

STOP
INDUSTRIAL
SOLAR

BIRCH SOLAR 1

A 2,345 Acre Utility-Scale Industrial
Solar Complex

Developer:

lightsource bp



About Birch Solar 1?

Project Timeline:

- Began development in 2019
- Publically announced project in October 2020
- Two (2) Public Information Meetings in November 2020
- Filed OPSB application in February 2021
- Public Information Meeting in August 2021
- Currently in Investigation phase at OPSB
- OPSB Public Hearing scheduled, November 4, 2021

Project Description:

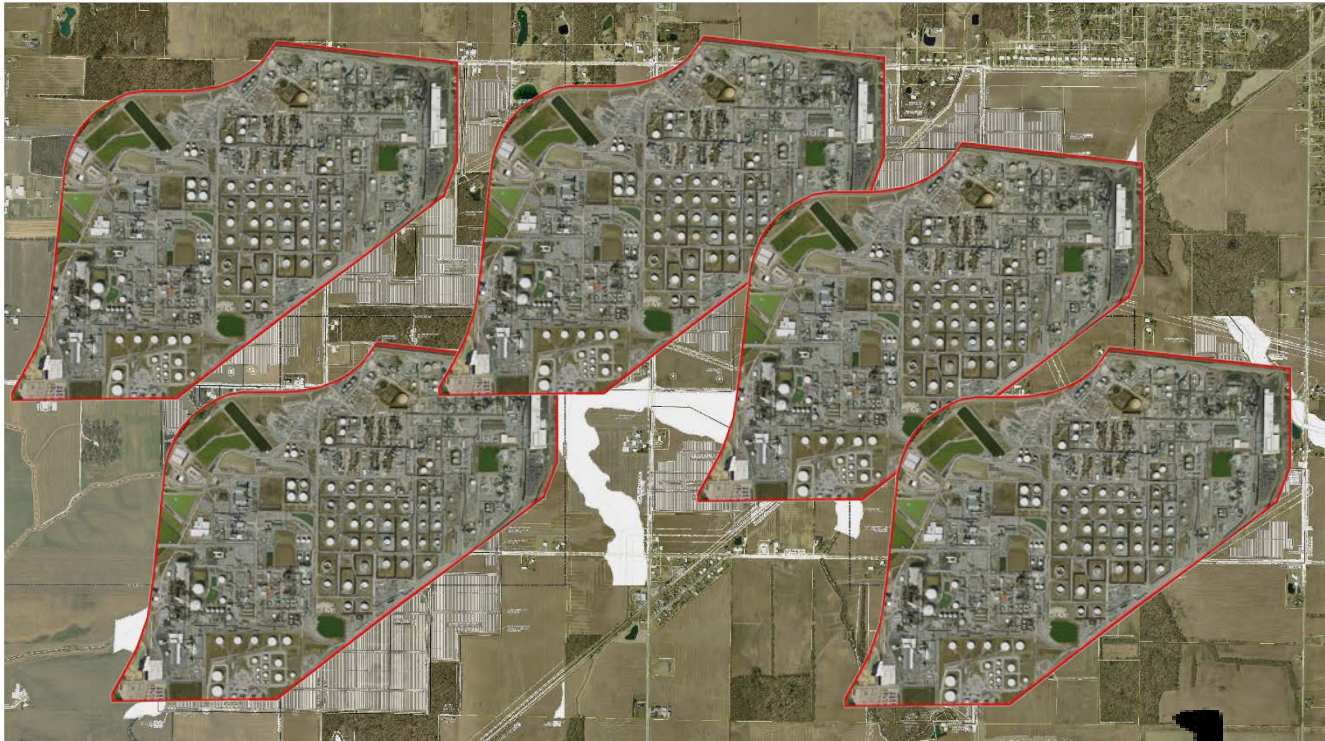
- 300MWac utility-scale solar facility
- 615,319 MWhr annual capacity
- Project area 2,345 acres
- New electric substation (Sellers Road)
- 635,584 Solar panels (Trinasolar – China)
- 142,000 Steel Piles to be driven
- 95 DC to AC Power inverters
- 1,424,680 feet of electric cable (269.8 miles)
- 118,600 feet of access roads (22.5 mile)
- 220,900 feet of fence (41.8 miles)



BIRCH SOLAR 1

A **2,345 Acre** Utility-Scale Industrial Solar Complex

How **HUGE** is Birch Solar 1?



- Birch Solar 1 covers approx. 6 square miles
- The Lima Refinery covers about 650 acres.
- At least 5 Lima Refineries could fit within Birch Solar 1.
- Or about 1,200 Mc Donald's Restaurants

Birch Solar 1 **IS HUGE!**



Trust & Transparency

- Less than honest or forthright about “negotiations” with Allen County Commissioners.
- Claims project reduced in size although no definitive project size established when announced publically.
- Made less than honest statements to Ohio Senate Public Utilities Committee about being largest tax generator.
 - Same committee – Made false claims as to facts regarding Shawnee Twp. resolution to oppose Birch Solar 1
- Blames local opposition for decision to use Chinese manufactured solar panels.
- Trespassed on private property, damaged sewers, had to file small claims case to resolve.
- Makes large financial commitment to Shawnee School’s Athletic Boosters weeks prior to OPSB’s Public Hearing.
- British Petroleum threatened to close Lima Refinery (mid 1990’s) if no buyer found.
- LSBP CEO Kevin Smith , Crescent Dunes, larges solar development failure US history, left month prior to bankruptcy.
- NO STRAIGHT ANSWERS!



Community Concerns

Location & Property Values:

- Birch Solar 1 has been irresponsibly sited to close to a densely populated rural community.
- Shawnee Township has a population density of 420 people per square mile. Most other solar developments in Ohio are sited in areas where population density is approximately 30-50 people per square mile.
- 217 Homes within 1,500 feet of the Birch Solar 1 development.
- 6 Homes completely surrounded on 4-sides by solar panels.
- Property Value expected to decline. At least 7% within a tenth-mile of a development and 1% within a mile.
“Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island” – 9/29/20.
- Your home/property is most likely your largest capital investment. Average home in Shawnee Twp. is near \$170k. This development could equate to a loss of equity of nearly \$12,000 per home.
- Birch Solar 1 is in direct conflict with the 2009 Shawnee Township Land Use Plan. In said plan it repeatedly refers to localized flood and calls for the “preservation” of agricultural land in the southwest portion of the Township.



Community Concerns

Location & Property Values:

- Glint and glare coming off solar panels ARE a “thing”. One local business could be adversely affected and has the potential of jeopardizing the duties of life-guards looking after the safety of swimmers.
- LifeFlight travels over project area, seemingly on a daily basis. The project appears to be along a straight shot between regional hospitals such as those in St. Marys and Coldwater. Glint, glare and electromagnetic frequencies affecting radio communications.
- Dust, occurring during construction, brings with it multiple concerns.
 - Residents locally with respiratory problems, COVID related or otherwise, could find themselves in need of emergency assistance.
 - Homes near development will be covered frequently with dust (inside and out) cause need for more frequent maintenance.



Community Concerns

Impacts to personal properties:

- Solar panels are as close as 30 feet, in areas, to property lines.
- Six (6) homes completely surround, on four (4) sides by solar panels.
 - Has potential to raise temperatures around these homes by 5.4 to 7.2 degrees.
 - If Paris Climate Agreement is trying to limit global temp's by 2.7 degrees, how is twice that going to effect residents?
- Setbacks measured from center on homes. Limits how property owners can develop their own property in future.
- Any screening in along solar panels will take 5-10 years to mature and fully screen residents view sheds.
- Property resell value. Who have you ever heard tell a realtor, "Hey, find me a home across the street from a utility-scale solar development."?



Community Concerns

Flooding:

- Birch Solar 1 project area already experiences localized flooding during modest rain events.
- Per LSBP Director of Development, at Shawnee Township's November meeting, will not implement detention ponds.
- Per LSBP Director of Development, at Apollo JVS public meeting, project will have 900 acres of panels.
- Per LSBP OPSB application, there will be 22.5 miles of access roads constructed. (equal to 54.5 acres)
- If Birch Solar 1 was of any other type stormwater detention/retention would be REQUIRED.
- The paneled area is equivalent to a 3,600 home residential development (assuming 0.25 acre lots).
- Increased flooding will cover more roadways and quicker as well as potentially flood our rural septic systems.



Community Concerns

Contamination:

- Per the USEPA >90% of Crystalline Silicon panels contain the following:
 - Bulk Materials: glass, aluminum frame, copper wire, plastic junction box
 - Minor constituents with value: silver, copper
 - Major constituents with hazard: lead, fluorine-containing encapsulates (PFAS)
 - Other materials: silicon, various plastic adhesives, laminates, encapsulates
 - CRITICAL materials: aluminum, tin, tellurium, antimony, gallium and indium.
- Other hazardous materials known to be contained within panels: cadmium telluride, copper indium (di)selenide, cadmium gallium selenide, copper indium gallium (di)selenide, hexaflouroethane, polyvinyl fluoride.



Community Concerns

Contamination:

- Studies have shown potential of leaching of heavy metals and metalloids from PV systems.
 - Potential for leaching of heavy metals and metalloids from crystalline silicon photovoltaic systems.
 - Set Robinson & George Meindl (Dept. of Biology – Univ. of Florida & Environmental Studies Program, Binghamton University)
 - Leaching Hazardous Substances out of Photovoltaic Modules
 - Renate Zapf-Gottwick^{1,*}, Michael Koch², Klaus Fischer², Fred Schwerdt¹, Lars Hamann¹, Martin Kranert², Jörg W. Metzger², and Jürgen H. Werner¹ (¹ Institute of Photovoltaics, Univ. Of Stuttgart, Germany & ² Institute for Sanitary Engineering, Water Quality, and Solid Waste Management, Univ. Stuttgart, Germany)
 - Leaching via Weak Spot in Photovoltaic Modules
 - Jessica Nover¹, Renate Zapf-Gottwick¹, Carolin Feifel², Michael Koch² and Jürgen H. Werner¹ (¹ Institute for Photovoltaics and Research Center SCoPE, University of Stuttgart, Germany; ² Institute for Sanitary Engineering, Water Quality, and Solid Waste Management, University of Stuttgart, , Germany)



Community Concerns

Contamination:

- Studies have shown potential of leaching of heavy metals and metalloids from PV systems.
 - The Effect of Photovoltaic Nanomaterial Roofing on Harvested Rainwater Quality
 - Qiao (Amy) Gao, M.S.E. Student, Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin & Mary Jo Kirisits, Assistant Professor, Department of Civil, Architectural and Environmental Engineering, The University of Texas at Austin
- From testimony of Peter Grevatt, PhD, Director of Office of Ground Water and Drinking Water USEPA (9/6/18)
 - There are many PFAS chemicals, including the chemicals perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and **GenX** (HFPO dimer acid).
 - There is evidence that exposure to certain PFAS may lead to adverse health effects.
- Interview with Peter Grevatt by Carolina Journal (8/27/18)
 - ... the GenX solar concern “is one that’s in a much broader set of challenges.”



Community Concerns

Wildlife:

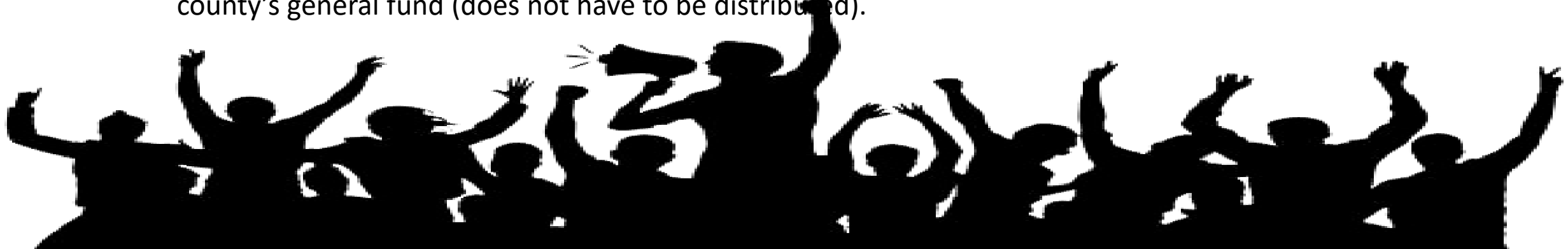
- Bald Eagles and falcons have been witnessed throughout project area in recent years.
- Deer, wild turkey, and fox populations adversely affected by 40+ miles of fencing.
- Bees and insects have a mesmerizing, and lethal attraction, to solar panel inverters.
- “Fences have measurable effects at every ecological scale,” and they “reorganize species and ecosystems by creating winners and losers.” - University of California Berkeley Department of Environmental Science, Policy, and Management
- “Another problem with large solar farms is that birds sometimes mistake the glossy blue expanse of solar panels for bodies of water and try to land on them. This is called a “lake effect.” Birds have been found dead, wounded, or stranded at several solar projects in the desert. The “lake effect” puts waterbirds in particular at risk because some species can’t take off from the ground; they require a running start on the water’s surface.” – US Audubon Society



Community Concerns

Tax Revenue Generation:

- Birch Solar 1 is planned to have a 615,319 MWhr annual capacity
 - With a wholesale rate of \$40 - \$88 per MWhr this equates to \$24,612,760 - \$ 54.148,072 annual income.
- Lightsource BP has stated they will pursue a Payment In Lieu Of Taxes agreement with Allen/Auglaize Counties
 - A PILOT agreement, by law, will provide the following:
 - \$7,000 per MW (based on nameplate) or \$2,100,000 annually. This revenue is distributed as follows:
 - 17% To County Governments
 - 54% To Schools
 - 5% To Apollo JVS
 - 24% To Townships
 - County Commissioners can also negotiate for an addition \$2,000 per MW and is to be allocated to the county's general fund (does not have to be distributed).



Community Concerns

Tax Revenue Generation:

- A PILOT agreement, unlike a traditional tax structure, is not tied to the rate of inflation or cost of money over time.
 - Value of PILOT agreement is anticipated to lose 2%-3% annually or have an annual value of about \$745,000 by year 35. (\$2,100,000 at year 1 to \$745,000 at year 35)
- The alternative to a PILOT agreement is a traditional utility tax. This, based on Lightsource BP calculations is anticipated to bring \$3,00,997 into the Counties annually (on average for 35 years).
 - Although Birch Solar 1 can depreciate its assets, it would take nearly 20 years for the traditional utility tax rate to equal a PILOT agreement (\$5,470,000 revenue in year one ~ \$2,105,533 in year twenty). After year 20, Birch Solar 1 would pay an about \$1,926,115 annually.



Community Concerns

Chinese Panels:

- If Lightsource BP continues on its current and intended plans, they will be purchasing over 600,000 solar panels from Trinasolar. A company headquartered in China and where the Vertex model of solar panels planned are manufactured.
 - Daqo New Energy is a downstream material supplier to Trinasolar.
 - Daqo New Energy signed long-term agreement with Trinasolar in November, 2020 (Cision PR Newswire).
 - Daqo New Energy identified as one of many Chinese companies utilizing forced/slave labor of ethnic minorities from the Xinjiang region of China. (Per 2020 Horizon Advisory report).
 - Both President Trump & President Biden's administration have identified forced/slave labor in the solar panel manufacturing industry as a large concern.
- **If Lightsource BP secures a PILOT agreement, which is a tax subsidy, all tax payers in Allen and Auglaize County will be indirectly supporting human rights violations of ethnic minorities in China.**

