



DER Interconnection Document Requirements

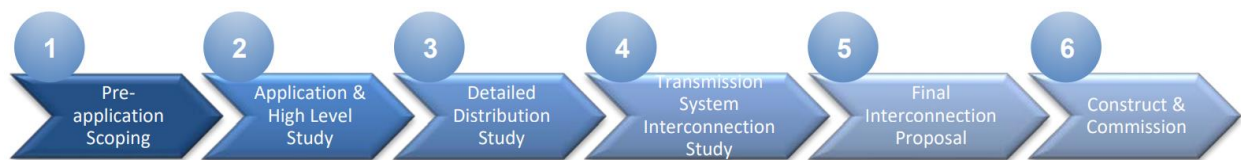
FORTIS
ALBERTA

DER INTERCONNECTION – TECHNICAL DOCUMENT REQUIREMENTS

The following technical documents must be received and accepted by FortisAlberta prior to DER interconnection energization. Review *Annex A* of this document to determine the set of required documents based on the total power generation of the site. Refer to the FortisAlberta’s *Technical Interconnection Requirements*, *DER-02* standard and *Distributed Energy Resource Interconnection Process Requirements* document in support of the documents below.

All required documentation must be submitted by email to FortisAlberta at generation@fortisalberta.com. Failure to submit any of the required information will result in a delay in interconnection energization.

For reference the following six phases will help provide guidance on when certain documents are required.



PRE-ENERGIZATION DOCUMENTS

DOCUMENTS REQUIRED BY: PHASE 3 (DETAILED STUDY)

1. ISSUED FOR CONSTRUCTION SINGLE LINE DIAGRAM (SLD) > 50kW

- DER customer shall provide SLD drawing(s) containing, but not limited to, the following:
 - Authenticated by a Professional Engineer (P.Eng).
 - Demarcation between FortisAlberta and Customer Facility.
 - Indication of the Measurement Point (Point of Common Coupling (PCC) or Point of Connection (PoC), see *Technical Interconnection Requirements* standard).
 - Disconnecting devices (Breakers, Isolation Switch, Isolating Fuses).
 - Protective and metering devices (Relays, Power Monitors, Revenue Meter). Protective relays must display enabled elements.
 - Power transformers
 - Transformers winding configurations
 - Proposed protection settings.
 - High level view of connecting generator(s).

Reference: FortisAlberta’s Standard, *DER-02 - Section 5.1*

Note: See Annex A, CSA C22.3 No 9:20 for example SLD’s, including variations for different transformer winding configurations and measurement point requirements.

2. ENGINEERING STUDIES

- The DER shall perform the following system impact studies. All studies require authentication by a professional engineer prior to submittal:
 - Short Circuit Analysis
 - Grounding Study
 - Self-Excitation Study (Induction Generation)
 - Transmission Anti-Islanding Study (If applicable)

Reference: FortisAlberta's Standard, *DER-02 - Section 4*

DOCUMENTS REQUIRED BY: PHASE 5 (FINAL PROPOSAL)

1. INTERCONNECTION PROTECTION SETTINGS & COMMISSIONING (IPSC): PROTECTION SETTINGS VALIDATION

- DER customer shall review the IPSC document and complete the Protection Validation section, **Section 1**, prior to commissioning. This document will be reviewed & approved by FortisAlberta.

2. DER UNIT CERTIFICATION

- The DER customer shall provide certifications for all DER Units which must be accredited by the Standards Council of Canada (CSA, ULc, etc.)
- For all Inverter based generators, certifications must confirm compliance to UL 1741 SA and CSA C22.2 107.1.

SUBMITTAL REQUIRED BY: STAGE 6 (CONSTRUCTION / COMMISSIONING)

1. COMMISSIONING DOCUMENTS

- FortisAlberta must be notified of commissioning activities and reserves the right to witness. All testing and verification must be conducted and signed off by a qualified employee. Testing documentation are not required to be submitted for energization but must be made available upon request.
- DER shall provide a completed IPSC Protection Performance and Equipment Commissioning, **Section 2**

Reference: FortisAlberta's Standard, *DER-02 - Section 9*

2. ELECTRICAL INSPECTION REPORT

- The DER customer shall provide an electrical inspection report authenticated by a certified Safety Codes Officer (SCO) upon completion of construction,

3. DATA CONCENTRATOR (RTU) – BENCH TEST REPORT

- The DER customer shall provide an RTU bench test report. The report shall include validation of all the field signals back to the RTU and that the RTU signal mapping complies to the mapping presented in *Annex A* of DER-02. The report shall also contain an as-left copy of the configuration parameters of the RTU.

Reference: FortisAlberta's Standard, *DER-02 - Section 9 & Annex A*

POST-ENERGIZATION DOCUMENTS

1. AS-BUILT SINGLE LINE DIAGRAM (SLD)

- DER customer shall provide As-Built SLD drawing(s) authenticated by a Professional Engineer (P.Eng.). As-built drawings shall be submitted within one month, post energization.

2. POWER QUALITY (PQ) BENCHMARK MONITORING AND ANALYSIS REPORT

- The DER customer shall complete a PQ analysis starting 7 days before any generation and for one month following generation. The final report should include an analysis and signoff that the DER facility is compliant with FortisAlberta's DER-02 interconnection requirements and Power Quality Specification.

REQUIRED ON AN ANNUAL BASIS

1. MAINTENANCE VERIFICATION REPORT

- A FortisAlberta *Maintenance Verification Form* shall be signed and completed by the DER, on an **annual** basis.

Reference: FortisAlberta's Standard, *DER-02 - Section 10*

ANNEX A: Required Documents by Total Power Generation

Documents	TOTAL POWER GENERATION		
	$P < 50$ (kW)	$50 \leq P < 150$ (kW)	$P \geq 150$ (kW)
Pre-Energization			
IFC Single Line Drawing		*P.Eng Authentication Required	*P.Eng Authentication Required
Electrical Inspection Report			
Engineering Studies			
Equipment Certification			
(RTU) – Bench Test Report			$P \geq 500$ kW
IPSC: Proposal Section		*FortisAlberta Approval Required	*FortisAlberta Approval Required
Commissioning Documents			
Post-Energization			
As-Built SLD		*P.Eng Authentication Required	*P.Eng Authentication Required
Power Quality Report			$P \geq 500$ kW
Maintenance Verification Form			*Submitted Annually to FortisAlberta

	Indication of Required Documentation
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