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July 2016 issue - No 61

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#61 EDITOR

Speed, it appears, is everything these days – especially if you rely on transatlantic connections for your business. Microsoft and Facebook are putting a new 6,600km cable on the bottom of the ocean to link Virginia in the USA to Bilbao in Spain. From there the link will go on to hubs in Europe, Africa, the Middle East and Asia.

The new cable – the highest capacity subsea cable across the Atlantic – will provide the two companies and their customers with high-speed connections for cloud and online services. Work gets underway in August this year and is due to be completed by October 2017. You can read the full story on page 9.

Investment is also playing a major role for General Cable with the company spending \$3.7m in its data communication cable business in Jackson, Tennessee. The company, with 57 manufacturing options worldwide, will create a further 51 jobs at the 186,000ft² site, adding to the 170 already in place. Catch the details on page 13.

Nexans in Canada is also spending \$15m on new equipment and warehousing logistics as it celebrates 50 years in the country. The expansion, at its Fergus site, will give the company more capacity for the production of low voltage residential, commercial and industrial cables. The full story is on page 14.

David Bell
Editor

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NEWS

Editor

David Bell
david@wiredinusa.com

Features Editor (USA)
Dorothy Fabian

Features Editor (Europe)
Gill Watson

Publisher
Caroline Sullens

INTRAS OFFICES

Europe:

46 Holly Walk, Leamington Spa
Warwickshire CV32 4HY, UK
Tel: +44 1926 334137
Fax: +44 1926 314755
Email: read@wiredinusa.com
Website: www.wiredinusa.com

USA:

Danbury Corporate Center,
107 Mill Plain Road,
Danbury, CT 06811, USA
Tel: +1 203 794 0444
Email: doug@intras.co.uk

SALES & MARKETING (INTERNATIONAL)

Sales Manager

Jason Smith
jason@wiredinusa.com
+44 1926 834 684

Accounts Manager

Julie Case
juliecase@intras.co.uk



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DIARY SHOW EVENTS

2016

SEPTEMBER

26-29 September 2016

wire China

Shanghai, PR China

Exhibition

www.wirechina.net

OCTOBER

2-5 October 2016

IWCS

Rhode Island, USA

Conference and Exhibition

www.iwcs.org

OCTOBER

5-7 October 2016

Wire & Cable India

Mumbai, India

Exhibition

www.wire-india.com

2017

MARCH

23-25 March 2017

TEL

Istanbul, Turkey

Exhibition

www.voli.com.tr

MAY

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InterWire

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MAKING THE NEWS

Facebook and Microsoft's new transatlantic cable to meet customer demand

Microsoft and Facebook are to build a subsea cable across the Atlantic. The new MAREA cable will help meet customer demand for high-speed connections for cloud and online services for Microsoft, Facebook and their customers. The parties have cleared conditions, and construction of the cable will commence in August 2016, with completion scheduled in October 2017.

MAREA is expected to be the highest-capacity subsea cable across the Atlantic – eight fiber pairs and an initial estimated design capacity of 160Tbps. The 6,600km submarine cable system, which will be operated and managed by Telxius, will also be the first to connect the US to southern Europe, from the data hub of northern Virginia to Bilbao, Spain and then to network hubs in Europe, Africa, the

Middle East and Asia. This route is south of existing transatlantic cable systems.

Christian Belady, general manager, datacenter strategy, planning and development, Microsoft Corp, said: "By building the cable along this new southern route, we will also increase the resiliency of our global network, helping ensure even greater reliability for our customers."

Najam Ahmad, vice president of network engineering at Facebook, said: "We're always evaluating new technologies and systems in order to provide the best connectivity possible. By creating a vendor-agnostic design with Microsoft and Telxius, we can choose the hardware and software that best serves the system and ultimately increase the pace of innovation."



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Continuous contract

SCR Technologies, Southwire Company, has signed a new contract with an Asian company.

The contract calls for an SCR system for a production rate of 25 tonnes per hour. The project includes the design of all operating equipment, from a skip cart furnace loader to a finished rod handling system. The system will include a ten-stand Morgan No Twist[®] rolling mill, provided by Primetals Technologies.

“SCR Technologies is excited to have signed another contract in the Asian region,” said Mark Roden, general manager of SCR Technologies.

Southwire's SCR Technologies provides continuous rod system equipment and technology for the production of copper and aluminum rod. SCR aluminum rod systems, incorporating ultrasonic technology, range in capacity from 2.5 tonnes to 15 tonnes per hour of EC aluminum and alloyed aluminum rod.

SCR copper systems range in size from 12 tonnes to 54 tonnes per hour of ETP copper rod or other profiles such as flats. SCR shaft furnaces and furnace systems for rod, billet and anode casting are available with capacities ranging from 7 tonnes to 60 tonnes per hour.



Getting the measure of training

NDC Technologies has supplied Beta LaserMike cable measurement technology to the new Prysmian Group manufacturing training academy in Turkey.

“Cable manufacturers today face a number of production challenges involving quality and cost reduction, such as reducing downtime by increasing plant and personnel efficiencies, minimizing material usage, and increasing process capabilities and production throughput,” says Stefano Cicetti, EMEA sales director for NDC’s line of Beta LaserMike products.

“The Beta LaserMike products we provided for the new manufacturing academy allow Prysmian personnel to train on the industry’s latest precision measurement technology. We will also share our knowledge and applications expertise to

reinforce best technical practices. These manufacturing skills will enable Prysmian to develop higher quality products faster and deliver more value to customers and the industry.”

The new academy will be using Beta LaserMike’s AccuScan 6000, LN3000 series three-axis lump and neckdown gauge, and the LaserSpeed® non-contact gauge.



Jackson investment

General Cable Industries Inc is to invest \$3.7 million in its data communication cable business in Jackson, Tennessee.

General Cable already has 170 employees at its 186,000ft² facility, which opened in the Jackson-Madison County industrial park in 1991, and expects to increase its workforce by 51 when the expansion is completed.

“The skills of General Cable’s Jackson team and their solid performance were major factors as we considered our options to support our data communications business,” said Mark Thackeray, General Cable’s senior vice president of global manufacturing and North American operations.

The announcement means the Jackson facility is prepared to take on additional product lines and production capabilities.

Once under a feasibility study for closure, General Cable of Jackson was selected by Penton Media’s IndustryWeek Magazine as one of the best manufacturing plants in North America for 2013.

General Cable joined six other plants across the country in receiving the designation.

General Cable has 57 manufacturing operations worldwide, 22 of which are in the US.

Warehouse investment

Celebrating 50 years in Fergus, Ontario, in June, Nexans reinforced its commitment to Canada with a \$15 million dollar investment in warehousing logistics and new equipment.

The expansion gives Nexans more capacity for the production of low voltage residential, commercial, and industrial cables, and a fundamental change in the way the company produces its wire products.

The additions to the plant (a new warehouse facility on the north side) enlarged the facility from 285,000 to 385,000 square feet, plus an outside storage area of 100,000 square feet.

Nexans has moved its Milton warehouse facility to the Fergus site, which now employs a staff of 220.

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The new furnace at Metex Heat Treating, installed by Can-Eng Furnaces International

Fastener furnace system from Canada

Can-Eng Furnaces International Ltd has installed and commissioned a 6,000lb/hour continuous mesh belt atmosphere furnace system for Metex Heat Treating of Brampton, Ontario.

The new system was commissioned for the hardening and tempering of high volume fasteners, and includes a computerized loading system, mesh belt controlled atmosphere hardening furnace, oil quench system, mesh belt tempering furnace, pre- and post-wash systems and a supervisory control and data acquisition (SCADA) system.

The continuous quench and tempering system incorporates enhanced energy reduction design features achieved through the benefits of recuperative burner technology, providing improved system efficiencies and reduced emissions.

Metex Heat Treating serves high volume automotive manufacturers of stampings, fasteners and final assemblies in the Ontario, Quebec, Ohio and Michigan markets. From its three plants in Brampton, Metex processes over 60 million pounds of heat treated product each year.

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A new series of flexible right-angle test cables from Pasternack. Photograph courtesy of Pasternack

Right-angled cables

Pasternack has launched a series of flexible right-angle test cables. The series consists of 16 assemblies covering a frequency range from DC to 27GHz for the SMA versions, and DC to 18GHz for the type-N and TNC terminated cables.

The cables have a low profile design and are rated up to 27GHz. The right-angle SMA and type-N connectors incorporate an internal radius design that optimizes performance in a low profile configuration.

The cables are also available in 0.086 inch and 0.141 inch diameter double shielded, silver plated copper braid over silver plated copper tape, coax designs. The PE-141Flex is a flexible cable alternate

to RG402, 0.141 inch diameter semi-rigid coax, and has a solid PTFE dielectric resulting in 69.5 percent phase velocity. PE-086Flex is a flexible cable alternate to RG405, 0.086 inch diameter semi-rigid coax.

The smooth wall formed by the braid over spiral ribbon design allows for a flexible cable with similar performance to a solid wall semi-rigid cable.

The series has an operating temperature range of -40°C to $+150^{\circ}\text{C}$, and stainless steel connectors that have a minimum lifespan of 500 mating cycles.

Rebar results

National Institute of Statistics data shows that Peruvian steelmakers produced 99,418 metric tonnes of rebar in March 2016, up 13.5 percent from 87,591 metric tonnes in the same month last year.

Month on month, rebar production increased 12.5 percent from 88,328 metric tonnes in February.

Shipments decreased slightly in March to 105,937 metric tonnes from 107,090 metric tonnes in March 2015, a one

percent difference. January to March, Peru shipped 307,436 metric tonnes of rebar, down three percent from 317,229 metric tonnes of 2015.

Peru's rebar market is primarily supplied by domestic longs producers, including Gerdau's Siderperu, with a rolling capacity of 1 million metric tonnes per year of bar, rebar and wire rod, and Aceros Arequipa, which can produce up to 1.3 million metric tonnes per year of bar, rebar, wire rod and profiles.

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Co-acquisition

Carlisle Companies Incorporated has announced the acquisition of Micro-Coax Inc, a global supplier of high-performance, high frequency coaxial wire and cable, and cable assemblies.

With annual sales of approximately \$45 million, Micro-Coax has manufacturing facilities in Pottstown, PA, and a joint venture operation in Blackburn, UK. The company designs, manufactures and sells customized, high-reliability wire and cable for signal transmission on defense, space and satellite platforms and in high-end industrial equipment. The company's brands include Utiflex[®] flexible microwave cable assemblies, Utiform[®] hand formable cable, M-Flex[®] cable assemblies and Aracon[®] metal clad fiber.

The business will operate as part of Carlisle Interconnect Technologies.

Chris Koch, Carlisle's president and chief executive officer, said: "We are excited about the acquisition of Micro-Coax, as the company adds capabilities and technology to strengthen our interconnect products business in very attractive sectors. Micro-Coax broadens our product, technology and service ranges to our customers. This acquisition is consistent with our focus on higher margin, highly engineered products and is an excellent fit with Carlisle."



SaskPower is asking for two rate increases

Price of power

Canada's SaskPower is asking for two rate increases: five percent this summer and a further five percent in January.

President of SaskWind, James Glennie, said a report from Canada's parliamentary budget office shows carbon capture technology will double the price of power generated from the project.

SaskPower's wholesale cost of power is around \$60 per megawatt hour.

The report pegs the cost of removing carbon dioxide through carbon capture at Boundary Dam Unit 3 at about the same price. "So essentially, what the report is saying, is if you... add on \$60 a megawatt hour for carbon capture, that is effectively doubling the wholesale price of power," Mr Glennie said.

The minister responsible for SaskPower, Bill Boyd, said: "It's something that I think the people of Saskatchewan are aware of. They know very well that the cost of mitigation in these areas is expensive. The cost of any kind of other alternative sources of energy are going to be expensive as well."

SaskPower is working to add more wind and solar projects to the province's power generation fleet, while the government has promised that by 2030, half of its power will come from renewable sources.

Low smoke designation

Superior Essex has released a category 6+ premises low-smoke halogen-free copper cable. The LSHF designation was awarded in accordance with the latest version of the IEC 62821-1,-2 and -3 standards, and is valid for the cable and for any compounds or materials used in the cable, from cable jacketing and insulation to its ColorTip® circuit identification system.

“After the release of the IEC 62821 standards and in accordance with our transparency policy, it was an obvious step for us to work with UL Wire and Cable to have the first UL CMR-LSHF listing,” said Will Bryan, vice president of marketing at Superior Essex. “Adding the UL LSHF surface mark on our cables helps reinforce our industry leadership.”

“We value transparency and safety in the wire and cable industry,” said Steven Galan, director of UL Wire and Cable, “and our testing and certification procedure enables manufacturers, designers and other key stakeholders to substantiate claims through UL’s trusted third-party certification and offer cables compliant to the latest standard for the benefits of their customers.”

Superior Essex category 6+ CMR LSHF cable is designed for applications where health, safety, and transparency are critical. This is said to be the industry’s only category 6+ CMR LSHF cable that does not require a cross-filler or divider in its configuration, providing increased flexibility and easier handling during installation, and reducing the amount of plastic in the cable construction.



*Multi-conductor hybrid cable from Molex.
Photograph courtesy of Molex*

Cables for small spaces

Molex LLC has introduced Temp-Flex® multicore cable, a customizable, multi-conductor hybrid cable. The cable uses Temp-Flex and Molex core competencies to combine fine wire, coax, twinax, triax, twisted pair, tubing and strength members in a single high-flex cable solution.

“A single application often requires power, data, audio/visual and coaxial cables, but is constrained by space and environmental limitations,” said Kris Lower, product manager, Molex. “Also, the need to miniaturize multifunction cables for different functions can produce a tangled mass of cables. Temp-Flex multicore cables combine multiple components and conductors in a composite, compact design that provides space and weight savings and ease of termination.”

The cables employ high performance and small gauge wire and cable.

Commercial applications for the multicore cables include audio/video and instrumentation, while medical applications focus on diagnostic, imaging and surgical equipment. The cables are also designed for aerospace and defense applications.

Jackets for Temp-Flex cables include ETFE, FEP, PFA, THV, PVDF and polyurethane. Operating temperatures are dependent on jacket material; FEP jackets offer a range of -65°C to $+300^{\circ}\text{C}$, while polyurethane jackets offer a range of -30°C to $+75^{\circ}\text{C}$. Jackets made from a new blended material have applicable operating temperatures up to 300°C .

EUROPE NEWS



CABLE RESCUE

JDR has signed a framework agreement with Bibby Offshore for cable maintenance activities.

Under the strategic alliance, JDR will provide cable maintenance services and offshore personnel, including high voltage and fiber optic cable jointers, and associated competency systems. Bibby Offshore will deliver project management and engineering services in addition to a marine vessel with equipment for on-deck cable handling, storage carousel or reels. It will also provide cable-lay and subsea equipment for lifting, excavation and burial of cables.

The agreement was signed during the opening day of the Global Offshore Wind 2016 conference and exhibition in the UK.

JDR CEO David Currie said: "This agreement is an example of JDR's expanding range of services to the global energy industry. Our technicians are highly experienced in offshore construction activities and we are delighted to partner with Bibby Offshore for future cable maintenance tenders."

Bibby Offshore's MD, Barry MacLeod, added: "This agreement builds upon our recently announced cooperation with Ecosse Subsea Ltd and is a further example of the collaborative approach that we are bringing to our offshore energy clients. Our ability to rapidly mobilize a marine cable repair vessel and spread in support of highly skilled JDR technicians will differentiate our service."



Springs acquisition

Lesjofors AB has acquired the John While Group (JWG), a Singapore-based specialist in the manufacture of customized springs. The group's customers include home electronics and white goods manufacturers, as well as the engineering and automotive industries. Its largest markets are China, Thailand, Singapore and Malaysia, which account for 80 percent of sales.

JWG conducts manufacturing operations in Singapore, China and Thailand, producing a product range of 7,000 items.

"The combination of the operations that Lesjofors have today in China, focusing mainly on pressings, and the JWG operation, focusing on wire springs, will form a strong platform for servicing existing and new customers to Lesjofors and JWG. The acquisition broadens the total capabilities of the group in Asia and we can now support most of the needs for springs locally, which is a big strength for the future," said Kjell-Arne Lindback, president of the Lesjofors group.

For JWG the acquisition will strengthen its operation, enabling access to technical support and benchmarking possibilities that will be of value for the further development of the JWG companies.

Power partnership

Siemens and Gamesa have agreed to create the world's biggest builder of wind farms, with the German company paying \$1.1 billion for a majority stake in the combined business. Siemens will take a 59 percent stake in the company but will not have a majority on the board, Gamesa said in a statement to Spain's market regulator.

Iberdrola, which backed the proposed merger, will see its stake in Gamesa diluted to 8 percent from almost 20 percent.

The venture will overtake Denmark's Vestas to become the world's largest wind farm manufacturer by market share, operating in the mature North American and European markets and fast growing markets such as India, Mexico and Brazil. The businesses will be combined within Gamesa, which will retain its Madrid listing.

Siemens is dominant in the offshore wind market but relatively weak onshore, while Gamesa is strong in emerging markets, notably Latin America, where it expanded when the Spanish government cut subsidies to clean energy producers in 2013. The combined business will have an installed power base of 69GW, and will be headquartered in Spain.



Photograph courtesy of
Volker Stevin International

New rebar mill

A high-speed rolling mill connected to an existing five-strand billet caster will allow Vietnam's Fuco Steel to enhance its productivity and product quality. The new mill for rebar, wire rod and small sections will be supplied and installed by Italian company Danieli.

Starting with 150mm square billets from the existing five-strand casting machine, the mill will produce rebars of between 10mm and 51mm diameter, screw rebars between 19mm and 51mm, wire rod from 5.5mm to 16mm and other products in bundles, sub-bundles, stacks and coils in low and medium carbon grades for commercial purposes.

The plant includes all the Danieli Morgårdshammar technologies for long products, including high-speed bar rolling and delivery onto a cooling bed discharging system, and will retain space for future upgrades.

Plant start-up is scheduled for the end of summer 2017.

Cables off Scotland

Beatrice Offshore Windfarm Ltd has chosen a consortium of Nexans and Siemens Transmission and Distribution Ltd to supply a transmission system to its new wind farm off the coast of Scotland.

Nexans will deliver two complete 220kV export cable circuits of 90km, with a total of 260km of onshore and offshore cables. The offshore cables will be laid by Nexans' cable laying ship, *C/S Nexans Skagerrak* and trenched for seabed protection by Nexans' Capjet system.

The Beatrice Windfarm project is a joint venture between SSE Renewables Ltd, SDIC Power of China and Copenhagen Infrastructure Partners. It is located 13.5km from Caithness in northern Scotland and will be operated and controlled from a base at Wick. The 588MW wind farm will be made up of 84 x 7MW turbines. Power will be carried by offshore and onshore cables to Blackhillock in Scotland to connect with the grid. Cables delivery will begin in summer 2016 with installation starting in fall 2017. The wind farm is expected to be operational by 2019.



Cable laying vessel nears completion

DeepOcean 1 UK Ltd, a subsidiary of DeepOcean Group Holding BV, has held the naming ceremony for its new cable laying vessel, the *Maersk Connector*.

DeepOcean's commercial director, Pierre Boyde, said: "We are extremely proud to have shared this ceremony with our partners and clients. The *Maersk Connector* is the most advanced power cable lay vessel in the world and the only vessel of her type that can go right up to the beach and go aground fully loaded with cable.

"She can install a power cable in a single length from the beach to the offshore wind farm, enabling increased reliability and reducing cost for the system operators. The vessel will be used to install the export cables of the Walney Extension windfarm in the UK followed by the Nemo Link® interconnector project."

The *Maersk Connector* was built by Damen to a bespoke DeepOcean specification, on schedule and budget. She was delivered in cooperation with vessel owner Maersk Supply Service and is on long-term charter to DeepOcean.

First project for new technology

VBMS has been awarded a contract by EDF Energy Renewables to provide the subsea connection between the offshore turbines and the onshore grid for the Blyth offshore wind farm. This will be the first project to use the new 66kV cable technology. The standard voltage for array cables has previously been 33kV, but with the increase in turbine size, a higher specification cable is expected to be more cost-efficient.

EDF Energy Renewables is to install new turbine, foundation and cable technology in realistic offshore conditions before using the technology on a wider scale.

The scope of work for VBMS includes the supply and installation of a total of approximately 14km of export and inter-array cable, the landfall pull ashore, and testing, terminations and commissioning services. VBMS will be using one or more of its cable-laying vessels and has contracted Nexans as the supplier for the 66kV cables themselves. Work is scheduled to commence in 2017.



Part 2 of Bheramara HVDC

Siemens has been awarded a contract to build an HVDC for the Power Grid Company of Bangladesh (PGCB).

Under the contract, Siemens will be responsible for the engineering, installation and commissioning of the complete HVDC system. The contract scope includes supply of all electrical components including the control, protection and monitoring systems for the HVDC system, the thyristor valves, eight converter transformers and the AC filters.

Scheduled to be commissioned in the second half of 2018, the HVDC back-to-back link will enable power trade between India and Bangladesh.

Siemens' HVDC Classic technology will support the stabilization of the connected systems. The company previously installed block 1 of the Bheramara HVDC back-to-back station in 2013, and will now deliver a second block with a transmission capacity of a further 500MW.



The new Europacable leadership team, from left, Christopher Guérin, Raul Gil, Yann Gontier, Philippe Vanhille, Pascal Portevin, Antonio Traversi and Valerio Battista

Re-asserting commitment to the industry

At Europacable's 2016 general assembly, held in May, Europacable president Valerio Battista highlighted that: "With Europe's future being ever more energized, digitalized and connected, wire and cables will be essential for the wellbeing and competitiveness of our society."

Mr Battista reconfirmed that Europe's wire and cable manufacturer's are ready to "connect Europe" and that, through Europacable, the industry will continue to contribute to the key EU cases relevant for the creation of Europe's digital single market and energy union, as well as to strengthen Europe's industry base and environmental commitments.

Pascal Portevin, chairman of the Europacable executive board, presented the structural adjustments of Europacable to respond to the industry's challenges and to support seizing the opportunities. Mr Portevin underlined that, with the new structure: "Europacable will be more focused and efficient in its work in Brussels, more linked between technical standardization and business, and better connected to the national associations, representing our industry at member state level."

ASIA & AFRICA NEWS



RUSSIAN FAR EAST CABLE MAKING PROGRESS

Huawei Marine and Rostelecom have begun work on a submarine fiber optical telecommunication line between Kamchatka and Sakhalin in Russia. Construction of the 900km cable constitutes the second phase of the Far East cable system to connect the regions of Kamchatka, Sakhalin, and Magadan, and will be commissioned in early 2017.

Phase One, connecting Sakhalin to Magadan, was completed in 2015, as was the land-based telecommunication network on the Kamchatka peninsula. The terrestrial network connects to the submarine cable in the area of Ust-Bolsheretz, from where the submarine cable is buried beneath the seabed to cross the Okhotsk sea, connecting Ust-Bolsheretz in Kamchatka with Okha in Sakhalin.

Total length of the project is over 1,855km, in addition to the land-based fiber network.

The system capacity is 400Gbps and will be upgradeable to 8Tbps.

Cable laying is being carried out by Huawei Marine, a joint-venture subsidiary of Huawei, using a specialist cable installation vessel, *Cable Innovator*. The vessel is over 145m in length and has a total cable store of 8,500 tonnes.

Nikolay Nikiforov, Russia's minister of telecommunication and mass communication, commented that the new system is: "Not a mere construction, but a large-scale infrastructural project which will provide the citizens with a set of services necessary in their everyday life. Thanks to high rate Internet access the residents of Kamchatka, Sakhalin and Magadan will access the state electronic services, remote education and telemedicine."



Chinese rebar

South Korea's imports of Chinese rebar jumped nearly 160 percent in May, compared with the same period in 2015, following strong demand from the construction sector. Rebar imports reached 113,000 tons during the month, according to data compiled by the Korea Iron and Steel Association.

The data showed that imports of Chinese rebar stood at 515,000 tons in the first five months of 2016, accounting for 88.3 percent of the imported rebar market in South Korea.

In comparison, imports of Japanese rebar came to 50,000 tons between January and May, up 93.4 percent from a year earlier. In May alone, rebar imports from Japan came to 10,000 tons.

An industry spokesman commented that rebar is in short supply, due to strong demand from the booming construction sector. He added that Chinese rebar could “deal a blow” to the South Korea market in the mid- to long-term if the construction sector slows down.

Vendor award

State-owned Saudi Electricity Company (SEC) recently recognized Bahra Advanced Cable Manufacture Co as its “excellent vendor” for 2015.

Bahra Cables, a Saudi Arabian company specializing in the production and distribution of electrical cables, accepted the award at SEC's fifth awards ceremony for its top vendors and suppliers. Kareem Talal Idriss, Bahra Cables' business development manager, and its government and utilities sales manager Loai Taha Al-Bar, received the award from SEC's president and CEO, Eng Ziyad Alshiha.

Talal K Idriss, CEO of Bahra Cables, an affiliate of Construction Products Holding Company (CPC), expressed the company's pride at being chosen for the award from SEC.



Peak power?

Pakistan's ministry of water and power announced the achievement of a milestone when the total electricity generation reached a record 17,272MW for the first time in the country's history. It included 6,080MW generated through hydroelectricity sources, while independent power producers and generating companies contributed 11,192MW.

The power peak, recorded on 18th June, had quickly followed the previous highest recorded generation of 17,120MW on 8th June.

On 18th June, at the time of the Iftar evening meal, around 98 percent of urban areas and over 90 percent of rural areas were provided with power.

A government press release stated that with a large number of power generation and transmission projects under construction, the country should see an end to power load shedding by 2018.



Price falls forecast

A report issued by the Abu Dhabi-based International Renewable Energy Agency (IRENA) suggests that average costs for electricity generated by solar and wind technologies could decrease by between 26 percent and 59 percent by 2025.

The report, "The power to change: solar and wind cost reduction potential to 2025", finds that with the right regulatory and policy frameworks in place, solar and wind technologies could continue to see cost reductions beyond 2025.

It estimates that, by 2025, average electricity costs could decrease 59 percent for solar photovoltaic, 35 percent for offshore wind, and 26 percent for onshore wind, compared to 2015. Electricity prices for concentrated solar power could also decrease as much as 43 percent, depending on the technology. By 2025, the global average cost of electricity from solar PV and onshore wind will be roughly five to six US cents per kilowatt hour.

"We have already seen dramatic cost decreases in solar and wind [energy] in recent years and this report shows that prices will continue to drop, thanks to different technology and market drivers," said IRENA director-general Adnan Z Amin.



Slow return for power supplies

Two hydropower generators in the border area of Gyirong, Tibet, are back in operation after being damaged in last year's 7.5 magnitude earthquake. The two generators provide electricity to 10,000 people in 25 villages.

Two other generators are expected to be repaired this year, said a county official, Ta Qing.

The earthquake, on 25th April 2015, claimed heavy casualties in Nepal and killed 26 in Tibet. The tremors triggered landslides on both sides of the border, cutting off electricity, road transport and telecommunications.

The Gyirong power station, with an installed capacity of 4,000kW, was built in 2013 to end the local residents' dependence on wood for fuel.



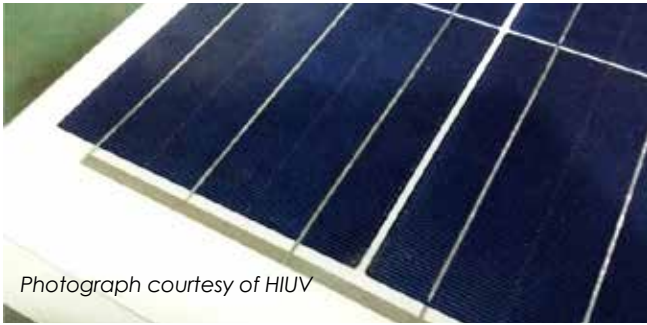
Steel price on the up

China Steel Corp's domestic wholesale price for steel wire rod has increased by around \$50 per ton for deliveries scheduled in July and August. China Steel increased local wholesale prices for steel products in April by an average 10.5 percent per ton, following a 3.1 percent increase for April-May contracts and 2.3 percent for March deliveries.

China Steel said that a recovery in global steel demand reflects the strong job market in the US, where home sales are stimulating building material consumption. The steel supplier added that the economy in the Eurozone has been growing at a steady pace, and that Japan has continued to put funds into its market.

China Steel said that there have been signs that many steel suppliers in the downstream segment in Taiwan have witnessed increasing orders placed by both local and foreign clients.

Inventory levels in the global steel market remain low, which could trigger another round of inventory build-up by many steel makers and making an additional price increase likely for the third quarter of this year.



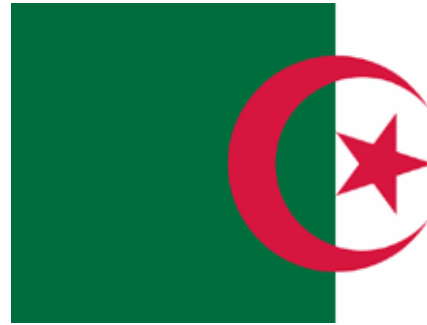
Photograph courtesy of HIUV

Improving the power of a PV module

HIUV New Materials Co has developed a high reflection rate encapsulant, S201W, for conventional c-Si PV modules. By adding titanium dioxide and using pre-crosslinking technology, S201W is porcelain white with above 90 percent high light reflection rate.

The correlation between the average reflectance from a module encapsulant material and the short circuit current is almost lineal. As a result, encapsulants with higher reflectance are necessary to improve the power of a PV module.

The pre-crosslinking in the S201W encapsulant is a similar technology to that used in the HIUV white encapsulant G401W for double glass modules. By using the high reflection rate encapsulant for the bottom layer, higher conversion efficiencies are possible as, due to its high reflectivity properties, more visible light can be harvested. HIUV New Materials claims that, by using S201W, a standard 60-cell module can achieve around 1.5-2.5 watts more power.



Algeria support for domestic products

It has been revealed that the Algerian government is to block wire rod imports. A new fiscal law is to be brought into force, similar to that used earlier this year to block imports of rebar.

The new measure appears to be in support of the Algeria-based producer Tosyali, and to restrict the import by the Cevital group of over 20,000 tons of wire rod per month from Italy.

It is thought that the new measure will have less impact on Italian producers than the earlier restriction on rebar, as they export considerably less wire rod to Algeria compared to rebar volumes.

PRODUCTS
MACHINES
TECHNOLOGY



Wire-cut EDM for micro-machining

GF Machining Solutions is urging manufacturers in micro-machining operations and applications to investigate its Agie Charmilles X-type wire-cut EDM machines which, the company says, offer appropriate accuracy by eliminating pitch and positional errors.



▲ *Eliminating pitch and positional errors with the Agie Charmilles X-type wire-cut EDM machines*

The machines include the Agie Charmilles Cut 1000X, Cut 1000X OilTech, Cut 2000X, Cut 2000X OilTech and Cut 3000X. According to GFMS, the Cut 1000X and Cut 1000X OilTech deliver pitch accuracy of $\pm 1.0\mu\text{m}$ over 200mm x 140mm, and an M-shape form accuracy of $\pm 1.0\mu\text{m}$.

Similarly, the Cut 2000 X, Cut 2000 X OilTech and Cut 3000 X machines deliver pitch accuracy of $\pm 1.5\mu\text{m}$ over 340 x 240mm (460 x 320mm for the Cut 3000 X) and form accuracy of $\pm 1.5\mu\text{m}$.

Features designed to ensure precision include short measurement loops, dual measurement systems on all axes, and

the separation of heat sources to ensure accuracy and eliminate thermal drift.

Target micro-machining applications include high precision stamping tools and multi-cavity molds for the electronics and IT sector, as well as micro-components for the science and medical device sectors.

Stronger, lighter ropes

UK manufacturer Bridon has installed a newly developed hybrid core rope at a South African gold mine.

Bridon has designed and produced its Bristar hybrid core rope which, in the future, may enable the company to create longer, stronger and lighter ropes in response to the requirements of the mining industry.

The oil and gas and underground mining industries are moving to ultra-deep depths, typically greater than 2,000m. Providing steel ropes for deeper waters and deep mining shafts is a complex exercise the longer the rope, the heavier it gets, so limiting the depth to which a conventional steel rope can be used. Using fiber ropes is a solution, but a number of challenges still remain regarding robustness, handling and established discard criteria.

Developing the hybrid solution has offered the advantage of the robustness of steel and the weight saving properties of fiber. Modern fibers are as strong as steel, but significantly lighter and more flexible. Following comprehensive internal testing,

a trial 42mm triangular six-strand rope with a hybrid fiber core has been successfully manufactured and installed.

Lee Bailey, Bridon's regional sales manager in Africa, said: "No one else in the industry has been able to replicate this. Hybrid ropes are a real plus for our mining customers as they offer so many advantages over traditional steel ropes.

"Utilizing a Bristar hybrid core contributes additional breaking load to the rope and therefore reduces the overall stresses in the steel wires whilst the rope is in service."

Cables keep their cool

R&M has studied the heat-up of network cables in connection with power over Ethernet (PoE). Tests are said to show that R&M's category 6A U/UTP WARP cables dissipate heat more effectively than conventional unshielded cables.

"WARP cables stay cool and behave just as well as shielded cables. That is an advantage when you are planning a local data network intended to include power over Ethernet," explained Matthias Gerber, market manager LAN cabling at R&M.

Power over Ethernet is increasingly popular as the power supplied to the device does not have to be separately fed over a power cable or from a battery; the device draws its energy over the data network.

IEEE, the standards organization, is developing a new 4PPoE protocol to

make two new levels of power available: 55W (level 3) and 90W to 100W (level 4). This approach opens up new applications, such as the operation of high-powered WLAN antennas, but the higher current level poses new challenges for data cabling.

Where more current is flowing there will be more heat, and warmer cables attenuate data transmission. Although the R&M cat 6A WARP cables are categorized as unshielded UTP cables, their jacket contains a special foil to reduce data interference from adjacent cables. These short metal foil segments (wave reduction pattern, WARP) suppress interference, but do not have to be grounded, which saves on installation costs.

Results show that a normal U/UTP cable of the same diameter can be expected to heat up by a factor of around five, while the R&M WARP cable can be assumed to heat up by a factor of three.

Mr Gerber added: "Under certain circumstances, the temperature difference and the longer link can decide whether a specific installation functions or not."

Mill upgrade

A fourth CSB compact sizing block with M2 multiple drive technology has been delivered to ESF Elbe Stahlwerke Riesa to upgrade an existing ESF mill with a new wire rod production outlet.

After the modernization the plant will

roll 5.5mm to 16mm diameter plain and deformed wire rod into 2,400kg coils at a rolling speed of up to 115m/second, with improved end-product size tolerances and ovality.

acceptance certificate release on the same day. The plant is fed by a 60 ton/hour pusher-type reheating furnace, suitable for heating up to 130mm and 120mm square billets, weighing up to 1,550kg.



▲ Upgrade for ESF Elbe Stahlwerke Riesa

The product mix includes low and medium carbon grades for reinforcing and cold drawing applications. The supply also includes a high-tech OFB oil film bearing loop laying head with associated auxiliaries and WCC wire rod controlled cooling line.

It integrates a 14-stand continuous rolling mill made up of SHS housingless stands in H and V configuration, and a ten-pass DWB type high speed wire rod block. The line includes an OFB oil film bearing loop laying head; a QTR+WCC wire rod controlled cooling line and a CCC controlled cooling conveyor with coil reforming station; and associated vertical coil transporting system, compacting, tying and final collecting services.

The CSB meets the requirement for the modernization of wire rod mills in terms of consistent production and flexibility. The M2 multiple drive technology means that each module of the CSB block is driven by an independent motor, giving better control of the overspeed set-up for each finished round, thus resulting in consistent finished product qualities and tolerances.



▲ Full production capacity is expected soon after Danieli completed its commissioning activities at Wempco's new wire rod mill

Plant start-up is scheduled for the beginning of 2017.

Although the mill can produce wire rod from 5mm to 16mm diameter at the maximum speed of 80m per second, its production is currently focused on 5.5mm smooth wire rod at a rolling speed of 74m per second to feed the existing Wempco drawing lines for the local market.

Modern mill for Nigeria

In May Danieli completed its hot commissioning activities at Wempco's new wire rod mill, receiving the final

Full production capacity is expected within a couple of months.

Quick-strip jacket

Stripping the insulation jacket from cables is a time consuming and potentially hazardous operation. When performed manually, using a sharp cutting tool, the insulation of the inner core cables can be damaged, and may result in a safety hazard or the expensive scrapping of material.



▲ *Igus – helping reduce stripping times by 50 per cent*

The risk is compounded where long lengths of cable jacketing need to be stripped.

igus® has introduced the CFRIP® tear strip, together with a special plastic hand tool, designed to reduce cable insulation stripping times by up to 50 percent. Without using metal tools, the outer jacket (or inner jacket, on shielded types) can be quickly and safely removed to the desired length.

The new feature is available on igus's 569 e-chain® cables, including the new CF78:UL PUR control cable, for quick and easy cable stripping without damage to

the core insulation or outer jacket. Igus's CFRIP technology received the IF design award in 2016.

Fine wire line

Schmidt Maschinenbau GmbH and Plasmait GmbH have integrated their products to develop a new drawing line for fine stainless steel and nickel alloy wires with an inline annealer.

The new PlasmaAnnealer can be installed inline with a Schmidt fine wire drawing machine to produce fine stainless steel wires of between 1mm and 0.1mm at between 4m and 15m per second.

An integrated fine wire drawing line avoids the need for 10 to 20 lines in a traditional tube furnace with expensive multi-line take-ups and payoffs and the associated material handling and manpower needs.

The line can be installed in a horizontal annealer configuration with double-head take-up and automatic spool changeover, or in a more compact vertical configuration suitable for smaller fine wire diameter ranges.

PlasmaAnnealer can also be used in combination with rolling mills or stranders.

The new drawing-annealing line is already available in Europe and Asia, and will shortly be offered in North America. The line can be used in a wide range of applications and for different types of materials including fine wire for mesh and

textile, filter wire, brush wires, EMS mesh wire, resistance wires, heating element and medical or jewellery wire.

Retrofit fiber rope

MacGregor, part of Cargotec, has launched a fiber rope retrofit option for its subsea cranes, replacing the crane's original steel wire rope with high performance synthetic fiber rope.



▲ High performance fibre ropes can now be retrofitted to subsea cranes

“We are proud to introduce our fiber rope retrofit option to the market. This unique system offers a good investment to our customers to expand their operational window,” says Alexander Nürnberg, senior vice president, technology and R&D, MacGregor.

Fiber rope's great advantage when used in this context is that it weighs virtually nothing in water so, regardless of the length of rope paid out, it does not add to the load experienced by the crane. This is

in complete contrast to wire rope, where the increasing weight of wire paid out progressively and seriously limits the load permissible in relation to depth.

In effect, a 100-tonne fiber rope crane has the same lifting capacity as a 150 tonne crane with steel wire rope, lifting at a depth of 2,000m, or a 250-tonne crane with steel wire rope, lifting at a depth of 3,500m.

Unlike wire rope, fiber rope does not require lubrication and so eliminates a source of pollution. The fiber rope can be inspected for wear, internally and externally, and the ability to splice in new sections adds flexibility to the system. With its low weight, a synthetic fiber rope can be shipped in a normal container, whereas 3,000m of steel wire rope poses significant challenges and demands specialist transportation and handling.

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Marketing:

Contact Jason Smith, wiredInUSA,
 Tel: +44 (0) 1926 834684
 Email: jason@wiredinusa.com

News:

Contact David Bell, Editor, wiredInUSA,
 Tel: +44 (0) 1926 334137
 Email: david@wiredinusa.com

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Jason Smith,
Tel: +44 (0) 1926 834684
jason@wiredinusa.com

David Bell, Editor,
Tel: +44 (0) 1926 334137
david@wiredinusa.com

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