ABB
A transmission link which carries power from the Inga hydropower station on the Congo River in the Democratic Republic of the Congo (DRC) to the mining district of Katanga in the south-east of the country, while also exporting excess electricity to the Southern African Power Pool countries, is to get a partial upgrade following the award of a contract worth more than US$30 million to ABB.

The Inga-Kolwezi high-voltage direct current (HVDC) power transmission link contract was awarded by Société nationale d’électricité (SNEL), the national electricity company of the DRC. The contract is part of the FRIPT project financed by Glencore and managed by Congo Energy, a subsidiary of Forrest Group International.

The retrofit will make it possible to increase transmission capacity from 520MW to 1000MW, securing power supplies to the mining region in Katanga and strengthening the power infrastructure in the DRC.

The 1700km link was built by ABB in 1982 and was, at the time, the world’s longest transmission line. ABB upgraded the link in 2009, installing new thyristor valves, high-voltage apparatus and its MACHTM control and protection system. ABB’s advanced MACHTM system, supports the company’s ABB AbilityTM based digital offering and acts like the brain of the HVDC link – monitoring, controlling and protecting the technology in the stations, managing thousands of operations to ensure the reliability of power supply.

ABB has now been entrusted to carry out a refurbishment that will boost transmission capacity, enhance grid reliability, extend life span and help ensure the efficient transmission of hydroelectricity across the region. ABB’s project scope includes system studies, supply of key equipment such as high voltage apparatus and commissioning.

The DRC is the 11th largest country in the world, with a land mass about one-fourth that of the US. It has a population of around 80 million, and one of the lowest rates of electrification in the world with over 80% of the population still lacking access to electricity. The total installed generation capacity is estimated at around 2500MW, which is almost completely installed. Power Generation industry.

Andritz Hydro
Andritz Hydro is half way through the installation of four Francis turbines at the 25 4MW Manolo Fortich Hydropower Plant 2 in the Philippines, developer Hedcor Bukidnon Inc has announced.

The AbritzPower subsidiary awarded Andritz a EUR 15 million contract for electromechanical works at Manolo Fortich 2, as well as the 43 4MW Manolo Fortich 1 plant. The latter plant will have a combination of Francis and Pelton turbines installed.

As well as equipment installation, Andritz will also ensure quality control of the entire hydro system such as analysis, target points and alignment, Hedcor explained. Commissioning of the project is expected by the end of this year.

Hedcor Bukidnon has also announced it has recorded 2.9 million man-hours with no lost time incident within the workplace, as of the time of writing.

Hedcor specializes in generating renewable energy from run-of-river hydropower system. It manages and operates 22 hydropower plants and supplies the Philippines with 185MW of clean and renewable energy.

ASI Group
This year, ASI Group Ltd. (ASI) is celebrating 30 years serving the industry. ASI’s first successful innovative R&D project started in 1990 when, alongside Ontario Hydro, ASI developed and patented the first North American treatment program to combat zebra mussels within the Great Lakes. Since then, ASI has been recognized as being the first company to provide sonar scanning capabilities for underwater assets; they developed the first Remotely Operated Vehicle (ROV) for long distance inspections (earning a spot in the Guinness Book of World Records) and was the first company in Canada to provide Commercial Diving services in radiated environments for the Nuclear Power Generation industry.

Founded in 1987, ASI has expanded its global footprint to provide necessary asset management solutions for governments and industries worldwide. To date, ASI has several locations across Canada, the US and globally including offices in St. Catharines, Sarnia, Vancouver, Orchard Park, New York, Chile and Singapore.

“ASI’s success is a result of long-term and symbiotic relationships with valued clients. Our staff’s experience and expertise along with the company’s passion to develop and deliver visionary turnkey solutions is what has made the company successful on a global scale” says Carmen Sierrazza, founder and President, ASI Group Ltd. “We plan to continue our company’s success and grow even further through various R&D projects to ensure our clients have means to collect crucial data and gain a better understanding of their assets for condition assessment and overall operations management.”

Atlantium Technologies
FirstLight Power Resources (FirstLight), a subsidiary of H2O Power, has purchased and installed the Hydro-Optic (HOD) ultraviolet (UV) technology from Atlantium Technologies Ltd.,
June 2017

The replacement dam consists of eight hydraulically-operated steel gates, each 50ft long, 17ft tall, and more than 260,000 pounds. The use of steel gates improves the durability and reliability of the dam, while the implementation of a hydraulically operated system offers a heightened level of safety and flow flexibility. The dam’s concrete piers and spillway slabs were cast over a roller-compacted concrete (RCC) foundation, one of several solutions employed during the project to help reduce the construction schedule. A time-lapse video of the construction is available online – construction began in June 2014 and was completed in May 2016.

PCL is pleased to have been a part of this momentous project,” said Mike McFetridge, PCL district manager. “We look forward to continuing to provide complex solutions to communities growing water needs.”

The ACIACE Phoenix Project of the Year Award is presented annually to a civil engineering firm undertaking a major project that represents the highest level of excellence in design, development and execution. The selection is made by ACIACE members from a list of nominees. Gannett Fleming was chosen for its performance on the Tempe Town Lake Replacement Project, which included the replacement of the existing dam with a new 600-foot-long, 175-foot-high, 260,000-pound concrete gravity dam with eight steel gates, plus associated structures that meet the needs of the city of Tempe and the residents of the town of Scottsdale. The project was selected for its complexity, innovation, and success in delivering a project that will serve as a state-of-the-art water supply and flood control structure for the Tempe/Tolleson communities for generations to come.

Gannett Fleming’s替换 Dam Replacement project was selected as the 2017 American Society of Civil Engineers (ASCE) Phoenix Branch Project of the Year in the “Greater than $10 million” category. Gannett Fleming was the design engineer for the project, which included the replacement of the existing dam with a new 600-foot-long, 175-foot-high, 260,000-pound concrete gravity dam with eight steel gates, plus associated structures that meet the needs of the city of Tempe and the residents of the town of Scottsdale. The project was selected for its complexity, innovation, and success in delivering a project that will serve as a state-of-the-art water supply and flood control structure for the Tempe/Tolleson communities for generations to come.
North America

The project generates 46 GWh/year of renewable energy, enough to power approximately 4,500 homes in the Sunshine Coast and the Lower Mainland.

Kuenz

A brand new Kuenz Trash Rack Cleaning Machine type H500 has been delivered and assembled in April/May 2017 at Lavey (Switzerland). Custom made according to the client’s requirements, it is perfectly adapted to the 100m radius of the rail track and features a rotating rake to better unload debris into the hopper. The hydropower station is operated by Services Industriels de Lauriane.

Mavel

A new 24MW hydropower plant is providing electricity for the Republic of Belarus, equipment supplier Mavel has announced.

The recently commissioned Polotskaya hydropower project, which is operated by RUP Vitebskenergo, is located on the West Dvina River. The project utilizes five Mavel Kaplan PIT type KP3000K4 turbines, with the firm also having supplied generators, hydraulic units, gearboxes, control systems as well as assembly and commissioning technical services.

Polotskaya is the second project in the Republic of Belarus to utilize Mavel’s KP3000K4 Kaplan PIT turbine. Each of the turbines has a runner diameter of 3000 mm, four runner blades, and was designed and manufactured at Mavel’s Benesov, Czech Republic manufacturing facility and headquarters. In 2012, Mavel commissioned RUP Grodnoenergo’s 18 MW Grodnenskaya hydroelectric power project on the Neman River. This plant utilizes five similar KP3000K4 turbines.

Natel Energy

Natel has developed and built a new hydroEngine model, the Linear Pelton, the first-ever implementation of a linear free jet single stage impulse turbine. The technology utilizes the highly efficient fluid mechanics of a Pelton-style bucket on a linear powertrain, and removes the need for a draft tube, stators, wicket gates, or stay vanes. The Linear Pelton operates efficiently in the net head range 3-20 m (9-65 ft) and up to 1MW.

Reel Coh Inc

To enhance customer service, Reel Group has decided to operate as a business unit by application markets. This organizational logic is coupled with a strong presence in North America since 2015, following the acquisition of Reel Alesa and the creation of Reel USA. REEL Alesa is a material handling solution provider primarily in the aluminum industry. Reel USA provides material handling services and solutions tailored to the aeronautics, nuclear and hydropower industries.

To ensure consistent brand identity and create a clearer link with Reel Group, COH Inc. became Reel COH Inc.

Reivax North America

In May 2017, Reivax North America announced it has delivered three more static excitation systems to Tacoma Power for a total of 10 units so far. The Reivax RTX Power excitation systems rated at a maximum continuous current of 979ADC were delivered to the Mayfield hydro station. These Mayfield units are part of the large contract that Reivax North America received in 2014 to supply a total of 11 static excitation systems. Reivax North America has also delivered static excitation systems to Tacoma Power’s Wynoochee, LaGrande, Alder and Cushman 2 hydro stations.

In February 2017, FortisBC awarded Reivax North America a contract to supply four static excitation systems for its Upper Bonnington
North America

hydro station in South Slocan, BC. Reivax North America will deliver one of its RTX Power excitation systems each year for the next four years. Each system is equipped with a redundant regulator that function with a single bridge with redundant fans. FortisBC appreciated this configuration since it was cost effective but also allowed for a smaller cabinet footprint while still providing high reliability with a Mean Time Between Failure of 20 years.

Rotork

The innovative Rotork CK range of modular electric valve actuators is designed to meet diverse actuation applications in the power and water industry, says the company.

The modular CK design provides flexibility and configurability, enabling quick selection from stock to meet customer specification with short lead times, it adds.

The torque range facilitates reliable operation of valve types and sizes typically found in industries such as power generation and water treatment. In combination with secondary gearboxes, the CK range maximum multi-turn output torque is 10,800 Nm (8,000 lbf.ft) and part-turn torque is 206,600 Nm (151,600 lbf.ft). A direct-drive part-turn CK range is also available.

The modular construction presents a wide range of options and features. These range from a standard CK actuator, requiring separate motor controls, to sophisticated Centronik versions equipped with an integral state-of-the-art intelligent digital control unit. The Centronik module can be mounted up to 100 metres from the actuator to provide local operation, configuration and commissioning for valves in inaccessible locations.

All CK versions can provide mechanical valve position indication. Standard features also include oil bath lubrication for extended life, mounting in any orientation, a safe motor-independent handwheel operation available at all times, and IP68 environmental double-sealing.

Increased valve protection is provided by independent torque and position sensing. Plug-and-socket connections facilitate fast and efficient commissioning and maintenance. All actuator sizes can utilise separable thrust or non-thrust bases, enabling actuators to be removed from the valve without affecting valve position.

The Centronik digital control unit provides intelligent control with datalogging for diagnostics and asset management, offering cost-effective integration with centralised and distributed control systems. Compatibility with hardwired, analogue or digital control protocols includes Rotork Pakscan, Profinet, Modbus, DeviceNet and HART.

Rapid and secure commissioning and configuration is performed using the actuator selector switches. A handheld Rotork Setting Tool, using infrared or Bluetooth interfaces, is optionally available for these functions. The actuator display window provides position indication, status and alarms plus user-friendly menu-driven configuration screens.

Saab Seaeye

Dominion Diving made big cost savings by customising it’s Saab Seaeye Cougar XT light work electric robotic vehicle and boosting its performance.

The resulting Cougar XT custom version could handle a tooling package normally possible only on a much larger hydraulic system – and take on three demanding tasks in one hit.

Founded 50 years ago, Dominion Diving, based on Canada’s Atlantic coast, provide subsea services and have a reputation for finding imaginative ways to fulfil demanding tasks.

Matthew Lohnes, president of Dominion, explains how the Cougar XT’s power and design flexibility allowed them to readily enhance and boost the system.

“We effectively turned the Cougar into a work class system that could undertake tasks typically needing 100hp hydraulic tooling and perform three roles in one tooling package.”
He explains how the subsea intervention was to profile a manifold site using multibeam sonar; then operate a trash pump to excavate and clear sand and debris from the valve row, before engaging a torque tool to isolate the manifold and then operate a manipulator to turn paddle valves.

“In building the package we added extra channels to control different survey equipment, and built an enlarged skid to accommodate the tooling which included a Kraft Predator seven-function force feedback manipulator and a torque tool.”

Faced with a new one-ton payload, they added an additional thruster to the Cougar XT’s six-strong thruster pack.

The result was a very compact system that undertook all three tasks whilst operating successfully in currents of 2.5 knots and working with exceptional manoeuvrability in a confined space.

The Cougar XT is a proven compact 2000 metre rated electric vehicle that is able to handle a variety of task-specific skids with different tooling options that can be easily bolted on and changed as needed.

Matthew Lohnes concluded by stating that the flexibility and performance of the customised Cougar XT meant the job was completed on time and to budget.

Seamor Marine
An innovative product has been launched by Seamor Marine Ltd. An in-house designed and produced Auxiliary Camera has been developed to expand the capabilities of a underwater remotely-operated vehicles (ROV).

Seamor, producer of the Chinook and Steelhead ROVs, has found a solution to the need for additional quality cameras that can easily be installed and used with a variety of ROVs. An easily-installed and respositionable full standard definition colour or black and white camera opens up a world of new possibilities for ROV pilots. Being able to view a different angle, behind the ROV, or close-up on a manipulator will provide even more reliable information for pilots to operate and maneuver their vehicles.

“We are excited about offering a high quality camera that is so adaptable, and very competitively priced” says Mr. Robin Li, Seamor Marine Ltd. President. “Like all our products, we have ensured that it can be used in a variety of applications. Its a great add-on for any ROV and an affordable tool to expand the capabilities for underwater work.”

The Auxiliary Camera produced by Seamor Marine features a top-of-the-line full resolution NTSC or PAL camera. This camera has been designed with integrated neutral-white LED lighting, which further enhances the camera’s fine sensitivity.

Seamor’s Engineering department designed this camera to operate with low power, and wide voltage range. This light weight camera (175 grams in the air, 80 grams in water) is equipped with industry sub-sea standard connectors that make it compatible with any Seamor ROV, or as a stand alone camera. These cameras can also be used with other ROVs, or mounted onto a divers’ helmet if needed.

Vaptech
Vaptech has announced that the Tikvesh hydropower plant in Macedonia, for which it supplied the turnkey solution, has been successfully commissioned.

The project is operating under a net head of 117.3m using a flow of 1.1m³/sec. Vaptech’s scope of supply on this project included a horizontal Francis turbine at rated speed 1000 rpm, butterfly valve DN600PN16, generator, electrical equipment, automation system and supervision of installation works.

The Western Balkan region has the largest remaining unexploited hydropower potential in Europe. Among the markets with great potential are Macedonia, Serbia, Bosnia and Herzegovina, Albania, Montenegro, Bulgaria.

In the first three quarters of 2016, Vaptech established its position in Macedonia with three new projects and the commissioning of HPP Konyarka 235. An additional three projects are expected to be put into operation in Macedonia this year.