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The Steel Winds wind farm on the former Bethlehem Steel site. Derek Gee/Buffalo News

"Steel Sun" project would add solar panels near wind turbines at former Bethlehem site in Lackawanna

"We think it's a great reuse of industrial property that you really can't build anything on," said Fred K. Heinle, director of development

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A vast wasteland from a past generation's steelmaking would be transformed into a high-tech energy producer under a plan to install 13,000 solar panels on brownfields at the former Bethlehem Steel site in Lackawanna.

The project, called "Steel Sun," would turn the brownfields into one of the largest solar farms in New York State, city and project officials say.

They expect installation of the ground-mounted solar panels to start by this fall, with completion by year's end.

"We think it's a great reuse of industrial property that you really can't build anything on," said Fred K. Heinle, director of development for Lackawanna. "Solar panels are good for that because there is no ground penetration. They sit on top of the site."

The 13,000 ground-mounted 3-feet-by-5-feet panels would face south, with a bit of a tilt.

The combined surface area of the panels would be the equivalent of 69 tennis courts.

Putting the large-scale solar panels on the site near Steel Winds, the 14 wind turbines on the Hamburg and Lackawanna waterfront, would further elevate Lackawanna's status in the international power field, said Paul F. Curran, managing director of BQ Energy, who is the Steel Sun project manager.

The Poughkeepsie-based renewable energy development firm was a partner in the building of Steel Winds.

“Steel Sun is one of the first projects in the world that will have utility-scale solar and wind at the same site,” Curran said. “It’s very unusual. There are a couple of places that have done it on a small scale with a wind turbine and a few solar panels – we’ll call it energy bling. But Lackawanna is one of the first sites to go big.”

BQ Energy proposed the project, and it cleared a hurdle last week when Lackawanna’s Planning Board greenlighted a zoning change to allow the use of solar panels on the 20- to 25-acre parcel. The Lackawanna City Council is expected to vote on the change Monday.

Lackawanna Mayor Geoff Szymanski called the solar panel installation the “new wave of green energy.”

“It just so happens that we are putting more green energy up in an area that pretty much polluted this region. We’re cleaning up after past generations,” said Szymanski, whose father, grandfather and great-grandfather worked at Bethlehem Steel’s Lackawanna plant.

The former steel plant site spans 1,100 acres. It’s owned by Tecumseh Redevelopment Inc.

Paul Werthman, an engineer and site manager for Tecumseh, also functions as environmental engineer on cleanup and remediation work.

The wind turbines, Werthman said, paved the way for more green energy installations.

“Once the wind farm was constructed, it became clear that there are some unique attributes of the site,” Werthman said. “Tecumseh recognized that early on, that the site could be used for some commercial scale electricity production from a bunch of means.”

Together, the solar panels will be capable of generating 4 megawatts a year, about the same number as two wind turbines. One wind turbine generates a little over 2 megawatts, Curran said.

One megawatt of solar energy can currently power a national average of 164 homes, according to the Solar Energy Industries Association.

Public utilities view the two sources of energy differently because each source provides energy at different times of the day, said Lynda Schneekloth, a University at Buffalo professor emeritus.

“The wind is active late at night and, of course, the sun is active mostly during the day, so you are starting to get a 24-hour cycle of energy available which makes it more reliable,” Schneekloth said. “That’s a big concern for people, to make sure the energy grid is reliable. That’s a great advantage in producing wind and solar energy at the same site,” she said.

Schneekloth, chair of the Sierra Club’s Niagara Group, is a professor emeritus in UB’s Department of Architecture and Planning. The land on which the former steel plant was built has been largely cleared since the plant closed in 1983. Remnants of the steel mill remain. A recent tour showed deteriorated coke ovens flanked by towering smokestacks sprouting up from a sea of weeds and other vegetation.

“The site is turning green in more ways than one,” said Heinle, Lackawanna’s director of development. “When Bethlehem closed there wasn’t a weed to be found around here.”

Brownfields on the property span almost 400 acres, said Werthman, president of Turnkey Environmental Restoration. According to state Department of Conservation regulations, brownfield soil remediation requires one foot of cover, whether it’s soil, vegetative soil or slag, the stony byproduct separated from metals during the making of steel.

“Slag gives you nice drainage material, and you don’t have to mow the grass around the solar panels,” Werthman said. “The slag is actually recycled from the site, crushed and grated. It has been determined beneficial by the DEC for use as ground cover.”

Solar technology converts energy from solar radiation directly into electricity.

The panels will be anchored to concrete to soak up the Lackawanna sun.

The Lackawanna solar project proposal comes two years after UB’s Solar Strand, a .75 megawatt solar-energy project designed by landscape architect Walter Hood and funded by a $7.5 million grant from the New York Power Authority. Dedicated in April 2012, the 3,200 panels are located between Audubon Parkway and Maple Road, east of Flint Road. The installation defines the university’s North Campus entrance. It powers more than 700 apartments for student housing.

“A power plant is usually surrounded by a chain-link fence topped with barbed wire fence and posted with signs that say ‘Danger,’ said Robert Shibley, dean of UB’s School of Architecture and Planning. “We reconceptualized what it means to be a solar power plant. Just as in Lackawanna, where a brownfield is being completely reimagined.”

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