

# K2 Wind – Moving forward

COMMUNITY UPDATE – SPRING 2012

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K1 Wind Farm Operations Manager

## How the Project is Taking Shape

After years of planning, study and consultation, the K2 Wind Power Project is picking up momentum and moving forward.

Last summer, the three partners of K2 Wind Ontario – **Capital Power, Samsung Renewable Energy and Pattern Energy** – signed a Power Purchase Agreement with the Ontario Power Authority, guaranteeing a buyer for the clean wind energy produced at K2.

With that agreement in place, the Project team is moving forward with the planning and development phases to build and operate the 270-megawatt (MW) wind farm in the Township of Ashfield-Colborne-Wawanosh (ACW), including completing the comprehensive Renewable Energy Approvals (REA) process.

As part of the REA process, experts and scientists have been engaged by K2 Wind Ontario to conduct studies on a wide range of environmental, cultural and technical elements, including:

- Archaeological assessments of all buildable areas for the Project location on private lands;
- Sound modelling for residences, schools, community centres and properties (including vacant lots and farmers' fields) within 5 km of proposed Project turbine locations.

- Detailed vegetation surveys, including assessing the presence or potential of rare plants;
- Bat, bird and raptor surveys, which included extensive field assessments of the various species and their habitat; and
- Wetland, forest and waterway evaluations throughout the Project area.

The results of these studies will be released to the community for comment and consideration, as part of the Draft REA Reports, at least 60 days in advance of an upcoming public open house – the third such forum organized for members of the public to learn about the Project and provide input. A future open house will be held in the Spring.

All input received regarding the Project will be submitted to the Ministry of the Environment in the Consultation Report as part of the final REA application for its review.

If the Project is approved by the provincial government, the K2 partners expect construction on the Project to begin in 2013 and commercial operation to begin in late 2014.

We look forward to continuing to move this Project ahead with the involvement of the ACW community. We value your input and we sincerely care about your concerns.

## The range of environmental studies for the Project includes:

- Ecological Land Classification (ELC) Mapping
- Vegetation Surveys
- Spring and Fall Migratory Bird Surveys
- Bat Surveys (Acoustics and Radar)
- Crepuscular & Breeding Bird Surveys
- Winter Raptor Surveys
- Spring Waterfowl Surveys
- Wildlife Habitat Assessment and Mapping
- Wetland Evaluations
- Herpetile (Amphibians and Reptiles) Surveys
- Species at Risk (SAR) Surveys
- Aquatic Survey
- Cultural Heritage (Built Heritage and Cultural Heritage Landscape Inventory Assessment and Archaeological Studies)
- Natural Heritage Assessment and Environmental Impact Study
- Water Assessment and Water Body Assessment
- Petroleum Infrastructure Investigations



## A NEAT ROCK? or ANCIENT PROJECTILE POINT?

Go to our website to learn more about the archaeology work for K2 Wind.

[www.k2wind.ca](http://www.k2wind.ca)



## What Determines the Location of Turbines?

Establishing the locations for turbines isn't as easy as simply picking out-of-the-way spots on a map.

Factors considered when judging the suitability of turbine locations, include:

- land lease options;
- environmental concerns;
- set backs and sound levels;
- proximity to access roads and electrical transmission lines; and
- land topography and long-term wind data;

The process begins by mapping out the various parcels of land owned by property landowners who have agreed to lease their land. Currently, the K2 partners have approximately 19,000 acres of leased land through land option agreements with about 90 property owners in ACW.

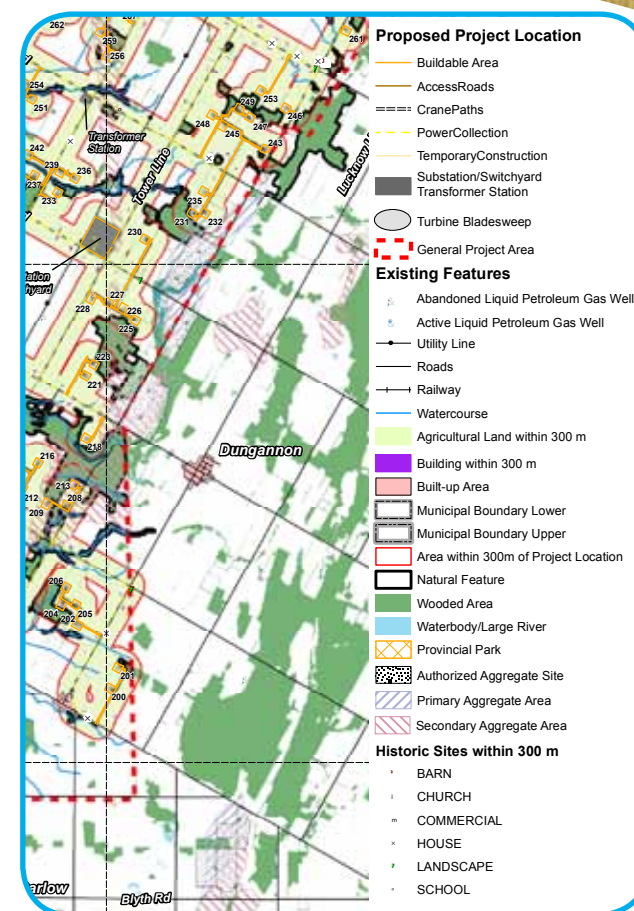
We take that map and overlay geographical features, such as forests and streams. This shrinks the area of land that can serve as turbine locations because we work to avoid forests and water bodies. Our focus is on land that is already farmed or developed.

Regulated setbacks, such as from waterways, provincially designated wetlands, forests, streams, must then be added to the map around residential dwellings, whether occupied or not. Accounting for these setbacks again reduces the inventory of available land for turbine sites.

Current regulations require a turbine to be 550 metres from the residences of "non-participating" landowners – those who are not leasing land to the Project – or greater if needed for maximum sound level of 40 decibels at the residence. We are also required to complete a detailed sound study that must consider other neighbouring operational or proposed wind facilities.

We must then look at where we can locate access roads and the collector system used to transmit the wind energy captured by the turbines to the electrical grid.

Considering all of these factors together allows us to select turbine sites that minimize impacts and maximize our ability to harvest the wind.



This map shows a section of the Project. To view the entire Project Location Area including all proposed turbine sites please visit our Project website at [www.K2wind.ca](http://www.K2wind.ca)

**Meet the K2 Wind team –**  
Wednesdays, 1:00pm -5:00pm at  
46 Victoria Street North, Goderich

## Why Here?

Ashtfield-Colborne-Wawanosh is one of the best locations in Ontario to harvest wind.

Differences in temperature between the land and the cool waters of the Great Lakes cause changes in air pressure that help fuel strong winds coming off the lakes. The strength and consistency of prevailing winds coming off Lake Huron make ACW an ideal location to harvest wind energy and turn it into power.

Since 2006, Capital Power has operated a 40-MW wind farm known as Kingsbridge 1, or K1, in ACW on lands adjacent to the proposed K2 wind farm. Nearly six years of operation in the location have given us reliable data on the strength, supply and consistency of wind

in the region. K1 has twice been identified as Ontario's best-performing wind farm in terms of annual capacity factor (the percentage of maximum output that a generation facility produces on average).

Wind power is clean and green. The province has placed a high priority on increasing Ontario's supply of green energy and reducing reliance on energy forms that create greenhouse gases, such as coal. Every kWh produced by wind is a kWh that does not have to be produced from fossil fuels or other less green energy sources.

Wind is renewable, sustainable and abundantly available in ACW.

## Government Review

Ontario moved forward towards its goal of replacing coal fired generation by the end of 2014. Compared to 2003, Ontario has reduced its use of coal-fired power by 90%. In October 2010, the province closed four coal-fired power units, four years ahead of schedule. In total, Ontario has shut down eight of 19 coal units; the remaining units will close by the end of 2014. Demand for electricity in Ontario is not expected to decrease, therefore this power must be made up for through other sources of energy.

## K2 Listens

### 1 What you requested:

Some of our neighbours asked that we make efforts to minimize the visual impact of equipment and infrastructure associated with the wind farm.

### What we are doing:

Almost all power lines used to collect and distribute the energy from the K2 turbines will be buried in the ground to reduce visual obstructions.

**All turbines will be located east of Bluewater Highway 21 to ensure an unobstructed westward view of the lake.**

We have changed the proposed locations of turbines on some properties at the request of landowners to ensure they don't interfere with the anticipated construction of homes on the land in the future, and in some cases, to reserve the view of landowners and their neighbours.

### 2 What you requested:

That drainage tiles be addressed during Project construction (turbines, roads, electrical infrastructure).

### What we are doing

We will develop a program with our construction contractors to make sure drainage tiles damaged during Project construction are identified and documented and repaired correctly. We know the importance of working with a drainage contractor who understands local conditions and has a good reputation with area farmers.

### 3 What you requested:

That K1 and K2 wind farms provide employment opportunities for local residents.

### What we are doing:

We are committed to employing people from the community to build and operate K2, just as we have with K1.

The operator of K1, Dan Hayden, is a life-long resident of this community. He and his family have been farming in the area for four generations. He has operated the K1 Project since its inception. In addition, there are eight wind turbine technicians working in the wider Goderich area.

The construction phase of the Project will also create local employment opportunities, providing work for qualified tradespersons and labourers. Trades that could be required and provided locally include pipefitters, electricians, ironworkers, millwrights and carpenters.

Although still in the planning stages, it's anticipated that K2 will create approximately 18 to 24 full-time jobs once it's fully operational. Where possible, we will hire qualified local residents to fill required positions.

## K2 Benefits ACW

As K2 Wind Ontario moves into a new phase of its development, the Project team is working with the Township of ACW, regional businesses and area residents to ensure the community shares in the value and benefits of the Project. The direct economic benefits to the community from K2 are estimated to be \$5 to \$6 million annually or over \$100 million over the 20 year life of the Project.

### Specific benefits to the community include:

- Over 600,000 person hours of direct employment and thousands of hours of indirect employment will be created during the 18-month construction period. We estimate that the construction payroll will be \$25-30 million;
- We anticipate 18 to 24 permanent full-time local employees during operations, generating about \$1.5-million of employment income each year. Annually we will require \$150,000 to \$200,000 of additional services and materials from the local market;
- Locally sourced materials will include concrete for turbine foundations, gravel for access roads, as well as many materials and tools bought by contractors. The Project team will be holding information sessions for contractors and businesses later this year to provide information on how local businesses and residents can become involved;
- K2 is supporting the renewal of Ontario's manufacturing sector. Hundreds of jobs will be created through the manufacturing of turbine blades and towers, development-stage work for construction trades, and ongoing operations, maintenance and support services;
- We are exploring an initiative with the ACW Council for funding of community initiatives such as roads, community services, parks, energy sustainability and natural habitat creation.
- K2 Wind Ontario will generate annual property taxes of approximately \$450,000 for the municipality, the County, and the education system;
- K2 Wind Ontario will deliver more than \$1.9 million in annual revenue to some 90 farm families through lease agreements and other benefits. K2 lease agreements are a source of stable, long-term income. Many financial institutions recognize lease agreements as asset-backed collateral, which allows farmers to borrow to help support continued growth and innovation.
- The K2 partners understand the importance of being good neighbours in the local community. Building on the approach set by Capital Power through the K1 Wind Operation, the partners will actively support local organizations and events.

### Did You Know – Use of Farmland

During construction, the buildable area around each turbine would be approximately 160 metres by 160 metres. After construction, turbines and access roads would on average use approximately one acre of land each, depending on the length of the access road for the turbine. Farmers would be able to use the land up to the turbine base gravel pad and access roads. Collector lines would be built and buried along access roads or within the existing municipal road allowance to allow for movement of equipment in and around the turbine base.



## Health Matters

A significant body of work exists world-wide on the relationship between wind turbines and possible human health effects. This includes a number of governmental and health agencies from around the world which have conducted studies or have commissioned reviews of this literature. You can find this information by linking to the K2 Wind website [www.k2wind.ca](http://www.k2wind.ca)

Whether we are planning, developing or operating a wind Project, there are regulations we must meet and these regulations are in place to protect the environment and public health and safety. The K2 Wind Ontario team is continuing to keep informed of these regulations and we have engaged recognized environmental health experts to assist us in assessing the science. We are committed to meeting the current applicable provincial regulations regarding the planning and operations of wind Projects.

## Wind farm keeps operator close to his roots

Dan Hayden's family tree has roots stretching back four generations on the large farm where he and his young family live just north of Goderich, near the village of Port Albert.

But it's a different type of farming that now helps Dan earn a living and keeps him anchored in Ashfield-Colborne-Wawanosh.

While his family continues a long tradition of harvesting crops on their 750 acres of land, Hayden also harvests the wind.

Dan, 35, has been running Capital Power's K1 40 MW wind farm for nearly seven years. But his ties to the area's burgeoning green energy industry reach back even further to when his father, Bill, leased a piece of the family's land to host the province's first privately owned wind turbine.

The year that Project — called the Port Albert Wind Farm — got up and running in 2001, Dan was hired as a turbine technician by Vestas, one of the world's top manufacturers of machines built to harness wind power and turn it into energy.

"It's not an industry I initially envisioned for myself growing up on the family farm," says Dan. "But it's been a fantastic opportunity for me to work in a lead role in a really important field and be able to remain in this community at the same time."

Dan spent much of his first few years with Vestas on the road, travelling to wind farms across North America to work on turbines and train others in his role as lead technician. But the job offer in the summer of 2005 to manage the 22-turbine K1 windfarm for Capital Power — plus that original turbine on his father's property — was a perfect fit, literally in his own backyard.

“I believe this region can become one of the key green energy hubs for Ontario.”

As Capital Power and partners Samsung Renewable and Pattern Energy continue forward in the planning process to create K2 — a 270-MW wind farm on lands adjacent to K1 — Dan sees many opportunities ahead for the community of ACW.

"I believe this region can become one of the key green energy hubs for Ontario. We're well known for having extremely strong and dependable winds coming off the lake. We also have a growing pool of highly skilled people already working in the wind energy field, many of them with young families reinvesting in the community," he said. "I see an enormous amount of job opportunities and spin-off benefits for the community."



Dan Hayden, K1 wind farm operations manager, with his father, Bill Hayden.

### Contact Us

Join our contact list if you would like to stay informed or if your address has changed.

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### The new Project website – K2wind.ca

Launched in March, the K2 Wind website features updates and information about the Project. See it online at [www.K2wind.ca](http://www.K2wind.ca).

In addition to detailed background on the Project, the new website offers visitors the opportunity to ask specific questions that will be answered by members of the Project Team.

You'll also be able to stay informed about important upcoming events and key dates in the ongoing approvals process.

### Meet the K2 Wind team – Wednesdays, 1:00pm-5:00pm

Members of the K2 Wind Team will be available on Wednesdays at the Capital Power Goderich office to meet with local residents about the Project.

Interested in a visit to a wind turbine? Please contact our Project team about visiting the K1 Wind operation. Teachers – class tours are also available.

Capital Power's office in Goderich is located at **46 Victoria Street North**.