

Ministry of the Environment  
and Climate Change

Eastern Region  
Kingston District Office  
1259 Gardiners Road, Unit 3  
Kingston, Ontario, K7P 3J6  
613/549-4000 or 1-800/267-0974  
Fax: 613/548-6908

Ministère de l'Environnement et  
de l'Action en matière de changement climatique

Région de l'est  
Bureau du district de Kingston  
1259 rue Gardiners, unité 3  
Kingston (Ontario), K7P 3J6  
613/549-4000 ou 1-800/267-0974  
Fax: 613/548-6908



January 12, 2017

Bruce Wick, Plant Manager  
TransCanada Energy Ltd.  
RBC Plaza South Tower  
200 Bay Street, 24th Floor  
PO Box 43  
Toronto, Ontario  
M5J 2J1

Dear Mr. Wick

Re : Proposed Changes to the Surface Water Monitoring Program  
BK1 Site, 12 Centennial Road, Township of Elizabethtown-Kitley  
Renewable Energy Approval No. 4549-8MKH7H

I have reviewed the request for the proposed changes to the surface water monitoring program for the TransCanada Energy Ltd., for BK1 Site as described in your October 5, 2016 letter (hereafter referred to as the 'October 2016 Request'). **With the support of the Ministry of the Environment and Climate Change's Surface Water Unit, I am in agreement with the proposal to change the effluent sampling frequency at the transformer substation spill containment facility from quarterly to biannually.**

As such and in accordance with Condition 18(3) of REA No. 4549-8MKH7H issued November 30, 2011, this letter provides TransCanada Energy Ltd. with written approval to implement the proposed changes to the surface water monitoring described in the October 2016 Request. **Since this letter forms part of the REA, please append this letter with the proposed monitoring program to the Renewable Energy Approvals.**

Please note that all other requirements of the REA and notices/amendments remain unchanged and must be complied with.

If you have any other questions or concerns, please do not hesitate to call Senior Environmental Officer, Laura Skoblenick, at (613) 540-6870 or myself at (613) 548-6902.

Yours truly,

A handwritten signature in black ink, appearing to read "Jim Mahoney".

Jim Mahoney  
District Manager (A)  
Kingston District Office  
Ministry of the Environment and Climate Change

File: SI LE EL CE 212

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**AMENDMENT TO RENEWABLE ENERGY APPROVAL**NUMBER 4549-8MKH7H  
Issue Date: December 10, 2015TransCanada Energy Ltd.  
RBC Plaza South Tower  
200 Bay Street, 24th Floor  
PO Box 43  
Toronto, Ontario  
M5J 2J1Site Location: 2176047 Solar Energy Project  
12 Centennial Rd  
Brockville City, United Counties of Leeds and Grenville  
K6V 5T2

*You are hereby notified that I have amended Approval No. 4549-8MKH7H issued on November 30, 2011 for a Class 3 solar facility , as follows:*

**A. The Company name and address has been changed:**FROM: 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc.  
545 Speedvale Ave W  
Guelph, Ontario  
N1K 1E6TO: TransCanada Energy Ltd.  
RBC Plaza South Tower  
200 Bay Street, 24th Floor  
PO Box 43  
Toronto, Ontario  
M5J 2J1

**B. The definitions of "Application" and "Company" in the Approval are deleted and replaced with the following:**

4. "Application" means:
  - (1) the application for a Renewable Energy Approval dated August 3, 2011, and signed by Milfred Hammerbacher, Director of 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc., and all supporting documentation submitted with the application, including amended documentation submitted up to November 22, 2011;
  - (2) as further amended by the application for an amendment to a Renewable Energy Approval dated June 4, 2012 and signed by Mark Feenstra, Project Manager, Canadian Solar Solutions Inc., and all supporting documentation submitted with the application up to September 10, 2012;
  - (3) and as further amended by the application for an amendment to a Renewable Energy Approval initiated by the Ministry of the Environment and Climate Change on August 7, 2015 to address a typographical error, and all other supporting document including a letter dated August 24, 2015 signed by John McWilliams, Vice President, Energy Operations, with TransCanada on behalf of 2176047 Ontario Inc., c/o Canadian Solar Solutions Inc., and all supporting documentation submitted up to December 10, 2015;
10. "Company" means TransCanada Energy Ltd. and includes its successors and assignees.

C. Schedule B of the Approval is deleted and replaced with the following:

**SCHEDULE B**  
**Coordinates of the Equipment and Noise Specifications**

Coordinates of the Equipment are listed below in UTM, Z17-NAD83 projection:

Source ID	Sound Power Level (dBA)	Easting (m)	Northing (m)	Source description
Inverter Cluster #1	89.6	444,538	4,942,171	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #2	89.6	444,777	4,942,286	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #3	89.6	444,713	4,942,426	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #4	89.6	444,613	4,942,510	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #5	89.6	444,523	4,942,402	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #6	89.6	444,456	4,942,252	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #7	89.6	444,282	4,942,481	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #8	89.6	444,404	4,942,659	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #9	89.6	444,489	4,942,811	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #10	89.6	444,455	4,942,910	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Substation Transformer	97.2	444,567	4,942,049	10 MVA Transformer

Notes: The inverter clusters and transformer Sound Power Level values in the above table correspond to the combined output of all the inverters in each cluster, and include the 5 decibel (dB) adjustment for tonality as prescribed in Publication NPC-104.

**All other Terms and Conditions of the Approval remain the same.**

**This Notice shall constitute part of the approval issued under Approval No. 4549-8MKH7H dated November 30, 2011.**

*In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.*

*In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.*

*Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:*

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The signed and dated notice requiring the hearing should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

*This notice must be served upon:*

The Secretary\*  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto, Ontario  
M5G 1E5

AND

The Environmental Commissioner  
1075 Bay Street, 6th Floor  
Suite 605  
Toronto, Ontario  
M5S 2B1

AND

The Director  
Section 47.5, *Environmental Protection Act*  
Ministry of the Environment and Climate  
Change  
135 St. Clair Avenue West, 1st Floor  
Toronto, Ontario  
M4V 1P5

**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)**

*Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at [www.ebr.gov.on.ca](http://www.ebr.gov.on.ca), you can determine when this period ends.*

*Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.*

DATED AT TORONTO this 10th day of December, 2015



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Mohsen Keyvani, P.Eng.

Director

Section 47.5, *Environmental Protection Act*

SR/

c: District Manager, MOECC Kingston District  
John McWilliams, TransCanada



**AMENDMENT TO RENEWABLE ENERGY APPROVAL**NUMBER 4549-8MKH7H  
Issue Date: September 25, 2012

2176047 Ontario Inc./o Canadian Solar Solutions Inc.  
545 Speedvale Ave W  
Guelph, Ontario  
N1K 1E6

Site Location: 2176047 Solar Energy Project  
12 Centennial Rd  
Brockville City, United Counties of Leeds and Grenville  
K6V 5T2

*You are hereby notified that I have amended Approval No. 4549-8MKH7H issued on November 30, 2011 for a Class 3 solar facility , as follows:*

**A. The address of the Company is deleted and substituted with the following:**

545 Speedvale Ave W  
Guelph, Ontario  
N1K 1E6

**B. The description of the project is deleted and substituted with the following:**

- The construction, installation, operation, use and retiring of a Class 3 solar facility with a total name plate capacity of up to ten (10) megawatts (AC).

**C. The definitions on pages 2, 3 and 4 of the Approval are deleted and replaced with the following:**

1. "Acoustic Assessment Report" means the report included in the amendment Application and entitled "Acoustic Assessment Report for the Canadian Solar – 10 MW Solar Farm (BR1) at Brockville", dated September 6, 2012 and is signed by Kana Ganesh, Deborah Hunt and Keni Mallinen, Stantec Consulting Ltd.;
2. "Act" means the *Environmental Protection Act* , R.S.O 1990, c.E.19, as amended;
3. "Adverse Effect" has the same meaning as in the Act;



4. "Application" means the application for a Renewable Energy Approval dated August 3, 2011, and signed by Milfred Hammerbacher, Director of 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc., and all supporting documentation submitted with the application, including amended documentation submitted up to November 22, 2011 and as further amended by the Application for an amendment to a Renewable Energy Approval dated June 4, 2012 and signed by Mark Feenstra, Project Manager, Canadian Solar Solutions Inc., and all supporting documentation submitted with the Application up to the date this amendment is issued;
5. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;
6. "A-weighting" means the frequency weighting characteristic as specified in the International Electrotechnical Commission (IEC) Standard 61672, and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound. It is denoted as "A";
7. "A-weighted Sound Pressure Level" means the Sound Pressure Level modified by application of an A-weighting network. It is measured in decibels, A-weighted, and denoted "dBA";
8. "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum";
9. "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas:
  - (a) sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours);
  - (b) low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours);
  - (c) no clearly audible sound from Stationary Sources other than from those under impact assessment.

10. "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:
  - (a) a small community with less than 1000 population;
  - (b) agricultural area;
  - (c) a rural recreational area such as a cottage or a resort area; or
  - (d) a wilderness area.
11. "Company" means 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc. and includes its successors and assignees;
12. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;
13. "Director" means a person appointed in writing by the Minister of the Environment pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;
14. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;
15. "Equipment" means the twenty (20) inverters, ten (10) transformers, and one (1) transformer substation, and associated ancillary equipment identified in this Approval and as further described in the Application, to the extent approved by this Approval;
16. "Equivalent Sound Level" is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is denoted  $L_{eq}$  and is measured in dB A-weighting (dBA);
17. "Facility" means the renewable energy generation facility, including the Equipment, as described in this Approval and as further described in the Application, to the extent approved by this Approval;
18. "Ministry" means the ministry of the government of Ontario responsible for the Act and includes all officials, employees or other persons acting on its behalf;
19. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, barriers, silencers, acoustical louvres, hoods and acoustical treatment, described in the Acoustic Assessment Report and Schedule C of this amendment to an Approval;

20. "Noise Receptor" has the same meaning as in O. Reg. 359/09;
21. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;
22. "Point of Reception" has the same meaning as in Publication NPC-205 or Publication NPC-232, as applicable, and is subject to the same qualifications described in those documents;
23. "Publication NPC-103" means the Ministry Publication NPC-103, "Procedures", August 1978;
24. "Publication NPC-104" means the Ministry Publication NPC-104, "Sound Level Adjustments", August 1978;
25. "Publication NPC-205" means the Ministry Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October 1995;
26. "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October 1995;
27. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995;
28. "Sound Level" means the A-weighted Sound Pressure Level;
29. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level  $L_{eq}$  ;
30. "Sound Power Level" is ten times the logarithm to the base of 10 of the ratio of the sound power (Watts) of a noise source to standard reference power of  $10^{-12}$  Watts;
31. "Sound Pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro pascal ( $\mu\text{Pa}$ );
32. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure ( $\mu\text{Pa}$ ) of a sound to the reference pressure of  $20 \mu\text{Pa}$ ;
33. "UTM" means Universal Transverse Mercator coordinate system.

**D. Condition No. 1 is deleted and replaced with the following:**

1. The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:
  - (a) Schedule A - Facility Description
  - (b) Schedule B - Coordinates of the Equipment and Noise Specifications
  - (c) Schedule C – Noise Control Measures

**E. Condition Nos. 9, 10 and 11 are deleted and replaced with the following:**

9. The Company shall ensure that:
  - (a) the Sound Levels from the Equipment, at the Points of Reception identified in the Acoustic Assessment Report, comply with the Sound Level Limit of 40 dBA as described in Publication NPC-232, subject to adjustment for tonality as described in Publication NPC-104 ;
  - (b) the Equipment is constructed and installed at either of the following locations:
    - (i) at the locations identified in Schedule B of this Approval; or
    - (ii) at a location that does not vary by more than 10 metres from the locations identified in Schedule B of this Approval and provided that,
      - 1) the Equipment will comply with Condition C1 (a), and
      - 2) all setback prohibitions established under O. Reg. 359/09 are complied with.
  - (c) the Equipment complies with the noise specifications set out in Schedule B of this Approval; and
  - (d) all of the Noise Control Measures are fully implemented prior to the commencement of the operation of the Facility.
10. If the Company determines that some or all of the Equipment cannot be constructed in accordance with Condition No. 9 (b), prior to the construction and installation of the Equipment in question, the Company shall apply to the Director for an amendment to the terms and conditions of the Approval.
11. Within three (3) months of the completion of the construction of the Facility, the Company shall submit to the Director a written confirmation signed by an individual who has the authority to bind the Company that the UTM coordinates of the “as constructed” Equipment comply with the requirements of Condition No. 9 (b).

**F. Condition No. 14 is deleted and replaced with the following:**

- 14. The Company shall employ best management practices for stormwater management and sediment and erosion control during construction, installation, use, operation, maintenance and retiring of the Facility, as described in the reports included in the Application and entitled "Draft Design and Operations Report for 2176047 Solar Energy Project", dated August 4, 2011 and prepared by Hatch Limited, and "2176047 Solar Energy Project Stormwater Management Report", dated May 18, 2011 and prepared by Dillon Consulting Limited and the report included in the amendment Application and entitled "Appendix H: Stormwater Management Report", dated April 16, 2012 and prepared by Stantec Consulting Limited.**

**G. Schedules A and B are deleted and replaced with the following:**

**SCHEDULE A**

**Facility Description**

The Facility shall consist of the construction, installation, operation, use and retiring of the following:

- (a) ten (10) arrays of photovoltaic (PV) modules or panels with a total name plate capacity of up to approximately ten (10) megawatts (AC), with each array containing one (1) cluster consisting of one or more inverters with a total rating of one (1) megawatt (MW) and one (1) 1-MVA transformer; and
- b) one (1) 10 MVA three-phase substation transformer; and
- (c) associated ancillary equipment, systems and technologies including on-site access roads, underground cabling and overhead distribution lines,

all in accordance with the Application.

## SCHEDULE B

### Coordinates of the Equipment and Noise Specifications

Coordinates of the Equipment are listed below in UTM, Z17-NAD83 projection:

Source ID	Sound Power Level (dBA)	Easting (m)	Northing (m)	Source description
Inverter Cluster #1	89.6	444,538	4,942,171	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #2	89.6	444,777	4,942,286	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #3	89.6	444,713	4,942,246	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #4	89.6	444,613	4,942,510	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #5	89.6	444,523	4,942,402	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #6	89.6	444,456	4,942,252	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #7	89.6	444,282	4,942,481	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #8	89.6	444,404	4,942,659	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #9	89.6	444,489	4,942,811	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Inverter Cluster #10	89.6	444,455	4,942,910	500 kW Inverter
				500 kW Inverter
				1 MVA Transformer
Substation Transformer	97.2	444,567	4,942,049	10 MVA Transformer

Notes: The inverter clusters and transformer Sound Power Level values in the above table correspond to the combined output of all the inverters in each cluster, and include the 5 decibel (dB) adjustment for tonality as prescribed in Publication NPC-104.

## **SCHEDULE C**

### **Noise Control Measures**

1. Enclosures for all ten (10) inverter clusters as described in the Acoustic Assessment Report.

**This Notice shall constitute part of the approval issued under Approval No. 4549-8MKH7H dated November 30, 2011.**

**NOTICE REGARDING HEARINGS**

*In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.*

*In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.*

*Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:*

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The signed and dated notice requiring the hearing should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

*This notice must be served upon:*

The Secretary\*  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto, Ontario  
M5G 1E5

AND

The Environmental Commissioner  
1075 Bay Street, 6th Floor  
Suite 605  
Toronto, Ontario  
M5S 2B1

AND

The Director  
Section 47.5, *Environmental Protection Act*  
Ministry of the Environment  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
M4V 1L5

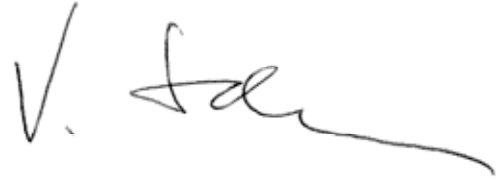
**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)**

*Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at [www.ebr.gov.on.ca](http://www.ebr.gov.on.ca), you can determine when this period ends.*



Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.

DATED AT TORONTO this 25th day of September, 2012



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Vic Schroter, P.Eng.  
Director  
Section 47.5, *Environmental Protection Act*

SE/

c: District Manager, MOE Kingston - District  
Mark Feenstra, 2176047 Ontario Inc./o Canadian Solar Solutions Inc.

**RENEWABLE ENERGY APPROVAL**NUMBER 4549-8MKH7H  
Issue Date: November 30, 2011

2176047 Ontario Inc./c/o Canadian Solar Solutions Inc.  
650 Riverbend Dr  
Kitchener, Ontario  
N2K 3S2

Project 12 Centennial Road  
Location: 12 Centennial Rd  
Brockville City, United Counties of Leeds and Grenville  
K6V 5T2

*You have applied in accordance with Section 47.4 of the Environmental Protection Act for approval to engage in a renewable energy project in respect of a Class 3 Solar facility consisting of the following:*

- the construction, installation, operation, use and retiring of:
  - (a) ten (10) arrays of photovoltaic (PV) modules or panels with a total name plate capacity of up to approximately 12.2 megawatts (DC) or 10 megawatts (AC), with each one (1) megawatt PV array consisting of approximately 5,226 PV modules and one (1) pad-mounted 1 Megavolt-ampere (MVA) three-phase, liquid filled transformer and two (2) 500 kilowatt inverters;
  - (b) one (1) 10 MVA three-phase substation transformer; and
  - (c) associated ancillary equipment, systems and technologies including on-site access roads, switchgear, control and monitoring equipment, underground cabling and overhead distribution lines,

all in accordance with the Application for a Renewable Energy Approval, dated August 3, 2011, and signed by Milfred Hammerbacher, Director of 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc., and all supporting documentation submitted with the application, including amended documentation submitted up to November 22, 2011.

*For the purpose of this renewable energy approval, the following definitions apply:*

1. "Act" means the *Environmental Protection Act*, R.S.O 1990, c.E.19, as amended;
2. "Adverse Effect" has the same meaning as in the Act;
3. "Application" means the application for a Renewable Energy Approval dated August 3, 2011, and signed by Milfred Hammerbacher, Director of 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc., and all supporting documentation submitted with the application, including amended documentation submitted up to November 22, 2011.
4. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;
5. "A-weighting" means the frequency weighting characteristic as specified in the International Electrotechnical Commission (IEC) Standard 61672, and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound. It is denoted as "A";
6. "A-weighted Sound Pressure Level" means the Sound Pressure Level modified by application of an A-weighting network. It is measured in decibels, A-weighted, and denoted "dBA";
7. "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum";
8. "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas:
  - (a) sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours);
  - (b) low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours);
  - (c) no clearly audible sound from Stationary Sources other than from those under impact assessment.

9. "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:
  - (a) a small community with less than 1000 population;
  - (b) agricultural area;
  - (c) a rural recreational area such as a cottage or a resort area; or
  - (d) a wilderness area.
10. "Company" means 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc. and includes its successors and assignees;
11. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;
12. "Director" means a person appointed in writing by the Minister of the Environment pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;
13. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;
14. "Equipment" means the one (1) pad-mounted 1 Megavolt ampere (MVA) three-phase, liquid filled transformer and two (2) 500 kilowatt inverters within each one (1) megawatt PV array, and one (1) 10 MVA three-phase substation transformer, identified in this Approval and as further described in the Application, to the extent approved by this Approval;
15. "Equivalent Sound Level" is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is denoted Leq and is measured in dB A-weighting (dBA);
16. "Facility" means the renewable energy generation facility, including the Equipment, as described in this Approval and as further described in the Application, to the extent approved by this Approval;
17. "Ministry" means the Ontario Ministry of the Environment;
18. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, barriers, silencers, acoustical louvres, hoods and acoustical treatment, described in the Noise Report and Schedule B of this Approval;

19. "Noise Report" means the report included in the Application entitled "Noise Study Report for 2176047 Solar Energy Project", dated November 17, 2011 and prepared by Hatch Limited;
20. "Point of Reception" has the same meaning as in the Publication NPC-232 and is subject to the same qualifications described in that document;
21. "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995 or its successor document.
22. "O.Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;
23. "Sound Level" means the A-weighted Sound Pressure Level;
24. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level Leq;
25. "Sound Pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro pascal ( $\mu\text{Pa}$ );
26. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure ( $\mu\text{Pa}$ ) of a sound to the reference pressure of  $20 \mu\text{Pa}$ ;
27. "UTM" means Universal Transverse Mercator coordinate system.

*You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:*

## **TERMS AND CONDITIONS**

### **GENERAL**

1. **The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application.**
2. Where there is a conflict between a provision of this Approval and any document submitted by the Company, the conditions in this Approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Company, the document bearing the most recent date shall take precedence.
3. **The Company shall ensure a copy of this Approval is:**
  - (1) **accessible, at all times, by Company staff operating the Facility and;**
  - (2) submitted to the clerk of each local municipality and upper-tier municipality in which the Facility is situated along with the Application.

4. If the Company has a publicly accessible website, the Company shall ensure that the Approval and the Application are posted on the Company's publicly accessible website within five (5) business days of receiving this Approval.
5. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.
6. The Facility shall be retired in accordance with the Decommissioning Plan Report and any directions provided by the Director or District Manager.

## **EXPIRY OF APPROVAL**

7. Construction and installation of the Facility must be completed within two (2) years of the later of:
  - (1) the date this Approval is issued; or
  - (2) if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.
8. This Approval ceases to apply in respect of any portion of the Facility not constructed or installed before the later of the dates identified in Condition No. 7.

## **PERFORMANCE LIMITS**

9. The Company shall ensure that:
  - (1) the Sound Levels from the Equipment, at the Points of Reception identified in the Noise Report, comply with the Sound Level Limit of 40 dBA as described in Publication NPC-232;
  - (2) the Equipment is constructed and installed at either of the following locations:
    - a) at the locations identified in Schedule A of this Approval; or
    - b) at a location that does not vary by more than 10 metres from the locations identified in Schedule A of this Approval and provided that,
      - i) the Equipment will comply with Condition No. 9 (1), and
      - ii) all setback prohibitions established under O.Reg. 359/09 are complied with.
  - (3) all of the Noise Control Measures, including enclosures for inverter clusters 1, 2, 3, 4, 5, 6, 8, 9 and 10, described in the Noise Report and Schedule B of this Approval, are fully implemented prior to the commencement of the operation of the Facility.

10. If the Company determines that some or all of the Equipment cannot be constructed in accordance with Condition No. 9 (2), prior to the construction and installation of the Equipment in question, the Company shall apply to the Director for an amendment to the terms and conditions of the Approval.
11. Within three (3) months of the completion of the construction of the Facility, the Company shall submit to the Director a written confirmation signed by the Director of 2176047 Ontario Inc. c/o Canadian Solar Solutions Inc. that the UTM coordinates of the "as constructed" Equipment comply with the requirements of Condition No. 9 (2).

## **GROUNDWATER MONITORING**

12. The Company shall implement the groundwater sampling and monitoring program described in the report included in the Application entitled "Proposed Groundwater Monitoring for a Proposed Solar Farm 2176047 Solar Energy Project, Elizabethtown-Kitley Twp, Ontario, City of Brockville, Ontario", dated August 5, 2011 and prepared by McIntosh Perry Consulting Engineers Limited.
13. The Company shall report the summary of the results of the groundwater sampling and monitoring program on an annual basis to the District Manager.

## **STORMWATER MANAGEMENT**

14. **The Company shall employ best management practices for stormwater management and sediment and erosion control during construction, installation, use, operation, maintenance and retiring of the Facility, as described in the reports included in the Application entitled "Draft Design and Operations Report for 2176047 Solar Energy Project", dated August 4, 2011 and prepared by Hatch Limited, and "2176047 Solar Energy Project Stormwater Management Report", dated May 18, 2011 and prepared by Dillon Consulting Limited.**

## **SEWAGE WORKS OF THE TRANSFORMER SPILL CONTAINMENT FACILITY**

15. The Company shall design and construct a transformer spill containment facility which meets the following requirements:
  - (1) the spill containment area serving the transformer shall have a minimum volume equal to the volume of the transformer oil and lubricants plus the volume equivalent to providing a minimum 24-hour duration, 25-year return storm capacity for the stormwater drainage area around the transformer under normal operating conditions;
  - (2) The containment facility shall have an impervious concrete floor and walls sloped toward an outlet, maintaining a freeboard of 0.25 metres terminating approximately 0.30 metres above grade, with an impervious plastic liner or equivalent, and 1.0 metre layer of crushed stone within;

- (3) the containment pad shall drain to an oil control device, such as an oil/water separator, a pump-out sump, an oil absorbing material in a canister or a blind sump; and
- (4) the oil control device shall be equipped with an oil detection system and appropriate sewage appurtenances, as necessary (pumpout manhole, submersible pumps, level controllers, floating oil sensors, etc.) that allows for batch discharges or direct discharges, and for proper implementation of the monitoring program described in Condition No. 18.

16. **The Company shall:**

- (1) as a minimum, check the oil detection system on a monthly basis and create a written record of the inspections;
- (2) ensure that the effluent is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters;
- (3) immediately identify and clean-up all losses of oil from the transformer;
- (4) upon identification of oil in the effluent pumpout, take immediate action to prevent the further occurrence of such loss; and
- (5) ensure that equipment and material for the containment, clean-up and disposal of oil and materials contaminated with oil are kept within easy access and in good repair for immediate use in the event of:
  - (a) loss of oil from the transformer
  - (b) a spill within the meaning of Part X of the Act, or
  - (c) the identification of an abnormal amount of oil in the effluent.

17. **The Company shall design, construct and operate the sewage works such that the concentration of the effluent parameter named in the table below does not exceed the maximum concentration objective shown for that parameter in the effluent, and shall comply with the following requirements:**

<b>Effluent Parameters</b>	<b>Maximum Concentration Objective</b>
<b>Oil and Grease</b>	<b>15 mg/L</b>

- (1) notify the District Manager as soon as reasonably possible of any exceedance of the maximum concentration objective set out in the table above;
- (2) take immediate action to identify the cause of the exceedance; and
- (3) take immediate action to prevent further exceedances.

18. **Upon commencement of the operation of the Facility, the Company shall establish and carry out the following monitoring program for the sewage works:**



- (1) the Company shall collect and analyze the required set of samples at the sampling points listed in the table below in accordance with the measurement frequency and sample type specified for the effluent parameter, oil and grease, and create a written record of the monitoring:

Effluent Parameters	Measurement Frequency and Sample Points	Sample Type
Oil and Grease	B - Batch, i.e. for each discrete volume in the sump prior to pumpout; or Q - Quarterly for direct effluent discharge, i.e., four times over a year, relatively evenly spaced.	Grab

- (2) in the event of an exceedance of the maximum concentration objective set out in the table in Condition No. 17, the Company shall:
- (a) increase the frequency of sampling to once per month, for each month that effluent discharges occurs, and
  - (b) provide the District Manager, on a monthly basis, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling and reporting is no longer required; and
- (3) if over a period of twenty-four (24) months of effluent monitoring under Condition No. 18 (1), there are no exceedances of the maximum concentration set out in the table in Condition No. 17, the Company may reduce the measurement frequency of effluent monitoring to a frequency as the District Manager may specify in writing, provided that the new specified frequency is never less than annual.

19. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition No. 18:

- (1) Ministry of the Environment publication "Protocol for the Sampling and Analysis of Industrial/ Municipal Wastewater", January 1999, as amended from time to time by more recently published editions, and
- (2) the publication "Standard Methods for the Examination of Water and Wastewater", 21st edition, 2005, as amended from time to time by more recently published editions.

#### **WATER TAKING ACTIVITIES**

20. The Company shall not take more than 50,000 litres of water on any day by any means at the project location during the construction, installation, use, operation, maintenance and retiring of the facility.

## ARCHAEOLOGICAL RESOURCES

21. The Company shall implement all of the recommendations for further archaeological fieldwork and for the protection of archaeological sites found in the consultant archaeologist's report included in the Application, and which the Company submitted to the Ministry of Tourism and Culture in order to comply with clause 22 (2) (b) of O. Reg. 359/09.
22. Should any previously undocumented archaeological resources be discovered, the Company shall:
  - (1) cease all alteration of the area in which the resources were discovered immediately;
  - (2) engage a consultant archaeologist to carry out the archaeological fieldwork necessary to further assess the area and to either protect and avoid or excavate any sites in the area in accordance with the *Ontario Heritage Act*, the regulations under that act and the Ministry of Tourism and Culture's *Standards and Guidelines for Consultant Archaeologists*; and
  - (3) notify the Director as soon as reasonably possible.

## OPERATION AND MAINTENANCE

23. Before construction and installation of the Equipment, the Company shall prepare a written manual for use by Company staff outlining the operating procedures and a maintenance program for the Equipment, including the sewage works of the transformer spill containment facility, that includes as a minimum the following:
  - (1) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
  - (2) inspection programs including frequency of inspection and the methods or tests employed to detect when maintenance is necessary;
  - (3) repair and maintenance programs, including the frequency of repair and maintenance for the works;
  - (4) emergency procedures;
  - (5) procedures for any record keeping activities relating to operation and maintenance of the Equipment, including the sewage works of the transformer spill containment facility;
  - (6) all appropriate measures to minimize noise emissions from the Equipment; and
  - (7) any additional information requested in writing by the District Manager from time to time
24. The Company shall:
  - (1) update as required the manual described in Condition No. 23; and
  - (2) make the manual described in Condition No. 23 available for review by staff of the Ministry upon request.

25. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition No. 23.

## RECORD CREATION AND RETENTION

26. The Company shall create written records consisting of the following:
- (1) an operations log summarizing the operation and maintenance activities of the Facility;
  - (2) within the operations log, a summary of routine and Ministry staff inspections of the Facility; and
  - (3) a record of any complaint alleging an Adverse Effect caused by the construction, installation, use, operation, maintenance or retirement of the Facility.
27. A record described under Condition No. 26(3) shall include:
- (1) a description of the complaint that includes as a minimum the following:
    - a) the date and time the complaint was made;
    - b) the name, address and contact information of the person who submitted the complaint;
  - (2) a description of each incident to which the complaint relates that includes as a minimum the following:
    - a) the date and time of each incident;
    - b) the duration of each incident;
    - c) the wind speed and direction at the time of each incident;
    - d) the ID of the Equipment involved in each incident and its output at the time of each incident; and
    - e) the location of the person who submitted the complaint at the time of each incident; and
  - (3) a description of the measures taken to address the cause of each incident to which the complaint relates and to prevent a similar occurrence in the future
28. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition Nos. 16, 18 and 26, and make these records available for review by staff of the Ministry upon request.

## NOTIFICATION OF COMPLAINTS

29. The Company shall notify the District Manager of each complaint within two (2) business days of the receipt of the complaint.

30. The Company shall provide the District Manager with the written records created under Condition No. 27 within eight (8) business days of the receipt of the complaint.
31. If the Company receives a complaint related to groundwater, the Company shall contact the District Manager within one (1) business day of the receipt of the complaint, to discuss appropriate measures to manage any potential groundwater issues.

#### CHANGE OF OWNERSHIP

32. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes:
  - (1) the ownership of the Facility;
  - (2) the operator of the Facility;
  - (3) the address of the Company;
  - (4) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act*, R.S.O. 1990, c.B.17, as amended, shall be included in the notification; and
  - (5) the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act*, R.S.O. 1990, c. C.39, as amended, shall be included in the notification.

## SCHEDULE A

Coordinates of the Equipment are listed below in UTM17-NAD83 projection:

<b>Equipment I.D.</b>	<b>Coordinates, UTM (NAD 83 z17)</b>	
	<b>Easting (m)</b>	<b>Northing (m)</b>
Transformer Substation	444519	4942030
Inverter 1	444556	4942124
Inverter 2	444555	4942217
Inverter 3	444556	4942312
Inverter 4	444709	4942311
Inverter 5	444572	4942442
Inverter 6	444710	4942500
Inverter 7	444338	4942455
Inverter 8	444354	4942632
Inverter 9	444472	4942785
Inverter 10	444474	4942939

## SCHEDULE B

### Noise Control Measures

1. Enclosures for inverter clusters 1, 2, 3, 4, 5, 6, 8, 9 and 10, described in the "Noise Study Report for 2176047 Solar Energy Project" dated November 17, 2011 and prepared by Hatch Limited.
2. Acoustical louvers for the enclosures identified above, with the acoustical specifications described in the following table:

**Free Field Noise Reduction dB values in octave frequency bands:  
Acoustical louvre on inverter cluster enclosures**

<b>OB Centre Frequency (Hz)</b>	<b>63</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>
Inverter Cluster #1 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #2 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #3 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #4 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #5 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #6 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #8 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #9 – 1 MW	10	10	12	16	23	18	0	0
Inverter Cluster #10 – 1 MW	10	10	12	16	23	18	0	0

*The reasons for the imposition of these terms and conditions are as follows:*

### REASONS

1. Condition Nos. 1 and 2 are imposed to ensure that the Facility is constructed, installed, used, operated, maintained and retired in the manner in which it was described for review and upon which Approval was granted. These conditions are also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.
2. Condition Nos. 3 and 4 are included to require the Company to provide information to the public and the local municipality.
3. Condition Nos. 5 and 6 are included to ensure that final retirement of the Facility is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure long-term protection of the health and safety of the public and the environment.
4. Condition Nos. 7 and 8 are intended to limit the time period of the Approval.

5. Condition No. 9 is included to provide the minimum performance requirement considered necessary to prevent an Adverse Effect resulting from the operation of the Equipment and to ensure that the noise emissions from the Equipment will be in compliance with applicable limits set in Publication NPC-232.
6. Condition Nos. 10 and 11 are included to ensure that the Equipment is constructed, installed, used, operated, maintained and retired in a way that meets the regulatory setback prohibitions set out in O. Reg. 359/09.
7. Condition Nos. 12, 13, 14 and 20, are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in a way that does not result in an Adverse Effect or hazard to the natural environment or any persons.
8. Condition No. 15 is included to ensure that the sewage works of the transformer spill containment facility are designed to have adequate capacity to provide spill control. This condition is also included to enable compliance with this Approval, such that the environment is protected and deterioration, loss, injury or damage to any person, property or the environment is minimized and/or prevented.
9. Condition No. 16 is included to ensure that the sewage works of the transformer spill containment facility will be operated and maintained in accordance with the information submitted by the Company, and to adequately manage and clean-up any oil spill from the transformer.
10. Condition No. 17 is included to establish non-enforceable effluent quality objectives which the Company is required to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.
11. Condition Nos. 18 and 19 are included to require the Company to demonstrate that the performance of the sewage works of the transformer spill containment facility is at a level consistent with the design and effluent objectives specified in the Approval and is not causing any impairment to the environment.
12. Condition Nos. 21 and 22 are included to protect archaeological resources that may be found at the project location.
13. Condition Nos. 23, 24 and 25 are included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, O. Reg. 359/09 and this Approval.
14. Condition Nos. 26, 27 and 28 are included to require the Company to keep records and provide information to staff of the Ministry so that compliance with the Act, O. Reg. 359/09 and this Approval can be verified.

15. Condition Nos. 29, 30 and 31 are included to ensure that any complaints regarding the construction, installation, use, operation, maintenance or retirement of the Facility are responded to in a timely and efficient manner.
16. Condition No. 32 is included to ensure that the Facility is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.

## NOTICE REGARDING HEARINGS

*In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.*

*In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.*

*Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:*

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*The signed and dated notice requiring the hearing should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

*This notice must be served upon:*

The Secretary\*  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto, Ontario  
M5G 1E5

AND

The Environmental Commissioner  
1075 Bay Street, 6th Floor  
Suite 605  
Toronto, Ontario  
M5S 2B1

AND

The Director  
Section 47.5, *Environmental Protection Act*  
Ministry of the Environment  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
M4V 1L5

**\* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or [www.ert.gov.on.ca](http://www.ert.gov.on.ca)**


*Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at [www.ebr.gov.on.ca](http://www.ebr.gov.on.ca), you*



*can determine when this period ends.*

*Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.*

DATED AT TORONTO this 30th day of November, 2011



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Mansoor Mahmood, P.Eng.  
Director  
Section 47.5, *Environmental Protection Act*

SE/

c: District Manager, MOE Kingston - District  
Jeff Roy, Canadian Solar Solutions Inc.