Interconnection Guidelines

The following steps are general guidelines when planning to connect your anaerobic digestion system to the electrical grid. While each utility may have their own process for interconnection, these guidelines provide an overview of common interconnection requirements. It is important to contact your local utility for actual state law and associated guidelines.

1— STARTING THE INTERCONNECTION PROCESS

Customer: Contact your local utility. Let them know that you wish to interconnect an electric generating system (anaerobic digester) to their system. Ask them what you will need to provide to start the process.

Utility: The utility will provide you with the required materials to complete your interconnection application. The utility may also have these documents and forms on its website.

Helpful Advice!

The most important aspect of interconnection is clear communication with your utility. Open and transparent communication will ensure your project remains timely.

At the onset of your project, ask your utility what steps, timelines and fees are involved in the process. Be sure to understand the steps for both the utility and you, and follow through on set timelines. These guidelines can be used as a starting point to negotiate timelines with your utility.

2 — COMPLETING THE INTERCONNECTION APPLICATION

Customer: Gather all required documents needed for the interconnection application. Complete the interconnection application fully, filling in all required data fields. Any missing or incomplete information will delay the process. If you are unsure about something on the application, contact your utility before submitting the application. Many utilities will charge an application fee. Fees can range from $75- $800 depending on the utility and the size of your generating system. When the information is complete, submit application and fees.

Note: If you plan to have your project developer manage the interconnection process for you, you may need to submit a letter to the utility authorizing them to act on your behalf. Ask your utility about any requirements.

3 — APPLICATION REVIEW

Utility: The utility will let you know when they receive your application. If any part of the application or fee is incomplete or missing, the utility will return your application. The utility will also identify the incomplete material. Generally, the application review process takes 5-10 business days.

4 — INITIAL REVIEW AND DETERMINATION OF SIMPLIFIED INTERCONNECTION QUALIFICATION

Utility: After the utility approves the application, they will determine whether your project qualifies for *Simplified Interconnection* or whether a *System Impact Study* is required. If your project requires a *System Impact Study*, your

project may be placed in a queue before proceeding. The utility will inform you of your spot in the queue and expected timeline. Generally, this process takes between 10-15 days.

Note: *Simplified Interconnection* may also be called *Fast-Track Procedure* by some utilities.

5 — SCOPING MEETING

Customer: After undergoing the initial review, schedule a scoping meeting with your utility to determine the next steps in the process. Most utilities will require your project undergo a series of reviews to determine what electricity distribution system upgrades, if any, will be needed. At the scoping meeting establish a mutual understanding of:

- Next steps of interconnection process
- Timelines for next steps
- Cost of reviews/studies
- Probable upgrades needed
- Probable upgrade costs

Answers to these questions can help determine if you wish to proceed with the interconnection process. Some of these answers may not be available until after the *System Impact Study* is completed. If this is the case, you can request a scoping meeting with the utility after the *System Impact Study* is completed. Generally, scoping meetings are held within 5-10 business days after the initial review or *System Impact Study* is completed. If a *System Impact Study* is not required, you can proceed to step 8 in the interconnection process.

6 — SYSTEM IMPACT STUDY

If the utility determines a *System Impact Study* is required, you will be required to complete a *System Impact Study Agreement*. The *System Impact Study* will determine the impact of your project on the safety, reliability and stability of the electricity distribution system. It also determines whether a *Facilities Study* is required.

Utility: The utility will determine parameters of the *System Impact Study*. They will prepare the *System Impact Study Agreement* and inform you of the associated cost. *System Impact Study* fees can range from a few hundred dollars to a few thousand dollars depending on the utility.

Customer: Review, sign and return the *System Impact Study Agreement* with payment for the *System Impact Study* (if applicable).

Utility: After receiving your signed *System Impact Study Agreement* and payment, the utility will conduct the *System Impact Study.* The utility will inform you of the study results, and an estimated cost for any required system modifications. The utility will also tell you if a *Facilities Study* is required. Generally, this step can take 15-60 days to complete.

Customer: After reviewing the results of the *System Impact Study* you can determine whether or not to proceed with the interconnection process. If a *Facilities Study* is not required you can continue to step 8 in the interconnection process.

Note: *System Impact Study* may also be called *Engineering Review* or *Supplemental Review* by some utilities.

7 — FACILITIES STUDY

If the utility determines a *Facilities Study* is required, you will be required to complete a *Facilities Study Agreement*. The *Facilities Study* will determine any system modifications required to ensure safe and reliable interconnection of your project.

Utility: The utility will determine the parameters of the *Facilities Study* and prepare a *Facilities Study Agreement* and inform you of the associated cost. *Facilities Study* fees can range from a few hundred dollars to a few thousand dollars depending on the utility.

Customer: Review, sign and return the *Facilities Study Agreement* with payment for the *Facilities Study*.

Utility: After receiving your signed *Facilities Study Agreement* and payment, the utility will perform the study. The study will determine required upgrades to the electric distribution system and costs of the upgrades. Once complete, the utility will inform you of the study results. Generally, this step can take 60 days to complete.

Customer: After reviewing the results from the *Facilities Study* you can determine whether to proceed with the interconnection process.

Note: *Facilities Study* may also be called *Distribution Study* or *Interconnection Study* by some utilities.

8 — INTERCONNECTION AGREEMENT AND OTHER AGREEMENTS

Utility: Upon completion of the necessary studies, the utility will provide you with the interconnection agreement and, if applicable, other agreements. These agreements will cover all requirements for interconnecting your anaerobic digestion system to the utility's electric distribution system and cost of the upgrades.

Customer: You may be able to negotiate some terms of the agreement. Negotiable terms include: construction timelines, upgrade costs, and responsibility and ownership for items the utility may wish to own within your property. However, many of the aspects of the interconnection agreement will be non-negotiable. After agreeing to the interconnection terms, the utility may require you to pay the upgrade costs upfront. Costs are dependent upon system upgrade requirements and can range from a few thousand dollars up to several hundred thousand dollars. Review the proposed system upgrades, sign the agreement and make required payments to the utility.

9 — UPGRADES PERFORMED

Utility: After a mutually agreed upon time period, the utility will proceed with designing and constructing the system upgrades. System upgrades can take several months to complete depending on the extent of the changes required.

Customer: Make sure your generator is installed and ready for interconnection before the upgrades are completed. Notify the utility when your generator is installed.

10 — SYSTEM TESTING

Utility: Once system upgrades are completed, the utility will perform a commissioning test to ensure the system is operating as designed. Generally, the utility will perform the test within 10 business days of completing the installation of the system.

Once authorized, the utility will inform you of your interconnection approval. Often, they will send a written statement of final approval, including final costs and a *Generator Interconnection Operating Agreement*. If the project is not approved, the utility will provide corrective actions needed for interconnection approval. Generally, the utility will provide approval or corrective actions within 5-10 business days of the system test.

Customer: Sign and return the *Generator Interconnection Operating Agreement*.

Utility: After receiving the signed *Generator Interconnection Operating Agreement*, the project will be authorized for operation.

11 — CONNECT TO THE GRID

Customer: After receiving authorization from the utility you can begin operation.

This guideline is a synthesis from interconnection procedures from California, Michigan, Vermont, and IREC.

Work was performed at the Office of Air and Radiation, U.S. Environmental Protection Agency, Washington, DC, through participation in the Oak Ridge Institute for Science and Education Research Participation Program, Nicholas Elger primary author.