

THE STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE SITE EVALUATION COMMITTEE
DOCKET NO. SEC 2018-__

Joint Petition of Walden Green Energy Northeast Wind LLC, Walden Antrim LLC and Antrim Level LLC For Approval of the Transfer of Membership Interests in Antrim Wind Energy, LLC

**PRE-FILED DIRECT TESTIMONY OF MARK MACKAY AND GARY WOODS ON
BEHALF OF ANTRIM LEVEL LLC AND TRANSALTA CORPORATION**

Qualifications of Mark Mackay – Project Construction

Q. Please state your name, position, and business address.

A. My name is Mark Mackay. I am the Managing Director of Construction and Development Engineering at TransAlta Corporation (“TransAlta”). My business address is 110 – 12 Avenue SW, Calgary, Alberta, Canada.

Q. Please describe your relevant work experience and education.

A. I am a Registered Professional Engineer in the Province of Alberta and graduated from the University of British Columbia, BC with a Bachelor of Applied Science in Mechanical Engineering in 1980. I have worked in the power generation and oil & gas industries for 38 years. Through my career I have worked in various roles including design engineering, project management and management. Over the course of my career I have been involved in more than 20 major capital projects. I have worked at TransAlta for 19 years with various accountabilities including Project Manager, Project Director, Director Engineering, Vice President Technology and Vice President Construction. I have been in my current role for 5 years. In my various positions at TransAlta I have worked on 4 of the 18 wind facilities currently owned by the company. In my current role I am responsible for the design and construction of major capital projects including natural gas fired, hydroelectric, wind and solar generation. TransAlta’s role in reviewing the final design, specifically the detail engineering of the substation, collectors and foundations, and construction of the Antrim Wind Energy Project (“Antrim Wind” or the “Project”) falls under my responsibility. My resume is attached as **Exhibit A**.

Q. What is the purpose of your testimony?

A. My testimony addresses the technical and managerial capability of TransAlta regarding construction of renewable energy projects generally, and how Antrim Level, as a subsidiary of TransAlta, will manage construction of Antrim Wind in compliance with the Order and Certificate of Site and Facility with Conditions, dated March 17, 2017 (the “Certificate”), after change of ownership is approved.

Q. Are you familiar with the Antrim Wind Energy Project and the Certificate?

A. Yes. Our construction team reviewed the Antrim Wind Energy application, as amended, and the key aspects of the project, including plans, drawings, permits and permit

1 conditions, site layout and access, road design, preliminary foundation design, electrical systems
2 and the proposed interconnection. In addition, we retained an independent engineering firm,
3 Canadian Projects Limited (“CPL”), to assist us in our review. CPL’s civil and electrical
4 engineers augment the internal expertise of TransAlta’s construction team. As discussed below,
5 effective August 1, 2018, CPL was acquired by Tetra Tech Canada Inc. and is now known as
6 Canadian Projects Limited, A Tetra Tech Company. The construction team’s evaluation of the
7 Antrim Wind application and design focused on the suitability of the design and the proposed
8 scope of work to be undertaken by the Engineering, Procurement and Construction contractor
9 (“EPC”). TransAlta’s construction team performed a thorough review of the EPC agreement
10 with Reed & Reed, Inc. TransAlta also performed a detailed review of the Turbine Supply
11 Agreement between Antrim Wind Energy LLC (“AWE”) and Siemens Energy, Inc. (now
12 Siemens Gamesa), the design, specification and scope of supply for the main transformer, and
13 the Large Generator Interconnection Agreement between AWE, Eversource and ISO New
14 England. Our construction team has reviewed the Order and Certificate. We understand the
15 conditions incorporated in the Certificate and are fully committed to meeting them.

16 **Qualifications of Gary Woods – Project Operations**

17 **Q. Please state your name, position, and business address.**

18 A. My name is Gary Woods. I am the Managing Director of Gas and Renewables at
19 TransAlta. My business address is 110 – 12 Avenue SW, Calgary, Alberta, Canada.

20 **Q. Please describe your relevant work experience and education.**

21 A. I have been in the power and industrial sectors for 30 years, with 19 of those years
22 being at TransAlta. I have been in my current role for 4.5 years, where I lead the operations
23 functions of TransAlta’s Gas and Renewables assets in North America. These functions include
24 Environmental Health and Safety, Operations, Maintenance, Engineering and Projects. Along
25 with a team of experienced professionals, I am responsible for the safe and reliable operation of
26 the 18 wind facilities owned by TransAlta. I am also responsible for leading TransAlta’s
27 Corporate Environmental Health and Safety Programs. Prior to my current role I was a senior
28 leader in the Operations of TransAlta’s gas and coal fired assets in North America. With respect
29 to the Antrim Wind Project my involvement has included oversight of technical due diligence

1 activities and will include integrating the project into our North American Operations including
2 ongoing operations and maintenance after change of ownership is approved. I am a First-Class
3 Power Engineer and a Certified Engineering Technologist. I attended Medicine Hat College, in
4 Medicine Hat, Alberta, Canada. My resume is attached in **Exhibit B**.

5 **Q. What is the purpose of your testimony?**

6 A. My testimony addresses the technical and managerial capability of TransAlta
7 regarding operation of renewable energy projects generally, and how Antrim Level, as a
8 subsidiary of TransAlta, will operate Antrim Wind in compliance with the Certificate.

9 **Q. Are you familiar with the Antrim Wind Energy project and the Certificate of**
10 **Site and Facility issued in 2017 for Antrim Wind?**

11 A. Yes. The TransAlta operations team carried out the following due diligence
12 activities concerning Antrim Wind consisting of:

- 13 • reviewing the key documents related to operations;
- 14 • reviewing the Turbine Supply and Operation and Maintenance agreements
- 15 • reviewing AWE existing operations and maintenance model
- 16 • reviewing the turbine technology and assessing it against TransAlta's existing fleet for
- 17 similarity
- 18 • completion of a TransAlta operation and maintenance model of the AWE project based
- 19 on our internal knowledge and experience
- 20 • completing an internal review of the wind resource
- 21 • site visits by members of the operations team

22 We also reviewed the Order and Certificate of Site and Facility with Conditions dated March 17,
23 2018. We understand the conditions incorporated in the Certificate and are fully committed to
24 meeting them.

25 **Joint Testimony**

26 **Q. Please provide a general description of TransAlta Corporation:**

27 A. TransAlta is a power generation company and marketer of wholesale electricity
28 and is publicly traded on both the New York Stock Exchange ("NYSE") and the Toronto Stock
29 Exchange ("TSX"). TransAlta, through its subsidiary TransAlta U.S. Holdings Inc., is the
30 ultimate parent of Antrim Level LLC, the entity who will be acquiring the ownership interests in
31 Antrim Wind Energy LLC ("AWE"). Beginning as a small, local power company in 1909,

1 TransAlta has transformed over the last century to become an experienced and respected power
2 generator and wholesale marketer of electricity. Headquartered in Calgary, Alberta, Canada,
3 TransAlta employs over 1,700 people across its fleet of operations. TransAlta's portfolio of
4 assets totals over 9,000 MW, and is comprised of a diverse mix of fuel types including coal,
5 natural gas, diesel, hydroelectric, wind and solar at more than 60 facilities across Canada, the
6 United States and Australia. TransAlta will be providing all managerial and operational support
7 and capability to successfully complete the construction and maintain the operations of the
8 Antrim Wind Project.

9 TransAlta has been active in the United States since acquiring the Centralia Power Plant
10 in the State of Washington in 2000. The Centralia plant is Washington's largest baseload power
11 source, providing reliability and stability to its electrical grid. The plant has a net capacity of
12 1,340 MW and provides approximately 10% of the State of Washington's power. Since
13 acquiring the facility in 2000, TransAlta has invested more than \$300 million in pollution control
14 technology, including scrubbers, low nitrogen dioxide burners, injected mercury capture
15 technology, and the installation of selective noncatalytic reduction pollution control technology.
16 In April 2011, the Washington Legislature signed into law the "TransAlta Energy Transition
17 Bill," which flowed from an agreement reached by TransAlta, environmental and labor groups,
18 and legislators, to transition from coal without undue disruption to the local economy. Of the two
19 units at the Centralia coal plant, one will retire in 2020 and the other will retire in 2025.

20 And since 2013, TransAlta has invested in 215 MW of operating renewable assets in the
21 United States in the States of Wyoming, Minnesota, and Massachusetts. Additionally, we have a
22 90 MW wind energy facility under construction in Pennsylvania, which, once operational will
23 push us to over 300 MW of operating US renewable assets in 2019. TransAlta is very committed
24 to pursuing additional growth opportunities the United States and has demonstrated its
25 commitment to growing its renewable generation portfolio over the last number of years. In
26 addition to the pending acquisition of the 29 MW Antrim Wind Project, we are also developing
27 renewable energy projects in the States of Washington and Montana, and continue to pursue
28 renewables acquisitions to grow TransAlta's United States renewables portfolio.

1 **Q. Please provide a list of all renewable energy facilities currently owned and/or**
2 **operated by TransAlta.**

3 A. TransAlta currently owns and/or operates a total of 50 renewable energy facilities
4 across Canada and the United States totaling a net capacity of over 2,200 MW. Of these projects,
5 27 are hydroelectric facilities totaling net 926 MW, 18 are wind facilities totaling net 1,321 MW
6 and a portfolio of five solar facilities totaling net 21 MW. Some of the hydro facilities have been
7 in TransAlta's portfolio over 100 years, and some of the wind assets close to 20 years, providing
8 TransAlta with extensive and diverse operating experience of renewable assets. Details of these
9 projects, including facility name, location, date of commercial operation, net owned capacity and
10 fuel type are highlighted in the table, attached as **Exhibit C**.

11 **Q. Mark Mackay - Does TransAlta's portfolio include facilities similar to the**
12 **planned Antrim Wind facility, and does TransAlta have experience constructing such**
13 **facilities?**

14 A. Yes. In addition to our operating experience, TransAlta is experienced in
15 constructing wind facilities. Over the past 15 years, TransAlta and its affiliates have constructed
16 7 wind facilities, with the largest constructed wind project having a capacity of 200 MW.
17 TransAlta's most recently completed wind construction project was the 68 MW New Richmond
18 Wind Facility located in Quebec, which reached commercial operation in 2013. In 2017, we
19 began an expansion of our Kent Hills Wind Facility, known as Kent Hills 3, located in New
20 Brunswick, where we are adding an additional five turbines, totaling 17.25 MW, to an existing
21 operating wind facility. The expected completion of Kent Hills 3 will be in the latter half of
22 2018. In February of 2018, we commenced construction on the 90 MW Big Level Wind Project
23 located in Pennsylvania. This project is scheduled to be in commercial operation in the latter half
24 of 2019. A summary of these three wind projects is set forth below.

25 **New Richmond Wind Facility**

- 26 - 27 x 2MW and 6 x 2.3MW Enercon E82 with 82m rotors for installed capacity of 67.8MW
- 27 - Towers are 2/3 concrete & 1/3 steel @ 98m hub height
- 28 - 2 permanent met towers for performance measurements
- 29 - 20 km of new and upgraded roads constructed to 25 m right of way to support construction and
- 30 operation

Kent Hills Wind Facility

- 5 x Vestas V126 3.45 MW with 126 meter rotor diameter for a installed capacity of 17.25 MW
- Steel towers at 117 meter hub height
- Approximately 5 km of new roads constructed

Big Level Wind

- 25 x GE 3.6 MW with 137 meter rotor diameter for a installed capacity of 90 MW
- Steel towers, 6 x at 110 meter hub height and 19 x at 131 meter hub height
- 1 permanent met tower for performance monitoring
- 13 miles of roads constructed to 16 feet right of way

TransAlta has over a hundred years of experience managing the construction of complex energy projects and two decades of experience constructing wind projects across North America in a variety of climates and regions, including in complex terrain similar to the Antrim Wind site. New Richmond in Quebec, Kent Hills in New Brunswick and Big Level in Pennsylvania, have many similar characteristics to the Antrim Wind Project. For example, New Richmond was constructed through difficult winter conditions across mountainous terrain neighboring local communities in Quebec. We maintained a strong, positive relationship with the local community throughout the course of construction. We participated in regular meetings with the community and the major stakeholders. We continue to maintain a strong relationship in the local community with the project in full operation.

In addition to TransAlta's many years of experience managing construction of energy facilities and wind facilities, under Antrim Level's ownership, Antrim Wind will maintain the engineering and construction contractors that the SEC approved during the 2015-02 docket. Specifically, Reed & Reed – an experienced wind contractor in New England – will remain as the EPC contractor responsible for safely constructing the Project in compliance with all Certificate conditions and Project design requirements specified in the EPC Agreement between AWE and Reed & Reed. Reed & Reed provided testimony as part of the 2015-02 Docket. Its important role in the construction of the Antrim Wind Project is not expected to change under Antrim Level's ownership.

1 **Q. Gary Woods - Does this portfolio include facilities similar to the Antrim**
2 **Wind Energy facility, and does TransAlta have experience operating such facilities?**

3 A. Yes. TransAlta owns 18 wind projects totaling 1,321 MW and directly operates
4 and maintains 7 of the sites. At 9 of the locations there are long-term service agreements with
5 vendors like Vestas, Enercon, General Electric and Nextera, where they perform field operations
6 and maintenance functions on the wind turbines. This work is overseen locally by TransAlta
7 supervision or Lead Wind Technicians. TransAlta also operates and maintains the Balance of
8 Plant (“BOP”) systems, like the electrical sub stations, fire protection systems,
9 telecommunications, community and stakeholder relations, snow removal, etc., at these sites. We
10 have two locations, in Wyoming and Minnesota, where all field operations and maintenance
11 activities are performed by long-term service agreement vendors and contractors who report into
12 regional TransAlta leaders.

13 It is usual practice for TransAlta to contract with a turbine Original Equipment
14 Manufacturer (“OEM”) to perform turbine operations and maintenance (“O&M”) for the first
15 two to five years of operation for its wind projects, and to manage the BOP maintenance and
16 project administration with TransAlta staff. Upon initial OEM turbine service contract
17 expiration, we proceed to make an economic business decision as to whether to extend the
18 contract, source the work to a different third party or in-source for our internal operational staff
19 to perform. In the case of Antrim Wind, the project has contracted under a Service and
20 Maintenance Agreement (“SMA”) with Siemens for the first two years of operations. During
21 that time, Siemens technicians will be on-site to perform turbine maintenance, both scheduled
22 and unscheduled. Like Reed & Reed as the contractor, Siemens role as the turbine supply and
23 turbine O&M provider for the first two years will remain unchanged by Antrim Level’s
24 acquisition of the ownership interests in the Project. TransAlta will also have one on-site
25 employee to manage BOP maintenance and oversee the general site operations. Upon
26 completion of the SMA, we will determine the best path forward, whether that be extension of
27 the SMA, insourcing turbine maintenance, or contracting to another experienced 3rd party. As
28 required by the conditions in the Certificate, Antrim Level will notify the Administrator of the

1 Committee, in writing, of any modifications or replacement of the Operations and Maintenance
2 Agreement within sixty days of such modification or replacement.

3 TransAlta's operations team, in support of its subsidiaries, achieves best in class plant
4 reliability and availability results through our in-house operating expertise. Our operations team
5 provides specialized monitoring of equipment for reliability and performance improvement.
6 These monitoring tools allow for early detection of equipment and performance issues.
7 Production losses can then be mitigated through prompt action taken at the earliest signs of
8 changes in equipment. Our operations team has successfully improved TransAlta's wind fleet
9 performance by 1.5 per cent (CAD\$2.5M/annum) through performance tune-ups, reliability
10 monitoring to identify maintenance requirements and prevent facility outages, and vibration-
11 based condition monitoring systems for early warning of potential failures. Currently,
12 TransAlta's operations specialists monitor over 7,900 MW of installed power plant capacity,
13 which includes over 1,200 MW of wind and nearly 800 wind turbines. The Antrim Wind Project
14 will become a part of this team's operations portfolio upon final commissioning of the facility
15 and the Project entering into commercial operations.

16 In addition, TransAlta facilities are monitored 24 hours a day, 7 days a week by
17 TransAlta's Wind Control Center ("WCC"), located in Pincher Creek, Alberta, Canada. The
18 WCC monitors the activity of nearly 800 wind turbines, and substations, which aids in ensuring
19 maximum productivity of the wind farm, as well as contributing to overall grid reliability. It
20 provides a single point of contact day or night for our grid operators, allowing a timely response
21 on all emergent matters, ensuring we remain compliant with all grid operator requirements. The
22 WCC also allows TransAlta to keep the expertise in-house and eliminates reliance and cost of
23 after-hours monitoring from third-party companies.

24 Knowledge and experience gained from over a 20-year wind operating history and over a
25 105-year power generating history are a major strength of our company. TransAlta has a long
26 history of working with customers and regulators to ensure synergies are realized and is
27 experienced in complying with the requirements of government regulators regarding compliance
28 management, auditing and reporting. TransAlta will be applying our knowledge-based

1 experience held in our wind operations team to the ongoing construction and operation of the
2 Antrim Wind Project.

3 **Q. Mark Mackay - Is Antrim Level familiar with the commitments to the Town**
4 **arising from the Project?**

5 A. We are familiar with the agreements in place between Antrim Wind and the Town
6 and the long history of collaboration during the development phase of Antrim Wind and we are
7 committed to following through on all of AWE's obligations in those agreements and
8 maintaining close communication and cooperation with the Town officials and residents.
9 Community engagement, in both the construction and the on-going operations phases, is very
10 important to TransAlta as we endeavor to provide multiple channels and regular opportunities to
11 involve stakeholders and to provide access to project information. This may include: open house
12 events, letters of introduction, phone calls, emails, in-person visits, website information, direct
13 mail, project information packages and newsletters, offers to visit operating wind projects,
14 engagement with transmission facility experts and conversations with reference/host wind farm
15 and transmission system landowners. In addition, TransAlta maintains positive relationships at
16 its existing wind projects with both host landowners and adjacent non-project landowners.
17 TransAlta has also engaged with communities in other forms such as sponsoring educational
18 scholarships, with the most recent one being a five-year, \$25,000 scholarship with the University
19 of New Brunswick in Canada. TransAlta looks forward to working with the Town of Antrim, the
20 Site Evaluation Committee, various agencies, commissions, property owners, town residents,
21 stakeholders and all interested parties to assure compliance with the terms of the Certificate and
22 developing and maintaining regular and effective communications. In addition, we look
23 forward to complying with agreements with the Town of Antrim, including the Amended
24 Agreement between the Town of Antrim New Hampshire and Antrim Wind Energy LLC,
25 Developer/Owner of the Antrim Wind Project (the "Town Agreement") and the Payment in Lieu
26 of Taxes Agreement and the Gregg Lake and Scholarship letter agreements. On July 16, 2018,
27 senior members of TransAlta's management team, including myself, and its Legal Counsel,
28 Bryan Morin, attended a Town Board of Selectmen meeting and were introduced to Town
29 officials.

1 **Q. Mark Mackay - If the Joint Petition for Approval of Transfer of Membership**
2 **Interests is granted, how will the parties ensure a smooth transition of construction to**
3 **Antrim Level?**

4 A. Antrim Level will cooperate with Walden Green Energy Northeast Wind, LLC
5 and Walden Antrim LLC (jointly, “Walden”) as construction continues and through the
6 transition of ownership. As stated earlier, we are committed to working closely with Walden to
7 ensure a smooth transition and maintain continuity of the key contractors during construction.
8 Prior to the closing under the Purchase and Sale Agreement (“PSA”), Walden will maintain
9 control of the Project and all construction, and will continue to coordinate with Antrim Level on
10 all aspects of the construction process. After the closing, Antrim Level will assume control and
11 management of all construction contracts and Walden will support Antrim Level as needed
12 through the construction process. Prior to change of control, Walden will manage construction
13 using Reed & Reed as the contractor with oversight by an owner’s engineer as described in the
14 original application. Under Walden’s current ownership, CPL will act as Antrim Wind’s
15 Owner’s Engineer, to assist with technical oversight of the final design and construction of the
16 Project. After change of control, both Reed & Reed and CPL will continue throughout the
17 construction process, ensuring a seamless transition under Antrim Level’s ownership.

18 **Q. Mark Mackay – How does Antrim Level intend to manage the construction**
19 **of the Antrim Wind facility?**

20 A. As noted previously, Antrim Level will continue to work with Reed & Reed for
21 the construction of Antrim Wind under the existing EPC contract. Reed & Reed is a reputable
22 EPC contractor experienced in constructing wind projects in the New England region, having
23 completed over 15 projects. We reviewed the qualifications of Reed & Reed and are confident in
24 its skills and abilities. In addition, Antrim Level will maintain CPL as the Owner’s Engineer.
25 This is the same firm that assisted TransAlta in its due diligence review of the Antrim Wind
26 Project. CPL has nearly three decades of experience and is one of the leading renewable energy
27 project delivery companies, with over \$3.0 Billion of projects built to date. CPL is an
28 engineering, design and project management company exclusively focused on renewable energy
29 projects. Over the past 18 years, CPL has designed and constructed over 80 renewable

1 projects. Key CPL staff have experience totaling over 350 wind and hydro projects. CPL has
2 worked on many wind energy projects in Canada and the United States. A few representative
3 examples are set forth in **Exhibit D**. Effective August 1, 2018, CPL was acquired by Tetra Tech
4 Canada Inc. CPL is now known as Canadian Projects Limited, A Tetra Tech Company. Prior to
5 it joining forces with Tetra Tech, CPL partnered with Tetra Tech to augment its construction
6 management and monitoring capabilities for US-based renewable energy projects. Founded in
7 Pasadena, California, in 1966, Tetra Tech specializes in delivering clean energy consulting and
8 electric utility advisory services to companies, institutions, and governments worldwide. Tetra
9 Tech's 17,000 employees provide services to independent power producers, utilities, merchant
10 transmission companies, banks, and governmental agencies on a wide range of renewable
11 projects in more than 125 countries, including nearly all U.S. states and Canadian provinces and
12 territories. Tetra Tech's expertise spans geothermal, hydropower, solar, and wind, and includes
13 experience in implementing both grid-connected and off-grid projects. During the last few years,
14 Tetra Tech has worked on more than 700 wind projects worldwide.

15 CPL is currently acting as Owner's Engineer for Pattern Energy on the Henvey Inlet
16 Wind project in Ontario, a 300 MW project comprised of 87 3.45 MW Vestas turbines and
17 scheduled to reach commercial operation in 2019. CPL is providing design and construction
18 management services for TransAlta's Kent Hills 3 project as well as Owner Engineer services for
19 TransAlta's Big Level wind project in Pennsylvania.

20 TransAlta has almost a decade's experience working with Siemens, the turbine supplier
21 for Antrim. TransAlta's 198 MW Wolfe Island Facility located near Kingston, Ontario, which
22 has been operational since 2009, consists of (86) Siemens SWT-2.3-93 turbines. We currently
23 perform all O&M activities at this site.

24 **Q. Mark Mackay – How will blasting be conducted at the Project site?**

25 **A.** Blasting at the Project site will be conducted by the certified blasting contractor
26 retained by Reed & Reed, Capital Rock Drilling & Blasting, in accordance with the conditions of
27 the Certificate and requirements of the Town Agreement, as well as in accordance with the
28 Blasting and Well Monitoring Plan developed by Reed & Reed for the Antrim Wind Project,

1 which has been approved by the New Hampshire Department of Environmental Services and
2 provided to the Town of Antrim.

3 **Q. Mark Mackay – Who will be the key TransAlta personnel that will work**
4 **with Reed & Reed during the construction of Antrim Wind?**

5 A. I will have Project oversight responsibility, and Jeff Nelson will be TransAlta's
6 Project Manager for the Antrim Project. Jeff will be supported by an on-site Tetra Tech
7 construction professional contracted through CPL. CPL will provide a construction manager who
8 will be on-site periodically for project reviews. Jeff Nelson has over 17 years of power
9 generation experience, both in gas and wind power plants, including installation, construction,
10 and commissioning experience. In addition, he has held several engineering leadership roles
11 during his 11 years at TransAlta, and has provided technical expertise in the expansion of
12 TransAlta's wind portfolio over the last 8 years. He has also been the technical lead for multiple
13 project financing deals to raise debt. A copy of his resume is attached as **Exhibit E**.

14 **Q. Gary Woods – How does TransAlta intend to manage the operations of the**
15 **Antrim Wind facility?**

16 A. TransAlta will have one full time employee on site throughout the term of Antrim
17 Wind's operations. During the first two years of operations, turbine maintenance at Antrim is
18 contracted with Siemens under the SMA, and Siemens will have two employees on at site full
19 time. TransAlta has one other site in Ontario, Canada, with Siemens wind turbines. TransAlta
20 self-performs turbine operations and utilizes Siemens for larger projects on an as required basis
21 in the past and will continue as such in the future. Following the expiration of the SMA and as
22 highlighted earlier, TransAlta will determine the best path forward, whether that be extension of
23 the SMA, insourcing turbine maintenance, or contracting to another experienced 3rd party.
24 Should TransAlta make the decision to proceed with a different O&M provider, TransAlta has
25 the qualifications and operating experience to determine the credentials of any potential provider
26 that it would bring on to support Antrim operations. Such qualified provider would need to
27 demonstrate its ability to meet TransAlta's operating and safety standards, which are of utmost
28 importance.

1 TransAlta will comply with the terms of the Certificate and the representations made in
2 the underlying proceeding and as such, will provide employee contact information at the town
3 offices so that the public may report any concern with the facility.

4 Safety is a critical corporate value of TransAlta's and great lengths are taken to ensure
5 the safety of its employees, contractors, and the general public both during construction and
6 operation. At each of our facilities, we have a site-specific Emergency Response Plan ("ERP") in
7 which all employees are trained to understand in order to respond to any specific emergency as it
8 could arise. Our ERP contains a list of emergency procedures with guidelines and steps as well
9 as, key contact information of supervisors and employees and contact information for a diverse
10 assortment of local emergency and medical responders and personnel. Our ERP also contains
11 directions and maps outlining the key routes to nearby medical facilities. Our company protocol
12 is to have all employees be fully versed in the ERP information and to be prepared to utilize it in
13 the circumstance that any emergency occurs. I personally am certified at level 300 with ICS
14 (that is, Incident Command System) Canada and am the leader of our wind operations in North
15 America. This course and certification enable effective management of incidents with expanding
16 scope and complexity.

17 **Q. Gary Woods – Who will be the key TransAlta personnel that will manage the**
18 **start-up and operation of Antrim Wind along with its integration into TransAlta's North**
19 **American Operations?**

20 A. I will have overall responsibility for the startup and operation of Antrim Wind,
21 and both Anik Whittom and Julie Turgeon will have day-to-day responsibility. Whittom serves
22 as Operations Supervisor at the TransAlta Le Nordais Wind Park, 98 MW and 132 turbines. She
23 has worked in the wind industry for 19 years, and been with TransAlta for nearly the past 10
24 years. In her current role, Whittom is responsible for the safe and reliable operation and
25 maintenance of wind assets at Le Nordais. Whittom is also ICS 300 certified. With respect to
26 the Antrim Wind Project, Whittom will support the integration of the project into TransAlta's
27 North American Operations including ongoing operations and maintenance at the commercial
28 operation date. A copy of her resume is attached as **Exhibit F**. Turgeon is a Geological
29 Professional Engineer with more than 10 years' experience working on the design, siting,

1 construction, and commissioning of wind facilities. In her current role at TransAlta, Turgeon
2 manages operation and maintenance contracts to ensure safe and reliable operations of
3 TransAlta's U.S. wind farms along with the integration of new and newly acquired operational
4 assets in TransAlta's wind and solar business units. A copy of her resume is attached as **Exhibit**
5 **G.**

6 **Q. Mark Mackay – Please describe in detail how TransAlta incorporates safety**
7 **during construction of a project?**

8 A. Safety is very important to TransAlta and is one of our corporate values. We are
9 committed to the health and safety of our employees and everyone who touches our business. We
10 take great care and pride in constructing and operating our facilities safely. The basic philosophy
11 and management elements of TransAlta's Construction Safety Management Programs are based
12 on TransAlta's Total Safety Management System, Target Zero Vision and Life Saving Rules.
13 Target Zero is a pro-active safety management strategy rooted in the belief that all incidents can
14 be eliminated by identifying the causes and by eliminating or controlling the causes we can
15 achieve zero recordable incidents. Target Zero is achieved through the implementation of
16 proactive tools and processes designed to identify and mitigate workplace hazards before they
17 contribute to an incident. TransAlta's objective is to work with companies who share this
18 philosophy and accordingly selects construction contractors who have a demonstrated similar
19 strong commitment to safety. Achieving our safety objectives requires a cooperative and
20 coordinated effort from all involved. TransAlta ensures a Safety Advisor is on site full time on
21 all construction projects work with contractors towards a zero injury objective.

22 We have reviewed Reed & Reed's safety management program and consider it to be
23 consistent with TransAlta's Safety Program. We will work with Reed & Reed to ensure that
24 safety remains a priority over the course of construction.

25 **Q. Gary Woods – Please describe in more detail the facility management and**
26 **operations capabilities of TransAlta.**

27 A. TransAlta has established effective programs, processes, systems and tools in the
28 areas of Environment, Health & Safety, Process Safety and Asset Management. Our EH&S
29 programs are centered around safe work planning, work permitting & equipment lockout /

1 tagout, field level hazard assessments, hazard and near miss reporting, site audits and incident
2 management and lessons learned processes, as well as Legal and Regulatory Compliance.

3 Within Process Safety and Asset management, the pillars of our programs are Safety
4 Critical Process Systems, Technical Risk Management including engineering standards,
5 technical risk reviews, management of change and establishing strategic equipment spares,
6 Alarm and Instrument Management for alarm systems and protective devices, Maintenance
7 Management for work identification, planning, scheduling and execution, Operations
8 Management including procedures, equipment checks and Shift Handovers, Learning and Staff
9 Competencies, Contractor Management and Emergency Preparedness.

10 All of our programs, processes, systems and tools are valued and supported by our field
11 and corporate employees who are committed to our vision of zero EH&S incidents and
12 unexpected asset failures.

13 To ensure our equipment is in adherence to our EH&S, Process Safety and Asset
14 Management Programs being applied by our wind team of 73 employees, we have governance
15 and oversight by a corporate EH&S and Operations Services Support team. Our systems and
16 tools have extensive dashboard and key performance indicators to monitor the health of our
17 assets and compliance to our programs. Our field operations are led by an experienced workforce
18 that includes an Operations Manager, Site Supervisors, Lead Technicians and Wind Technicians.
19 We have a modernized Centralized Wind Control Centre that is staffed 24-7. Our Wind Fleet has
20 Engineers in the disciplines of Mechanical, Electrical and Controls who are located in field
21 locations. They are supported by a centralized team of Performance and Diagnostics Engineers,
22 Technical Services Engineers, Drafting and Document Control Specialists, and a Production
23 Assurance team that leverages data analysis and problem-solving principles to improve
24 availability and reduce equipment losses. Regarding any turbine repairs and maintenance, if an
25 OEM or Third Party is under contract and on-site, they will typically handle all repair and
26 maintenance work associated with the turbines under their programs, processes, specifications
27 and procedures.

28 **Q. Gary Woods - Does TransAlta have experience decommissioning a wind**
29 **facility?**

1 A. Yes. Cowley Ridge was the first commercial grade utility scale wind facility to be
2 installed in Canada and it is also the first commercial wind farm in Canada to be
3 decommissioned. It consisted of 57 KVS Kenetech 33 wind turbines with an output of 375
4 Kilowatts per turbine. The three main reasons for decommissioning were: safety for the workers,
5 obsolescence of turbine parts and end of recommended manufacture life of turbine.

6 Built in 2 phases during the summer of 1993 and spring of 1994, the 21.4 MW site was
7 decommissioned in the spring and summer of 2016. Decommissioning was planned in 2
8 phases. First, all above ground structures were removed in 2016. Next, all concrete pads and
9 piles are to be removed in 2019.

10 Materials recycled during the first phase of decommissioning included 2,688,000 pounds
11 of metal, 34,200 pounds of copper cable, and approx. 36,000 liters of oil.

12 Two complete nacelle and bottom controllers where donated to colleges for wind
13 technician programs. One was given to Northern Lights College in Dawson Creek and the other
14 to Lethbridge College. Environment wildlife monitoring was conducted throughout the first
15 phase of the decommissioning.

16 Unlike oil and gas where the fuel gets depleted, the Cowley Ridge site has a proven wind
17 resource and we are actively exploring repower options. The landowners have extended their
18 leases to accommodate repowering. It is interesting to note that it will only take 5 modern
19 turbines to replace the output of the 57 original turbines at this site.

20 **Q. Do you both believe TransAlta has the technical and managerial capability to**
21 **assure that the Antrim Wind facility is constructed and operated in continuing compliance**
22 **with the terms and conditions of the Certificate?**

23 A. Yes. As demonstrated in the Joint Petition and by our joint testimony, TransAlta
24 has the full range of technical and managerial experience and capability to assure construction
25 and operation of Antrim Wind in continuing compliance with the terms and conditions of the
26 Certificate.

27 **Q. Does this conclude your testimony?**

28 A. Yes.

**PRE-FILED DIRECT TESTIMONY OF MARK MACKAY AND GARY WOODS ON
BEHALF OF ANTRIM LEVEL LLC AND TRANSALTA CORPORATION**

LIST OF EXHIBITS

- Exhibit A - Resume of Mark Mackay
- Exhibit B - Resume of Gary Woods
- Exhibit C - TransAlta Generation Facilities – Renewable Energy
- Exhibit D - Representative Examples of Projects of Canadian Projects Limited
- Exhibit E - Resume of Jeff Nelson
- Exhibit F - Resume of Anik Whittom
- Exhibit G - Resume of Julie Turgeon

MARK MACKAY, P. Eng.

PROFESSIONAL EXPERIENCE

TransAlta Corporation

Vice President/Managing Director, Construction & Development Engineering

2010 - Present

- Accountable for TransAlta's major capital construction program including new natural gas, wind, solar, hydro and cogeneration facilities.
- Ensure good industry practices and governance protocols are in place to deliver investments safely, on time and on budget
- Support development of new growth initiatives to support TransAlta's long term strategic goals.
- Responsible for investments ranging in size from \$100M to \$2B
- Key Construction and Development Projects include:
 - Sundance 7 – 800 MW CCGT Power Plant
 - South Hedland – 150 MW CCGT Power Plant, Western Australia
 - Brazeau Pumped Storage Hydro
 - Kent Hills 3 Wind Facility
 - Spray Hydro Life Extension
 - Fort McMurray West Transmission Line
 - Antrim and Big Level Wind Facilities
 - Centralia Solar Project
- Supported due diligence on several M&A initiatives
- Responsible for assessing new technology opportunities including energy storage and electric vehicles

TransAlta Corporation

Vice President, Energy technology/Technology & Innovation

2006-2010

- Responsible for developing a technology strategy to address carbon emissions
- Developed a \$700M first-of-its kind Carbon Capture & Storage project
- Secured significant government funding to pilot CCS technology
- Undertook fast track rebuild of two idle coal fired facilities and returned to service on schedule and with an excellent safety record
- Worked with Capital Power on the joint construction of the 450 MW Keephills 3 Supercritical coal facility
- Responsible for the construction of a 66MW Wind facility in Quebec.

TransAlta Corporation

Director, Engineering Services

2003-2006

- Strategic and day to day leadership of TransAlta's engineering functions responsible for plant, reliability and power plant equipment.

TransAlta Corporation

Project Manager

1999-2003

- Responsible for the design, construction and commissioning of a 350 MW cogeneration facility at Suncor's Oil Sands Facility in Fort McMurray.

- Successfully secured AEUB approval for the Keephills 3 and 4 coal facility – first 900 MW coal facility to be permitted in Canada in 20 years

TransCanada/ Alberta Natural Gas

Project Manager

1993- 1999

- Managed the design and construction of pipeline and midstream gas processing facilities.

BOARD POSITIONS

Director and Past President of the Construction Owner's Association of Alberta

EDUCATION

University of British Columbia - BASc

Mechanical Engineering

1980

Gary Woods

Professional Profile

Over 30 years of experience relating to natural gas, coal and renewable power plant operations.

- Senior Leadership experience with Canada's largest publicly traded power generator and marketer
- Management team member that reports to Board of Directors on a quarterly basis
- Director experience on an external board that provides leadership for the orderly and responsible development of natural resources in Alberta
- Sponsor team member for a companywide Operations Excellence program
- Senior leadership experience leading corporate EH&S programs
- Overall plant senior leadership / management accountabilities leading profit / loss, EH&S, production, operation and maintenance.
- Financial management including cash flow, profit, capital and operating expenditures.
- Leadership experience and skills with a workforce of > 400 management and union positions.
- Customer, joint venture partner and stakeholder relation skills.
- First nation and government relations experience.
- Operations lead accountable to deliver power generation growth strategy.
- Organization transformation team experience.
- Commercial contract management skills and experience.
- Technical skills and training in the design, construction, inspection, operation and maintenance of power and industrial plants,
- Skills in the operation & maintenance of a GE and Alstom frame gas turbines and GE aeroderivative engines
- Knowledge and experience in the management, operation and maintenance of Vestas, GE, Siemens, Enercon and other wind turbine technologies
- Knowledge and experience in the management, operation and maintenance of small to large hydro generation facilities and the associated dam structures
- Experience and skills related to the operation of 300+ MW coal fired plants.
- Jurisdictional experience and skills in pressure equipment design review, inspection, operator and welding examinations and testing.

Gary Woods

Professional Experience

TransAlta Corporation

1999 – Present

Vice President / Managing Director, Canadian Gas & Renewable Operations (November 2013 to Present)

Accountable for the operations, business results and P&L of 50 gas-fired, wind, solar and hydro facilities in Canada and the US aggregating greater than 3,400 megawatts with revenues of \$900M, cash flows of \$550 million plus, and an organization of 370 employees. Lead key business functions including. EH&S, production, operations, maintenance, projects, and engineering.

Director, Canadian Gas Operations (October 2012 to October 2013)

Accountable for the operations, business results and P&L of six cogeneration and combined cycle power plants in Canada aggregating 1200 megawatts, cash flows of \$200 million plus, with 12 direct reports and 250 indirect reports. Lead all business functions including. EH&S, production, operations, maintenance, projects, supply chain, management, finance, human resources, and engineering, etc. Accountable for the delivery of planned turnaround and capital projects ranging from \$50M to \$70M per year.

Director, West Gas Operations (December 2011 to October 2012)

Accountable for the operations, business results and P&L of TransAlta's gas fired power plants in Western Canada aggregating 475 megawatts, with cash flows greater than \$50M. Led a team of 6 direct reports and 50 indirect reports.

Coal Operations Leader – Transformation Team (Oct 2010 – November 2011)

As a member of a companywide cross functional leadership team I was accountable for the re-engineering of corporate processes, systems, tools and applications.

Director of Coal Operations (2006 – September 2010)

Accountable for the operations and business results of 3 coal fired power stations in Alberta aggregating 2500 Mw, cash flows of \$300 million plus, with 8 direct reports and 600 plus indirect reports and 500 plus contractors. Lead business functions of EH&S, production, operations, maintenance, projects and engineering. Accountable for the delivery of planned turnaround and capital projects ranging from \$100M to \$150M per year.

Manager, Joint Venture Operations (2004 – 2006)

Accountable for overall plant management of two Co-generation facilities providing power and steam supplies to petro chemical customers. Also acted as the TransAlta management representative for two coal fired power plant joint ventures.

Gary Woods

Plant Manager (2002 – 2004)

Accountable for business, financial, environment, safety, operations, maintenance and customer relations objectives of the Fort Saskatchewan Power Project on the Dow Chemical site.

Chief Inspector (2000 – 2002)

Accountable for the implementation of TranaAlta's Owner / User Pressure equipment Integrity Program at all facilities for which the Alberta Safety codes Act applies.

Shift Supervisor (1999 – 2000)

Accountable for the safe and efficient shift operation of the 500 Mw Wabamun power plant.

Saskatchewan Government

1996 - 1999

Boiler and Pressure Vessel Inspector

Accountable for the implementation of the boiler and pressure vessel act and regulations within an assigned jurisdiction.

Department of National Defence

1987 – 1996

While working in the power plant at Canadian Forces Base, Moose Jaw, I progressed through various operations positions ranging from assistant engineer to chief engineer.

Education / Certification

- First Class Power Engineer
- Certified Mechanical Engineering Technologist – Alberta Society of Engineering Technologists.
- National Board Commission with "A" endorsement – National Board of Boiler and Pressure Vessel Inspectors.
- Power Engineering Diploma (Fourth Class Engineer) – Medicine Hat College
- High School Diploma – Coronach High School

EXHIBIT C

Canada (Eastern)							
Facility Name	Location	Fuel	MW	Ownership	Net MW	Operator	COD
Appleton	Almonte, ON	Hydro	1	100%	1	Yes	1994
Galetta	Galetta, ON	Hydro	2	100%	2	Yes	1907
Misema	Englehart, ON	Hydro	3	100%	3	Yes	2003
Moose Rapids	Sudbury, ON	Hydro	1	100%	1	Yes	1997
Ragged Chute	New Liskeard, ON	Hydro	7	100%	7	Yes	1991
Kent Breeze	Thamesville, ON	Wind	20	100%	20	Yes	2011
Kent Hills	Kent Hills, NB	Wind	150	83%	125	Yes	2008
Le Nordais	Matane, QC	Wind	98	100%	98	Yes	1999
Melancthon	Shelburne, ON	Wind	200	100%	200	Yes	2006
New Richmond	New Richmond, QC	Wind	68	100%	68	Yes	2013
Wolfe Island	Wolfe Island, ON	Wind	198	100%	198	Yes	2009
Total			748		723		

Canada (Western)							
Facility Name	Location	Fuel	MW	Ownership	Net MW	Operator	COD
Akolkolex	Revelstoke, BC	Hydro	10	100%	10	Yes	1995
Barrier	Seebe, AB	Hydro	13	100%	13	Yes	1947
Bearspaw	Calgary, AB	Hydro	17	100%	17	Yes	1954
Belly River	Glenwood, AB	Hydro	3	100%	3	Yes	1991
Bighorn	Nordegg, AB	Hydro	120	100%	120	Yes	1972
Bone Creek	Valemount, B.C.	Hydro	19	100%	19	Yes	2011
Brazeau	Drayton Valley, AB	Hydro	355	100%	355	Yes	1965
Cascade	Banff, AB	Hydro	36	100%	36	Yes	1942
Ghost	Cochrane, AB	Hydro	54	100%	54	Yes	1929
Horseshoe	Seebe, AB	Hydro	14	100%	14	Yes	1911
Interlakes	Kananaskis, AB	Hydro	5	100%	5	Yes	1955
Kananaskis	Seebe, AB	Hydro	19	100%	19	Yes	1913
Pocaterra	Kananaskis, AB	Hydro	15	100%	15	Yes	1955
Pingston	Revelstoke, BC	Hydro	45	50%	23	Yes	2003-2004
Rundle	Canmore, AB	Hydro	50	100%	50	Yes	1951
Spray	Canmore, AB	Hydro	112	100%	112	Yes	1951
St. Mary	Magrath, AB	Hydro	2	100%	2	Yes	1992
Taylor	Magrath, AB	Hydro	13	100%	13	Yes	2000
Three Sisters	Canmore, AB	Hydro	3	100%	3	Yes	1951
Upper Mamquam	Squamish, BC	Hydro	25	100%	25	Yes	2005
Waterton	Glenwood, AB	Hydro	3	100%	3	Yes	1992
Ardenville	Fort Macleod, AB	Wind	69	100%	69	Yes	2010
Blue Trail	Fort Macleod, AB	Wind	66	100%	66	Yes	2009
Castle River	Pincher Creek, AB	Wind	44	100%	44	Yes	1997
Cowley North	Pincher Creek, AB	Wind	20	100%	20	Yes	2001
Macleod Flats	Fort Macleod, AB	Wind	3	100%	3	Yes	2004
McBride Lake	Fort Macleod, AB	Wind	75	50%	38	Yes	2003
Sinnott	Pincher Creek, AB	Wind	7	100%	7	Yes	2001
Soderglen	Fort Macleod, AB	Wind	71	50%	35	Yes	2006
Summerview	Pincher Creek, AB	Wind	70	100%	70	Yes	2004

Summerview 2	Pincher Creek, AB	Wind	66	100%	66	Yes	2010
Total			1,424		1,328		

United States							
Facility Name	Location	Fuel	MW	Ownership	Net MW	Operator	COD
Skookumchuck	Centralia, WA	Hydro	1	100%	1	Yes	1970
Mass Solar	Dartmouth and region, MA	Solar	21	100%	21	No	2012-2015
Lakeswind	Rollag, MN	Wind	50	100%	50	Yes	2014
Wyoming Wind	Evanston, WY	Wind	144	100%	144	No	2003
Total			216		216		

Total Generation	2,388	2,267
-------------------------	--------------	--------------

Representative Examples of Projects of Canadian Projects Limited

Melanchton, Ontario

Owner	Canadian Hydro Developers Inc. – acquired by TransAlta
Project	New Wind Energy Project in Ontario
Location	25 km Northwest of Orangeville Ontario
Size	67.5 MW, \$123.5 million
Turbines	45 GE 1.5 MW, 80m hub height
Role	Project Management, Engineering and Construction Supervision/Inspection

The project involved the supply and installation of 45 GE 1.5 MW sle turbines. The site is located in a farming community northwest of Toronto and involved over 25 different landowners. Location of turbines and the layout of access roads were critical in order to address landowner issues. Construction work began in June 2005 and the project was operational by March 2006, two months ahead of schedule. Under the construction management approach, over 40% of construction work was performed utilizing local area contractors.

Wolfe Island, Ontario

Owner	Canadian Renewable Energy Corporation - A wholly owned subsidiary of Canadian Hydro Developers – acquired by TransAlta
Project	New Wind Project in Ontario
Location	On Wolfe Island near Kingston, Ontario
Size	198 MW, \$475 Million
Turbines	86 Siemens 2.3 MW, 80m hub height
Role	Project Management, Engineering and Construction Management

The project involved the supply and installation of 86 Siemens 2.3 MW Mark II turbines. The site is located on an island across from Kingston. Site investigation work was undertaken in 2006 and 2007. Construction started in the fall of 2008 and was completed in 2009. CPL managed all engineering and construction for the project as well as the transportation and delivery of the turbine components from Denmark to the project site.

Grand Valley, Ontario

Owner	Grand Valley Wind LP, a Limited Partnership of Veresen Inc. and Greta Energy Inc.
Project	Grand Valley Wind Project Phase I and II
Location	North of Grand Valley, Ontario
Size	19.8 MW
Turbines	9 Siemens 2.3 MW, 80m hub height
Role	Project Management and Construction Monitoring

The project involved the management of the supply and installation of 9 Siemens SWT 2.3-101 MW turbines. The site is located in the township of East Luther Grand Valley in the county of Dufferin. Final permitting and tendering of the EPC contract took place in late-2010 and early 2011. Construction started with roads and turbine foundations in August and turbines were delivered in November. The project phases both came on-line with commercial operation in March, 2012. The project was completed on schedule and on budget.

JEFF NELSON

SUMMARY OF EXPERIENCE

Jeff Nelson is an engineering graduate from the University of Regina. He has diverse background in power generation technology including extensive knowledge and experience in wind operations and technology. For the past 7 years Jeff has had several roles within TransAlta's wind operations team including leading the engineering team. During this time he brought in new standards and procedures to help improve the overall reliability of the wind fleet. In addition to this Jeff has led the technical due diligence for all wind acquisitions since 2011. As well Jeff leads the due diligence on new turbine technology for TransAlta.

PROFESSIONAL EXPERIENCE

TransAlta Corporation

Manger, Project Engineering

Sept. 2017 – Present

- Oversee engineering aspects of relationships with engineering firms, construction contractors, equipment suppliers, customers and regulators for TransAlta's wind and solar development projects
- Manage internal engineering resources and external engineering consultants to complete engineering deliverables such as equipment specifications, design and work scope documents
- Review and adopt the company's existing procedures and/or develop new engineering procedures that are appropriate for the project supported
- Ensure that correct input data, codes and standards are used and adhered to
- Define work scope and manage external engineering vendors
- Provide technical risk assessment for technology selection
- Negotiate major equipment supply and EPC contracts
- Lead technical due diligence teams for the acquisition of existing wind and solar facilities

TransAlta Corporation

Manger, Gas and Renewables Engineering

Oct. 2015 – August 2017

- Lead the Gas and Renewables engineering team to support operations, maintenance, projects, turnarounds and forced outages to ensure TransAlta's wind, solar, hydro and gas facilities can operate safely and in compliance within company technical policies, procedures, standards
- Develop, implement, and manage the equipment/system risk assessments and condition assessments process while taking into account key commercial drivers to insure
- Coordinate and communicate the resolution, including corrective actions, of significant technical issues while taking into account commercial business drivers

- Establish a collaborative work environment between project and engineering teams, peers, stakeholders and support groups to ensure project issues may be resolved in a professional and productive manner
- Develop innovative strategies which improve equipment performance and reliability
- Provide technical risk recommendations for M&A/greenfield projects and new technologies

TransAlta Corporation

Manager, Wind Engineering

Jan. 2012 – Sept. 2015

- Lead a team of electrical, mechanical and performance engineers focused on wind plant reliability
- Provide engineering and technical support for the operating facilities to resolve technical issues and improve performance
- Provide technical due diligence for M&A and greenfield opportunities. Completed over 2GW of due diligence.
- Support the identification, analysis and remediation of plant equipment and life cycle concerns
- Provide risk assessments of all units and systems as required, while balancing commercial/business requirements
- Identify productivity and cost reduction opportunities
- Manage technical relationship with various wind turbine OEM's

TransAlta Corporation

Lead Engineer, Renewable Technology – Technical Services

June 2010 – Dec. 2012

- Offer technical advice to TransAlta's Wind Operations as it relates to operations and maintenance to help improve availability and reliability
- Provide rigorous Root Cause Failure Analysis follow up to consequential events
- Interface with wind turbine OEM's to resolve technical issues within the fleet
- Lead cross functional teams to obtain operational goals
- Contribute to contract negotiations with vendors to minimize the technical and quality risk to TransAlta
- Provide technical due diligence on the review of new technologies, as well as risks associated with existing technologies for acquisitions for TA business development

TransAlta Corporation

Senior Gas Turbine Engineer – Technical Services

April 2007- May 2010

- Deliver specialist technical support to the business for designated frame and aeroderivative turbine models within the TransAlta gas fired fleet
- Support the Generation Technology business model through ongoing asset condition assessment and input to the major maintenance planning process
- Participate on-site at unit outages to inspect asset condition and provide technical support as required

TransCanada Turbines Limited – GE Gas Turbine Depot

Project Manager

June 2005 - March 2007

- Managing the scope, cost and schedule of LM6000 and LM2500 gas turbine overhaul and repairs
- Customer interface for communication and contract management

Siemens Power Generation, a division of Siemens Canada Limited

Gas Turbine Field Service Engineer

July 2001 - June 2005

- Provide field support and technical assistance for the maintenance, installation, commissioning and performance testing of gas turbines, generators and auxiliary equipment

EDUCATION

University of Regina

Bachelor of Applied Science, Industrial Systems Engineering (Co-op Designation)

1996- 2001

TECHNICAL SKILLS

- Understand and articulate complex technical issues to both a technical and non-technical audience
- Understanding of renewable energy generation technology and life cycle
- Analysis of contracts and participation in negotiations
- Technical risk analysis with appropriate mitigations to achieve business objectives
- Technical due diligence for renewable energy projects
- Capability to identify and resolve technical, operational, and organizational problems
- Knowledge and experience working in a power generation facilities

AWARDS

- 2015 TransAlta A & B for Suncor/Lakewinds Acquisition and Wolfe Mel Project Financing
- 2014 TransAlta A & B for Le Nordais Life Cycle Strategy
- 2012 TransAlta Presidents Award for Innovation
- Siemens Westinghouse Employee Performance Award
- 2001 Faculty of Engineering Deans List
- ASHRAE fourth year project scholarship

Anik Whittom

Anik_Whittom@transalta.com

EDUCATION

2016-2018	Financial Services Groupe Collégia, Matane, Quebec
2015	Human Resource Groupe Collégia, Gaspé, Quebec
2012-2014	Management Groupe Collégia, Matane, Quebec
2003-2006	Accounting courses CÉGEP de Rosemont (distance) Accounting 1 & 2 Financial Specialized Accounting 1
1995-1996	Baccalaureate in Geography Université du Québec à Rimouski, Quebec (Not completed)
1992-1994	Human Sciences Accounting Profile CÉGEP de Matane, Québec

WORK EXPERIENCE

December 2018 to present

Manager, Wind Operations

TransAlta Corporation

Sites: 22 Wind Sites (Canada, United States)

Responsibilities:

- Accountable to provide leadership for optimal performance, by selecting, developing and managing direct reports capable of producing the agreed deliverables.
- Accountable for developing, implementing, and managing a 1-3-year business plan and delivering the agreed outcomes.
- Accountable for operational compliance to safety, compliance (NERC, OHS, etc.), plant availability, and cost standards.
- Accountable for selecting, developing, and managing a high-performance team of employees to achieve expected outcomes of the plants. This includes delegating stratum appropriate deliverables to direct reports (of up to a 1-year deliverable) and holding them accountable for delivery. This includes building bench strength.

- Accountable for delivering optimal site results within appropriate performance metrics including quality, quantity, timeliness, productivity, customer satisfaction, and financial performance.
- Accountable for providing risk management context to leaders and developing and implementing strategic mitigation plans
- Accountable for key supplier relationships, collaboration with corporate groups and other external stakeholders to ensure TransAlta's investment in Wind and Solar achieves the intended return over the life of the plant asset.
- Accountable for ensuring that TransAlta's interests are represented in jointly owned facilities.

January 2012 to
December 2018

Regional Operations Supervisor, Quebec & New- Brunswick

TransAlta Corporation

Sites: Le Nordais I & 2, Kent Hills I & 2 and New Richmond Wind Farms

Responsibilities:

- Accountable to provide leadership and optimal performance, by selecting, developing and managing direct reports and contractors capable of producing the agreed deliverables.
- Accountable for developing and implementing a 1-year business plan driving operational performance, achievement of business results and continuous improvement.
- Accountable for developing and tailoring plans to drive for results in the areas of safety, compliance, plant availability, and cost.
- Accountable to ensure staff are adequately trained, qualified and competent in their roles and compliant with mandatory training.
- Accountable for identifying and mitigating risk that could negatively impact the agreed to outcomes or business results and identifying and realizing opportunities that could positively impact the agreed to outcomes or business results.
- Accountable to establish a collaborative work environment within the team, peers, stakeholders and support groups to ensure issues may be resolved in a professional and productive manner.
- Accountable to uphold TransAlta values, thereby maintaining and enhancing reputation and stakeholder relations.

January 2009 to
January 2012

Operations Supervisor, Le Nordais Wind Farm

TransAlta Corporation

Le Nordais Wind Park (132 turbines)

Matane and Cap-Chat, Québec

Responsibilities:

- Supervise and manage 17 permanent employees;

- Assist the project coordinator with the managing of 12 temporary employees, purchase order, sub-contractor, crane work and paperwork;
- Ensure that the employees work safely and follow safety policies and procedure;
- Ensure the team troubleshoots all problems and performs preventive maintenance;
- Monitoring performance of the turbines;
- Ensure appropriate level of materials and spare parts inventory are in place;
- Conduct and prepare feedback documentation for employee's annual performance review;
- Work closely with outside vendors and sub-contractor;
- Play an active role in the community of Matane and Cap-Chat to maintain and enhance the company reputation.

May 2008 to
January 2009

Office Administrator

Canadian Hydro Developers Inc.
Le Nordais Wind Park (132 turbines)
Matane and Cap-Chat, Québec

Responsibilities:

- Set up the service office in Matane;
- Fulfill all tasks closely related to the office administration

June 2005 to
November 2008

Wind Turbine Consultant

(Part time contract)
Hydro-Québec – Baie-Comeau
Matane, Québec

Responsibilities:

- Supervise, maintain and operate the Pilot Project Wind Park in St-Ulric;
- Make the follow-up of the maintenance contract;
- Make the connection between the subcontractors and Hydro Québec;

Sept. 2004 to
June 2008

Office Administrator

CMC Electronics. (Marconi Canada)
Matane and Cap-Chat, Québec

Responsibilities:

- Make invoicing;
- Follow through customers and suppliers bills;
- Check-out technician's hours of work and proceed service work order;
- Order and receive parts intended for service and selling;

February 2004 to
July 2004

- Fulfill all tasks closely related to the office administration.

Inventory Office Coordinator

Vestas Canadian Wind Technologies Inc.
Murdochville, Québec

Responsibilities:

- Set up the Service office in Murdochville;
- Order and receive spare parts to set inventory;
- Fulfill all tasks closely related to the office administration.

July 1999 to
July 2004

Operations Office Coordinator

NEG Micon Canada, Inc.
Le Nordais Wind Park (132 turbines)
Petit-Matane, Québec

Responsibilities:

- Set-up the Service office in Petit-Matane;
- Secretarial work
- Communication with the landowner, the wind park owner and Hydro Québec;
- Order different products to keep Wind Turbine in good working order. Order, receive and check-out the merchandises;
- Send defective parts in USA and Denmark: Fill our documents for transportation and for the clear out customs;
- Inventoried mechanic, electrical parts and other consumables;
- Negotiation with subcontractors (crane, service trucks, snow clearing and environmental companies);
- Buy, rent and negotiate: Safety equipment, working clothes, office supplies, cellular, plane tickets, hotel rooms, etc;
- Make guided tour on site.

June 2001 to
March 2009

Inventory Coordinator

(Part time contract)
Ministère des Transports du Québec
Matane, Québec

Responsibilities:

- List fuel 2 to 3 times per week, enter information in the computer system (DAC) at the time of gauging, receiving, complete and send report to the CGER in Sainte-Anne-des-Monts.

PROFESSIONNAL QUALIFICATIONS

2014 High Rescue PDQ training
2011 Projects Managements - SIM

2011 Fire Extinguishers – Matane firefighter department
2011 High Rescue training - ENSA
2009 First Aid training - CSST
2009 Lift truck training – Wajax inc.
2009 Hydro-Québec speaking language training
2009 Accident and Incident Investigation training – Peak Safety Management Consulting
2009 Hot Work Permit training – FM Global
2009 Challenging Conversation training – Performance Coaching
2008 High rescue training on NEG Micon 750/48 wind turbines – Nouvelle Hauteur Inc.

SKILLS

French spoken and written: Very well

English spoken and written: Well

Computing knowledge: Word, Excel, Lotus Notes, Power Points, etc.

Accounting Software: Concord, SAP, Mapix, Great Plains, Accpac and Accomba.



Julie Turgeon, P.Eng

514-567-0051

Julie_turgeon@transalta.com

Operations Supervisor, Wind & Solar
TransAlta Corporation since 2009

Geological Engineer with project management, project control, leaderships and public relations experiences and skills. International work experiences for contract negotiations and implementation in Canada, USA, Europe and Australia. Main technical expertise in wind, hydro and solar energy power plants design, development and operations.

PROFESSIONAL EXPERIENCES

Operation Supervisor and Capital Project Manager

2015 to date

TransAlta Corporation

- Manage O&M contracts to ensure safe and reliable operations of TransAlta US wind farms and solar plants.
- Ensure TransAlta operations and maintenance standards and procedures are being implemented on site.
- Developing and implementing short & long terms business plans to drive operations performance, including contracts amendments & various business cases such as in-sourcing scenario analysis.
- Manage the integration of new acquired operational assets into TransAlta business units (wind & solar).

Project Manager, Construction & Major Projects

2011 to 2015

TransAlta Corporation

- Manage construction and commissioning of a 66MW wind farm in Province of Quebec, Canada.
- Ensure safe & efficient coordination between various contractors on site (turbines & BOP).
- Project close-up including contract claim litigations management until settlement.
- Special assignment for Hydro Dams major capital projects pre-execution (Budget & Project execution plan).

Wind Developer

2009 to 2011

TransAlta Corporation

- Negotiations of major construction contracts for two wind farms in Province of Quebec, Canada.
- Manage the wind farms design study and micro-sitting on site.
- Lead of the permitting process, including acting as the company spokesperson for Public Hearings & media relations.

Wind Development Project Manager

2007-2009

DVN-GL (previously Helimax)

- Public hearing and social acceptance process management with various consultants for technical studies and environmental assessment.
- Prefeasibility studies (design and construction) for wind farms project in Canada & USA.

Geotechnical & Environmental Project Manager **2004-2006**
SNV Lavalin (previously Quéformat Itée)

- Field work supervisor for geotechnical & environmental (soil & water) reclamation studies.

Research assistant – Civil engineering **2001-2003**
University Laval (Serge Leroueuil, P. Eng. Ph. D.)

- Assist Professor Leroueuil on its soil mechanical study research, especially in sensible clay studies.

ACADEMICS & OTHER BACKGROUND

Geological Engineering **2000-2004**
University Laval & Polytechnique de Montréal
Member of Ordre des Ingénieurs du Québec
Licence : 195608

Project Management Professional (PMP) **in progress**
SIRIUS Conseils

Medical Assistant
Canadian Armed Forces **1999-2004**