

McCracken County Solar

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About McCracken County Solar



McCracken County Solar is a proposed:

- 60 megawatt (60MW) solar farm
- Located on 615 acres near Kevil
- Selling 100% of its output to Big Rivers Electric Corporation
- Under development by Community Energy



About Community Energy



- In business for 21 years
- A leader in the development of renewable energy projects (especially in new markets)
- Headquarters in Radnor, PA
 - Additional offices in Colorado and North Carolina
- **Successful, experienced, and trusted**



Why McCracken County?



Last year, Big Rivers Electric Corporation conducted a competitive bid process, seeking to buy solar power under a long-term fixed-price contract.

Community Energy's proposal for a solar farm in McCracken County was one of the bids selected.

The result will be low-cost locally-produced solar power.



What is a ‘Solar Farm’?

A ‘**solar farm**’ is essentially a power plant that converts sunlight to electricity.

The basic building block of a solar farm is a solar panel.

Solar panels are rectangular, about 3 ft wide and 5 ft tall. They’re black or dark blue, with glass on top.

A solar farm is just a whole lot of solar panels, bolted to a racking system, and placed in a field.

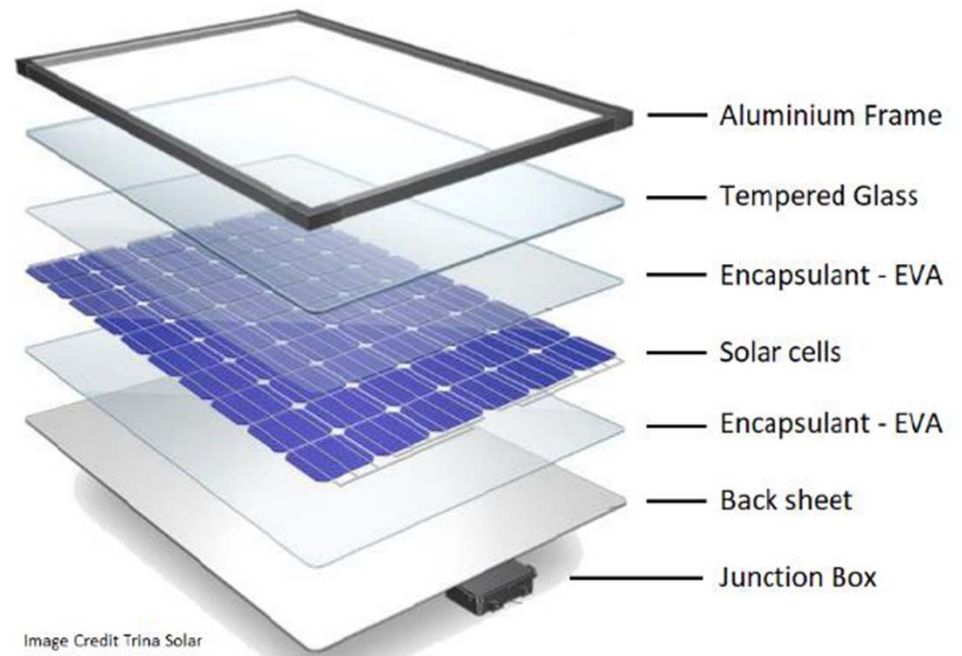


Solar Panels

Solar panels are made of simple materials, including:

- Glass (+/- 85%)
- Aluminum (+/- 8%)
- Silicon (+/- 6%)
- Wiring (+/- 1%)
 - Wiring is typically made of copper, silver, and zinc

The proposed solar farm will utilize 156,000 solar panels.



Racking

The proposed solar farm will utilize a '**Single-Axis Tracking System**' – a rotating racking system that will follow the sun from east to west.

- First, a post is driven into the ground
- Then, the racking system is bolted to the posts
- Then, the solar panels are attached to the racks



Inverters



Solar panels produce 'DC' power (the same as in a car battery).

An 'Inverter' changes the power from 'DC' power to 'AC' power (the same as you use in your home).

Inverter stations will be located throughout the solar farm.



Transformers

Solar panels produce low-voltage electricity.

Transformers are used to increase the voltage to a usable level.

“Step-up Transformers” within the solar farm increase the voltage to a level similar to the typical voltage in the power lines that run along roads.

A “Main Transformer” at the project substation increases the voltage again, to the level in the transmission line.



Substation



To connect the solar farm to Big Rivers' transmission line, a substation will be built.

The substation will be a square area surrounded by a security fence, with electrical equipment inside.

A power line will connect the substation to the transmission line at a new 'tap' into the line.

The location of the tap is called the 'Point of Interconnection.'



Security Fence

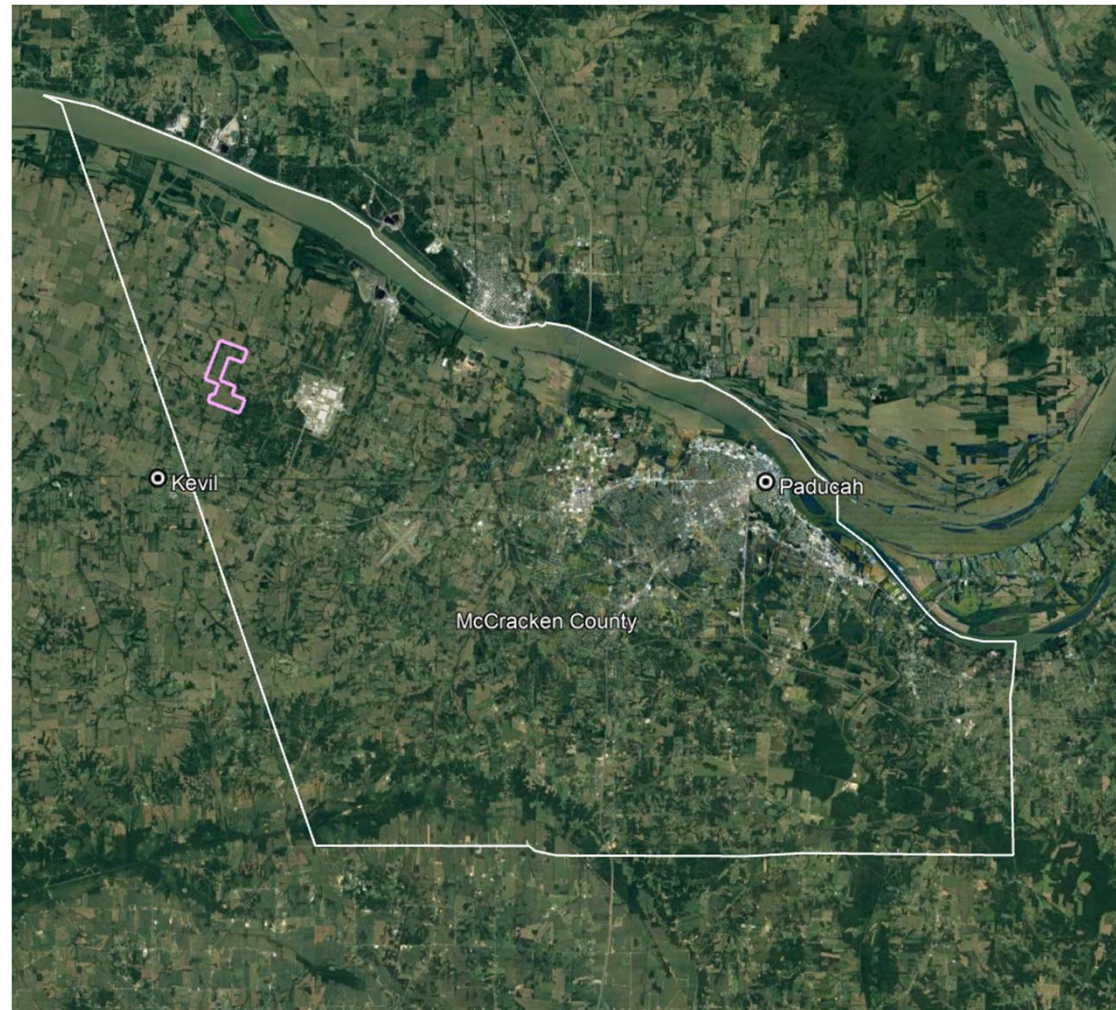


The solar farm will be built in a number of sections. Each section of the solar farm will be surrounded by a security fence, typically a six-foot tall chain link fence, sometimes topped with barbed wire (depending on local regulations).

Project Location

The project will be located in western McCracken County, approximately 2½ miles northeast of Kevil, KY.

The project site is adjacent to the West Kentucky Wildlife Management Area, and near the Paducah Gaseous Diffusion Plant.

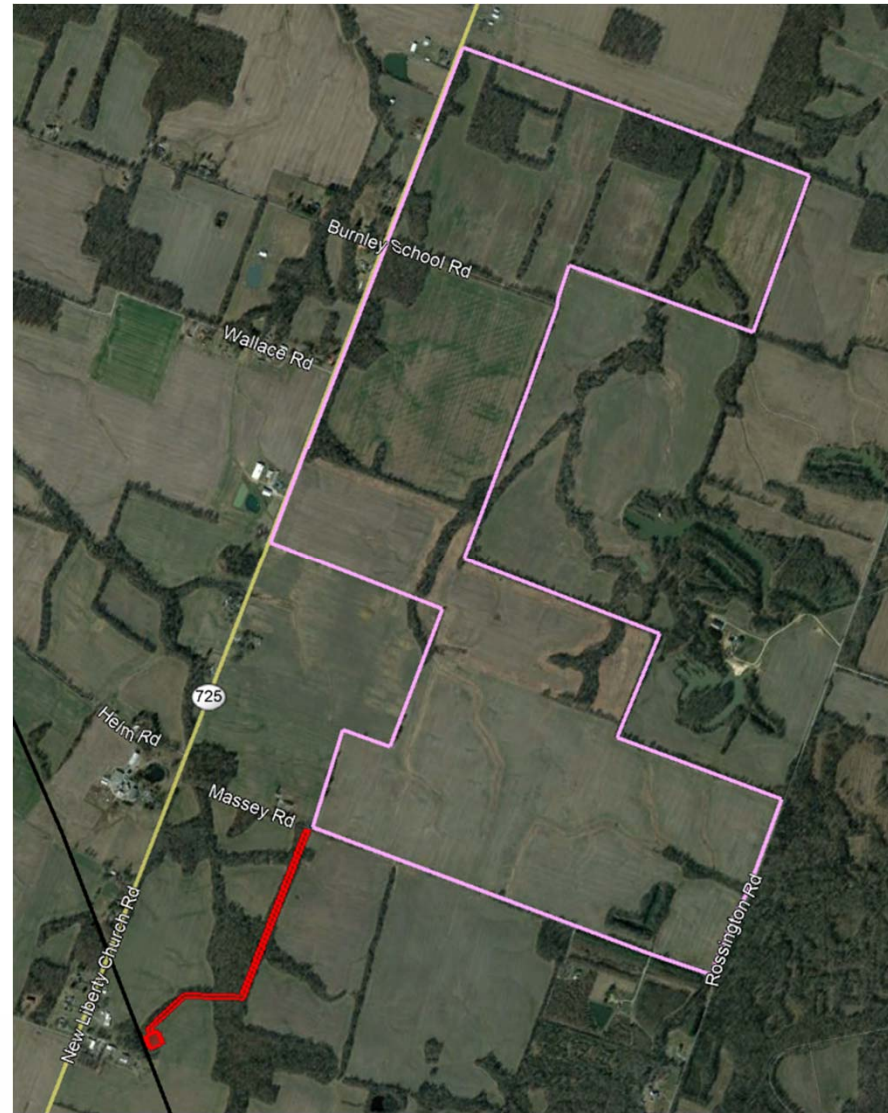


Project Site



The project site includes approximately 615 acres of land along New Liberty Church Road.

Most of the project site is currently open land used for row-cropping.

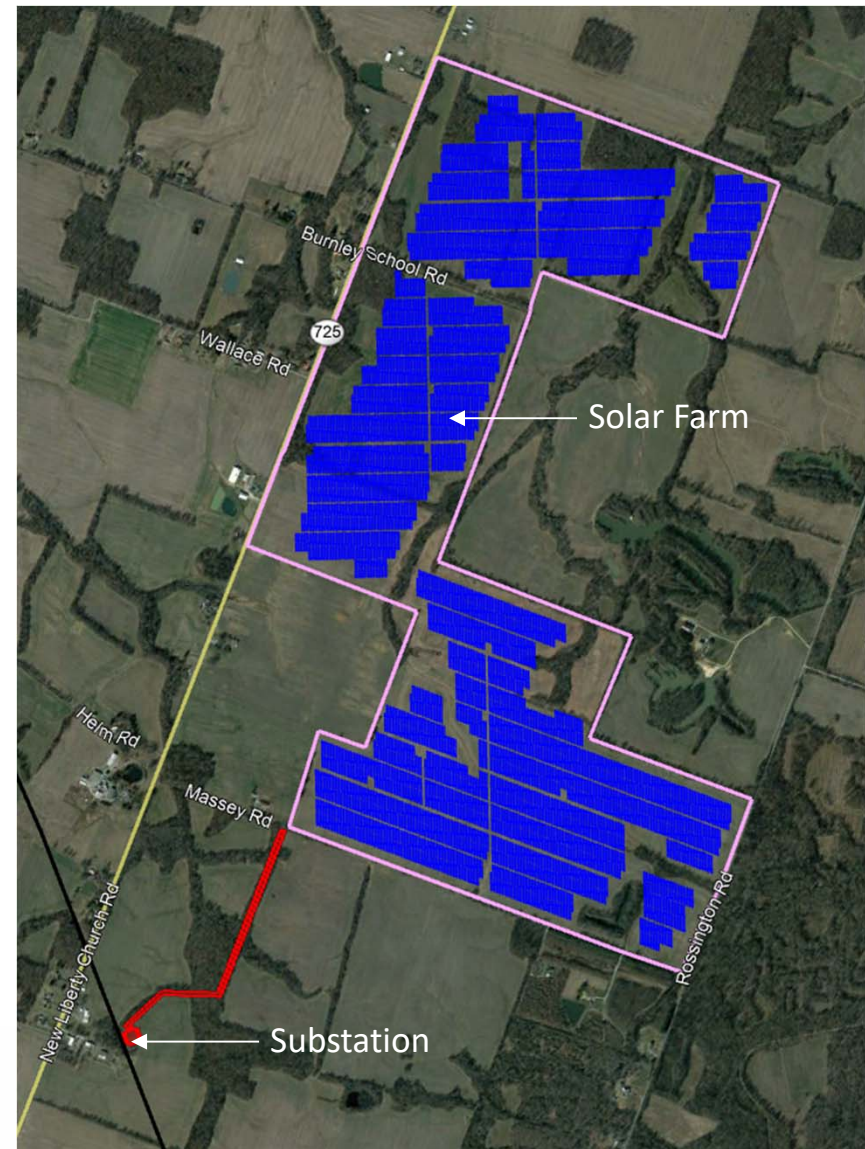


Project Layout

The solar farm will cover approximately 400 acres of the project site.

The solar panels will be set back from neighboring residences by at least 500 feet.

The natural vegetative buffer between the solar farm and New Liberty Church Road will be retained. Where no natural buffer currently exists, a double-row of evergreen plantings will be installed.



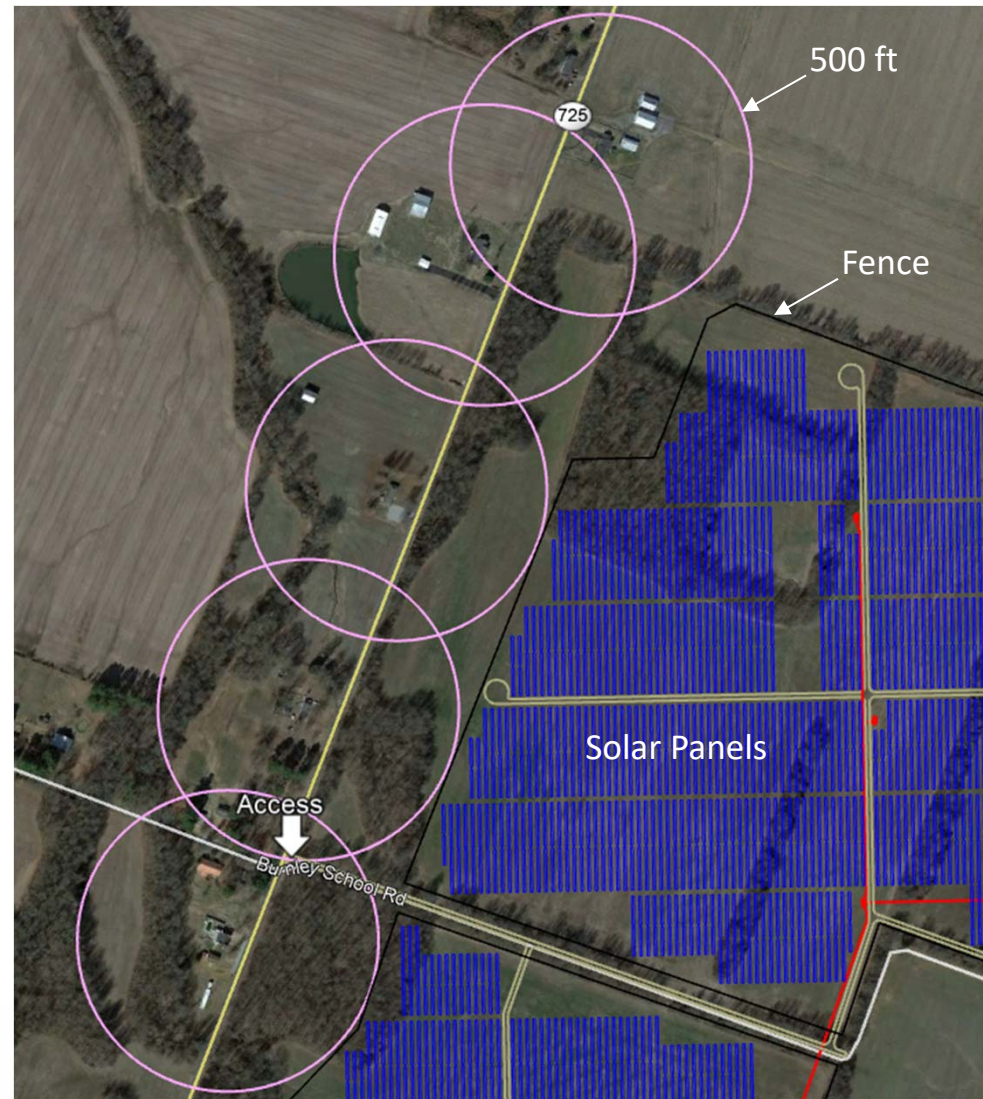
Project Layout – Northern Section



This close-up of the northern section of the solar farm illustrates the setbacks from neighboring houses.

This section of the solar farm benefits from a mature existing natural buffer along New Liberty Church Road. This buffer will be retained.

Access to this section will be from the 'Burnley School Road' – a dirt road that will remain open, preserving access to the adjacent farm fields.

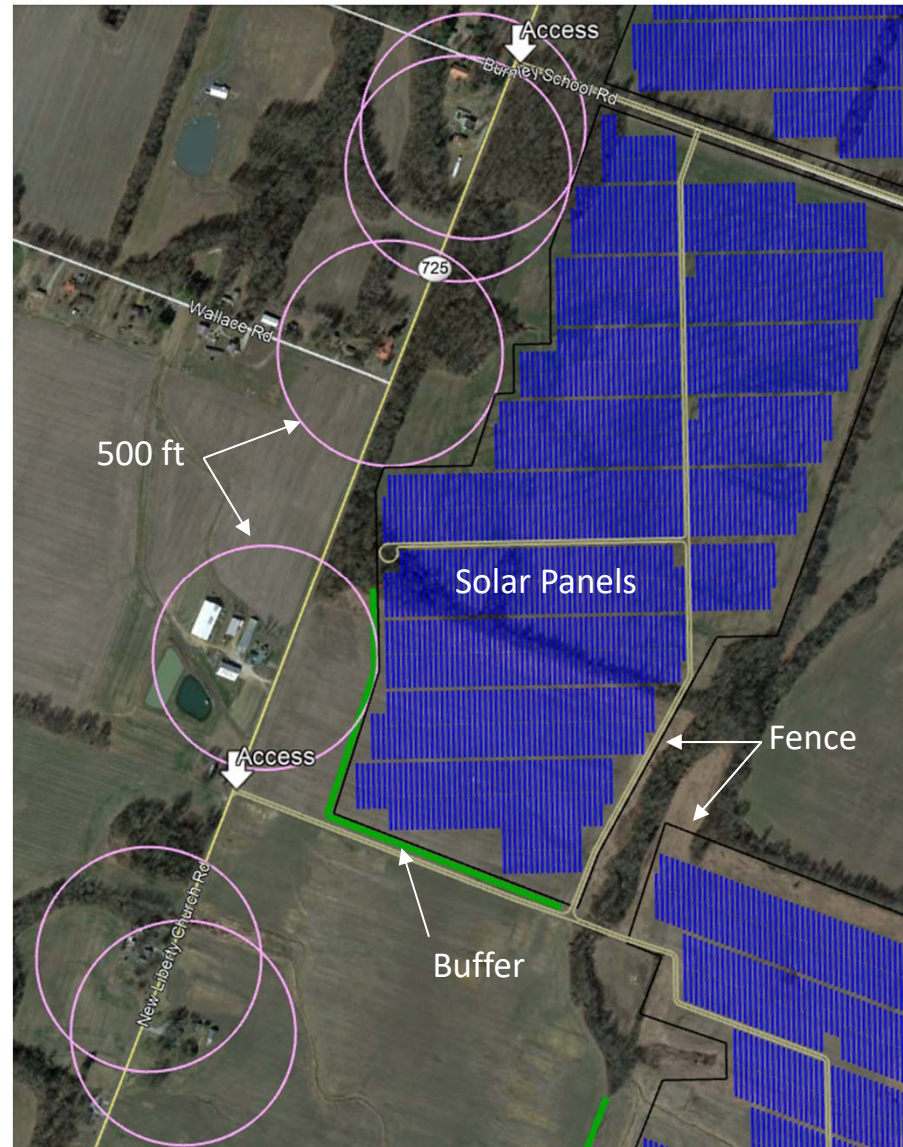


Project Layout – Central Section

This close-up of the central section of the solar farm illustrates the setbacks from neighboring houses.

A 2nd access road to this section will be from a new dirt lane along New Liberty Church Road.

A double-row of evergreen plantings will be installed along the southwest corner of this section of the solar farm to provide a visual buffer to neighbors and passing cars.



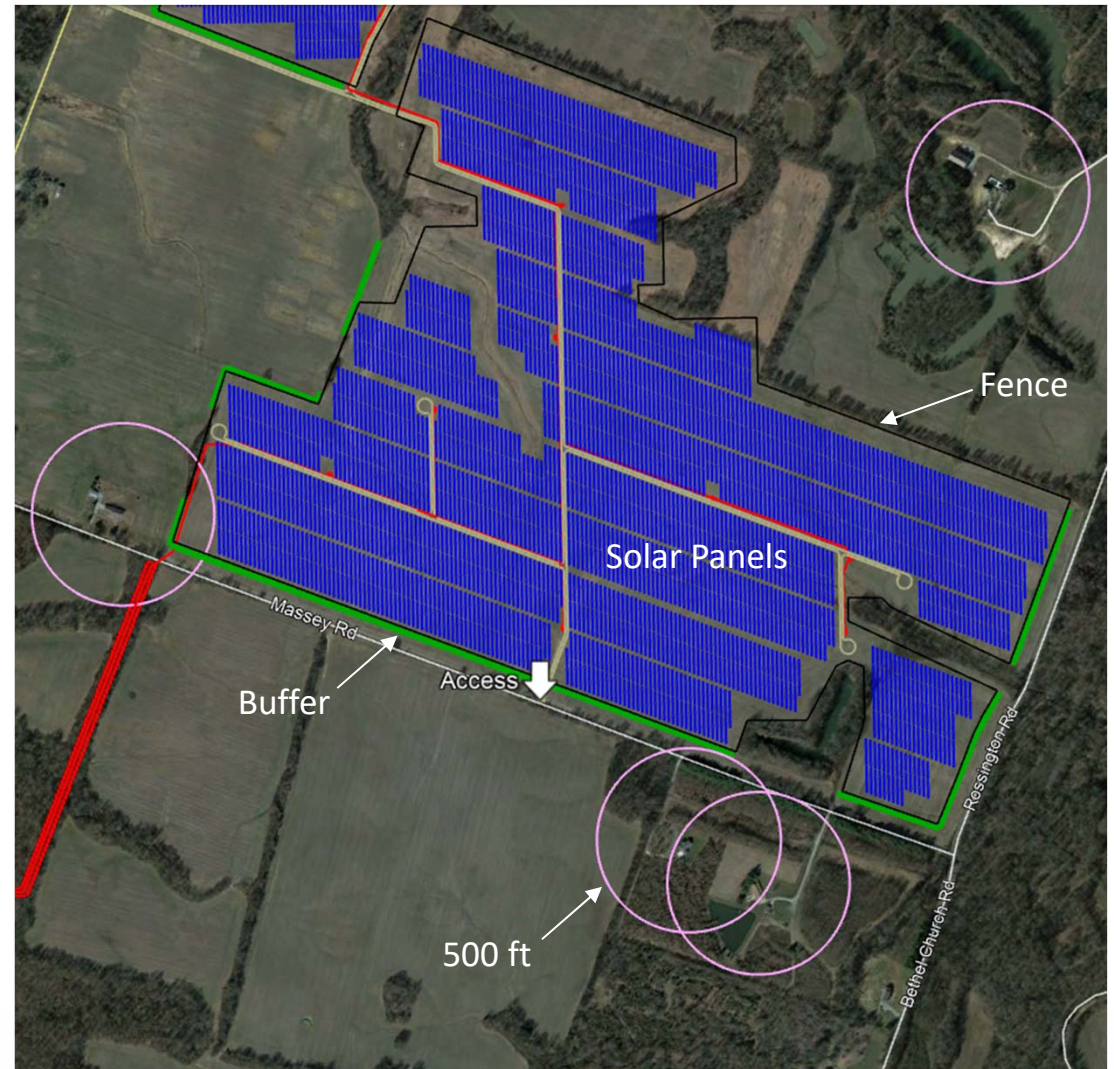
Project Layout – Southern Section



This close-up of the southern section of the solar farm illustrates the setbacks from neighboring houses.

Access to this section will be from an existing farm path along Massey Road.

A double-row of evergreen plantings will be installed around the perimeter of this section, filling the gaps where natural vegetation does not exist.



Project Layout – Substation

Power lines will run from the southern section of the solar farm to a new substation that will connect the solar farm to the Big Rivers transmission line.

The setback between the new substation and the nearest house is in excess of 500 feet.

The natural vegetative buffer at the substation location will be retained.



Interconnection Studies

The solar farm will connect to a Big Rivers transmission line which is part of a regional transmission network managed by the 'Midcontinent Independent System Operator' (MISO).

MISO will study the proposed facility, to determine whether the existing transmission lines in the area can absorb this additional power, or if they need to be upgraded.

Any required upgrades will be paid for by the project.



Environmental Studies



Multiple environmental studies have already been conducted:

- Wetlands and streams eligible for protection have been identified. Any required setbacks or buffers will be observed.
- Cultural resources eligible for protection have been identified. Any required setbacks or buffers will be observed.
- Threatened and endangered wildlife habitat has been identified (bats). Any required avoidance will be observed.



Impact Study

A 'Property Value Impact Study' has been conducted to determine whether the proposed solar farm will likely have a negative impact on local property values.

The most common areas for impact on adjoining property values are, in order of importance:

1. Hazardous materials
2. Odor
3. Noise
4. Traffic
5. Stigma
6. Appearance

- The Study reported no hazardous materials or odors associated with solar farms.
- The Study reported no instances of audible sounds at the periphery of the solar farms it inspected.
- The Study estimated that the anticipated 2-3 fulltime workers at the solar farm would not significantly impact traffic.
- The Study reported no negative stigma against solar farms as a neighboring use.
- Based on the enhanced setbacks and buffers from neighboring residences, the Study anticipated no negative visual impact from the solar farm.
- The Study concluded that the proposed solar farm would not likely have negative impact on local property values.

Acoustical Analysis



An 'Acoustical Analysis' has been conducted to determine whether the proposed solar farm will likely increase noise levels in the area.

The study concluded that the enhanced setback distances between the solar farm and neighboring residences are anticipated to diminish sounds from the solar farm to a level below 40 decibels – lower than the existing daytime noise level in the area.

Table 1. Sound Levels of Common Activities/Situations.

Activity/Event	dBA
Lowest audible sound to person with average hearing	0
Quiet rural, nighttime	25
Crickets, distant frogs	30
Birds, distant dog bark	40
Quiet urban, nighttime	45
Large business office	60
Normal speech at 3 feet	60-70
Noisy urban area, daytime	75
Food blender at 3 feet	85
Gas lawn mower at 3 feet	100
Jet flyover at 1,000 feet	110

County Permitting



McCracken County Solar will be seeking a **Conditional Use Permit** from McCracken County.

The Conditional Use Permit will be decided by the McCracken County **Planning Commission**.

The approval process will involve public meetings, where County residents can ask questions and provide comment.

The dates for any public meetings are TBD.



Solar Ordinance



McCracken County will be adopting a solar ordinance to regulate solar farms.

Typical regulations include:

- **Setbacks**
 - Minimum distance of solar panels from residences, church, schools
- **Screening**
 - Adding vegetative buffers where no natural buffer exists
- **Decommissioning**
 - Plans for removal of the solar farm at the end of its life

For more information, contact:

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Planning and Zoning Administrator

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(270) 448-0125

State Permitting



McCracken County Solar will be seeking a **Construction Certificate** from the Kentucky Public Service Commission

The Construction Certificate will be issued by the Kentucky State Board on Electric Generation and Transmission Siting (the “**Siting Board**”).

The Siting Board review focuses on three areas:

- Environmental matters such as noise and visual impacts
- Economic impacts
- Impact of the proposed facility on Kentucky’s electric transmission grid



Kentucky Public Service Commission



Commonwealth of Kentucky
**Kentucky State Board on
Electric Generation and
Transmission Siting**

Siting Board Members



The Siting Board will be composed of seven (7) members:

- **The (3) members of the Public Service Commission**
 - Chairman (Michael J. Schmitt)
 - Vice Chairman (Kent A. Chandler)
 - Commissioner (Talina R. Mathews)
- **Two (2) members of state government**
 - The Secretary of the Kentucky Cabinet for Energy and Environment (Rebecca Goodman), or her designee
 - The Secretary of the Kentucky Cabinet for Economic Development (Larry Hayes, Interim Secretary), or his designee
- **Two (2) members of local government**
 - The Chairman of the McCracken County Planning Commission (Wayne Elliott)
 - A resident of the County (appointed by the Governor)

Siting Board Process



The Siting Board review takes approximately nine (9) months

Key steps include:

- **Public Meeting**
 - January 20, 2021
- **Application**
 - April 20, 2021
- **Evidentiary Hearing**
 - *Optional - TBD*
- **Local Hearing**
 - *Optional - TBD*
- **Decision**
 - Anticipated Q4 2021
- **Appeal**
 - If filed within 30 days of decision

For more information on the Siting Board:

<https://psc.ky.gov/Home/EGTSB>

To see Public Service Commission filings related to this project:

https://psc.ky.gov/PSC_WebNet/ViewCaseFilings.aspx?Case=2020-00392

Case No. 2020-00392

Construction



If the Construction Certificate is approved:

- Construction will start in 2022
- Construction period will be 6-9 months
- Approximately 150 construction jobs
 - Mostly no experience required
- Hiring of local trades
 - Electric
 - Surveying
 - Earthmoving
 - Fencing
 - Landscaping



Operations and Maintenance



Typical operations and maintenance duties include:

- Preventive Maintenance
- Repair
- Mowing

McCracken County Solar will require 2-3 full-time employees for operations and maintenance.



Output



McCracken County Solar will produce **140,000,000** kWh of electricity per year

Roughly equivalent to the electric consumption of **½ of all the households** in McCracken County

100% of the solar power we produce will be delivered and sold to Big Rivers Electric Corporation.



Economic Benefits

Solar farms do more than generate clean, low-cost electricity. They also generate economic growth.

The McCracken County Solar project will impact the local economy in multiple ways:

- **Construction Jobs** for local workers: 150+ jobs during the 6-9 month construction of the project
- **Construction Contracts** for local businesses: Electrical, Site Work, Landscape, etc.
- **Local Spending** during construction: Hotels, Restaurants, Shops, Entertainment, etc.
- **Long-term Tax Revenue:** The solar farm will pay substantial taxes over 30 years, without increased pressure on community services such as roads, schools, libraries, and first responders.
- **Full-Time Jobs:** 2-3 full-time operations and maintenance jobs

Summary



In a single hour, the amount of solar power that strikes the Earth is more than the entire world consumes in a year.

McCracken County Solar proposes to capture some of that solar power, convert it to usable electricity, and deliver it to the local community at a competitive price.

We seek to develop a solar project that is respectful of our neighbors, and delivers multiple benefits to the greater McCracken County community.

We invite your questions, comments, and feedback.



Contact Info



For more information, or to receive a printed version of this presentation:

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or call us at (866) 946-3123

Thank you