BACKGROUNDER
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Media inquiries only:
Sotoria Montanari
860-757-7764 or 860-559-9776
smontanari@ctmira.org

Facts about the MIRA Solar Energy Facility at the Hartford Landfill

The Materials Innovation and Recycling Authority (MIRA) has built a solar energy-generating facility on the closed Hartford Landfill.

The Facts about the Project

The facility is the first solar-energy facility to be built on a closed landfill in Connecticut; fewer than 100 such facilities exist nationwide. At the MIRA facility, 3,993 photovoltaic panels will generate up to one megawatt of electricity, or enough electricity to power about 1,000 homes, when operating at full capacity. Weather and the sun's position in the sky impact the amount of power solar cells generate.

The solar facility was included in the final phase of capping the 96-acre landfill. E. T. & L. Corporation of Stow, Mass., received an $11.6 million contract for the project, which installed a state-of-the-art synthetic cap over about 35 acres of the landfill. Some 3,993 solar cells sit atop a layer of sand and a layer of ClosureTurf™, an impermeable synthetic grass designed for covering landfills. Tecta Solar, a national construction company with offices in East Berlin, Connecticut installed the solar generators on 6 acres of the capped landfill for $3.6 million of the $11.6 million. The entire landfill has now been enclosed with a synthetic cap at a total cost of $30 million, including the solar installation and final phase of capping. The capping project was paid for by a special reserve fund created by MIRA's predecessor, the Connecticut Resources Recovery Authority and funded by the tipping fees paid by Mid Connecticut trash to energy project customers: Connecticut cities and towns.

The facility will sell excess electricity to the grid or, potentially, to the City of Hartford at a discounted rate that could save the City several hundred thousand dollars per year on its electricity bill.
In addition, in 2012, Connecticut Light & Power selected the project to receive zero-emission renewable energy credits, or ZRECs. The ZRECs add 11 cents per kilowatt-hour to the price of electricity generated for sale by the solar collectors.

The public may track the performance and output of the solar-generating facility by visiting the public view website: https://www.solarems.net/kiosks/255.

The Facts about the Hartford Landfill

The City of Hartford opened the landfill on Leibert Road in the North Meadows for use as an open-burning dump in 1940. In 1951, the Hartford Fire Department burned shacks erected on the landfill by "dump dwellers." The City operated an incinerator there from 1953 and 1977; the incinerator, which burned all waste produced in the City, had no emissions controls. During this period, the incinerator ash and bulky waste that could not be burned were placed in the landfill.

In 1982 the City leased the landfill to MIRA's predecessor, CRRA. Until 1988, the landfill received raw municipal solid waste (MSW), and bulky waste. Starting in 1988, when CRRA opened the Mid-Connecticut trash-to-energy plant, the landfill was no longer used for raw garbage but for ash from the trash-to-energy plant and assorted bulky and special wastes unsuitable for conversion into energy.

After leasing the site from the city, CRRA upgraded the facility adding several environmental control systems at the landfill, all of which will function for a minimum of 30 years after the landfill is closed:

- A gas extraction and collection system in which over 100 wells capture gas before it enters the air, decreasing odors, while using that gas to generate enough electricity to power 1,500 homes.
- A groundwater collection and pumping system that captures and treats groundwater that may flow under the landfill.
- An ash-leachate collection system that collects and treats rain water percolating through the ash landfill.
- A groundwater monitoring program ensuring the area surrounding the landfill is safe and remains so.

On Dec. 31, 2008, the landfill received its last deliveries of ash. The previous year, CRRA had begun installing a synthetic cap on portions of the landfill that had already reached capacity shortly after the Department of Energy and Environmental Protection issued a permit. In 2014 MIRA completed capping the final 35 acres of the site. The entire landfill is now covered with a thick synthetic membrane that encapsulates approximately 10 million tons of waste within the landfill to prevent infiltration by rainwater.

The project vividly exhibits the dual mission of the Department of Energy and Environmental Protection – the protective environmental benefits of closing and capping the landfill and the clean renewable energy generated by its solar cells and methane we extract and convert to energy.

The City of Hartford continues to own the Hartford Landfill while being operated by MIRA. The site has potential for further development in the future. Development possibilities include additional solar energy generation, the construction of greenhouses, or using the site as park land as the site offers panoramic views of the Hartford skyline, the surrounding hills and the Connecticut River.

The Materials Innovation and Recycling Authority ("MIRA"), the successor organization to CRRA, is a quasi-public agency whose mission is to work for – and in – the best interests of the participating municipalities of the State of Connecticut. MIRA's board of directors and management team develop and implement environmentally sound solutions and best practices for solid waste disposal and recycling management on behalf of municipalities. MIRA serves over 51 Connecticut municipalities, numerous businesses and commercial haulers. MIRA also operates award-winning sustainability education programs through the MIRA Trash Museum in Hartford. For more information about MIRA and its activities, visit http://www.ctmira.org.