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October 15, 2019

Helmar Prent, VP, Finance and Claims Services
3700 Steeles Ave, Suite 1100
Vaughan, Ontario L4L 8K8
ATTENTION: LDC Tomorrow Fund
hprent@mearie.ca

Subject: **LDC Tomorrow Fund Project Funding Report**

Mr. Prent:

Ontario Power Generation Inc. (OPG) entered into a funding agreement with the Local Electricity Distribution Companies (LDC) Tomorrow Fund beginning in July 2018 for the support of the Gull Bay Diesel Offset Micro Grid project.

The deliverables identified under the funding agreement include the following activities associated with the project's execution phase:

- Final engineering and design
- Construction
- Turnover of assets for operations

Background - Gull Bay First Nation Diesel Offset Micro Grid Project

The Gull Bay First Nation Diesel Offset Micro Grid will create a community renewable energy micro grid by integrating new solar photovoltaic generation, battery energy storage, and micro grid control technology with the existing on-site diesel generators that currently supply the community's entire energy needs.

The Kiashke Zaaging Anishinaabek (KZA) / Gull Bay First Nation (GBFN) Reserve is located on the western shore of Gull Bay on Lake Nipigon and includes the lower reaches of the Gull River. The Reserve is known as Gull River 55 and comprises a land area of 3,940 ha (AANDC, 2014), within the Robinson Superior 1850 Treaty area. KZA has a population of approximately 350 community members living on the Reserve.

At the KZA Reserve, the electricity grid is supplied by three diesel generators operated by Hydro One Remote Communities, Inc. (Remotes). KZA has been identified as one of four remote communities uneconomic to connect to the transmission grid. Ontario Power Generation (OPG) and KZA are in the developmental phase for planning an advanced renewable micro grid on the reserve. The micro grid project will construct a solar photovoltaic (PV) array, connect it with a new Battery Energy Storage System (BESS) and integrate each with the existing Remotes diesel generators via a Micro Grid Master Controller (MGMC) to feed into the electrical distribution system.

The primary goal of the project is to achieve maximum renewable generation penetration, (up to 100% in diesel-off mode), into an off-grid community for the purpose of reducing diesel consumption in the community. By reducing diesel usage the project will reduce the environmental and safety concerns associated with diesel. This project is expected to reduce annual diesel consumption by up to 30% or over

130,000 L annually at Gull Bay this equates to approximately 430 tonnes of CO2 emissions avoided annually.

The project also has several other parties collaborating on the project that are providing in-kind and technical support including;

- Hydro One Remote Community Inc. (Remotes)
- MaRS Advanced Energy Center
- ABB Inc.
- Kiashke Zaaging Anishinaabek (KZA)
- Lumos Clean Energy

Summary of the Project Components

The Micro Grid System will have the following components:

- A ground-mounted fixed angle PV array with an installed DC capacity of 360 kWdc;
- A battery energy storage system with a power capacity of at least 300 kWac and an energy capacity of 555 kWh;
- Micro Grid Master Control (MGMC) system for the integration of the micro grid system with existing Remotes generators and distribution grid; and
- A control building to host the MGMC.

These components are further broken down as follows:

PV array

- Minimum total DC Capacity (kWp): 360 kWp
- Minimum total inverter AC nameplate rating (kWAC): 300 kWac
- DC:AC Ratio (kWp/kWac): 1.20
- Number of panels: 1020
- Approximately land required: 2.2 acres

BESS

- Power capacity: 300 kW
- Energy capacity: 555 kWh
- Technology: Lithium Ion
- Structure: Self contained building with dedicated HVAC system
- Approximate weight: 6,800 – 9,100 kg, with a peak loading of 1,470 kgf/sq m.
- Approximate size: 6.1 m length x 2.5 m width x 2.6 m height

Micro Grid Master Controller (MGMC)

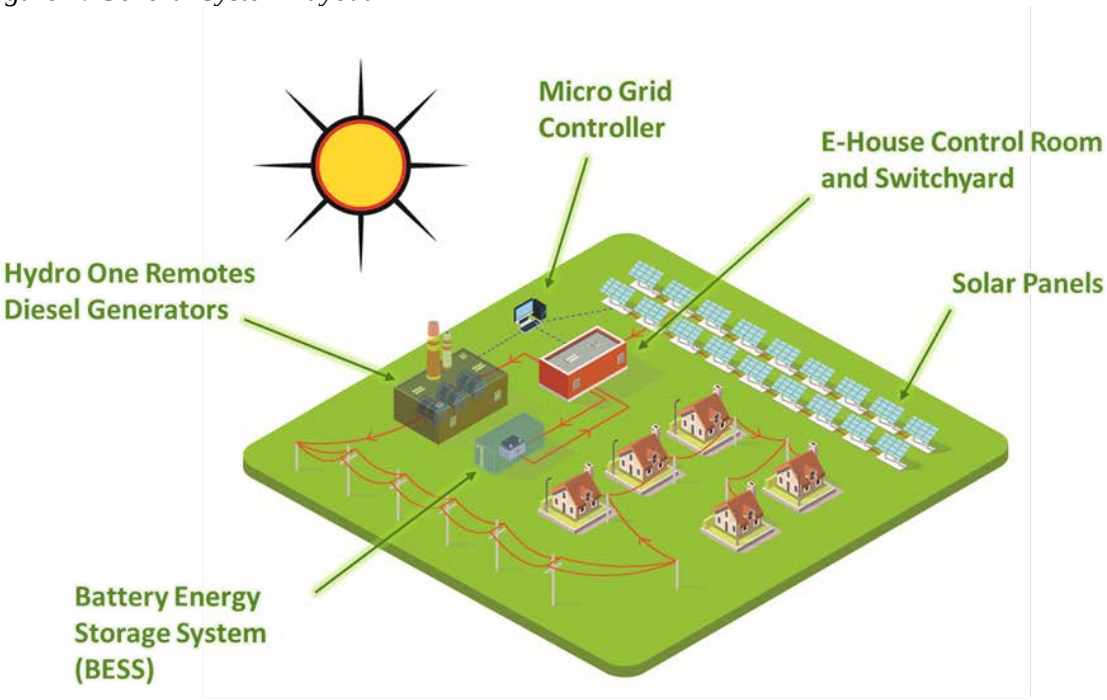
- Integration: MGMC will interface with the community load, diesel generators, solar PV and BESS
- Controller: ABB Microgrid Plus Control system

Control Building

- DAS/SCADA monitoring station
- MGMC
- Power Meters: to provide power and frequency information to the MGMC at high update rates

- PV Inverters
- Auxiliary station service transformer and breaker panel
- PV switchgear
- BESS switchgear
- Intertie switchgear
- Intertie disconnect switch
- Weather station
- Security monitoring system

Figure 1: General System Layout



System Operation

The MGMC is programmed with an algorithm that monitors community demand and each of the energy resources, including solar PV, BESS state of charge and Remotes diesel generators. The MGMC then sends a signal to the Remotes control system to dispatch the resources in real time against the variability of demand and renewable output to meet the community's electricity demand.

Further, unlike a simple solar-only installation or a behind-the-meter alternative, all resources in this project "speak" to each other, allowing the MGMC to optimize the operations of the entire system with the goal of maximizing the use of renewable generation from the PV and BESS and ultimately shutting down the diesel generation when possible and supply the community with 100% renewable energy. The solar PV/BESS system is expected to reduce annual diesel fuel consumption by approximately 30%/year.

Ownership

Once operational, KZA will own and operate the micro grid. KZA will receive revenues from energy delivered by the project through the Remotes Renewable Energy INnovation DiEsel Emission Reduction (REINDEER) program. OPG will gain project management experience in micro grids and access to operational data for the life of the Project.

Review of the completion of deliverables for the project's Execution Phase

Early in the year, OPG obtained environmental review approval and the land permit approval from Indigenous and Northern Affairs Canada (INAC). Alltrade was selected to be the Engineering, Procurement and Construction contractor and Alltrade hired Stantec as the design engineer for the electrical, structural and civil work. OPG issued the purchase order with ABB to be provider of the BESS and for the design, supply, installation and commissioning support of the micro grid controller. OPG executed the purchase order for DNV GL to be the Owner's Engineer of Execution Phase services.

Final Engineering and Design

Alltrade / Stantec completed the required engineering studies in order to complete the detailed design including; short circuit analysis, protective device coordination, AC & DC arc flash, power flow analysis, harmonic analysis, protection and control philosophy, pile corrosion analysis and pile load test analysis. Stantec completed the detailed civil and electrical design of the solar PV and balance of plant for the project. ABB completed the detailed design for the BESS and Microgrid Controllers. OPG in conjunction with DNV GL completed the review and approval of the design to ensure it met all the requirements of the technical specifications.

Completion of the Connection Impact Assessment (CIA) with Hydro One Remotes Inc.

OPG worked with Remotes during the final engineering and design stage to complete the CIA application. Remotes reviewed the CIA and design of the system and provided a Detailed Technical Connection Assessment report outlining the items that needed to be addressed in order to facilitate the interconnection of the micro grid to the Remotes facility. Remotes then completed the detailed design for the required changes to their facility in order to accommodate the connection of the micro grid and issued the Connection Cost Agreement providing OPG with an estimate for the cost of this work.
OPG, Remotes and KZA continue to finalize the Distribution Connection Agreement (DCA) and Power Purchase Agreement (PPA) which is to be between Ma'iingan Development LP and Hydro One Remotes upon transfer of the asset to MDL for ownership.

Construction

Alltrade mobilization to the site in March, 2018 in order to complete tree clearing and grubbing prior to the migratory bird nesting season as per our commitments made to INAC in the Environmental Review. During pile testing on site it was discovered that the soil conditions in certain areas where not suitable to meet the loading requirements for the PV system and it was decided that the site would be moved an additional 50m to the south to more suitable soil conditions.

From August to December Alltrade completed the following work:

- Installed erosion and sedimentation control measures
- Constructed fencing around site
- Completed site grading
- Built road access to the site
- Installed piles for PV racking and building foundations
- Installed solar PV racking and panels
- Completed trenching and installation of all AC & DC cabling and communications cables
- Installed BESS building on foundation
- Installed battery modules in the BESS racking
- Installed Ehouse building on foundation
- Completed termination of DC cabling from solar PV array to Ehouse
- Completed termination of AC cabling from Ehouse to Remotes diesel generating facility
- Auxiliary station service power was installed to provide power to the Ehouse and BESS for climate control and lighting

During the construction period, OPG conducted an environmental and safety audit at the project site and did not observe any major issues.

Work on site was then delayed from December 2018 until March 2019 while the project awaited the delivery of the switchgear to be installed in the Remotes facility required for the connection between the two sites and for delivery of a replacement DC breaker in the BESS that was found to be faulty during testing.

In March of 2019 all final installation work was completed and the required Electrical Safety Authority inspections where completed and passed.

To accommodate testing and commissioning on site without putting the community at risk of experiencing several electrical outages the project rented a temporary generator to provide power to the community during testing.

Alltrade completed all inspections and testing of the solar PV system and ABB took the lead on testing and commissioning of the overall micro grid. Testing and commissioning was carried out in March and April. During testing issues where discovered with equipment that would require repairs and delay the

final in service date of the micro grid. In July the BESS equipment was repaired and final testing and commissioning was completed.

Solar PV system and Balance of Plant inspection and testing included:

- EHouse building inspections
- PV inverters (x15)
- AC & DC Cable terminations
- AC & DC Insulation resistance testing
- Conduit inspections
- PV Racking and Module Installation
- Weather Station
- Security System
- SEL 751 protection relay.
- SEL 735 check meter.
- Potential & current transformer testing within E-House - 6 PT's & 6 CT's
- Eaton UPS systems - functional testing only.
- 600V, 1200A Schneider electrically operated intertie breaker.
- 600V, 1200A fusible disconnect switch & one (1) 100A fusible disconnect switch.
- Breakers 52-PV and 52-BESS.
- Transformers. 1 - 350kVA & 1 - 415kVA.
- 600V, 600A Inverter Panelboard & 208/120V, 225A Station Service panel.
- 600V - 208/120V, 75kVA transformer.
- SCADA system and communication
- Perform grounding system inspection and testing
- Infra Red (IR) scans on all connections
- I-V Curve testing of all Solar PV panels

ABB Testing and commissioning included:

- INITIAL INSPECTION
  - Unit Inspection for BESS
  - Set Configurable Devices
  - Unit Inspection for CABT01
  - Unit Inspection for CABT02
- TESTING WITH AUXILIARY POWER
  - Auxiliary & Control Power Application
  - Main Control Components Configuration (BESS)
  - Main Control Components Configuration (CABT01)
  - Main Control Components Configuration (CABT02)
  - Emergency Stop Circuit Verifications
  - I/O Verifications – BESS
  - I/O Verifications – (CABT02)
  - Building & Auxiliary Equipment Functional Testing

  - Communication Modems (BESS)
  - Communication Modems (CABT01)
  - Communication Modems (CATB02)
  - PCS Offline Controls
- EQUIPMENT SETUP
  - Ewon Remote Access Gateway Setup
  - Power Quality Meter Setup for BESS
  - Power Quality Meter Setup for PV
  - GPS Time Server Setup
  - M+ Operations Server Setup
- BATTERY INTEGRATION
  - Battery Management System Communication Check
  - Battery Voltage Protection Coordination
- INTEGRATION
  - DCS Communication (Hydro One Remotes PLC)
  - Communication to PV Data Manager
  - Communication to RTAC
- TESTING WITH MAIN POWER
  - Main Power Application
  - On Grid Start and Power Quality Operation
- FULL BATTERY CHARGE AND DISCHARGE
- MICROGRID OPERATIONAL COMMISSIONING
  - Diesel & PowerStore Operation
  - Diesel & PV Operation
  - Diesel & PowerStore & PV Operation
  - Transition to/from Diesel Off Mode

All equipment passed the testing and commissioning and the system was put in full operational service in August.

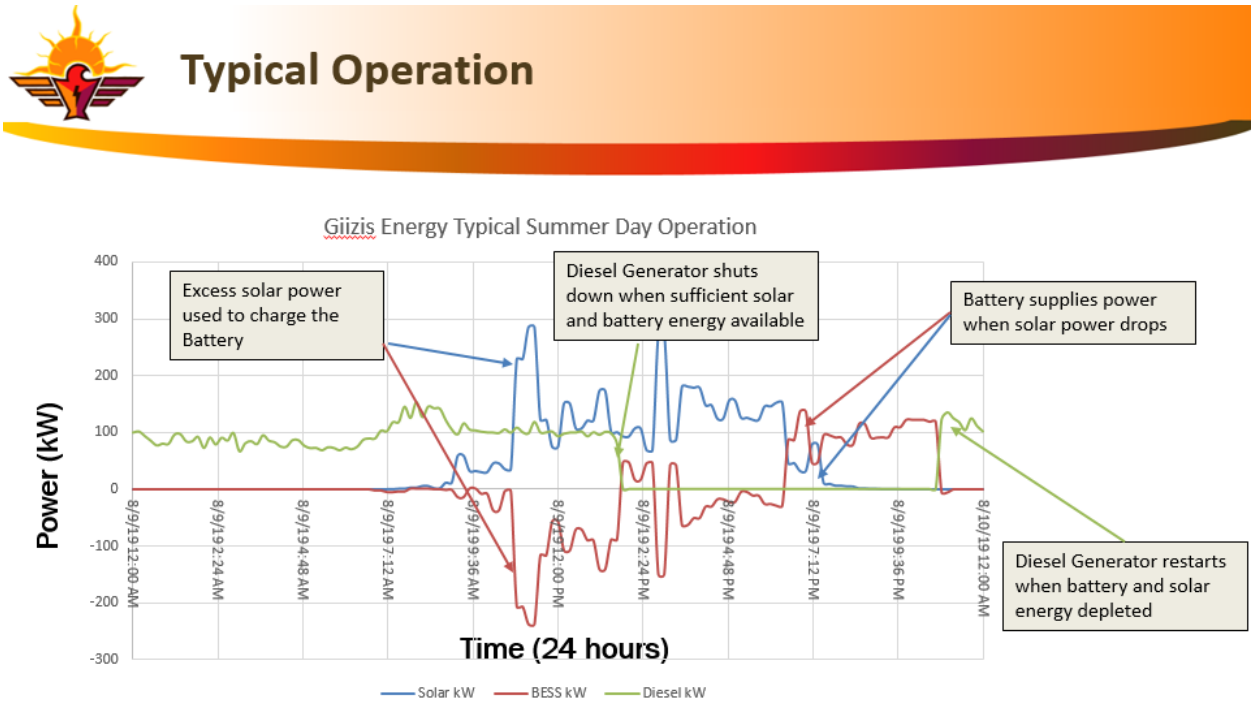
In August the project held a Project Completion Event to celebrate the opening of Gull Bay First Nation's "Giizis Energy Solar Storage Micro Grid Facility", see https://bit.ly/2zSWWhp for details of the event.

Initial Operating Data

Through the month of August the micro grid provided 40% of the community's electricity needs (35,817kWh) and operated in diesel off mode for 28 of the 31 days for a total of 232 hours. This equates to reducing diesel use by approximately 9450 liters and reducing emissions by 31 Tonnes CO2eq.

Initial modelling expectation for the month of August the micro grid should provide 42% of the community's electricity needs (38,573kWh) and operate in diesel off mode for 26 of the 31 days for a total of 215 hours. The slight underperformance of the micro grid is due to the continued issues with the solar inverters.

Figure 1 – Actual operating data from August 9th 2019



- Diesel Generators shut down from 12:20 PM until 10:30 PM

Turnover documents to prepare for transition to ultimate owner

ABB and Alltrade have turned over required documentation per their contractual agreements to facilitate transition and transfer over to Ma'iingan Development LP (MDL), a company fully owned by KZA. This will help ensure that MDL is equipped with the sufficient resources and knowledge to operate and control the facility upon connection of the asset. See appendix A for a complete list of turnover documents provided.

Sincerely,

Rosalie Ahlan
OPG Senior Advisor, Corporate Business Development

Appendix A - Table of Contents Giizis Energy Project Turnover Documents

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**01 Solar Panels**	Canadian Solar Data Sheet	Describes the technical specifications of the solar modules.	2
		Canadian Solar Installation Manual	Full manual for the installation of standard solar modules. Includes Limitation of liability, Safety Precautions, Mechanical/Electrical Specs, Unpacking & Storage, Module Installation, Wiring, Grounding, Mounting and Maintenance.	39
	02 Racking	50053008 WEEB-DSK516-45	WEEB® Washer Electrical Equipment Bond	1
		Polar Racking Connections	Detailed drawings of racking dimensions and solar module connection points	1
		Racking Assembly 2x18 Yellow Table	Design drawings and components	1
		Racking Assembly 2x18 Orange Table	Design drawings and components	1
		Racking Assembly 2x12 Orange Table	Design drawings and components	1
		UL 2703 certification	ETL Listing of the Ground Mount System PRU	1
		PRU Installation Manual	Polar Racking detailed manual for mono-leg portrait-round post.	35
	03 Combiner Boxes	Models RF8 RF12 datasheet	Description, features and specifications for Grounded DC String Combiner Boxes	1
	04 PV Inverters	Fronius Symo Product Cut Sheet	Describes technical specifications of Fronius Symo inverter 22.7	4
		Fronius Datamanager 2.0	Details regarding operating instructions, system monitoring, features, safety rules, etc.	116
		Fronius Installation Instructions	How to install symo inverter for grid-connected photo-voltaic systems	64
		Fronius Modbus Manual	Datamanager communications	136
		Fronius Operating Manual	Details related to operating instructions for Symo inverter	220
		Fronius Datamanager Cut Sheet	Describes features and technical specifications for Datamanager 2.0 and Datamanager Box 2.0	2
	05 PV Transformer	HPS Transformer O&M Manuals	Installation, Operation and Maintenance Guide for indoor/outdoor dry type transformers which utilize DH series, NH series or NJ1, NJ2, NJ3, NJ4 type enclosures	60
		HPS Transformer Cold Start Procedure	Instructions from HPS on how to energize the transformer in cold weather.	1
		Nameplate Info	Nameplate on the HPS Transformer	4
	06 E-House > Breaker & Panels & Disconnects			
		1200A I-Line	One line diagram of I-Line Circuit Breaker	1
		Box HC4259DB	Product characteristics of I-Line Panelboard Enclosure	2
		Bussman Fuse Holder	Technical data, features and specifications for fuse holder	9
		Front HCW59TSD	Product characteristics for I-Line 4pcs hcp panelboard	2
		I LINE HCP MLO	Drawing of 4 piece trim I-Line HCP MLO	1
		Interior HCP235912N	Product characteristics of interior I-Line hcp Panelboard for main lugs	2
		Masterpact NW Installation	Instruction bulletin and manual for Low-Voltage-Power/Insulated Case Circuit Breaker- Installation	256
		Masterpact NT and NW Circuit Breakers	Catalog for Schneider Electric Universal Power Circuit Breakers. Includes Codes & Standards, Features, Design, Ratings, etc.	240
		NF panel PBA554T	Design drawings with interior, side and front view	1
		NQ Panelboards_NQ442L2	Product characteristics of NQ interior panelboard for main lugs	2
		NQ Panelboards_NQMB2Q	Product characteristics for NW panelboard for the main breaker	2
		NQNF Panelboard Data Sheet	Product characteristics for NQNF panelboard enclosure box	1
		Phoenix Contact PS	Catalog of technical data and characteristics for Primary-switched TRIO POWER power supply	7
		PowerPact P-Frame Moulded Case Circuit Breakers	Product characteristics for molded case circuit breaker 600V 800A	2
		PowerPact Q-Frame Molded Case Circuit Breaker	Product characteristics for molded case circuit breaker – 3 pole – 10kA – 240V – 225A	2
		Power Style Low Voltage Switch	Catalog and description of QED-2 and Speed-D Merchandised Service Section Switchboards	60
		QED Switchboard Drawings	Technical drawings of QED switchboards	9
		QED-2 Switchboard Instruction Manual	Instruction bulletin for QED-2 switchboard. Includes safety precautions, handling, storing, installation, cable terminations and more.	18
		Schneider 5A breaker Multi 9 Data Sheet	Product characteristics for Multi 9 C-Curve 5A miniature circuit breaker	2

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**06 E-House > Breaker & Panels & Disconnects**	Schneider 6A breaker Multi 9 Data Sheet	Product characteristics for Multi 9 C-Curve 6A miniature circuit breaker	2
		Schneider 15A breaker Multi 9 Data Sheet	Product characteristics for Multi 9 C-Curve 15A miniature circuit breaker	2
		Schneider Contact Block NC Harmony Data sheet	Product characteristics for single contact block for head Ø22 1NC silver alloy screw clamp terminal	2
		Schneider Contact Block NO Harmony Data Sheet	Product characteristics for single contact block for head Ø22 1NO silver alloy screw clamp terminal	2
		Schneider P-frame breaker Manua	Catalog and detailed manual for circuit breakers	192
		Schneider Electric QO Load Centers Data Sheet	Product characteristics of PK27GTA load center equipment ground bar assy	1
		Schneider QO Load centres	Product characteristics for PK9GTA load center equipment ground bar assy	1
		SST Disconnect Drawing	Diagram for heavy duty safety switches	1
	06 E-House > SCADA/RTAC/SEL/HMI - Controls & Relays	AcSELerator RTAC 5033	Instruction manual for AcSELerator RTAC SEL-5033 Software	652
		Bitronics DS PowerPlex II	Describes features and specifications of Bitronics PowerPlex II Automation Transducer	2
		Eaton UPS 9130	Describes characteristics, features and technical specifications for Eaton 9130 Rackmount UPS	4
		Electroswitch Breaker Control Switch	Nameplate and visual dimensions for breaker control switch	1
		Electroswitch Catalog	Includes drawings, specifications and	88
		Electroswitch series 24	Includes features, specifications, data and drawings for series 24 instrument and control switches	7
		Electroswitch Type W-2	Includes features, specifications, data and drawings for type W-2 instrument and control switches	2
		Ethernet Switch EDS-205A/208A Series	Characteristics and specifications for 5 and 8-port Ethernet switches	2
		EWON Cosy 131 Remote Access Gateway Datasheet	Product description for eWON Cosy Industrial Remote Access Gateway	4
		FileIO	IEC 61131 Library for SEL Automation Controllers	96
		MegaPowerSystems UTS Catalog	Information regarding UTS1 and UTS3 switches	12
		Nitron Switch 516TX Data Sheet	Product characteristics and specifications for 516TX-A Industrial Ethernet Switch	3
		Phoenix Contact Relay Module	Technical data, characteristics regarding pre-assembled relay module with push-in connection	13
		Scanned PV CT test stickers	Scanned PV CT test stickers	1
		Scanned PV PT test stickers	Scanned PV PT test stickers	1
		Schneider Harmony XB4 ZB4 Metal Push Buttons	Product characteristics for black selector switch head Ø22 2-position stay put	2
		Schneider Pilot Light Green Harmony XB4BVG3	Product characteristics for green complete pilot light Ø22 plain lens with integral LED 110/120V	2
		Schneider Pilot Light Red Harmony XB4	Product characteristics for red complete pilot light Ø22 plain lens with integral LED 110/120V	4
		Schneider Pilot Light White Harmony XB4	Product characteristics for white complete pilot light Ø22 plain lens with integral LED 110/120V	4
		SEL 235 Accessory Guide	Describes features and technical aspects/guide for SEL Satellite Synchronized Clocks	24
		SEL 735	SEL 735 Power Quality and Revenue Meter Instruction Manual	424
		SEL 751 Relay Instruction Manual	SEL 751 Feeder Protection Relay	946
		SEL 2401 Satellite Synchronized Instruction Manual	In depth of features, benefits, applications, settings, installation, maintenance, etc. for Satellite Synchronized Clock	28
		SEL 2440 Instruction Manual	Discrete Programmable Automation Controller (DPAC) instruction manual	148
		SEL 3530-4 Instruction Manual	Real-Time Automation Controller (RTAC) instruction manual	738
		SEL 5045 Software	AcSELerator Team SEL 5045 Software instruction manual	204
		Single phase Overvoltage/Undervoltage Relay	Product ratings, specifications and drawings	12
		TrendRecorder	IEC 61131 library for SEL Automation Controllers	14
		White Rodgers	Schematic drawings and data for general purpose relays Type 184	2

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**06 E-House > Miscellaneous Equipment**	Junction Boxes Sheet	Type 1, 3 an 3R Junction Boxes Enclosures data and illustration sheet	2
		Uninterrupted Power Supply	Product characteristics, data and specs for Uninterruptible power supply – input 24 V DC, output 24 V DC/5A	8
		Power Supply Unit	Product characteristics, data and specs for Primary-switched QUINT POWER power supply for DIN rail mounting with Selective Fuse Breaking	10
		A30248GSC HOFFMAN	Specifications and characteristics of Hoffman screw-cover, gasketed type 3 box/enclosure	2
		Amphenol Coaxial Cable	Design drawing of coaxial cable	1
		Bussmann Fuse	Features, specs and technical data for Low-Peak LP-CC Class CC 600 Vac/300 Vdc time-delay fuses	4
	06 E-House > Miscellaneous Equipment	Bussman Fuse	Features, specs and technical data for LIMITRON FNQ-R Class 600Vac time-delay fuses	6
		CANARM KJ16110	Details regarding SPDT and TWO SPDT switches including warranty, specs and ratings.	4
		Coaxial Cable	Lists part number and length for SEL-C960 Coaxial Cable	1
		Cooper 4SLSTP4040DD120V	Specifications and characteristics of SLSTP Lensed LED Metalux AP Series	2
		Cooper CPRSGF15W	Technical Data and Specifications for Arrow Hart specification grade GFCI receptacles	6
		Cooper CPRXTOR1A	Specifications and characteristics of XTOR Crosstour LED	3
		Cooper WIU-1	Description and features of Extra duty while in use weather protective covers	1
		Emergi-Lite EMGEX10WP2M	Features, specs and other characteristics for EX10-P & LPEX10-P Series LED Exit Sign	1
		Rittal Enclosure	Product characteristics for Wall mounted enclosure – WM 8017.575	3
		Hoffman painted steel panel	Product characteristics of Panel Conversion Kit	1
		Hoffman Panel PTHW602424G2	Product description and characteristics of Protek double-hinged wall mount cabinets	10
		Hoffman Rack Mount Panels	Design specifications for rack angles and associated materials	1
		Hoffman Spec-00534	Product characteristics and specification of Accessplus Double-hinged type 1 wall mount cabinets	6
		Hubbell HUBCR15	Specs and features for 15A, 125V, 2 pole, 3 wire grounding commercial specification grade duplex receptacles	1
		Hubbell HUBCS115	Specs and features for single pole 15A, 120-277V AC specification grade commercial switch	1
		Hubbell Receptacle Wiring	Specs and features for 15A, 125V, 2 pole, 3 wire grounding commercial specification grade duplex receptacles	1
		Hydel Full Line Catalogue	Dimensions for Ontario Hydro Meter Cabinet	1
		Interlock Kit EIK40601	Product characteristics for Kit Electrical Interlock Switch	1
		Itron	Layout and ratings of Itron potential transformer ME-7	4
		Kidde Pi2010CA Data Sheet	Features specs and other info related to Dual Sensor Ionization & Photoelectric Smoke Alarm	2
		Kidde SM120X User Guide	Includes ratings, description and other important info related to Relay/Power Supply Model	2
		Littelfuse Protection Relays Manual	PGR-3100 Manual for Ground Fault Indication System	9
		LPJ-60SP	Technical data sheet for Low-Peak LPJ Class J 600Vac/300Vdc dual element time-delay fuses	4
		Multicomp SPC19944	Serial DB9 data cable assemblies specifications	2
		NEMA 4 panel V-GP	Vision Series V-GP model wall mount single door enclosure	2
		Pentair ASE8x8x6	Specifications and features for screw-cover type 1 enclosure	8
		Phoenix Contact End Clamp	Data and classifications for CLIPFIX 35-5 End clamp	8
		Phoenix Contact terminal block 3044199	Data and classifications for Feed-through terminal block UT 16	15
		Phoenix Contact terminal block 3058143	Data and classifications for Bolt connection terminal block RSC 5	13
		Rab Design MS180SBRZ	Specifications and ratings for RAB Design On/Off motion sensor	2
		Receptacle Box – Rab Design	Dimensions and description for weatherproof, single gang, die cast aluminum box	2
		Ritz DCCW-DCCB (R6MC equal)	Describes charactersitics, design and specs for DCCW and DCCB transformers	4
		Ritz PT ME-7 Ritz	Tpe ME-7 Voltage Transformer 720V Class, 10kV BIL, Indoor features	4

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**06 E-House > Miscellaneous Equipment**	Schneider PB mounting collar Harmony	Product characteristics for metal fixing collar pillar for electrical block	1
		Stelpro Dragon Heater	Features, technical drawigns and specs for Dragon Heater	4
		Stelpro STLSWT1C	Specifications and features of Line Volatage – SWT series mechanical thermostat	1
		Thomas & Betts BOX1110	Photos and features of various Utility Boxes and Covers	2
		Thomas & Betts BOX52171k	Photos and features of various 4 in square boxes conduit knockouts	6
		Thomas & Betts MICMM	Specifications for various Service Entrance Masts and Accessories	10
		Wall Mount Brackets V-WMB	Characteristics for N12-MF series Mounting Feet Kits	1
		Weidmuller end bracket	Technical data for WEW 35/2 end bracket	3
	06 E-House > Miscellaneous Equipment	Weidmuller feed through terminal	Technical data and classifications for WDU terminal blocks with clamping yoke connections	5
		Weidmuller PE Terminal	Technical data and classifications for WPE 6 terminal block	5
		Weidmuller test disconnect terminal	Technical data and classifications for WTL 6 SL test disconnect terminal block	4
	06 E-House > Ehouse Manuals	AcSELerator RTAC 5033	Instruction Manual for RTAC SEL-5033 Software	652
		Masterpact NT and NW Circuit Breakers	Catalog from Schneider Electric on Masterpact NT and NW Universal Power Circuit Breakers	240
		QED-2 Switchboard Instruction Manual	Detailed instruction bulletin for Power-Style QED-2 Switchboards	188
		REX SST Transformer O&M Manual	Maintenance, Operating and Installation instructions for dry-type general purpose transformers	1
		Schneider P-frame breaker manual	Catalog for PowerPact M-,P- and R-Frame, and Compact Circuit Breakers	192
		SEL-735	Instruction Manual for SEL-735 Power Quality and Revenue Meter	424
		SEL 751 Relay Instruction Manual	Instruction Manual for SEL-751 Feeder Protection Relay	946
		SEL-2401 Satellite Synchronized	Instruction Manual for SEL-2401 Satellite-Synchronized Clock	28
		SEL-2440	Instruction Manual for SEL-2440 Discrete Programmable Automation Controller (DPAC)	148
		SEL-3530	Instruction Manual for SEL-3530-4 Real Time Automation Controller (RTAC)	738
		SEL-5045 Software	Instruction Manual AcSELerator Team SEL 5045 Software	204
	07 Weather Station	Wind Speed and Direction Sensors	Description and specs for weather station wind monitor	5
		Calibration Certificates	Model 525 series calibration certification for sensors	5
		CMP10 Pyranometer	Specifications for CMP10 pyranometer	1
		CR1000X Datalogger	Features and specifications for World Class Environmental Datalogger	2
		CS106 Sensor	Specifications and characteristics of CS106 Barometric pressure sensor	2
		HC2 S3 L Sensor	Specifications and characteristics of HC2-53-L Temperature and Relative humidity Sensor	2
		Modbus Map Gull Bay	Table of data from sensors	1
		Pyranometers – CMP6-CMP11-CMP21	Product Manual for CMP 6, CMP 10, CMP 11 and CMP 21 Pyranometers	46
		RTD Sensor	Descriptions, instructions and specs for self-adhesive RTD sensor	1
		SAT-RTD	Specifications and characteristics of advanced-design surface mount RTD	2
		TE525 data sheet	Features and specs for Texas Electronics Bucket Rain Gauges	1
		Temperature and Relative Humidity Probe	Manual for HC2S3 Temperature and Relative Humidity Probe	43
		Wiring Diagram	Outlines connections points and wiring for junction box and power terminal block	1

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**7 Weather Station > Manuals**	Barometric – CS106 Manual	Instruction manual for CS106 Barometric pressure sensor by Campbell Scientific	28
		CR1000X Product Manual	Detailed manual for Measurement and Control Datalogger	200
		Datalogger CR1000 Manual	Operators Manual for CR1000 Datalogger	630
		Rain Gauge Manual	Instruction Manual for TE525 Tipping Bucket Rain Gauge	31
		Solar Install Manual	Solar weather station installation guide, includes pictures and graphics	17
		Wind Sensor Manual	Instruction Manual for Wind Monitor, includes warranty assistance	37
	08 Security System	HIKVISION Network Camera	Features and specs for 2 MP vandal resistant weatherproof network camera	2
		Camera User Manual	HIKVISION Network Camera User Manual	165
		Detexi Client V3	Stealth monitoring Detexi User Manual for security cameras	45
		Detexi7.xip	Installation setup file to access cameras	
		Eaton 5p ups installation user manual	Installation and user manual for Eaton Tower models and 1U Rack models	28
		EdgeSwitch Data Sheet	Specifications and characteristics of Managed PoE+ Gigabit Switches with SFP for Ethernet	12
		EdgeSwitch ES-8-150W	Quick Start Guide for AC or DC Powered, Managed PoE+ Gigabit Switch with SFP	27
		EdgeSwitch ES 16 150W	Quick Start Guide for Managed PoE+ Gigabit Switch with SFP	10
		Network Speed Dome	User Manual for HIKVision network speed dome, instructions on configuring camera settings	139
		Axis Communications	Axis Q1941-E Thermal Network Camera user manual	65
	9 BESS > 01 Battery Modules	E2 Module	Drawings representing history of design change in modules	1
		E2 Switchgear	Schematic drawing of switchgears	1
		Installation Manual Vertical	Samsung installation manual for vertical connection of the ESS	74
		Operation and maintenance manual V171229	Operation & maintenance manual for Samsung Energy, Medium and Power compact platform	46
		Specification of Battery System	Configuration and technical specification of battery system	2
		NABB02 As Built	Schematic as built drawings of battery cabinet	**39**
	BESS > Inverter PCS 100	PCS100 ESS Technical Manual	Technical manual for PCS100 Converter Grid Connect Interface for Energy Storage Systems	150
		PCS100 ESS User Manual	Detailed user manual of PCS100 ESS Grid Connect Interface for Energy Storage Systems	150
		PCS100 ESS Maintenance Schedule	Maintenance intervals and component replacements	1
		2UCD190024E101_b	Mechanical layout of PCS100 system	2
		2UCD190024E301_g	Wiring diagram of PCS100 system	2
		Service Log Download	Step-by-step procedure for downloading PCS100 power converter service log	10
		PCS 100 Module Replacement	Service instruction – PCS100 Rectifier/Inverter Module Replacement	11
		PCS100 AVC Vo2 Module Blower Fan Replacement	Service guide w/ illustrations for Vo2 Module Blower Fan Replacement	4
	03 HVAC	Marvair HVAC Technical Brochure	Installation and Operation Manual for 9-11 EER Vertical Wall-Mount Air Conditioners	45
		68-0312	Product data/manual for VisionPRO 8000 touchscreen thermostat	146
		69-1709EFS	Installation instructions for C7089U outdoor sensor	12
		69-2760	Installation guide for Honeywell VisionPRO series thermostat	12
		Marvair compact avpa	Description, features and ratings for Marvair Vertical Wall Mount Air Conditioner	37
			Installation and operation manual for Vertical Wall Mount Air Conditioner with Front Control Box Panel	45
		SK 3110 Thermostat	Product datasheet for internal enclosure thermostat	3
		SK 3239 Cabinet Fan	Specifications and assembly for fan and filter unit	21
		SZ 4140_820 - LED Strip	Product datasheet for LED compact system light	4
	04 Fire Suppression	PFC4410	Installation, operations and instruction manual for Releasing Panel for Water and Agent Extinguishing System	99
		ARM-44	Description, ratings and installation for ARM-44 relay module	2
	05 AC & DC Breakers	MCCB Product Selector	Formula, Tmax XT & Tmax T ranges for molded case circuit breakers	122
		MOE Installation Instructions	Illustrations for installation steps	9

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
01 Equipment	**06 Control Equipment > AFS Switch**	AFS Installation Manual	User manual for ABB FOX switch AFS660-C	50
	06 Control Equipment > Antenna	TTM-01-G-Datasheet-022019	Information related to outputs for TTM 01-G GPS and GLONASS clock	
		TTM-01-G-Manual-082217	User manual for Tekron synchronization solution for RTUs, protection relays and other intelligent electronic devices.	14
		ttm-01-g-quick-start-guide-0	Quick setup and configuration tool tips for antenna	
	07 Misc Equipment	BESS Misc Equipment cut sheets	Detailed data sheets	78
	10 BESS Transformer	HPS Transformer O&M Manuals	Installation, Operation and Maintenance Guide for indoor/outdoor dry type transformers which utilize DH series, NH series or NJ1, NJ2, NJ3, NJ4 type enclosures	60
		HPS Transformer Cold Start Procedure	Instructions from HPS on how to energize the transformer in cold weather.	1
	11 89 Intertie Breaker	89 Intertie Cut sheet	Product specifications and characteristics for 600V switchgear	2
		89 Intertie O&M Manual	Operations and Maintenance instructions for 89 Intertie	20
		89 Intertie Switch Shop Drawing	Shop drawing of the 89 Intertie	1
		89 Intertie O&M Manual	800 and 1200 A Heavy Duty Safety Switches manual	20
	12 Microgrid Controllers	E00022308 OPG BESS01-S	Schematic drawings of PowerStore Battery contents	29
		E00022308 OPG CABt01-S	Schematric drawings of components for Hydro One Remotes PLC Interface	6
		E00022308-V rev1	System overall overview communication & control diagram	1
	13 Remotes Switchgear	CSKI104056-001-18 - CONSTRUCTION	Information related to switchgear	8
		OPG Gull Bay Diesel Offset Microgrid O&M	Eaton switchgear operations and maintenance manual	265
		dwg_60312_GBay_E601-E-601 dwg_60312_GBay_E602-E-602 dwg_60312_GBay_E603-E-603 dwg_60312_GBay_E604-E-604 dwg_60312_GBay_E605-E-605-1 dwg_60312_GBay_E605-E605-2 dwg_60312_GBay_E605-E-605-3		
02 Operating Procedures	**01 Start-up Shut Down**	Giizis Energy – Stat Up and Shut Down Procedure	Instructions on how to perform a controlled Shut down and Start-up of the micro grid station	4
	02 HMI	Giizis Energy – Login and passwords	Includes all credentials to access E-catcher, HMI via Chrome, Security System, Fronius Web, SEL software and more.	2
		How to Log onto the Gizzis Energy HMI	Instructions to login to the HMI from the Ehouse or from a remote location	7
		Giizis Energy – P&C User Guide	Synchro manual on RTAC SCADA and Relays	28
		Operations Flow Diagram	Visual and textual representation of the micro grid system logic and operation (how it works)	1
	03 Security System	Stealth Monitoring User Manual	User manual of Detexi software to view camera footage of the site	45
	04 Microgrid Controller	E22308-M1 - ControlsInterfaceDescription Rev6	Functional description of Controls and Interface of controller and Powerstore	13
		E22308-M2 -Operator Manual Rev0	Functional description and operator manual regarding the PowerStore	43
		E22308-M4 - FaultFindingGuide Rev0	Fault finding guide/instructions for ESS	16
03 Maintenance		Gull Bay Maintenance Plan	Instructions from ALLTRADE on maintaining equipment on site	10
		Alltrade – Gull Bay Operation & Maintenance	Instructions for operations and maintenance of micro grid components such as weather station, E house, Racking, Solar Modules and more.	85
		ABB PES – 9006 OPG GULL BAY Proposal	Preventative maintenance proposal for 300kw, 479kwh powerstore	15
		Powerstore Maintenance Schedule & Recommended Spare Parts	20 year O&M Plan and instructions for maintaining the powerstore	4
		Gizzis Energy Spare Parts Solar & Ehosue	List of recommended spare parts and estimate on pricing for the Solar PV system and Ehouse	2

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
04 Training		Giizis Energy Intro Video	Drone footage of the micro grid site and pictures that describe various equipment and components of the system.	
		Giizis Energy HMI & SCADA training	Computer walkthrough video of navigating and accessing the Synchro HMI	
		Giizis Energy Security Camera Tutorial	Computer walkthrough video of navigating and accessing site security cameras using Detexi Client software from Stealth Monitoring	
05 Commissioning Results	**01 Civil > Compaction Test Reports**	Compaction Test Results	Test results by DST Consulting Engineers on civil work performed by JD Landworks. Includes site inspection report, compaction test field form.	41
	01 Civil > 02 Material Supply Certificates	Granular A	DST Consulting Engineers laboratory proctor test results	1
		Granular B	DST Consulting Engineers laboratory proctor test results	1
		Sand Thermal Results	Results of thermal resistivity testing carried out on a sand sample provided by JD Landworks.	1
	01 Civil > 03 Site Reports	Stantec Gull Bay Microgrid Civil Site Report	Site visit report by Stantec from Oct 26, 2018 describing on-site activity, completed works and observations and discussions.	4
		Stantec Gull Bay Micro Grid Structural Site Report	Letter to KZA from Stantec confirming that structural work has been built in general conformance to the approved permit drawings and specifications.	1
	01 > 04 Well Decommissioning	A233210 Well Record	MOECC record of well construction form	1
		A233215 Well Record	MOECC record of well construction form	1
	02 Ehouse testing	Eaton Gull Bay Microgrid	Detailed Field Service Repiort for on site equipment testing. Summarizes all services, recommendations and comments.	172
		Gull Bay BESS – Final.rdb	Settings file for the 751 relay as left by Eaton (relay	
		SCADA Checks	Alltrade commissioning checklist for breakers, panel, relays, RTAC, etc	1
		Weather Station Commissioning	Technical data from weather station	5
	03 Piles	Gull Bay Compression Test NE	Table and graphical form data from NE-4 Compression Load Test by Polar Racking	4
		Gull Bay Production Test Load Displacement Graphs	Table and graphical form data from Axial Load Test by Polar Racking	20
	04 PV Plant Commissioning > 01 Fiber Optic	Fiber Optic OTDR	Test results, parameters and graphics from fiber optic OTDR	12
05 Commissioning Results	**04 PV Plant Commissioning > 02 Solar PV Modules > Module Flash Test Data**	Flash data-DN#87003506 – 365W Modules Flash data-DN#87003507 – 365W Modules	Table of data from the panels in volts, amps and watts	1
		Gull Bay IV Data Sheet Final Results	Alltrade IV Curve Report of module strings	45
	04 PV Plant Commissioning > 03 PV Inverters	Inverter Setpoints	Photo captures of the inverter settings from the front display screen of each inverter	
		PV Inverter Production Test Results	Fronius report of production from PV inverters including results, test conditions and software version.	15
	04 PV Plant Commissioning > 04 Transformer FATs	CertifiedC9_226767_I18J0005-250754 CertifiedC9_226768_I18J0006-250754	Hammond Power Solutions Inc. production test data	2
	04 PV Plant Commissioning > 05 IR Scans	June 2019 Gull Bay IR Scans	Thermography Report - IR scans of all DC and AC connection points	32
	04 PV Plant Commissioning	PV Plant Commissioning Results	Reports, checklists, inspection and testing information from Alltrade related to PV commissioning	81
	05 BESS & Microgrid Controller	E22308-BESS01-TR2 rev4	System Acceptence and Testing Proceedure and Results for Microgrid Controller and BESS	55
06 Remotes	**01 CIA**	Gull Bay CIA Service Agreement and CIA final and executed	Gull Bay Solar – Battery Design, Joint Operations Agreement and Connection Impact Study for MDL and OPG	26
		Gull Bay First Nation Diesel Offset Microgrid DTCA	Detailed Technical Connection Assessment by Hydro One Remotes	19
		Remotes Case 2&3 CIA Application Form	Checklist and appendices for the connection of the grid with Remotes facility	14
	02 DCA			

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
07 As built Drawings	01 E House > Electrical	254015 Gull Bay Ehouse	Single Line diagrams, Three Line diagrams and other SCADA and SEL drawings from Synchro.	51
		OPG Gull Bay Intertie Protecton Settings RevA	OPG Gull Bay Intertie Protecton Settings RevA	1
	01 E House > Layout	254015-E2 Rev 0	Synchro drawing of 30' E-House Overhead Layout w/ Framing & Under-Floor/Through-wall Conduit	1
		254015-E3 Rev 0	Synchro drawing of 30' Ehouse North and South Exterior Wallas Elevation Layouts	1
		254015-E4 Rev 0	Synchro drawing of 30' Ehouse North and South Interior Walls Elevation Layouts	1
		254015-E5 Rev 0	Synchro drawing of 30' Ehouse East and West Interior and Exterior Walls Elevation Layouts	1
		254015-E1 Rev 2	E house overhead layout	1
	01 E House > Structural	182003 - ARCH-STRUC_CURRENT - Sheet - PL1 - POINT LOADS LAYOUT_STAMPED-09-04-18	Series 2000 – Equipment Shelter Base Frame – Point Loads Layout	1
		182003 - ARCH-STRUC_CURRENT_R3_08-30-18 - STAMPED	Shows floor plan, roof plan, door schedule, notes, elevations, cross sections, unfactored point loads layout	7
	02 Solar & BoP	900284000_GULLBAY_CONNECTIONS 900314001_GULLBAY_YELLOW 900314002_GULLBAY_Orange 900314003_GULLBAY_2X12_ORANGE	Polar racking design drawings of racking assembly	4
		dwg_60312_GullBay-AsBuilt-190605	Solar site civil and electrical drawings	28
	03 BESS	E00022308-OPG-BESS01-S rev2	Electrical schematic drawings of PowerStore Battery	29
		NABB02 AS BUILT	Battery building drawings	39
	04 Micro grid Controller	E00022308-OPG-CAB0T2-S_rev3	Schematic drawings of content of PV solar inverter interface	9
		E00022308-OPG-CABT01-S_rev1	Hydro One Remote PLC Interface drawings	6
		E00022308-V rev4	System overall overview communication and control diagram	
	05 Engineering Reports	GullBay Grounding Mar 8 2019-signed	Letter from Stantec to KZA explaining how a grounding study is not required as it is a low voltage system	2
		OPG Gull Bay Short Circuit Coordination & AF Analysis	Stantec AC Short Circuit, Protective Device Coordination and AC/DC ARC Flash Analysis	130
		OPG Gull Bay PowerFlow Harmonic Analysis	Extensive report from Stantec including drawings and data from study	274
		17-1102 OPG Gull Bay TULLOCH GEO Nov 1 2017	Site Geotechnical Report	57
		Pile Corrosion Analysis and Design	Solar PV ravking Pile Corrosion Analysis Design	
		Alltrade GullBay P&C Philosophy	Includes tripping matrix and SEL 751 FPR & DPAC logic diagram	17
08 Environmental		OPG KZA Report - Final	Beacon Environmental Natural Heritage Assessment for the project	34
		Archaeology Field Report Letter	Archaeological resource assessment of the micro grid site by the Ministry of Tourism, Culture and Sport	8
		Noise Impact Assessment	DNVGL noise impact assessment of the site consisting of assessment criteria, points of reception, mitigation measures.	21
		HOU-R-03-C Gull Bay Phase I ESA-FINAL	DNVGL report for Phase I Environmental Site Assessment. Purpose of Phase I ESA, "…identify actual and potential site contamination…"	161
		BG-632-Env Inv. Gull Bay First Nation – OPG	Environmental investigation of site by Bluewater Geoscience Consultants Inc.	50
		OPG Gull Bay Tulloch Geo	Geotechnical report – provides results of the subsurface investigation and analyses completed on site and the subsurface materials encountered	57
		Environmental Commitments Report	INAC report of Simple Environmental Assessment that identifies potential adverse impacts and associated mitigation commitments.	8
		Simple Environmental Review Report	Standard environmental review as per AANDC environment review process to satisfy the requirements of s. 67 of the Canadian Environment Assessment Act, 2012	22
		Stormwater Management Brief	Stormwater Management Brief documents existing conditions and outline SWM design strategy for the proposed development of the project	33
		Gull Bay Civil Drawings	Technical IFC (issued for construction) civil drawings of the site	5

Table of Contents
Gizzis Energy Project Turnover Documents

Folder	Subfolder(s)	Name of Document	Description	Number of Pages
09 Equipment Warranty		01 Equipment warranty list	Outlines processes and conditions for the 10 Year Limited Product Warranty and 25 Year Limited Performance Warranty.	4
		02 Canadian Solar Limited Warranty Statement	Outlines processes and conditions for the 10 Year Limited Product Warranty and 25 Year Limited Performance Warranty.	4
		03 E-House Warranty Certificate	Gull Bay E-House exclusive of equipment that was supplied by others (inverters, BESS TX, PV TX, Weather Station Equipment, Camera System and Equipment).	2
		04 Inverter Warranty	Warranty conditions for Fronius Inverters	3
		05 Racking Warranty	Warranty and Product maintenance for racking. Outlines terms and conditions of warranty.	1
		06 Transformer Warranty	HPS Power Solutions Inc., (“HPS”) warrant to the original purchaser of HPS Part Number 226767; 226768	1
		07 Weather Station Warranty	Warranty from Cambell Scientific for the weather station components	1
		08 OPG - GULL BAY DIESEL OFFSET MICRO GRID AGREEMENT	EPC Contract between OPG and Alltrade includes warranty provissions for workmanship	574
		09 ABB Warranty	20190903 OPG Gull Bay ABB Warranty-KMH	9