lt's in the Win

Unless otherwise specified all editorial copy in this section was provided by Peter Heckbert, a veteran journalist and editor, based in Truro, Nova Scotia.

CBCL Limited

Engineered Tech Specs

Considerable engineering expertise was called into play when it came time to design the Nuttby Mountain Wind

Halifax-based CBCL Limited was brought on board in 2009 by Nova Scotia Power to act as project manager during the initial phase of the development, explained Randy Thorpe, CBCL's wind farm project manager.

company involved in assisting NSP in land acquisition as well as design coordination with the company that supplied the wind turbines. In addition, CBCL designed the power collection system as well as the roads and turbine pads required for the project.

As work progressed, a Nova Scotia Power project manager became available so CBCL turned those duties over to the NSP. CBCL provided personnel to assist Nova Scotia Power's construction managers, Thorpe said. The engineering firm continued to work on design and commissioning of the collection system and roads.

Over the design period. Thorpe said 10 CBCL employees were involved in the Nuttby Mountain Wind Farm project. That number dropped to five or six during the construction phase.

CBCL Limited opened its

first office in Halifax in 1955. Over the ensuing years the company expanded on its base of engineering expertise and is now able to apply that in a wide variety of areas, including municipal services, water and waste water, buildings, industrial and manufac-

ment and planning.
Branch offices have been established throughout the Atlantic provinces, Thorpe

turing, energy and power, oil

and gas, marine, transporta-tion and bridges and environ-

said. CBCL Limited covers complete engineering services from project conception

through to detailed design, contract award, construction,

startup, and training.
The total staff numbers over 300 and includes civil, structural, environmental, chemical, industrial, mechani-cal, and electrical engineers, quantity surveyors, landscape architects, biologists, environmental scientists and plan-ners. Qualified technical and clerical personnel who work in areas such as automated design and drafting, construction inspection, technical specification production, quantity surveying, and cost estimating are available to support professional staff.





The massive scale of the Nuttby Mountain Wind Farm project is evident as a crane lifts the giant blades into position. Submitted photo

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CBCL Limited designed tower base under construction

"Atlantic Canada's Leading Engineering Firm"

Servicing the site for the next 12 years



Parts of a wind turbine are lifted into place at the nuttby Mountain Wind Farm. (Submitted photo)

TURBINE FACTS

- Turbine Model Enercon 82
- 77 metres high
- Turns clockwise
- Speeds vary from six to 19.5 rpm
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- Capacity to generate 2.05 MW of energy each
- Equipped with an automatic safety shut off function when wind speeds reach 100 km/hour

While Enercon is international in scope, the Nova Scotia division of the company likes to ensure local suppli-ers and workers are afforded every opportunity available. Enercon Nova Scoti

Nuttby Mountain Wind Farm project manager Mahdi Javid said "We believe that the benefit has to go back to the local area as much as possible."
The company subcontract-

ed work for pretty well every aspect of the project, from access roads to power poles and portable toilets.

Javid said Enercon will be establishing a training program for local service people so the company will have the expertise required for future projects.

Enercon also supplied the 22 turbines from its parent company in Germany. The components were shipped overseas and trucked to the site from Sheet Harbour, Nova

The first Enercon 82 turbine started producing power in Europe 25 years ago Since then the company has provided turbines from projects around the world, including two others in Nova Scotia. In addition to meeting or surpassing all European regulations, Javid said the tur-bines also meet Canadian

standards. Two installation teams working with cranes from A.W. Leil Cranes & Equipment started work in July of this summer. The last of the 22 towers was erected a couple of weeks ago and by year's end, all 22 turbines will be generating energy into the system but Enercon's involve-ment in the project won't end there. Javid said the company will be servicing the site for the next 12 years.



erving the communities of Belmont/Debert, Wentworth/Londonderry, Onslow/Masstown along the shore to Great Village, Bass River, Economy, Five Island and Lower Five Islands. It is published on the last Wednesday of each month (earlier in December) with a deadline of the 20th of the month.

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Black & McDonald

Specialized Skills brought to the site

Erecting tall towers and hooking up giant turbines is delicate work. A small change in wind speed can shut a job site down immediately but safety always comes first.

"We like to work with companies that share our phi-losophy on safety, that it's a top priority, and we found that working with Enercon, A.W. Leil Cranes and Equipment and other contractors at the Nuttby Mountain Wind Farm site," said Black & McDonald's Industrial Manager Lester Buckland.

As a multi trade contractor Black & McDonald supplied millwrights and iron workers who erected the towers and electricians who put in countless hours tying the entire system together.

tem together.
Buckland said Black & McDonald's regional office in Halifax has worked on other wind farm projects with both Enercon and A.W. Leil and 'We've established a great working relationship with them. It's a good fit - we're very proactive with our safety programs and so are they."

Due to the critical nature of the work, pre-lift meetings were held every day and safety training was upgraded throughout the project

throughout the project.
"It made for long days for
the guys. They were working
within the restrictions of the
weather, doing high, heavy
lifts. The work was very pre-

cise but safety came first."

The number of Black & McDonald workers peaked at 25. Buckland said most of the workers came from union halls in the region, where training is also kept up-to-date. A number of the crew had worked with Black & McDonald Limited on wind

farm projects in Ontario, brining their skills back home to the East Coast.

"The guys really enjoy the work. Unlike working on an industrial site, they're outdoors in the fresh air. It's a real nice change," Buckland said.

The work started for Black & McDonald in July and they

will be wrapping up at the Nuttby Wind Farm sometime over the next couple of weeks.

Black & McDonald takes pride in being able to work on a project that reduces the carbon footprint and ultimately is beneficial to all Nova Scotian's and their families.



Debra McLellan, Project Manager, NS Power checks one of the electrical panels installed by Black & McDonald. (Rees photo)



Workers from Black & McDonald and A.W. Leil Cranes and Equipment erected 22 wind turbine towers at the Nuttby Mountain Wind Farm. (Rees photo)



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Nova Scotia Power

Generating Renewable Energy into the Grid



Nova Scotia Power employees Ron Hupman from Tatamagouche and Mike Innes from Amherst working on the farm collector system at the Nuttby Mountain Wind Farm site. (Submitted photo)

Since early October Nova Power's Nuttby Mountain Wind Farm has been generating renewable energy into the grid, opening the door to more power as the development is completed over the next few months.

Once all 22 turbines are erected and hooked into the system, 45 megawatts of electricity will be generated, providing enough energy to sup-

ply 15,000 homes.

The \$120-million project created hundreds of jobs through a vast array of contractors and subcontractors. In addition to the turbines, a new substation and transmission interconnection constructed at the wind farm, along with the installation of hundreds of poles and power

While the bulk of the construction was carried out in 2010, the project has been in the works for a few years. The provincial government gave its Environmental Assessment Approval in April 2009. (The document is available to review at gov.ns.ca/nse/ea.) In addition, Nova Scotia Power involved local landowners in discussions and negotiations for land leases in the years leading up to

construction.

Among the concerns raised about wind turbines was the question of noise generated by the units when in operation. While the Province of Nova Scotia does not regulate sound levels, Nova Scotia

Power indicated the Nuttby Mountain project will be well within the levels recommend-ed by the World Health Organization: No more than 45 decibels overnight or 50 decibels during the day.

To ensure the project doesn't harm birds and bats,Nova Scotia Power will be on top of any impact on the winged creatures through a regular monitoring program. Baseline studies have already been conducted on birds in the area, giving Nova Scotia Power vital data to compare with over the wind farm's life-

According to Nova Scotia Power, Nova Scotia is a Canadian leader in wind energy. From Yarmouth County through to Cape Breton, wind farms across Nova Scotia generate over 100 megawatts of renewable energy. Over the next few years, Nova Scotia Power and independent producers will develop several additional wind farms, meaning there will be as many as 168 turbines operating in Nova Scotia by 2012.

The largest wind farm in the province is RMS Energy's Dalhousie Mountain farm in Pictou County, which has been in operation since December 2009 and has the capacity to generate 51 megawatts.

One of the many economic benefits of wind energy is that the costs are less variable than other types of genera-tion which rely on fuel from the world markets.

Due to the nature of the project, the Nuttby Mountain Wind Farm will attract attention from around the world. Similar projects in the Maritimes have become quite popular with tourists which means an increase retail and tourism related







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Initial Development of Nuttby Windfarm Site



Brigitte DeBoer, Anne Forbes, Scott Winters, Clair Peers, Cornelius DeBoer and Robert George from Cobequid Wind Power Inc. at the entrance to one of the wind turbines. (Submitted photo)

Armed with the inspiration in 2004 to do something in the Colchester region to promote and enhance environmentally green energy development, five area residents banded together and formed Cobequid Wind Power Inc (CWPI).

The five were Anne Forbes,

Brigitte Deboer, Robert George, Scott Winters and Clair Peers.

Prior to the formation of CWPI, some of the members had been involved with a volunteer organization known as CRES, (Colchester Renewable Energy Resources), which was supported at the time by

CORDA. After many meetings, encounters with bureaucratic red tape and basically not accomplishing a lot, they all agreed to try a different approach.

This resulted in the formation of CWPI.

The mandate and strategy of the company was to research wind sites and acquire lease options on lands suitable for sustainable long-term wind power development in the local area.

Considerable research had already been done, laying the groundwork to look at the viability of various sites. A meeting with partners of AWPC, (Atlantic Wind Power Corp. owners Charles Demond & Jorge Losse), lead to a partnership between the two companies.

Nuttby was one of those sites originally visited by Cobequid Wind Power.

Clair Peers says, "Without the expertise and continued effort by Charles & Jorge of AWPC, this project may not have gotten developed when it did and may not have been as successful as it is."Also having NSP take over the project has certainly been an important factor in getting the job done.

Peers also commented that "when it came time for the Municipality of Colchester along with the Joint planning Advisory Committee to play a role by writing a by-law for wind farms in Colchester county, they did a great job."

A liaison committee made up of local residents and chaired by councillor Ron Cavanaugh met regularly. "Their commitment and local contact was very helpful. This county and community has prospered due to the efforts of all of the individuals involved in the project," said Peers.

All members of CWPI are excited to see this site finally developed and congratulate Nova Scotia Power on the success of this project.

FLUSHER TRUCK: to provide flushing of driveway culverts, weeping tiles, sewer lines and septic beds.

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Devil

Enterprises (2010) Limited

Atlantic Wind Power Corporation

AWPC: Nuttby Developer

By Maurice Rees

Atlantic Wind Power Corporation was the developer that originated the Nuttby Mountain Wind Farm development back in 2006. The private company, owned locally by Nova Scotians, fostered the early agreements with a few local landowners and an American based woodlot owner.

The developer put its own capital into the project in those early days tackling a number of tasks including installing its own wind testing equipment, gathering and analyzing data, considering turbine selections, obtaining certain permits and commissioning a number of environmental studies from plant, bird and bat observations to detailed studies of the communication tower uses nearby.

AWPC is also quick to acknowledge the important input and help it has had along the way from a local partner Cobequid Wind Power lead by Truro resident Clair Peers and local resident Steven McRae which AWPC had actually hired on their own staff a few years ago.

In addition to the typical development work, the AWPC team also became involved in the Municipal Council's process to update its relevant bylaws a few years ago. In fact it was the Nuttby Wind Farm project, which caused Council to examine its bylaws to address wind farms.

Charles Demond, president of AWPC recalls those days with a sense of accomplishment, "Our whole team worked hard during that period to give Municipal Council the benefit of our thoughts, experience and input. I remember clearly being impressed with their diligent approach and the interest the Councillors took to drill down into the detail and get the bylaw right, balancing interests of landowners and

various uses"

Often many folks don't see the effort that goes into these front end processes which are actually quite important in the shaping of our society, he went on to say.

In 2007, AWPC had advanced the project to the point where it was submitted to Nova Scotia Power in response to a request for proposals. AWPC was successful in that bid; obtained a contract with the utility, and aligned itself with a Western Canadian-based financial parter to fund construction.

AWPC thought the project was well on a path to a successful build. Then, as Demond puts it, "the wheels fell off the train onto which we had bitched our warpon!"

we had hitched our wagon!"
Shortly after AWPC did a
deal with them, the financial
partner, which then controlled the Nuttby project, suffered cost over-runs from an
unrelated project in British
Columbia and fell into creditor protection.

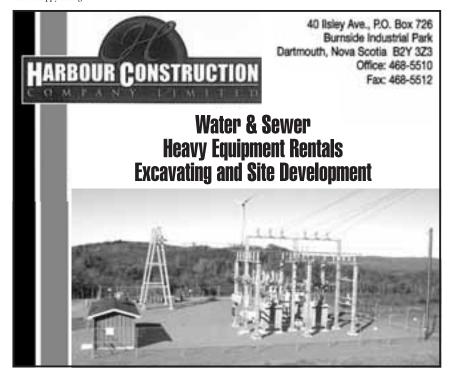
AWPC acknowledges tough financial times in the fall of 2008 certainly changed his company's plans for the ultimate conclusion of the nuttby project. Although these events had no effect on the financial health and spirit of AWPC as a company, it certainly created havoc for the Nuttby development and the added value we had hoped to achieve, recalls Demond.

Although there were many uncertain intervening months, AWPC now enjoys the fact Nova Scotia Power saw a bargain and stepped forward to acquire the project. They got a great deal thinks Demond. Although the wind farm is now being built, owned and operated by NSPI, AWPC continues to be involved as a service provider to NSPI at least until completion of the build.

Demond concludes "we are still very proud of our involvement in this project and grateful to have had the opportunity to work with so many good people in the community, like good landowners, councillors and many others.

It's great to see this wind farm up and running less than five years from when it was just an idea in our minds. The end of the story did not quite finish as we had expected, but nonetheless we have realized value for our effort and, importantly, we can say the project was completed consistent with the way in which we represented it to stakeholders from the beginning.

All in all, that's enough to call it a happy ending.





A worker is dwarfed by the size of the blades that he's putting together. (Submitted photo)



This graphic illustrates the location of each power-generating turbine on the Nuttby Mountain Wind Farm site. (Submitted graphic)

Ron Chisholm Hydro Seeding

Reinstating previous conditions



An arc of green hydro seed shoots from the seeder used by one of the crew from Ron Chisholm Hydro Seeding (Submitted photo)

Once Ron Chisholm's employees finished their work at the Nuttby Mountain Wind Farm, the site was truly "green."

Ron Chisholm Hydro-Seeding, based in St. Andrews, Nova Scotia, applied hydro seed to 350,000 metres of ground, as well as prepared the 22 turbine pads on site. A crew of six people worked on the project over a two month

period.

Company owner Ron
Chisholm said recently hydroseeding is a method of reinstating the ground to its previous condition, before construction with heavy equipment began, as well as a
method of preventing soil
crosion. The hydro-seeding is
done with a hydro-seeder that

seeds the ground with a mixture of grass seed, fertilizer, and hydraulic mulch (recycled material).

Chisholm started the business in 1995 and has developed a diversified selection of services, including hydroseeding, hay mulching, TDS dust control, trucking, dozing and excavation work.

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Ronnie Chisholm

Red Devil Enterprises

The Royal Flush

Red Devil Enterprises provided vital compnents to the Nuttby Mountain Wind Farm project but none of them had anything to do with power transmission lines.

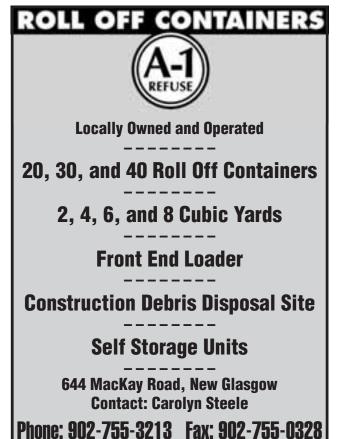
The Alma, Nova Scotiabased company supplied portable toliets, garbage containers and covered organics containers to the job site.

job site.

Red Devil Enterprises (2010) was purchased in February of this year from the previous owner after 32 years in business by the MacKenzie Family of companies in Pictou County.

In addition to the above services, Red Devil Enterprises also has a flusher truck to provide flushing of driveway culverts, weeping tiles, sewer lines and septic beds; video Inspection, used to provide a visual look into sewer lines and bulk water hauling to pools and wells; vacuum trucks for pumping septic tanks, residential and municipal pumping:

ing;
Other companies owned by the MacKenzie family: MacKenzie Septic Tank Service Limited, C.Robert Enterprises Limited, Industrial Hydro-Vac Services Limited, Industrial Hydro-Vac NB Limited and Trinity Maintenance Solutions Limited.



Nine Counties High Speed



Seaside High Speed erected one of its Internet transmission sites among the turbines at the Nuttby Mountain Wind Farm site. (Submitted photo)

Nuttby Mountain — As the sculptural shapes of wind turbines began to fill the Nuttby Mountain skyline this fall, a second massive construction project was also coming to a end in Northern Nova Scotia.

A Cape Breton company, Seaside High Speed, has been putting the finishing touches on a project to bring high speed Internet access to the nine counties of Northern Nova Scotia. Rural residents now enjoy Internet access at speeds and prices comparable to their city cousins—thanks to a visionary government initiative that puts Nova Scotia.

Nova Scotia was the first state or province to commit to 100 percent high speed access for residents and businesses. Seaside, which operates a cable, Internet, and telephone service in several Cape Breton communities, was the surprise winner of the contract to fulfill that promise in the northern half of the province.

ner of the contract to fulfill that promise in the northern half of the province.

It was a huge construction project, spanning 28,000 square kilometers of rugged, heavily forested, coastal terrain, including many areas where cell phone service remains dicey 30 years after its introduction in Nova Scotia.

To meet the challenge, Seaside erected some 200 major telecommunications towers —including one right in the middle of the Nuttby Mountain Wind Farm — to transmit Internet data to radio equipment mounted on customer's homes and businesses. The towers connect to the Internet via a robust fiber-optic cable to Canada's main Internet hub

The 200 towers reach 95 to 97 percent of the homes and businesses in Seaside's territory. The company is currently installing another 100 wooden utility poles equipped with repeater transmitters to reach the remaining customers.

"We're in Meat Cove and

"We're in Meat Cove and Lincolnville, Glengary Station and Spencer's Island," said David Horton. "We're a 100 percent Nova Scotia company providing 100 percent coverage throughout Northern Nova Scotia and Cape Breton." Horton said Seaside took

Horton said Seaside took on the project because it believes high speed access is essential to the future survival of the small rural communities where the company is based, as important as rural electrification in the 1950s.

"We're in rural Nova Scotia because we believe in rural Nova Scotia, and we know high speed Internet is essential for our communities to thrive," he said. Fulfilling this commitment was a big job. Each of

Fulfilling this commitment was a big job. Each of the 200 major communications towers and 100 or more wooden fill-in required a power connection, as well as permits from up to four different federal, provincial, and municipal agencies. To speed up the process, Seaside has developed a "green power" system that uses solar arrays and batter-

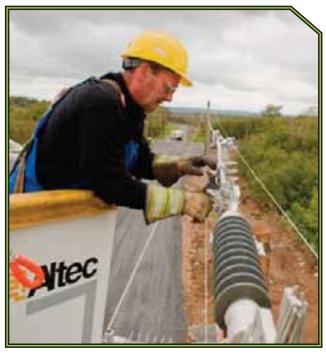
Nova Scotia Power has not yet been able to service.

The company also

The company also installed nearly 10,000 radio transmitters, 20,000 ethernet connectors, and 80,000 feet of cable. When interference with signals from local Internet providers caused problems, Seaside obtained Nova Scotia's only license for a new part of the radio spectrum, and new radios and antennas designed for those frequencies. This solution not only overcame the signal interference problems, it has enabled Seaside to provide ultra-high speed service to customers in some areas.

It took longer than expected, but by year's end, we'll have placed the last of 100 utility poles needed to reach the few remaining unserved customers. To overcome signal interference from other providers, we obtained the only Nova Scotia license for a faster, more secure part of the radio spectrum. The result: Northern Nova Scotia and Cape Breton now enjoys some of the highest rural Internet availability in the world.

The result? By year's end, almost every home and business in Seaside's nine-county area (Cumberland, Colchester, Pictou, Antigonish, Guysborough, Ricmond, Inverness, Victoria, and Cape Breton) will have access to high speed Internet at typical urban rates. Readers can call 1-888-965-5511 to get connected.

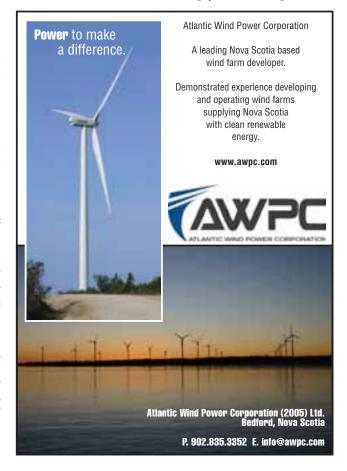


Nova Scotia Power employee Mike Innes from Amherst installs a switch on one of the lines at the Nuttby Mountain Wind Farm. (Submitted photo)

Ray McCormick & Sons Ltd.

375 Poles - Line 'em Up!

Springhill, Nova Scotiabased Ray McCormick & Sons Limited kept a crew busy for 10 weeks this summer installing 375 poles and approximately 500 anchors at the Nuttby Mountain Wind Farm site. Company spokesman Craig McCormick said the firm was pleased to be part of the project. His grandfather started the company in 1956 by adding a single crawler loader to his farming operation. Over the years, the company has grown to become a full service provider in the construction industry, offering services such as excavation, utility work, road building, and crushing.





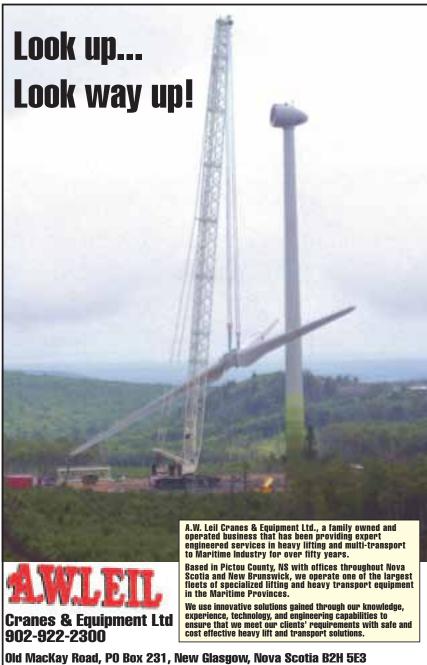
From the air, the Nuttby Mountain Wind Farm looks a bit like a golf course. (Submitted photo)



This hub is where the three giant blades are attached to the turbine. The equipment was manufactured in Germany by Enercon. (Rees photo)



The Mills Heavy Hauling crews were kept busy during the project, using nine trucks and 12 escort vehicles to deliver one complete windmill per day. The components were delivered by ship to Sheet Harbour where Mills Heavy Hauling loaded them onto the trucks and made their way across the province to Nuttby Mountain (Submitted photo)



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