CITY OF NEWARK
DELAWARE

CONSERVATION ADVISORY COMMISSION
MINUTES

April 10, 2018

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

MEMBERS PRESENT: George Irvine (presiding), Kismet Hazelwood, John Hornor, Bob McDowell, Kass Sheedy

ABSENT: Jason Kramer, Ajay Prasad, Sheila Smith, John Wessells

STAFF: Sarah Campanelli, Secretary

Mr. Irvine called the meeting to order at 7:08 p.m.

1. **APPROVAL OF MINUTES FROM MEETING HELD ON MARCH 13, 2018**

   MOTION BY MR. HORNOR, SECOND BY MS. SHEEDY: THAT THE MINUTES FROM THE MARCH 13, 2018 MEETING BE APPROVED AS RECEIVED.

   MOTION PASSED UNANIMOUSLY.

2. **PUBLIC COMMENT**

There was no public comment.

3. **GREEN ENERGY FUND LIGHTING PROJECT – CREEK ROAD TRAIL CONNECTOR**

Mr. Irvine noted that there was still no estimate from Public Works regarding this project. He stated he would reach out to Mr. Filasky.

4. **DRAFT CONCEPTUAL AGREEMENT – NEWARK SUSTAINABLE PARTNERSHIP**

Mr. Irvine stated that he was pleased Drs. Byrne and Chajes from UD had returned to further discuss the financing of a possible partnership. Dr. Byrne recalled that at their last meeting, he had given the technical potential for the City using both its own rooftops and a partnership with the University. Dr. Byrne advised they were not ready for that partnership, so this presentation would focus on just using City buildings for the purposes of hosting this project. Dr. Byrne explained that he would provide 2 financing models and a partially completed 3rd financing model. He pointed out that he needed further data from the City of Newark to complete the 3rd model.

Dr. Byrne stated the City had a substantial rooftop area that would allow it to do solar projects. This was a small beginning project that could lead to a larger project. The researchers had identified 11 City-owned buildings that had flat roofs. If the City were to use these, it would meet 60% of the State's renewable portfolio

standard. It would meet 100% of the solar carve-out expectation. He noted the City had pledged to reach this target. The project involved a cost of approximately $870,000. Dr. Byrne stated that the City could decide to use the rooftops of the City to generate solar energy, then sell it to the citizens of Newark. The approach lined out by Drs. Byrne and Chajes sold electricity at a lower amount than it was currently sold to customers. Dr. Byrne understood that the City needed a price that could pay for the cost of electricity and other factors to run the government. He stated they had left enough room that there would be an opportunity to sell at a lower cost and still have some level of funding from the project that would go toward funding the City budget. Dr. Chajes mentioned that this project was twice as big as the McKees Solar Park site. McKees was .23 MWp and this project was .48 MWp. The total potential of all flat roofs in Newark, including University and residents, was 83 MWp. Dr. Chajes stated the beauty of this idea was that the City could start the project alone without any partnerships.

Mr. Irvine asked if they could explain the relationship of .54 gigawatt (GWh) a year of electricity consumption for the flat roofs versus the total consumption. He asked whether the total consumption was just from the City. Dr. Byrne said that was just City government consumption. Dr. Byrne understood that $870,000 was not a small number but he thought that the City had an opportunity to expand this to all its citizens and businesses. If the City waited until it was able to involve everyone, it was going to take a while to make that happen. This was a way that the City could lead by using its own buildings and selling green energy to its customers. Dr. Byrne pointed out that the City was currently paying DEMEC for the delivery of energy.

Dr. Byrne advised there were 2 basic models for financing this project. The first involved the City dipping into its own discretionary or capital funds to come up with the $870,000. This was called the direct purchase model. The second model involved taking out a loan from an entity called the Delaware Sustainable Energy Utility. The Delaware Sustainable Energy Utility was created to support the development of energy efficiency and on-site renewable energy throughout the site. This program loaned up to $2 million at a 2% interest rate for 20 years. Dr. Byrne had modeled his approach after what the SEU currently offered to entities like a local government. Mr. Irvine asked if they had run the model on a full loan of $870,000. Dr. Byrne said they had. He stated this was no down payment. He also noted that they could do a hybrid of the 2 approaches. Mr. Irvine felt that doing a hybrid approach would reduce the terms and amount of interest.

Dr. Byrne stated that these approaches had been formed using the System Advisor Model (SAM) which was created by the National Renewable Energy Laboratory. A 2nd software was used which was a propriety software developed by the developer who had done the Longwood Gardens project. Dr. Byrne said that his colleagues had checked the software against each other to ensure that SAM gave an answer that conformed to what the business software found.

Dr. Byrne explained the direct purchase model. He showed a slide with the cash flow 20 years out. He advised that it was after tax because the City was a sovereign entity that did not pay taxes. NREL reported every quarter how much people were paying per unit of capacity installed which was $1.83 per watt. Dr. Byrne stated that solar came in a unit measured in watts peak. This was a good way to benchmark a bid price. He had placed the discount rate at 5% because the City may want to involve a 3rd party from the private sector. Dr. Byrne advised that the State of Delaware had created a law saying that everyone should be working on having a certain percentage of their electricity coming from solar. In order to make that possible, it created a market called SREC (Solar Renewable Energy Certificate). Those who put things on their roof could then sell those SRECs to entities such as Delmarva Power or DEMEC. Dr. Byrne had asked whether the City of Newark could use its own buildings to build a solar plant and then sell those SRECs into this market. The answer was yes. The SEU had its own platform in which it bought SRECs then sold them to Delmarva Power. Dr. Byrne stated there was a problem with that market that they were trying to fix. The problem was that entities

outside the State of Delaware were selling their SRECs into the Delaware market which was driving down the price. There was an effort to fix that. Dr. Chajes noted that last year, all SRECs sold were from out of state. Dr. Chajes also pointed out that McKees was selling its SRECs for around that price. Ms. Sheedy asked if the reason there was uncertainty was because the out-of-state suppliers were charging a very low price that may not be workable for the City. Mr. Byrne said that was correct. Ms. Sheedy asked what the current out of state sales price was. Dr. Byrne stated last year it was $9 an SREC. There was currently legislation to fix that issue.

A member of the public (name not provided) asked what was to keep the state from flooding its own market if out of state SRECs came under state control. Dr. Byrne stated that as a condition of sale in that platform, the Delaware SEU required that the contractors were written into a 20-year contract. This meant that they were guaranteed the price for 20 years. The member asked what the life term of the panel was. Dr. Byrne stated it was 25 to 30 years. He noted that many people had asked what happened if technology improved and it was cheaper than it was today. He said part of the reason why the market was built this way was because it was in the interest of the 3rd party to come in when the market moved in that direction. It was in their interest to take out the old panels and put in new panels.

Dr. Byrne explained that currently Delmarva automatically paid $35 per SREC for years 11-20. For the first 10 years they had planned for $45 per SREC. This was because, before the problem that occurred last year, $45 would win in the mid-sized market that this project would fit in. Dr. Byrne stated the opportunity cost of money was not included and there was no guarantee of savings with the direct purchase model. The 3rd party model would give a guarantee of savings but Dr. Byrne reiterated that they still needed more data for this model. There were no Investment Tax Credit benefits for the direct purchase option. This was the cleanest model. Dr. Byrne stated the City would have to charge its customers 10.87 cents/kWh in order for this project to pay off. The project would be able to pay off the $870,000 in 20 years. If the City needed more money to pay for administrative expenses of government, there was headroom to change that price. Dr. Byrne noted it was still cheaper than what customers were currently paying. They could also put in that contractors from Newark would get preferential treatment.

A member of the public recalled that when it came before Council that energy was being sold at a higher rate, it was viewed as a tax and had to be rescinded. Dr. Byrne clarified this was lower than what energy was being sold at. He stated this was only with regard to the energy being generated on City rooftops. Mr. Hornor asked how much the City paid for electricity. Dr. Chajes stated they were seeking the answer to that question. Dr. Chajes understood that this differential was funding a big part of the City's budget. This would probably decrease the differential. Mr. Hornor believed that electricity paid 50% of the budget. Dr. Byrne said that the City was already paying for alleged green energy in the form of landfill gas. The landfill gas was coming from West Virginia and creating no jobs for the community. There could be local economic benefits by going this other way and Dr. Byrne suggested they may offset the differential. Job Taminiau, a colleague of Drs. Byrne and Chajes, added that another advantage was that the City would have more control over a fixed rate for sale to customers. Mr. McDowell agreed that was a good selling point. Ms. Sheedy felt the most important selling point required the data. She thought the City needed to know what the change in the revenue would be. Mr. Hornor asked how much the City charged for energy from McKees. Dr. Chajes did not think they were separating it out.

Ms. Sheedy asked whether the City was reluctant to share the data that Drs. Byrne and Chajes had requested. Dr. Byrne said they just had not gotten the data yet. Dr. Chajes thought it may be easier to have the CAC request the information. He understood it was a little sensitive. Mr. McDonald felt that DEMEC was not happy about this idea. He felt that DEMEC was running scared that the City would start making its own electricity and not buying from DEMEC. He did not think DEMEC would be forthcoming about anything. Dr. Byrne did

not think they should ask DEMEC for anything. Mr. McDowell recalled that there had been a representative of DEMEC at the last CAC meeting and he had been very pro-DEMEC. Mr. McDowell noted that the City was a customer of DEMEC and not enslaved to buying electricity from them. Mr. Irvine added that the City was a customer and a board member of DEMEC. Mr. Irvine thought that it was possible DEMEC could be the 3rd party financer for this project. Dr. Byrne stated that in this model, the project would pay back in the revenue that it would receive from customers against the cost. It would fully repay everything in 18 years.

The next model was the financing model. This involved taking out a loan. Dr. Byrne suggested going to the Sustainable Energy Utility (SEU). The SEU got its money from many sources but the majority of the money came from Delaware's participation in the Regional Greenhouse Gas Initiative. The Regional Greenhouse Gas Initiative had states pay into a fund to buy the right to release carbon. The price was not high and the project worked well. The state then got money, 60% of which went to the SEU. The state then offered the money to citizens, businesses and public or non-profits entities. The loan was 20 years at 2% per year. The outcome of this model was that the basics stayed the same. He noted there was a debt interest cost that needed to be repaid. He stated the after tax cash flow was the money that was made after the debt and principal were paid. He noted there was not a discount rate yet. They had solved for what price would end up with that discount rate in it so the City was at zero. This involved getting all the money back to pay off the loan, the interest costs and operational maintenances costs without using any of its own capital or discretionary budget funds.

The 2nd model required energy to be sold to customers at 12.98 cents/kWh. This was less than energy currently was being sold for. The base price was currently 14.50 cents, however, if customers used more, they were charged more. This model had a flat rate of 12.98 cents for 20 years. Dr. Byrne thought that businesses would like this concept. Mr. Irvine asked why the cash flow dropped over the years. Nick DiNardo, another colleague of Drs. Byrne and Chajes, advised that there was a degradation factor with the solar panels which meant they were producing a little less electricity each year. Mr. Irvine asked if the operations and maintenance (O&M) increased as well. Dr. Byrne said that was correct and that they increased it 2% per year. Mr. Irvine felt that the install cost was high compared to the O&M cost. He asked if they were based on the same unit. Dr. Byrne said that they were on different scales. He said he would change that. Ms. Sheedy felt it was confusing how the initial loan was laid out on the slide. Dr. Byrne explained it was representing the City taking on debt. Dr. Chajes noted that there could be a hybrid loan/payment done which would change the numbers. Mr. Irvine stated that the CAC had the Green Energy Fund and some discretion over how it was spent. Mr. McDowell wondered if there was a way to discover the trend in DEMEC's prices to compare to a flat 12.98 cents rate for 20 years. Mr. DiNardo pointed out that electricity was a less volatile option than fossil fuels.

Dr. Byrne noted that an important question was how this plan would affect the energy bills of all citizens and businesses. Dr. Byrne showed an illustrative slide. It showed four months with the peak amount of electricity used each month and the average for each hour of the day for the months of February, May, August and November. This had been based on a Department of Energy database. This was built on all kinds of buildings. The DOE had created a database and a way for researchers to project a load profile. Dr. Byrne stated that in February, the high level was much lower than May or August due to air conditioning. Dr. Byrne showed the portions of the energy that would be reduced by PV. Dr. Byrne and Mr. Taminiau explained how they used the DOE data to come to these conclusions. He reiterated that they needed further data from the City. Dr. Byrne stated that based on these illustrative calculations, the City's electricity budget would go to about 14% of consumption being solar with 33% during summer days. This was important because the peak was what set it. 22% of annual day light would be solar. Mr. Irvine thought this was great for only 11 buildings.

Dr. Byrne showed a slide with the data requested by the UD researchers. Dr. Byrne said that they had only asked for the data once but thought the CAC may have more luck asking. He added that they were also working with the City of Wilmington on a similar plan. Mr. Irvine thought they would be able to get this data. Dr. Byrne clarified there was no evidence that this request was being ignored. He just felt that the sensitive information would be better requested by the CAC. Mr. Irvine asked why they needed the DEMEC rates charged to the City. Dr. Chajes answered that they needed to know the differential.

Dr. Byrne advised that for the 3rd model, it was very important to know what the City wanted. The 3rd party developer would take advantage of tax benefits and the ability to substantially lower the cost of the project. The City could not do this. In return, the City should make sure it got some of those benefits. The 3rd model was called the power purchase agreement. The difference between the first 2 that had been presented was that the City would pay back entirely and only from the purchase price of solar energy from the developer. The developer would find a 3rd party equity investor to put money into the project. Their payment would have to do with the tax benefits. Dr. Chajes stated that this was a guaranteed price and the City had to put nothing in. Mr. McDowell asked how long that was. Dr. Byrne said this was a negotiation. Mr. Hornor noted this was no different than the people who paid to have solar panels installed on their roof and had a purchase agreement. Dr. Byrne stated that they would sell electricity to the City after they had taken the tax benefits of lowering the project costs by 30-40%. The member of the public asked how long the tax credit lasted. Dr. Byrne answered that the tax credit was all up front. The depreciation ran for 6 years. There was a 2-year window that a 3rd party could do this.

Dr. Byrne gave the example of the UD Field House. In this case, the 3rd party that came in was Standard Solar. Standard Solar did an 870-kW project, compared to the 480-kW proposed Newark project. Dr. Byrne said that he and his foundation would happy to help write the RFP for Newark. One of the advantages of the power purchase agreement was that once the agreement was signed, it would be a minimum amount of electricity that the provider must provide the City. It also must be a guaranteed price for 20 years. He thought the way to negotiate would be to get a flat price. If the SRECs did not sell, it was not the City's problem but the developer's. There were benefits in the power purchase agreement that pushed most of the risks of the developer's side. Dr. Byrne stated that he had run this model multiple versions of this with varying results. He stressed that they were not reliable until the researchers had data. Dr. Byrne thought it was likely that the rate would come in under 10.87 cents. Mr. Irvine asked if there was a scale. Dr. Byrne did not want to produce overly hopeful results, however, if the 3rd party developer already had 30-40% of the cost gone due to tax benefits, that entity would want to know how Newark would pay them. Newark would sell the energy to its customers. Mr. McDowell felt this was stable for the 3rd party as well. Dr. Chajes felt there was no question that Newark would be able to sell its energy. Dr. Byrne stated that the equity provider for the 3rd party would be looking for more than a 12% rate of return on those tax benefits. Dr. Byrne felt this plan was very stable.

Mr. Irvine felt that if the City could sell electricity at a lower rate than it currently was, Council would be in a good political position. Ms. Sheedy said that was true as long as it did not eat into the revenue stream. Mr. Irvine thought Council knew they needed to diversify because the budget was too heavily reliant on electricity. Mr. Irvine felt that this was giving them a piece of the answer to that issue. It was stable in his opinion. Mr. Irvine thought that option 3 required the City to pay less but noted that they would not have as much control. Mr. McDowell asked how long this program lasted. Dr. Byrne said it was 20 years. Mr. Irvine said that at the end of 20 years, they would renegotiate. Dr. Chajes noted that so much changes in 20 years in the energy market that they may be doing something different. Dr. Byrne said that the inherent interest of the 3rd party was to generate more electricity rather than less. They were being paid cents per kilowatt. If new technology came forward, it would make sense for them to install new panels that would produce more kilowatts. To do this, the City would have to stay on top of the agreement and negotiate.

Mr. Hornor asked how much of the City's purchased electric went to UD. He felt that was a complication because UD wanted to go solar. Dr. Byrne was not sure of the percentage. He noted UD had a 15-year contract with the City. Dr. Chajes thought it may be 20%. Dr. Chajes noted this was why they would like to see a partnership. He understood that trying to balance this relationship was difficult and they were trying to get information to the University administration. He thought what had been proposed tonight was a good starting point. Dr. Chajes acknowledged he did not know where the University stood on this issue right now.

Mr. Irvine said that he had shared this idea with a friend in the alternative energy field and the friend had said that this project would require a change in thinking. Mr. Irvine felt that people needed to understand that there were implications far beyond the numbers and politics. He felt that it went toward threatening vested interests. Mr. Irvine thought that was why DEMEC had showed up at the meeting last month. Mr. Irvine felt that resistance would also happen in constituent situations. Mr. Irvine felt that if the CAC went down this route, they needed to advocate this to their individual Council members. He suggested that they put it out to the public to explain it as he anticipated a lot of resistance and enthusiasm. Mr. Irvine thought this project was not a lot of money and could be used to show the larger benefits of a partnership. He felt this would change the way people thought about UD within the City. Mr. McDowell agreed that Newark should be on the edge of this technology. Dr. Chajes suggested that if the University saw the City moving forward with this idea, they would want to move ahead as well. Dr. Chajes noted that Mayor Sierer had heard about this project. Mr. Irvine felt that once the data they needed was acquired, the CAC could make a recommendation. Mr. Irvine felt that Council would be less of a hurtle than some departments in the City that would feel this is taking away from revenue. Mr. DiNardo felt that this project would draw support from younger people. He felt that it may bring good publicity to UD which would lead to more students in Newark. Mr. DiNardo felt this was a benefit for the City.

Mr. Irvine liked the idea of suggesting that local contractors do the work for this project. Dr. Byrne stated that could be written into the project. Dr. Byrne emphasized that this was a pilot and was not a big project. He felt this was a good way for people to get used to this approach before committing to a larger project. Mr. Hornor felt this was a logical next step after McKees. Mr. McDowell agreed and felt this could inspire other entities in Newark. Dr. Byrne stated that UD was very busy with STAR campus. He thought this may be a difficult time for the University to cooperate with the City on this project. He did feel that the City could greatly benefit from this pilot project.

Mr. Irvine let everyone know that April 25, the University was having a meeting regarding the Newark Futures Project at the Trabant Center from 5:00 to 7:00 p.m. Mr. Irvine said this was the first of a series of conversations between town and gown.

The member of the public asked whether $870,000 was just for installation or whether it included assessments of the buildings or roofs. Dr. Byrne said that they did not know. Mr. Taminiau said that they had evaluated the buildings but had not inspected them physically. Dr. Byrne noted that the tax credit allowed the accounting of part of the re-roofing because it facilitated the solar plant. That was only possible with a 3rd party. Dr. Byrne also noted that engineering and roof inspections could be written into the RFP. Mr. Irvine stated that he would try to reach out and get the data requested by Drs. Byrne and Chajes. Mr. Irvine asked the other CAC members to speak to their respective Council members about this project. The CAC members present agreed this was a project that they were enthused about with many benefits. Mr. Irvine thanked Drs. Byrne and Chajes for presenting this update.

5. <u>A BETTER NEWARK AWARD</u>

Ms. Campanelli advised she had emailed the nomination to all members. The CAC members reviewed the nomination for 815 Rock Lane. Mr. Irvine pointed out this was mostly landscape upgrades. Mr. Irvine asked if there was a photo submitted. Ms. Campanelli said there was not. Mr. Irvine noted there was no solar panel but there were multiple upgrades. He felt they had done a lot of work. The nominator was Marlene Bonn nominating her neighbor.

Mr. McDowell shared that he had gone to Home Depot to investigate where the plastic bags go. He felt that each member should take a store and ask. He said he was having issues getting answers from Home Depot. The stores were supposed to recycle but Mr. McDowell did not think they actually did. Mr. McDowell said that Home Depot also supposedly recycled light bulbs and batteries as well but he was not sure whether that was true. He said the staff had gotten really nervous when he went in and told them he was a representative of the City and asked whether they recycled the bags. Mr. McDowell stated that per the law, DNREC could ask them for the records. His next step would be to go to DNREC and ask for those records.

MOTION BY MS. SHEEDY, SECOND BY MR. MCDOWELL: TO AWARD THE A BETTER NEWARK AWARD TO 815 ROCK LANE.

MOTION PASSED UNANIMOUSLY.

6. REVIEW OF PLANNING/DEVELOPMENT REPORTS

There was no comment.

7. OLD/NEW BUSINESS

Mr. Irvine said that next month there would be more discussion about planning Reforestation Day. Mr. McDowell stated he had started reaching out to the State Forester and other websites with seedlings for a low price. Mr. Irvine asked members to come with ideas for citizen groups they could engage for this day. Mr. Irvine also said he would invite Parks and Recreation Director Joe Spadafino to the next meeting. Ms. Campanelli suggested inviting Parks Superintendent Tom Zaleski as well.

8. NEXT MEETING

The next regularly scheduled meeting is May 8, 2018.

9. ADJOURNMENT

The meeting was adjourned at 9:11 p.m.

Sarah Campanelli
Secretary

/sjc