Distributed Resource Interconnection Procedures

Procedures for interconnecting of non-utility generation

Up to and including 10 MW in capacity to the Manitoba Hydro System at a voltage not to exceed 25kV

Effective: 2016 01 22

Available in accessible formats upon request.
Manitoba Hydro Distributed Resource Interconnection Procedures

1 Introduction
This document sets out the procedures and the documents required for interconnecting proposed network resource or paralleling generating facilities up to and including 10 MW in capacity to the Manitoba Hydro System at a voltage not to exceed 25kV (the “Interconnection Procedures”). The Interconnection Procedures include the following Appendixes and Attachments:

- Appendix 1 Glossary of Terms
- Appendix 2 Distributed Resources Interconnection Process Chart
- Attachment 1 Interconnection Request
- Attachment 2 Engineering Study Agreement
- Attachment 3 Type I DR Interconnection and Operating Agreement
- Attachment 4 Type II DR Interconnection and Operating Agreement
- Attachment 5 Type III and Type IV DR Interconnection and Operating Agreement
- Attachment 6 DR Interconnection 10 kW or less Registration Form

2 Inquiries
Inquiries may be made to:

- Primary Contact: Kelly Spence
  - Energy Services Advisor
  - Manitoba Hydro
  - 235-10th St.
  - Brandon, MB R7A 7J8
  - Phone (204) 727-9271
  - Fax (204) 571-6657
  - Email: kspence@hydro.mb.ca

- Secondary Contact: Mercil Lutzek
  - Energy Services Advisor
  - Manitoba Hydro
  - 360 Portage Ave
  - Winnipeg, MB R3C 0G8
  - Phone (204) 360-7127
  - Fax (204) 360-6108
  - Email: mtlutzek@hydro.mb.ca

3 Definitions
Capitalized terms used in the Interconnection Procedures (including the Attachments) shall have the meanings specified in the Glossary of Terms in Appendix 1 or in the body of this document.
4 Interconnection Process

Following the initial contact by an individual or entity seeking to interconnect a generating facility to the Manitoba Hydro System, (the “Distributed Resource Owner” or “DR Owner”) a Manitoba Hydro customer service representative (the “Representative”) will be designated to work with the DR Owner throughout the interconnection process. The Representative is the primary point of contact for Manitoba Hydro and will coordinate all communications and correspondence between the DR Owner and Manitoba Hydro.

All DR Interconnections must satisfy the technical requirements for connecting distributed resources to the Manitoba Hydro distribution system as outlined in DRG2003.

For DR Interconnections 10 kW or less the generator/inverter assembly shall be CSA/ULC approved, electrically inspected and registered with Manitoba Hydro using the form set our in Attachment 6.

For all other interconnections by a DR Owner, there are five stages:

- Stage 1 – Exploratory
- Stage 2 – Preliminary Estimates
- Stage 3 – Interconnection Study
- Stage 4 – Agreement
- Stage 5 – Construction & Commissioning

Appendix 2 describes the interconnection process in the form of a chart.

4.1 Stage 1 - Exploratory

The DR Owner contacts Manitoba Hydro to discuss a proposal for interconnection with the System. The Representative will review the proposal and arrange exploratory meetings with the DR Owner. The scope of the exploratory meetings shall include the following:

- Point of Interconnection Information
  - Location of generator
  - Generator capacity, type, energy output profile
  - Proposed one line diagram of generator interconnection
  - Prime mover of generation (wind, solar, biomass, diesel etc.)

- Primary Intent of DR Facility
  - Load displacement
  - Export to Manitoba Hydro System
➢ Interconnection Process
  o DR Owner technical requirements (as outlined in DRG2003)
  o Electrical permit and inspection
  o Interconnection Request
  o Interconnection & Operating Agreement

➢ Power Purchase Process (if any)
  o Power Purchase Agreement
  o Terms of payment
  o Compensation during pre-commercial testing
  o Metering

Distributed Resources fall into one of the following categories:

1. **Type I DR Interconnections** – An interconnection to the Manitoba Hydro System utilizing a CSA/UL approved momentary transition soft load transfer switch. The typical use for a Type I DR Interconnection is to momentarily connect/test a standby generator unit. The Type I DR Interconnection is not permitted to sell power to Manitoba Hydro.

2. **Type II DR Interconnections** – An interconnection operating in parallel with Manitoba Hydro. The Type II DR Interconnection is not permitted to sell power to Manitoba Hydro.

3. **Type III DR Interconnections** – An interconnection operating in parallel with Manitoba Hydro. The DR Owner of a Type III Interconnection displaces its own load and may contract to sell the excess power it produces to Manitoba Hydro.

4. **Type IV DR Interconnections** – An interconnection undertaken by the DR Owner solely for purposes of the sale of the power it produces to Manitoba Hydro.

The type of interconnection determines the process the DR Owner must follow, and the costs which the DR Owner will be obliged to pay, in order to interconnect. As part of the exploratory stage, Manitoba Hydro shall, in its sole discretion, determine the category of the DR Owner’s proposed interconnection.

4.2 **Stage 2 – Preliminary Estimates**

Once the DR Owner and Manitoba Hydro have determined the scope of the proposed interconnection, and Manitoba Hydro has determined which category of interconnection, the DR Owner will advise Manitoba Hydro of its decision to proceed. If the DR Owner determines to proceed, the DR Owner shall provide a written request to Manitoba Hydro for preliminary estimates of the energy purchase
price (if any) and the construction costs to be incurred to interconnect. The written request from the DR Owner shall include the following information:

- Generator location
- Single line diagram (‘SLD’)
- Generator size, type, voltage level
- Primary intent of generator load displacement: that is, parallel operation, export to grid
- Energy output profile of generator

Manitoba Hydro will provide preliminary estimates of the energy purchase price (if any) and the construction costs to connect to the DR Owner’s generator within 30 Days of receiving the written request. Preliminary estimate shall mean an estimate of energy costs within 25% of actual energy costs and construction costs within 25% of actual construction costs.

A change in the SLD once submitted to Manitoba Hydro will be deemed to be a new interconnection inquiry and may be returned to Stage 1 for further analysis by Manitoba Hydro.

4.3 Stage 3 – Interconnection Study

Once the DR owner has received the preliminary estimates and has determined to proceed with the proposed interconnection, the DR Owner shall submit an Interconnection Request in the form prescribed in Attachment 1. The receipt by Manitoba Hydro of a completed Interconnection Request commences the Interconnection Study stage which is comprised of two parts: (1) the engineering study component; and (2) the energy purchase price component.

4.3.1 Engineering Study Component

The Engineering Study process is as follows:

a) Manitoba Hydro will determine within 15 Days of receipt of a completed Interconnection Request whether an Engineering Study is required. If no Engineering Study is required, the DR Owner interconnection shall proceed directly to Stage 4.

b) If an Engineering Study is required, Manitoba Hydro will forward an Engineering Study agreement in the form attached as Attachment 2 (the “Engineering Study Agreement”) to the DR Owner within 15 Days of receiving a completed Interconnection Request.

c) DR Owner shall execute and deliver the Engineering Study Agreement within 15 Days of receipt of same. Manitoba Hydro may permit the DR Owner to delay execution of the Engineering Study Agreement for up to 60 days provided it does not materially affect the Interconnection Request. If Manitoba Hydro determines, in its sole discretion, that the Interconnection Request is materially affected by the delay, the Interconnection Request shall be rejected.
d) Once an executed Engineering Study Agreement and study costs/deposit (as
detailed below) have been received by Manitoba Hydro, Manitoba Hydro
shall, within 30 Days, complete and deliver the Engineering Study and cost
estimates for the interconnection to the DR Owner. The time required for
completing and delivering the Engineering Study and cost estimates may be
extended by Manitoba Hydro if the nature of the particular Interconnection
Request is such that additional time is required to complete same.

The Engineering Study costs to be paid by the DR Owner to Manitoba Hydro in
accordance with the terms hereof are as follows:

- Type I DR Interconnection – No Cost
- Type II DR Interconnections less than 100 kW – No Cost
- Type II DR Interconnection - $500
- Type III DR Interconnection – DR Owner places a deposit of $1000 for
  the Engineering Study costs and is responsible for the actual Engineering
  Study costs
- Type IV DR Interconnection - DR Owner places a deposit of $5000 for
  the Engineering Study costs and is responsible for actual Engineering
  Study costs

4.3.2 Energy Purchase Price Component

Manitoba Hydro will review the cost of integrating the DR Owner’s generator
output into the System. The review will include, but not be limited to, factors such
as environmental premiums, government subsidies and shaping and firming the
generator output into a 5 x 16 product (On peak hours Monday through Friday from
6AM to 10 PM, 5 x 16). Manitoba Hydro will provide a revised estimate for the
energy purchase (if any) to the DR Owner along with the Engineering Study.

4.4 Stage 4 – Agreement

The DR Owner shall, within 15 Days of receipt of the Engineering Study and cost
estimates for the interconnection as contemplated by Stage 3, advise Manitoba
Hydro in writing that it intends to proceed to Stage 4 (the “Agreement Stage”).

Manitoba Hydro may permit the DR Owner to delay proceeding to the Agreement
Stage for up to 60 days following receipt by the DR Owner of the Engineering
Study and cost estimates for the interconnection provided the delay does not
materially affect the Interconnection Request. If Manitoba Hydro determines, in its
sole discretion, that the Interconnection Request is materially affected by the delay,
the Interconnection Request shall be rejected. If the DR Owner subsequently
wishes to proceed with the interconnection, it must return to Stage 1 of these
Interconnection Procedures.
Within 15 days of written notification by the DR Owner that it intends to proceed, Manitoba Hydro will forward the following agreements to the DR Owner: (1) a Power Purchase Agreement for the energy (if required); and (2) an Interconnection and Operating Agreement in the form of either Attachment 3, Attachment 4 or Attachment 5 depending on the category of the proposed interconnection (the “Agreements”).

The Interconnection and Operating Agreement details, among other things, the construction responsibilities of the both the DR owner and Manitoba Hydro, if any, obligations related to operating and maintaining the Interconnection Facilities and the generating facility, insurance requirements, creditworthiness requirements and delineates the rights of the parties on termination of the interconnection. In terms of cost responsibility, the DR Owner is obligated to pay for the actual cost of constructing all of the facilities as well as any other costs associated with accommodating the interconnection.

Upon receipt of the Agreements the DR Owner shall have 30 Days to execute the Power Purchase Agreement (if required) and the Interconnection & Operating Agreement and deliver same to the Representative.

4.5 Stage 5 – Construction & Commissioning
The DR Owner shall, at least five days prior to final inspection, notify Manitoba Hydro that such inspection will be taking place. Manitoba Hydro shall have the right to have a representative present at the final inspection.

As per the Engineering Study Agreement (Attachment 2), all data provided to Manitoba Hydro by the DR owner shall be verified as accurate immediately prior to commissioning and every four years afterwards.

5 Adherence to Timelines
If Manitoba Hydro is unable to complete the required Engineering Study or agreements within the time periods outlined above, Manitoba Hydro shall notify the DR Owner and provide an revised estimated completion date along with an explanation as to why additional time is required.

The DR Owner may request a reasonable extension of any deadline set forth in these Interconnection Procedures. A reasonable extension shall be granted if in the judgment of Manitoba Hydro the extension does not cause any additional burden/costs to Manitoba Hydro. Any request for extension shall be made in writing to the Representative.