



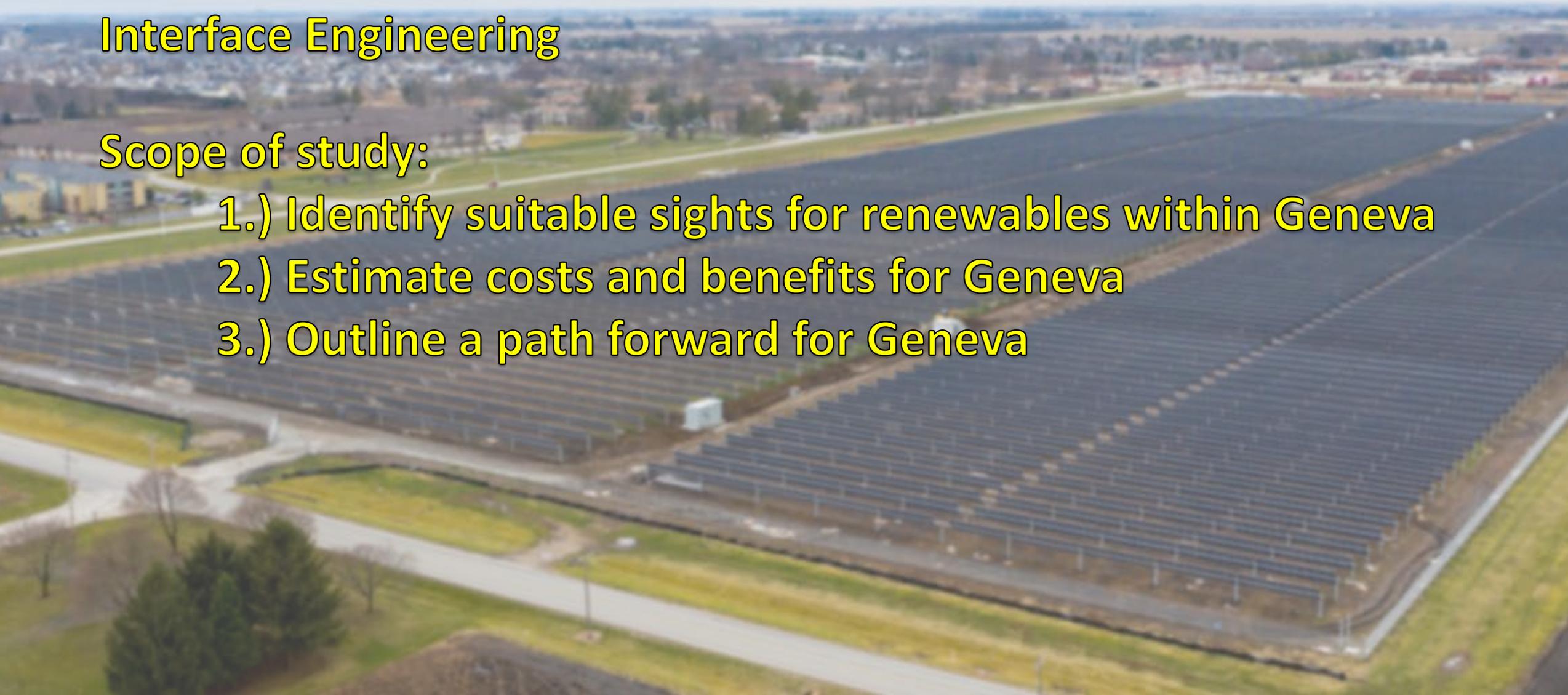
Potential Solar Locations and Costs for Geneva

Solar and Battery Feasibility Study undertaken in Spring of 2024

Interface Engineering

Scope of study:

- 1.) Identify suitable sights for renewables within Geneva
- 2.) Estimate costs and benefits for Geneva
- 3.) Outline a path forward for Geneva





Study Identified 7 potential locations for Solar in Geneva

Criteria included location of substations and system hosting capability

Evaluation produced estimated system size and output for each location

Estimated outputs combined and used to model potential savings for a model year

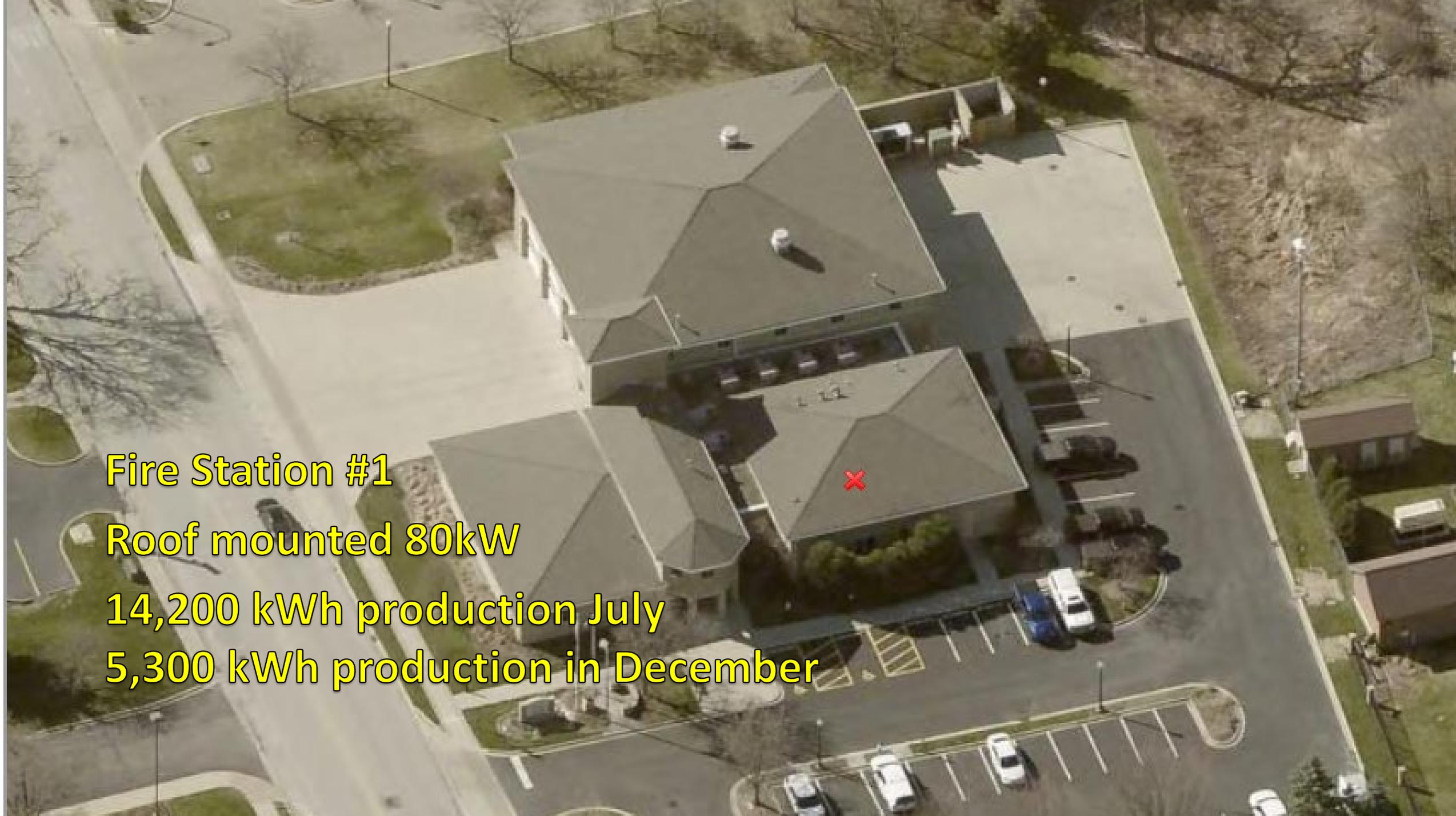
An aerial photograph showing a vast, mostly green agricultural field with some brown patches, likely harvested crops. In the foreground, there is a residential neighborhood with several houses and a road. The text is overlaid on the center of the image.

Prairie Green

300 Acres could support up to 50 MW of Utility Scale Solar

10 MW is more reasonable and has smaller foot print

Saves 16,110 MWh of energy from market purchases

An aerial photograph of a large, multi-story building with a grey roof, identified as Fire Station #1. A red 'X' is marked on the roof of one of the central buildings. The station is surrounded by a parking lot with several vehicles, including a blue truck and a white van. The building has multiple gabled sections and a central courtyard area. The surrounding area includes a road, some trees, and other buildings in the distance.

Fire Station #1

Roof mounted 80kW

14,200 kWh production July

5,300 kWh production in December



**Parking Garage
Construction of a Solar "roof"**

745 kW AC = 155,000 kWh in July and 38,000 kWh in December

An aerial photograph of a wastewater treatment facility. A large, long, white rectangular building, identified as the Solids Storage Building, is the central focus. It has a flat roof with a solar panel array. To the right of this building are several circular aeration tanks. Further south, there is another solar panel array installed on a grassy area. The facility is situated next to a river, with a dam or bridge structure visible in the background. Residential houses and trees are visible in the foreground and to the right. The text is overlaid in yellow on the left side of the image.

Waste Water Treatment Facility

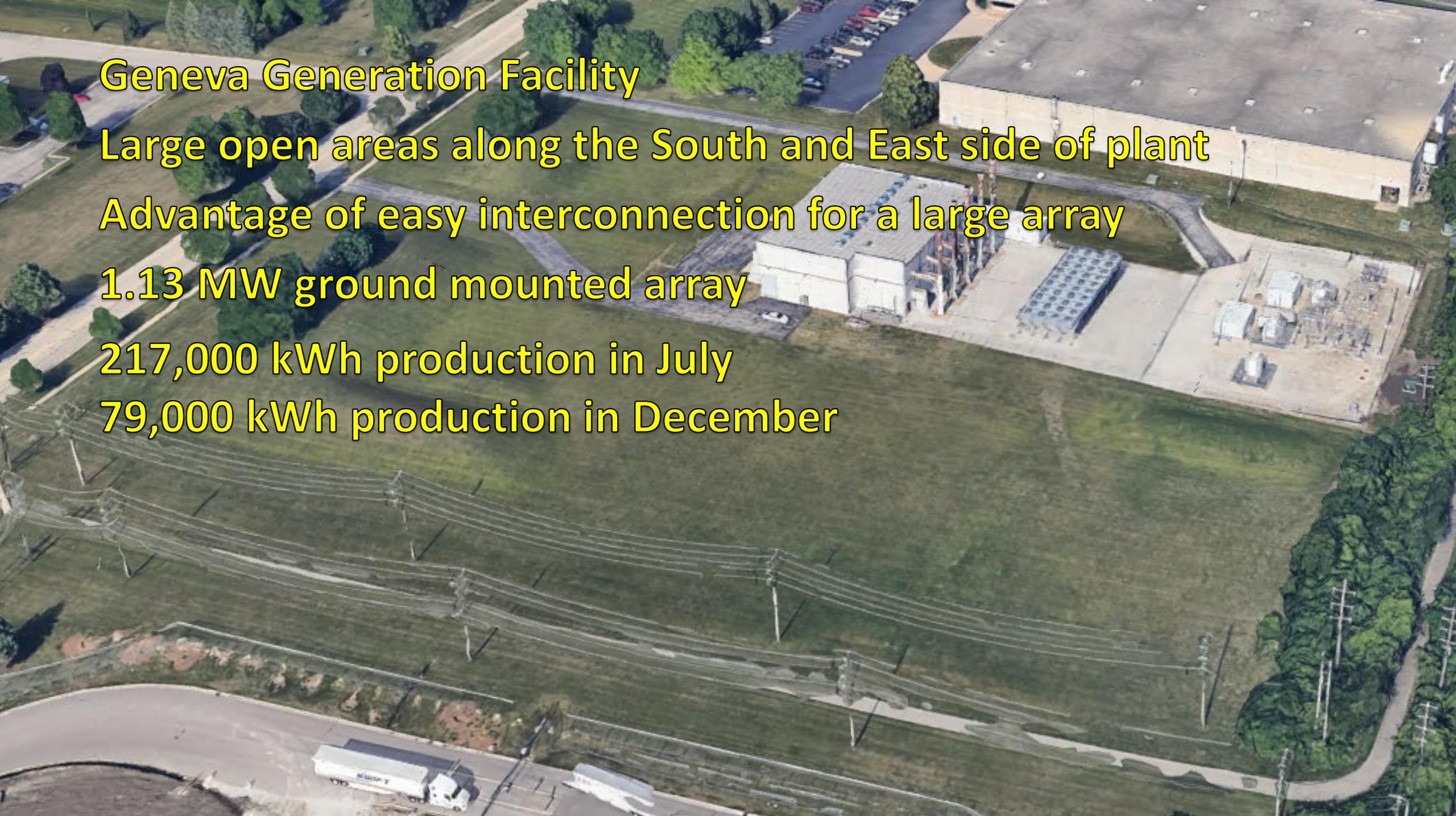
Roof Mounted array on Solids Storage Building

Ground Mounted array on infill area south of plant

700kW AC Capacity combined

143,000 kWh production in July

51,000 kWh in December



Geneva Generation Facility

Large open areas along the South and East side of plant

Advantage of easy interconnection for a large array

1.13 MW ground mounted array

217,000 kWh production in July

79,000 kWh production in December



Public Works

Rooftop array

890 kW AC Capacity

174,000 kWh output in July

43,052 kWh output in December



Fire Station #2

66kW Rooftop array

11,400 kW production in July

4,600 kWh production in December

Projected Costs

10MW Utility Scale - \$11,750,00

Total costs for “roof top” locations - \$9,700,000

Costs are exclusive of system upgrades needed

Projected Savings

21,895 MWh of market purchases for energy

\$597,000 savings on PJM energy costs

Capacity Savings are smaller – solar peak production occurs before PJM peak during the day.

Battery Energy Storage - BES

Two scenarios considered

26 MWh battery located with Solar installations

Used for peak shaving

\$855,000 Capacity Charge savings/year*

Installed cost of \$8,900,000

150 MWh Large Capacity Storage Installation

150 MWh Battery - \$48,750,000 installed cost

Distributed throughout City

\$4,931,000 Capacity savings/year*

Moving Forward

Reducing GHG and increasing percentage of renewables

Purchase REC's to offset GHG emissions from Generation

Develop owned Solar

10MW Utility and Rooftop options – \$23.7 Million

Purchase Power Contracts or Agreements

Similar to NextEra contracts, exclusively for renewable

Contract to purchase energy from solar generator in Geneva

Renewable Energy Credits

Administered by the Illinois Power Agency

SRECs purchased in Illinois by the IPA then used by ComEd or Amren

SRECs offset cost to build solar generators

Renewable Portfolio Standards (RPS)

Owner of SREC can use the energy to satisfy RPS requirement

RPS for IPA – 40% by 2030

REC is worth \$30/MWh, total cost for Geneva \$12M/year

Geneva Owned Solar

10MW Utility and Rooftop - \$23.7 Million

Geneva would keep the RECs

Could be developed in stages

Rooftops, then ground mount, then Utility scale

Battery Storage

Additional costs - \$2.4 Million Rooftop

10MW Utility scale - \$6.5 Million

Large 150MWh - \$48.8 Million

Can be added in the future, PPA options

Purchase Power Contracts/Agreements

Similar to current PPA's

Tailored to load and energy curves

Simple \$/MWh bill to City with no maintenance or on going costs

Downside is no Capacity savings versus Behind the Meter

PPA also possible for Utility Scale within Geneva

Winning proposal would build/operate Solar

Contract terms for medium or long term

Possible for Geneva to purchase generator at end of term

Estimated costs at time of study (1st quarter 2024)

Solar Installation Cost Estimation

Site	Nameplate Solar (DC)	Installation Type	MMP Per kW dc	Approximate Total Cost
NW Site	50MW	Ground Mount – single axis Tracker	\$1,175	\$58,750,000
	10 MW Alternate	Ground Mount – single axis Tracker	\$1,175	\$11,750,000
200 East Side Drive	92.2 kW	Roof Mount	\$2,784	\$256,684
501 S 2 nd Street	931.7 kW	Canopy Above Parking	\$4,500	\$4,192,650
602 Crissey Avenue	874.7 kW	Roof, Ground	\$2,240	\$1,959,413
1717 Averill Road	1,390 kW	Ground Mount	\$2,152	\$2,991,280
1800 South Street	1,110 kW	Roof Mount	\$2,154	\$2,390,940
2530 Fargo Blvd	74.2 kW	Roof Mount	\$2,784	\$206,572