



Know Before You Build - Steps to Renewable Energy Projects

Introduction:

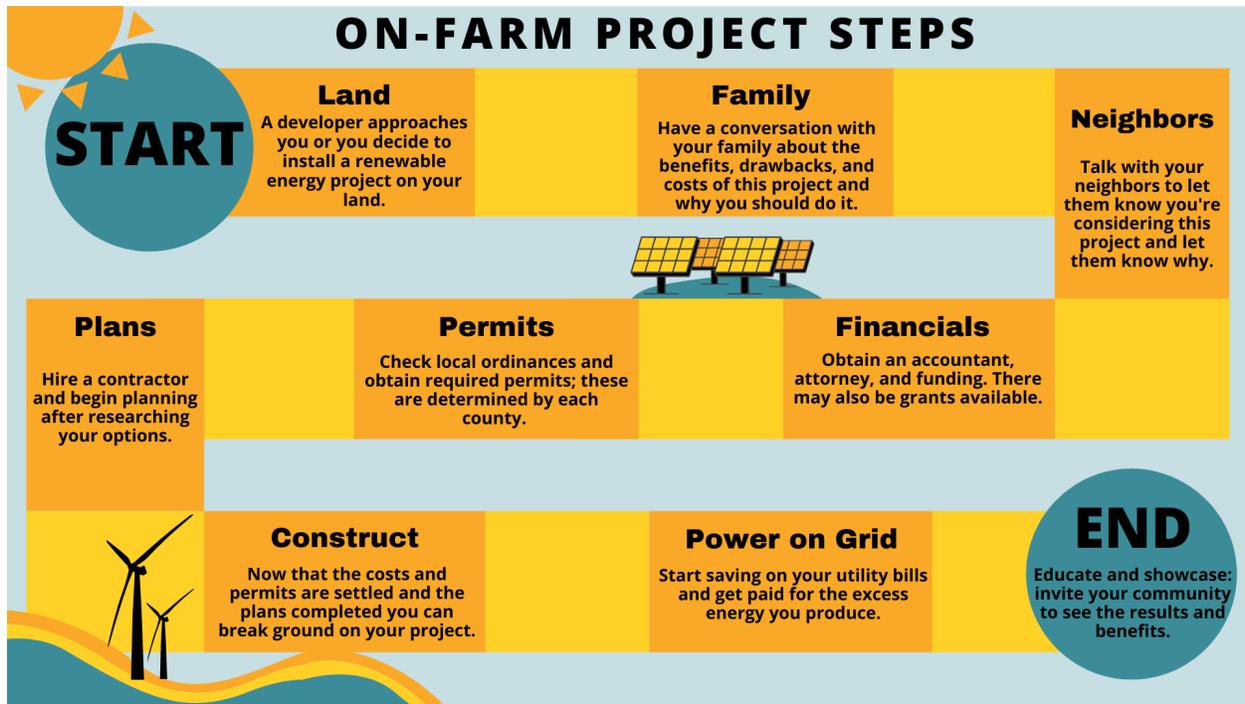
Renewable energy projects are becoming more ubiquitous across the United States as a way to generate income and provide clean energy across the power grid. In recent years, many farmers and landowners have begun looking more seriously at alternative sources of income and energy generation for their operations. Renewable energy projects have become options that can have valuable and lasting impact for these needs.

Common renewable energy projects are wind turbines and solar arrays. Wind turbines are large towers that produce electricity when their propeller-like blades turn a rotor spinning an energy generator. Solar panels generate energy through the photovoltaic effect where photons from the sun hit the array and that photon is converted into electrical energy. While the idea of beginning a project is appealing, the decision to partner with a developer or begin a renewable project on your own farm can be a daunting task. There is a lot of planning and research that goes into designing these projects to be as efficient as possible. When comparing a landowner installing a smaller project on their farm to a commercial utility-scale project there are a lot of differences. While both parties must work within a legal framework, the restrictions on landowners are much more lenient than those imposed on utility-scale projects. Typically for landowner projects, their energy source will connect with an electric meter on their property. For larger utility-scale projects it would run directly into the power grid.

The following set of tips and suggestions provide a brief guide to the steps to starting a landowner or utility-scale renewable energy project.

On-Farm Renewable Energy Projects

Landowner-based, non-commercial



Step 1: Landowner

Begin by deciding the best spot to install the renewable energy project. Consider how and where the energy will be used and the flow of your operational activities and structures around it. For example, solar panels can be placed on rooftops, on unused cropland, or in a brownfield area.

Step 2: Hire a Contractor

Hiring a reputable contractor is an important step in setting up renewable energy projects. The contractor will give advice on the project size, cost, return on investment, and more. A knowledgeable contractor may also direct you to apply for grants/subsidies that can offset the costs of equipment and installation. The contractor will also engage the energy provider to see what options would be available and what financial opportunities they offer. It's also advisable to find a contractor comfortable with and knowledgeable about the ordinance and permitting requirements of your county. Ordinances are local guidelines about how and where the project can be built. These vary greatly; some counties have very limited or no restrictions and in others, it is not possible to build new renewable projects such as solar. Your contractor should be able to navigate the local ordinances and explain them to you.

Step 3: Hire an Accountant and Attorney

Once the costs and return on investment of the project have been researched, it's time to involve other professional counsel such as an accountant and attorney. Renewable energy projects can have large startup costs so it is important to discuss all funding avenues like subsidies and grants. Working with both of these advisors in concert enables you to create a viable financial and legal plan for the project.

Step 4: Ordinances and Permitting

The next step in the process is to look at renewable energy ordinances in your county. Ordinances describe the guidelines and legal framework under which the project has to comply. Some guidelines include ambient noise levels, setbacks from residential or city property, and height limits. In Indiana, ordinances vary from county to county—they can be very strict, non-existent, or anywhere in between. Generally, ordinances for landowners are usually much more relaxed than those for utility-scale projects. Again, work with your contractor to ensure the project complies with local ordinances. Permits, granted by the county commissioner's office, will also be required. There are commonly two (2) major types of permits:

Special Exception Permits

- Special Exception Permits pertain to land siting restrictions and issuance requires approval from the county's board of zoning appeals (BZA)

Permitted Use Permits

- Permitted Use Permits are given with proof that the project complies with all ordinance standards but will require a hearing at an advisory planning commission (APC) meeting. Contractors typically handle these hearings, landowners are not required to be present but it can be beneficial for you to attend. If the landowner speaks as to why they want to get this project approved it can give a positive push to the decision process. If the landowner is unable to go, they can share a letter to read during the hearing.

Step 5: Required Plans

The plans required for large projects can be extensive and variable depending on what the county ordinance requires. The most commonly required plans are environmental assessments, road use plans, drainage plans, and a decommissioning agreement. Landowner-based projects typically only have to worry about environmental assessments and decommissioning agreements.

Environmental assessments describe the impacts that the project could have on the environment including the construction of the project, species displacement, and vegetation impacts. This assessment can include a plan for enhancing vegetation growth and repopulation of pollinators after construction.

Decommissioning agreements discuss what happens at the end of the project's life. There is some room for negotiations on these, but they are mostly dictated by the county's ordinance. The landowner and contractor should refer to the ordinances to see what is required.

Step 6: Construct the Project

After all the plans have been made and all appropriate building permits have been received, project construction can begin. At this point, it is still important to make sure all protocols and ordinance requirements are followed. Many landowners find staying engaged in this process is both educational and interesting as they see the construction unfold.

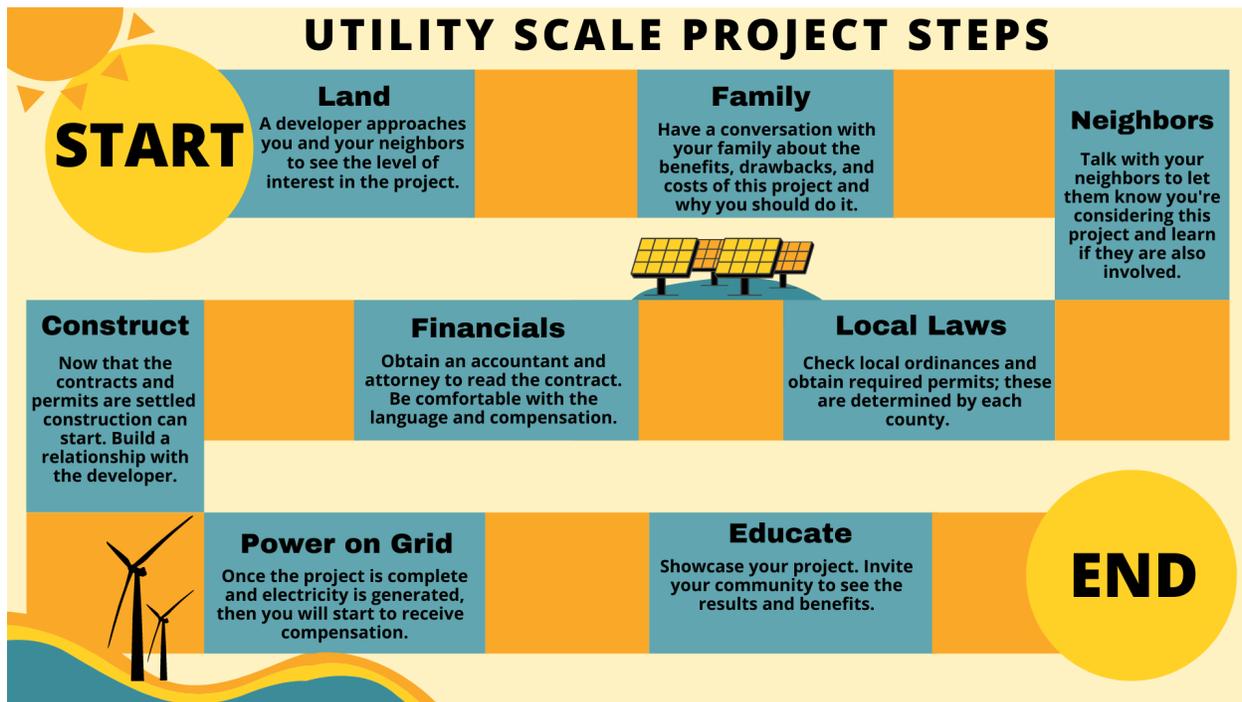
Step 7: Educate and Showcase

Friends, family, and neighbors will be both curious and potentially concerned about seeing a new renewable energy project going up. It's best to begin a dialog with these stakeholders as early as possible. It's also recommended that once your project is completed that you consider Inviting the broader community to see your project. You may want to provide details on your website or social media page or consider hosting a field day where you can share your story and help others increase their understanding of renewable energy. Many farmers and landowners also opt to partner for an event with the state associations, departments of agriculture, and their developers and contractors.

Utility-Scale Renewable Energy Projects

Community-based, Commercial

Commercial projects have separate, yet similar steps to on-farm projects completed by landowners. While it may appear that there is more 'red tape' to cut through, the majority of this work is done by the developer or contractor. The major difference is the large amount of energy produced by utility-scale projects, this level of energy generation requires stronger regulations. Yet, for a landowner, the advantages can be very attractive. For example, with utility-scale wind projects, the landowner will receive various types of compensation including base, land usage, and easement payments. In the case of large-scale solar farms, landowners receive a multi-year per acre payment for the property used. Both types of projects may also offer bonus payments to landowners. The following are important steps to consider as you explore participating in a commercial renewable energy project.



Step 1: Land Acquisition

Land acquisition is the first step in any renewable project. Renewable energy developers start by sending out land acquisition representatives to contact landowners in areas that are suitable for the project they want to develop. Usually, these areas are located near existing substations and transmission lines that are capable of transmitting large volumes of electricity. For wind turbine projects they choose flat, non-forested areas that have been mapped for wind capacity. Once potential areas are identified, representatives will invite landowners to attend a group or individual

meeting to learn more. They will gauge the level of local interest and share project details, land usage agreements, compensation rates, and decommission plans.

Step 2: Work with the Contractor/Developer

As a landowner in a commercial project, you will have very little management or coordination to do. The developer and contractor will run the project and you will be provided with a point person during construction. In the case of large-scale developments, they will have a contractor and legal team that will work for and with the landowners to ensure the project meets all the ordinances and permitting requirements within a county. The contractor will navigate the permits and explain them to you. Build a personal relationship with your developer and contractor representatives. Ask your developer any questions you may have and stay engaged as an advocate for yourself and your family during the process.

Step 3: Hire an Attorney and Accountant

Once the project has been fully explained, contact your attorney to review the contract offered to you. They will evaluate the technical language, project timeframe, and the compensation you will receive. Your accountant is another important contact to make when considering how the income and any financial incentives will be taxed for you and for future generations.

Step 4: Ordinances and Permitting

The next step in the process is to look at renewable energy ordinances in your county. Ordinances describe the guidelines and legal framework under which the project has to comply. Some guidelines include ambient noise levels, setbacks from residential or city property, and height limits. In Indiana, ordinances vary from county to county, they can be very strict, non-existent, or anywhere in-between. The developer will handle making sure the project complies with local ordinances. Additionally, permits, typically granted by the county commissioner's office, will be required. There are commonly two (2) major types of permits:

- Special Exception Permits
 - Special Exception Permits pertain to land siting restrictions and issuance requires approval from the county's board of zoning appeals (BZA)
- Permitted Use Permits
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Step 5: Required Plans

The plans required for large projects can be extensive and variable depending on what the county ordinance requires. Your developer/contractor will complete these plans for you, however, it is beneficial for you to be familiar with the guidelines. The plans required for large projects can be extensive and variable depending on what the county ordinance requires. The most commonly required plans are environmental assessments, road use plans, drainage plans, and a decommissioning agreement.

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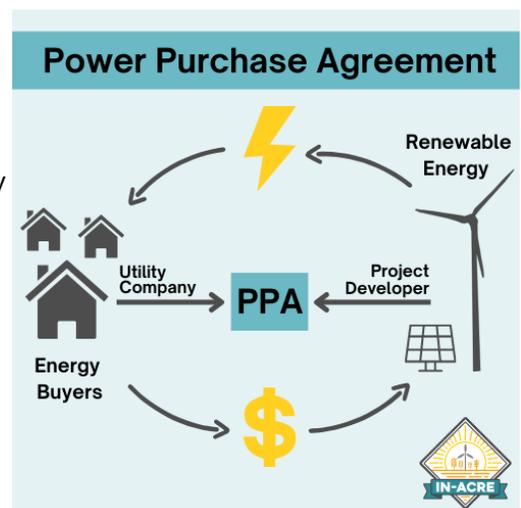
Road Use Plans require utility-scale projects to fund the upkeep of all roads where construction equipment will be present. Commonly, this results in the paving of adjacent residential roads used for project construction.

Drainage Plans require the replacement of all tile drains that could be broken when heavy machinery is frequently driving over them during construction and maintenance. Tile drains will be mapped out prior to the project and the fewest possible will be affected. Any that are affected will be replaced by the company in a timely manner.

Decommissioning agreements discuss what happens at the end of the project's life. There is some room for negotiations on these, but they are mostly dictated by the county's ordinance. The landowner and contractor should refer to the ordinances to see what is required. When the land leasing contracts are up for the project, the project can either be renewed or decommissioned.

Step 5: Power Purchase Agreements

Power Purchase Agreements (PPAs) are necessary for commercial projects. These multi-year agreements are made between the developer (the seller) and the local utility company (the buyer) and do not involve the landowner. A PPA is a contract between the developer and utility company, in which the developer agrees to sell the power generated by their project to the utility company. The developer will sell the electricity generated at a certain rate to the utility company, then the utility company can sell that electricity to their customers (residents, businesses, etc). The substation connected to the project is owned by the utility company in the PPA.



Step 6: Construct the Project

After all the plans have been made and all appropriate building permits have been received, project construction can begin. Continue to grow your relationship with the construction company and their crew, they will be on your property for the next few weeks as the project is built.

Step 7: Educate and Showcase

Friends, family, and neighbors will be both curious and potentially concerned about seeing a new renewable energy project going up. It's best to begin a dialog with these stakeholders as early as possible. It's also recommended that once your project is in place that you consider Inviting the broader community to see it. You may want to provide details on your website or social media page or consider hosting a field day where you can share your story and help others increase their understanding of renewable energy. Many farmers and landowners also opt to partner for an event with the state associations, departments of agriculture, and their developers and contractors.

Conclusion:

Renewable energy is becoming more prevalent in our landscape and is increasing in popularity. It also has become a viable income stream for many landowners to consider both in the short term for revenue generation or cost savings and as a supplement for generations in the future. As the owner or partner in a renewable energy project, you are providing both yourself and your community with energy produced locally on your property. It can be an interesting and rewarding opportunity to consider as part of your overall production, financial and environmental management planning.

Special thanks to Indiana Land and Liberty Coalition and Hoosier for Renewables for providing us with valuable information used in this project.