Potential Solar Locations and Costs for Geneva

Solar and Battery Feasibility Study undertaken in Spring of 2024

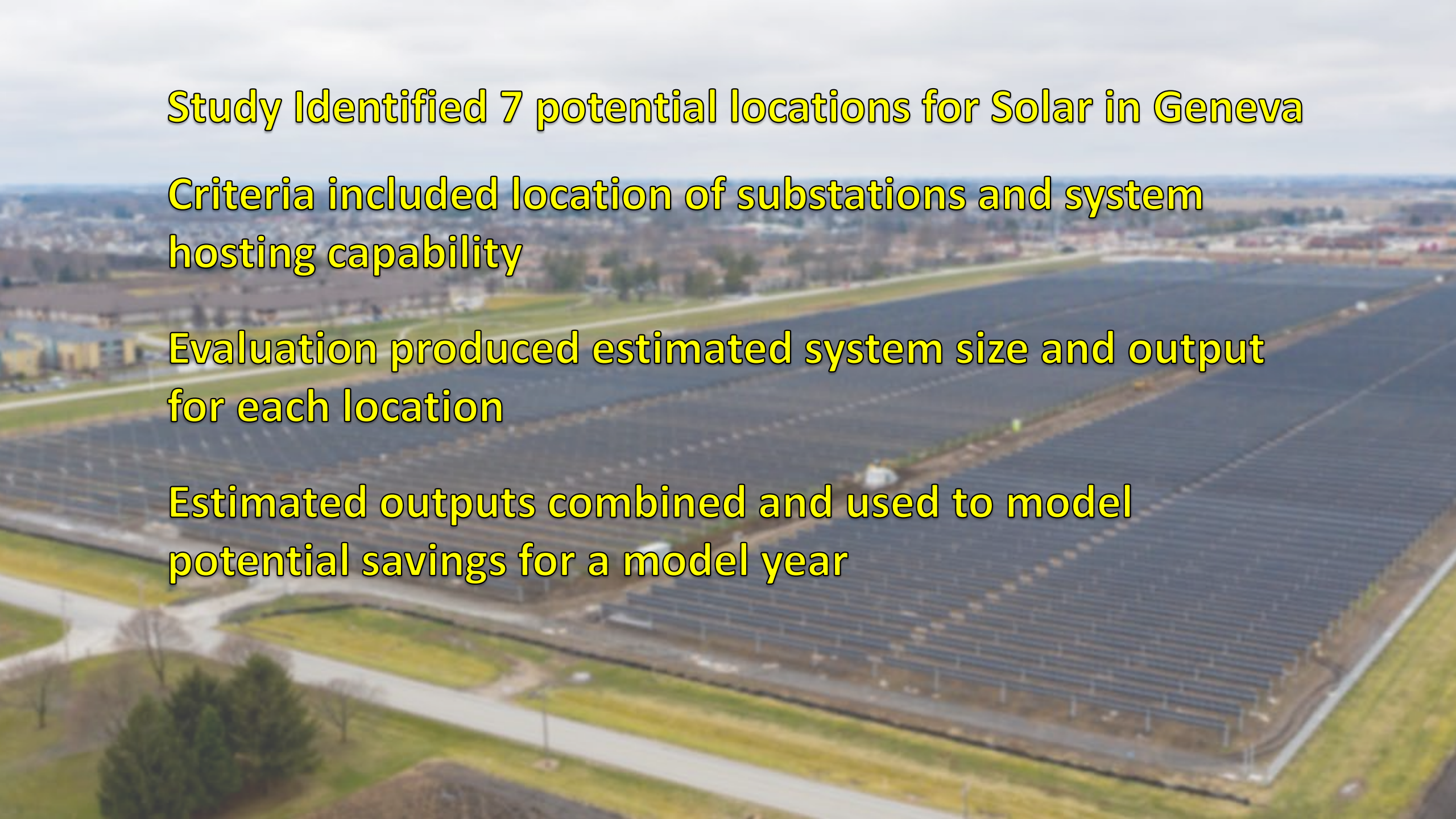
Interface Engineering

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



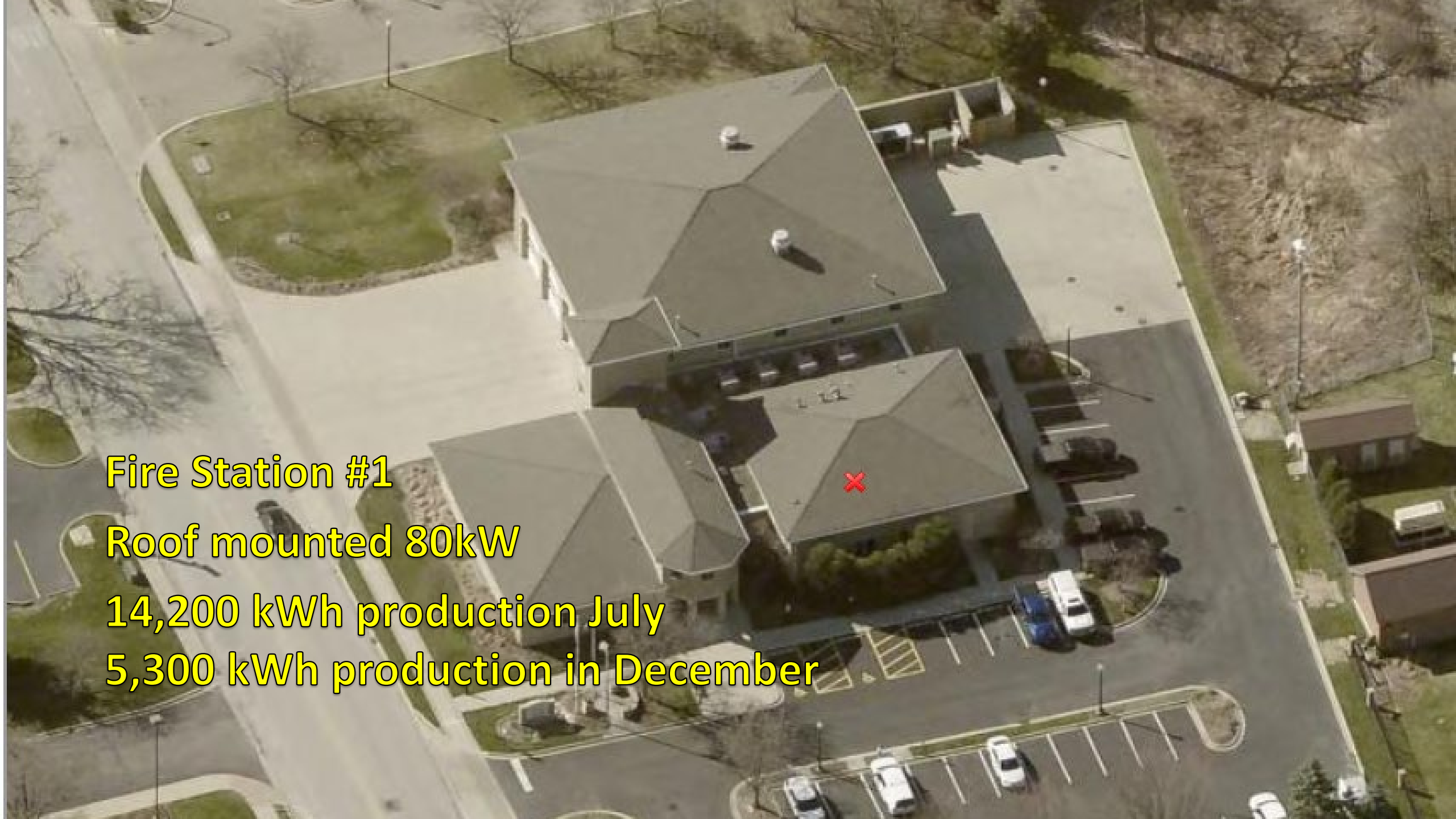
Study Identified 7 potential locations for Solar in Geneva

Criteria included location of substations and system hosting capability

Evaluation produced estimated system size and output for each location

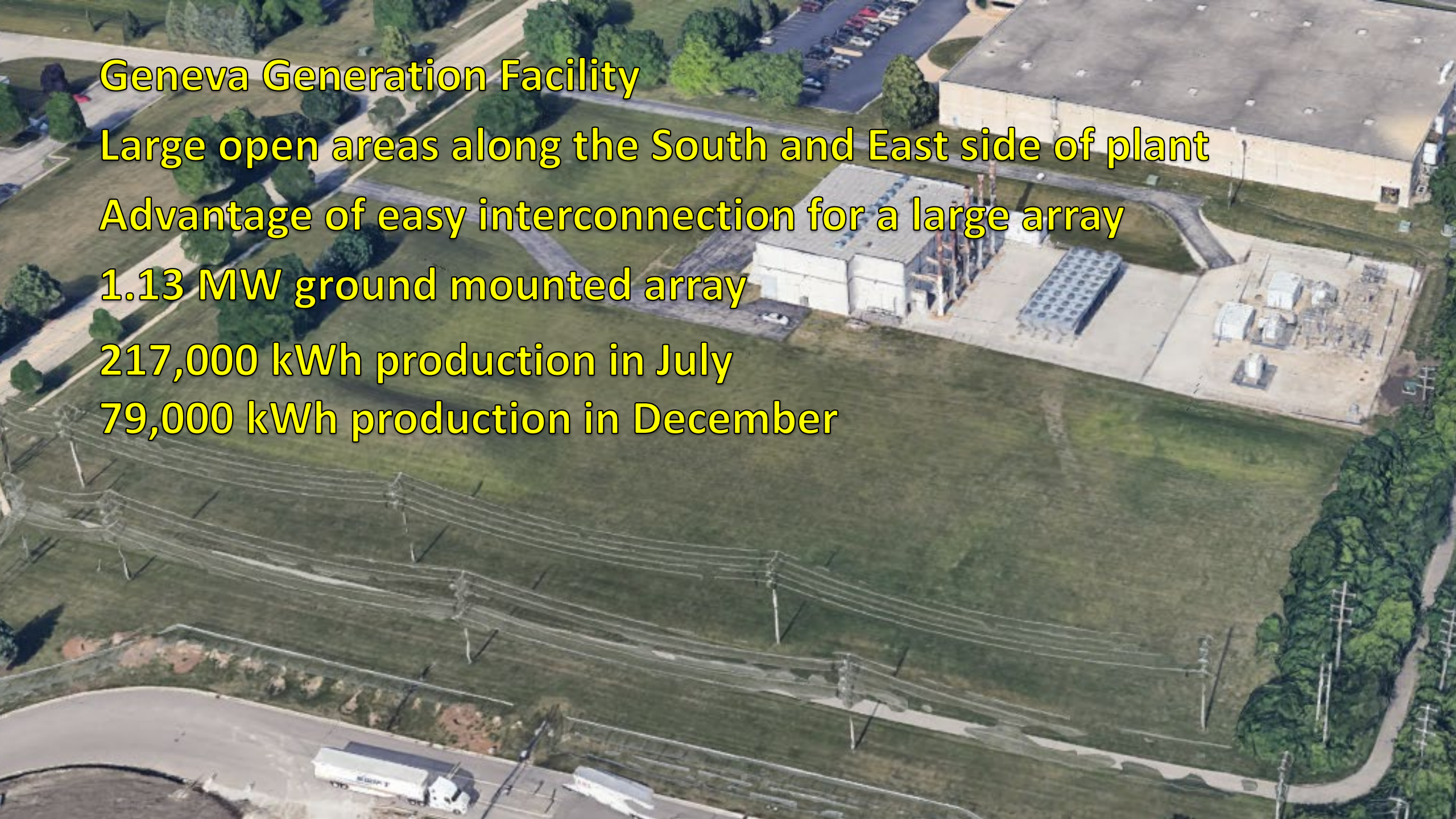
Estimated outputs combined and used to model potential savings for a model year


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


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


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*

* Updated for 2025 PY PJM Capacity Charges

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 2nd 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