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wiredIn USA

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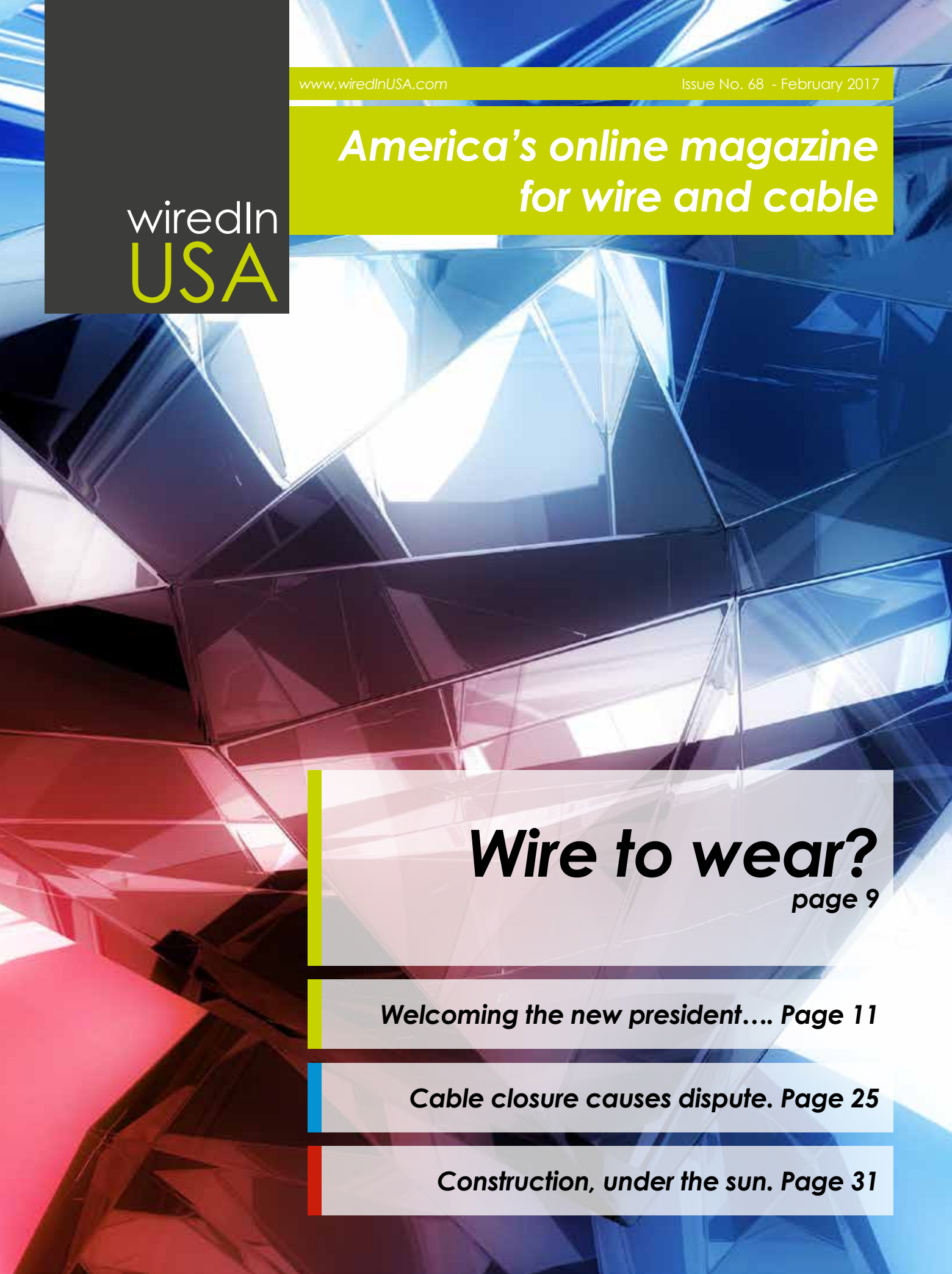

Wire to wear?
page 9

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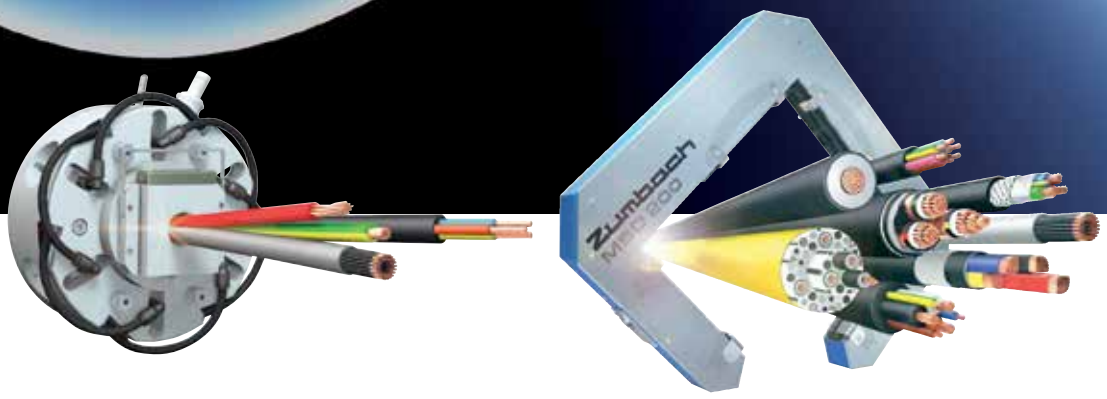

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EDITOR

Fabrics could soon be generating electricity – thanks to the efforts of scientists at the US department of energy's SLAC national accelerator laboratory. The team have used slivers of diamond to assemble electric wires just three atoms wide, paving the way for the electricity generating fabrics.

The atoms are put together 'Lego-style' and could potentially be used to build tiny wires for applications using both electricity and light, and for materials conducting electricity without any loss. See page 9 for the full story.

Everyone knows there is a new president in town – and there's also a new one occupying the hot seat at the Wire Association International. David Hawker took over as 64th president of the association on 1st January. During his one-year term he will also serve as chairman of the board of directors, and serve on the WAI's conference programming committee.

He currently works as vice president and general manager of Nexans Energy Cable North America. Turn to page 11 for the full details.

Southwire is closing its manufacturing facility in Flora, Illinois, although it will operate at a limited capacity until the fourth quarter of this year. The company's plan also includes moving operations at the Dallas customer service center in Arlington, Texas, to Denton, Texas. Find all the details on page 12.

David Bell
Editor

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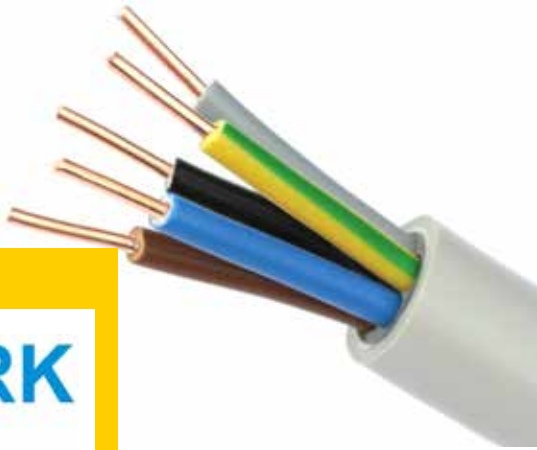

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MAKING THE

NEWS

Wire to wear?

Scientists from the US Department of Energy's SLAC National Accelerator Laboratory have used the smallest possible slivers of diamond to assemble electrical wires just three atoms wide, an advance that could make electricity-generating fabrics possible.

The new technique, whereby various types of atoms are put together "Lego-style", could potentially be used to build tiny wires for applications such as optoelectronic devices that employ both electricity and light, and for superconducting materials that conduct electricity without any loss.

"What we have shown here is that we can make tiny, conductive wires of the smallest possible size that essentially assemble themselves," said Hao Yan, postdoctoral researcher at Stanford University. "The process is a simple, one-pot synthesis. You dump the ingredients together and you can get results in half an hour. It's almost as if the diamondoids know where they want to go."

Each block consists of a diamondoid — the tiny piece of diamond — attached to sulfur and copper atoms. Like Lego® blocks they only fit together in certain ways, determined by size and shape. The copper and sulfur atoms form a conductive wire in the middle, and the diamondoids form an insulating outer shell.

Nicholas Melosh, from the National Accelerator Laboratory, explained that size is important because a material that exists in just one or two dimensions, as atomic-scale dots, wires or sheets, can have very different, extraordinary properties compared to the same material made in bulk.

The new method allows researchers to assemble those materials with atom-by-atom precision and control.

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Messe Düsseldorf

Welcoming the new president…

David R Hawker has been appointed 64th president of the Wire Association International (WAI) beginning 1st January 2017. During his one-year term, Mr Hawker will also serve as chairman of the board of directors and continue to serve on the association's conference programming committee.

He is the vice president and general manager of Nexans Energy Cables North America and has previously served in a variety of engineering, manufacturing and commercial roles at other Nexans cable plants.

Commenting on his new post, Mr Hawker said: "The WAI allows us to be part of a larger community than our plants or companies. WAI is a resource for the industry, by the industry. This organization is a unique forum for continuing education and technical exchanges for solutions that confront each of us every day. The Reference Guide, the *Wire Journal*, the Expos, the technical papers, webinars and Interwire are all opportunities to gain knowledge, to help you develop, and to help your business improve.

"I am thankful for the opportunity to lead the organization in 2017 and follow a long list of industry professionals who have devoted time and resources to build this organization and make it relevant for today's industry."

Consolidating operations

Southwire is to close operations at its Flora, Illinois, manufacturing facility, although the plant will continue to operate at a limited capacity until the fourth quarter of this year.

"The Southwire Flora plant has been in existence since 1974, and has provided foundational support for the company's success in the bare overhead transmission market for many years. This decision is not a reflection on the people, the quality, or the performance of the facility, nor is it one we take lightly," said Charlie Murrah, president of Southwire's power systems and solutions group. "Bare overhead transmission is a core product for our utility business, and these changes ensure we are able to meet the needs of our customers for the long term."

The company also plans to move operations at the Southwire Dallas customer service center in Arlington, Texas, to the company's newly acquired facility in Denton, Texas. All operations will be relocated by the end of the second quarter.

"Upon the recent acquisition of United Copper, we took the time to assess how we could best maximize our resources across the Southwire footprint. With the close proximity of these two locations, we believe that consolidating these two operations under one roof is the best decision," said Norman Adkins, president of Southwire's construction systems and solutions group. "The Denton facility is comprised of both manufacturing and distribution," he added.

Eligible employees who are affected by the moves will have the opportunity to consider positions elsewhere in the company, or to take severance pay.

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Acquisition gives a lift

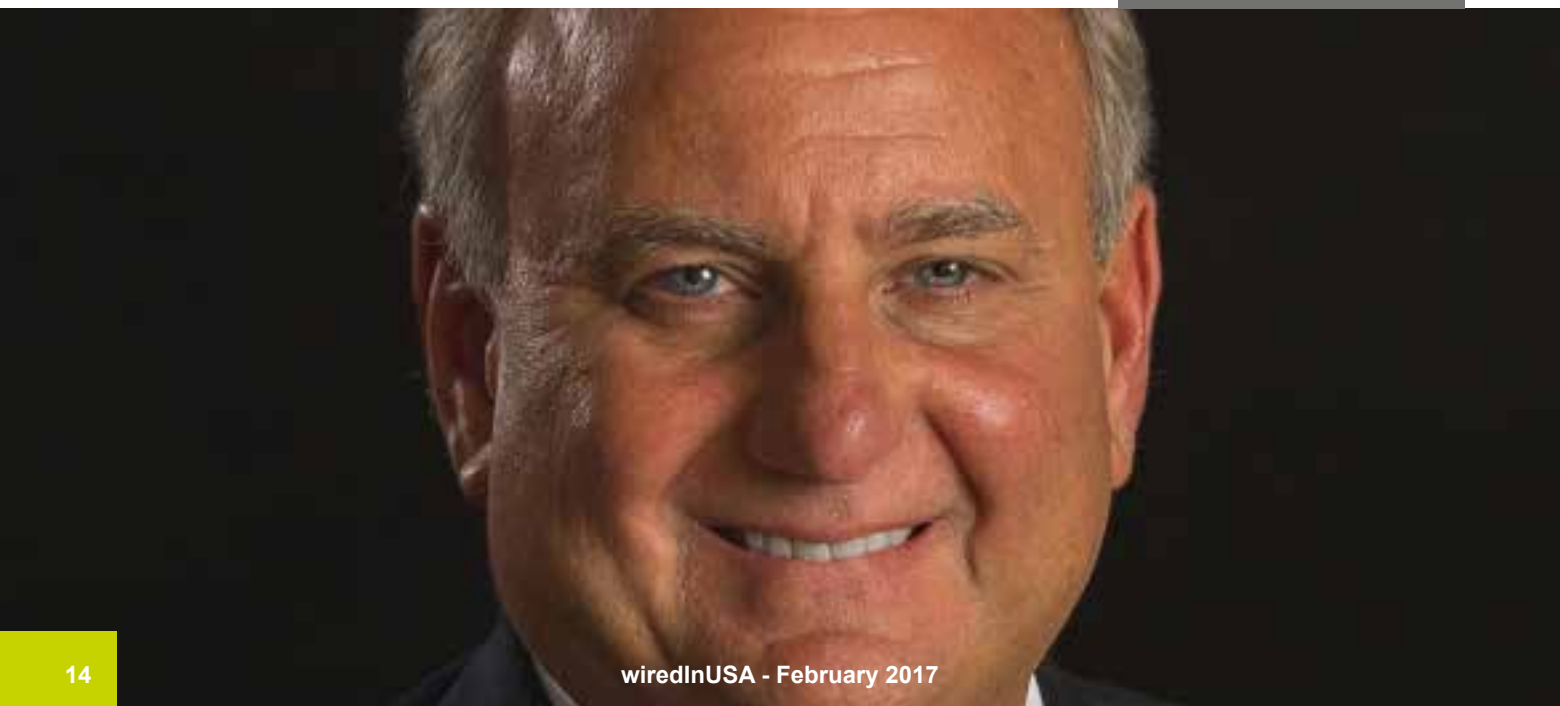
Southwire has acquired Sumner Manufacturing, a material lift manufacturer.

The acquisition includes Sumner's manufacturing operations and corporate support functions in Houston and Langfang, China, as well as its direct sales and distribution operations in Canada, the UK and the Netherlands. Sumner's 160 employees will remain with the company, and its manufacturing facilities will be integrated into Southwire's business operations.

Southwire chief executive Rich Stinson said: "We are excited to welcome the Sumner team to the Southwire family. This acquisition supports all three of Southwire's key strategic goals: build organizational capability, drive operational excellence and accelerate growth. …The addition of Sumner gives us the opportunity to look ahead into new markets and channels and expand the range of solutions we can provide to our customers."

Brandon Moss, president of the tools and equipment division, added: "This acquisition provides a significant opportunity to help scale our tools and equipment business. …We will strengthen our company's position in the contractor equipment market, develop new manufacturing capabilities and rapidly expand our presence in the industrial supply and rental channels. We do not anticipate that your day-to-day operations and business dealings with Southwire/Sumner will be impacted."

Rich Stinson,
Southwire chief executive



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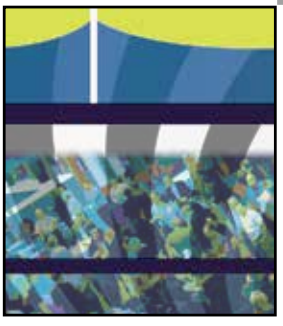

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Charity goes to the dogs!

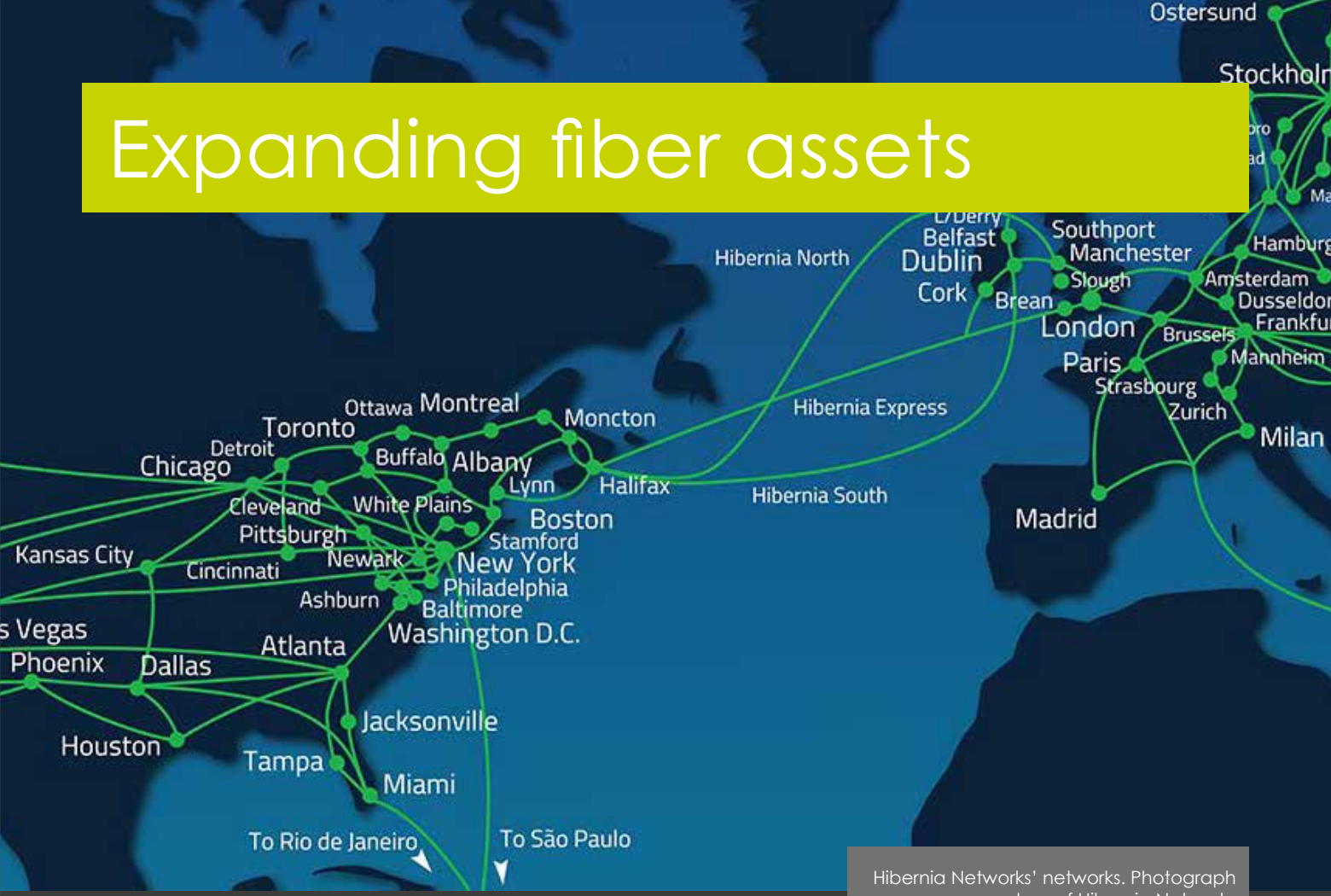
Staff celebrate hitting the $20,000 mark in Allied Wire's annual charity week

Allied Wire's 11th annual charity week, running from 19th to 23rd December 2016, collected a proportion of all sales to donate to K9s For Warriors, a charity that rescues and places dogs with a military hero suffering from post-traumatic stress or other injuries acquired during their service.

The week raised $18,248.63. The goal was $20,000, the full cost of sponsoring a dog and veteran through to graduation, so the company has made up the shortfall to donate $20,000 to the charity. Over the next few months, Allied staff and customers will follow the progress of the sponsored dog and its veteran partner.

Since the start of annual charity week in 2006, Allied has raised over $140,000 for a number of deserving charities.

Expanding fiber assets



Hibernia Networks' networks. Photograph courtesy of Hibernia Networks

GTT Communications has finalized its acquisition of the global telecoms provider Hibernia Networks.

The takeover will expand GTT's global tier 1 IP network with owned and leased dark fiber assets, plus five owned subsea cables – including the transatlantic Hibernia Express system, with a design capacity of 53Tbps – as well as eight submarine cable landing stations.

Rick Calder, GTT president and CEO, commented: "The addition of Hibernia Networks advances GTT's growth strategy. The transaction expands GTT's top five global IP network, adds products to our cloud networking portfolio, and provides a strong recurring revenue base via established relationships with multinational clients.

"Our clients will also benefit from a team with deep technical expertize and a proven track record of delivering exceptional client service." GTT expects the complete integration of Hibernia Networks within two to three quarters after closing the deal.

Southern network

The 30,500km Southern Cross Cable Network (SCCN) is using Ciena's Blue Planet V-WAN to support its Gigaflex Elastic bandwidth-on-demand capability.

Ciena's Blue Planet V-WAN connects SCCN data centers on the US west coast (Seattle, Portland, San Jose and Los Angeles) to those in Sydney (Australia), Auckland (New Zealand), Fiji and Hawaii, providing a complete end-to-end connectivity solution.

The trans-Pacific SCCN system comprises two submarine cables (commissioned in November 2000 and January 2001), with current potential capacity of 20Tbps. SCCN is owned by Spark New Zealand, SingTel Optus, and Verizon Business. A further project, the Southern Cross Next, is under development to link Auckland to Los Angeles, adding a third route to the Southern Cross network.

Broad collaboration

PPC Broadband Inc and Corning Optical Communications RF LLC have announced an important technical collaboration in the broadband connectivity field.

The collaboration encompasses a range of connectivity inventions, and creates broader availability of connectivity solutions for system operators worldwide. The agreement resolves pending patent infringement and related proceedings between the companies involving Corning's EFC series of coaxial cable connectors, although the specific terms of the agreement are confidential.

"This technical collaboration recognizes the value of intellectual property covering our innovative connectivity technology, and expands our commitment to the industry as our customers build advanced networks to meet the future needs of broadband," said Dave Jackson, president of PPC. "The technology improves the reliability and efficiency of broadband communication networks, thus enabling advanced service offerings."

"We are pleased to have reached an agreement on what we expect to be a long-term technical collaboration with the PPC team on this interconnect technology," said Mike Bell, senior vice president and general manager, optical connectivity solutions, Corning Optical Communications.

"We expect the macro trends enabling the growth of this technology to continue in the future, as bandwidth intensity, cloud computing, and the number of devices connected to the Internet continue to grow exponentially."

Learning opportunities for 2017

Light Brigade, AFL's training and education division, is partnering with Fiber Insight to offer two new course options for design and engineering customers: certified optical network associate (CONA) and certified fiber characterization engineer (CFCE).

CONA is an intermediate level course, teaching the techniques for optimum system design and how performance can be affected by the fiber infrastructure.

CFCE is an advanced course that focuses on the tests required to verify that network infrastructures can support future, high data rate applications.

"Teaming up with Fiber Insight allows us to bring two rigorous, five-day technical courses to our customers this year," said Lee Kellett, general manager of Light Brigade. "With the growth in higher speed networks, there is great need for these types of courses. The CFCE and CONA courses are licensed by OTT in the UK and are very well respected around the world."

The first CONA course is scheduled at Light Brigade's Seattle training center in February and the next CFCE class will be at the Lowell, MA, facility in April. The classes are open and anyone can register to attend.

Wind in Iowa

MidAmerican Energy has unveiled the sites of its first two planned wind farms, part of its 2GW Wind XI development in Iowa. Both projects are scheduled for completion by the end of 2017.

The 170MW Beaver Creek project will be built in Boone and Greene counties, while the 168MW Prairie Wind project will be in Mahaska county.

The Beaver Creek and Prairie Wind projects will add 338MW to Iowa's wind generating capacity.

The state already gets nearly 40 percent of its electricity from wind, the highest proportion in the country.

Vestas will supply the turbines for the entire $3.6 billion Wind XI development, from its cluster of factories in Colorado.

MidAmerican is still working to finalize sites for the remaining wind farms, with construction planned to begin in 2018. The 2GW development is expected to be completed by the end of 2019.

Latest appointment

Victor March
Chief financial officer

TPC Wire & Cable Corp has announced the appointment of Victor March as chief financial officer. He joined the company in October 2016.

Mr March most recently served as chief financial officer of EXAL Group in Youngstown, Ohio, but was previously chief financial officer for Excel Polymers, LLC, a supplier of elastomeric solutions including rubber chemicals, compounds, and services.

March's global experience with acquisitions and divestments includes participating in private equity transactions across the UK, Hungary and South America.

TPC president and CEO Jeff Crane said: "I'm delighted that Vic has agreed to join us.

"He brings analytical capabilities that will allow us to tie company strategy with key metrics, which will better inform our efforts to grow and become more profitable. And he's a great fit for this team. TPC is ready and excited to collaborate with him."

Joining the club

Fiber to the Home (FTTH) Council Americas has welcomed Verizon as its most recent new member.

The council welcomes members from all companies involved in supporting the deployment of all-fiber, future-proof networks.

"Verizon continues to be an industry leader in fiber deployment, building one of the nation's largest fiber networks and boasting millions of customers," said Heather Burnett Gold, CEO and president of the FTTH Council. "As a Premier member, Verizon brings with it a decade of leadership, talent, and expertise within the industry that is crucial to building consensus around the important issues that will impact fiber's future."

"Verizon has always been a trailblazer in fiber broadband, dating back to our original Fios deployments in 2004," said Donna Epps, vice president public policy and strategic alliances for Verizon.

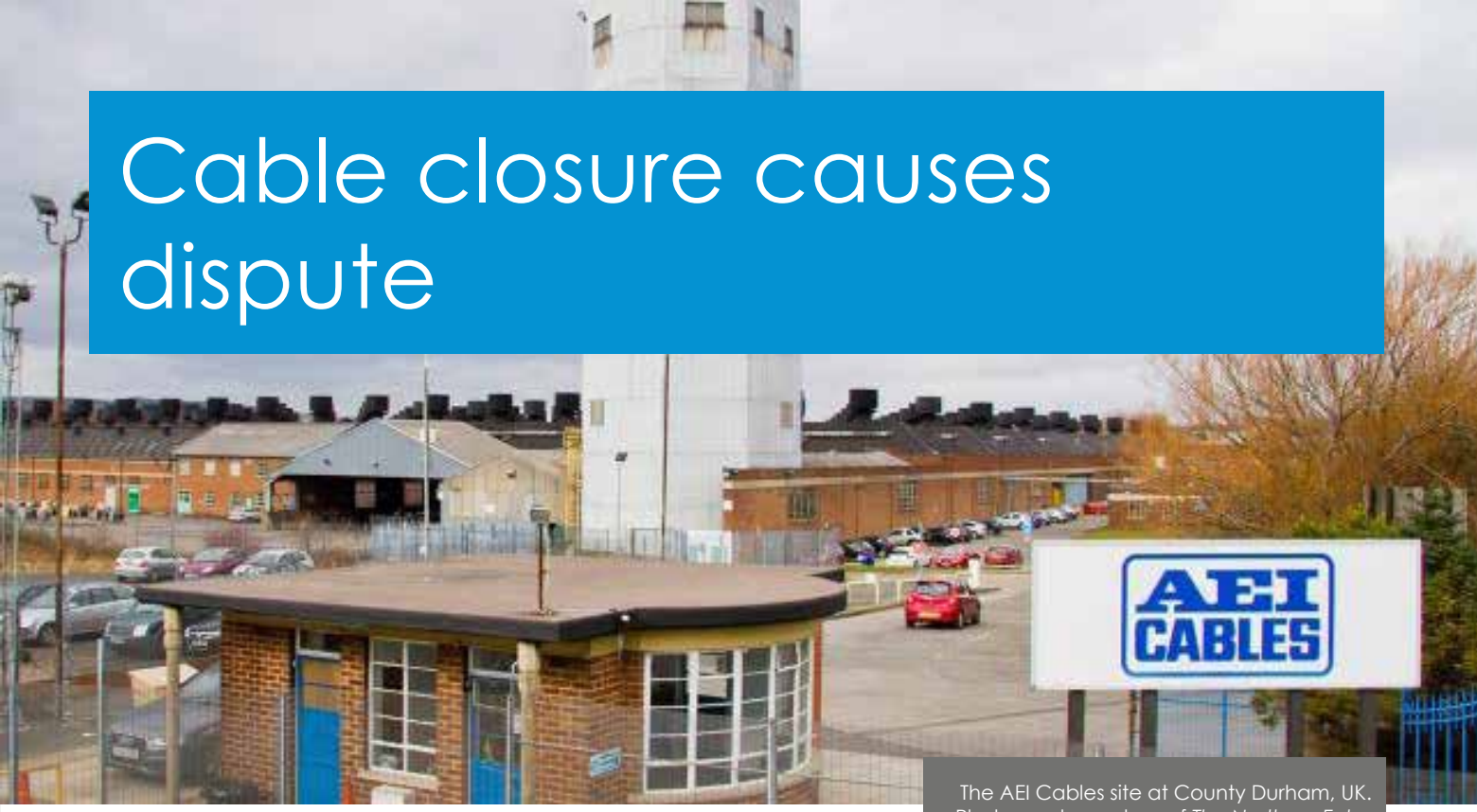
"Twelve years later, Verizon is the largest provider of consumer fiber broadband connections in the US, and we continue to invest in our fiber architecture to bring this vital technology to our customers."

"We are pleased to join the FTTH Council and support its mission of accelerating the build-out of fiber infrastructure."

EUROPE

NEWS

Cable closure causes dispute



The AEI Cables site at County Durham, UK. Photograph courtesy of *The Northern Echo*

Ducab, the owner of UK's AEI Cables, has been accused of treating its workers badly by refusing to give clarity on the company's future.

A former worker at the County Durham site told a local journalist that staff were left "dangling" because the company refused to tell them anything.

AEI Cables denied the claims, saying staff were made "fully aware" of the position of the company. AEI has now ceased manufacturing with the loss of 200 jobs, and is set to become a sales-only business.

The GMB union has called for a full investigation into Ducab, which bought AEI in 2014, after accusing them of neglecting their duties over staff pay-outs. The union also raised concerns that staff were told before Christmas 2016 that their jobs were secure. The worker confirmed: "I think the whole workforce knew the place was finished."

A spokesperson for AEI Cables said: "Monthly briefings with all staff and union members have taken place over the last year or more.

"Since the acquisition of AEI Cables from the administrator by Ducab in February 2014 significant investment has been made in the site, with all funding coming from Ducab – supporting more than 200 jobs for nearly three years.

"The company tried for almost three years to make the loss-making business a success. We will be providing all the advice and guidance we can to those being made redundant."

Seeking solutions

Between 10th January and 13th February, the Carbon Trust's offshore wind accelerator (OWA) ran a new global competition to find and fund the development of innovative solutions to a challenge facing the offshore wind industry: how to monitor the condition of subsea cables to ensure that they are not damaged during the load out and installation process. The competition aims to identify and support the development of new condition monitoring systems for subsea cables.

Current available solutions are unable to detect and monitor mechanical cable limits with the necessary accuracy, so the OWA is searching for new ideas from complementary industries such as telecommunications, civil engineering, automotive and oil and gas, which could be adapted for subsea cable application.

Of 28 UK offshore wind insurance claims between 2002 and 2015, 68 percent were directly due to cable faults occurring primarily during the construction phase. Condition monitoring during the installation process could detect potential issues before they develop into failures.

Brazilian power link

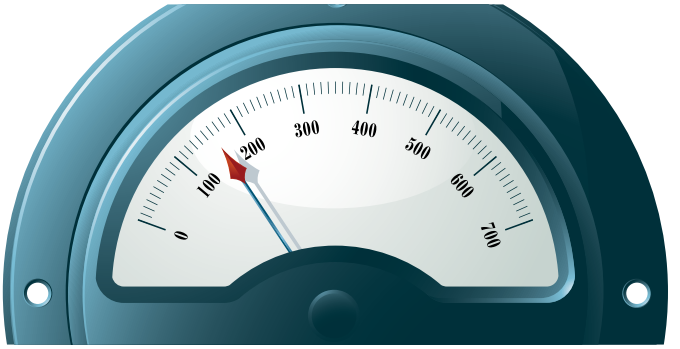


ABB has won an order worth around $75 million to supply advanced converter transformers to the Belo Monte 800kV ultra-high voltage direct current transmission link. The 2,518km link will carry clean power generated in the north of Brazil, from the Xingu substation, to the Rio substation in the southeast. It will be capable of transporting up to 4,000MW of electricity — enough to meet the needs of around ten million people.

"Our advanced converter transformers are making it possible to integrate renewable energy sources and transmit clean power across long distances with minimum losses, reliably and efficiently," said Claudio Facchin, president of ABB's power grids division. "We have a long and successful track record in Brazil and remain committed to continue supporting the country's power infrastructure development."

ABB supplies for the Belo Monte UHVDC link will include fourteen 400MVA, 400kV converter transformers. Converter transformers provide grid stability and power reliability, while minimizing losses.

Network news

Telia Carrier has established a new route, via Tallinn, between Stockholm and St Petersburg, and has upgraded multiple submarine cables to future proof its network.

At just under 900km the network extension is the most direct route possible from Stockholm to St Petersburg, and brings diversity to the network. As St Petersburg and Moscow are important transit points for Asian traffic, the route allows Telia Carrier to service the increase in traffic coming into Europe from Asia via terrestrial cable routes from the east.

Subsea cables across the Baltic Sea have been upgraded using the latest coherent Flex-Grid technology to enable Telia to provide 100G+ services in the Baltics, Russia and beyond.

Telia Carrier's global fiber backbone has grown without acquisitions, and is believed to be the first to be 100G-enabled in both Europe and North America. It was the first network to successfully transmit 1Tbps on its US network.

Refit, and ready to go

Ndeavor, before the recent refit

Rotterdam Offshore Group (ROG) based in the Waalhaven, Rotterdam, has recently completed the conversion of the Boskalis MPV, *Ndeavor*.

The 99m-long vessel was built in 2013 and has been equipped with rock dumping equipment for the last two years. It has now been recommissioned as a cable-laying vessel.

The conversion included the installation of a new 200-ton knuckle boom crane, a 15-ton stand-alone crane, an 18m-diameter 227-ton cable carousel, a trencher, HPUs, control centers, boat landings and additional cable guiding equipment.

The project was managed by ROG and completed within an eight-week project timescale. The completed vessel has already begun operations on its first cable laying project, the inter array cable installation works on the Sandbank offshore wind farm.

Optic fiber fears

Reuters reports that the government of Lithuania has ordered a halt to the construction of a data center because of fears that a planned fiber optic network link to Russia would risk the nation's security.

A report by the Lithuanian government's counter-intelligence agency in 2016 cited Russian hackers as the greatest threat to Lithuania's security. A 2014 law gives the Lithuanian government the power to block investments in energy, transport, information technology and finance where national security concerns are raised, the article added.

Reuters quotes a spokesman for Darius Jauniskis, head of Lithuania's counter-intelligence, as saying that they alerted the government that if the data center were linked to Russia via a fiber optic link, it could be linked by Russia's federal security service to its radio electronic reconnaissance network.

Wire rod investment

Danieli has been contracted to supply a two-strand wire rod mill along with a new six-strand billet caster to Acciaierie di Verona, part of Pittini Group, Italy.

The purpose of the Pittini investment is to increase its wire rod production, currently 700,000 tonnes per year.

The mill is characterized by an H-V rougher feeding two independent rolling lines made of cantilever roll stands, featuring quick roll change, and temperature control along the mill and downstream. High speed shears installed downstream of the twin-module sizing blocks will perform wire rod head and tail cropping.

The fourth-generation loop layers, offering extended pipe life, quick rotor changes, and no vibration during rolling, are designed to produce perfect loops, including front and tails. The variable pitch cooling conveyor features modular slow-to-ultrafast cooling.

The six strand caster, which will produce 150-160mm square billets, will feature a Fast Cast Cube® oscillating mold, multi-radius system, in-mold and final stirrers, with in-line quality control, billet marking and tracking.

Cable to cross the Celtic Sea

Ireland-France Subsea Cable Ltd has announced a partnership with Tiger Infrastructure Partners to finance and construct the first direct subsea cable between Ireland and France. The fiber optic cable system, IFC-1, is intended to provide ultra-high capacity connectivity to continental Europe for telecommunication carriers, Internet companies and large Ireland-based enterprises.

"The massive growth of Ireland's data center industry, and the requirement for resilient telecommunications infrastructure, has created the need for a new, direct route to continental Europe," said Michael Cunningham, chairman of IFSC. He continued: "We are delighted that Tiger Infrastructure shares our vision and look forward to having them as our partner."

The cable has been designed to extend terrestrially into Dublin and Paris, providing connectivity and enabling long digital line segments. The system is scheduled to be ready for service in late 2018.

Subsea solution for island services

Coriant, a supplier of SDN-enabled end-to-end packet optical networking and DCI solutions, has announced that Korea's SK Telecom has selected a Coriant submarine solution to extend 100G connectivity to Ulleungdo Island, which lies off the east coast of Korea. The Coriant solution, based on the Coriant® hiT 7300 multi-haul transport platform and Coriant® Transport Network Management System (TNMS), will enable SK Telecom to enhance the delivery of mobile broadband services on the island.

SK Telecom is increasing long haul DWDM capacity to Ulleungdo using the Coriant technology in its nationwide terrestrial DCM-free 100G network. The Coriant unrepeatered submarine network solution will support resilient, low latency 100G coherent optical transmission over a distance of more than 250km.

"Uncompromising quality is critical in today's transport networks as they scale to support ever-increasing amounts of customer traffic," said Petri Markkanen, general manager and vice president of sales, Asia Pacific, Coriant.

ASIA & AFRICA

NEWS

Construction work has begun on the 800MW phase 3 of the Mohammed bin Rashid Al Maktoum solar park in Dubai. Photograph courtesy of Emirates 24/7

Construction, under the sun

Construction work has begun on the 800MW phase 3 of the Mohammed bin Rashid Al Maktoum solar park in Dubai. In 2016, Dubai Electricity and Water Authority (DEWA) chose a Masdar-led consortium to develop what, on completion, is expected to be the world's largest solar park on a single plot.

An EPC contract has been awarded to an international consortium led by specialist renewable energy contractor GranSolar of Spain, alongside Spanish specialist Acciona and Ghella of Italy.

Saeed Mohammed Al Tayer, managing director and CEO of DEWA, said: "The agreement with Masdar supports the directives of president his highness Sheikh Khalifa bin Zayed Al Nahyan and his brother, his highness Sheikh Mohammed bin Rashid Al Maktoum, vice president, prime minister of the UAE and ruler of Dubai, to support the growth of the promising clean energy sector, and our efforts to achieve the Dubai clean energy strategy 2050, launched by his highness Sheikh Mohammed bin Rashid Al Maktoum to diversify the energy mix so clean energy will generate 7 percent of Dubai's total power output by 2020, 25 percent by 2030 and 75 percent by 2050."

His highness Sheikh Mohammed bin Rashid Al Maktoum announced his UAE energy strategy 2050 in January, calling for a diversified energy mix.

Construction of the 16km^2 phase 3 expansion of the Dubai solar park will occur in three stages. The first 200MW stage is expected to be completed by the first half of 2018, with the next 300MW phase due the following year. The final 300MW will be on-stream in the first half of 2020.

Korean cable contracts

Taihan Electric Wire Co, the South Korean manufacturer of industrial cables, has won two orders worth $62 million to build a high voltage power network in the Middle East. The company announced in January that it had been awarded projects in Saudi Arabia and Kuwait, worth $43 million and $19 million respectively.

In Saudi Arabia, the company signed a contract with Saudi Electricity Company-Eastern Operating Area (SEC-EOA) to construct 380kV underground cables to connect an electric power substation in Qurayyah, Saudi Arabia, to Doha, Qatar. For the 118km ultra-high voltage cable project, Taihan Electric Wire will supply cables and accessories as well as installation and testing.

In Kuwait, Taihan Electric Wire will install ultra-high voltage cable in an oil refinery, due to be built in Al-Zour, south of Kuwait City. The company will carry out the project on a turnkey basis, responsible from the supply, installation and civil design to facility testing.

This latter deal was signed with US-based Fluor and the Kuwait National Petroleum Company (KNPC).

Qatar projects

Qatar General Electricity and Water Corporation (Kahramaa) has signed a contract with Nexans for low and medium voltage cables to be used in civil infrastructure projects in Qatar. The cables are needed to connect substations to infrastructure projects across Doha and its suburbs, as well as projects needed for the 2022 FIFA World Cup.

Charles-Edouard Mellagui, Nexans country manager, and chief executive officer of the Nexans' company QICC, commented: "Our track record with Kahramaa over the past years has been outstanding. … We're pleased to be continuing our very successful collaboration, contributing to the Qatar National Vision 2030."

New year – new website

The new website from Oman Cables.
Photograph courtesy of muscatdaily

Oman Cables has launched its newly re-designed website, offering a "bold new look" and improved navigation.

The website now has a consistent site-wide navigation system with improved menu functionality that directs users to the most relevant information. It is fully responsive with mobile devices, making it easy to navigate on a wide range of web browsers and portable devices. Various new features have been added to the website, including a live link to the London Metal Exchange.

The main objective of the re-designed website was to make it faster and easier for customers to navigate and use. Oman Cables will continue to communicate regularly through social media as well as the website blog to provide new information and notifications.

Future-proofing power supply

New Zealand power utility Powerco is planning a five-year spending program to upgrade electricity networks supplying Coromandel, Eastern and Southern Waikato, Western Bay of Plenty, Taranaki, Whanganui, Manawatu, Tararua and Wairarapa.

Work will begin on 1st April 2018.

Powerco's chief executive, Nigel Barbour, said the proposal reflects Powerco's commitment to regional New Zealand and will underpin future economic growth in the areas.

"Powerco distributes electricity to more than 320,000 homes and businesses across the North Island," he said. "Many of the poles and wires which make up the bulk of New Zealand's electricity networks were installed in the 1950s and 1960s and this program will see these ageing assets upgraded and replaced with more modern and resilient equipment.

Funding the investment will require a small increase in electricity charges, but this is subject to the approval of the commerce commission.

New safety standards

The Malaysian Ministry of Science, Technology and Innovation (Mosti) has approved 15 new Malaysian standards for electric wires and cables, intended to reduce the risk of injuries and accidents among consumers and within the industry.

The department's minister, Datuk Seri Madius Tangau, said in a statement that the standards also cover the specification of electric wires and cables to ensure they are safe for use. "It also includes the testing method which is expected to be used for laboratory testing of household appliances for product certification," he added.

OF investment in SA

Work has started on the modern optical fiber cable manufacturing plant in Durban, South Africa

Chinese company Yangtze Optics Africa Cable (YOAC) is to invest $11 million in a modern optical fiber cable manufacturing plant at the Dube trade port industrial development zone in Durban.

YOAC is a venture between Yangtze Optical Fibre and Cable Joint Stock Ltd Company (YOFC) from China, and South African company Mustek Ltd.

South African trade and industry minister Rob Davies said that YOAC's optical fiber cable plant, with an initial capacity of one million fiber kilometers, will introduce new modern manufacturing equipment and processes in the manufacturing of optical fiber cable in South Africa.

The minister added that it is the intention of YOAC to manufacture a range of new generation optical fiber cable products for the country's information and communication technology and broadband market, as well as key export markets in West and East Africa.

Connecting Greenland

New 100G network along the Greenland west coast. Photograph courtesy of greenland.com

Huawei Marine will partner with Tele Greenland for the deployment of a 100G network along the Greenlandic west coast and a capacity upgrade of the existing Greenland Connect between Greenland, Iceland and North America. When completed, the new system is expected to be the world's most northerly 100G submarine network.

Greenland is located between the Arctic and Atlantic oceans with 80 percent of the island covered by ice and snow throughout the year. Huawei Marine will supply and, in collaboration with Tele Greenland, install submarine line terminal equipment for Greenland Connect North, which will connect Nuuk (the capital), Maniitsoq, Sisimiut and Aasiaat. The new system will initially hold a capacity of 100G. Huawei Marine will also supply and install submarine line terminal equipment for the existing Greenland Connect system, with initial capacity of 100G.

New "always on" policy

Telstra has guaranteed customers on its Japan-Hong Kong and Singapore-Hong Kong subsea cables that they will almost immediately be rerouted to another connection route in the event of submarine cable damage under its new "always on" policy.

Currently, when subsea cables suffer damage, it can take months to reconnect customers. Telstra is now promising a wait time measured in hours, which will eventually be reduced to minutes, using automation.

According to Telstra, announcing the policy at the Pacific Telecommunications Council Conference in Hawaii, it now has enough diverse cables in its subsea network to guarantee almost unceasing uptime, including in the event of a natural disaster or a cable being accidentally cut.

Products, Machines & Technology

Multi-band technology

TE SubCom has announced that its C+L optical transmission technology has reached production stage. The transmission approach leverages both the C-band and L-band, effectively doubling the wavelength capacity of approaches that only use the C-band.

The company says that the repeater technology should reach deployed and activated status in 2018.

TE SubCom says it opens the L-band for use via a second length of erbium-doped fiber in its undersea repeaters. The additional erbuim-doped fiber provides amplification and support for wavelengths on the long-wavelength side of the traditional C-band. The efficient use of optical spectrum will reduce the number of fiber pairs that new systems may require, so improving efficiency and cost-effectiveness.

Transatlantic undersea cable systems equipped with C+L technology and eight fiber pairs will have capacity up to 325Tbps, the company claims, adding that the significant capacity increase will result in lower cost-per-transported bit.

Neal Bergano, vice president and chief technology officer, TE SubCom, commented: "This is a significant milestone for our company, as we believe we're providing our customers with the bandwidth and capacity that they need to power today's networks, within a system that is reliable, cost-effective, and ready for implementation."

Making a mark

TE Connectivity has launched STD and STB snap-on pre-printed markers for wire and cable identification, suited to power station, oil refinery, offshore platforms and other applications where maintenance technicians need to identify individual wires and cables quickly and efficiently.

▲ *Pre-printed markers from TE Connectivity*

STD and STB markers are individual markers that can be applied after termination or installation using a dedicated applicator wand.

STD markers are white and yellow with a black legend; STB markers are color coded, and a UV stabilized version is also available. Both types are available in ten sizes that

expand to accommodate a range of wire and cables from 1mm to 19mm in diameter (0.04 inch to 0.75 inch).

Both STD and STB markers are manufactured using a highly elastic zero - halogen polyoxymethylene (POM) compound. POM avoids damage to the wire or cable insulation, but is strong, stable and offers low moisture absorption. It also has good resistance to chemicals, including key fluids found in energy, oil and gas, aviation and military installations.

STD and STB markers meet the US standard UL94 HB for flammability performance of plastic materials.

New cable takes control

Lapp Group USA has launched a new control cable for oil- and abrasion-resistant industrial machine tools and appliances.

▲ *The new control cable from Lapp Group USA*

Lapp's Ölflex 409 P PUR features an interstice filling functional layer on a PVC base for more efficient and reliable stripping. As well as providing improved stripping characteristics, when compared to common PUR jacketed cables the Ölflex cable reduces the risk of damage to core insulation and demands less manual processing and less material waste.

A robust polyurethane outer sheath provides increased durability under harsh conditions. Ölflex 409 P is also resistant to many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media.

The Ölflex 409 P PUR cable comprises a fine-wire, bare copper conductor, special PVC core insulation, twisted-layer cores and an outer sheath of polyurethane with an interstitial functional layer. The cable has an intermittent flexing temperature range of -5°C to 70°C, and fixed installation temperature range between -40°C and 80°C.

PV changes direction

Ascent Solar Technologies, a developer and manufacturer of lightweight, flexible thin-film photovoltaic (PV) solutions, has secured a major contract from an Asian customer to supply its high voltage, super-light thin-film module for an aerospace application.

Dr Joe Armstrong, founder and CTO of Ascent Solar, explained: "Ascent Solar was asked to customize a fully encapsulated, large area thin-film module weighing no

more than 420 grams per square meter (1.38 ounces per square foot), which could withstand extreme operating temperature ranges from +100 to -75°C (approximately +210 to -100° Fahrenheit)," adding: "The Ascent team designed the module to easily integrate into the customer's application."

▲ *Thin-film photovoltaic panels from Ascent Solar*

After lengthy and vigorous testing and validation over two years, the customer is now making commercial size orders.

"This is by far the single largest PV sales contract in the corporate history of Ascent Solar," said Victor Lee, CEO and president of Ascent Solar Technologies Inc. "While the contract is significant in value, it underscores the power of Ascent's technology to address these rapidly emerging and growing markets."

Mr Lee continued: "Since pivoting away from the traditional and highly commoditized on-grid and rooftop solar markets in 2012, Ascent has been focusing on developing high value-added commercial and consumer solar products, to ensure better margin protection. The sales process and cycle in such specialty PV market can be tedious and lengthy, but the progress has been very encouraging."

Developments are patently clear

Several AFL associates have received patent awards for new product and technology developments within the optical connectivity, fusion splicing and test and inspection divisions.

The optical connectivity team received four patents, including one for a "small form factor field installable outside plant connector housing" that allows field engineers and technicians to run cable point-to-point and protect the connection in an environmentally sealed, crush-resistant housing.

▲ *AFL patent award winners. Photograph courtesy of AFL*

Two patents were received for the "universal interface device base and module" which minimizes manufacturing design variation and, so, reduces costs. Modules can be

easily replaced by technicians, whether to replace defective modules or upgrade with new modules. The last patent is for a "field installable high strength breakout kit".

AFL's fusion splicing team received a patent for making "fiber axicon tapers for fusion splicers", using fusion splicers, rather than polishers, to make axicon lenses on fiber ends which can be used for connection between a fiber and a laser chip.

The test and inspection team received a patent for a "system and method for identifying fiber sequence in a multi-fiber optical cable" that enables OTDR-based identification of fiber sequence.

Semi-flexible cable range

The cable assembly division of Intelliconnect (Europe) Ltd is now offering its own brand of semi-flexible 0.085" (I405) and 0.141" (I402) cables, designed to compete with multiflex, T-flex and flexiform cables for industrial, defense, security and test system applications.

Intelliconnect semi-flexible cables are described as a lighter, more flexible alternative to semi-rigid types, making system assembly and interconnection easier. They are compatible with standard semi-rigid cable connectors.

Intelliconnect Spiral Strip shielded coaxial cables are flexible alternatives to semi-rigid coax, with a shielding configuration said to offer a cost effective, low attenuation option. The use of strip/round braid composite shields results in low transfer impedance levels.

The 50 ohm construction exhibits the same attenuation characteristics as M17/130-RG402 and M17/133-RG405 cables. All the Intelliconnect spiral strip shield coaxial cables have VSWR characteristics designed to meet or exceed similar size flexible constructions. The I402 and I405 cable types have been designed with diameters over the outer braids of 0.141" and 0.086" and have an operating temperature range of -55°C to +200°C.

▲ *Semi-flexible cables from Intelliconnect (Europe) Ltd*

In addition to custom cable assemblies, including cryogenic cables, Intelliconnect manufactures standard and custom RF connectors and components, including waterproof and fast turnaround custom designs. Intelliconnect also manufactures a wide range of coaxial adaptors to facilitate inter-series connection and gender change.

Soft cable tie

HellermannTyton has introduced its reusable Diamond Lock tie fastening solution. The fastener has a stretchable diamond shape, for a strong and durable grip, while its soft-grip strap protects cables from abrasion.

▲ *The Diamond Lock tie from HellermannTyton*

The initial concept for the tie came from the horticulture sector, but has been further developed for other applications and industries including securing multiple cables for heavy machinery and equipment.

Manufactured in the UK, the Diamond Lock tie has strong tear resistance, and is resistant to abrasion, hydrolysis failure and oxidation. The cable tie also remains chemically stable when exposed to many solvents and offers good UV resistance.

The automatic self-locking feature makes installation simple, but the tie can be adjusted and released quickly when necessary.

Richard Rands, UK product manager at HellermannTyton, said: "The Diamond Lock tie …was manufactured following demand from our customers for a fastening that balances security with protection. The result is a premium product which offers a secure grip whilst protecting vulnerable cables during application."

Overlay for higher speeds

Nokia and Ooredoo Qatar have achieved a 40Gbp/s download and upload speed using Nokia's time and wavelength division multiplexing passive optical network (TWDM-PON) fiber technology in a trial in Doha. The TWDM-PON, also referred to as NG-PON2 (next generation PON 2) technology, was deployed over Ooredoo's existing single fiber network to achieve this speed. This overlay technology can add more capacity to existing networks, saving the costs of laying new fiber.

Nokia's TWDM-PON technology delivers four additional wavelengths, each providing 10Gbp/s upload as well as download speeds, eventually providing a total of 40Gbp/s. This significantly enhanced speed will allow Ooredoo Qatar to cost efficiently upgrade its networks from the existing GPON (2.5Gbp/s) to XGS-PON (10Gbp/s) and, in the future, to TWDM-PON (40Gbp/s) using the same access node ISAM FX.

Waleed Al Sayed, chief executive officer of Ooredoo Qatar, said: "Every single step

will evolve Ooredoo's network now, and in the long term, to meet the increasing data demand of subscribers across the country."

Fire safety compounds

Melos and Inhol have announced the introduction of two new char-forming jacketing compounds — Mecoline S TP 1006 F char and Mecoline S TP 1021 char. The new compounds are said to represent a new class of flame retardancy formulations with greater thermal stability, forming an overlapping hybrid to provide improved fire protection properties.

This new range of thermoplastic, char-forming Mecoline compounds shows improved fire behavior, demonstrated by cone calorimeter tests and fire tests according to DIN EN 50399 (CPR). Heat release has been reduced by 20 percent, in comparison with standard compounds. Fame spread has been reduced significantly, with flame retardancy properties showing significant improvements with no burning droplets within 20 minutes.

New co-extrusion crosshead

With the tendency in high and extra high voltage applications towards wider diameter cables, up to 200mm, a smooth Al-sheathing has been introduced as an alternative to the conventional corrugated metal sheath to reduce the outer diameter. To guarantee adhesion between the smooth sheath and the PE-sheath, an adhesive layer is applied between the two, and most HV and EHV cables have a semi-conductive skin layer for testing purposes.

To apply all three layers on the cable core simultaneously, Maillefer has developed its ECH 200/240 3L — a three layer co-extrusion crosshead. Taking user friendliness and space restrictions into account, the design places all three extruders on one side of the line, leaving the operator side of the line clear. The distributors are mounted on slides for easier and safer dismantling and cleaning.

Advanced material flow simulations were used in the design of the distributors, which allows distribution of a thin, even layer over the cable circumference, which can be over 620mm.

The crosshead handles common sheathing materials, including PE, PVC and HFFR.

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