO 14001 and ISO 50001, including preparations for certification and the first surveillance audit

What I consider important:

I would like to achieve a workable balance between theory and practice, and that with the greatest possible involvement of all employees.

In a new function at VEM



René Händler

Qualification:

Degree in engineering management

Location:

VEM Sachsenwerk GmbH

My first task:

As head of industrial sales, my task is to receive queries from our customers, to translate their wishes into a quotation and to win the corresponding order. Thereafter, I must also stay in touch to answer any technical questions which arise and to monitor the progress of order processing.

What I consider important:

Customer wishes must be satisfied to the best possible extent, and that likewise to the optimum benefit of our location and its employees.

Marcel Markula

VEM

Qualification:

Degree in engineering management

Location:

VEM Sachsenwerk GmbH

My first tasks:

As head of marine sales, my most important task is to prepare quotations and offer advice to our major customers in the shipbuilding industry.

What I consider important:

A positive working climate in the team



■ Chemical industry

Supporting agriculture

Pump drives from VEM for fertiliser plant

Grodno Azot, one of the most important chemical companies in Belarus, is currently investing in a new production plant for nitric acid. Alongside, a facility is being set up for production of the liquid fertiliser UAN. The project is being equipped by a German plant engineering contractor, who has once more commissioned VEM to supply the drive motors for the pumps. The decision was founded not least on positive experience from past cooperation with

VEM, for example projects in Egypt and the Netherlands.

To reduce energy consumption, the customer has chosen to incorporate low-voltage three-phase motors of efficiency class IE2. The motors from the VEM factories in Wernigerode and Zwickau are designed for outputs between 4.0 and 250 kW. Production at the new plant is scheduled to start in 2016. Grodno Azot has been producing chemicals and fertilisers for agriculture since the 1960s. The growing demand for fertilisers can be attributed to the combi-

nation of an increasing population and constantly shrinking area available to agriculture.



The Grodno Azot fertiliser plant in Belarus

■ Transport engineering

Well cooled for both North Sea and the Alps

The new Class 245 diesel locomotive for Deutsche Bahn is to be used firstly on the island of Sylt and in the Allgäu region. VEM drives provide for cooling of the traction motors.

Tourists and residents on the North Sea island of Sylt are sure to rejoice. The car shuttles over the Hindenburgdamm causeway are to be pulled by a new class of diesel-electric locomotive

from the end of 2015. The primary benefit of the Class 245 locomotive: It is environment-friendly, quieter and uses less fuel, because the four parallel diesel engines can be switched on and off individually.

The four traction motor fans per locomotive are to be supplied by VEM in Zwickau. Approx. 83 % of the air flow produced is used to cool the traction

motor. The remaining 17 % is passed over filter mats and serves as ventilation for the engine space. The new locomotive has already completed thousands of test kilometres in the south of Germany. Deutsche Bahn AG has also purchased seven locomotives of the new class for the Allgäu-Schwaben region. They will be used for timetable services between Memmingen and Munich, and from Füssen to Munich and Augsburg.



Class 245 locomotive in facts and figures

- Design:** Multi-engine diesel locomotive
- Manufacturer:** Bombardier TRAXX ("Transnational Railway Applications with eXtreme fleXibility")
- Length over buffers:** 18,900 mm
- Weight:** 83 tonnes
- Speed:** 160 km/h
- Nominal output:** 563 kW per diesel engine, total 2,252 kW



■ Power generation

Thumbs up for co-generation

Looking back over the first year of combined heat and power generation at VEM in Wernigerode

What do you do if emergency power supplies can no longer be sustained by the existing generator? At VEM in Wernigerode, it was decided to install a combined heat and power plant (CHP). The new plant went into operation in March 2014. Just over a year later, the time had come for a first evaluation of the results to date.

A capacity factor of 93 % is certainly a result to be proud of. Since commissioning in March 2014, the plant has produced approx. 3,290 MWh of heat and around 2,050 MWh of electricity. In this way, it has been possible to cover some 40% of the heating requirements for the office building and production hall 5. At the same time, the maximum active power could be reduced from 1,050 kW to around 900 kW for power drawn from the public grid.

First calculations suggest that the plant will have paid back its investment in less than two years. All in all, the co-generation plant is contributing significantly to the attainment of energy targets at the Wernigerode location.



The company CHP module GG 237 is operated fully automatically with the latest iPC control and Internet-based remote monitoring.

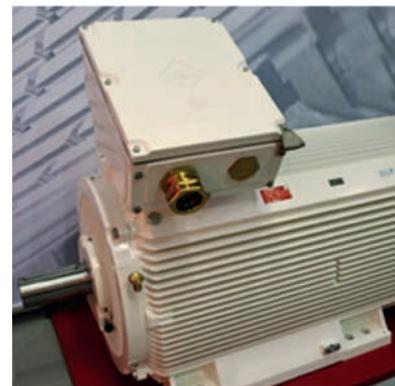
■ Fairs

Up front as partner to a wider branch

ACHEMA 2015 offered visitors numerous opportunities to experience VEM expertise

The highlight from VEM at the latest "International Show for the Process Industries" in Frankfurt/Main was indisputably the IE3 version of a 320 kW low-voltage transnorm motor in frame size 400. This motor was designed with an increased safety rating (Ex e) and featured also RFID memory functionality to enable saving of the motor data and maintenance history.

One positive outcome of the 5-day fair from 15th to 19th June 2015: Visitor interest on our stand was noticeably higher than at previous process industry exhibitions. One reason may be that ACHEMA 2015 no longer focused exclusively on the chemical industry, and instead involved also numerous related fields of industry.



Transnorm motor size 400, 320 kW, IE3

Experts, purchasers and students were thus also able to gain an impression of VEM's expertise in the associated fields of oil and gas. Indeed, there were plenty of opportunities to do so, because VEM machines were also on show in various applications on the stands of other exhibitors.

As an indicator of global movement in the branch, the fair provided a host of new insights for VEM. "Alongside exhibitors from the field of plant engineering, we also spoke to numerous pump manufacturers and representatives of other related branches," says Roland Zänger, VEM head of sales for the German-speaking countries. "And the topics of our many discussions with visitors from Asia and the Middle East showed clearly that future investment demand will be concentrated outside Germany."

Quality

Assessed and found to be good

Audits completed at the VEM locations in Dresden, Wernigerode and Zwickau and at our competence centres



ISO 9001. The auditors from Bureau Veritas acknowledged noticeable improvement at the location.

Wernigerode and Zwickau. At the end of May this year, experts from DNV GL, the world's largest marine and offshore classification society, performed a periodic surveillance audit to ISO 9001. The audit covered the locations Zwickau and Wernigerode, as well as the competence centre in Berlin.

In June 2015, the environmental and energy management system to ISO 14001 and ISO 50001 was audited by DQS GmbH at the Wernigerode and Zwickau locations and at the competence centres in Ratingen and Munich. The topics here included the storage of hazardous substances and the identification of potential for savings in energy consumption.

The surveillance audits found no evidence of any deviations from the requirements of either management system. All currently held certificates thus retain their validity.

Dresden. Environmental protection and energy efficiency were the topics of a certification audit at VEM in Dresden in June 2015. Further procedures already completed in Dresden this year related to a second surveillance audit for IRIS approval, a quality management system for railway industry manufacturers and suppliers, and certification under



Top to bottom: The VEM locations Wernigerode, Dresden and Zwickau

Save the date

14th TECHNICAL CONFERENCE

15th and 16th September in Wernigerode
Harzer Kultur- und Kongresshotel



TRAKO International
Railway Fair

22nd to 25th September 2015 in Gdansk
Hall B, Stand B16

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