109 3rd Ave S
Franklin, TN 37064
(615) 791-3217

City of Franklin

Meeting Agenda

Sustainability Commission

Friday, July 12, 2024	8:00 AM	Development Services Room

CALL TO ORDER

CITIZEN COMMENTS (Open for citizens to be heard on any issue or concern, including those related to items on the agenda. Please submit a Speaker Card at the beginning of the meeting if you would like to address the Commission. If you would like to speak on an agenda item, the Chair will hold your comment until the public comment period associated with the item. As provided by law, the Commission shall make no decisions or consideration of action of citizen comments for items not on the agenda, except to refer the matter to the Planning Director/Staff for administrative consideration, or to a schedule the matter for consideration at a later date. Those addressing the Commission are requested to come to the microphone and identify themselves by name and address for the official record. The Chair may restrict the period for public comment, including the length of the public comment period, the number of individuals who can speak and the length of time each individual may speak. When time allows, the standard individual public comment time is two minutes.)

Comments on agenda items may be made in person at city hall or by emailing planningintake@franklintn.gov before noon on the day of the meeting. Emailed comments will be provided to the Commission and included in the minutes, but not read aloud in their entirety during the meeting.

APPROVAL OF MINUTES

1. Consideration Of Approval Of Minutes

NEW BUSINESS

2. 200 kW Solar Expansion Recommendation
3. Bee City USA Next Steps

OTHER BUSINESS

ADJOURN

Anyone needing accommodations due to disabilities please contact the ADA Coordinator at 615-791-3277 at least 24 hours prior to the meeting.

City of Franklin

109 3rd Ave S
Franklin, TN 37064
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Meeting Minutes

Sustainability Commission

Friday, May 10, 2024	8:00 AM	Development Services Room

CALL TO ORDER

Chair Mike Cassity called the meeting to order at 8:00 AM.

Board Members Present: Mike Cassity, Jon Brevard, Keith Gordon, Alderman Beverly Burger, Brian Stone, and Christina Christiansen

Board Members Absent: Eric McElroy, Anna Timme, and Al Pramuk

Staff Members Present: Andrew Orr, Eric Conner, Kelly Dannenfelser, Vernon Gerth, Mark Hilty, and Trevor Hannon

Others: Ron Merville

CITIZEN COMMENTS (Open for citizens to be heard on any issue or concern, including those related to items on the agenda. Please submit a Speaker Card at the beginning of the meeting if you would like to address the Commission. If you would like to speak on an agenda item, the Chair will hold your comment until the public comment period associated with the item. As provided by law, the Commission shall make no decisions or consideration of action of citizen comments for items not on the agenda, except to refer the matter to the Planning Director/Staff for administrative consideration, or to a schedule the matter for consideration at a later date. Those addressing the Commission are requested to come to the microphone and identify themselves by name and address for the official record. The Chair may restrict the period for public comment, including the length of the public comment period, the number of individuals who can speak and the length of time each individual may speak. When time allows, the standard individual public comment time is two minutes.)

Chair Cassity asked for citizen comments. There were none.

Comments on agenda items may be made in person at city hall or by emailing planningintake@franklintn.gov before noon on the day of the meeting. Emailed comments will be provided to the Commission and included in the minutes, but not read aloud in their entirety during the meeting.

APPROVAL OF MINUTES

1. **Consideration Of Approval Of Minutes**

   Sponsors:

   A motion was made by Commissioner Christiansen, seconded by Commissioner Brevard, to Approve the Minutes from the April 12, 2024, meeting. The motion carried 6-0.

NEW BUSINESS

2. **Discussion of 200 kW Solar Upgrades and Expansion**

   Sponsors:

Ron Merville with Energy Source Partners. At the February meeting, the wastewater treatment plant and existing solar power project were discussed to find direction for the projects' future. The existing solar array is 200 kW and has earned $492,112.50 as of October 2021. To date, the earnings are over $550,000. The 20-year contract with TVA ends in April 2032. Mr. Merville knew technology would change and that the contract would need to reflect changes. Energy Source Partners estimate the City of Franklin pays over $1.5 million in energy costs per year to Middle Tennessee Electric for power at the Waster Water Treatment Plant. The solar project helps reduce those costs.

Mr. Merville then displayed the existing solar project projection report and existing solar project carbon reduction benefits. A case study was recently conducted regarding solar demand savings, including savings from multiple organizations, in 2023. The Greenville Energy Authority Solar Savings in 2023 showed a $761,402.22 energy cost savings. In West Tennessee, Solar Flexibility Savings of the Paris Board of Public Utilities displayed $319,204 of demand savings in 2023.

There are two options for the future of this project.

- Option 1: Amend the existing agreement to allow the replacement of the existing 1 acre, 200 kW solar panels with higher producing panels. Benefits of this option include maintaining the existing TVA solar contract with the city, the city's share of 80% of the original 200 kW solar revenue remains, and additional solar power will be directed into the motor control center at the waste water treatment plant. Additionally, the city will also share in the savings and revenue generated by the expansion of all additional solar power.
- Option 2: Amend the existing agreement to improve the existing racking to accommodate as much solar power as possible by expanding the existing site to approximately 3 acres. Benefits of this option include maintaining the existing TVA solar contract with the city, the city's share of 80% of the original 200 kW solar revenue remains, and additional solar power will be directed into the motor control center at the waste water treatment plant. Additionally, the city will also share in the savings and revenue generated by the expansion of all additional solar power.

Mr. Merville asked the Commission to consider amending the City of Franklin and Energy Source Partners contract to include one of the two options he discuessed. This will come at no cost to the city. He believes under the current Inflation Reduction Act, the city can get a 30% grant for this project. The existing solar panels can be reused and donated to the new city hall.

Commissioner Gordon asked if by grants he means credit.

Mr. Merville said it goes to the city as a grant, not a credit, under the Inflation Reduction Act. Energy Source Partners has a specific IRS number that the city would use to obtain the grant. It would be a tax savings on the construction cost.

Commissioner Stone asked for clarification by stating the City of Franklin could pay the upfront cost and get a direct rebate of the 30%.

Commissioner Gordon asked about the financial projects are for the two options.

Mr. Merville said the cost is linear and considered a smaller array.

Commissioner Stone said he believes it would be easy to know the financial projection for the project.

Mr. Merville said they have not taken bids yet for the project and prices will be negotiated down the road. Most projects cost about 1 dollar per watt. The rate of return would be very good. Energy Source Partners hope to use the current contract with TVA and have it amended.

Mr. Orr commented that all power currently generated goes back to the grid but the new option would have all energy up to 200 kW go to the grid and all additional energy would go to the Waste Water Treatment Plant.

Alderman Burger would like to see the costs and benefits detailed and return rates presented to BOMA.

Mr. Merville would like to see the commission move forward and then he would prepare a more detailed cost projection.

Commissioner Stone said he would be interested in seeing the estimated return.

Mr. Merville hopes to use an American made solar company which provides a greater return. He then purposed that a pollinator garden could also be put on site of the new solar project.

Commissioner Christiansen asked questions and stated concerns about the lifespan of the current solar array.

Mr. Merville responded that the current panels have a 25 year lifespan warranty and they have been operating for 12.

Commissioner Christiansen said she doesn't believe the old panels will be used on a new city hall for recyling. She asked how the panels would be discarded or recycled.

Mr. Merville said the EPA is working on solar panel recycling regulations. The current panels are sturdy and would last the full 25 years.

Commissioner Stone asked if the city would get a return for using the recycled solar panels.

Mr. Hilty said yes, but it would take some strategic planning.

Commissioner Christiansen commented that a combination of natural gas and solar panels could be used for the new city hall. She reiterated how citizens might be concerned over how solar panels are recycled.

Commissioner Brevard stated a few companies are currently working on recycling solar panels and using their materials for other technology.

Mr. Merville wanted to update the commission on the project and begin this project before the 2024 elections. He will keep the old panels and use them until city hall is complete. He wants to have a contract and bring this project before BOMA.

Mr. Hilty said he would also like to see the cost of both options at $1.50 per kW.

Commissioner Gordon mentioned that a solar and pollinator project together is a lot easier than people think.

Mr. Merville said that can be decided after an option is chosen.

Commissioner Gordon said planting natural non-invasive species would be great for this project.

Commissioner Stone asked if this project was on a sludge field.

Mr. Merville responded no.

Mr. Orr stated the next Sustainability Commission meeting is in June, when commissioners will decided on Option 1 or Option 2 for the solar array project.

Commissioner Gordon asked for next steps and a timeline for approval.

Mr. Orr said it would be beneficial for Mr. Merville to provide the financial analysis at the next meeting. Additionally, a law approved contract revision will then be prepared before taking the decision to BOMA. The commission would be looking at Fall 2024 for final approval from BOMA.

OTHER BUSINESS

Mr. Orr stated that Bee City USA is on the BOMA agenda for May 14, 2024, at 5 PM and will be presented by staff. He hopes a few Sustainability Commissioners will be available to attend. It will be voted on at the May 28th meeting.

Mr. Gerth shared his appreciation for the Sustainability Commission. He then asked Ms. Dennenfelser to discuss the progress of plans for city hall.

Ms. Dannenfelser stated the plans have gone through an extensive community visioning process. Plans for a new city hall will include demolishing the current building, adding subgrade parking for employees, and building a three-story building on the current site. This will also open up an acre of green space for a community park. Ms. Dannenfelser will be returning in June with a park concept and finalized schematic design.

Mr. Gerth commented that decisions on the plans' progress must come quickly as inflation increases the project price every month. When the second meeting in May is completed, the design team will come before BOMA for additional design recommendations. One design will do with the parking lots and subsurface parking which will support the building and park. Mr. Gerth stated he is coming before the Commission to discuss if a LEED certification should be formally pursued. When the Sustainability Commission was established, the Board adopted a resolution that stated public buildings would be LEED Silver certified unless not financially approved.

Commissioner Brevard asked where offices would be located during the construction process.

Mr. Gerth responded that a transition team has been developed and BOMA has recommended a potential location, First Bank off Columbia Avenue, that will be toured later that day. The intended move in date of the new city hall is Fall 2027.

Alderman Burger said she cares about making the new building energy efficient and believes citizen will want the same thing.

Commissioner Stone asked what the qualifications are for LEED Silver qualifications.

Mr. Gerth said it involves stormwater recapturing, natural light, materials used in lighting and carpet, how much energy is coming into the building, and other factors.

Commissioner Brevard asked how much more, percentage wise, would it cost to be certified.

Mr. Gerth did not have an exact cost but they are working with a design and owners representative team to get a clear amount.

Commissioner Christiansen said engineers at her company are always willing to help.

Mr. Gerth appreciated the sentiment.

Alderman Burger said she thinks the LEED Certification pros and cons should go before the Board.

Mr. Orr discussed that the Franklin Fire Deparment wants to prohibit any EV charging stations in large parking garages. This decision came after a EV charging fire that took hours to extinguish in Fall 2023. The Fire Department will be visiting the commission for more details on their plans.

ADJOURN

A motion was made by Commissioner Brevard, seconded by Commissioner Gordon to Adjourn. The motion carried 6-0.

There being no further business, the meeting adjourned at 9:07 AM.

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Chair Date

Energy Source Partners
Renewable Energy Solutions

Historic City of Franklin, Tennessee 1799

City of Franklin
Solar Photovoltaic Proposal
July 2024

Existing Solar Project

- 200 kW Ground-mounted Solar Array
- Solar Earnings as of October 2021: **$492,112.50**
- Solar Earnings to date in excess of **$550,000.00**
- Existing 20-year contract with TVA ends April 29, 2032
- Public/Private Partnership

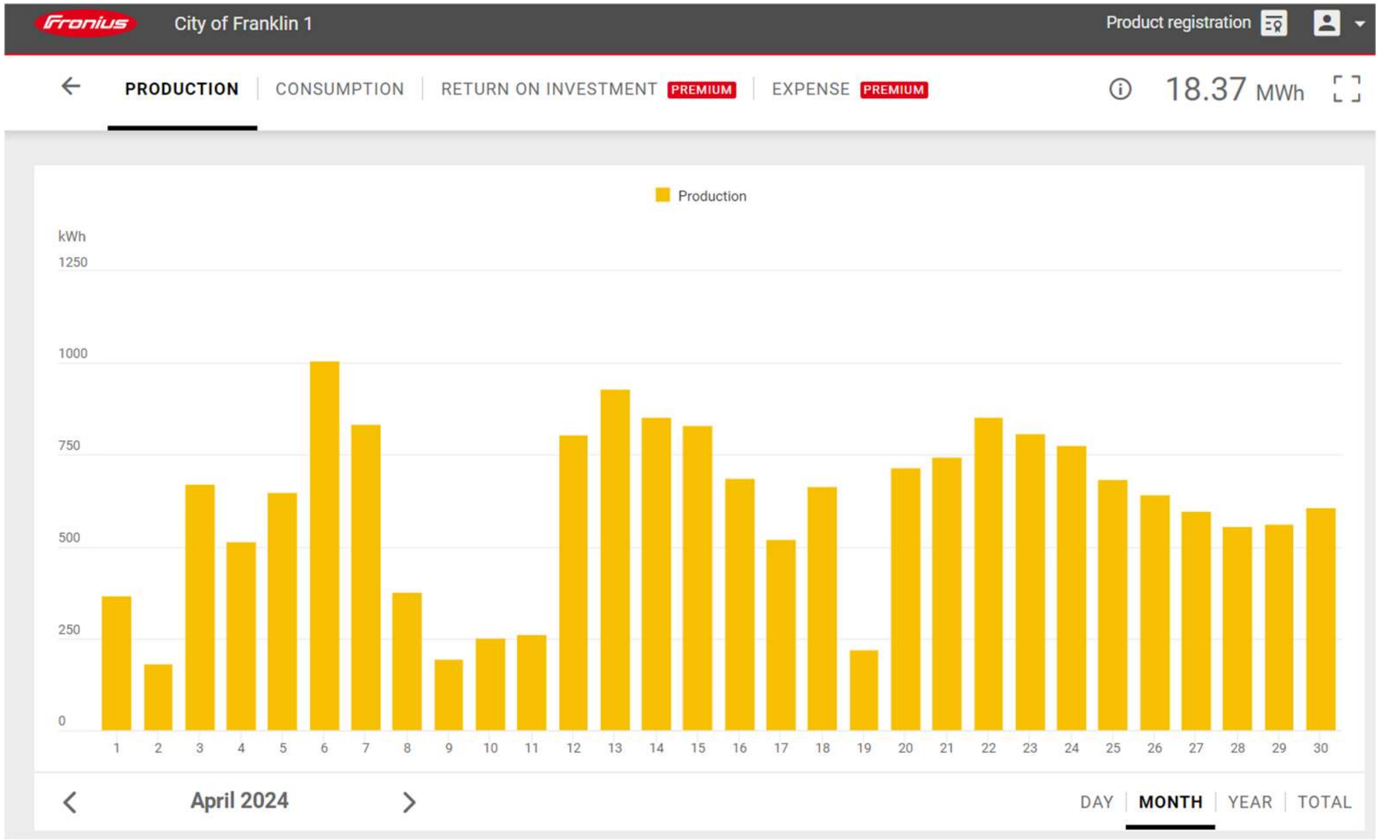
Energy Source Partners
Renewable Energy Solutions

Existing Solar Project

City of Franklin currently pays over **$1,500,000.00** in energy costs per year to MTEMC for electrical power at the WWTP. This Solar Project helps reduce those costs.

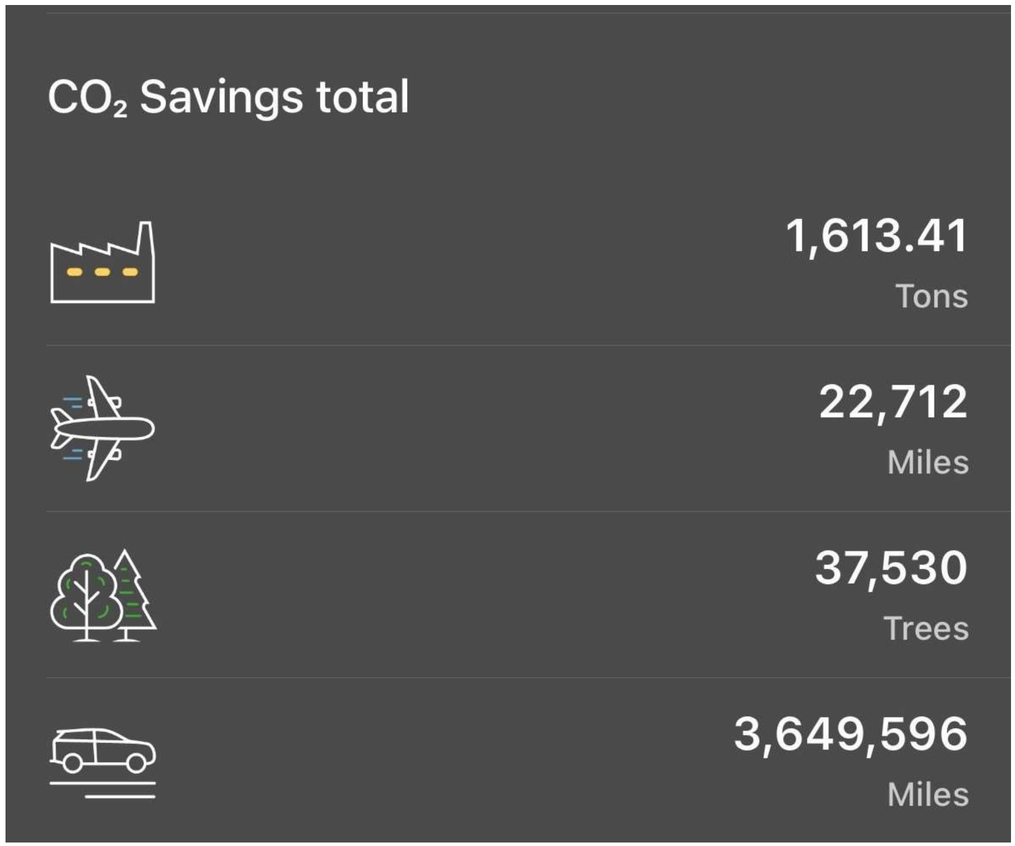
Energy Source Partners
Renewable Energy Solutions

Existing Solar Project Production Report



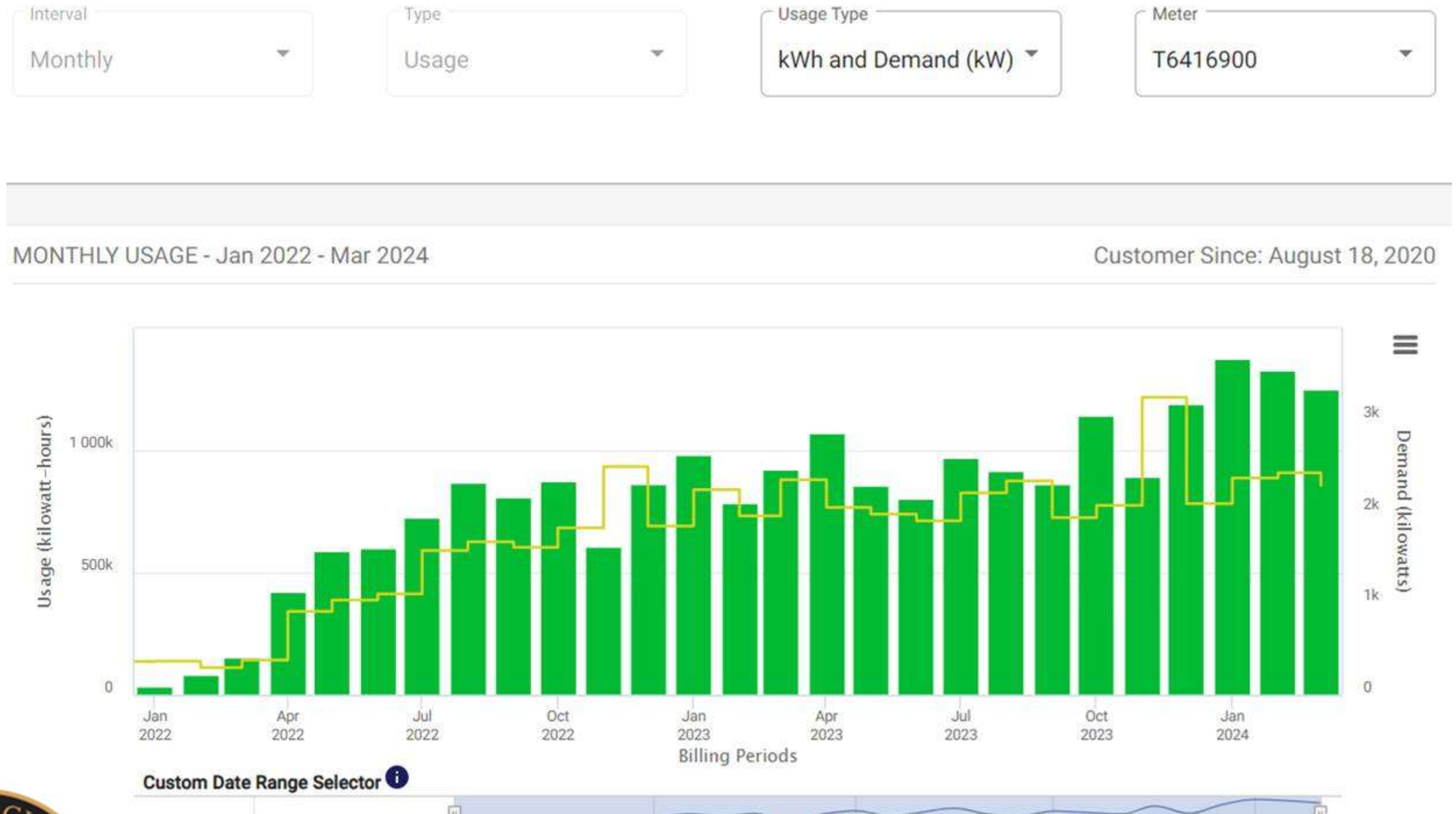
Energy Source Partners
Renewable Energy Solutions

Existing Solar Project
Carbon Reduction Benefits



Energy Source Partners
Renewable Energy Solutions

City of Franklin
Electrical Billing (WWTP)



Energy Source Partners
Renewable Energy Solutions

Battery Storage

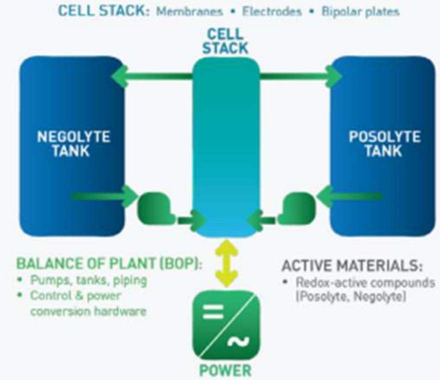
GridStar Flow

FLEXIBLE, LONG-DURATION, ENERGY STORAGE TO ENABLE LOW-CARBON, RELIABLE,RESILIENT ELECTRICITY

GridStar Flow is an innovative redox flow battery designed for long-duration, large-capacity energy storage applications, to address the new, disruptive challenges faced by the electric sector and enable clean, reliable, and secure energy.

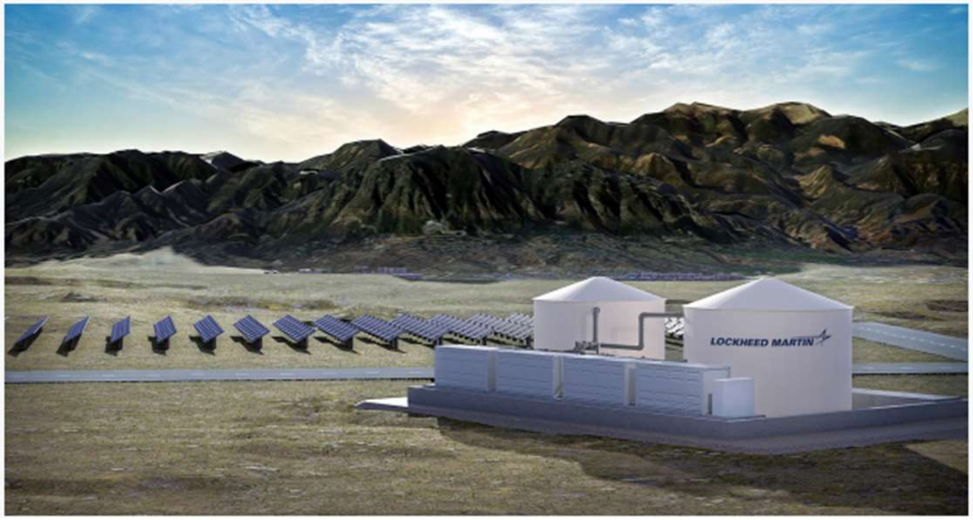
Flow batteries differ from sealed batteries (e.g., lead acid, lithium-ion) in that they separate the power and energy portions of a battery system and allow each to be independently sized. Energy is stored in a liquid electrolyte which is flowed through a stack of electrodes.

Developed in the US, GridStar Flow is based on a novel and protected redox flow battery chemistry that consists of water-based, non-flammable engineered electrolytes made from commonly available materials that enable durability, flexibility, safety and a competitive total cost of ownership.



APPLICATIONS

- Renewable generation bulk shifting (large amounts of energy for many hours)
- Large-scale transmission & distribution deferral
- Peaking unit replacement
- Day-ahead, real-time and ancillary market optimization
- Resiliency, particularly in microgrids, islands, and military installations



ADVANTAGES

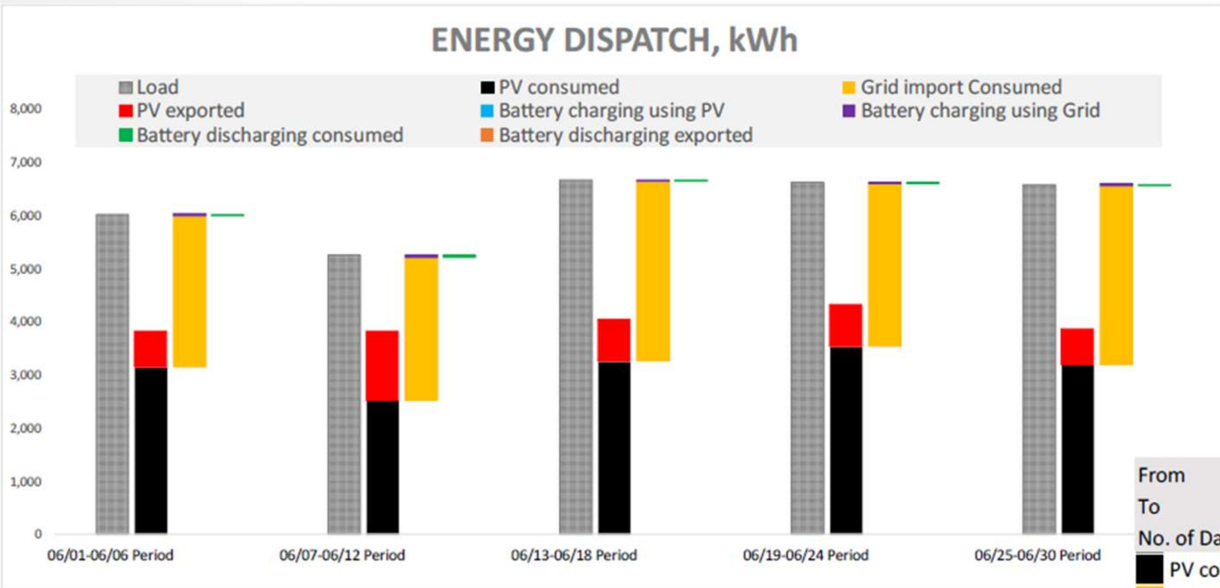
- Designed for daily-cycling and optimized for 6+ hours of flexible discharge
- Flexibility to switch between applications to maximize revenue
- 100 percent depth-of-discharge with minimal degradation
- Design life of 20 years
- Ability to size energy and power independently
- Non-flammable, water-based electrolytes
- Competitive total cost of ownership

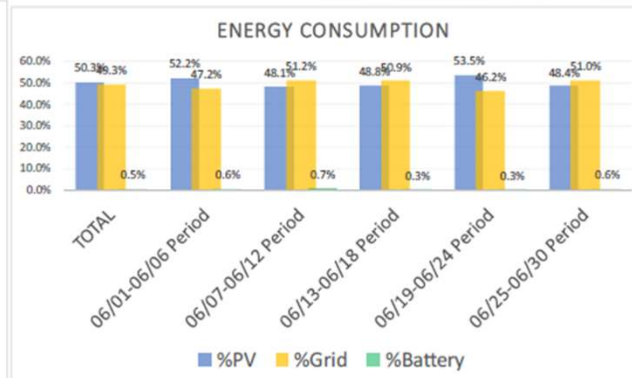
Heila Solar/Battery Report

Performance Report | CED – Franklin Fixtures

Heila

Report Date:	Period:	End User:	Location:	System Description:	Use Case:
07/05/22	06/01/22 – 06/30/22	Energy Source Partners	Cookeville, Tn 38501	120kW PV System 48kWh Battery Storage System	Economic Optimization





	TOTAL	Last Period
From	6/1/2022	6/25/2022
To	6/30/2022	6/30/2022
No. of Days	30	6
PV consumed, kWh	15692.68	3196.30
Grid import consumed, kWh	15385.01	3368.95
Battery discharging consumed, kWh	149.02	36.75
PV exported, kWh	4239.77	676.95
Battery discharging exported, kWh	0.00	0.00
Battery charging using PV, kWh	0.00	0.00
Battery charging using Grid, kWh	219.17	52.57
Load, kWh	31226.71	6602.01

- 19,932 kWh of total solar produced during this billing period
- Solar and storage offset **50.7%** of energy consumption this billing period.

Energy Reduction Plan
Existing 0.2 MW – TVA Contract

- Existing 200 kW Solar Panels to continue production under the current TVA Solar Contract with the City.
- Benefits:
  - The City's share of 80% of the original 200 kW Solar revenue remains the same.
  - The City's share is approximately $2,000/month and will continue until April 2032, increasing approximately 3% per year as power costs rise.
  - Anticipated project income to the City to exceed $216,000 over the next 9 years.

Energy Source Partners
Renewable Energy Solutions

Energy Reduction Plan
Option 1: 1.2 MW Solar Only

- Additional 1 MW of Solar power to be directed into the Waste Water Treatment Plant Motor Control Centers.
- Benefits:
  - Additional revenue and savings will be shared (ESP 80%/City of Franklin 20%) until the project costs are recouped by ESP.
  - Projected savings estimated to be over $10,000 per month. Projection does not include anticipated peak demand savings which are unknown at this time.
  - Total benefits anticipated to exceed the $2,000 per month from the existing 200 kW system plus the City's 20% split from the additional 1 MW Solar Project. The total benefit to the City will exceed over $4,000 per month until the project payoff.
  - Projected revenues for both projects are anticipated to exceed $48,000 per year.
  - Project revenue split will occur in Year 8 or Year 9.
  - Project revenue split will adjust to a negotiated contract rate after project payoff.
  - Option 1 will generate over $432,000 in savings to the City in 9 years.

Energy Source Partners
Renewable Energy Solutions

Energy Reduction Plan
Option 2: 3.2 MW Solar Only

- An additional 3 MW of Solar power to be directed into the Waste Water Treatment Plant Motor Control Centers.
- Benefits:
  - Additional revenue and savings will be shared (ESP 80%/City of Franklin 20%) until the project costs are recouped by ESP.
  - Projected savings estimated to be over $30,000 per month. Projection does not include anticipated peak demand savings which are unknown at this time.
  - Total benefits anticipated to exceed the $2,000 per month from the existing 200 kW system plus the City's 20% split from the additional 3 MW Solar Project. The total benefit to the City will exceed over $8,000 per month until the project payoff.
  - Projected revenues for both projects are anticipated to exceed $96,000 per year.
  - Project revenue split will occur in Year 8 or Year 9.
  - Project revenue split will adjust to a negotiated contract rate after project payoff.
  - Option 2 will generate over $864,000 in savings to the City in 9 years.

Energy Source Partners
Renewable Energy Solutions

Energy Reduction Plan

Option 3: 3.2 MW Solar + Battery

- An additional 3 MW of Solar power to be directed into the Waste Water Treatment Plant Motor Control Centers and a Long Duration Battery System.
- Benefits:
  - Additional revenue and savings will be shared (ESP 80%/City of Franklin 20%) until the project costs are recouped by ESP.
  - Projected savings estimated to be over $45,000 per month.
  - Total benefits anticipated to exceed the $2,000 per month from the existing 200 kW system plus the City's 20% split from the additional 3 MW Solar Project. The total benefit to the City will exceed over $11,000 per month until the project split occurs.
  - City of Franklin's projected revenues for both projects are anticipated to exceed $132,000 per year until the split occurs.
  - Project revenue split will occur in Year 8 or Year 9.
  - Project revenue split will adjust to a negotiated contract rate after project payoff.
  - Option 3 will generate over $1,188,000 in savings to the City in 9 years. This projection does not include the increase in the cost of electricity over time.

Energy Source Partners
Renewable Energy Solutions

Discussion

- Consider amending the City of Franklin/ESP contract to include Option 1, Option 2 or Option 3.
- Begin construction of this project in 2024.

Energy Source Partners
Renewable Energy Solutions

Contact Information

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Energy Source Partners

Renewable Energy Solutions