

The City of Newark
Conservation Advisory Commission
Annual Report for 2015

The City of Newark Conservation Advisory Commission (CAC) Annual Report for 2015

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Overview of CAC Accomplishments in 2015

This report summarizes the activities of the City of Newark's Conservation Advisory Commission in calendar year 2015. The CAC focused on Green Energy in 2015 by choice and by opportunity. Key CAC accomplishments in 2015 include:

1. The CAC recommended to City Council that the City permit Newark residents to purchase a maximum of two 100kwh green energy blocks from McKees Solar Park to increase citizen buy-in and commitment to the city's efforts to increase the use of solar power.
2. The CAC recommended to City Council that the CAC enthusiastically supported the purchase of LED lights and in support of this purchase, the CAC recommended the use of 2015 CAC \$100,000 allocation to use as a down payment towards the investment in LED street lights.
3. The CAC recommended to City Council that the City invest an additional \$50,000 in McKees Solar Park to increase its solar production capability. This recommendation was later altered to invest this money to purchase additional LED light bulbs for the City's street lights due to an opportune decrease in the price of these bulbs.
4. The CAC awarded the Better Newark Award at a City Council meeting to Dow's Newark operations for its sustainable landscaping using native plants.
5. The CAC provided DEMEC with energy efficiency policy ideas to help DEMEC comply with and exceed new State of Delaware law which requires utilities to increase energy efficiency.
6. The CAC recommended to City Council that after the McKees' solar park is paid off, Green Energy Funds be allocated evenly into three categories: Private projects (PV, Wind Turbine, Solar Water Heater, Fuel Cell, and Geothermal); Public renewable energy installations (solar parks, wind turbines, etc.); Municipal energy conservation projects. The funding will partially support the investment in renewable energy by citizens, companies and the City.
7. The CAC broached the idea of launching a Green Energy Day in Newark to promote energy efficiency to citizens in a fun and engaging way. The CAC formed a sub-committee to explore this possibility.
8. The CAC met with representatives from Sierra Club and UD's Students for the Environment to learn about the pending plastic bag bill in the State of Delaware's legislature. The CAC chose to consult with City Council members on the merits of the bill and its impact on Newark businesses.

CAC Background

Ordinance 77-56 created the CAC in November 1977,

"to advise in the development, management, and protection of its natural resources with appropriate consideration of Newark's human and economic resources. The Commission shall concern itself with conservation in its broadest sense and may, among its activities: (a)

Recommend to City Council a program for ecologically suitable utilization of all wet lands, valley streams, and flood plains and other land areas, the condition and use of which will affect the environmental quality of life in the City of Newark; (b) Shall file an annual report; (c) Maintain informal liaison with the Planning Commission, the Parks and Recreation Department, the City Manager, and the City Council, and cooperate with other public and private bodies organized for similar purposes; (d) In addition to the foregoing, carry out any other duties, tasks, or responsibilities, consistent with the objectives of this Commission assigned to it by resolution of City Council.”

Ordinance 77-56 gave examples of programs that may be considered by the Commission, such as street tree replacement; improved recycling; beautification plans for volunteer groups; guidelines for multiple use of open space and public areas; community gardens; energy conservation; and review of Zoning Code amendments to encourage conservation, and also stated that “the above list shall not, however, limit the program which the Commission may undertake or be requested to undertake.”

CAC Membership

The CAC has 9 members when all positions are filled. 2015 witnessed turnover of members. In May, CAC elected George Irvine as Chair of CAC after former chair, Tom Fruehstorfer, stepped down to take a position with the City of Newark.

Appointment Type	CAC Member	Term Expiration Date
Mayor’s Appointment	John Hornor	3/15/18
Mayor’s Appointment	Tom Fruehstorfer until April 2015 when he stepped down. Vacant remainder of 2015. Kismet Hazelwood appointed in January 2016	
Mayor’s Appointment	Katherine Sheedy	3/15/16
District 1	Ajay Prasad, Ph.D.	3/15/16
District 2	John Wessells	3/15/17
District 3	Bob McDowell	3/15/18
District 4	Held by George Irvine until July 2015, when he moved to District 5. Vacant remainder of year. Sheila Smith appointed in January 2016	3/15/17
District 5	Vacant until July 2015. Filled by George Irvine (Chair as of May 2015)	
District 6	Carol Anders Riggs stepped down in mid-2015. Vacant remainder of year. Jason Kramer appointed in January 2016.	

Staff Representative (ex officio)	Tom Coleman, Director, Public Works & Water Resources or Tim Filasky, Deputy Director	
Staff Secretary	Tara A. Schiano, City Secretary's Office	

An updated CAC roster is maintained on the City's web site at www.cityofnewarkde.us/DocumentCenter/Home/View/620 (pdf format).

A Better Newark Award

In December, the CAC voted and approved that Dow Chemical, located in the Diamond State Industrial Park on Bellevue Road. Receive a Better Newark Award. Dow took two area in back of one of their building that faces Bellevue Road that was strictly grass with a neighboring gully that consistently fills with water and proceeded to fill both areas with native plants that thrive in both grassy and marshy/wet areas. It is expected that this award will be presented to Dow in early 2016.

MOTION MADE BY MR. IRVINE, SECONDED BY MR. HORNOR TO AWARD THE A BETTER NEWARK AWARD TO DOW CHEMICAL.

MOTION PASSED UNANIMOUSLY: 5-0

The CAC encouraged the City to make citizens more aware of the Better Newark Award through its website and routine public awareness campaigns. It is hoped that this effort will increase the number of award nominees.

Green Energy

In 2015, the CAC put considerable energy into Green Energy initiatives in the City, specifically: McKees Solar Park operations and possible expansion; the installation of LED bulbs in City street lights to decrease the City's energy consumption and carbon footprint; changes to the allocation of the City's Green Energy Fund which promotes the use of renewable energy; policy ideas for DEMEC's response to a new State of Delaware energy efficiency law; solar powered refuse containers on Main Street; and the possible creation of a Green Energy Day in the City.

McKees Solar Park

The Solar Park completed its first full year of production and is running ahead of expectations. Green Energy Funds for 2015 were used to help pay off the rest of the cost. Once these costs are paid, the Green Energy Funds will revert back to homeowner and business solar installations. See a later section on changes to the future allocation of Green Energy Funds.

At the CAC's May meeting, Messrs. Eric Van Orden and Allen Hazzard, owners from Solair LLC, the City's partner in the operation of McKees Solar Park, gave the CAC an update on the park's operations (the presentation was entered into the record.) Since the inception of the project, 151 MWh have been produced. This is the equivalent to powering 9 stadiums for one day or the equivalent of a one-hundred fifty one 2,000 square foot homes. The carbon offset is 105 tons, which is equivalent to planting 9 acres of forest. Mr. Hazzard stated they are very happy with the production and anticipate 10-15% over

production every year. They anticipate the system to be in use for 35-40 years.

To help promote solar energy, the CAC unanimously approved a recommendation at the May 2015 meeting that Council allow residents to invest in additional solar energy blocks. Residents can now buy up to two energy blocks for \$50 in 100 kWh of monthly usage for 120 months. Council subsequently approved this CAC recommendation.

MAY MEETING: MOTION MADE BY MR. MCDOWELL THAT THE CONSERVATION ADVISORY COMMISSION MAKE A RECOMMENDATION TO COUNCIL THAT WE PERMIT RESIDENTS TO PURCHASE A MAXIMUM OF TWO 100KWh GREEN ENERGY BLOCKS FROM MCKEES. SECONDED BY MR. IRVINE.

MOTION PASSED UNANIMOUSLY: 6-0

The CAC also unanimously approved a recommendation to Council that the City spend \$50,000 of the 2015 CAC allocation of Green Energy Funds toward installing more solar panels at the park. However, it was later explained to the CAC from the Mr. Vitola, the Finance Director that it was going to cost much more to add panels to the Solar Park so this was dropped. The money was instead allocated toward the LED Streetlight Program.

MAY MEETING: MOTION MADE BY MR. PRASAD, SECONDED BY MR. IRVINE: THAT THE CONSERVATION ADVISORY COMMISSION MAKE A RECOMMENDATION TO COUNCIL THAT COUNCIL ALLOCATE \$50,000 FROM THE 2015 CAC GREEN ENERGY FUNDS TO ADD ANOTHER 60 PANELS TO MCKEES.

MOTION PASSED UNANIMOUSLY: 6-0

LED Streetlights

Council approved the budget item for the installation of LED streetlights in early 2015. With the cost of the LED lights continuing to decrease, the City was able to buy enough bulbs to replace 2000 lights instead of the planned 750. In late 2015, Electric Dept. personnel began the LED streetlight replacement and hope to finish in the first half of 2016. The CAC voted to use the 2015 CAC allocation of \$100,000 to help pay off this worthy endeavor which allows for brighter lights, darker skies, more efficient electric use and longer replacement cycles saving maintenance.

SEPTEMBER MEETING: MOTION BY MR. IRVINE, SECONDED BY PRASAD, THAT THE CONSERVATION ADVISORY COMMISSION ("CAC") ENTHUSIASTICALLY SUPPORTS THE PURCHASE OF LED LIGHTS AND IN SUPPORT OF THIS PURCHASE, THE CAC RECOMMENDS TO CITY COUNCIL TO USE THE 2015 CAC \$100,000 ALLOCATION TO USE AS A DOWN PAYMENT TOWARDS THE INVESTMENT IN LED STREET LIGHTS.

MOTION PASSED UNANIMOUSLY: 7-0

Green Energy Fund Changes

Councilman Markham asked the CAC to develop recommendations about the future allocation of the City's Green Energy Funds once McKees Solar Park is paid off. The CAC discussed the allocation of the money and whether it should be used to support residents that install solar or other green energy (which helps a few) versus funding future city solar projects (which benefits all residents). Other municipalities in Delaware do not incentivize green energy as much as Newark, making the City a leader in the state.

Over a few meetings, the CAC developed a recommendation that after McKees Solar Park is paid in full future annual Green Energy funds be divided evenly into three categories:

- Private projects (PV, Wind Turbine, Solar Water Heater, Fuel Cell, and Geothermal)
- Public renewable energy installations (solar parks, wind turbines, etc.)
- Municipal energy conservation projects

The CAC recommends that initial payouts distributed from the Green Energy Fund for private projects be used to cover previously submitted applications (currently on hold) that were approved at current established incentive levels. It may take a few years to cover the backlog. The CAC recommends the proposed new incentive levels to be used for future applications for private projects for residential and businesses. These proposed incentive levels can be found in the report given to City Council in July 2015.

Funds collected for future public renewable energy projects such as solar parks would be held until such a new project is approved, but could also be used to expand the existing solar park(s) if needed.

The City would be able to use allocated Green Energy funds for public facility energy conservation projects immediately.

Dr. Prasad and Mr. Hornor of the CAC presented this recommendation to City Council at its August 10, 2016 meeting and Council unanimously approved it.

DEMEC Energy Efficiency Programs

At the November meeting, the CAC hosted Mr. Scott Lynch, Energy Services Manager at DEMEC, to learn about DEMEC's approach to meeting a new Delaware state law which will require increased efficiency of energy production. The CAC provided Mr. Lynch with policy ideas to help DEMEC comply with and exceed the new state policies. These ideas are listed below.

Newark Conservation Advisory Commission (CAC) Ideas to Increase Energy Efficiency and Decrease Carbon Footprint for City of Newark to Possibly Propose to DEMEC in November 2015

Draft for Discussion Purposes Only

Drafted by George Irvine, Chair, CAC, girvine69@gmail.com, based on 10/13/15 CAC meeting

- Commercial Level
 - Provide incentive for companies to build LEED certified buildings
 - Incentivize companies to install solar power over parking lots
- Residential Level
 - Incentivize installation of or provide free smart thermostats to homeowners to increase consumer knowledge of their electrical consumption. Could provide a "dashboard" of data to educate consumer and prompt conservation behavior to decrease bill (Could work for businesses as well.)

- Provide micro-loans to homeowners to increase energy efficiency of their homes modeled on Boulder, CO program
- Municipal level
 - Install variable frequency drive (VFD) pumps in existing and new water infrastructure projects to decrease monthly electrical usage and bill
 - Encourage installation of LED lights, promote solar, apply peak rate adjustment

Solar Powered Trash and Recycling Containers

The City completed the installation of solar powered trash and recycling containers on Main Street in May 2015. The CAC requested and received periodic reports from the City's Public Works Department about the containers' use, performance and energy savings. In 2014, the CAC recommended that the City invest in these containers.

Green Energy Day

At the June meeting, the CAC discussed the merits of organizing a Green Energy Day in the City to promote energy efficiency to citizens in a fun and engaging way. The idea is to invite we invite solar vendors, DEMEC, energy efficient organizations etc. The Mayor liked the idea and encouraged the CAC to come up with big bold ideas for the Green Energy Day, such as a solar powered co-cart race or similar fun, energy-themed event. The CAC formed a subcommittee to explore this idea, comprised of Mr. Wessells, Ms. Hazelwood and a third party not yet named. The subcommittee is charged with planning the event, contacting vendors and coordinate displays.

In subsequent meetings, the CAC discussed this idea with Ricky Nietubicz, Community Affairs Officer for the City, in particular the optimal timing for the Green Energy Day and the merits of combining it with New Night in Newark or similar existing City event. Another suggestion was to combine it with the Main Street Mile.

In regards to the solar go-kart idea, Mr. Lynch reported there is an event called the "Junior Solar Sprint" where middle school students build a solar car with a kit provided by the State of Delaware. To his knowledge, no school in Newark has participated. The suggestion was to have UDEL students mentor the school students through the process. The other suggestion was to have the event scheduled around when McKees Park produces its 300 MWh. Social media should be used to promote these events.

Reforestation in Riparian Zones

At the December meeting, the CAC discussed the possibility of recommending to the City that an annual reforestation event be started in order to officially encourage the planting of trees in riparian zones. Mr. McDowell proposed the idea after taking part in a very successful, volunteer-led tree planting at Curtis Mill Park in November 2015 with 100 trees and shrubs planted.

Reducing the Use of Plastic Shopping Bags

Stephanie Herron, Volunteer & Outreach Coordinator, Sierra Club, Delaware chapter, presented at the CAC's December meeting about the necessity of reducing the consumption of plastic bags in Delaware. She asked that the CAC consider making a recommendation to City Council to support a bill currently in

committee in the State Legislature (H.B. 202) that would require large stores to charge \$0.05 per plastic bag. The CAC agreed that decreasing the use of plastic bags is important. Each member of the CAC will speak with his/her Council representative about this issue before CAC will take any additional action.

Future Goals

Throughout the year, the CAC continuously discusses new environmental conservation ideas. These ideas form the basis of future CAC recommendations to City Council. A list of the ideas which the CAC discussed at its 2015 meetings is below:

- Create a program to incentivize the use of reusable bags at City businesses from year to year. It is still the opinion that something needs to be done to limit the use of plastic bags.
- Continuously measure the City's carbon footprint in order to demonstrate progress year over year.
- Promote bike lanes in the City on roads such as Dallam Road, West Park Place and Casho Mill Road.
- Arbor Day in Newark activities to promote the planting of new trees in City parks and riparian zones. Get community organizations involved in the efforts to ensure civic engagement with tree planting. Choose areas that need revitalization and have plantings in those areas, assuming the citizens are interested in doing so.
- Increase CAC's Outreach & Education efforts at all levels. Mr. Prasad suggested approaching the school clubs (i.e. nature society). Mr. McDowell stated Newark High School nature club is installing a solar pump in the pond in the wildlife habitat area.
- Wind Power – find a location to demonstrate how wind turbine and/or solar works to the public. Ideal venues: Newark Night, Community Day. Could grant money be found to fund such ideas?
- Conduct an electronic survey asking City resident what they would like the CAC to accomplish in the future. Could a notice be included with electric bill mailings providing information to links (i.e. a survey) on the City website?
- Anti-Idling – what else should CAC do to decrease idling of motor vehicles in the City?
- Public Transport Network for Newark and in Newark? How can public transport best be supported by the CAC?

Appendix 1: RECOMMENDATION AND REPORT ON GREEN ENERGY FUND REIMBURSEMENT PROGRAM RECIPIENTS AND LEVELS

**City of Newark
Delaware
Conservation Advisory Commission**

July 14, 2015

TO: Mayor and Members of City Council
FROM: Chairperson and Members of the Conservation Advisory Commission
RE: RECOMMENDATION AND REPORT ON GREEN ENERGY FUND REIMBURSEMENT PROGRAM RECIPIENTS AND LEVELS

RECCOMENDATION FOR GREEN ENERGY FUND

The CAC recommends, that after the cost of the McKees Solar Park is paid in full, future annual Green Energy funds be divided evenly into three categories:

- Private projects (PV, Wind Turbine, Solar Water Heater, Fuel Cell, and Geothermal)
- Public renewable energy installations (solar parks, wind turbines, etc.)
- Municipal energy conservation projects

The CAC recommends that initial payouts distributed from the Green Energy Fund for private projects be used to cover previously submitted applications (currently on hold) that were approved at current established incentive levels. It may take a few years to cover the backlog. The CAC recommends the proposed new incentive levels to be used for future applications for private projects for residential and businesses. These proposed incentive levels can be found in the report section below.

Funds collected for future public renewable energy projects such as solar parks would be held until such a new project is approved, but could also be used to expand the existing solar park(s) if needed.

The City would be able to use allocated Green Energy funds for public facility energy conservation projects immediately.

GREEN ENERGY FUND REPORT

BACKGROUND

The money in the Green Energy Fund is based on the amount of electricity sold by the city. Each resident pays a certain percentage of their bill into the Green Energy Fund that can then be distributed to support sustainable energy or energy conservation projects. The amount of funds contributed to the Green Energy Fund is approximately \$120,000/year. In the past these funds were used to reimburse private green energy projects.

In December 2012 payouts from Newark's Green Energy Fund for private projects were put on hold and funds were instead diverted to help pay for the McKees Solar Park. The CAC supported this diversion as it facilitated development of green energy in Newark that benefits all Newark residents and not just residents who can afford the capital investment required for the installation of private systems. The current plan is to reopen the Green Energy Incentives program after the McKees Park Solar installation is paid in full. However, the diversion of the Green Energy Fund to a project that benefited all Newark residents has prompted the CAC to consider how we might best allocate the Green Energy Fund in the future after the McKees Solar Park has been paid for.

While we support the provision of funds to a project that benefits everyone, we also feel there is justification for supporting private projects also to help the penetration of green energy systems in Newark. For that reason the CAC recommends splitting the fund in the future to support both public and private projects, as well as reassessing the current incentive levels. A recommended breakdown is detailed below.

First though, there is a concern that projects continue to be turned into the city to receive incentive payments. So far, over \$40,000 in pending incentive payments have accumulated during 2013 and 2014. Currently, any project submitted to the city is approved at the previously established incentive levels. There is some concern that the backlog of projects could overwhelm the Green Energy Fund inflows in future years. There is also concern that talk of reassessing the incentive levels could prompt a surge of projects to get them submitted at the current incentive levels before they are potentially lowered. For that reason, we recommend a temporary freeze on the incentive program while the new incentive levels are being determined. We recommend that any new applications made to the program be subject to the new levels when they are finalized. In summary,

- We recommend that new applications to the Green Energy Fund at current reimbursement rates be frozen.
- We recommend that the reimbursement rates be reevaluated. The CAC is making a recommendation for revised reimbursement rates as detailed below.
- We recommend that any new private applications to the Green Energy Fund be reimbursed at the new rates (after funding of the McKees Solar Park is complete).

RESOLUTION FOR PATH FORWARD

We have identified three types of projects that would be eligible for Green Energy funds:

1. Private projects (PV, Wind Turbine, Solar Water Heater, Fuel Cell, and Geothermal)

2. Public renewable energy installations (solar parks, wind turbines, etc.)
3. Municipal energy conservation projects

The first type is private projects that were covered in the past such as PV, Solar Hot Water, and Geothermal. The second is future public renewable energy projects such as McKees Solar Park. The third is municipal green energy or energy conservation projects in public facilities such as the City water treatment plant. We propose splitting the fund equally three ways with about \$40,000 being allotted to each type of project each year. It should be noted that there is already a backlog of over \$40,000 in pending payments for private projects so it could take a couple of years to clear that backlog once McKees Solar Park is fully funded.

Private Projects

The first of these project types is the private projects. In 2010 almost \$165,000 was allocated to reimburse private projects, but those levels have dropped to about \$20,000/year and leveled out since 2012. This may be partially because the program was put on hold in 2012. While there are other sources of incentives on State and Federal levels, some residents might be hesitant to initiate projects now due to a delayed payment from our local incentive program, so those levels could increase once the program is opened up again.

Currently, photovoltaic (PV) and wind turbine incentives are set at 33.33% of the system cost. Solar Hot Water, Fuel Cell, and Geothermal systems reimbursement is set at up to 50% of the installation costs. We recommend retaining the same reimbursement incentives as before, but with a reduction in the Not To Exceed (NTE) caps. Formerly PV, wind, and fuel cell had a residential/business NTE cap of \$15,000/\$30,000. We propose halving these NTE caps to \$7500/\$15000 as system prices have fallen over the years and a smaller cap will enable more citizens to take advantage of the program. We also recommend that solar thermal systems should be restricted to domestic hot water (DHW) systems and exclude swimming pools, etc.

Green Energy Fund Incentive Levels for Private Projects (changes in red)

	Current Incentive Details	Proposed Incentive Details
PV	33.33% of installation costs up to NTE caps for residential and business (\$15000/\$30,000)	33.33% of installation costs up to NTE caps for residential and business (\$15,000 / \$30,000)
Wind	33.33% of installation costs up to NTE caps for residential and business (\$15,000/\$30,000)	33.33% of installation costs up to NTE caps for residential and business (\$15,000 / \$30,000)
Fuel Cell	50% of installation costs up to NTE set caps for residential and business (\$15,000/\$30,000)	50% of installation costs up to NTE set caps for residential and business (\$15,000 / \$30,000)
Geothermal	50% of installation costs up to NTE caps for residential and business (\$3,000/\$20,000) OR \$500/ton whichever is lower	50% of installation costs up to NTE caps for residential and business (\$3,000/\$20,000) OR \$500/ton whichever is lower
Solar Hot Water	50% of installation costs up to NTE caps for residential and business (\$3,000/\$10,000 or \$5,000/\$10,000 for radiant systems)	50% of DHW installation costs up to NTE caps for residential and business (\$3,000/\$10,000 or \$5,000/\$10,000 for radiant systems)

Future public renewable energy generation projects

The second group is future publicly-owned renewable energy generation projects such as McKee's Solar Park. Data collected to date indicates that this project is performing better than anticipated and is expected to help Newark reduce its reliance on fossil fuels in a cost-effective manner. Therefore, the CAC believes that construction of similar public projects in the future could further help Newark reach its state-mandated levels of renewable energy supply.

Municipal energy conservation projects

The third group is municipal projects that will reduce the use of conventional energy by improving the efficiency of city operations. Public Works facilities and equipment are currently heavy users of electricity. Replacement of old equipment with more efficient equipment such as LED street lights and high efficiency pumps at the water plant can greatly reduce the demand on conventional energy supply.

Respectfully Submitted,

City of Newark Conservation Advisory Commission