

# IMPORT LOAD SHED AGREEMENT

Between

**INDEPENDENT SYSTEM OPERATOR (operating  
as Alberta Electric System Operator)**

and

**[Insert NAME]**

**[Insert Date]**

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## TABLE OF CONTENTS

|   |    |
|---|----|
| 1. Definitions.....                                   | 2  |
| 2. Interpretation.....                                | 10 |
| 3. Services.....                                      | 11 |
| 4. Term.....  | 13 |
| 5. Compliance with Applicable Laws.....               | 13 |
| 6. Representations and Warranties.....                | 13 |
| 7. Compensation.....                                  | 14 |
| 8. Audit and Records.....                             | 16 |
| 9. Confidentiality.....                               | 17 |
| 10. Indemnity.....                                    | 19 |
| 11. Damages.....                                      | 20 |
| 12. Change in Law.....                                | 21 |
| 13. Injunctive Relief.....                            | 22 |
| 14. Notice.....                                       | 22 |
| 15. Dispute Resolution.....                           | 23 |
| 16. Termination.....                                  | 23 |
| 17. General.....                                      | 25 |
| SCHEDULE "A" – LSSI FACILITY INFORMATION.....         | 28 |
| SCHEDULE "B" – LSSI ELIGIBILITY AND REQUIREMENTS..... | 29 |

## IMPORT LOAD SHED AGREEMENT

THIS AGREEMENT is made as of the [●] day of [●], 2021

BETWEEN:

INDEPENDENT SYSTEM OPERATOR, operating as AESO, a statutory corporation established pursuant to the *Electric Utilities Act (Alberta)* (the "AESO")

- and -

**[AESO NTD: please choose one and delete the one that does not apply]**

[LONGNAME],

a corporation, incorporated pursuant to the laws of the Province of [insert name of province] (the "Service Provider")

[LONGNAME],

a [partnership / limited partnership] formed in accordance with the laws of the Province of [insert name province] (the "Service Provider")

**WHEREAS** the AESO's statutory mandate includes responsibility for the safe, reliable and economic planning and operation of the System;

**AND WHEREAS** the AESO requires the Services in order to carry out its mandate, as the provision of the Services is critical to the reliability of the System;

**AND WHEREAS** the Service Provider is prepared to provide Services to the AESO in accordance with this Agreement;

**NOW, THEREFORE**, in consideration of the terms and conditions contained in this Agreement and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. **Definitions.**

1.1 In this Agreement, the following capitalized terms shall have the meanings set out below, unless the context clearly indicates otherwise:

"**Actual Trip Volume**" means the amount of real power in MW (recorded to one (1) decimal point) from the Service Provider's LSSi Facility that is Armed and Trips in accordance with the LSSi Requirements.

"**Actual Volume**" means the total amount in MW (recorded to one (1) decimal point) that is being consumed, or is being consumed as an aggregated volume, by the Service Provider that is subject to LSSi at any point in time.

"**AESO**" means the Independent System Operator, operating as the Alberta Electric System Operator, established under the EUA, being the Party described in the opening paragraph of this Agreement, and includes its successors and assigns.

"**AESO Representative**" means the representative of the AESO responsible for managing all matters related to this Agreement on behalf of the AESO, as specified in Section 14.

"**Affiliate**" means "affiliate" as such term is defined in the ISO Glossary.

"**Agreement**" means this Import Load Shed Agreement and all attached Schedules, Exhibits, and any amendments thereto.

"**Alberta Reliability Standards**" means "reliability standards" as such term is defined in the ISO Glossary.

"**Annual Confirmation**" has the meaning ascribed to it in Section 6.3 of the LSSi Requirements.

"**Applicable Laws**" means:

- (a) any applicable principles of common law and equity and any applicable federal, provincial, municipal and local law including any statute, subordinate legislation, or treaty; and
- (b) any applicable guideline, protocol, directive, direction, rule, standard, requirement, program, policy, order, judgment, injunction, award, or decree of a Governmental Entity having the force of law, including but not limited to the ISO Rules and the Alberta Reliability Standards.

"**Arm**", "**Armed**", and "**Arming**" means enabling the functionality of the LSSi such that the under frequency relay is continuously measuring system frequency and operates when the target frequency of fifty nine point five (59.5) Hz is reached or a SCADA Trip Signal is received.

"**Armed Volume**" means the amount in MW (recorded to one (1) decimal point) Armed for LSSi by the Service Provider following a Dispatch.

"**Arming Payment**" means the sum of all Hourly Arming Payments for the applicable Month.

"**Arming Price**" means \$[XX.XX]/MW.

"**Arming Volume**" for each Hourly Dispatch Period means one of the following, as applicable:

- (a) 0 MW, when the Actual Volume for such Hourly Dispatch Period is below the Lower Tolerance Limit of the Dispatched Volume at any point in time during the Hourly Dispatch Period; or
- (b) the Armed Volume, when the Actual Volume for such Hourly Dispatch Period is equal to or above the Lower Tolerance Limit of the Dispatched Volume at all points in time during the Hourly Dispatch Period.

"**Availability Payment**" means the sum of all Hourly Availability Payments for the applicable Month.

"**Availability Price**" means \$6.00/MW.

"**Availability Volume**" for each hour means the Offered Volume.

"**Business Day**" means "business day" as such term is defined in the ISO Glossary.

"**Certified Report**" has the meaning ascribed to it in Section 6.1 of the LSSi Requirements.

"**Change in Law**" means the adoption, enactment, promulgation, modification, amendment, or revocation, after the Proposal Date, of:

- (a) any Applicable Laws specifically governing the provision of the Services hereunder; or
- (b) any interpretation, reinterpretation, or administrative position relating to any such Applicable Laws by any Governmental Entity,

provided that "Change in Law" shall not include any adoption, enactment, promulgation, modification, amendment, or revocation after the Proposal Date that the Service Provider knew about or reasonably ought to have known about before the Proposal Date.

**"Commercially Reasonable Efforts"** when used in connection with an obligation of a Party under this Agreement, means taking, in good faith and with due diligence and in accordance with prudent industry practices, reasonable commercial steps to achieve the objective and to fulfill the obligation at the earliest reasonable time, including doing all that a reasonable and prudent owner or operator, as the case may be, in comparable circumstances would do and expending funds and assuming liabilities which are reasonable in nature and amount in the context of the obligation being performed, in each case, having regard to the importance of the obligation to the successful performance of this Agreement.

**"Communication Confirmation"** has the meaning ascribed to it in Section 6.1 of the LSSi Requirements.

**"Confidential Information"** has the meaning ascribed to it in Section 9.1.

**"Confirmation of Indemnity"** has the meaning ascribed to it in Section 16.4.

**"Contract Volume"** means an amount of load in MW equal to [XX] that the Service Provider has agreed to provide for LSSi in accordance with this Agreement.

**"Credit Rating"** means, in respect of any Person at any time:

- (a) the rating assigned to the Person's unsecured, senior long-term debt obligations; or
- (b) if the Person does not have an unsecured, senior long-term debt rating, the rating then assigned to it as an issuer rating by Standard & Poor's or an equivalent rating by a major reputable corporate rating service satisfactory to the AESO.

**"Directive"** means "directive" as such term is defined in the ISO Glossary.

**"Disclosing Party"** has the meaning ascribed to it in Section 9.1.

**"Disarm", "Disarmed", and "Disarming"** means disabling the functionality of the LSSi such that the under frequency relay is not continuously measuring system frequency and does not operate when the target frequency of fifty nine point five (59.5) Hz is reached or a SCADA Trip Signal is received.

**"Dispatch"** means "dispatch" as such term is defined in the ISO Glossary.

**"Dispatched Volume"** means the amount in MW (recorded to one (1) decimal point) to be Armed for LSSi, as Dispatched by the System Controller.

**"Effective Date"** means [XX].

**"Eligibility Requirements"** means the requirements in Section 1 of Schedule "B".

**"EMS"** has the meaning ascribed to it in Section 2.1 of the LSSi Requirements.

"**Exhibit**" means any exhibit, attachment, or appendix attached to and incorporated by reference into any Schedule.

"**EUA**" means the *Electric Utilities Act* (Alberta).

"**Failure to Supply**" means the occurrence of any of the following in any one (1) hour period:

- (a) the Service Provider fails to respond to a Dispatch in accordance with the LSSi Requirements;
- (b) the Service Provider fails to Arm the LSSi Facility in accordance with the LSSi Requirements or Arms the LSSi Facility contrary to the LSSi Requirements; or
- (c) the Service Provider fails to Trip the LSSi Facility in accordance with the LSSi Requirements.

Multiple occurrences of a Failure to Supply in one (1) hour shall be deemed to be a single occurrence.

"**Financial Obligation**" means "financial obligation" as such term is defined in the ISO Glossary.

"**Financial Security**" means "financial security" as such term is defined in the ISO Glossary.

"**FOIP Act**" means the *Freedom of Information and Protection of Privacy Act* (Alberta).

"**Force Majeure**" means any occurrence (and the effects thereof):

- (a) which is beyond the reasonable control of the Party claiming relief of its obligations under this Agreement and which could not have been avoided through the use of Good Electric Industry Practice and which prevents such Party from satisfying its obligations under this Agreement including, but not limited to: acts of God or the public enemy, flood, earthquake, storm, cyclone, tornado, hurricane, lightning, fire, explosion, epidemic, war, embargoes, riot or civil disturbances, sabotage, expropriation, confiscation or requisitioning of facility, change in federal or provincial policy or legislation affecting the AESO's conduct; and
- (b) which the Service Provider or the AESO (as the case may be) could not have reasonably foreseen or taken reasonable measures to prevent, but which shall not include any lack of finances, any occurrence which can be overcome by incurring reasonable additional expenses, any Forced Outage, any strike, lock-out or any other form of labour dispute, or any other form of delay caused by contractual or labour relations between the Service Provider and any of its Personnel.

"**Forced Outage**" means any Outage which:

- (a) is not anticipated through regular maintenance;
- (b) is caused by defective equipment, a System Disturbance, or any human element; and
- (c) occurs as a result of any automatic action or operation, or as a result of any manual action or operation (deliberate or accidental), the purpose of which automatic or manual action or operation is to avoid risk of injury to personnel or the public, or damage to equipment or property.

**"Good Electric Industry Practice"** means the standard of practice attained by exercising that degree of knowledge, skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced Person engaged in the same type of undertaking in the same or similar circumstances, including determining what is reasonable in the circumstances having regard for safety, reliability and economic considerations but is not intended to be limited to the optimum practice, method or act, to the exclusion of all others, and rather is intended to include practices, methods and acts generally accepted in Alberta.

**"Governmental Entity"** means:

- (a) any multinational, federal, provincial, municipal, local or other governmental or public department, central bank, court, commission, board, bureau, agency or instrumentality, domestic or foreign;
- (b) any subdivision or authority of any of the foregoing; or
- (c) any quasi-governmental or private body exercising any legislative, judicial, regulatory, administrative, expropriation or taxing authority under or for account of any of the above.

**"GST"** means the goods and services tax provided for in Part IX of the *Excise Tax Act* (Canada).

**"Guarantee"** means a written, irrevocable guarantee of a Person ("**Guarantor**") that guarantees the performance of the obligations and covenants of the Service Provider in this Agreement, such guarantee in form and substance satisfactory to the AESO.

**"Guarantor"** has the meaning ascribed to it in the definition of "Guarantee".

**"Hourly Arming Duration"** means the number of minutes (in whole minutes) in the Hourly Dispatch Period that the load was Armed where:

- (a) the beginning of the Hourly Arming Duration is established by the acceptance of a Dispatch by the Service Provider; and
- (b) the end of the Hourly Arming Duration is established by either: (i) the timestamp of the Disarm signal or when the System Controller issues a new Dispatch; or (ii) when the LSSi Facility is Tripped.

**"Hourly Arming Payments"** for any given hour, means the sum of all Hourly Dispatch Period Arming Payments in such hour.

**"Hourly Availability Payments"** for any given hour, means:

[Availability Volume X Availability Price]

**"Hourly Dispatch Period Arming Payment"** means for each Hourly Dispatch Period:

[Arming Volume X Arming Price X Hourly Arming Duration] / 60

**"Hourly Dispatch Period"** means within a given hour, a period of time no greater than sixty (60) minutes during which there is Armed Volume. For greater certainty, for any given hour, there may be multiple Hourly Dispatch Periods.

**"Hourly Trip Payments"** means:

[Trip Volume x Trip Price]

"Hz" means hertz

"Insolvent" means the Service Provider:

- (a) becomes insolvent or is unable to meet its debts as they become due;
- (b) files a voluntary petition in bankruptcy or seeks reorganization or to effect a plan or other arrangements with creditors;
- (c) files an answer or other pleading admitting, or fails to deny or contest, the material allegations of an involuntary petition filed against it pursuant to any applicable statute relating to bankruptcy, arrangement, or reorganization;
- (d) shall be adjudicated as bankrupt or shall make an assignment for the benefit of its creditors generally; or
- (e) shall apply for, consent to, or acquiesce in the appointment of any receiver or trustee for all or a substantial part of its property, and any such receiver or trustee shall be appointed and shall not be discharged within thirty (30) days' after the date of such appointment.

"ISO Glossary" means the ISO Consolidated Authoritative Document Glossary, as amended from time to time.

"ISO Rules" means "ISO rules" as such term is defined in the EUA.

"Liquidated Damages" has the meaning ascribed to it in Section 11.2.

"Lower Tolerance Limit" means an amount in MW (rounded to one (1) decimal point) equal to ninety five percent (95%) of the Dispatched Volume.

"LPR" means the *Liability Protection Regulation* (Alberta).

"LSSi" means load shed service for imports which meets the requirements described in Schedule "B".

"LSSi Facility" means all loads and equipment associated with the Services and located at the facility or facilities as described in Schedule "A".

"LSSi Requirements" means the LSSi Eligibility and Requirements attached hereto as Schedule "B", as amended, supplemented, replaced or otherwise modified from time to time.

"Material Adverse Change" means:

- (a) a downgrade in the Credit Rating of the Service Provider or any Guarantor by any credit rating agency; or
- (b) any event, circumstance or change which results, or would reasonably be expected to result, in a material adverse change in: (i) the financial condition of the Service Provider or any Guarantor; (ii) the ability of the Service Provider to perform its obligations under this Agreement; or (iii) the assets or business of the Service Provider or any Guarantor.

"Month" means "month" as defined in the ISO Glossary.



"**Monthly Payment**" has the meaning ascribed to it in Section 7.1.

"**MW**" or "**Megawatt**" means 1,000,000 watts or 1,000 kilowatts of real electric power.

"**Offered Volume**" means, in any given hour, the amount in MW (recorded to one (1) decimal point) last received by the AESO on or prior to twenty-five minutes before the hour (XX:35); provided, such amount shall not exceed the Contract Volume.

"**Outage**" means any removal from service, outage, derate, capacity reduction, or other event during which the LSSi Facility (or any portion thereof) is not able to provide all or a portion of the LSSi pursuant to this Agreement.

"**Party**" means the Service Provider or the AESO, as the context requires, and "**Parties**" means both the Service Provider and the AESO.

"**Prescribed Form**" means in relation to any form referenced herein, the latest version of such form which is published on [www.aeso.ca](http://www.aeso.ca) or otherwise provided to the Service Provider, as such form may be amended or replaced by the AESO from time to time and without notice to the Service Provider.

"**Person**" includes a natural person, corporation, limited partnership, general partnership, joint stock company, joint venture, association, company, limited liability company, trust, bank, trust company, land trust, business trust or other organization, whether or not a legal entity, or government or any agency or political subdivision thereof.

"**Personal Information**" means "personal information" as defined under the FOIP Act.

"**Personnel**" means a Party's partners, directors, officers, employees, agents, subcontractors, representatives or servants.

"**Planned Outage**" any Outage which is undertaken or utilized in respect of the schedule of planned maintenance provided by the Service Provider to the AESO in accordance with Section 3.9(a).

"**Pool Participant**" means a "pool participant" as such term is defined in the ISO Glossary.

"**Proposal Date**" means the date on which the Service Provider submitted its proposal to the AESO in response to the RFP.

"**Receiving Party**" has the meaning ascribed to it in Section 9.1.

"**Records**" means "records" as defined under the FOIP Act.

"**Representatives**" means the AESO Representative and the Service Provider Representative.

"**Revised Offered Volume**" means, in any given hour, the amount in MW (recorded to one (1) decimal point) last received by the AESO prior to a Forced Outage SCADA signal being sent to the AESO, provided such amount shall not exceed the previously Offered Volume.

"**RFP**" means the Request for Proposals for Load Shed Services for Imports dated October 28, 2020 issued by the AESO.

"**SCADA**" means supervisory control and data acquisition.

"**SCADA Trip Signal**" means a Directive issued by the AESO in the form of a SCADA signal sent from the System Controller.

"**Schedule**" means any schedule attached to and incorporated by reference into this Agreement, as further described in Section 2.3.

"**Scheduling Hour**" means for any given hour, the ten (10) minutes before the hour, the sixty (60) minutes in the hour and the ten (10) minutes following such hour for a total duration of eighty (80) minutes.

"**Services**" has the meaning ascribed to it in Section 3.1.

"**Service Provider**" means the Person identified as the Service Provider in the opening paragraph of this Agreement, and includes, as applicable, any successor thereto resulting from any merger, arrangement, or other reorganization or any continuance under the laws of another jurisdiction or any permitted assignee.

"**Service Provider Representative**" means the representative of the Service Provider responsible for managing all matters related to this Agreement on behalf of the Service Provider, as specified in Section 14.

"**Service Term**" means the period of time commencing upon 00:00 hours on January 1, 2022 and continuing until 24:00 hours on December 31, 2024.

"**System**" means "interconnected electric system" as such term is defined in the EUA.

"**System Controller**" means the AESO personnel authorized by the AESO to carry out its duty to direct the safe, reliable, and economic operation of the Alberta interconnected electric system pursuant to the EUA, and includes the dispatching of the energy market merit order and ancillary services merit order.

"**System Disturbance**" means "disturbance" as such term is defined in the ISO Glossary.

"**System Event**" means an event, which for the purposes of this Agreement, shall be deemed to be one (1) hour in duration (whether or not the actual duration is longer than one (1) hour) that causes the System to be in non-compliance with all or any applicable North American Electric Reliability Council disturbance control standards and/or causes the System Controller to shed firm load from the System.

"**Term**" has the meaning ascribed to it in Section 4.1.

"**Termination Notice**" has the meaning ascribed to it in Section 16.4.

"**Tolerance Excursion**" means, once Armed, when the Actual Volume falls below the Lower Tolerance Limit at any point in time.

"**Total Transfer Capability**" means the amount of real power the AESO determines can be reliably transferred over the System under specified System conditions.

"**Trip**" or "**Tripped**" means the disconnection of the Armed Volume from the LSSi Facility that is connected to the System in accordance with the LSSi Requirements.

"**Trip Event Record**" has the meaning ascribed to it in Section 4.4 of the LSSi Requirements.

"**Trip Payment**" means the sum of the Hourly Trip Payments for the applicable Month where the Service Provider's LSSi Facility was Tripped.

"**Trip Price**" means \$1000/MW.

"**Trip Volume**" means, when a Trip occurs in accordance with the LSSi Requirements or this Agreement, the lesser of the Armed Volume, Actual Trip Volume, or the Contract Volume at the time of the Trip. In the event that the Trip does not comply with the LSSi Requirements, the Trip Volume shall be deemed to be zero (0).

"**UFLS**" means "under frequency load shedding" as defined in the ISO Glossary.

"**WECC**" means the Western Electrical Coordinating Council or any successor organization.

## 2. Interpretation.

2.1 References and Headings. The expressions "herein", "hereto", "hereof", "hereby", "hereunder" and similar expressions shall refer to the provisions of this Agreement in their entirety and not to any particular section, subsection or other subdivision hereof. Where the word "including" or "includes" is used in this Agreement, it means "including (or includes) without limitation". References to Sections and Schedules herein refer to sections and schedules of or to this Agreement, unless the context otherwise requires. Any reference to time shall refer to Mountain Standard Time or Mountain Daylight Saving Time during the respective intervals in which each is in force in the Province of Alberta. The headings of the Sections, Schedules and any other headings, captions or indices in this Agreement are inserted for convenience of reference only and shall not in any way affect the construction or interpretation of this Agreement or any provision hereof. Where there is a reference to an ISO Rule that reference shall include any subsequent revisions, amendments, replacements, or modifications to that ISO Rule.

2.2 Singular/Plural/Derivative. Whenever the singular or masculine or neuter is used in this Agreement it shall be interpreted as meaning the plural or feminine or body politic or corporate, and vice versa, as the context requires. Where a term is defined herein, a capitalized derivative of such term shall have a corresponding meaning unless the context otherwise requires.

2.3 Schedules. All Schedules annexed to this Agreement shall be attached to and form part of this Agreement. The Schedules to this Agreement are as follows:

- (a) Schedule "A": LSSi Facility Information; and
- (b) Schedule "B": LSSi Eligibility and Requirements.

2.4 Priority of Documents. In the event of a conflict or inconsistency between the provisions of: (i) the main body of this Agreement; (ii) any Schedule; or (iii) any Exhibit; then, unless the Parties otherwise agree in writing, the following order of priority will apply to the extent of such conflict or inconsistency:

- (a) the main body of the Agreement, with any amendments having priority from most recent (highest priority) to first (lowest priority);
- (b) the Schedules, all with equal priority with any amendments having priority from most recent (highest priority) to first (lowest priority); and
- (c) the Exhibits.

2.5 Statutory References. Any reference to a statute, regulation, ISO Rule, or Alberta Reliability Standard shall include and shall be deemed to be a reference to such statute, regulation, ISO Rule, or Alberta Reliability Standard, and all amendments made thereto and in force from time to time, and to any statute, regulation, ISO Rule, or Alberta Reliability Standard that may be passed which has the effect of replacing, modifying, or supplementing the

statute, regulation, ISO Rule, or Alberta Reliability Standard so referred.

- 2.6 Computation of Time Periods. Except as expressly set out in this Agreement, the computation of time referred to in this Agreement shall exclude the first day and include the last day of such period.
- 2.7 Currency. All dollar amounts referred to herein are expressed in Canadian dollars.
- 2.8 No Drafting Presumption. The Parties acknowledge that their respective legal counsel have reviewed and participated in settling the terms of this Agreement and the Parties agree that any rule of construction to the effect that any ambiguity is to be resolved against the drafting Party shall not be applicable in the interpretation of this Agreement.

### 3. Services.

3.1 Services. During the Service Term, the Service Provider shall supply LSSi to the AESO from the LSSi Facility in accordance with the LSSi Requirements (the “**Services**”), and the AESO agrees to purchase the Services from the Service Provider, all in accordance with and subject to the terms and conditions contained in this Agreement.

3.2 Basic Requirements. During the Service Term, the Service Provider shall:

- (a) make the Contract Volume available for Arming to or for the account of the AESO in accordance with the terms of this Agreement;
- (b) offer no less than one (1) MW in one (1) hour during a consecutive thirty (30) day period during the Term;
- (c) comply with the LSSi Requirements; and
- (d) comply with all Dispatches delivered to the Service Provider by the System Controller in accordance with the ISO Rules.

For clarity, the minimum offer requirement in Subsection 3.2(b) shall not apply to the extent that a Forced Outage, Planned Outage, or event of Force Majeure or Suspension under Section 3.11 exists and continues for the entire duration of such consecutive thirty (30) day period.

3.3 Certified Report and Communication Confirmation. On or before October 1, 2021, the Service Provider shall provide the AESO with the Certified Report and Communication Confirmation as set forth in the LSSi Requirements. The testing and the Certified Report and Communication Confirmation must be performed between the Effective Date and October 1, 2021.

3.4 Operating and Regulatory Requirements. During the Service Term, the Service Provider shall, as it relates to the operation and maintenance of the LSSi Facility and the provision of LSSi therefrom, comply with Good Electric Industry Practice, the reliability management system requirements of the WECC and all relevant ISO Rules and Alberta Reliability Standards.

3.5 Reporting and Communication.

- (a) During the Term, the Service Provider shall provide the AESO, at any time and from time to time at the request of the AESO, all information, data, and reports required to enable the AESO to verify the Service Provider’s compliance with the terms of this Agreement or to verify the capability of the LSSi Facility to provide LSSi.

- (b) During the Service Term, and without limiting the generality of the foregoing, the Service Provider shall: (i) provide the AESO with the Annual Confirmation; (ii) provide the AESO, at any time and from time to time at the request of the AESO, all information, data and reports required to enable the AESO to calculate the Monthly Payments; and (iii) maintain the communication requirements as set forth in the LSSi Requirements.
  
- 3.6 Modifications to the LSSi Facility. Prior to making any material modifications or changes to the LSSi Facility, the Service Provider shall obtain the prior written consent of the AESO, which consent shall not be unreasonably withheld. For clarity, this includes, but is not limited to, any addition, removal, substitution, or replacement to the loads as described in Schedule "A". Notwithstanding anything to the contrary, it shall be reasonable for the AESO to withhold its consent if such material modification or change: (i) is not in compliance with the LSSi Requirements, including but not limited to the Eligibility Requirements; (ii) relates to a load that is subject to another agreement with the AESO; (iii) would result in an inability to provide the Contract Volume; or (iv) would otherwise result in a material adverse impact to the AESO.
  
- 3.7 Non-Exclusivity. Notwithstanding anything to the contrary in this Agreement, this Agreement shall be non-exclusive in nature, and the AESO shall at all times have the right to perform any of the Services itself or to contract with a third party to perform any service included in the Services or any other obligations of the Service Provider in this Agreement.
  
- 3.8 No Minimum. Unless otherwise agreed to between the Parties in writing and executed by an authorized representative of each Party, the AESO shall have no obligation to purchase a minimum quantity of Services from the Service Provider at any time.
  
- 3.9 Outages.
  - (a) During the Service Term, the Service Provider shall report any Planned Outages to the AESO throughout by providing the AESO with an annual schedule of such planned maintenance at least thirty (30) days prior to January 1 each year, detailing all such planned maintenance for the subsequent twenty four (24) Months. If there are any changes to the dates or times of a Planned Outage, the Service Provider shall provide notice to the AESO at least thirty (30) days in advance of such Planned Outage.
  
  - (b) To invoke a Forced Outage, the Service Provider shall: (i) promptly submit a Revised Offered Volume equal to or less than the original Offered Volume which represents the capability of the LSSi Facility following the Outage; (ii) promptly report the Outage to the System Controller via SCADA; and (iii) provide the AESO with evidence in the Prescribed Form within five (5) Business Days of the Outage. The Service Provider shall in all cases have the burden of proof to establish both the existence and duration of the Forced Outage. If the Service Provider elects not to invoke a Forced Outage or fails to establish both the existence and duration of the Forced Outage to the AESO's sole satisfaction, the Outage shall be deemed not to be a Forced Outage.
  
- 3.10 Recovery Plan. In addition to any other rights or remedies the AESO may have, upon the occurrence of a Tolerance Excursion, a Failure to Supply, or a failure to comply with the LSSi Requirements, the AESO may, on notice to the Service Provider, require the Service Provider to prepare and deliver within thirty (30) days, at the Service Provider's sole cost and expense, a plan which sets forth the cause of the Tolerance Excursion, Failure to Supply, or failure to comply with the LSSi Requirements and the work that the Service Provider will undertake to remedy the cause. Upon the AESO's review and written approval (not to be unreasonably withheld) of such plan, the Service Provider shall forthwith undertake and implement the operational changes, maintenance, technical additions or

modifications or replacements or other remedial work set forth and described in such plan. The Service Provider shall notify the AESO upon completion of the work.

- 3.11 Suspension. In the event the Service Provider fails to provide an acceptable recovery plan in accordance with Section 3.10 or the AESO believes the Service Provider is not in compliance with the LSSi Requirements, the AESO may suspend the Service Provider from providing the Services until such time as the Service Provider provides an acceptable recovery plan in accordance with Section 3.10 or remedies any non-compliance with the LSSi Requirements, as determined by the AESO in its sole and absolute discretion. This right is in addition to any other rights or remedies the AESO may have.

4. **Term**.

- 4.1 The term of this Agreement (“**Term**”) shall commence upon the Effective Date and shall continue until 24:00 hours on December 31, 2024. For certainty, the Term and Service Term shall not be extended in the event of Force Majeure.

5. **Compliance with Applicable Laws**.

- 5.1 Compliance. The Service Provider shall comply with and shall require and ensure the Service Provider’s Personnel comply with all Applicable Laws.

- 5.2 Reliability Standards. Without limiting the generality of Section 5.1, the Service Provider shall comply with all Alberta Reliability Standards and all ISO Rules, as amended, supplemented, replaced or otherwise modified from time to time.

- 5.3 Good Electric Industry Practice. The Service Provider shall at all times adhere to Good Electric Industry Practice in performing its obligations under this Agreement; provided that no provision of this Agreement shall be interpreted as requiring the Service Provider to place at risk any equipment, personnel, the public or the environment or to be in non-compliance with Applicable Laws or operating licenses or permits applicable to the LSSi Facility.

- 5.4 Obligations at Law. Nothing in this Agreement modifies, alters, reduces, or affects the Service Provider’s obligations, liabilities, or accountability under Applicable Laws. In the case of any conflict, ambiguity, or inconsistency between or among any of the provisions or requirements of this Agreement and the provisions or requirements of any Applicable Law, Alberta Reliability Standard or ISO Rule, the more restrictive or stringent provisions or requirements will govern.

6. **Representations and Warranties**.

- 6.1 Representations and Warranties. The Service Provider represents, warrants and covenants to and in favour of the AESO that as of the date of this Agreement and continuing throughout the Term:

- (a) it is a [corporation/partnership/limited liability partnership], duly organized, validly existing under the laws of its jurisdiction of formation, and duly registered and authorized to carry on business in the Province of Alberta;
- (b) it has the requisite capacity, power and authority to execute this Agreement and other documents required to be delivered under this Agreement and to perform all obligations to which it thereby becomes subject. This Agreement is binding and enforceable against the Service Provider in accordance with its terms;
- (c) it has taken all necessary actions to authorize the execution, delivery and performance of this Agreement, including the transactions contemplated herein in accordance with the provisions of this Agreement. This Agreement has been duly

executed and delivered by the Service Provider, and this Agreement constitutes, and all other documents executed and delivered on behalf of the Service Provider hereunder shall, when executed and delivered constitute, valid and binding obligations of the Service Provider enforceable in accordance with their respective terms and conditions;

- (d) the execution, delivery and performance of the Services and any deliverables specified in this Agreement are not and will not be in violation or breach of, or be in conflict with or require any consent, authorization or approval under: (i) any term or provision of the constating documents of the Service Provider; (ii) any permit or authority to which the Service Provider is a party or by which the Service Provider is bound; (iii) any term or provision of a binding contract with a third party; or (iv) any Applicable Law;
- (e) there are no actions, suits or proceedings pending or, to the knowledge of the Service Provider, threatened against the Service Provider or any of its Affiliates seeking relief which would prevent or materially hinder the performance of the Services;
- (f) it is duly registered under the Part IX of the *Excise Tax Act* (Canada) and its GST registration number is [insert GST number], if applicable;
- (g) it is the legal owner of the LSSi Facility or has the rights to provide LSSi from the LSSi Facility in an amount equal to the Contract Volume;
- (h) it is a Pool Participant and meets the Eligibility Requirements and shall, throughout the Term, remain a Pool Participant and continue to meet the Eligibility Requirements;
- (i) it shall maintain such skills, resources, subcontractors and Personnel necessary to perform the Services and meet its obligations under this Agreement;
- (j) it shall provide only fully trained and qualified individuals to perform the Services;
- (k) it shall provide all the equipment, Personnel, supplies, consumables, superintendence and labour necessary to perform any Services required by this Agreement; and
- (l) it has and will maintain all licenses, permits, consents and authorities necessary to perform the Services.

6.2 Acknowledgement. The Service Provider acknowledges that the representations, warranties and obligations under this Agreement are reasonable, necessary and fundamental to the AESO's ability to perform its statutory duties, and the Service Provider acknowledges and agrees that any breach of this Agreement by the Service Provider and the Service Provider's Personnel could result in irreparable harm with respect thereto.

7. Compensation.

7.1 Monthly Payment. In consideration of the Service Provider's supply of LSSi, the AESO shall, for each Month during the Service Term, pay to the Service Provider an amount (the "**Monthly Payment**") as the sum of:

- (a) the Availability Payment;
- (b) the Arming Payment; and
- (c) the Trip Payment,

which shall be subject to Sections 7.2 and 7.3 and the Service Provider’s compliance with this Agreement.

7.2 Exceptions.

- (a) In the event of: (i) a Tolerance Excursion, (ii) a Failure to Supply, or (iii) the combined British Columbia and Montana interconnection import Total Transfer Capability is less than or equal to sixty five (65) MW, the Service Provider shall not be entitled to receive, and the AESO may deduct, the Hourly Availability Payments, Hourly Arming Payments, and Hourly Trip Payments for the hours when such events occur.
- (b) Notwithstanding Section 7.2(a)(i), in the event of a Forced Outage, the Service Provider shall not be entitled to receive, and the AESO may deduct, the Hourly Availability Payments, Hourly Arming Payments, and Hourly Trip Payments for the hours when such event occurs; provided, however, the Service Provider will be entitled to receive: (i) partial Hourly Arming Payments for the duration of the Hourly Dispatch Period following the Forced Outage; and (ii) Hourly Trip Payments, if the Service Provider complies with Subsection 3.9(b), receives a revised Dispatch from the System Controller, and maintains compliance for the duration of the Hourly Dispatch Period following the Forced Outage. If the Revised Offered Volume exceeds the previously Offered Volume, the Hourly Dispatch Period Arming Payment shall be zero (0) for the purposes of Section 7.2(b)(i).
- (c) The AESO may net and set-off pursuant to Section 7.8.

7.3 Performance Adjustment Mechanism. On each occurrence of a Failure to Supply in a calendar year, the AESO may multiply the Arming Payment in Section 7.1(b) by the applicable performance adjustment factor, as set out below, which shall reduce the Arming Payment for the Month in which the Failure to Supply occurred. If there is a Failure to Supply in the Month then the cumulative performance adjustment factor, calculated using the sum of all the Failures to Supply that have occurred throughout the calendar year, shall be applied. On January 1 of each year during the Service Term, the number of occurrences shall start again from zero (0). This Section shall not apply to an occurrence of a Failure to Supply that results from a Forced Outage, and such Failure to Supply shall not be counted for the purposes of the below table.

| <b>Occurrence of a Failure to Supply per Calendar Year</b> | <b>Performance Adjustment Factor</b> |
|--|--------------------------------------|
| First (1 <sup>st</sup> ) Failure to Supply                 | 1.00                                 |
| Second (2 <sup>nd</sup> ) Failure to Supply                | 0.95                                 |
| Third (3 <sup>rd</sup> ) Failure to Supply                 | 0.80                                 |
| Fourth (4 <sup>th</sup> ) Failure to Supply                | 0.75                                 |
| Fifth (5 <sup>th</sup> ) Failure to Supply                 | 0.50                                 |
| All subsequent Failures to Supply                          | 0.50                                 |

The AESO may net and set-off pursuant to Section 7.8.

7.4 Invoices. The Service Provider shall, no later than ten (10) Business Days following the end of each Month during the Service Term, prepare and submit to the AESO an invoice, in the form as prescribed by the AESO from time to time, for the Monthly Payment due from the AESO to the Service Provider in respect of the Services performed or provided during the



previous Month. Such invoice shall be accompanied by backup information specifying details relevant to the calculation of the amounts owing for such Month, including a list of the Planned Outages, Forced Outages, Tolerance Excursions, Failures to Supply, and Events of Force Majeure. In the event the information provided by the Service Provider is inconsistent with that provided by the System Controller, then, for the purposes of this Agreement and to the extent of such inconsistency, the information provided by the System Controller shall take precedence. With respect to any inconsistency related to the combined British Columbia and Montana interconnection import Total Transfer Capability, the information available on the AESO's website shall take precedence. In the event the Service Provider incorrectly calculates any Monthly Payment which results in an overpayment by the AESO to the Service Provider then the AESO shall have the right to net and set-off subsequent Monthly Payments against the amount of such overpayment pursuant to Section 7.8. All invoices shall be sent to the following address:

AESO  
Attention: Ancillary Services Payable  
2500, 330 – 5th Avenue SW Calgary, Alberta  
T2P 0L4  
or by e-mail to [aspayables@aeso.ca](mailto:aspayables@aeso.ca)

7.5 Waiver. The Service Provider acknowledges and agrees that the AESO shall not be responsible or liable for, and the Service Provider waives any and all claims with respect to, any Monthly Payment for which the Service Provider fails to provide an invoice within ninety (90) days of the performance or provision of the applicable Services.

7.6 Payment. The AESO shall, with respect to any invoice for a Month during the Service Term which is properly prepared and submitted to the AESO in accordance with the requirements of Section 7.4, pay the amount of such invoice to the Service Provider on or before the twentieth (20th) Business Day of the following Month, unless the AESO provides notice to the Service Provider that it is disputing the invoice, in whole or in part. In such case the AESO shall be entitled to withhold the disputed amount until the dispute is resolved between the Parties, at which time the AESO shall only be required to pay the amounts the Parties have agreed upon or the amounts otherwise determined as payable. If the time required for payment by the AESO for amounts owed under this Agreement falls on a day that is not a Business Day, the time required for such payment shall extend to the next Business Day. The AESO shall pay all invoice amounts by direct transfer to the bank account of the Service Provider set forth below, or such other account or bank as the Service Provider may stipulate by notice to the AESO.

Name of Bank:  
Address:  
Bank No.:  
Transit No.:  
Account No.:

7.7 Taxes. The Service Provider shall file and pay any applicable income and sales taxes. All Monthly Payments shall be exclusive of taxes, as applicable. The Service Provider shall be liable for and shall indemnify the AESO in accordance with Section 10 hereof in respect of any claims arising from the Service Provider's non-compliance with tax laws.

7.8 Set-Off. The AESO may net and set-off any Monthly Payments due to the Service Provider against any amounts owing by the Service Provider to the AESO. The remedy provided for in this Section 7.8 shall be without prejudice and in addition to any right which the AESO is at any time otherwise entitled.

## 8. Audit and Records.

8.1 During the Term and for a period of two (2) years thereafter, the AESO shall have the right,

during normal business hours and upon reasonable notice to the Service Provider, to conduct an audit of the Service Provider's books and Records and its computers and networks relating to the Services performed under this Agreement and to the extent necessary to confirm or investigate the Service Provider's compliance with the terms of this Agreement, including compliance with confidentiality, privacy and security terms, and where applicable the calculation of any Monthly Payment paid or payable by the AESO pursuant to this Agreement. The Service Provider shall also provide the AESO and its agents with access to its computers and networks, recovery plan and related books and Records required pursuant to Section 3.10, and shall make available to the AESO and its agents such financial and other information as the AESO shall reasonably request. If there is any revision to the Monthly Payments paid or payable by the AESO as a result of an audit, within thirty (30) days of the audit, the Service Provider shall pay to the AESO the full amount of any credit or the AESO shall pay to the Service Provider the full amount of any shortfall, as the case may be.

9. **Confidentiality.**

9.1 Confidential Information. "**Confidential Information**" means non-public information that the Party disclosing the Confidential Information ("**Disclosing Party**") designates to the Party receiving the Confidential Information ("**Receiving Party**") as being confidential or which, under the circumstances, would reasonably be known to be confidential or deserving of confidential treatment. Confidential Information includes locations of the AESO Operations Complex (AOC), Back-up Coordination Centre, Primary Data Centre and Secondary Data Centre, the Disclosing Party's confidential and proprietary information, any data, material, analyses, compilations, finances, business plans, marketing plans, services, budgets, forecasts, models, capital and operating costs, sales histories, market projections, creations, inventions, trade secrets, personal or employee information, information relating to facilities, suppliers, vendors, licensors, licensees, customers or employees, network, servers, workstation and security device addresses, information technology authentication and authorization information, security sensitive information (including information regarding security threats, vulnerabilities, impacts, safeguards, incidents, analyses or plans), past or present projects or products, projects or products under consideration, and any other matter relating to the operations, business, financial affairs or intellectual property of the Disclosing Party. For greater certainty, "Confidential Information" shall not include any information, however designated, that:

- (a) is now or becomes generally available to the public other than as a result of a breach of this Agreement by the Receiving Party;
- (b) is disclosed in good faith to the Receiving Party by a third party (who is not disclosing the same on behalf of the Disclosing Party) having legitimate possession and the right to make such disclosure without passing on or violating any obligation of confidence;
- (c) was already known by the Receiving Party without any obligation of confidence prior to disclosure or access hereunder by the Disclosing Party; or
- (d) was developed independently by the Receiving Party prior to disclosure of or access to any of the Disclosing Party's Confidential Information, or by Personnel of the Receiving Party who have not had access to the Disclosing Party's Confidential Information (both as evidenced by written records).

9.2 **Disclosure and Use Restrictions.** The Receiving Party agrees that it shall:

- (a) use the Disclosing Party's Confidential Information solely to the extent required to fulfill the purposes of this Agreement;
- (b) not disclose the Disclosing Party's Confidential Information to any third parties

(including Affiliates) except as may be specifically and expressly permitted in Section 9.3 below;

- (c) take all reasonable precautions, and in any event not less than those precautions used to protect its own Confidential Information, to keep the Disclosing Party's Confidential Information in the strictest confidence and to protect it from disclosure (including maintaining adequate security with respect to its facilities, Receiving Party's Personnel, and third parties, and implementing appropriate security and access controls to ensure that no unauthorized persons are able to access the Disclosing Party's Confidential Information);
- (d) not reproduce or copy in any medium in whole or in part any of the Disclosing Party's Confidential Information without the written approval of the Disclosing Party in each instance; and
- (e) not use or exploit the Disclosing Party's Confidential Information for creating, marketing or aiding in the creation or marketing, of any business opportunity.

9.3 Permitted Use and Disclosure. The Receiving Party may only:

- (a) disclose the Disclosing Party's Confidential Information to the Receiving Party's personnel or employees (or to the Receiving Party's agents (including the Service Provider's subcontractors) who are contractually bound to keep such information confidential) and legal counsel that have a need to know the Confidential Information for the purposes of this Agreement;
- (b) disclose or use the Disclosing Party's Confidential Information for purposes other than those expressly permitted in this Agreement where such disclosure or use is expressly approved in writing by the Disclosing Party in each instance (or as otherwise permitted pursuant to Section 9.10(b)); and the Disclosing Party, in its sole discretion, may determine whether any such disclosure shall be performed by the Receiving Party in a secure and encrypted manner; and
- (c) subject to Section 9.6, disclose the Disclosing Party's Confidential Information in the event that, and only to the extent that, such disclosure is required by Applicable Laws.

9.4 Proprietary Rights. All Confidential Information and materials are and shall remain the exclusive property of the Disclosing Party. The Receiving Party shall not acquire any right, title or interest in and to the Disclosing Party's Confidential Information. Nothing in this Agreement is intended to grant any rights to the Receiving Party under any patent, copyright, trade-mark, trade secret or any other intellectual property right of the Disclosing Party, nor shall this Agreement grant the Receiving Party rights in or to the Confidential Information and materials of the Disclosing Party except as expressly set forth herein.

9.5 Unauthorized Use. The Receiving Party shall promptly notify the Disclosing Party of any unauthorized use, possession or disclosure of the Disclosing Party's Confidential Information of which it becomes aware.

9.6 Disclosure Pursuant to Applicable Laws. Should the Receiving Party, or any person or entity to whom Confidential Information is transmitted directly or indirectly by the Receiving Party, be required by Applicable Laws to disclose any of the Disclosing Party's Confidential Information, to the extent permitted by Applicable Laws, the Receiving Party shall forthwith notify the Disclosing Party, and upon the request of the Disclosing Party, shall cooperate reasonably with the Disclosing Party in contesting such disclosure or seeking a protective order or other appropriate remedy within and subject to all Applicable Laws.

9.7 Storage of Confidential Information. The Receiving Party:

- (a) shall ensure that any Confidential Information, which is provided to the Receiving Party or to which the Receiving Party obtains access or collects (including any data repository that may contain any Personal Information or Confidential Information for which the Disclosing Party is responsible) is stored only in Canada; and
- (b) agrees not to move or retransmit Confidential Information from its location within Canada to another location within Canada or elsewhere without the Disclosing Party's prior written consent.

9.8 Return of Confidential Information. The Receiving Party, upon request by the Disclosing Party and in any event upon the termination of this Agreement, shall immediately return or destroy, at the Disclosing Party's option, the Disclosing Party's Confidential Information and all copies thereof in any form whatsoever which are in the possession, charge, control or custody of the Receiving Party, together with all other equipment or information provided to the Receiving Party by the Disclosing Party during the Term. If requested by the Disclosing Party, the Receiving Party shall provide an officer's certificate confirming deletion or the return of all such copies, equipment and information and that it has taken measures to ensure that any individual or party permitted pursuant to this Agreement to perform any part of the Services has not retained any copies or reproductions, electronic or otherwise.

9.9 Obligation to Disclose. Notwithstanding anything to the contrary, this Agreement shall not obligate the Disclosing Party to disclose or otherwise provide access to any particular Confidential Information or any particular portion thereof and such disclosure or access, if any, is provided at the Disclosing Party's discretion.

9.10 Publicity.

- (a) Without the prior written consent of the other Party, neither Party shall make any press release, advertisement, public disclosure or other public announcement or statement with respect to this Agreement or relationship between the AESO and the Service Provider, including the use of the either Party's name or logo or trademark, in advertisements, marketing materials, press releases or other documentation or announcements, except as mandated by Applicable Laws.
- (b) Notwithstanding 9.10(a) or anything else to the contrary, the AESO may make a press release, advertisement, public disclosure, or other public announcement disclosing: (i) the identity of the Service Provider; (ii) the Contract Volume, (iii) the average or range of the Availability Price, Arming Price, Trip Price and resulting payments; (iv) the Term and any extension thereof as part of the AESO's business practices without the prior written consent of the Service Provider. The Service Provider consents and agrees to such disclosure by the AESO.

10. Indemnity.

10.1 General Indemnity. The Service Provider shall be liable for and shall indemnify and hold the AESO, including AESO Personnel, harmless from and against all losses, expenses (including all legal expenses on a solicitor and own client basis), damage and injury to property and persons, for all third party claims (whether in contract or tort), demands, suits or actions arising from or related to:

- (a) any material breach of this Agreement, including any breach of privacy or confidentiality;
- (b) any inaccuracy or breach of any representation or warranty made by the Service Provider;

- (c) any payment or other obligation of the Service Provider to a third party relating to the Services rendered in connection to this Agreement;
  - (d) the negligence or willful misconduct of the Service Provider, including Service Provider Personnel in the performance of the Services whether occurring on the AESO's premises or elsewhere; or
  - (e) any and all loss, damage or liability for the infringement, violation or misappropriation, actual or alleged, of a third party patent, trademark, trade secret or copyright by the AESO arising from or in connection with the Services, related deliverables or materials of the Service Provider.
- 10.2 Defence of Claims. The Service Provider shall defend the AESO against any action brought for any of the foregoing claims and shall satisfy any judgment against the AESO, including AESO Personnel, resulting therefrom. Notwithstanding the foregoing, at its own cost, the AESO may participate in the defense of any action to which it is a party without relieving the Service Provider of its responsibility for the defense of such action. The AESO, upon receiving notice of any action brought against it, shall notify the Service Provider of the action and shall render all reasonable assistance required by the Service Provider in the defense of the action.
- 10.3 Settlement of Claims. No settlement of a claim shall be entered into by the Service Provider without the prior written consent of the AESO, which consent will not be unreasonably withheld.
- 10.4 Waiver of Claims. The Service Provider shall make no claim or demand against the AESO for any:
- (a) personal injury (including death); or
  - (b) claim, expense, or loss from damage to property suffered or sustained by the Service Provider or any other person;

which arises out of any act or omission under this Agreement, negligence or errors or omissions of the Service Provider, and the Service Provider hereby waives as against the AESO all such claims and demands.

11. **Damages.**

- 11.1 Direct Damages. Each of the Parties shall be liable to the other for any direct damages arising out of or relating to its performance or failure to perform under this Agreement, whether based on an action or claim in contract, equity, negligence, tort or otherwise, for any event, act or omission.
- 11.2 AESO Procurement Costs. In the event the AESO terminates the Agreement for cause in accordance with Section 16.1, the Service Provider shall pay to the AESO an amount equal to \$40,000 (the "**Liquidated Damages**"). The Parties intend that the Liquidated Damages constitute compensation and not a penalty. The Parties acknowledge and agree that the AESO's harm or actual damages caused by the AESO terminating the Agreement for cause would be impossible or very difficult to accurately estimate as of the Effective Date, and that the Liquidated Damages are a reasonable estimate of the anticipated or actual harm or actual damages, including the costs associated with conducting procurement processes for replacement Services, that might arise in the event that the AESO terminates the Agreement for cause pursuant to Section 16.1.
- 11.3 Financial Information.

- (a) The Service Provider shall, from time to time, at the request of the AESO, provide to the AESO such financial information as the AESO may require with respect to the Service Provider's ability to perform its obligations under this Agreement, including financial statements and other information relating to the Service Provider's assets and its Credit Rating.
- (b) The Service Provider shall provide the AESO with notice of any Material Adverse Change within two (2) Business Days after any officer of the Service Provider becomes aware that a Material Adverse Change has occurred.

11.4 Financial Security. Within fifteen (15) Business Days from the Effective Date or such later date as agreed to by the Parties, the Service Provider shall provide Financial Security to the AESO in the amount of the Liquidated Damages and for the duration of the Term, all in accordance with Rule 103.3 of the ISO Rules. In the event the AESO terminates this Agreement in accordance with Section 16.1, it may avail itself of the Financial Security to settle any Financial Obligations of the Service Provider that arise in relation to this Agreement.

11.5 Consequential Damages. Except for a claim for:

- (a) personal injury proximately caused by the Service Provider;
- (b) the Service Provider's breach of its confidentiality obligations under this agreement;
- (c) third party intellectual property infringement; or
- (d) Liquidated Damages pursuant to Section 11.2,

in no event is the Service Provider or the AESO liable for any indirect, special, exemplary, punitive, consequential or incidental damages (including lost profits, lost revenues and other economic losses), however caused and regardless of whether such damages are foreseeable or whether the Service Provider or the AESO has been advised of their possibility.

11.6 Limiting Liability.

- (a) Nothing herein shall be construed as limiting the application or the protection of the EUA or LPR.
- (b) In no event shall the Service Provider's liability to the AESO for any direct damages, whether based in contract, tort, or otherwise exceed (i) one million dollars (\$1,000,000), or (ii) the total amount of Monthly Payments received by the Service Provider under this Agreement, whichever amount is greater. Notwithstanding the foregoing, nothing herein shall limit the Service Provider's liability to the AESO for any damages caused by the Service Provider's gross negligence, willful misconduct, or breach of Sections 9.1 – 9.9.

**12. Change in Law.**

12.1 Change in Law. If a Change in Law occurs during the period beginning on the Proposal Date and ending on the expiry of the Term, and the Service Provider incurs (or will incur) additional net costs in excess of fifty thousand dollars (\$50,000) as a direct result of providing the Services, then the AESO will have the option to either: (i) pay the Service Provider the actual amount of such increase after it has been incurred by the Service Provider, to the extent such increase exceeds fifty thousand dollars (\$50,000); or (ii) terminate this Agreement, provided that:

- (a) the Service Provider delivers a notice to the AESO within twenty (20) Business Days of the occurrence of such Change in Law, setting forth reasonable details in respect of the scope, nature and anticipated impact thereof, and the steps the Service Provider has taken (or will be taking) to address and mitigate such anticipated impact; and
- (b) the Service Provider uses all reasonable efforts and takes all reasonable steps to mitigate the adverse impact of such Change in Law.

Notwithstanding anything to the contrary, the Service Provider shall not be entitled to recover any lost profits, lost revenues, or other economic losses as the result of a Change in Law.

13. **Injunctive Relief.**

- 13.1 Without intending to limit the remedies available to the AESO, the Service Provider acknowledges that damages at law may be an insufficient remedy to the AESO in view of the irrevocable harm which may be suffered if the Service Provider violates any of the terms of Section 9 and agrees that the AESO may apply for and have injunctive relief in any court of competent jurisdiction specifically to enforce any such covenants upon the breach or threatened breach of any such provisions, or otherwise specifically to enforce any such covenants, and the Service Provider hereby waives all defenses to the strict enforcement thereof by the AESO.

14. **Notice.**

- 14.1 Any notice, consent, demand or other communication that may be or is required to be given pursuant to this Agreement shall be in writing and shall be delivered by hand, by prepaid courier service or by certified registered mail, postage prepaid and return receipt requested, or electronic mail, to the address of the AESO or the Service Provider, as the case may be, set forth below. Any notice or other communication contemplated herein shall be deemed to have been delivered and received by the other Party:
- (a) upon delivery when delivered by hand; or
  - (b) one (1) Business Day after delivery, if delivered by courier; or
  - (c) five (5) Business Days after being sent by pre-paid single registered mail to an address set forth herein; or
  - (d) one (1) Business Day after being sent by confirmed electronic mail.

Addresses:

To the AESO:

Alberta Electric System Operator  
2500, 330 – 5<sup>th</sup> Avenue SW Calgary, Alberta  
T2P 0L4

Attention: Stephen Dickinson (the “AESO Representative”)  
Email: [Commercial.Services@ieso.ca](mailto:Commercial.Services@ieso.ca)

With a copy to:

Alberta Electric System Operator  
2500, 330 – 5<sup>th</sup> Avenue SW Calgary, Alberta  
T2P 0L4

Attention: General Counsel  
Email: [General.Counsel@aeso.ca](mailto:General.Counsel@aeso.ca)

To the Service Provider:

Attention: (the “**Service Provider Representative**”)  
Tel:  
Email:

With a copy to:

Attention: Tel:  
Email:

Either Party may change its address for notices herein by providing written notice to the other Party in accordance with this Section 14.

## 15. **Dispute Resolution.**

- 15.1 **Resolution by Representatives.** In the event of a dispute arising out of or relating to this Agreement, the AESO Representative and the Service Provider Representative shall make Commercially Reasonable Efforts to resolve the dispute in good faith and in as timely a fashion as possible, but in any case, in not more than twenty (20) Business Days from the time the dispute is first discussed formally by such representatives. A Party wishing to formally discuss the dispute must provide written notice to the other representative stating the nature of the dispute, a proposed schedule of meetings to discuss the dispute, and possible options to resolve the dispute.
- 15.2 **Resolution by Senior Officers.** If the Representatives are unable to resolve the dispute within the timeframe stated in Section 15.1, then each Party shall appoint a senior officer in their organization, or that person’s designate, to resolve the dispute. The senior officer shall arrange a suitable schedule of meetings to discuss the dispute and shall attempt to resolve it, in good faith, in as timely a fashion as possible, but in any event, in not more than twenty (20) Business Days.
- 15.3 **Arbitration.** In the event that the Parties fail to resolve the dispute accordance with Section 15.2, the Parties may proceed to binding arbitration. Arbitration shall be conducted in accordance with the Arbitration Act (Alberta). The Parties shall endeavor to select a mutually acceptable arbitrator knowledgeable about issues relating to the subject matter of this Agreement. The arbitrator shall not have the authority, power, or right to alter, change, amend, modify, add, or subtract from any provision of this Agreement or to award punitive damages. The arbitrator shall have the power to issue mandatory orders and restraining orders in connection with the arbitration. The award rendered by the arbitrator shall be final and binding on the Parties, and judgment may be entered thereon in any court having jurisdiction. The agreement for arbitration shall be specifically enforceable under Alberta arbitration law. During the continuance of any arbitration proceeding, the Parties shall continue to perform their respective obligations under this Agreement. Any arbitration shall take place in Calgary, Alberta.

## 16. **Termination.**

- 16.1 **Termination for Cause by the AESO.** The AESO may elect to terminate this Agreement, in whole or in part and at its sole discretion, upon notice to the Service Provider, if:
- (a) the Service Provider becomes Insolvent;
  - (b) notwithstanding anything in Section 17.3, any event or events of Force Majeure, in



aggregate, last longer than 180 days in duration in any twelve (12) Month period during the Term;

- (c) if at any time the Service Provider fails to Trip the LSSi Facility in accordance with the LSSi Requirements;
- (d) if the Service Provider fails to comply with Section 3.2(b);
- (e) there are five (5) or more Failures to Supply within a calendar year;
- (f) the Service Provider fails to comply with or perform any of the terms of this Agreement, and any such failure continues for a period of thirty (30) days after the date of receipt of written notice from the AESO to remedy or cure such failure; or
- (g) the Service Provider fails to comply with or perform any of the terms of any other agreement between the Service Provider and the AESO, and such failure is not cured or remedied within the applicable cure period, if any, specified in such agreement.

For the purposes of Section 16.1(e), a Failure to Supply that results from a Forced Outage shall not be counted.

16.2 Termination due to Change in Law by the AESO. If any Change in Law or other event occurs during the Term which materially affects the Services or results in all or a material portion of the Services no longer being required by the AESO, then the AESO may elect to terminate this Agreement.

16.3 Termination for Cause by the Service Provider. The Service Provider shall have the right to terminate this Agreement for cause solely in the event of any failure by the AESO to make timely payment of Monthly Payments (not including withholding by the AESO for a good faith dispute) which failure is not cured within thirty (30) Business Days following written notice thereof.

16.4 Termination due to Change in Law by the Service Provider. If any Change in Law occurs during the Term which materially reduces or limits the liability protection which the Service Provider, as of the Proposal Date, is entitled to under the EUA and LPR with respect to its delivery of Services hereunder, then the Service Provider may elect to terminate this Agreement, provided that the Service Provider delivers a notice to the AESO within twenty (20) Business Days of the occurrence of such Change in Law setting forth reasonable details with respect to the manner in which its liability protection has been materially reduced or limited ("**Termination Notice**"). The AESO may elect within ten (10) Business Days of receiving any such Termination Notice to fully indemnify the Service Provider in respect of such reduced or limited liability protection by providing the Service Provider with written confirmation of same ("**Confirmation of Indemnity**"). Upon the AESO's delivery of a Confirmation of Indemnity within such ten (10) Business Day period, the Termination Notice will be deemed void ab initio. If the AESO does not deliver a Confirmation of Indemnity within such ten (10) Business Day period, then this Agreement shall terminate on the later of (a) the expiration of such ten (10) Business Day period and (b) the date that such Change in Law becomes effective in respect of the Service Provider.

16.5 Procedures upon Termination.

- (a) Upon receipt or delivery of a notice of termination with respect to this Agreement for any reason, the Service Provider shall: (i) take all reasonable steps necessary to minimize any costs arising from the commitments made prior to the date of its receipt of the notice of termination; (ii) in the period prior to the effective date of termination and at its own cost (unless the Agreement has been terminated

pursuant to Section 16.3), assemble in an orderly fashion, all documents and other information (including information in electronic form) relating to the Services and deliver the same to the AESO; and (iii) subject to having complied with its obligations pursuant to this Agreement, be entitled to payment for the Services performed prior to the date of termination as specified in this Agreement.

- (b) Other than total payment for the Services rendered, the AESO shall have no further liability to the Service Provider or its Affiliates, the Service Provider Personnel, for any sum whatsoever, including without limitation, loss of profits, or any other losses resulting from the early termination of all or part of the Services.

16.6 Effect of Termination.

- (a) Neither termination nor expiration of this Agreement shall relieve either Party of liabilities accrued prior to termination or any liability, obligation or agreement which is to survive or be performed after such termination or expiration. The Parties shall co-operate in good faith after the termination or expiration of this Agreement to fulfill any such liabilities, obligations or agreements.
- (b) Termination shall be without prejudice to any other rights or remedies the Parties may have at law or in equity.

17. General.

17.1 Governing Law. This Agreement shall be governed by and interpreted in accordance with the laws of the Province of Alberta and the federal laws of Canada applicable therein, excluding any conflict of laws principles that may apply therein. The Parties irrevocably consent, submit and attorn to the jurisdiction of the courts in the Province of Alberta and the courts of appeal therefrom.

17.2 Survival. The provisions of Sections 1, 2, 7.7, 7.8, 8, 9, 10, 11, 13, 14, 15, 16.5, 16.6, 17.1, 17.2, 17.5, 17.6, 17.7, 17.8, and 17.9 shall survive termination of this Agreement.

17.3 Force Majeure. Notwithstanding any other provision of this Agreement, neither the Service Provider nor the AESO shall be liable for any failure or delay in complying with any obligation imposed on such Party under this Agreement if:

- (a) the failure or delay arises from, or is in connection with, an event of Force Majeure;
- (b) that Party, on becoming aware of the event of Force Majeure, promptly notifies the other Party in writing of the nature of, the expected duration of, and the obligation(s) affected by, the event of Force Majeure; and
- (c) that Party uses its Commercially Reasonable Efforts to: (i) mitigate the effects of the event of Force Majeure on the performance of that Party's obligations under this Agreement; and (ii) perform that Party's obligations which are not affected by the event of Force Majeure in a timely manner.

17.4 Amendment. This Agreement shall not be amended except by a written amending agreement which expressly states that it is intended to amend this Agreement by cross reference to the section of the Agreement to be overridden, executed by authorized signing officers of each of the Parties.

17.5 Severability. Whenever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under Applicable Laws, however, each provision of this Agreement is intended to be severable and if any provision is determined by a court of competent jurisdiction to be illegal, invalid or unenforceable for any reason whatsoever,

such provision shall be severed from this Agreement and will not affect the legality, validity or enforceability of the remainder of this Agreement or any other provision hereof.

- 17.6 Assignment. The Service Provider shall not, without the prior written consent of the AESO, acting reasonably, assign this Agreement or any of its rights or obligations arising hereunder. Any purported assignment of this Agreement by the Service Provider without the prior written consent of the AESO shall be void. This Agreement shall enure to the benefit of and be binding upon the Parties, their respective successors and permitted assigns.
- 17.7 Waiver. No waiver by any Party of any breach, whether actual or anticipated of any of the terms, conditions, representations or warranties contained herein shall take effect or be binding upon that Party unless the waiver is expressed in writing under the authority of that Party. Any waiver so given shall extend only to the particular breach so waived and shall not limit or affect any rights with respect to any other or future breach.
- 17.8 Reasonableness of Restrictions. The Service Provider acknowledges having carefully read and considered the provisions of this Agreement and acknowledges that the AESO has permitted the Service Provider sufficient time to seek independent legal advice and, having done so or voluntarily electing not to do so, the Service Provider agrees that the restrictions set forth herein are fair and reasonable and are reasonably required for the protection of the interests of the AESO and its business and that of AESO Personnel.
- 17.9 Entire Agreement. This Agreement represents the entire understanding and agreement of the Parties with respect to the subject matter hereof and supersedes all prior communications, agreements and understanding relating to the subject matter hereof.
- 17.10 Further Assurances. Each Party will, from time to time, without further consideration, do such further acts and deliver all such further assurances, deeds and documents as shall be reasonably required in order to fully perform and carry out the terms of this Agreement.
- 17.11 Counterparts. The Parties may execute this Agreement by facsimile or other electronic means and in separate counterparts, each of which when so executed and delivered shall be an original, and all such counterparts taken together shall constitute one instrument.

[Intentionally left blank – signature page to follow]



IN WITNESS WHEREOF, the Parties acknowledge that they have read this Agreement, understand it, and agree to be bound by it and have caused this Agreement to be executed by their duly authorized representatives effective as of the Effective Date. The Service Provider acknowledges having received a fully executed copy of this Agreement.

**INDEPENDENT SYSTEM OPERATOR,**  
operating as the **AESO**

**[SERVICE PROVIDER LEGAL NAME]**

Per:

Per:

Name:

Name:

Title:

Title:

Date:

Date:

\_\_\_\_\_

\_\_\_\_\_

Per:

Per:

Name:

Name:

Title:

Title:

Date:

Date:

\_\_\_\_\_

\_\_\_\_\_

THIS IS SCHEDULE “A” TO THE IMPORT LOAD SHED AGREEMENT DATED THIS [•] DAY OF [•], 2021 BETWEEN [•] AND THE INDEPENDENT SYSTEM OPERATOR, OPERATING AS THE AESO

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**SCHEDULE “A” – LSSI FACILITY INFORMATION**

[AESO NTD: Please copy and complete a table for each load providing LSSi at each facility, collectively forming the LSSi Facility]

| Facility information   |  |
|--|--|
| Facility name  | [insert]   |
| AESO Asset ID  | [insert]   |
| Owner of facility  | [insert]   |
| Operator of facility   | [insert]   |
| Physical address   | [insert]   |
| GPS location (coordinates)   | [insert]   |
| Connection point   | [insert – specify connection point to the System, or the City of Medicine Hat electrical system as applicable, with identifier such as line number]                                |
| Substation identifier (number, name)   | [insert]   |
| Facility total load volume (MW)  | [insert – the total (overall) volume of load in MW (based on rated MW capacity) present at the facility (of which all or a portion of this volume is proposed to provide LSSi)]    |
| Load providing LSSi  |  |
| Volume of load at the facility providing LSSi (MW)                                     | [insert – the volume of load in MW (based on rated MW capacity) at the facility providing LSSi, which may be all or a portion of the total volume of load present at the facility] |
| Identifier(s) (name and/or number) of each feeder with load configured to provide LSSi | [insert – identifier (as a label/name and/or number) of each feeder with load configured to provide LSSi at the facility]  |
| Identifier(s) (name and/or number) of each breaker configured to provide LSSi          | [insert – identifier (as a label/name and/or number) of each breaker at the facility configured to provide LSSi at the facility]   |

**THIS IS SCHEDULE "B" TO THE IMPORT LOAD SHED AGREEMENT DATED THIS [●] DAY OF [●], 2021 BETWEEN [●] AND THE INDEPENDENT SYSTEM OPERATOR, OPERATING AS THE AESO**

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**SCHEDULE "B" – LSSI ELIGIBILITY AND REQUIREMENTS**

This document outlines the eligibility criteria and requirements that a Service Provider needs to meet in order to provide LSSI.

**Definitions**

Capitalized terms not defined in this Schedule "B" or elsewhere in this Agreement shall have the meaning ascribed to them in the ISO Glossary.

**1 Eligibility to Provide LSSI**

- 1.1 The LSSI Facility must be located within the Alberta Balancing Authority Area and be connected to the System.
- 1.2 The LSSI Facility must be able to provide a minimum of five point zero (5.0) MW of LSSI.
- 1.3 The LSSI Facility may be an aggregation of several individual loads from throughout Alberta that are connected to the System irrespective of whether the Load Facilities are electrically separated from each other via transmission or not.
- 1.4 Loads that are part of the UFLS program are eligible to provide LSSI except for the time-delayed blocks D1, D2 and D3. The AESO may need to evaluate the total volume of loads participating in LSSI that are also part of the UFLS program. The Service Provider needs to inform the AESO whether any of the loads offered for LSSI are connected to a UFLS relay and if so, what the UFLS relay setting values are.
- 1.5 The AESO must be able to evaluate the maximum amount of load offered for LSSI in any one geographical location or by any one or more LSSI Facility if the Trip of this amount of load causes an adverse impact on System reliability in the area of the Service Provider.

**2 Communication Requirements**

- 2.1 The Service Provider must be able to receive and respond to SCADA signals received from the System Controller via the Energy Management System ("**EMS**") as primary communication for the purpose of Arming/Disarming the LSSI Facility, receiving and responding to the SCADA Trip Signal, and for load restoration. The Service Provider must install and maintain reliable telemetry signals to the System Controller in accordance with the ISO Rule 502.8. Both analog and status points shall have a latency as stipulated in Appendix 5 to ISO Rule 502.8. The AESO will use two (2) second exception and fifteen (15) second integrity data polling. The Service Provider must GPS time synchronize SCADA data for data provided by the Service Provider to the AESO, with time stamped accuracy as described in ISO Rule 502.8.
- 2.2 The requirement to stay equal to or above the Lower Tolerance Limit is inclusive of any permissible SCADA accuracy tolerance as stated in ISO Rule 502.8. For greater clarity, the Service Provider shall use exception-based reporting and acceptable deadbands, as specified in the ISO Rule 502.8, without time delays, filtering, or averaging.
- 2.3 The following analog SCADA data shall be provided:

- (a) From the Service Provider to the AESO:
  - (i) the Actual Volume, a measured quantity;
  - (ii) the Offered Volume, an entered quantity; and
  - (iii) the Armed Volume, an entered quantity;
- (b) From the AESO to the Service Provider:
  - (i) the Dispatched Volume, an entered quantity; and
  - (ii) the confirmed Offered Volume, an entered quantity.

2.4 The following status SCADA data shall be provided:

- (a) From the Service Provider to the AESO:
  - (i) A digital signal indicating Armed or Disarmed status. This is a contact that is either open or closed, where open means “Disarmed” and closed means “Armed”;
  - (ii) SCADA Trip Signal status confirmation; and
  - (iii) A digital signal indicating a portion of or the entire LSSi Facility is experiencing a Forced Outage condition.

The SCADA Trip Signal will be a two (2) second momentary pulse signal from the AESO and the SCADA Trip Signal response will be a thirty (30) second momentary pulse returned to the AESO by the Service Provider.

- (b) From the AESO to the Service Provider:
  - (i) An Arm or Disarm Dispatch digital signal; and
  - (ii) SCADA Trip Signal.

2.5 The Service Provider must be able to receive and respond to voice communication from the System Controller as backup communication. Voice communication for normal telephone service shall be in accordance with Table 1, Column A, Market Participant Subcategory, Section 2 of ISO Rule 502.4. Access to the AESO Automated Dispatch and Messaging System (“ADaMS”) is not required for the provision of LSSi.

**3 Operational Requirements**

- 3.1 The Service Provider must be able to Arm and Disarm the LSSi Facility.
- 3.2 The Service Provider may not Arm the LSSi Facility without receiving a Dispatch. Once the LSSi Facility has been Armed, the Service Provider may not Disarm the LSSi Facility without receiving a Dispatch.
- 3.3 The Service Provider must Arm or Disarm within fifteen (15) minutes in response to a SCADA Dispatch. The Dispatch may be verbal under emergency conditions or if the telemetry (SCADA system) has failed.
- 3.4 Once Armed, the Actual Volume (that could be Tripped) must remain equal to or above the Lower Tolerance Limit at all points in time and for the duration of the Scheduling Hour.

- 3.5 If the Service Provider desires to change the Offered Volume, the change will be Dispatched by the System Controller as soon as reasonably possible and no later than the end of the next Scheduling Hour. The Service Provider shall not change to the new Offered Volume unless Dispatched.
- 3.6 A Service Provider must have their Offered Volume for the next Scheduling Hour received by the AESO no later than twenty five (25) minutes prior to the start of the next hour. At that time the Offered Volume in place becomes a commitment for the next Scheduling Hour.
- 3.7 Once the LSSi Facility has been Armed it may not be Disarmed until a Dispatch or verbal instruction to that effect is received from the System Controller.
- 3.8 The Service Provider must ensure that their SCADA point for the Actual Volume is current and accurate at any point in time. For clarity, there shall be no averaging of the Actual Volume.
- 3.9 A load must be able to remain off the System for up to sixty (60) minutes following a Trip event.
- 3.10 After a Trip event and the load has been shed, the Service Provider can restore the load only when directed by the System Controller, or after a minimum of sixty (60) minutes have elapsed from the Trip event.
- 3.11 The Service Provider is not obligated to restore a load subject to a Trip event. However, the Service Provider must ensure that the Offered Volume telemetered to the AESO via SCADA is accurate and reflects the Service Provider's capability.
- 3.12 Any load that is Tripped must not be restored automatically or taken over by another feeder at any other point within the System and shall remain off the grid until the System Controller has directed the Service Provider that it is safe to restore their load or after a minimum of sixty (60) minutes have elapsed from the time of the event that caused the LSSi Facility to Trip. The System Controller will notify the Service Provider that it is safe to restore their load by sending the Service Provider a Disarm signal. Telephone communication will be used as a back-up to the Disarm signal.
- 3.13 The Service Provider must comply with the provisions of ISO Rule 303.1.
- 3.14 When Armed, the Service provider must disconnect within ten (10) minutes of the SCADA Trip Signal being sent from the System Controller, meaning the disconnection of at least ninety five percent (95%) of the Armed Volume from the LSSi Facility that is connected to the System at each breaker that is configured under the LSSi scheme. See Section 2.2 of Attachment 1 for further information regarding this requirement.

#### **4 Technical Requirements – Under Frequency Relay Scheme and Data Measurement**

- 4.1 When Armed, the Service Provider must disconnect within zero point two (0.2) seconds (12 cycles) of the frequency reaching fifty nine point five (59.5) Hz (+/- 0.02 Hz), meaning the disconnection of at least ninety five percent (95%) of the Armed Volume from the LSSi Facility that is connected to the System at each breaker that is configured under the LSSi scheme. The zero point two (0.2) seconds trip timing requirement is the sum of the frequency measurement time plus any time required to Trip the Armed Volume. See Section 2.1 of Attachment 1 for further information regarding this requirement.
- 4.2 The under frequency relay scheme shall be developed using digital under frequency relay(s) measuring frequency at each facility. The load at each facility must have its own breaker(s) which allow the load to be Tripped independently of any other loads. Each breaker to be



Tripped must be directly connected to an under frequency relay. A remote “central” measurement point with communications between the under frequency relay and a breaker is prohibited.

- 4.3 A relay used in the UFLS program must not also be used for the LSSi under frequency relay scheme.
- 4.4 The Service Provider must be capable of recording the frequency, timing, and real power (in MW) for the Trip event that was triggered by the under frequency relay LSSi scheme and recorded into a data file as an event record of the Trip (“**Trip Event Record**”). The Trip Event Record must consist of the following:
- (a) measurement points of the Trip Event Record shall be measured at each breaker associated with the LSSi Facility’s LSSi scheme;
  - (b) for any LSSi Facilities with behind the fence equipment, including but not limited to generation units and series reactors, the Trip Event Record must also be measured at the point nearest to the Point of Delivery (as defined in the ISO Glossary) that is owned by the legal owner of the LSSi Facility;
  - (c) the pre-Trip event and post-Trip event recording and clearly demonstrate the Service Provider’s performance;
  - (d) the Trip Event Record must show the Actual Volume for sixty (60) seconds prior to the Trip event, during the Trip event and for sixty (60) seconds after the Trip event with the rate of at least thirty (30) frames per second; and
  - (e) data measurement including the following: (i) the frequency observed by the relay at each facility location where the load is being shed; (ii) the real power (MW) of each load (either the total load or the load providing LSSi at each facility) both prior to the under frequency event and the real power (MW) of the load (either total facility load or load providing LSSi) following the under frequency event; and (iii) a demonstration that the load was shed in twelve (12) cycles (zero point two (0.2) seconds) or less, once a frequency of fifty nine point five (59.5) Hz is detected by the under frequency relay.

The Service Provider must be capable of providing the Trip Event Record electronically in a comma separated values (“**csv**”) file format or other similar data format as specified by the AESO. A data file such as Disturbance Fault Recorder type data using sixty (60) Hz current and voltage sine wave traces are not acceptable.

- 4.5 All data forming the Trip Event Record, and any supporting information, shall be provided to the AESO within five (5) Business Days of the Trip event.
- 4.6 The Trip Event Record and any supporting information or records shall be retained by the Service Provider for a minimum of two (2) years following the expiry of the Agreement.

## 5 **Monitoring.**

- 5.1 The AESO will monitor the response of the LSSi Facility to Trip events through the normal telemetry (SCADA) system. However, because the SCADA system does not provide sufficiently detailed information for any given event, the AESO may request the Service Provider to provide a copy of the electronic Trip Event Record referred to in Section 4.4 of the LSSi Requirements following every Trip event.

6 **Testing**

- 6.1 No later than October 1, 2021, the Service Provider shall provide the AESO with:
- (a) a report certified by a Professional Engineer registered with the Association of Professional Engineers, and Geoscientists of Alberta of a test confirming that: (i) the Armed Volume will disconnect from the LSSi Facility that is connected to the System at breakers configured under the LSSi scheme within zero point two (0.2) seconds (12 cycles) of the System frequency reaching fifty nine point five (59.5) Hz (+/- 0.02 Hz); and (ii) the data measurement, collection, and retention abilities of the LSSi Facility meet the requirements described in Section 4 of the LSSi Requirement (the "**Certified Report**"); and
  - (b) evidence, in the Prescribed Form, demonstrating that the Service Provider meets the requirements set out in Section 2 of the LSSi Requirements to the satisfaction of the AESO (the "**Communication Confirmation**").

The Service Provider shall repeat the test and provide the AESO with a new Certified Report and Communication Confirmation any time there is a material change to the LSSi Facility.

- 6.2 Upon the AESO's request, the Service Provider shall schedule a test with the AESO for verification that the SCADA Trip Signal being sent from the AESO is received and that the proper response sent from the Service Provider is received by the AESO.
- 6.3 No later than December 31 of each year during the Service Term, the Service Provider shall provide the AESO with an annual confirmation, in the Prescribed Form, confirming the Service Provider's compliance with the LSSi Requirements, with the exception of Section 4.1, and that there has been no material change to the LSSi Facility (the "**Annual Confirmation**").
- 6.4 Any time there has been a failure to comply with any of the LSSi Requirements, the AESO may require the performance of a test after corrective action has been taken in order to confirm the capability of the Service Provider and the LSSi Facility to provide LSSi, at the Service Provider's sole cost.
- 6.5 The AESO will not require the LSSi Facility to be Tripped as a part of any testing.

ATTACHMENT "1"

1. Illustration of LSSi SCADA communications for Arming and offers

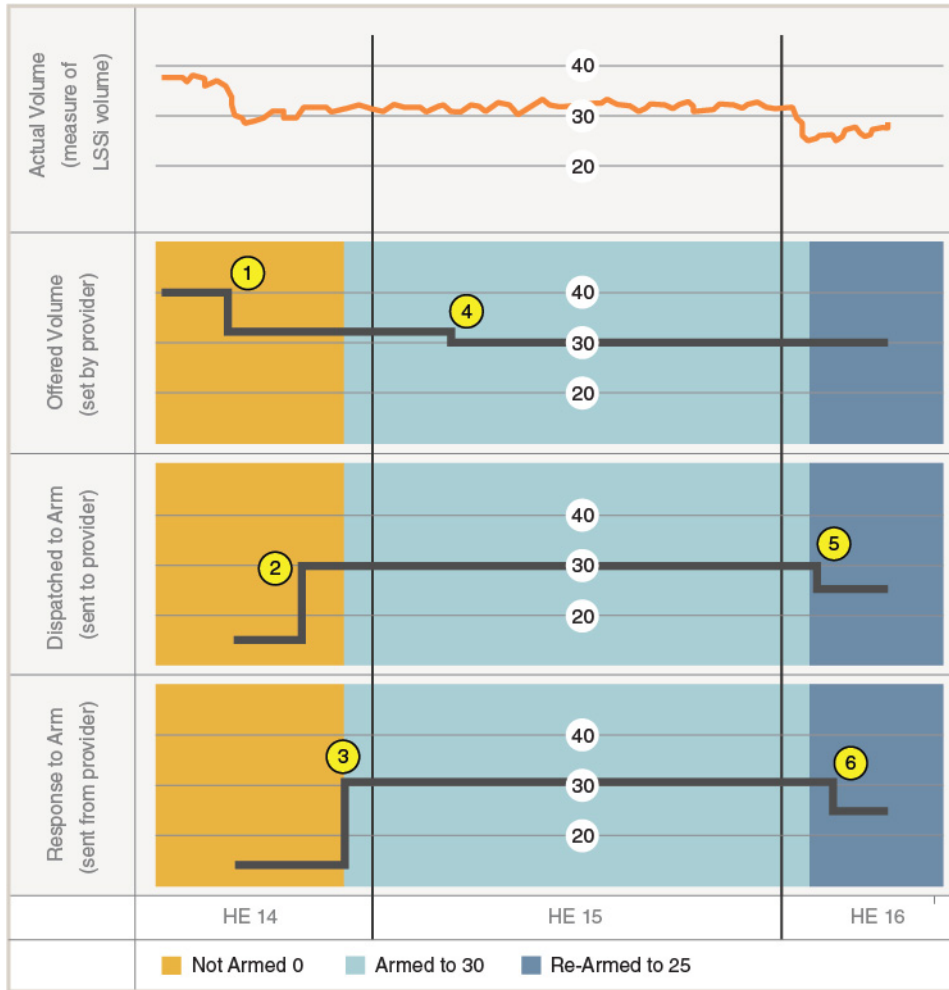


Figure 1: Illustration of the LSSi SCADA communication for Arming and offers

The highlighted events above correspond to the following actions:

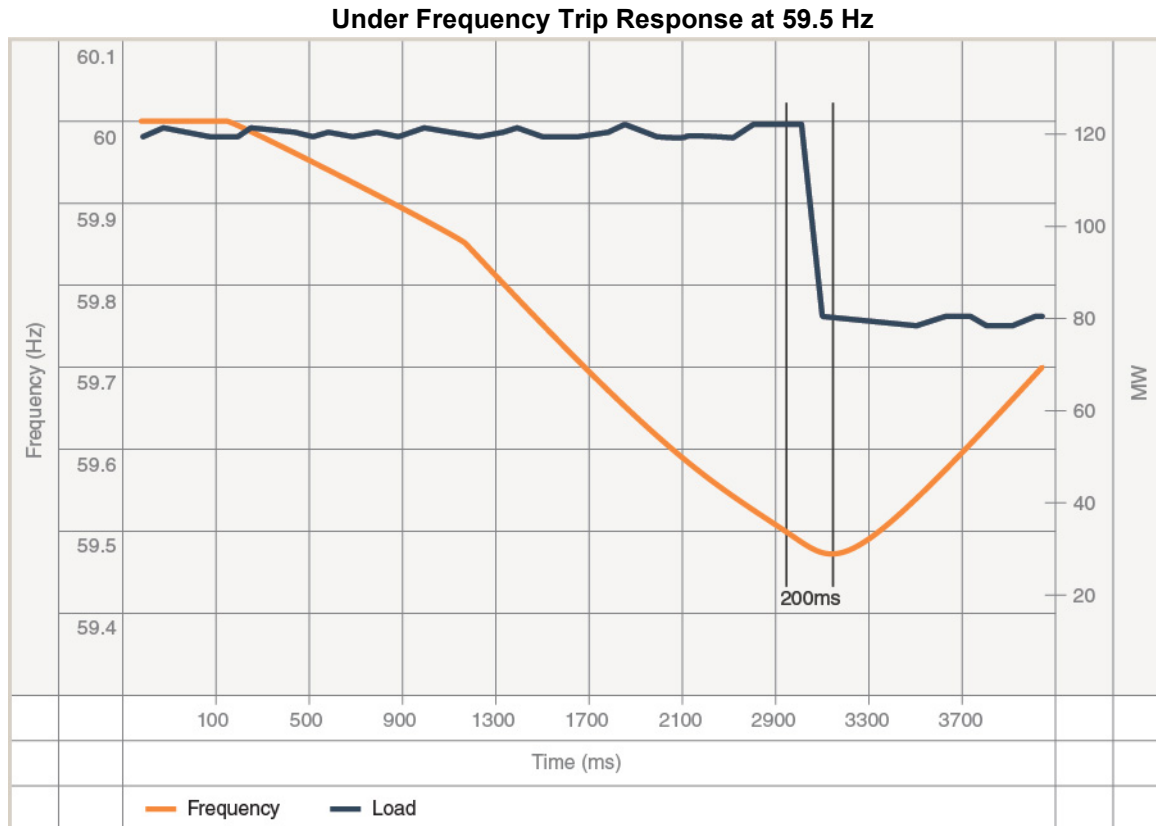
- 1.1 At 13:15 the Service Provider changes their Offered Volume from forty (40) MW to thirty (30) MW. The change is transmitted via SCADA to the System Controller indicating that the Service Provider is available to provide thirty (30) MW of LSSi for the next Scheduling Hour. At this point the Service Provider is not Armed and does not have any volume obligations. At 13:35, the Service Provider's submitted offer of thirty (30) MW becomes the Offered Volume for the next Scheduling Hour. Confirmation of the Offered Volume is provided via SCADA from the AESO to the Service Provider.
- 1.2 At 13:50 the System Controller determines that thirty (30) MW of LSSi is required from the Service Provider. The Dispatched Volume is transmitted by SCADA to the Service Provider, indicating that the System Controller requires the thirty (30) MW of offered LSSi to be Armed. The Service Provider must comply with the Dispatch within fifteen (15) minutes of the System Controller sending the Dispatch.
- 1.3 At 13:54 the Service Provider Arms the LSSi under frequency relay and ensures that the load Armed to Trip reflects the Dispatched Volume. The state of the LSSi scheme (Armed or

Armed) and a confirmation of the thirty (30) MW Armed Volume is sent back to the System Controller, via SCADA, indicating the load is Armed for thirty (30) MW, as Dispatched.

- 1.4 At 14:16 the Service Provider determines they would like to provide only twenty five (25) MW of LSSi for the next Scheduling Hour and changes their submitted offer accordingly. At 14:35 this will be reflected as the Service Provider's Offered Volume for the next Scheduling Hour. However, because the Service Provider was already Armed for thirty (30) MW, they are committed to provide that thirty (30) MW unless Dispatched otherwise by the System Controller no later than the end of the next Scheduling Hour.
- 1.5 At 15:10 the System Controller Dispatches the Service Provider from thirty (30) MW to the new Offered Volume of twenty-five (25) MW. The Service Provider must be capable of maintaining the Armed Volume until Dispatched by the System Controller. This new Dispatch is transmitted by SCADA to the Service Provider indicating that the System Controller will require the twenty five (25) MW Offered Volume of LSSi to be Armed. The Service Provider must comply with the Dispatch within fifteen (15) minutes of the System Controller sending the Dispatch.
- 1.6 At 15:11 the Service Provider sends the state of the LSSi scheme (Armed or not Armed) and a confirmation of the twenty five (25) MW Armed Volume to the System Controller indicating that the load is Armed for twenty five (25) MW, as Dispatched. The Service Provider ensures that the Actual Volume remains equal to or above the Lower Tolerance Limit at all points in time while Armed.

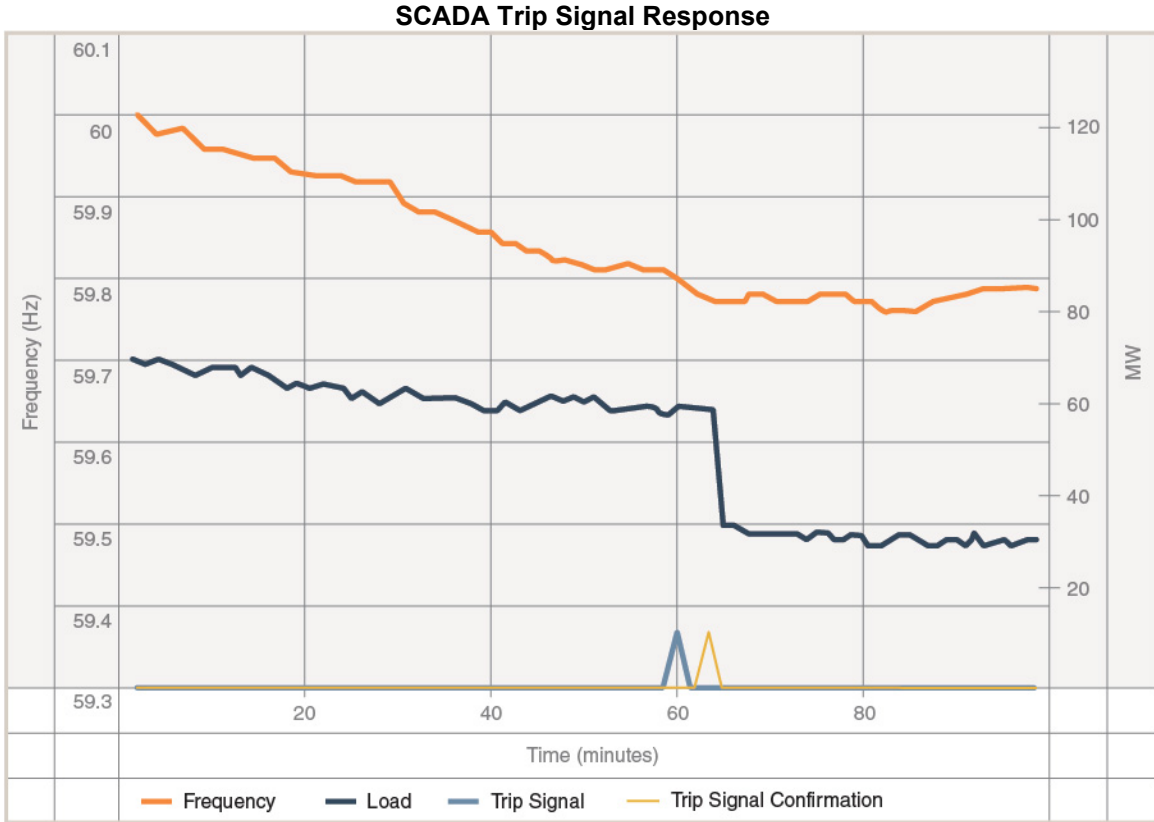
## 2. Guide to Meeting the LSSi Under Frequency Trip and SCADA Trip Signal Requirement

2.1 When Armed, the Service Provider must disconnect within zero point two (0.2) seconds (12 cycles) of the frequency reaching fifty nine point five (59.5) Hz (+/- 0.02 Hz), meaning the disconnection of at least ninety five percent (95%) of the Armed Volume from the LSSi Facility that is connected to the System at each breaker that is configured under the LSSi scheme. The zero point two (0.2) seconds trip timing requirement is the sum of the frequency measurement time plus any time required to Trip the Armed Volume. This can be achieved by employing an under frequency relay set to fifty nine point five (59.5) Hz such that the total time used for measurement and breaker operation is zero point two (0.2) seconds or less. See Figure 2 below.



**Figure 2: Shows a load disconnected by the under frequency relay from an LSSi Facility connected to the System within zero point two (0.2) seconds after the System frequency reaches fifty nine point five (59.5) Hz. The amount of load shed is forty (40) MW as indicated by the right hand axis.**

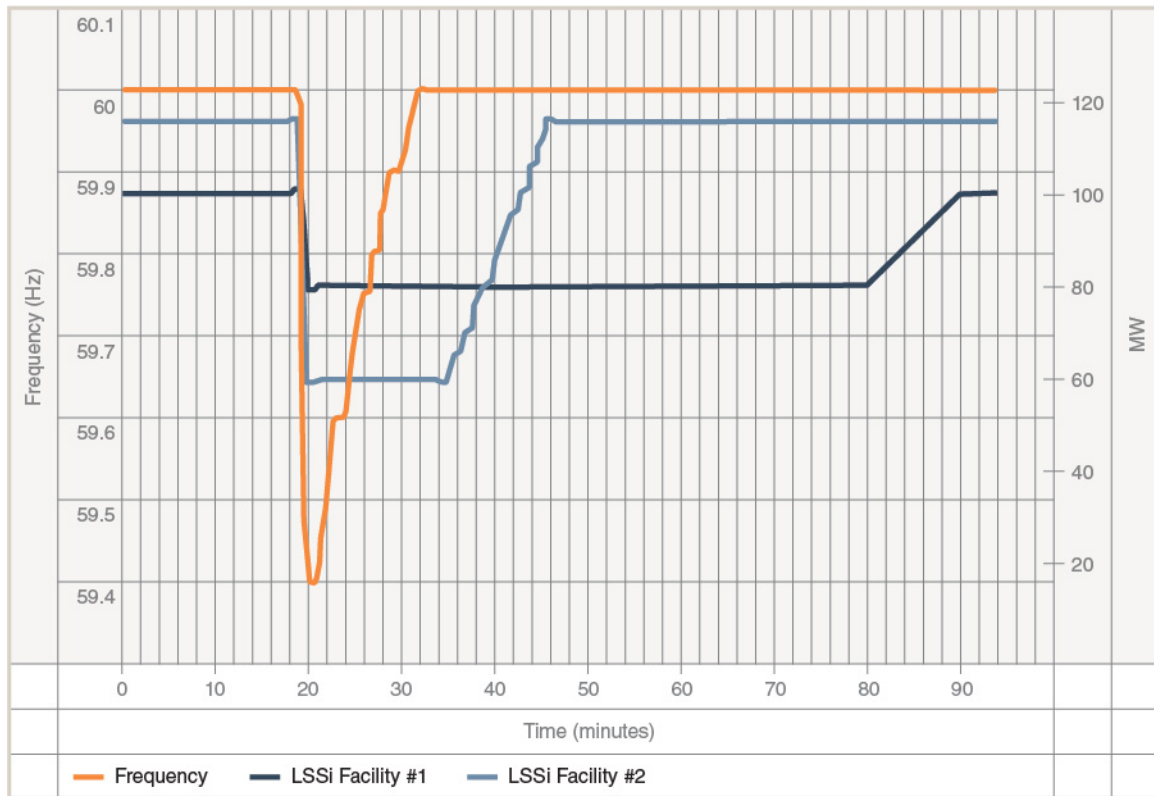
2.2. A SCADA Trip Signal may be sent from the AESO. When Armed, the Service provider must disconnect within ten (10) minutes of the SCADA Trip Signal being sent from the System Controller, meaning the disconnection of at least ninety five percent (95%) of the Armed Volume from the LSSi Facility that is connected to the System at each breaker that is configured under the LSSi scheme.



**Figure 3: Shows a load disconnecting from an LSSi Facility connected to the System within ten (10) minutes of the AESO SCADA Trip Signal being sent to the Service Provider. The Service Provider is required to send a SCADA Trip Signal status confirmation to the AESO as receipt of the SCADA Trip Signal. The amount of load shed is thirty (30) MW as indicated by the right-hand axis.**

### 3. LSSi Arming, Tripping and Load Restoration Sequence

#### LSSi Response and Load Restoration



**Figure 4: Shows an example of two LSSi Facilities being Armed, Tripped and restored as follows (load MW shown in the right hand axis)**

Timeline for a fifty nine point five (59.5) Hz under frequency load shed on the System:

- 3.1 At time  $t = 0$  LSSi Facility #1 is Armed for twenty (20) MW and LSSi Facility #2 is Armed for fifty five (55) MW;
- 3.2 At time  $t = 19$  minutes, a System Event takes place and the frequency drops to fifty-nine point four (59.4) Hz and LSSi Facility #1 sheds twenty (20) MW and LSSi Facility #2 sheds fifty five (55) MW;
- 3.3 At time  $t = 32$  minutes the System frequency has restored to normal conditions at sixty point zero (60.0) Hz;
- 3.4 At time  $t = 35$  minutes the System Controller sends an updated SCADA signal for LSSi Facility #2 and allows LSSi Facility #2 restore load. However, the System Controller does not send an updated SCADA signal for LSSi Facility #1 so it remains at the reduced level; and
- 3.5 At time  $t = 80$  minutes (sixty (60) minutes after it Tripped) LSSi Facility #1 begins to self-restore even though the System Controller has not sent an updated SCADA signal for LSSi Facility #1.