ITEM #:	**3**
DEPT:	**ELEC**

Staff Report

SOLAR ENERGY PROJECT AT AMES MUNICIPAL AIRPORT

April 21, 2026

BACKGROUND:

The City's Electric Services Department is capable of providing electricity to over 28,000 customers through a combination of the utility's own boilers and combustion turbines, market purchases, as well as Purchased Power Agreements (PPAs) that provide fixed terms for the purchase of electricity from outside entities.

Currently, the utility is engaged in two PPAs:

1. A PPA with NextEra Energy Resources (d/b/a Garden Wind LLC) for wind energy. This contract provides 36 MW of capacity from a wind farm located in northeast Story County. Of this amount, 6 MW is passed through to Iowa State University and the City receives the benefit of the remaining 30 MW. The agreement provides for energy to be sold to the City through February 2030. This agreement, when considering its unique "take or pay" provisions, costs approximately 8 cents per kWh in FY 2025/26. This translates to approximately $5.6 million annually.

2. A PPA with Forefront Power for a community solar farm located on City property north of the Airport. This agreement was entered into in July 2019, and the 25-year initial term expires in 2044. The solar farm is 2.2 MW in size. The energy produced is purchased by the Electric utility at 5.9 cents per kWh. Most of this energy is not a direct to the Utility because it is credited directly to customers who have elected to purchase power packs.

The constructed capacity of 32.2 MW from these two projects, when adjusted by MISO to calculate their contributions towards the utility's capacity obligations, results in credit of 6.8 MW of capacity.

With the knowledge that the PPA for wind energy expires in 2029, combined with the City's aspirations as outlined in the Climate Action Plan, the City sought proposals from renewable energy projects in 2024. Unfortunately, no proposals were received. Staff learned that this lack of interest was in part due to the fact that most utility-scale projects had a buyer involved prior to the development of the project rather than reserving some of the capacity for sale to other entities after construction has occurred.

To address this new understanding of the market dynamics, staff identified a developer with a track record of implementing utility-scale projects. In March 2025, the City Council approved a letter of intent with Ames Greenfield Development Co., a subsidiary of Callaway Energy Development, to identify a viable renewable energy project suitable for the utility to invest in. Initially, this effort was focused on securing a wind energy project. However, during 2025 it

became clear that there were few, if any, viable wind projects that the City could invest in. Most such projects were committed to other utilities. Therefore, the developer began evaluating the potential for a utility-scale solar project.

Following a review of potential sites, the developer identified properties owned by the City adjacent the James Hermann Banning Ames Municipal Airport as a preferred location for a project. A solar development firm, Recall Strategies, was identified as having interest in constructing a project. Ames Greenfield LLC is a Special Purpose Entity (SPE). The SPE will hold the assets of the solar project. The SPE is owned by Callaway Energy, LLC, which is the development arm of Recall Strategies.

PROJECT CONCEPT:

The concept for the solar project being proposed by Recall involves the installation of up to 24.9 MW of solar panels. Projects larger than this size would require an Iowa Utilities Commission approval process that would delay the project and cause the loss of essential federal tax credits that are being relied upon to make the project financially viable.

Up to 165 acres of Airport property would be utilized. The solar panels would be divided into as many as seven separate zones situated in areas of the Airport property that are currently part of the Airport farm operation. Most of these potential zones are in areas that are unsuitable for other types of development due to the potential for conflict with Airport operations. The solar panels would tilt to follow the path of the sun throughout the daylight hours, maximizing the potential for energy production.

One advantage of the arrangement and location of the project on the Airport property is the possibility for the Utility to take the energy at the distribution voltage, which avoids a lengthy study process by MISO. The energy would be delivered to the Electric Utility at a fixed price for a period of 20-25 years, depending on the terms negotiated under the PPA.

Recall has preliminarily estimated that the price per kWh would be near 7.65 cents per kWh over the 20-25 year life of the agreement. It is important to note that this figure would adjust and be finalized once further development steps are taken, such as performing engineering analyses and identifying the specific equipment to be installed. However, once the PPA containing the price is agreed to, the price would remain fixed.

Additionally, it is important to note that the estimate of the pricing is dependent on Recall being able to meet key deadlines to secure federal tax credits for solar production. Without these tax credits, the price under the PPA would increase by approximately 30%, making the project significantly less financially viable. Further discussion regarding the timing of these deadlines is provided below.

AGREEMENT OVERVIEW:

The project would require that the City lease portions of the Airport property to the developer for the evaluation, installation, and operation of the solar project. This agreement would simply provide the developer the right to complete the project if certain conditions are met, and it is this agreement which is critical to complete soon if the project is to move forward and qualify for the tax credits.

A separate Power Purchase Agreement would need to be negotiated later by the City and the developer to establish the terms for the purchase of the energy by the Electric Utility.

It is anticipated that the lease is structured as a **revocable** lease-option agreement, containing several separate phases.

1. The **Development Phase** would allow Recall to enter the property, perform geotechnical analysis, surveys, and other studies, and commence civil and electrical design work. This phase would include the completion of necessary FAA studies for the project.

   It is this phase that is the most time-critical. In order to qualify for tax credits, Recall must demonstrate to the IRS by July 4, 2026 (the "Safe Harbor" Deadline), that it has secured the lease option and has begun physical work of a significant nature on the project (completing approximately 100 laborer-hours and $100,000 of work). Once Safe Harbor for the tax credits has been secured, Recall would finalize its cost per kWh and the City would enter into negotiations for a PPA.

   It is important to emphasize that the risk for these investments lies entirely with Recall. The City would be under no obligation to pay for Recall's due diligence or its preliminary construction costs necessary to meet the Safe Harbor provisions. Additionally, the City would be under no obligation to agree to the PPA. If the terms of the PPA are unacceptable, in the City's sole determination, the lease option agreement would terminate. Additionally, the agreement would be structured to prevent Recall from building the solar farm and selling the electricity to any entity other than the City of Ames.
   One major issue yet to be resolved is that it is unknown the manner in which the solar project will interconnect into the Electrical utility's distribution network. This will need to be evaluated further by Electric Services staff during the Development phase. If it is not possible to connect each of the seven separate solar zones into separate distribution lines, then the Electric Utility may need to incur expenses to construct a larger feeder line between the solar project and the Vet Med substation. This is not City staff's preference, as it results in additional costs for Electric customers. More work will be necessary to determine the manner in which the interconnection(s) can take place.

2. The **Construction Phase** would commence once the Development Phase has concluded, and only after Ames and Recall are able to negotiate a successful PPA. It is anticipated that equipment procurement would take place in 2027 and construction would occur in 2028.

3. The **Operational Phase** would begin on the date the project enters commercial operation and begins delivering energy, which is expected to be in late 2028. This phase would extend for 20-25 years, depending on renewal periods.

Each phase of the agreement has the potential to impact the City's existing lease with a tenant farmer for agricultural production at the Airport. **Therefore, the agreement must contain provisions to pay for crop damages and loss of Airport revenues that may occur during the Development or Construction phases.**

Additionally, a rent amount will need to be determined to reimburse the Airport for the

use of the land during the Construction and Operational phases of the project. It is important to note that as the rent amount owed by the developer to the Airport increases, so too does the amount the Electric Utility will pay the developer for the purchased power.

FINANCIAL ANALYSIS:

The cost of the energy that is ultimately purchased through this project is added to the blend of other purchased power, transmission, and fuel used by the utility's own generating assets, ultimately reflected on customer bills through the Energy Cost Adjustment (ECA). The ECA is calculated monthly on a rolling 12-month basis and is either a credit or additional cost on a per-kWh basis for each customer's energy consumption. Because of the ECA mechanism, the costs of entering into a PPA for this project would not affect the adopted rates. However, these additional costs will be incorporated into the ECA and reflected on a customer's total electric bill.

Because the proposed project has no competitive proposals to analyze, a key question is whether the potential financial terms for the solar project are reasonable, competitive, and a good value for the Utility. In the absence of direct comparisons with competitive proposals, costs can be compared with: 1) other solar PPA projects in the market, 2) MISO market energy pricing (with caveats), and 3) pricing from the City's other PPAs and generating units.

Solar PPA Pricing within MISO - Data from the Lawrence Berkeley National Lab (https://emp.lbl.gov/pv-ppa-prices) shows that solar PPA pricing (excluding battery storage projects) in the MISO market from 2013 to 2024 ranges from 2.4 cents per kWh to 11.3 cents per kWh, with average pricing of 4.5 cents per kWh (in 2024 dollars). If only projects between 15 and 25 MW are considered, the average pricing rises to 5.7 cents per kWh. It is anticipated that average prices for solar projects are rising as the federal tax credit deadline approaches.

MISO Market Pricing - Ames can purchase energy from MISO through transmission lines. MISO's average on-peak energy price over the most recent 12 months has been 4.0 cents per kWh.

In comparison, the estimated cost of 7.65 cents per kWh for this new solar energy source would be 90% greater than the average on-peak MISO price. **However, unlike other comparisons, MISO prices have no long-term stability since these prices change hourly.** MISO prices are expected to rise at least 3% per year, according to analysis from the City's consultants. Therefore, these prices should not be used as a direct comparison to a fixed-price PPA.

Comparison with Other Ames Generation Resources - The utility's two natural-gas fired baseload generating units (Unit 7 and Unit 8) can produce energy at approximately 4.2 cents per kWh. A 20-year solar energy PPA with Forefront started in 2020. This solar farm is 2.2 MW in size and has a fixed price of 5.9 cents per kWh.

A PPA with NextEra Energy started in 2009. This wind farm is for 36 MW and has a variable price. In the most recent year, pricing was approximately 8 cents per kWh. This PPA is set to end in February 2030. A comparison between the expiring wind PPA and the preliminary estimates for the Airport solar farm is provided below:

PROJECT	FUEL	ANNUAL MWH PRODUCED	$/MWH	ANNUAL COST	% of Ames Load
NextEra PPA	Wind	70,195	$79.70	$5,594,542	11.69%
Recall PPA	Solar	52,350	$76.50	$4,004,756	8.8%

STAFF COMMENTS:

There are a number of issues that must be resolved if the City Council wishes to pursue this project further.

LEASE AGREEMENT:

Foremost among the issues is the preparation of an agreeable revocable lease option agreement. To secure the 30% Investment Tax Credit from the Federal government, a project must achieve "safe harbor" status by July 4, 2026. If Recall fails to secure the lease and make the necessary financial investments prior to this date, then the credit goes away and the project would see a 30% increase in cost. **Coming to agreeable terms prior to the looming safe harbor deadline will prove to be a challenge.**

City staff and Recall have had preliminary discussions about provisions for a lease. Entering into revocable lease agreement will not obligate the City to move ahead with this solar project. This agreement will make it clear that if for any reason the City decides not to sign a Power Purchase Agreement, the land lease will be terminated with no financial obligation on the part of the City. **However, arriving at an agreeable lease in a timely fashion will be a substantial undertaking.**

Recall has indicated that May 12 is the latest feasible date to enter into the agreement in order to complete the due diligence and begin physical work of a significant nature as necessary to demonstrate that it has met the Safe Harbor deadline of July 4, 2026. Therefore, on April 28, the City Council would need to set May 12 as the date of hearing and approval of this agreement. **It is not likely that the lease will be negotiated to staff's satisfaction until shortly prior to the May 12 meeting where approval is requested. Therefore, the Council will have little opportunity to review the agreement's terms prior to being asked to approve it.**

AIRPORT OPERATION IMPACTS:

As part of the lease negotiations, one of staff's concerns is ensuring that the areas made available for solar installation allow the City to meet any existing or future FAA obligations imposed upon the Airport. In addition to meeting FAA's approval prior to construction, the City must maintain the ability to remove certain infrastructure if the FAA determines in the future that doing so is necessary for operations. **The potential for FAA obligations adds risk and uncertainty to the solar project, which staff expects will translate to increased solar PPA pricing.**

ELECTRIC DISTRIBUTION INTERCONNECTION:

Another significant hurdle is the ability of the Electric Utility to connect this size of a project into the utility's distribution system. A full buildout of 24.9 MW would require a substation to incorporate the energy into the system. A planning-level cost estimate for a substation project would be $4 million, which would likely be a direct cost to the Electric utility rather than being incorporated into the PPA cost.

Without a substation, staff anticipates that the size of the solar project would be limited to approximately 12-14 MW. This, however, relies on constructing a large electric feeder to the nearest substation. Because of Airport operations, this large line would need to be buried, adding to costs. An initial estimate of the cost to pursue this approach is approximately $2 million, again a direct utility cost. Short of pursuing these capital-intensive options, the utility would only be able to absorb perhaps 2-4 MW of solar development without the construction of major infrastructure.

The sizing of the project would ultimately need to be determined after the lease option has been signed, but before the PPA has been agreed to. Although the technical issues are likely capable of being resolved, it must again be emphasized that the costs necessary to resolve them, plus costs to compensate the project's investors for uncertainties that exist in the future (e.g., FAA requirements), will increase the price the Utility ultimately pays for the energy. How much the price increases can only be known through more study and negotiation prior to the approval of a PPA in the fall.

If the prospect of an increased price and/or a smaller project is unsatisfactory to the City Council, then the Council may wish not to pursue the project any further. City staff has emphasized to Recall that the Utility's top priority at the moment is the New Thermal Generation project to install replacement capacity for the Power Plant. That project is critical to meeting our obligations to MISO for sufficient capacity to meet our customer demand.

Although Recall has expressed a willingness to invest its staff's time in preparing documents and performing studies to relieve City staff's burden, this solar project will still require substantial City staff time to complete. If the Council wishes to proceed with the project negotiation, it should indicate so at the workshop. Staff will then proceed with setting the necessary hearing date for approval of the lease option agreement.

ATTACHMENT(S):