City of Franklin

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Meeting Minutes

Sustainability Commission

Friday, November 10, 2023 | **8:00 AM** | **Development Services Room**

CALL TO ORDER

Vice Chair Christina Christiansen called the meeting to order at 8:03 AM

Board Members Present: John Brevard, Eric McElroy, Keith Gordon, Al Pramuk, Christina Christiansen, Brian Stone, and Anna Timme

Board Members Absent: Mike Cassity and Alderman Beverly Burger

Staff Present: Kelly Dannenfelser, Tia Holden, Teresa Anderson, Eric Conner, Joe Polenzani, Kevin Lindsey, and Andrew Orr

Visitors Present: David Verner and 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.)

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 Eric McElroy, seconded by Keith Gordon to approve the Minutes from the October 13, 2023 meeting. The motion carried 6-0. (Anna Timme arrived after vote)

NEW BUSINESS

2. **Announcements**

   Sponsors:

3. (8:05 AM to 8:40 AM) Ultium Battery Plant Presentation

Sponsors:

David Verner presented on Gresham Smith, an overview of the battery market, what makes battery plants different, Ultium 2, and the future of battery technology.

Gresham Smith is a full-service architecture, engineering, and design practice, headquartered in Nashville, that has been in business for fifty-six years. They specialize in markets ranging from aviation and healthcare to land planning and environmental affairs. Some of their projects include the Ultium Cells Phase 1 EV Battery Manufacturing Plant in Warren, OH, Phase 2 EV Battery Manufacturing Plant in Spring Hill, TN, and the new Honda Li Ion Battery Plant. Mr. Verner said there is not an energy problem but an energy storage problem. Dams, gasoline, and batteries are forms of energy storage. However, batteries allow other technologies to be viable. Mr. Verner mentioned he was skeptical at first but faced a tipping point after two incidents. The first was with his gas-powered chainsaw that would not start; he then bought an electric chainsaw that was very easy to use. The second was the GMC electric Hummer that goes from zero to sixty in three seconds, which is faster than a Corvette or Mustang. After these incidents, Mr. Verner realized the public buys performance and concluded batteries are a better, more performative technology. There is a strong commitment across businesses to adopt battery technology. Sales projections for electric vehicles are moving up with another large demand wave coming. There are various stages of battery production including mining, processing, cell manufacturing, pack manufacturing, and recycle and reuse. Gresham Smith is deeply involved in cell manufacturing and holds thirty-five percent of the market share. Mr. Verner shared that he has seen many companies, with no experience in EV or batteries, looking to get involved in the production process. This shift is being driven by the Inflation Reduction Act. EV battery manufacturing projects are driving commodity prices and are experiencing higher amounts of inflation due to demand.

Mr. Verner discussed what makes a battery plant different. EV cells can be configured in many different ways. The Spring Hill plant manufactures cells. The main differences in battery plants compared to traditional manufacturing facilities are as follows:

- Ultra low humidity environment, some even as low as less than one percent
- Unique hazards
- Non-US processing vendors, which means most materials come from countries in different time zones, languages, and cultures, leading to difficulties in project design and development
- Major power consumption, Mr. Verner saw one facility that needed 80 Megawatts of electricity, while other projects consume 130 Megawatts of power
- Physical scale, EV Battery Manufacturing Plants are typically 3,000,000 to 4,500,000 square feet, equal to 45 to 65 football fields
- Equipment density, Mr. Verner showed how a battery plant is typically laid out, including electrode production, assembly, and formation
- Speed to market due to high demand for EVs

Ultium 2 is a Battery Cell Manufacturing Site in Spring Hill, TN. The plant is 165 acres, costs 2.2 billion dollars, and will create more than 1,300 new jobs. Mr. Verner explained the number of HVAC systems to keep humidity down and the general layout of the facility. The building prioritized life safety and building safety. The building has a central spine, running along one side of the building, that serves as a protective wall that employees can use to exit the building. Mr. Verner's team researched and mapped out specific paths for employees in the event of a fire. The manufacturing plant also includes a fire command center for firefighters to see what is happening in the building during an emergency. Lastly, there are sprinkles, smoke detection, volatile chemical detection, and gas detection systems. There are many products being developed to help mitigate hazards.

John Brevard asked how battery fires start. Mr. Verner explained they are typically manufacturing defects. A cell could be punctured, electricity could short circuit, but overall these fires are rare. Battery fires are much fewer than gasoline fires.

Technology is changing rapidly and the design process is always improving. Mr. Verner briefly stated that dry mixing could potentially be a new way of developing batteries. There is also an Iron Phosphorus battery that is less energy dense but more

stable. All of these new technologies are to increase safety. Battery technology is easier to build and easier to maintain than traditional technology. EVs have better performance and more torque but require more electric infrastructure and charging time. Grid demand is another concern with developing battery plants and increased demand for EVs.

Mr. Verner believes the future of power generation is small, modular nuclear reactors. This approach may take another five to seven years to implement due to the regulatory environment. He hopes to see a bipartisan agreement on implementing this form of power generation.

Batteries are at a point where they can compete with gasoline and are creating a completely new industrial ecosystem for the U.S.

Eric McElroy asked about hydrogen-powered vehicles. Mr. Verner used to believe hydrogen was the future. However, investor pressure has pushed for batteries. Hydrogen would be more difficult to distribute, unlike gas stations or charging stations. He believes it could be a parallel technology used for tractor trailers and locate fueling stations in major cities.

Anna Timme asked if the battery plants have backup generators. Mr. Verner answered with no, since the power demand is too high.

Anna Timme asked, in relation to sustainability, what drivers the industry has to reduce its carbon footprint. Mr. Verner said this is spearheaded by customers. Minor source air permit in Spring Hill. The plant is powered up in a way to keep emissions below the permitted levels. Water from the plant is easily taken to a municipal water plant for reuse. Overall, air and water emissions from battery plants are low except for the high energy demand. The main goal is to drive down energy consumption.

Anna Timme asked, as customers are pressuring manufacturers for lower carbon emissions, is there an offset strategy for carbon-free manufacturing outside of small nuclear reactors? Mr. Verner responded that there is no specific strategy. He discussed one client who asked for carbon-free manufacturing. If solar was used, it would take 565 acres of solar panels to power the battery manufacturing plant. It was not logical to cut down a forest for a carbon-free manufacturing plant. He believes small nuclear reactors are the only way to go.

Mr. Verner then discussed the recyclability of EV batteries. When an EV battery is no longer useful, it is still a good battery, but does not hold as good a charge for the vehicle. One idea for recycling old batteries is placing them in shipping containers and using them for temporary backup power at large facilities.It could also be used for peak shaving. They can then be repurposed for home backup power.Finally, batteries will have their rare metals extracted and recycled.

John Brevard asked if the manufacturing process has robotics. Mr. Verner responded that the manufacturing process is highly automated, so there is a lot of robotics involved. There are still jobs in manufacturing, but companies cannot find people to do the jobs. Robotics allows the gaps to be filled.

John Brevard asked if there is any on-the-job training or formal training. Mr. Verner stated there is training, but he is not familiar with the specifics. He advises young people to attend a two-year Tennessee College of Applied Technology program, get a certificate, and then apply for jobs in manufacturing.

4. (8:40 AM to 8:55 AM) Future Options for 200 kW Solar Project

Sponsors:

Ron Merville with Energy Source Partners will attend the next formal Sustainability Commission meeting for further discussion.

Mr. Merville did a brief overview of the 200 kilowatt solar project at a local waste water plant. It sits on an acre of land leased by the City of Franklin. The project includes a power purchase agreement between Energy Source Partners, Tennessee Valley Authority, and Middle Tennessee Electric. They will ask the city to amend the contract. Energy Source Partners want to replace and improve the current solar panels to create more energy. Mr. Merville proposes keeping the current contract with the Tennessee Valley Authority, which includes 80 percent of the revenue given to the city. The contract has made over

$160,000. The city could make more money with panel improvements. They will ask the city if additional power can be tied into a building near the waste water plant. Energy Source Partners is defined by the State of Tennessee as a private utility and pays all regular taxes.

5. **(8:55 AM to 9:00 AM) Approve 2024 Meeting Schedule**

Sponsors:

A motion was made by Al Pramuk, seconded by Keith Gordon to Approve the 2024 Sustainability Commission Meeting schedule. The motion carried 7-0.

OTHER BUSINESS

Brian Stone asked if anyone was aware of the Brownfield Investment Act passed by Tennessee. Starting in January, applications can be submitted for up to $20,000 to conduct brownfield studies. This includes a 5 million reoccurring fund that grants up to $500,000 for brownfield reinvestment.

Eric Conner gave an update on the EECBG project. Applications were released last Monday, November 6 2023. The deadline for applications has been extended until March 2024

ADJOURN

A motion was made by Al Pramuk, seconded by John Brevard to Adjourn. The motion carried 7-0.

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

Chair

1/12/24
Date