



of a company in the region according to the number of jobs created or maintained. Second, the category "Coup de coeur" recognizes the exemplary contribution of a regional company to innovation, strategy, or impact of creating or maintaining employment in its sector.

Very few wind projects have been installed over the past 30 years in northern Canada. Conditions in the North can be challenging for rotating machines, and the variable nature of wind makes it difficult to integrate with diesel power plants in adapting to variable community loads. These conditions have resulted in high installation costs coupled with high operation and maintenance costs. For these reasons, wind powered energy systems in the North are rare.

Acting as a flagship site for future industrial-scale wind power development in the region, this energy project successfully demonstrates that wind energy can improve long-term economic stability and energy security, and reduce greenhouse gas emissions and the environmental footprint of Canada's northern mining operations and communities.

Beverly Brooks, MA MBA, is an economist and writer, who has worked for the federal government and private sector companies on energy policy.

Hatch designed and implemented the Hatch Microgrid at Raglan, which monitors wind power production and load variations, and economically dispatches the charge and discharge from energy storage units to smooth out wind power variations and displace diesel generation.

Hatch | www.hatch.com

Tugliq Energy Company is the owner and the independent operator of the wind powered energy system. The photo has been supplied by Justin Bulota, Tugliq Energy Company/www.tugliq.com



High-tonnage ultra-flat cylinders for harsh conditions

Enerpac has released its new CUSP-Series and CULP-Series high-tonnage ultra-flat cylinders designed for harsh conditions which require low clearance, especially for industrial maintenance and construction applications. The CUSP-Series has an integrated tilting function with 10 to 1,000-ton capacity, 0.26-0.69 inches stroke, and maximum operating pressure of 10,150 psi. The CULP-Series has an integrated stop ring with 10 to 50-ton capacity, 0.24 inches stroke, and maximum operating pressure of 10,150 psi. CUSP-Series features include: up to 4% side load of maximum capacity, low collapsed height, integrated tilting function up to 4°, nitrocarburized surface treatment for harsh conditions, and "Red Line" for visual maximum stroke limitation.

Enerpac | www.enerpac.com



Energy harvesting components for electromechanical applications

POSITAL's Wiegand assemblies offer a compact and efficient way of harvesting power for electronic circuits in electromechanical devices, eliminating the need for backup batteries. The operating principle of POSITAL's Wiegand modules is straightforward. A "Wiegand wire" is a short length of specially prepared Vicalloy (vanadium-iron-cobalt) wire. When exposed to a changing external magnetic field (e.g. a nearby permanent magnet mounted on a rotating shaft) the Wiegand wire will initially retain its magnetic polarity, and then abruptly 'flip' this polarity when the change to the external magnetic field reaches a certain threshold. This sudden change in the magnetic state of the core induces a current pulse in a copper coil wound around the Vicalloy core. This current pulse is very short-lived, but the energy harvested from the mechanical motion of the magnet can be captured and used to activate a low-power electronic circuit. An important feature of the Wiegand effect is the amount of electric power generated with each reversal of the magnetic polarization is constant and completely independent of the rate of change of the external magnetic field, even if this happens very slowly. Wiegand assemblies are a core component in POSITAL's IXARC multi-turn absolute rotary encoders, providing a maintenance-free method for powering the counter that records the number of complete rotations that the device experiences.

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