



Impulse *online*

■ Seasonal report

Christmas wonderland Erzgebirge

“Dresden Striezelmarkt” is the name of the second limited edition of a mechanised candle arch from the Klaus Kolbe manufactory in Seiffen. It is populated by some 100 figures, and that not counting those which serve as tiny decorations on the market stalls and the Christmas pyramid. In the plinth of this jewel of wooden craft art, moving figures depict the invention of Meissen porcelain.

page 2



Back on the rails



03 Offshore on the rise



04 Drives for steelworks



05 Fit for a princess

Seasonal report

Christmas wonderland Erzgebirge



Kerstin Wagner presents a Christmas candle arch which relates the history of mining in the region.

In the Erzgebirge village of Seiffen, artistic candle arches are born in the hands of master craftsmen – assisted by machines driven by VEM motors.

Turned and carved, ground and glued, screwed and painted – countless individual steps, and even more hours of work, are necessary to produce a candle arch, the typical Christmas decoration of the Erzgebirge region, without which Advent is simply unthinkable in this part of the country. The 20 staff of the Klaus Kolbe craft manufactory in Seiffen produce 50 different candle arches. Seven of those designs are produced as limited editions with moving figures.

Dieter Bossenmaier beamed with delight when he was finally able to pick up his mechanised masterpiece “Dresden Striezelmarkt” four weeks before Christmas. Together with his

wife and mother-in-law, he had travelled all the way from Munich to Seiffen just to collect the new candle arch. “That is the fulfilment of a childhood dream,” he said. His interest in craft art from the Erzgebirge mountains was already awakened decades ago, and he has remained loyal to the Kolbe family workshops ever since their founding in 1990. Pride of place for the latest acquisition is guaranteed: “This candle arch with the famous Dresden Frauenkirche church will be the centrepiece of my whole collection.”

Quality is trumps

The grinding machine used in the Klaus Kolbe workshop was manufactured by a small engineering company which is also at home in the Saxon toy-making village Seiffen. Erik Ulbricht represents the third generation at the helm of the family business founded by his grandfather. His individually

Proprietor Erik Ulbricht with one of the VEM compact motors used in his mechanical workshop.



Dietmar Wagner working on wooden candle holders in the workshop of the Klaus Kolbe manufactory. The grinding machine is driven by a VEM motor.

designed turning lathes are highly prized by Seiffen’s toy-makers and hobby craftsmen alike. Each machine is unique, tailored to the specific needs of the customer.

The machines are driven by motors from the VEM factory in Zwickau. “We use exclusively VEM motors, because we are absolutely convinced of their quality,” says Erik Ulbricht. “They are robust, stable, reliable, long-lasting, and unbeatable in quality with their copper windings.” His father Dietmar Ulbricht nods in agreement. He has worked in the company since 1958, and reports that they had already been committed users of VEM motors in the years prior to German unification.

When the company purchased a Danish wood gas stove to heat

the workshop, the two men were in for an interesting surprise: The ventilation system also functioned with a VEM drive from Zwickau. And another favourite anecdote: Only recently, a customer came in with a VEM motor dating from 1954! All they needed to do was to replace the ball bearings, and the drive was running like new once more. Dietmar Ulbricht couldn’t resist an appropriate comment: “You would hardly experience that with cheap motors from certain other corners of the world!”

www.klaus-kolbe.de
www.maschinenmanufaktur-ulbricht.de

■ Steel and rolling mills

Italy's "rotating forge" – Rotoforgia – in operation

World's largest mill line is fitted with VEM drive machines

The Friuli plant operated by ABS Engineering Steel Products has been equipped with a brand new mill line. It was taken into operation by Italy's prime minister, Matteo Renzi, on 16th October 2015. The plant belongs to the Italian company Danieli Group from Buttrio, one of the leading plant engineering suppliers to the international metallurgical industry.

The RF 1800 "Rotoforging" line was developed jointly by Danieli Transportation Systems and

ABS. It is currently the largest rolling mill line in the world and will in future handle an hourly throughput of up to 100 tonnes. Danieli manufactured its own frequency converters for the electric drives. The corresponding drive machines, two 3.15 medium-voltage motors for the roll stand, were already supplied to Italy from VEM's Dresden location in the early summer of 2015.

In addition to the normal production process, the line serves as a plant engineering "show-room", where innovations for the metallurgical industry – such as

the new "Rotoforging" technology – can be demonstrated to potential customers. Over the past six years, the company

group has invested more than 400 million in the new line and various retrofit solutions at the Friuli plant.



■ Transportation

Fit for the rails again



Colossus on the crane: The converter for railway power supply is prepared for shipping at the VEM factory in Dresden.

First converter for railway power supply on its way back to Norway after overhaul in Dresden

The first of ten MVA converter of type 961 for Jernbaneverket, the Norwegian National Rail Administration, was shipped on 21st October 2015. In the

meantime, the specialists at VEM's Dresden location are already working on the overhaul and modification of a second such converter for railway power supply for Norway.

Jernbaneverket purchased the converters from Deutsche Bahn AG in 2014 and had them sent to Dresden from their original base in Rostock. Within 10 months, the first wagon-based system then underwent a complete overhaul and extensive modification. The entire instrumentation and above all the high-voltage connection were adapted to meet Norwegian requirements. For the first time, VEM developed and implemented a brushless excitation system specifically for the rotors of

this converter type. The Norwegian customer was very impressed by the know-how and technical capabilities of the Sachsenwerk team.

This order is VEM's first venture into the modification of converters for railway power supply for use outside of Germany. Deutsche Bahn is planning to sell another ten converters to Jernbaneverket over the coming five years. Three converters have been purchased by the Swedish Transport Administration. Here, too, the VEM customer support team is in close contact with the operator and hopes to be able to participate in traction power business in Sweden with supplies of high-quality original spare parts and targeted technological support.

■ Engineering

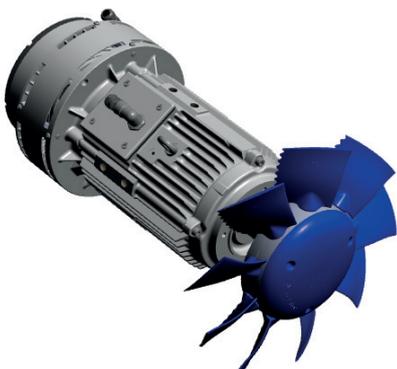
Space-saving and energy-efficient

Newly developed axial converter motor extends the range of VEMoDRIVE compact drives

The VEMoDRIVE product range has been extended to include also compact drives with axial converters, above all for use in pumps and fans with square-law torque characteristics. They were developed in cooperation with converter manufacturer ZIEHL-ABEGG SE Germany.

The new drive systems offers three main benefits. Firstly, they are ideal for applications where installation space restrictions prevent the use of a motor with top-mounted converter. Secondly, the system comes to the fore in fan applications where the drive must be installed within the air flow. Thanks to the axial arrangement of the converter, there is no unnecessary impeding of the flow. In this way, the VEMoDRIVE compact motor supports the efforts of fan manufacturers to improve energy efficiency. Furthermore, it places not just the motor and converter in the focus, but rather the whole system, including the driven machine. And thirdly, the VEM drive in a grey-cast housing comprising two main components and two add-on parts is designed for simple mounting and intelligent integration in diverse industrial environments.

Motors with axial converter are currently available for the outputs 5 kW (2-pole) and 4 kW (4 pole). The first frame size will be launched as a series product from 2016. Further output classes and sizes are to follow in the future.



Click [here](#) to view the axial converter from all sides.

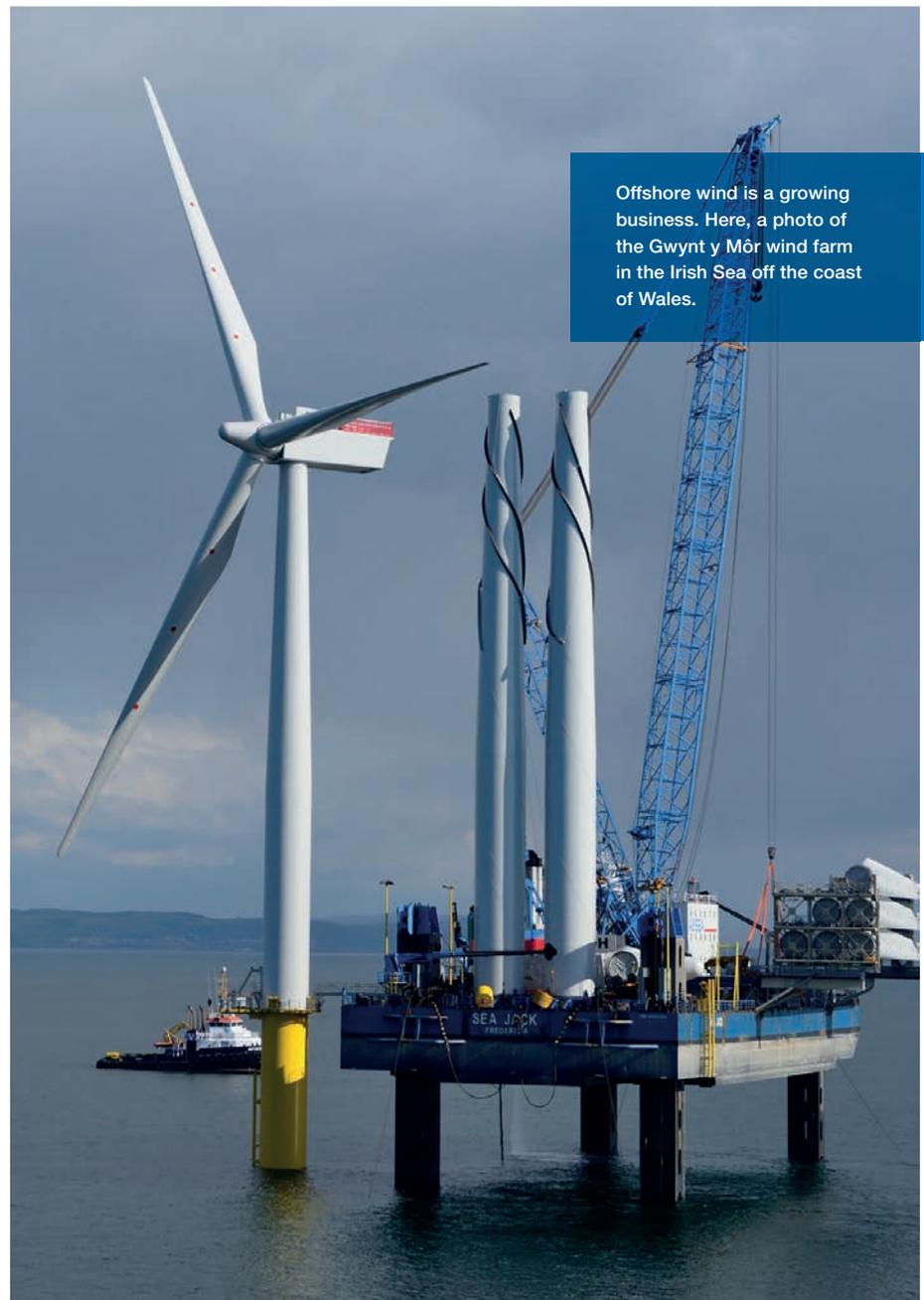
■ Renewable energy

Wind farms back on the rise

VEM generators for the largest off-shore wind farm complex in Germany

One of the largest offshore wind farms in the world is currently being installed around 40 kilometres off the coast of the German North Sea island Juist. In this connection, the Dresden VEM location has received a manufacturing order for five wind turbine generators with a nomi-

nal output of 6.16 MW each for the first project stage. The farm will initially comprise 54 turbines, with a total output capacity of approx. 330 MW. Together with the further expansion stages Nordsee 2 (48 turbines) and Nordsee 3 (60 turbines), it will eventually boast an installed capacity of around 1,000 MW. The 162 wind turbines are to be spread over an area of almost 100 square kilometres.



Offshore wind is a growing business. Here, a photo of the Gwynt y Môr wind farm in the Irish Sea off the coast of Wales.



■ Steel and rolling mills

Carriage drives for steelworks

VEM three-phase asynchronous motors guarantee the necessary high torque

VEM has contributed six three-phase asynchronous motors to the modernisation of a steelworks. The Wernigerode factory supplied traction motors for a steel carriage which runs back and forth between two workplaces. The drives are replacements for old slipping motors with relatively poor control response. The works already possesses a modernised control station with high-performance frequency converters, and is now able to make full use of the converter capa-

bilities for improved control of the new drives.

For the customer, the high starting torque of the three-phase asynchronous motors was especially critical. The VEM drives are ideally suited in this respect. Thanks to the intermittent mode of operation, it was possible to select a non-ventilated motor type. The modern converter-fed operation ensures the high starting torque. Further decisive customer specifications, such as the tapered shaft dimensions, the overall length and the shaft height, could be observed without the slightest compromise.



Three-phase asynchronous motor
ARC 315 LX8

■ Trade fairs

Retrospective and outlook

After the fair is before the fair: SPS in Nürnberg and the year 2016

The automation branch drew a positive balance after SPS IPC DRIVES 2015. The mood is good, although not ecstatic. This year's fair was larger and more comprehensive than ever before, with 1,668 exhibitors from 45 countries, and once more confirmed its standing as the industry's foremost European meeting place. The VEM Group also took the opportunity to present its portfolio in Nürnberg. The focus was placed on drive solutions and systems bearing the

VEMoDRIVE brand name, which cover the entire output range from 0.55 kW to 28 MW. The products are suitable for use in a diversity of industrial applications, in plant engineering and as drives for pumps, fans and material handling in the general engineering sector. The advantage for the customer is that the drives facilitate the optimisation of operations management and energy consumption, which in turn serves to reduce operating costs.

Countless visitors were welcomed to the VEM stand during the three days of the

fair. Alongside our drive solutions, the topic of "Industry 4.0" also played a major role. An integrated RFID transponder is one such possibility which VEM offers to users of its drive units. In fact, VEM drives from size 315 are already provided with such memory transponders as standard.

Similarly extensive interest was attracted by the compact motor series, as well as system solutions and the key component of converter technology.



Trade fairs in 2016

Hannover Fair

25th to 29th April 2016

SMM Hamburg

6th to 9th September 2016

Innotrans Berlin

20th to 23rd September 2016

WindEnergy Hamburg

27th to 30th September 2016

SPS IPC DRIVES Nürnberg

22nd to 24th November 2016

Customer information

New price list and product information published

Detailed information on the VEM product range now also available in printed form

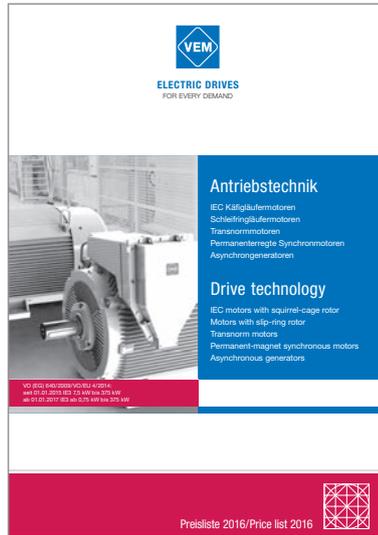
Customers are already able to access the new 2016 VEM price list for low-voltage motors. The new price list applies from 01.01.2016. The list content has been fully revised and it now includes various new technical solutions.

Visitors to the VEM stand at the SPS IPC Drives fair in Nürnberg at the end of November were able to pick up some new VEM product information on variable-speed drive systems.

The following VEM publications can be requested in either digital or printed form:

- Info flyer on drive solutions up to 28 MW
- Product flyer on VEMoDRIVE Compact variable-speed drives
- Low-voltage drive system catalogue
- Info flyers relating to pump, fan and materials handling applications

Requests by mail to:
emw-dokumentation@vem-group.com



Shipbuilding

Thruster motors for the Canadian Navy

Royal Canadian Navy safely on course

VEM in Dresden has been awarded an order to manufacture thruster motors for the new "Arctic Offshore Patrol Ship" (AOPS) from GE Power Conversion. The Canadian government passed the decision to build the new patrol vessels in June 2010. The AOPS fleet is to be deployed in

extremely cold regions such as the Arctic, and is thus designed with ice-breaking capabilities. The first vessel of this type is to be delivered to the Canadian Navy in 2016. Five more are to follow by 2020. Over this period, VEM will be supplying six 4-pole asynchronous motors for a voltage of 620 V and an output of 1,100 kW each for the thrusters.

Partners

Cooperation between VEM and ELEKTRON

Long-term cooperation sealed with a general agency contact for Switzerland and Liechtenstein

The Swiss company ELEKTRON was appointed official general representative for VEM with effect from 20th October 2015, and will in future be responsible for sales, service and support relating to VEM system and drive solutions in Switzerland and Liechtenstein. The contract strengthens the already long and successful partnership between the German motor manufacturer and the Swiss drive experts.

"The cooperation with ELEKTRON in Switzerland and Liechtenstein will enable significant improvement of our local product availability through a high-rack warehouse facility near Zurich," says sales manager Roland Zänger. "At the same time, ELEKTRON's vast experience and know-how in sales, technology, service and support will also permit better utilisation of synergy effects in the future," he continues.



Roland Zänger, VEM head of sales for the D-A-CH region (left), and Enrico Baumann, CEO of ELEKTRON AG (right), after signing the contract.



The ACHENBACH OPTI-MILL® universal foil rolling mill and its control centre in the production hall. The inset shows the main tandem drive during commissioning



■ Rolling mills

Rolled to perfection at high speed

A new aluminium foil rolling mill in Turkey has passed its baptism of fire, also thanks to its VEM drives

One of the most modern aluminium foil rolling mills in Turkey has passed its baptism of fire, and the reliable performance of its VEM drive motors was no doubt a contributing factor.

The mill was commissioned last year by Achenbach Buschhütten GmbH und Co. KG from Kreuztal (Germany). The universal roll stand for foil thicknesses of 2 x 0.006 mm is characterised by its ultimate rolling quality even at speeds of up to 2,000 m/min. Such extremely thin foils are used as barrier laminations for drinks packages such as Tetra Brik cartons or as

the top foil for pharmaceuticals packaging, for example.

The drives for the coil winders and roller stand are realised with water-cooled VEM low-voltage motors in a tandem arrangement. The tandem arrangement provides for distribution of the required drive power between two motors. Decoupling of the rear motor permits optimisation of the strip tension in accordance with the process require-

ments. VEM also supplied the base frame, switchable clutches between the tandem motors, and the associated pneumatic components.

The system design was elaborated together with the customer, with final configuration and order processing placed in the hands of the steel and rolling mill team at the VEM Competence Centre in Düsseldorf.



The propulsion motors are lifted aboard at the Alberthafen river port in Dresden

■ Shipbuilding

Fit for a princess

Dresden drive technology for a new cruise liner is shipped via the city's Elbe river port

The VEM specialists in Dresden have in the meantime supplied drives and motors for four cruise liners of a series designed and built for operator Princess Cruises. The latest order involved two propulsion motors (synchronous, 18.4 MW, 4.3 kV), four generators for the on-board power supply (synchronous, 2 x 21 MVA and

2 x 18 MVA, 11 kV) and six thruster motors (asynchronous, 2.5 MW, 11 kV). Safely packed and lashed, they were loaded onto barges at the Alberthafen river port in Dresden to be carried downstream to Hamburg. From there, the heavy propulsion motors continued their journey to the Fincantieri shipyard in Montefalcone-Gorizia (Italy) in September. The new luxury liner will be joining the fleet of 2017 floating hotels operated by Princess Cruises in 2017.

Certification

New type-examination certificates

Internally cooled Transnorm motors now also in explosion-protected design

After addition of the 1,000 A version to the partial certificate IBEXU00ATEX1051U for terminal boxes with explosion protection rating “e” (increased safety) at the beginning of the year, confirmation has now also been received regarding expansion of EC type-examination certificate IBEXU00ATEX1083U to include the motor types (IE-) K4.R 355 to 450. The partial certification is at the same time approval for the mechanical design of these motors for explosion protection rating “tb” (protection by enclosure) for use in Zone 21. Furthermore, corresponding EC type-examination certificates have been obtained for the three shaft heights.

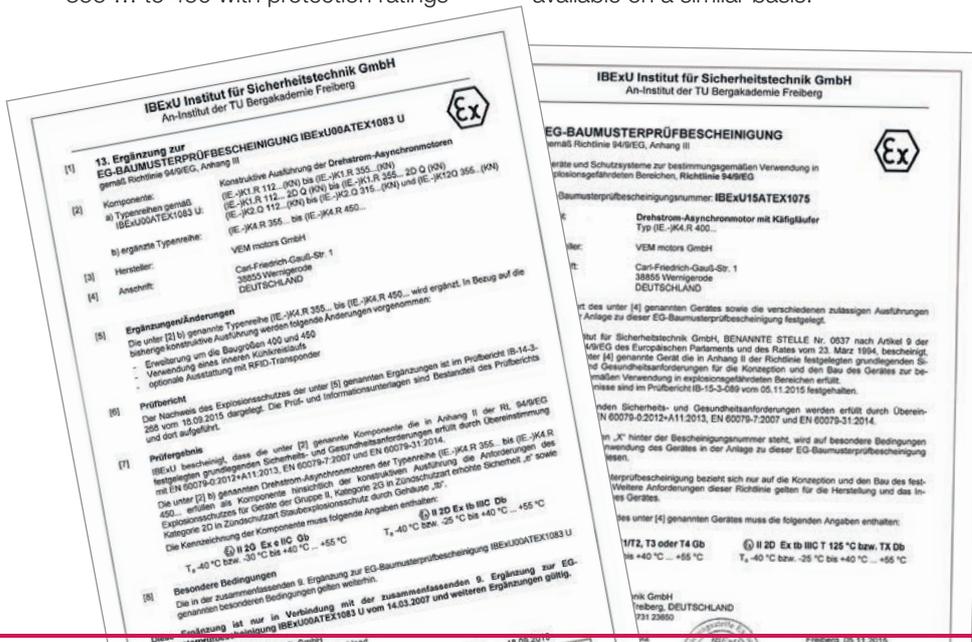
Low-voltage versions of the Transnorm series are thus now available with explosion protection ratings “e”, “n”, “tb” and “tc”. Applications for type-examination certificates for explosion-protected versions of the high-voltage series W52R 355 ... to 450 with protection ratings

“e”, “n” and “tb” have been submitted to IBEXU Freiberg and are currently under review. Apart from the terminal boxes, the mechanical design of this series corresponds to that of the low-voltage series for which certification has already been granted.

New insulation system

A new, optimised insulation system has been introduced for the high-voltage Ex nA series and permits higher power ratings for the motors. Prototype testing is voluntary for Ex nA motors. EU legislation stipulates merely a manufacturer's declaration of conformity for category 3 products. For this reason, there is no specification of a Notified Body on the rating plate. Only the CE mark and indication of the explosion protection are attached.

These motors can already be supplied on the basis of an EC Declaration of Conformity. Additionally, a version with explosion protection rating “tc” (protection by enclosure) for use in Zone 22 is available on a similar basis.



Chemical industry

Fast assistance thanks to VEMoDRIVE

Chemical plant in Abu Dhabi receives a new, tailored converter for its extruder drive in just five weeks

The VEM transresch converter had been operating flawlessly at a chemical plant in Abu Dhabi for almost 15 years. But when the 1,250 kW extruder drive began to show signs of wear, fast reaction was imperative. After all, an extruder breakdown would have brought the whole production of polyethylene and polypropylene at the plant in Borouge to a standstill.

It was with this problem that the operator approached the service office of VEM transresch. Only limited spare parts were available for such an old converter. It was thus decided to offer a new replacement converter of the VEMoDRIVE series. The flexibility of the series permitted the engineering and manufacture of a converter with matching mechanical and technical parameters within the shortest possible time. On the basis of the archived documentation of the original project, the local installation conditions were mapped onto a new VEMoDRIVE converter. The tricky challenge of adapting interfaces and connections to the new hardware and software was also mastered.

The project needed to be completed within five weeks after receipt of the order. But the team from VEM transresch in Berlin was still able to deliver on schedule – and that to the full satisfaction of the customer.

Publisher

VEM Holding GmbH
Pirnaer Landstraße 176
01257 Dresden | Germany
Phone: +49 351 208-0
www.vem-group.com

Responsible editor

VEM Sachsenwerk GmbH
Sabine Michel
Head of corporate communications
sabine.michel@vem-group.com

Layout & design

Kommunikation Schnell GmbH, Dresden
Photos: Karin Wagner, Sabine Hartenstein,
Dr. Torsten Kuntze, iStock, Klaus Kolbe
KG, Karin Hanig, RWE, VEM

Subscribe/unsubscribe

To automatically receive each new issue of "Impulse online" by e-mail, please subscribe [here](#). If you no longer wish to receive the newsletter, you can cancel your subscription [here](#).