

**Energy Solutions for Commercial and Industrial Applications**

**Energy Storage**

**Corvus Energy Ltd.**  
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**Brent Perry**  
**CEO**

**BIO:** Brent Perry is a global operating and management executive who's successful at building high-performance teams and leading sophisticated manufacturing and service organizations with P&L responsibility.

A strategic visionary, Brent has a strong understanding of the energy sector and attacks problems with a clear sense of purpose and urgency. He is well skilled at establishing operational excellence within culturally diverse environments, translating conceptual models into specific growth strategies and planning and executing multi-faceted global business development campaigns designed to improve market share, gross revenues and net profit.

Brent has a clear vision for the expansion of the lithium-ion battery industry and a proven history in lean manufacturing, sales, product distribution and customer service leadership.

**About Corvus Energy Ltd.:**

Corvus Energy was the brainchild of nearly fifty years of combined history in the marine and battery industry. Company founders George Roddan and Neil Simmonds, groundbreakers and patent holders in their respective industries, came together with Brent Perry to create leading edge lithium ion technology. Our company can meet all of your heavy power needs, with no limits. We love to create viable alternative power supplies for hybrid and electric propulsion applications throughout the world.

**Interview conducted by:**  
**Lynn Fosse, Senior Editor**  
**CEOCFO Magazine**

**CEOCFO:** Mr. Perry, what is the vision at Corvus Energy?

**Mr. Perry:** The vision of the company is to bring energy solutions into commercial and industrial applications that have meaningful payback within a very short period of time and any actual differences in performance of product that have a meaningful impact on how everything works.

**CEOCFO:** What are you doing day to day to achieve the goal?

**Mr. Perry:** What we do is take our energy-storage systems, which are comprised of lithium polymer batteries and energy management control systems, and make them up with products from companies such as Siemens, ABB, GE, Wärtsilä and other industry leaders. We basically combine the energy source that they generate

with the capacity to use it in a meaningful way on things like ferries, tugboats, workboats, trains, trucks, airport equipment and grid applications to effectively deliver systems that deliver better fuel and risk performance that pay themselves off usually in two to three years.

**CEOCFO:** Would you give us one or two examples of how you go soup to nuts on one or two projects you are working on?

**Mr. Perry:** The most notable in the marine industry is the Scandlines Prinsesse Benedikte Ferry, which is a very large car-carrying ferry that runs between Germany and Denmark. It carries a couple of trains, about two hundred class A trucks, another couple hundred vehicles, and upwards of fifteen hundred passengers. What we did there was the customer came to us looking for an opportunity to reduce the fuel consumption of the vessel. It runs about twenty hours a day on average over a year, and they wanted to reduce fuel consumption of the vessel in order to pay for the system, which costs about \$4.5 million, within five years. We married up the idea of energy storage with the driveline energy requirements of the system. On board, they have six three-megawatt generators that were providing most of the power of the ship, but they had to run three to four of these generators all the time in order to have the spinning reserve power to meet safety requirements for passenger-carrying vessels. We worked with them to develop the capacity of the battery system required, which in this case is 2.7 megawatt hour, to be able to run a single generator and effectively save the fuel of running three additional generators. We also increased the efficiency of

the performance of the generator from about 40% to 90% while doing this. The vessel has the capacity to run full battery and be fully electric or run hybrid and effectively run the generators at very high output efficiency. The net reduction of this, which took us about eighteen months to both engineer and install the system, is a fuel efficiency increase of about 20%. That saves the vessel about \$1.4 million in fuel per year.

**CEOCFO:** What is it that you understand at Corvus to allow you to produce a system that will work as efficiently?

**Mr. Perry:** We approach this business not so much as batteries and battery engineers, but our history is in the industries that we service. We effectively are applications experts, and we can basically look into the solution that our customer is looking for and completely technically validate it to meet their expectation and help them understand exactly how to take raw energy and apply it into a physical solution that is going to work. Our understanding of the applications industry and also how to help support these people in transitioning from the idea of how to make something hybrid or electric into something that is real is the strength that we bring to the business. We spent nearly four years using that knowledge in developing the battery solution that we incorporated; literally scouring the planet for the right partners and parts to use in what we designed to ultimately become our energy storage module. We married our understanding and knowledge with the expertise of the battery industry and then drove everything backwards into an engineered solution that makes sense for the marine industry.

**CEOCFO:** Our there many companies in your space? How do potential clients understand the difference with you? Is there an “aha” moment?

**Mr. Perry:** I would say there is. The issue there is a couple of things. We really do not have very much competition right now. In the marine industry, there are three types of class

approvals. One is a company called DNV or Det Norske Veritas which is a Norwegian company that helps set standards for industrial and commercial applications. Another is the American Bureau for Shipping out of Houston, and another one is Lloyds Register which is a UK-based organization. We are the only battery company in the world to have achieved what we call type approval from all three of these entities. As a product, we do not have a lot of competition. The biggest competition we typically face is that people can choose to do what they have done for the last hundred years – the status quo. Our real competition is getting owners to even look at the idea of engaging into something that

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is a relatively new technology and product solution, even though the savings are compelling enough to make everybody at least take a look. There is a curve of acceptance, and we are still at the very early stages of frontrunner companies that are willing to take those risks of incorporating this kind of software to help save fuel, money and operations. Most companies are rather saying that they want to see two years of successful installations or five years of successful installations before they are willing to risk their money, time and effort.

**CEOCFO:** Are you looking for companies that can use your expertise or are people who are on the cutting edge coming to you?

**Mr. Perry:** Since we opened our doors in 2010, we have experienced nothing but pull from many different industries.

People are looking for solutions actively, and we have distinguished ourselves in terms of how rugged the product is, how well it performs, and how it is designed for megawatt-scale solutions. In a marketplace that is very skeptical of energy storage, we have been able to establish ourselves as one of the products that actually works. We now have clients in grid-based applications, airport equipment, trains, long-haul trucks, and even off-grid applications all around the world.

**CEOCFO:** Do you have a preference for the types of projects you would like to do?

**Mr. Perry:** We have now started engaging in developing-country solutions where we are basically bringing western equality, energy and power into places that have never seen that before. The difference we make in people’s lives there both indirectly and directly is a phenomenal thing to experience. It is very compelling to develop solutions in developing countries because it is a phenomenally good market place, and it is amazing to see the difference a light bulb can make to somebody. I mean that quite literally. Our industrial and commercial customers are very pragmatic, who are in it for the operational savings, and at the end of the day maybe some of the environmental benefits that are associated with it.

**CEOCFO:** Are there industries that are not embracing your type of technology but should be?

**Mr. Perry:** We can bring such compelling optimization of whether it is fuel use or risk reduction of bringing energy to things like grid, but every industry is embracing it at the pace of acceptance that is probably faster than how they would normally accept something as a new product. My history is as a professional boat builder, and as a boat builder, I would never incorporate something into my products that had not been well established commercially within the field. I am not surprised when people look at us and say our business is only a few years old and we do not

have enough in the field to validate that we can do everything they need us to do, so they will wait. We have caught their awareness and their eye in terms of keeping up with us undoubtedly, but there are companies that are a little greedier and will look for the risk reward earlier as well as other companies who are a little more conservative and would rather wait a couple of years before they engage. In our industries, whether it is any of our industrial sectors, turn time is usually three to four years just from start to putting your first systems in. They are very slow, very conservative, and need to be compelled even whether it is by greed or the idea that they are actually making a difference in how their systems work. They need to be strongly compelled to take advantage of this for one of the other reasons. I think we have actually gained very good acceptance commercially as a product in a very short time. It is mostly because we did go down the road of getting class approved with the three other groups. At the same time, it will take several more years before see a really large-scale uptake. Even so, we are growing our sales every year by 500% to 600% right now.

**CEOCFO:** What is TOPAZ manufacturing?

**Mr. Perry:** Basically, it is a series of letters to represent what we call our

manufacturing process. We offer two products. One of our products is our battery systems that we sell as part of solutions. The other is the ability to take one of our TOPAZ lines and literally translate it into a facility in Africa, Singapore, Germany or Norway. It can literally stop us from having to build the product in Canada and ship it, which takes a long time and is quite expensive, to actually moving a facility close to our customers and having both local support and service, be a local entity, and supporting our commercial and industrial clients. TOPAZ is effectively our second product, which is our manufacturing process.

**CEOCFO:** Are you able to keep up with the pace of new opportunities?

**Mr. Perry:** It is somewhat driven around finding resources. Every business is only as good as the quality of people that work there. It is also somewhat driven by what we consider to be the two criteria for taking a contract. On the one side, you need to have that better-than-five-year payback at the very worst, and then on the other you need to deliver performance that is unmatched with any other technology today. With our first two criteria, we usually know eight out of every ten applications that come to us because they just do not make sense today. They are just not

compelling enough for one reason or another. We are very focused on the brand of Corvus and the quality of the brand. Everything for us has to be very performance oriented and has to effectively deliver an experience that our customers could not achieve with any other product. As the prices of our products drop, the pool of those opportunities will increase, but right now we are very fussy about what we qualify as something where we can make a real difference for somebody.

**CEOCFO:** Why pay attention to Corvus Energy?

**Mr. Perry:** I think it is a different paradigm in the business world. The idea of a guerilla company that will never have business units figured and seventy-five people focused on global growth, regional development and delivering products that actually make a significant difference in the quality of lives of the customers that they touch. It is an exciting story and it is a very exciting company. The growth of the business is an indication of how large the demand for energy storage solutions or active energy solutions are. It is an industry that does not exist today, and it is a phenomenally and fun experience helping to define the rules as we continue to actually create this industry of energy storage.



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