

# Appendix F Exhibit F-2

# **Guaranteed BESS Availability**

# for

# 2021 Request for Proposals for

# Renewable Resources

For Entergy Arkansas, LLC

Entergy Arkansas, LLC August 3, 2021

# GUARANTEED BESS AVAILABILITY AND GUARANTEED BESS RT EFFICIENCY

# I. GUARANTEED BESS AVAILABILITY

O&M Contractor is engaged to provide Services with the objective to meet or exceed the guaranteed availability percentage for the BESS provided in this <u>Exhibit F-2</u> (the "<u>Guaranteed BESS Availability</u>").

Except as otherwise specified in <u>Section 3.1</u> of the Agreement, Owner's sole and exclusive remedy for a failure of the BESS to achieve the Guaranteed BESS Availability during any Operating Period (as defined below) shall be the BESS Availability Liquidated Damages (as defined below) provided in this <u>Exhibit F-2</u>. The measurement of BESS Availability and the calculation of BESS Availability Liquidated Damages shall be determined during each Operating Period during the Term; provided that the last Operating Period shall end on the last day of the Term.

### 1. Guaranteed BESS Availability and BESS Availability Liquidated Damages

The following table describes the Guaranteed BESS Availability and BESS Availability Liquidated Damages for each Operating Period during the Term of this Agreement.

Guaranteed BESS Availability	BESS Availability Liquidated Damages (pro rated for partial percentages)
[98]%	[\$] per 1% that BESS Availability is below Guaranteed BESS Availability

### 2. Capacity Based Availability Calculation

Owner may elect to measure the capacity of the BESS in MWs in accordance with this Exhibit F-2 at any time during the Term. Once requested to perform a Capacity Test (as defined below), O&M Contractor shall complete the test within 15 Business Days of the date of Owner's request. Owner may only request a Capacity Test 3 times during an Operating Period, except that a Capacity Test shall not count toward such limitation to the extent such Capacity Test results in Measured Capacity being more than 1% below the Measured Capacity from the last Capacity Test or, with respect to the first such Capacity Test under this Exhibit F-2, below the Guaranteed BESS Storage Capacity (defined in the BOT Agreement) determined under the BOT Agreement. In order to determine the average power and energy that can be discharged by the BESS (the "Measured Capacity"), O&M Contractor shall, at Owner's request pursuant to the preceding sentence, conduct a test of the BESS starting at a 100% state of charge and shall discharge the BESS over a [\_\_\_\_ hour] period (plus or minus 1%) at the maximum discharge rate setting for the BESS (the "Capacity Test"). The test shall be conducted at unity power factor. The number of MWh of energy discharged as measured by the BESS meter at the point of common coupling and net of auxiliary loads (and the corresponding amount of power determined by dividing the foregoing by [ hours]) shall be the Measured Capacity of the BESS. If the Measured Capacity is more than 1% less than the BESS Capacity determined under the BOT Agreement, the portion of the BESS (measured in MW) that shall be deemed to be partially unavailable for a particular Settlement Interval (as defined below) shall be determined according to the following formula (each, a "Capacity Shortfall"):

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Capacity Shortfall<sub>i</sub> = BESS Capacity-Measured Capacity<sub>i</sub>

Where:

"i" = a Settlement Interval occurring during the applicable Operating Period

"Settlement Interval" = means a MISO 15 minute settlement interval

"Measured Capacity $_i$ " = the Measured Capacity that is applicable to a particular Settlement Interval "i".

"Capacity Shortfall<sub>i</sub>" = the Capacity Shortfall in MW for a particular Settlement Interval "i" determined pursuant to the formula set forth above.

From the date that a Capacity Test occurs until the next Capacity Test, the Measured Capacity from the last Capacity Test shall apply and the Capacity Shortfall determined as a result thereof shall apply to each Settlement Interval occurring from and after the Capacity Test until the completion of the next Capacity Test. If the Capacity Test was conducted after the on-line monitoring data indicated that there is a suspected Capacity Shortfall, the results of the Capacity Test shall apply from the earlier of the time that on-line monitoring data indicated a Capacity Shortfall, or when the Capacity Test was requested. If, between the time that a Capacity Test is requested and when the Capacity Test is conducted, repairs are made to the BESS or a modification is made to the BESS's systems that adjusts or otherwise changes how the BESS's state of charge is determined or calculated, the Capacity Shortfall as indicated by the on-line monitoring data will be deemed to have been in effect from the point in time identified by the on-line monitoring system until the time that the Capacity Test is conducted after the repair or modification was completed and the results of the Capacity Test will only apply to the time period after such Capacity Test. If O&M Contractor performs adjustments, repairs or other corrections to the BESS, O&M Contractor may require Owner to operate the BESS to cause an additional Capacity Test to be conducted within 48 hours after O&M Contractor's written request; provided that O&M Contractor may not request more than one (1) Capacity Test per month during the Term. For the avoidance of doubt, the Capacity Shortfall is intended to apply to all Settlement Intervals until the next Capacity Test is conducted, including Settlement Intervals when the BESS is neither charging nor discharging.

The ability of the BESS to charge and discharge in accordance with the set point rate initiated by Owner shall be measured for each Settlement Interval. If the BESS fails to charge or discharge at the set point rate initiated by Owner, then a portion of the BESS's Capacity shall be deemed to be partially unavailable for a particular Settlement Interval as determined according to the following formula (each, a "<u>Performance Shortfall</u>"):

Performance Shortfall<sub>i</sub> = BESS Capacity \* Performance Percentage<sub>i</sub>

Where:

"Performance Percentage<sub>i</sub>" = with respect to Settlement Interval "i", the percentage determined by dividing (a) the lower of (1) the actual energy discharged/charged during such Settlement

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Interval and (2) the energy requested to be discharged/charged based on the set point selected by Owner for such Settlement Period by (b) the higher of (1) the actual energy discharged/charged during such Settlement Interval and (2) the energy requested to be discharged/charged based on the set point selected by Owner for such Settlement Period.

The average Performance Shortfall determined over the course of a charge cycle or a discharge cycle shall apply to all Settlement Intervals after such charge cycle or discharge cycle until a subsequent charge cycle or discharge cycle at an equal or higher set point for power output demonstrates a different Performance Percentage. For the avoidance of doubt, the Performance Shortfall shall apply in accordance with the preceding sentence to all Settlement Intervals, including Settlement Intervals when the BESS is neither charging nor discharging.

O&M Contractor shall automatically record Measured Capacity, Performance Percentage (including discharge/charge setting and actual discharge/charge rates for each charge/discharge cycle), operating hours and unavailable hours for the BESS as a whole and each individual containerized unit on a continuous basis throughout the Operating Period using the BESS's monitoring and control systems, together with the O&M Contractor's log and shall provide such information in each monthly report provided under <u>Section 4.10(a)</u> of the Agreement.

For each Settlement Interval "i" occurring in an Operating Period, the availability of the BESS shall be measured as follows:

Availability<sub>i</sub> = (BESS Capacity – Unavailable Capacity<sub>i</sub>) / BESS Capacity

Where:

BESS Capacity = the BESS Capacity determined under the BOT Agreement

 $\label{eq:capacity} \begin{array}{l} Unavailable \ Capacity_i = the \ portion \ of \ the \ BESS \ Capacity \ during \ Settlement \ Interval \ ``i'' \ that \ is \ unavailable \ determined \ by \ the \ sum \ of \ Capacity \ Shortfall_i \ + \ Performance \ Shortfall_i \ + \ Adjusted \ Capacity \ Outage_i \end{array}$ 

Where:

Adjusted Capacity Outage<sub>i</sub> = the BESS Capacity that is unavailable to operate as a result of an outage (whether scheduled or unscheduled); provided that Adjusted Capacity Outage shall be reduced to reflect any reduction in BESS Capacity captured through the calculation of Capacity Shortfall<sub>i</sub> and Performance Shortfall<sub>i</sub> (e.g., if one containerized portion of the BESS is offline and unavailable for operation during a Settlement Interval, the portion of Capacity Shortfall<sub>i</sub> or Performance Shortfall<sub>i</sub> allocable to the portion of the BESS Capacity attributable to such containerized portion of the BESS capacity attributable to such containerized portion of the BESS shall be reduced from the calculation of Adjusted Capacity Outage<sub>i</sub> to ensure such unavailable portion of capacity is not counted twice)

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# GUARANTEED BESS AVAILABILITY AND GUARANTEED BESS RT EFFICIENCY

The BESS Availability for an entire Operating Period will be calculated by averaging Availability<sub>i</sub> across all Settlement Intervals occurring during the applicable Operating Period as follows:

BESS Availability = 
$$\frac{\sum_{i=1}^{n} Availability_i}{\sum_{i=1}^{n} Availability_i}$$

Where:

"i" equals one Settlement Interval "i"

n

"n" all Settlement Intervals occurring during the applicable Operating Period

# 3. Calculation of BESS Availability Liquidated Damages

If BESS Availability for an Operating Period is less than Guaranteed BESS Availability, then the O&M Contractor will be subject to liquidated damages ("<u>BESS Availability Liquidated Damages</u>"). BESS Availability Liquidated Damages will be calculated as specified in the chart set forth in Section I.1 above.

## 4. Excused Outages

For purposes of calculating Unavailable Capacity, the BESS (or a portion thereof to the extent only a portion of the BESS is adversely effected) will be considered available to the extent resulting from a Force Majeure Event.

### 5. Reporting; Disputes

The Parties will review the performance of the BESS in connection with each monthly report provided under Section 4.10(a) of the Agreement. Each monthly report provided under Section 4.10(a) of the Agreement will contain all the information required by the Agreement and all raw data necessary to calculate BESS Availability for the applicable month. The calculation of BESS Availability and BESS Availability Liquidated Damages for an Operating Period will be provided by O&M Contractor to Owner within fifteen (15) days after the end of such Operating Period. Any disputes related to the monthly reports provided under Section 4.10(a) of the Agreement, the calculation of BESS Availability or BESS Availability Liquidated Damages shall be resolved as specified in the Agreement.

### 6. Payment

O&M Contractor shall pay any undisputed BESS Availability Liquidated Damages within thirty (30) days after the end of each Operating Period and shall pay any disputed amount of BESS Availability Liquidated Damages that are ultimately determined to be owed within fifteen (15) days after the resolution of such dispute.

# **II. GUARANTEED BESS RT EFFICIENCY**

For each Operating Period during the Term, O&M Contractor guarantees that Measured BESS RT Efficiency (as defined below) for such Operating Period will equal or exceed the Guaranteed BESS RT

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Efficiency (as defined in the table below). Measured BESS RT Efficiency shall be measured annually for each Operating Period occurring during the Term.

Except as otherwise specified in <u>Section 3.1</u> of the Agreement, Owner's sole and exclusive remedy for a failure of the BESS to achieve the Guaranteed BESS RT Efficiency during any Operating Period shall be the BESS RT Efficiency Liquidated Damages (as defined below) provided in this <u>Exhibit F-2</u>.

### 1. Guaranteed BESS RT Efficiency and BESS RT Efficiency Liquidated Damages

The following table describes the Guaranteed BESS RT Efficiency, BESS RT Efficiency Liquidated Damages and maximum liability for failing to achieve the Guaranteed BESS RT Efficiency for each Operating Period during the Term of this Agreement.

Guaranteed BESS RT Efficiency	BESS RT Efficiency Liquidated Damages (pro rated for partial percentages)
[89.1%] minus [0.3%] per year after Project Substantial Completion	[\$50] <sup>1</sup> per MWh * total MWh charged during the year * [(Guaranteed BESS RT Efficiency - Measured BESS RT Efficiency)/Guaranteed BESS RT Efficiency]

### 2. BESS RT Efficiency Calculation

The BESS's round trip efficiency in charging and discharging energy in each Operating Period shall be measured by dividing the sum of all energy discharged in MWh (as measured by the BESS's revenue meter) by the sum all energy charged in MWh (as measured by the BESS's revenue meter) during the Operating Period (the "<u>Measured BESS RT Efficiency</u>"). The measurement of Measured BESS RT Efficiency shall begin with the first charge of energy during an Operating Period that starts from a 0% state of charge and shall end with the last discharge of energy during an Operating Period that ends with a 0% state of charge. The test shall be conducted at unity power factor.

### 3. Calculation of BESS RT Efficiency Liquidated Damages

If Measured BESS RT Efficiency for an Operating Period is less than Guaranteed BESS RT Efficiency, then the O&M Contractor will be subject to liquidated damages ("<u>BESS RT Efficiency Liquidated</u> <u>Damages</u>"). BESS RT Efficiency Liquidated Damages will be calculated as specified in the chart set forth in Section II.1 above.

### 4. Reporting; Disputes

<sup>&</sup>lt;sup>1</sup> Should reflect cost of energy to charge the battery that is lost due to inefficiency.

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The Parties will review the performance of the BESS in connection with each monthly report provided under <u>Section 4.10(a)</u> of the Agreement. Each monthly report provided under <u>Section 4.10(a)</u> of the Agreement will contain all the information required by the Agreement (including the amount of energy charged and discharged during the applicable month as measured by the BESS's revenue meter). The calculation of Measured BESS RT Efficiency and BESS RT Efficiency Liquidated Damages for an Operating Period will be provided by O&M Contractor to Owner within fifteen (15) days after the end of such Operating Period. Any disputes related to the monthly reports provided under <u>Section 4.10(a)</u> of the Agreement, the calculation of Measured BESS RT Efficiency or BESS RT Efficiency Liquidated Damages shall be resolved as specified in the Agreement.

#### 5. Payment

O&M Contractor shall pay any undisputed BESS RT Efficiency Liquidated Damages within thirty (30) days after the end of each Operating Period and shall pay any disputed amount of BESS RT Efficiency Liquidated Damages that are ultimately determined to be owed within fifteen (15) days after the resolution of such dispute.

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