Waste-to-Energy Development Information Sheet

Under North Carolina’s Session Law 2007-397 (Senate Bill 3), electric power suppliers are required to meet a certain percentage of energy needs from renewable resources or energy efficiency. There are specific compliance requirements through the use of swine and poultry waste resources. This document is intended solely to provide general information to those developing waste-to-energy generation projects with the intention to sell energy, Renewable Energy Certificates (RECs), or both to a utility. This information sheet is not all encompassing. Generator owners are responsible for consulting with appropriate legal and energy professionals in determining all requirements for successful project development. Nothing in this Information sheet should be considered an offer or acceptance of terms or conditions for a Power Purchase Agreement (“PPA”) or an Interconnection Agreement.

A. General Information

- All developers installing generation must follow interconnection procedures as adopted by the North Carolina Utilities Commission (“NCUC”). (See below for more details.)
- In North Carolina, all project owners installing generation must provide a Report of Proposed Construction or, if installing generation of more than 2 megawatts (MW), receive a Certificate of Public Convenience and Necessity from the NCUC.
- For generators with maximum net power production capacity exceeding 1 MW, certification as a Qualifying Facility with the Federal Energy Regulatory Commission may be required.
- To be eligible to sell North Carolina-compliant RECs, a generator must be registered as a New Renewable Energy Facility with the NCUC.
- All project owners selling power to an electric utility must enter into an Interconnection Agreement and PPA. These agreements include specific requirements and/or costs that project owners must consider when planning a project.

B. Power Purchase Agreement

The PPA is the contract provided by a utility that governs the purchase of the energy and RECs (the product) produced by a waste-to-energy facility. It is a commercial contract that includes the pricing, terms, and conditions that are negotiated for each project. A PPA sets forth the terms and conditions under which a project owner (Seller) would be obligated to produce and deliver the product to the utility (Buyer) and how the utility would be obligated to accept and pay for the product.

The PPA may include performance guarantees requiring the project owner to produce a certain amount of energy and RECs within a time period. Because the output of the facility contributes to the utility’s renewable energy compliance plan, these performance guarantees are necessary to ensure that the project owner adequately supports the commitments represented to the utility. Failure to meet the performance guarantee may result in penalties or damages corresponding to the value of the product that is not delivered.

A project owner may also be required to post credit under a PPA. The credit provision acts as a security measure if a project owner defaults on PPA obligations. The need to post credit and the amount required depends on a variety of factors including, but not limited to, the project owner's financial standing, experience, and expected product delivery.

C. Interconnection

In addition to a PPA, all project owners must enter into an Interconnection Agreement that governs the interconnection of the generating system to the electric grid. The interconnection process is initiated when a project owner submits an Interconnection Request to the host utility. **In all cases, the cost to interconnect generation to the grid is the responsibility of the project owner, not the utility.** These costs include, but are not limited to, the cost of upgrading utility
transmission or distribution lines to accommodate the facility. A cost cannot be derived until the project owner makes a formal request to interconnect to the utility. Note that a proposed site may be served by Duke, Progress, an electric cooperative, or a municipality. Contact the electric power supplier that serves your site to interconnect. Both Duke and Progress have dedicated websites that should be consulted to access the documents and necessary steps to achieve interconnection.

Duke Energy Carolinas
North Carolina
South Carolina

Progress Energy Carolinas
North Carolina
https://www.progress-energy.com/carolinas/home/renewable-energy/interconnect-nc.page
South Carolina
https://www.progress-energy.com/carolinas/home/renewable-energy/interconnect-sc.page

Regarding costs of interconnection: Depending on the interconnecting utility, a project owner may choose to pay for interconnection facilities through an ongoing monthly facilities charge, a single up-front payment with a lower monthly facilities charge, or a pre-payment. However, many waste-to-energy facilities require three-phase service and are located in rural areas. These projects may be subject to a system improvement charge, to be paid up-front, in addition to the monthly facilities charges.

If you are considering a project on a site that is not served by a three-phase line, or is located in a rural area with few electric customers, interconnection may become more complex, expensive, and time consuming. Due to the cost uncertainties surrounding interconnection, Duke and Progress recommend that project owners start the interconnection process early in the project development cycle by submitting an Interconnection Request (which includes a nominal application fee). Once the request is processed, the utility is able to provide the project owner with specific interconnection costs or deposit requirements.

Notably, the cost to interconnect may be obtained by providing an Interconnection Request, but the project owner is not obligated to sign an Interconnection Agreement and incur those costs unless he or she intends to install the generation.

D. Key Considerations
• Project owners need to ensure that they are not too aggressive with their milestone schedules and performance guarantees on their project are not overly aggressive.
• Fuel – Building a relationship with a fuel supplier early in development is critical. Fuel risk can only be mitigated by contracting for all or a majority of the fuel supply for the life of the project.
• Consider the availability of output guarantees by equipment manufacturers in order to meet production guarantees under a PPA.
• New technology – If project owners wish to utilize unproven technology, they should be aware that obtaining financing on new technology can be difficult to impossible. In those cases, the project owner should expect to self-finance with the potential to convert to other types of financial structures once the unit is operational and proven over a period of time. Otherwise, project owners should focus on proven technology.
• State or local permits may be required, including, but not limited to, air quality, water quality, or erosion and sedimentation control. Project owners should contact the Department of
Environment and Natural Resources and local development boards early in the process to determine permitting requirements and timelines.

- Financing – Project owners should engage the financial markets early on in the process.
- Interconnection Agreement – Project owners should start this process early as well. There will be costs associated with connecting to the grid and the project owner is responsible for these costs.
- Site control, either through ownership or a lease, is necessary for the term of a PPA.
- Consider local zoning and ordinances.
- Community involvement and support can influence the success of a project.
- Projects may be eligible for federal or state renewable tax incentives. Consult www.dsireusa.org for applicable incentives.

For comprehensive information on interconnecting and selling renewable generation, see:

Duke Energy Carolinas
http://www.duke-energy.com/generate-your-own-power/nc-main.asp

Progress Energy Carolinas