



Pile driving preparation for the substructure assembly



Pile driver



Pile driving profiles



Rack mounting



Assembly of PV modules

# Stettler Solar and Storage Project Construction Stages



Transformer station



Commissioning of the inverter



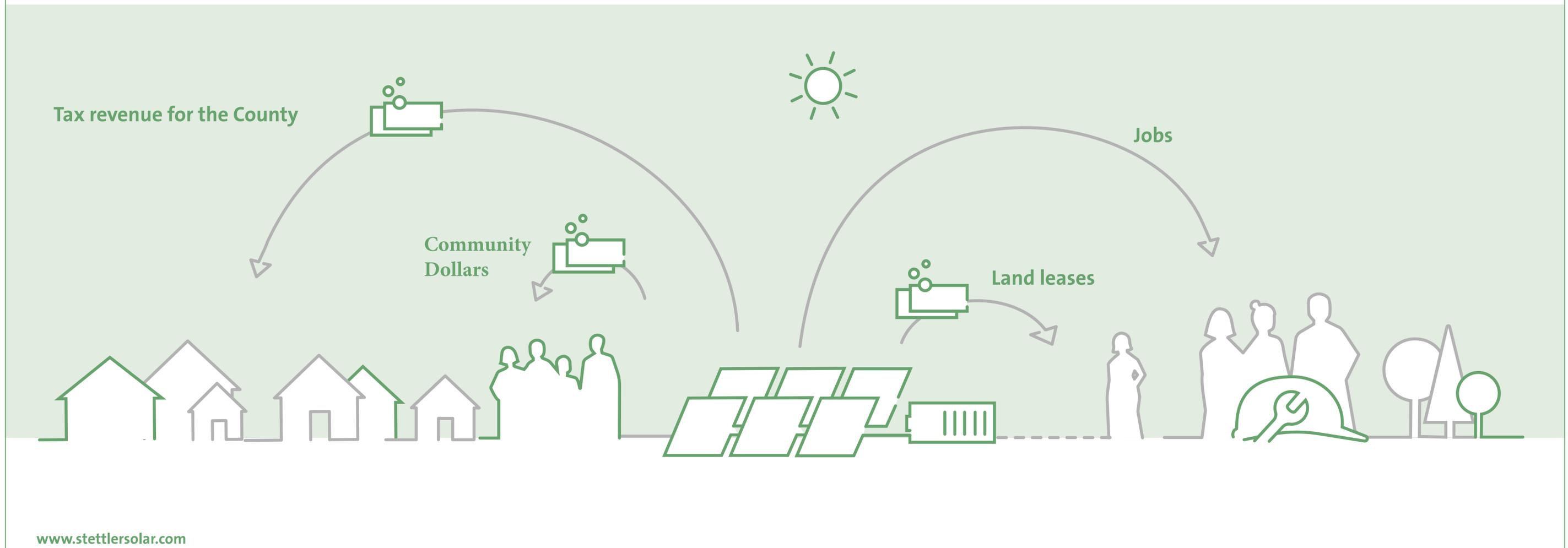
Inverter



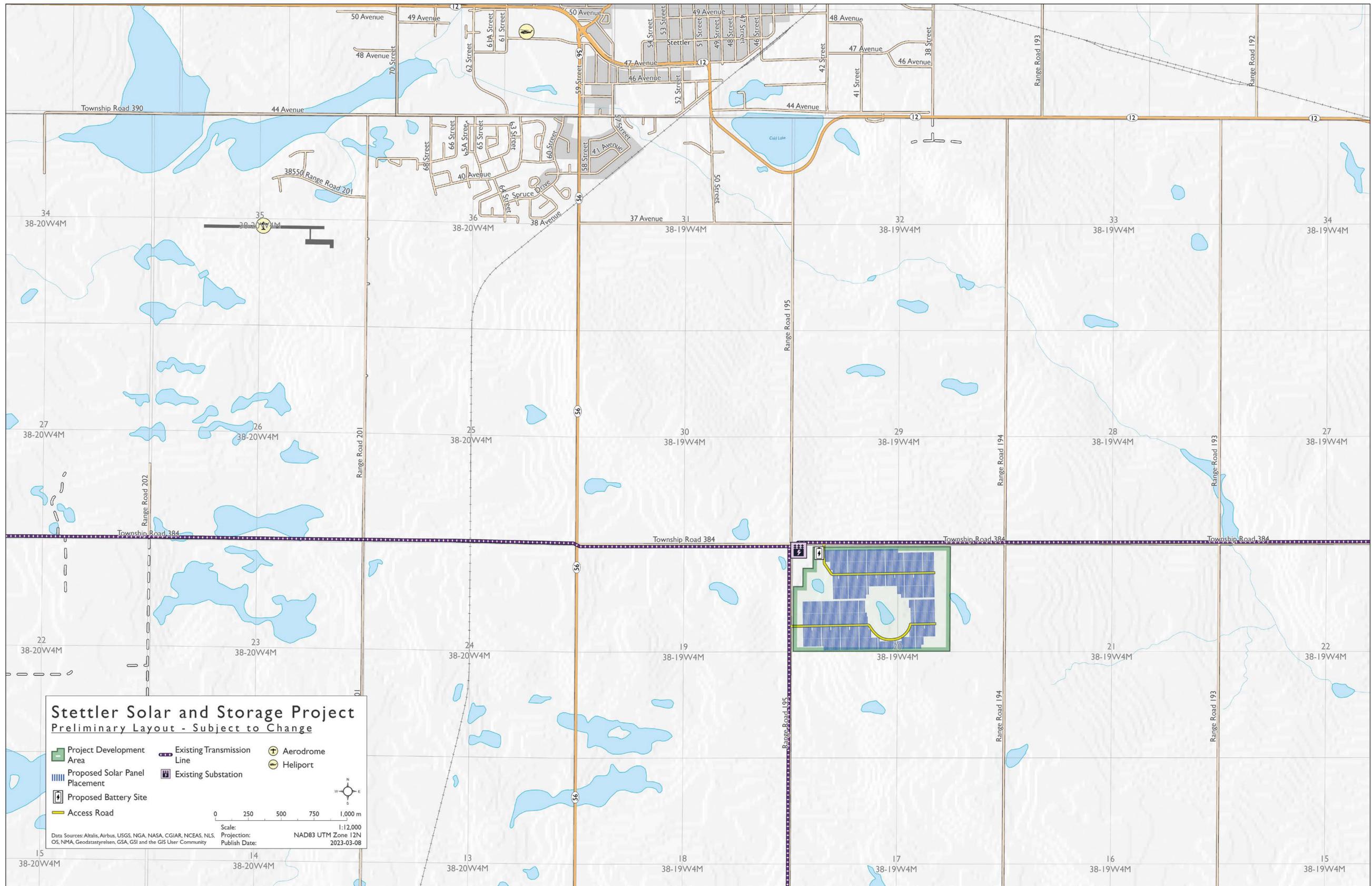
Completed solar project

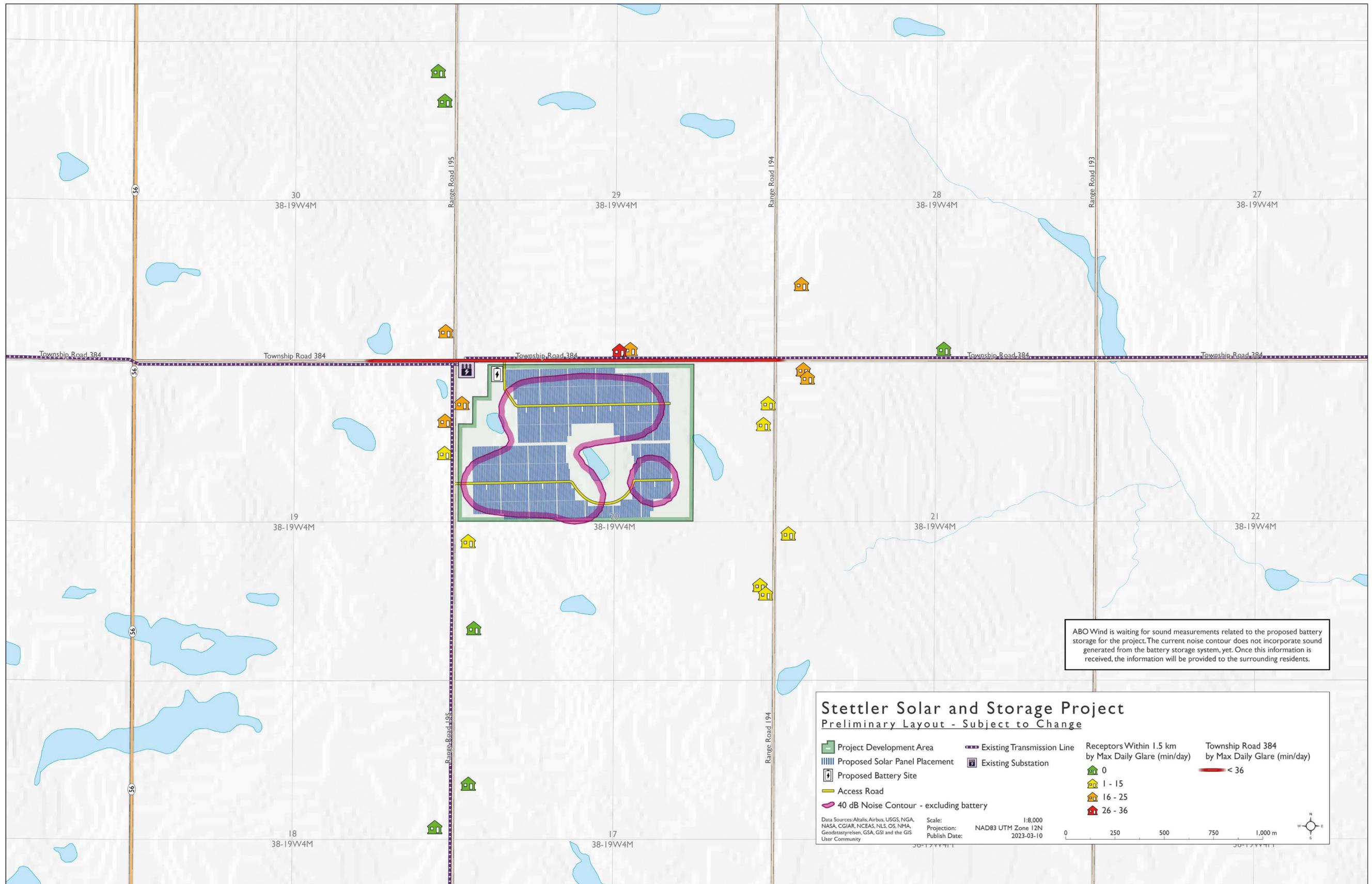
ABO commits to creating a lasting positive impact in the communities where we develop renewable projects. ABO's Local Economic Benefit Policy provides preference to those individuals and entities that are local to the Stettler area. The Project will generate the following positive benefits for the surrounding community:

- Tax dollars in the millions for Stettler County
- Estimated \$1-2 million of contracts/revenue to local Stettler goods and service providers
- 80-100 employment opportunities for an estimated 15-month construction period
- Estimated \$3 million of revenue to Alberta companies
- Project Funds to support local organizations and initiatives



# Stettler Solar and Storage Project Map

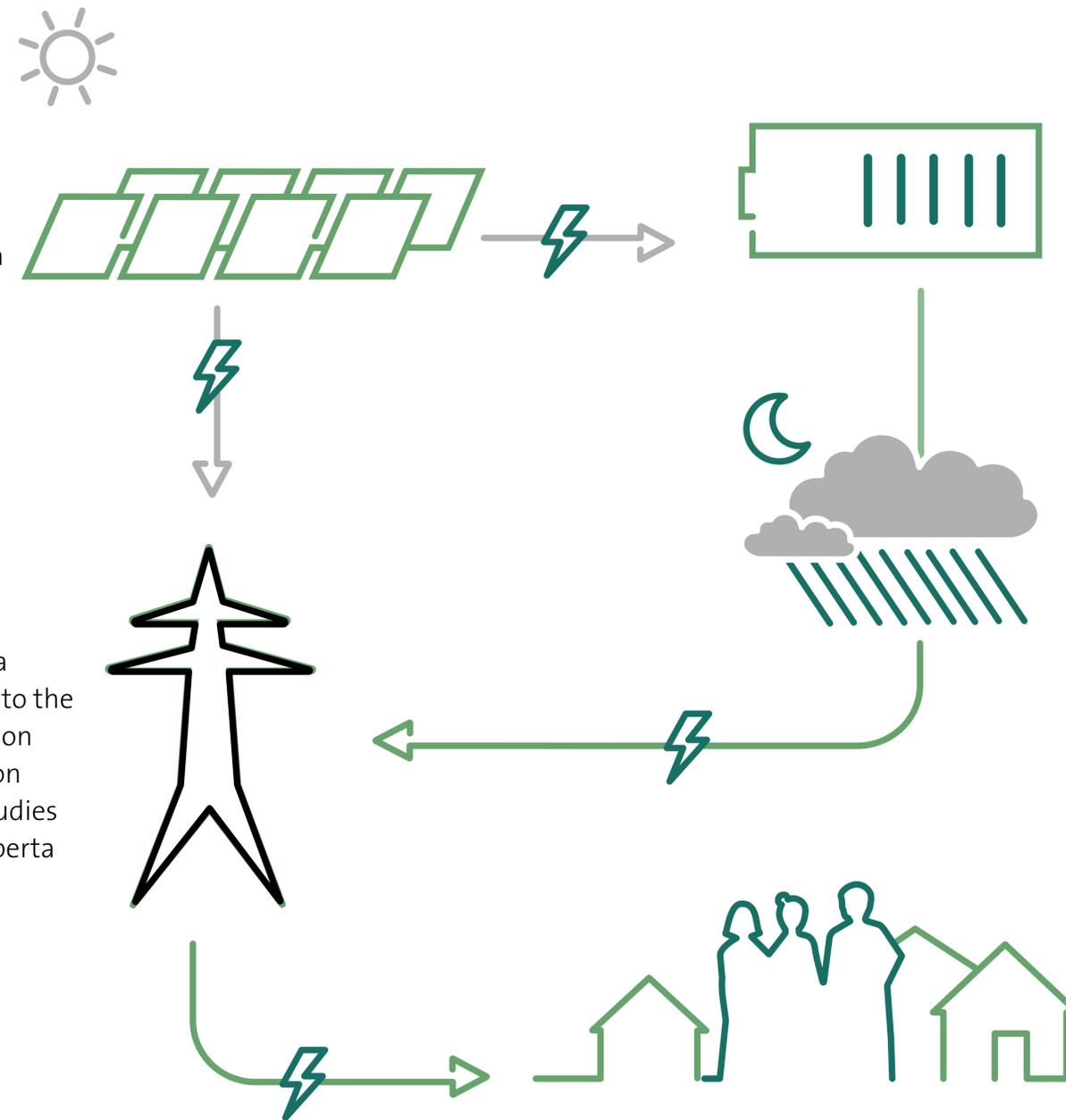




# Stettler Solar and Storage Project The Project at a Glance

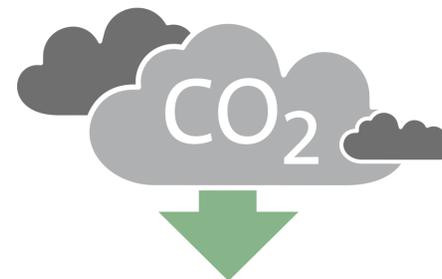
**Photovoltaic (PV) Panels** - Approximately 72,000 PV panels will be used to convert sunlight into electricity. The Stettler Solar and Storage Project has a capacity of 34 MW. The approximate \$160 million project would export up to **25 MW of capacity** to the Alberta electricity grid.

**Interconnection** - ABO Wind will look to connect the Project to the grid via a distribution line that will link directly to the Stettler 796S substation. The substation is owned by the local DFO (Distribution Facility Owner), ATCO Electric. Grid studies are ongoing with the DFO and the Alberta Electric System Operator (AESO).



**Energy Storage/Battery:** The proposed **(16 MW/48 MWh)** battery will store electricity in periods of excess generation from the solar site and discharge the electricity to the grid during periods of high demand. This allows for shifting the renewable energy generation to times when it is most needed. The inclusion of storage will also allow for more penetration of intermittent renewable resources.

The Project would provide a cost-effective source of enough clean energy for approximately **10,000 homes** and will contribute to Alberta's increasing percentage of renewable energy generation.



The Stettler Solar + Storage Project would displace approximately **120,000 tonnes of CO2 equivalent** annually and 3.6 million tonnes of CO2 over 30 years.

## Environmental Survey Results

### Wildlife survey results

- Songbirds observed were common to the area
- High number of migrating birds in the area
- No hawk nests, sharp-tailed grouse leks, or sensitive amphibians identified

### Wetlands and vegetation survey results

- Wetlands were identified within the project boundary
- Project lands are cultivated
- Mostly common grassland species



## Environmental Mitigations and Reporting

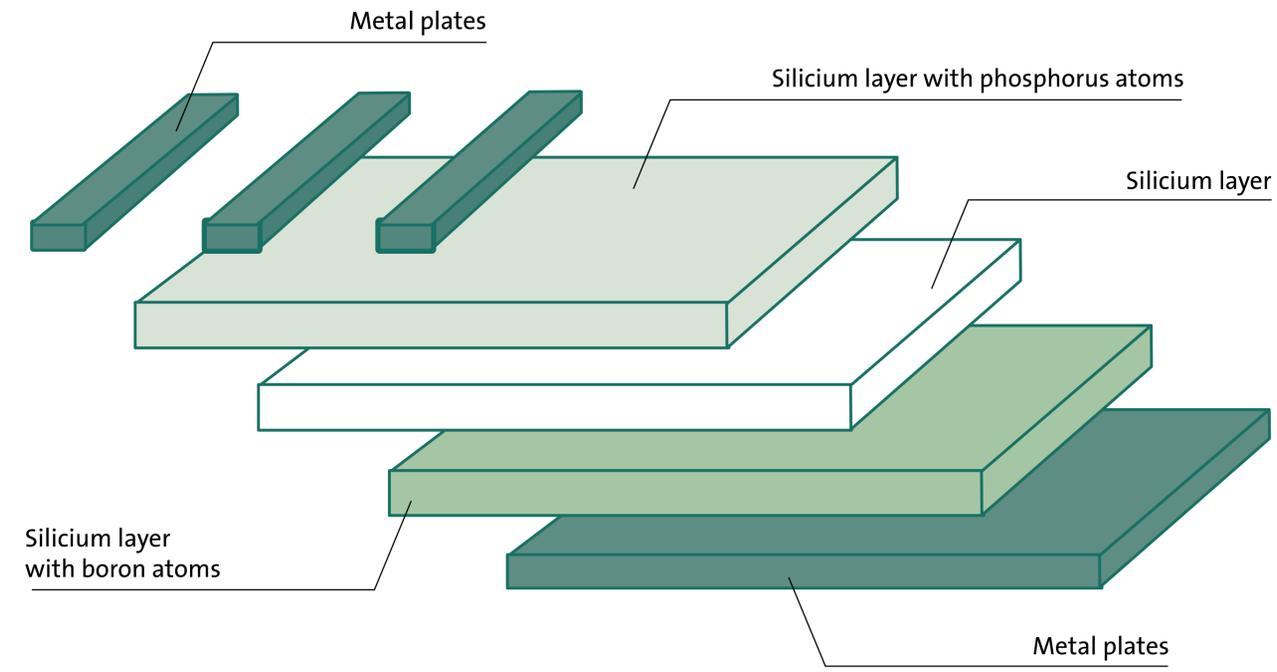
### Mitigations

- Avoidance of higher-quality wildlife habitat (native grassland, pasture) and of seasonal and semi-permanent wetlands
- Erosion and sediment control plans
- Construction during dry/frozen ground conditions
- The Project will be monitored for three years after construction for environmental impacts

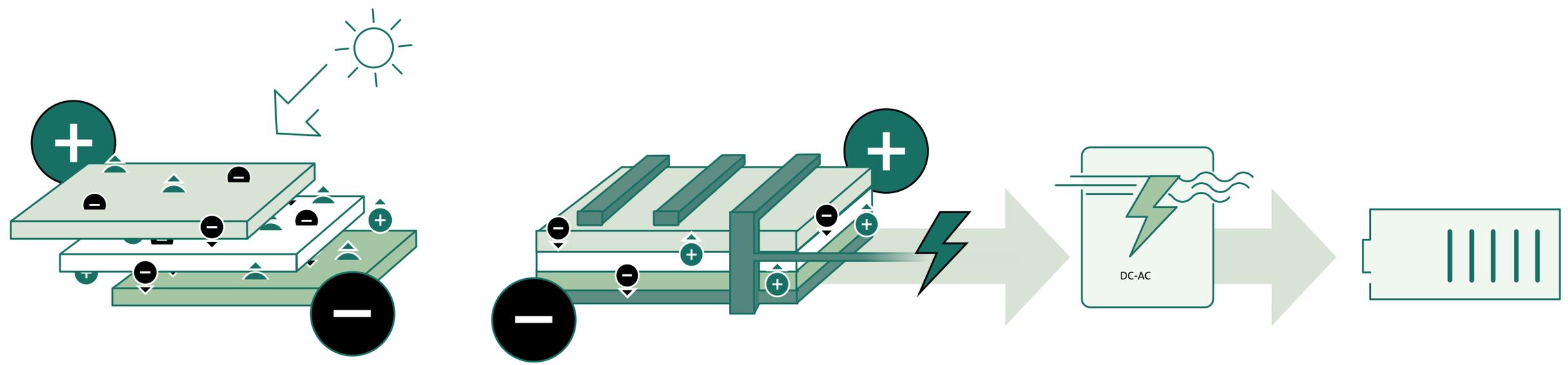
### Reporting

- Submission of the Renewable Energy Submission Report to Alberta Environment and Protected Areas (AEPA)
- Preparation of an Environmental Evaluation (EE) and Environmental Protection Plan (EPP) that includes a summary of field work results and proposed mitigation will be included as part of the AUC Facility Application
- A Conservation and Reclamation (C&R) Plan will be developed that detail plans for reclamation from construction stages to end of project life
- A detailed soils program will be undertaken in accordance with the Conservation and Reclamation Directive for Renewable Energy Operations to determine baseline information





A solar cell consists of three silicon layers, where the upper layer is enriched with phosphorus atoms and the lower layer with boron atoms.

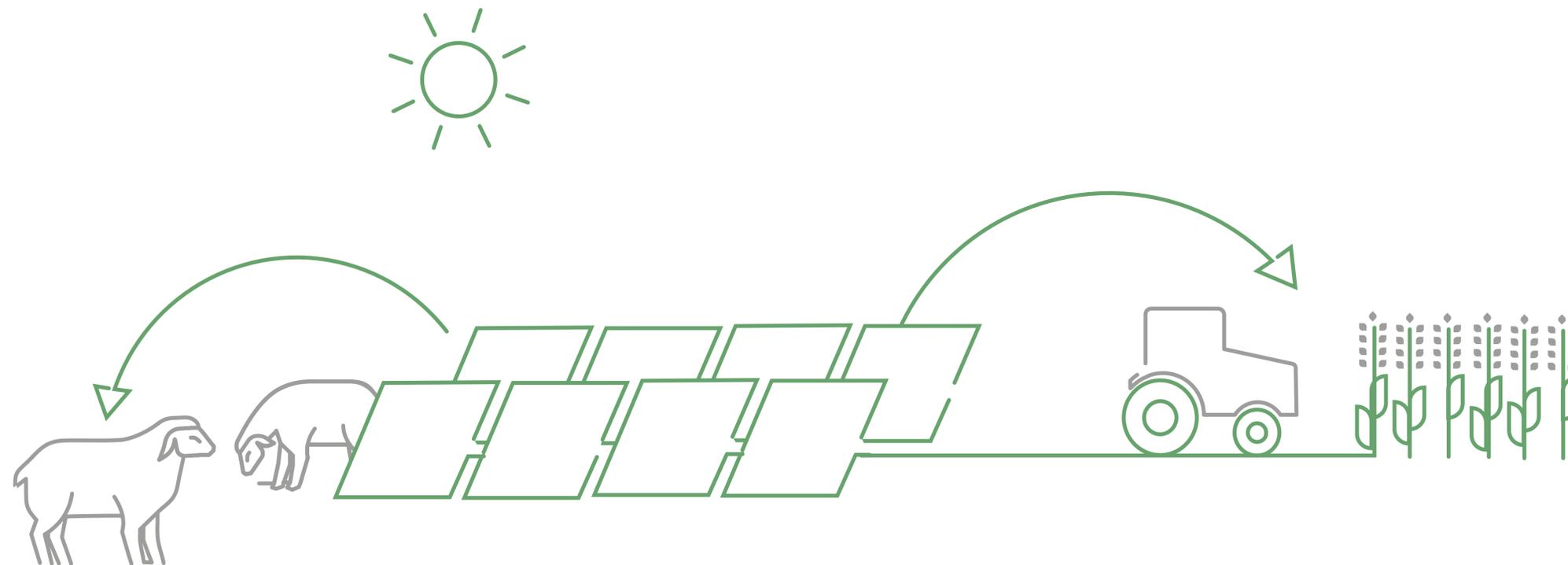


When sunlight hits the solar cell, the photons separate the electrons from the atoms. This separation ensures that the electrons accumulate on one side and the protons on the other side of the solar cell: An electric field with a plus and a minus pole is created.

In order for current to flow, metal plates and a cable are connected to both sides of the solar cell.

The direct current produced is fed to the inverter, where it is converted into grid-compliant alternating current.

In this way, it can be temporarily stored in the storage unit and fed into the grid as needed. Solar cells produce electricity even with little solar radiation.



## Suitable for Farming

A solar facility occupies a large percentage of land throughout its life. Effective soil management practices during construction and facility access guidelines during operations ensure that land used for a facility is suitable for farming and ranching after operations come to an end. Additionally, appropriately designed vegetation management ensures erosion is minimized and that nutrients remain within the soil. Many solar facilities also offer the opportunities for local stakeholders to graze sheep and/or goats on vegetation within the facility.

## Reclamation Certificate

Provincial regulations have stringent requirements to obtain a Reclamation Certificate. A proponent would need to demonstrate the decommissioned site meets these criteria to the governing body before a certificate would be issued.

The Project will be designed in accordance with the Alberta Utilities Commission (AUC) Rules 012 (Noise Control), which is intended to “ensure noise from a facility, measured cumulatively with noise from other energy-related facilities does not exceed permissible sound level calculated in accordance with this rule”.

This rule does not allow sound pressure levels from energy-related sources, measured in dBA, to exceed the permissible sound level applicable at each receptor within 1.5km from the sound-emitting Project infrastructure. A noise impact assessment will be carried out by a third party consultant and once completed, will be included as part of our application to the AUC. Moreover, studies will be done that adheres to any applicable municipal bylaws as part of the Development Permit Application.



Examples of common sound levels (dBA)

140	Threshold of pain
130	Jet take off
120	Rock concert
110	Jackhammer
100	Power saw
90	Street traffic
80	Doorbell
70	Office
60	Normal conversation
50	Quiet urban neighborhood, daytime
40	Library
30	Soft whisper
20	Ticking of a wrist watch
10	Rustling leaves

# Stettler Solar and Storage Project Preliminary Schedule

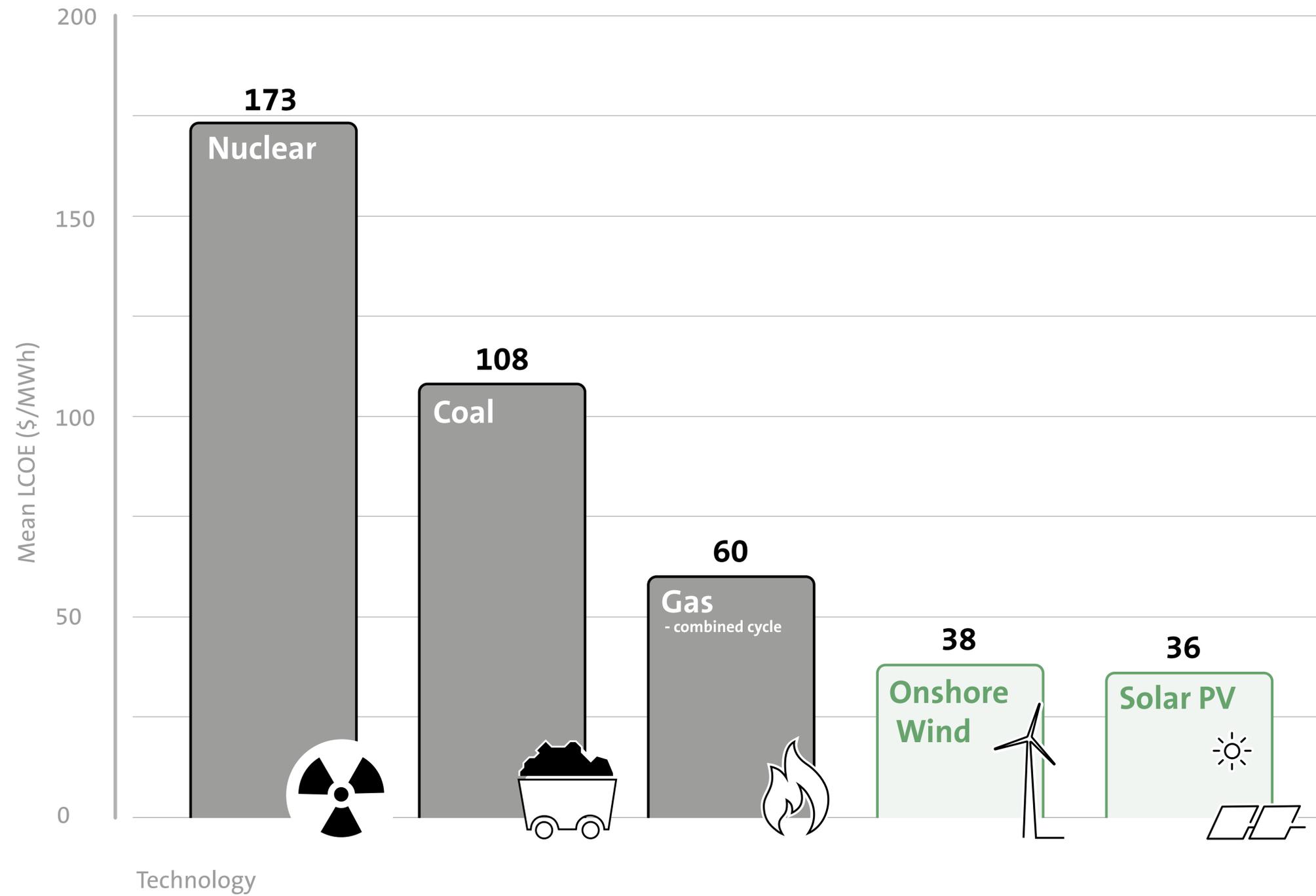


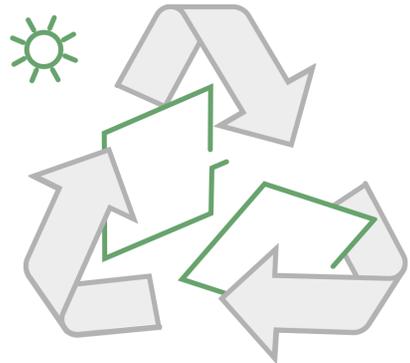
2022			2023				2024				2025
Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
		Public Notification Package 1 November 2022	Submission to AEPA				File Development Permit Application with County of Stettler	Start of Project Construction			Commencement of Operation
			Open House in Stettler March 2023	AUC Application Submission							
				AUC Review and Approval							
Environmental Field Studies							MD Permit Review and Approval				

# What does energy cost?

The chart shows the Levelized Cost of Energy Comparison (LCOE) in \$/MWh of different energy sources.

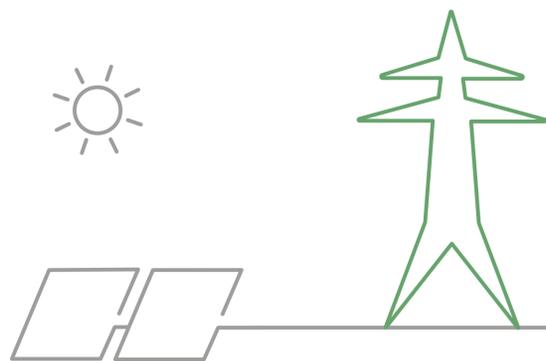
Source: Lazard's Levelized Cost of Energy Analysis—Version 15.0, October 2021





## Recycling

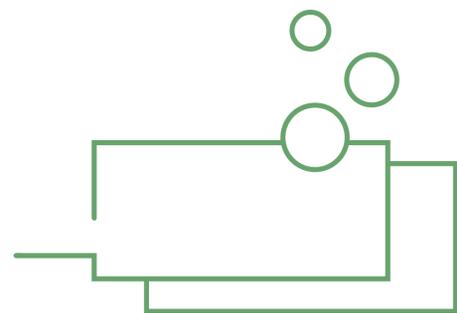
The main components of a solar facility that can be recycled, repurposed, or salvaged include: steel racking and support systems, electrical equipment and cables, precious metals/materials (including solar panel components), and concrete. Other materials or pieces of equipment that cannot be recycled, repurposed, or salvaged will be disposed of according to local/provincial regulations.



## High residual values

Renewable energy projects have high residual values for two main reasons:

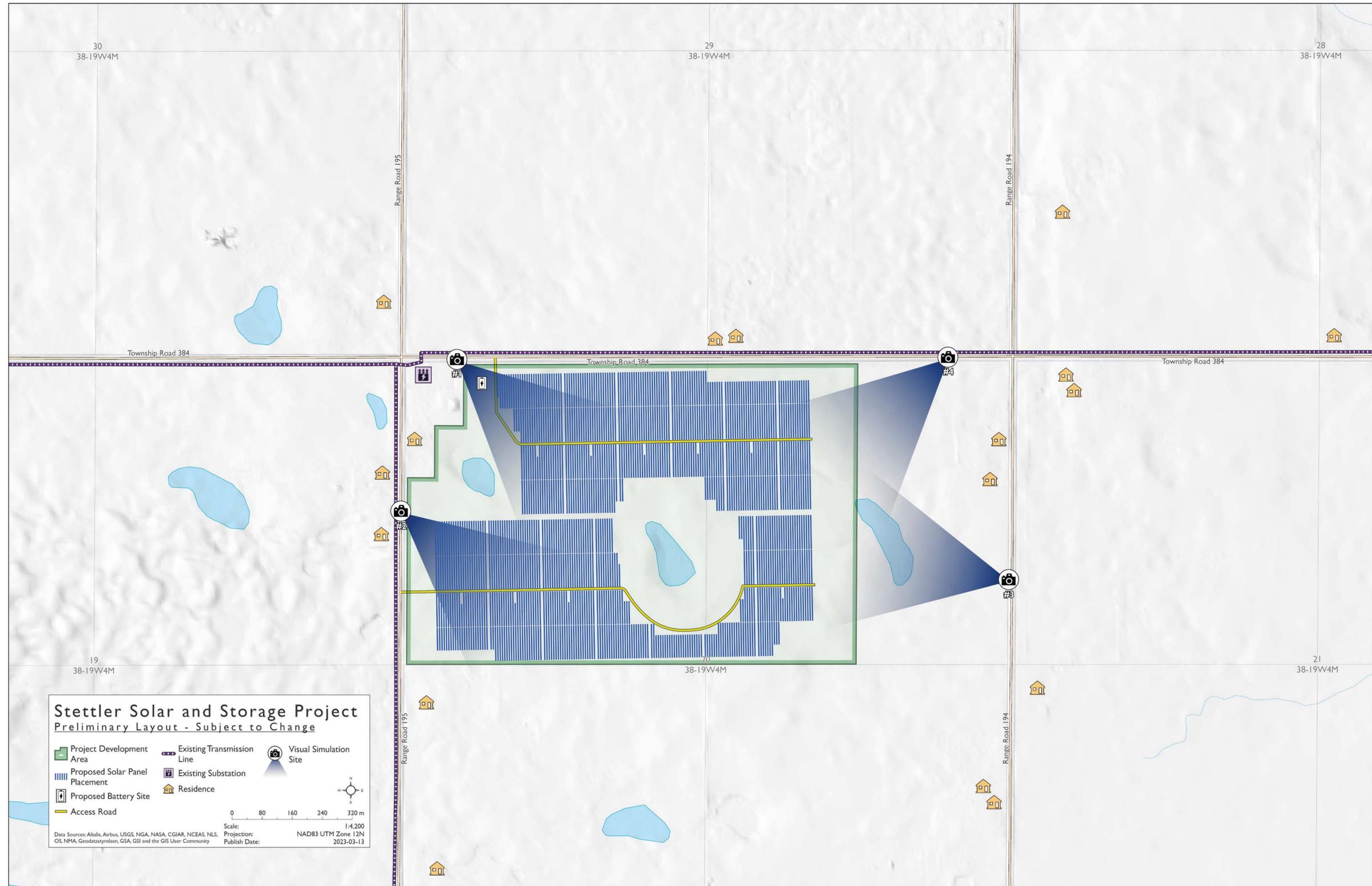
- The project has secured electrical capacity on the electrical grid which is extremely competitive to do, expensive and time consuming, and valued by others.
- The strong winds and good solar resource are present at the location and free to use. This means there is no additional cost to use wind or the sun.



## Project owner responsible for decommissioning

A high residual value means that if a project (or company that owns a project) does go bankrupt (even with a year left) that the facility is extremely attractive to others. All obligations to decommission and reclaim a site remain with the project, regardless of who the owner is. A project that is owned by potentially bankrupt company would be seen as highly valuable to others and would be expected to be sold and to have operations continue throughout.

# Stettler Solar and Storage Project Visualizations Map



# Stettler Solar and Storage Project Visualizations



Photomontage

View flat at a comfortable arm's length

Viewpoint Location:	E384508 N5794473	Field of View:	53.5° (planar)	Camera:	NIKON D3000
Viewpoint Elevation:	840m AOD	Principal Distance:	812.5mm	Lens:	35mm
View Direction:	133°	Paper size:	841 x 297mm	Camera height:	1.5 AGL
Nearest PV Array:	110m	Printed image size:	820 x 260mm	Date and time:	23/01/2023 14:10

Viewpoint 01



Photomontage

View flat at a comfortable arm's length

Viewpoint Location:	E384352 N5794073	Field of View:	53.5° (planar)	Camera:	NIKON D3000
Viewpoint Elevation:	840m AOD	Principal Distance:	812.5mm	Lens:	35mm
View Direction:	130°	Paper size:	841 x 297mm	Camera height:	1.5 AGL
Nearest PV Array:	91m	Printed image size:	820 x 260mm	Date and time:	23/01/2023 15:20

Viewpoint 02

# Stettler Solar and Storage Project Visualizations



Photomontage

View flat at a comfortable arm's length

Viewpoint Location:	E385964 N5793863	Field of View:	53.5° (planar)	Camera:	NIKON D3000
Viewpoint Elevation:	837m AOD	Principal Distance:	812.5mm	Lens:	35mm
View Direction:	282°	Paper size:	841 x 297mm	Camera height:	1.5 AGL
Nearest PV Array:	524m	Printed image size:	820 x 260mm	Date and time:	23/01/2022 13:00

Viewpoint 03



Photomontage

View flat at a comfortable arm's length

Viewpoint Location:	E385813 N5794456	Field of View:	53.5° (planar)	Camera:	NIKON D3000
Viewpoint Elevation:	835m AOD	Principal Distance:	812.5mm	Lens:	35mm
View Direction:	227°	Paper size:	841 x 297mm	Camera height:	1.5 AGL
Nearest PV Array:	377m	Printed image size:	820 x 260mm	Date and time:	23/01/2022 12:50

Viewpoint 04