

**CITY OF NEWARK
DELAWARE**

**CONSERVATION ADVISORY COMMISSION
MINUTES**

January 9, 2018

MEETING CONVENED: 7:00 p.m. Council Chambers

MEMBERS PRESENT: George Irvine, John Horner, Ajay Prasad, Bob McDowell, Kass Sheedy, Sheila Smith, John Wessells

ABSENT: Kismet Hazelwood, Jason Kramer

STAFF: Sarah Campanelli, Secretary

Mr. Irvine called the meeting to order.

1. APPROVAL OF MINUTES FROM MEETING HELD ON DECEMBER 12, 2017

MOTION BY MR. WESSELLS, SECOND BY MR. PRASAD: THAT THE MINUTES FROM THE DECEMBER 12, 2017 MEETING BE APPROVED AS RECEIVED.

MOTION PASSED UNANIMOUSLY.

2. PUBLIC COMMENT

There was no public comment.

3. GUEST: UNIVERSITY OF DELAWARE STUDY – SOLAR PRODUCTION CONCEPT

Michael Chajes stated he worked for the University of Delaware Civil and Environmental Engineering Department and was co-chair of the University Sustainability Task Force. Dr. Chajes advised that the Task Force was building the Newark Sustainable Partnership. The goal was to gather different efforts happening around sustainability on a broad scale that would be of interest and applicable to the City of Newark. The University wanted to build partnerships to bring those efforts forward. Dr. Chajes noted that they had met with the Acting City Manager Tom Coleman. Dr. Chajes was at this meeting to discuss the project of creating a solar city by using rooftop solar systems. Dr. Chajes introduced John Byrne from the Center for Energy and Environmental Policy. He stated Dr. Byrne had been leading this effort.

Dr. Byrne said he had been researching this project for over a year. The funding was from the State and the project involved both the City of Wilmington and Newark. Dr. Byrne advised that the University of Delaware had been identified by the US Department of Energy as a Center of Excellence in photovoltaics, or the conversion of solar to electric. He stated most of the solar cells were invented at the University of Delaware. Solar was the fastest growing source of new supply of energy in the US and world. Much of this had to do with a dramatic reduction in the cost of the technology. Dr. Byrne stated when the study from 2009 was done, solar was about 4 times as expensive as it was today.

Dr. Byrne explained that his team had been researching a way to use this technology to meet sustainability goals. They wanted to do this in a way that was cost effective to the City. Dr. Byrne understood that the City heavily depended on electric revenues. Dr. Byrne said that his goal was to find a way that the City would be better off in the future, rather than solar being a leakage away from that revenue. The idea was that the City would become an aggregator and manager of a new solar plant. The City would then collect revenues from that. Dr. Byrne stated the project was about halfway through to the goal of a complete analysis that would provide all the costs and financing. He noted that they had done this project in many different cities and the financial model would show the variety of ways to make this a financially and environmentally sound decision.

Dr. Byrne advised that this study had been done in Philadelphia. The City of Philadelphia was now actively considering this proposal. Philadelphia was looking at a way to use their own municipal buildings as the host. It would then either sell the electricity to its users in the City or it would reduce its buys from the grid. The most active project was in Seoul, South Korea. This project had been going for 5 years and had cost \$1.5 million. The goal was to make the city able to use this technology in the most efficient way by 2022. Dr. Byrne explained that the database they used was LIDAR. LIDAR was imaging that was going on all the time of surfaces. The imaging was done through LIDAR pulses which measured the distance, angle and heights of buildings through rebound. This allowed them to know the rooftop space of the city in a precise way and to find out if the roof areas were shaded and during what period of time they were shaded.

Mr. Prasad asked how this LIDAR data was collected. Dr. Byrne answered it was through USGS data, drones, helicopters and other methods. Dr. Byrne said they had been able to collect what the major public buildings were in the city. The City of Newark had 11 buildings and flat roof buildings allowed the generation of approximately 567 megawatt hours of electricity annually. The University of Delaware had 114 buildings and could generate approximately 30 times more than the City. He stated the goal was to capture this opportunity with buildings in the public sector first as a way to pilot using this technology. Dr. Byrne was proposing a partnership model in which the City and University would work together for this sustainability objective.

Dr. Byrne stated the City currently consumed 418 gigawatt hours of electricity citywide annually. He showed a graph that reflected how much electricity the City's own buildings used. It was a small portion of the overall, with the University using the most electricity in the city. They had used this LIDAR model and conservative estimates of how much rooftop area was suitable. They had only included flat roof area and added a maintenance area so that the plant could be serviced. Dr. Byrne stressed that these preliminary numbers were likely lower than they would actually see at the end of the study. Under the City project, solar electricity generation could be over .6 gigawatt hours from just the flat roofed buildings of the City. Dr. Byrne stated the City could take that portion of its energy use and supply it from its own buildings. He reiterated this was a conservative estimate. This was about 14% of the City's electricity use.

Dr. Byrne said his goal was to partner the City with the University and he had discussed this with officials on both sides. He advised they would utilize a model in which electricity from an agreed upon set of roof areas would be mapped as a new solar plant. The City would set up an arrangement between the University and its own Electric Department to buy back power from those roof areas. The University would remain a customer in this sense and revenue would remain flowing into the City. The University would get an assurance in that the price of solar did not fluctuate like other fuel prices. Dr. Byrne believed the University would be able to get a flat rate at or below what they were currently paying the City. Dr. Byrne felt that the University and City would both benefit from this partnership.

Dr. Byrne felt there was a partnership opportunity. He estimated that about 20% of the collective footprint of buildings both that the City and University owned would be needed. This was about 3% of the citywide

footprint. He emphasized that they were only using small portions, not taking over the City with solar. The big picture would allow all parties in the city to participate including businesses, residents and industries. The only way to do this would be on a voluntary basis. Dr. Byrne said he was giving an estimate of the potential of that voluntary approach. He advised that a larger version of this project would be 28% of the city's rooftop area. It was difficult to estimate the cost because there were many ways to configure it. Dr. Byrne said they were working to find credible options for the City.

Dr. Byrne focused on the impacts of this project. He explained that if Newark only did the government project, the City would see a 15% reduction in its energy bills. It would buy 15% less electricity from DEMEC. It would also reduce its emissions by 15%. Just by using this small portion of rooftop space, the City would meet 60% of the renewable portfolio standard. Dr. Byrne noted that the City had signed an agreement with the State of Delaware that it would act to meet a standard of 25% of electricity coming from renewable sources by 2026. Inside the renewable portfolio standard was a requirement of getting a portion from solar directly. The City would immediately be in compliance with that standard if it were to use its own rooftops. This technology would also provide a local economy and opportunities for local labor. He thought it was a viable project.

If the City were to partner with the University and the University allowed a portion of its rooftop space to host this solar plant, the City would then get a 10% collective reduction. Dr. Byrne pointed out that the University was a big user of electricity and having a 10% reduction in grid-based electricity use would be substantial. This would be good for sustainability as well, as there would be a 10% reduction in CO2 emissions. He noted the main aspect of this partnership plan was that the University would be billed by the City for that 10% that would be provided by self-generated electricity. With this option, the City would be at 40% of the RPS standard. Dr. Byrne also noted that with the partnership model, the goal of a 100% renewable energy City was possible. This plan would cut conventional electricity use by 43% and would have the most sustainability impact. The City would be in complete compliance with the RPS standard. The City would be 100% renewable which could be used as a branding tool. Dr. Byrne felt that the University would also like this recognition.

Dr. Byrne said that based on the work done so far, there was a potential to make this project financially viable. He advised that the solar plant on the UD Field House had been developed when solar prices were higher. When the University had bought into that, they had not used their own capital budget but instead paid a third party to provide and maintain the technology. The University then paid that party the same rate it was paying the City for electricity. Dr. Byrne was proposing that instead of having a third party, the City of Newark would be that entity. This did not mean that the City had to come up with the capital costs. He said that there were tax incentives available.

Mr. McDowell noted that right now the STAR campus was mostly undeveloped. He asked if the development of that campus would expand this project. Dr. Chajes said the STAR campus would be used in the partnership. He said that parking lot solar carports would expand this project and could possibly be utilized on STAR campus. Dr. Chajes assured they would like to consider all potentials but had presented only conservative estimates. Dr. Chajes felt that sometimes it was better to start small and then expand.

Ms. Smith asked how likely it was that UD would pursue this project without a partnership with the City. Dr. Chajes advised that Dr. Byrne had put together a proposal in the past to do that and the University had not acted on it. However, he pointed out there was a new administration and sustainability was important to the new president. Dr. Chajes thought there was a possibility of moving forward. Dr. Chajes was not as interested in pushing for a University only project. He felt this should be a partnership. Dr. Byrne shared that an agreement had been made between the University of Delaware and the City that the University would not

do anything like that without checking with the City, as they had done at the Field House. He thought that the University was worried that if there was not a good relationship with the City, there was a potential it would backfire on the University.

Ms. Smith pointed out that this had been presented before and asked why the project had not been acted on. Dr. Byrne stated that the 2009 study depended on a State incentive with solar renewable energy credits. He said that there had been an issue of whether the State would create a policy incentive that would be specifically targeted to the City. Dr. Byrne had not mentioned that in his presentation tonight because the reduction in costs of solar had negated the need for that incentive. Ms. Smith asked whether this presentation would be made to the Newark Community Sustainability Plan Steering Committee. Dr. Chajes hoped that they would be able to put in a proposal for that plan.

Mr. Hornor asked whether Dr. Chajes thought it would be harder to convince UD or the City to begin this project. Dr. Chajes shared that Mayor Sierer had been participating in this process and had been very supportive. Dr. Chajes said there was also good support at the University. He thought anything was possible. Mr. Hornor did not see how the City could turn this down. Mr. Hornor thought the decision would be more difficult for UD. Dr. Chajes shared that he had seen an interest in the University administration to find places for a partnership with the City. He noted it would all come down to financial aid. Dr. Byrne agreed that there was interest in the UD administration. He explained that the City was not captive in this approach. When the City purchased solar panels for this project, they could offer residents and businesses to join in that procurement. That act would lower the price of individual installations by 20-30%. Dr. Byrne agreed that the University was better equipped to make this decision now than in 2011. He felt that with or without the University, the City should do this.

Mr. McDowell felt that this idea would make Newark an appealing city for both prospective residents and students. He wanted to keep Newark ahead of the curve. Dr. Chajes agreed that being a sustainable city would also be appealing to businesses. He noted that there would be an educational aspect to this plan. The benefits would need to be explained to people so that they would be receptive to this.

Ms. Smith asked if there was an example of a city on this scale doing a project like this. Dr. Byrne responded that Philadelphia was moving forward on this idea. His team was also doing an analysis on Pittsburgh. He said they had been working on this process with Wilmington as well and they were eager to do this. Dr. Byrne explained that they had done a project with Dover in which a Brownfield site had been used for a solar plant. They had used their utility as the aggregator and manager, then sold the energy from that plant to the consumers. This was similar to what was being proposed in their plan for Newark.

Ms. Sheedy noted that Dr. Byrne had mentioned the University was nervous about potential blowback if the University decided to do this project on its own. Ms. Sheedy assumed that if the University did this, the City would lose revenue. Dr. Byrne said that was correct. Ms. Sheedy asked where the development of a partnership stood now. She also wished to know what needed to happen to move that development along. Dr. Chajes felt the partnership was more casual at this point. Dr. Chajes said that they were discussing the idea with Mayor Sierer and trying to reach out to other Council members or committees, such as the CAC. There was nothing formal on the University side but Dr. Chajes had met with the Executive Vice President. Dr. Chajes wanted to have more details and financial figures before sitting both entities down. Ms. Sheedy asked if a conceptual agreement would be the first step of the process. Dr. Chajes was open to that.

Mr. Irvine noted that Council's concerns and questions would likely focus on what policy changes needed to be made. He felt that there was a policy window open at this time and there was no reason not to do this.

Mr. Irvine felt the other concern was the \$22 million. Mr. Irvine noted that Dr. Byrne had not talked much about the ROI. Mr. Irvine felt that the ROI was quick, especially if the City saved 15% of its current purchase. The aggregate ROI would be fast as well. He understood that the initial spend was high and Council would ask about that. Dr. Byrne felt that the City needed to be steering the ship in this approach. A private party was needed because about 40% of the capital costs could be offset by 2 tax benefits in the tax code. Dr. Byrne said there were a number of models in which the City would remain the primary and it would have a tax equity partner. That partner would take those benefits and leave. This would stretch out the ROI but it would reduce the overall costs by 40%. Dr. Byrne advised there were still financial aspects that needed to be researched further.

Mr. Wessells asked whether this would adversely affect the price of the electricity the City purchased from DEMEC. Dr. Chajes did not think that was the case. Dr. Byrne felt that DEMEC had to consider that Newark was one of its major partners and determine a long-term business solution. Mr. Wessells asked if DEMEC was a tax paying company. Dr. Chajes said they were a non-profit. Mr. Irvine stated that Newark was 1 of 9 cities that bought electricity from DEMEC and that Newark was on their board. Mr. Wessells wondered if DEMEC could become an investor in this project. Mr. Irvine thought they could.

Mr. Hornor noted that right now, the University bought electricity from the City. He asked where they were in that contract. Dr. Chajes was not sure but he thought discussions were not far off in renewing that contract. The timing was good to bring this idea forward. Dr. Chajes knew that Council understood the vulnerability of having a large portion of their budget coming from one source. He felt this idea of the City becoming a provider was a solution to that problem.

Mr. Irvine asked what type of labor force would be needed to do this. He asked if it currently existed in the City ranks. Dr. Chajes answered that Delaware businesses would be doing the installing. It would not be the City doing it. Mr. Irvine noted that someone still needed to manage those contracts.

Mr. Irvine stated they needed to find when the existing energy contract expired. He felt that should be the deadline for a conceptual agreement. He also commented that they needed to see the financing. Mr. Irvine shared that the CAC was in a position to help the City spend its Green Energy Fund, which was \$100,000. Dr. Byrne felt that could be beneficial. Mr. Irvine would prefer to do the 3rd option which was the most ambitious. He would like to see the residents, businesses, University and City involved. Mr. Irvine could not see any downsides to this project. Mr. Irvine asked what Dr. Byrne would like the CAC to do to help. Mr. Irvine said they could make a recommendation to Council encouraging the City to actively consider creating Newark as a solar city in partnership with the University of Delaware. Dr. Byrne felt that making that recommendation could get the conversation started. Dr. Byrne thought the business community would find ways to be a partner, especially Main Street. Dr. Byrne liked the idea and felt that the City should set a target.

Ms. Sheedy felt that Council would be most interested in the financial information and asked when that would be available in detail. Dr. Byrne answered that his team needed to make assumptions about the level of University participation in order to calculate the finances. He could provide financials for the 1st option within weeks but the City would pay more in that scenario because the procurement was small. Dr. Byrne said that if they went on that assumption, they could get financials for the 2nd scenario by March. Dr. Chajes suggested that they come back to the CAC with numbers in March. Dr. Byrne said he would forward the presentation made tonight, as well as the Philadelphia study to the CAC members. Mr. Irvine wanted to do this project. He felt it was beneficial to both parties and was a step in the right direction.

4. GREEN ENERGY FUND LIGHTING PROJECT – CREEK ROAD TRAIL CONNECTOR

Mr. Filasky stated this trail was originally a 2019/2020 project but had been moved up to 2018. It was not fully funded at this time. Mr. Filasky explained that the reason the trail existed was because there were electric lines running down it. The lights would be attached to the existing electric poles and would be a low cost option. The cost was \$10,120.15 including material and time to install the lights. Mr. Irvine asked what the status was of securing the remaining funds needed for the trail. Mr. Filasky answered that this still needed to be determined. Mr. Irvine did not want to make a recommendation from the CAC if the other money was not going to come forward. Mr. Filasky said he would keep them updated. Mr. Hornor suggested that the CAC could commit the money on the condition that the additional funds were secured. Mr. Filasky noted that as the CAC met monthly, it was unlikely this would fall behind. Mr. Irvine felt that they could make a recommendation at the February meeting when they had more information from Mr. Filasky.

Mr. Filasky wished to add that DEMEC needed to be a big partner in the proposal of making Newark a solar city. Mr. Filasky advised that Newark owned part of DEMEC with other municipalities. There was also a power-generating plant in Smyrna and some solar installations including McKees Solar Park. Newark had partnered with DEMEC to make that happen. Mr. Filasky stressed that it was financially beneficial for Newark to include DEMEC. He believed that Newark was approximately 45% of DEMEC. Ms. Smith asked whether DEMEC was planning on getting more involved in solar. Mr. Filasky responded that DEMEC did have a large interest in solar installations. Mr. McDowell noted that there was a State requirement so he was sure DEMEC was onboard with that. Mr. Irvine recalled that DEMEC had presented to the CAC last year and he had felt that their targets were not ambitious enough. Mr. Irvine thought this project may prompt DEMEC to move more progressively. Mr. McDowell recalled that the LED lights had prompted other towns to install LED lights to keep up with Newark. Mr. Irvine agreed.

5. 2017 ANNUAL REPORT

Mr. Irvine asked everyone to send their submissions to him for the Annual Report as soon as possible. He hoped to have a draft Report for the February meeting to review.

6. REVIEW OF PLANNING/DEVELOPMENT REPORTS

There were no comments.

7. OLD/NEW BUSINESS

Mr. Irvine advised that Mr. McDowell had written up the feedback received on Community Day. Due to weather conditions, it was decided that this would be discussed on next month's agenda.

Mr. Irvine thanked Ms. Smith for drafting the first submission to the Newark Post. Ms. Smith said she had spoken to Josh Shannon who had told her the article would be published on 1/12/18. Mr. Shannon had also agreed to quarterly Conservation Corner articles. Ms. Smith said this submission was about the Better Newark Award and she intended to generate some interest in nominations. Ms. Smith noted that Mr. Shannon had asked how long the award had been around. Mr. Filasky answered it had been created in 1986. Mr. Shannon had also asked why it was important for the City to give this award. Ms. Smith had responded that it engaged the populace in issues that concerned the City as a whole and property conservation. Ms. Smith felt it uplifted communities when they saw someone making improvements to their home. It also preserved property values. Mr. Prasad advised that the City website had a page dedicated to the Better Newark Award. Mr. Irvine added that the award raised awareness and showed that conservation and sustainability mattered to the

City. Ms. Sheedy felt it also demonstrated to people what could be done on their properties. It was a model of inspiration. Ms. Smith stated she would pass those statements on.

Ms. Smith suggested that the next article could be focused on the Reforestation Recommendation that would soon come before Council. Mr. McDowell offered to assist in drafting that article. Ms. Campanelli advised that due to the cancelling of the Monday, January 8 Council meeting, she was not sure when the recommendation would go before Council. She said she would keep the CAC updated.

8. NEXT MEETING

The next regularly scheduled meeting is February 13, 2018.

9. ADJOURNMENT

The meeting was adjourned at 8:43 p.m.

Sarah Campanelli
Secretary

/sjc