DISTRIBUTION INTERCONNECTION INFORMATION FORM FOR SOLAR AND ENERGY STORAGE RESOURCES

REQUEST FOR PROPOSALS FOR SOLAR AND SOLAR + STORAGE RESOURCES
UB # 19-20-12

INFORMATION FOR PARALLEL OPERATION OF SOLAR GENERATION AND BATTERY STORAGE EQUIPMENT WITH THE ELECTRIC DISTRIBUTION SYSTEM

Preamble and Instructions

An owner of a Solar Photovoltaic (PV) installation or a Solar Photovoltaic and Battery Energy Storage System (PV + BESS) who requests an interconnection to the Henderson Municipal Power and Light, KY (HMP&L) electric distribution system under Request For Proposals For Solar And Solar + Storage Resources (UB #19-20-12), must submit a digital Interconnection Information form by e-mail to HMP&L's engineering consultants at GDS Associates, Inc through the contact information listed below:

Ryan Johnson, P.E.
Phone: 770-799-2351
and
Steven Spiegel
Phone: 770-799-2373
Direct all emails to:
HendersonSolarRFP@gdsassociates.com

Respondents will be responsible for the actual cost of all required interconnection studies (System Impact, Facilities, etc.). A refundable deposit of $7,500 will be due on the proposal due date for each project proposed to be interconnected to the local HMP&L distribution system that will need to be studied. The deposit will either be used to perform an initial System Impact Study or refunded. This Interconnection Information form is required for the PV or PV + BESS systems connected to the HMP&L distribution system. Should there be any impact to the neighboring 69kV or 161kV system further identified, additional studies will need to be conducted by MISO. Applicants may be required to provide additional data as deemed necessary by either MISO or HMPL. Other MISO (and/or HMP&L) fees and dues may apply for the proposed interconnection(s) projects affecting the 69kV or 161kV transmission system. If the project is ultimately contracted, the deposit will be credited to the total distribution interconnection costs paid for by the Respondent.

The Interconnection Information Form is deemed complete when it provides all applicable and correct information as required below. (Additional information to evaluate a request for Interconnection may be required pursuant to the application process after the application is deemed complete.)

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Section 1 – Applicant Information

Legal Name of Interconnecting Applicant
Name: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____
E-Mail Address: _____

PV or PV + BESS Facility Location (if different from Above):
Name: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____
E-Mail Address: _____

Will the PV or PV + BESS be used for any of the following (check all that apply):

To supply power to the City of Henderson?	Yes ☑ No ☐
To export power to customers on City of Henderson distribution system?	Yes ☐ No ☐
To export power to the Transmission Service Provider?	Yes ☐ No ☐

Requested Point of Interconnection: _____
Interconnection Applicant's proposed in-service date: _____

Section 2 – General Technical Information

Enclose a preliminary site electrical One-Line Diagram showing the configuration of all generating facility equipment up to the proposed POD.

Is One-Line Diagram Enclosed with this application Information (see Note below)?
Yes ☐ No ☐

Is a PV or PV + BESS layout plan with major equipment locations provided with this application?
Yes ☐ No ☐

Note: The final one-line diagram must be signed and stamped by a licensed Professional Engineer In the state of Kentucky along with the final PV or PV + BESS facility design submission.

Enclose a copy of proposed site documentation that indicates the precise physical location of the proposed DER (e.g., USGS topographic map or other diagram or documentation, GPS coordinates, Google Earth KMZ File).

Is Site Documentation Enclosed? Yes ☐ No ☐

Proposed Location of Protective Interface Equipment on Property: (Include Address if Different from Application Address) _____

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes.

Are any Available Operation and Protection Documentation Enclosed? Yes ☐ No ☐

Section 3 –Site Control

Enclose documentation verifying site control. The site control may be demonstrated through:

a) Ownership of the site;
b) A leasehold interest in, or a right to develop a site for the purpose of constructing a distributed generation resource facility;
c) An option to purchase or acquire a leasehold site for such purpose;
d) An exclusivity or other business relationship between PV or PV + BESS facility and the entity having the right to sell, to lease or to grant the distributed generation resource facility the right to possess or occupy a site for such purpose.

Section 4 – Generator Qualifications

Energy source:
_____ Solar
_____ Battery
_____ Other renewable (state type)

Type of PV or PV + BESS coupling on the low voltage side:
_____ DC-DC coupled
_____ DC-AC coupled

Applicants Future Site Load _____ kW

Applicant Future Reactive Load _____ kVAR (if known)

Maximum Physical PV or PV + BESS (combined) Export Capability to the Electric System
_____ kVA

Maximum Physical PV or PV + BESS (combined) Export Duration to the Electric System
_____ hours

List components of the proposed PV or PV + BESS Facility that are currently certified by a U.S. Department of Energy-approved laboratory and/or listed by the Underwriters Laboratory:

Equipment Type UL Listing or U.S. Lab Certification (Identify)

1. _____

2. _____

3. _____

4. _____

5. _____

Section 5 – Generating Unit Technical Information

PV or PV + BESS generation equipment (solar) Manufacturer, Model Name & Number:

_____

PV OR PV + BESS generation equipment (storage) Manufacturer, Model Name & Number:

_____

PV OR PV + BESS Inverter Manufacturer, Model Name & Number:

_____

Nameplate (combined) Output Power Rating in kW: (Summer) _____ (Winter) _____

PV OR PV + BESS Generator Power Factor at which the Applicant intends to run its Resource
_____ PF

Rated Power Factor range Leading/Lagging: _____

Is the output PF adjustable? Yes ☐ No ☐

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Is protection equipment available at the PV OR PV + BESS closest to the Point of Demarcation?
Yes ☐ No ☐

Protection settings (pick-up and delay) for voltage, current, and frequency if available as provided by the Manufacturer:

_____

_____

_____

_____

_____

_____

_____

_____

Will the PV OR PV + BESS impedance model be available for modeling purposes?
Yes ☐ No ☐

Provide fault current contribution to the electric system:

_____

_____

_____

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Battery Energy Storage System (BESS) Data

Battery Chemistry to be used in the BESS system: _____
BESS Expected lifetime: _____ years
BESS Charging Time: _____ h
Rated BESS Charging cycles: _____
BES Charging Source: _____ System grid _____ Coupled DER* source
Rated BESS Voltage on the AC side: _____ V (AC)
Rated usable BESS Capacity: _____ kW
Rated BESS Capacity duration: _____ h
BESS construction: _____ Solid _____Flow (Acid, salt, hydroxide etc.)
Fire protection system included: Yes ☐ No ☐
Thermal runaway protection system included: Yes ☐ No ☐

Applicable BESS Standards* check all that apply:

IEEE 1547 Yes ☐ No ☐
Provide which IEEE 1547 standard requirements are applicable if the proposed BESS is compliant with this standard
IEEE 1375 Yes ☐ No ☐
IEEE 484 Yes ☐ No ☐
ASME TES-1 Yes ☐ No ☐
UL 9540 Yes ☐ No ☐
UL 1741 Yes ☐ No ☐
Provide UL1741 compliance certificate if this standard is applicable
NFPA 791 Yes ☐ No ☐
NFPA 855 Yes ☐ No ☐
UL 3001 Yes ☐ No ☐
UL 1973 Yes ☐ No ☐
UL 1642 Yes ☐ No ☐
IEC 62935 Yes ☐ No ☐
IEC 62897 Yes ☐ No ☐
UL 9540 Yes ☐ No ☐
UN 38.3 Yes ☐ No ☐

*Note: Provide documentation where all checked (applicable) standards are referenced

BESS Back-up Power Requirements including for Climate Control: ___ kW
BESS Momentary Fault Current at the rated voltage on the AC side: _____ three-phase _____ ph-gnd
BESS Function Characteristics:

Peak shedding: Yes ☐ No ☐
Frequency support: Yes ☐ No ☐
Voltage Support: Yes ☐ No ☐

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Section 6 – Interconnection Equipment Technical Data Information

Will a new transformer be used between the PV OR PV + BESS and the point of interconnection?
Yes ☐ No ☐

Will the transformer be provided by Interconnection Applicant? Yes ☐ No ☐

Transformer Data (if applicable. for Interconnection Applicant-Owned Transformer):

Is the transformer: _____ single-phase _____ three-phase

Size: _____ kVA

Transformer Impedance: _____ % on _____ kVA Base

Transformer Voltage and Connection on the BESS side and system side: _____ / _____

Transformer Fuse Protection Data (if applicable, for Interconnection Applicant-Owned transformer):

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Interconnecting Circuit Breaker (if applicable)

Manufacturer: _____ Type: _____ Load Rating (Amps): _____

Interrupting Rating: _____ (Amps) Trip Speed: _____ (Cycles)

Relay Manufacturer: _____ Catalog number

Section 7 – Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in the Interconnection Application is true and correct.

Name, Title, and Signature of Applicant: _____

_____

_____

Date: _____/_____/_____