

Horseshoe Solar – Supporting Details

This attachment documents the numbers, calculations, and sources behind my post on Horseshoe Solar. It is organized in the same order as the post. Janet Glocker’s full presentation is available [here](#).

1. Project Background

Permit dockets

Horseshoe Solar filed its application under Article 10 in [Case 18-F-0633](#) and transferred it to ORES as [Matter 21-02480](#). ORES issued the siting permit on December 9, 2022.

Energy production and household claims

The [2/28/19 Public Involvement Program plan](#) “Project Summary” states:

HSS estimates the Project will operate at an annual net capacity factor (NCF) of 23.4%. This means the Project, if built at the maximum expected generating capacity of 180 MW, would generate approximately 369,000 megawatt hours (MWh) of energy per year. This will be enough electricity to meet the average annual consumption of 33,000 or 50,000 households, based on average annual household electric consumption of 10.8 MWh for the U.S. and 7.2 MWh for New York State, respectively (EIA, 2014).

[NYISO reported](#) 18%–19% annual capacity factors for New York’s front-of-the-meter solar fleet in 2024 and 2025.

Case	Capacity factor	Annual energy (MWh)	NY household equivalents (7.2 MWh)
Developer estimate	23.4%	369,000	50,000
NYISO fleet, low	18%	283,800	39,400
NYISO fleet, high	19%	299,600	41,600

Annual energy = 180 MW × 8,760 hours × capacity factor. Household equivalents describe total energy over a year, not reliable service at night, during low-sun periods, or whenever household demand exceeds solar output.

Agricultural co-use

Horseshoe has a [permit-backed commitment](#) to agricultural co-use. The Agricultural Integration Plan calls for a commercial sheep operation with rotational grazing beneath and around the arrays. It says honeybees, hay, and other crops may also be explored, but it does not commit to growing vegetables beneath the panels.

My [Perplexity AI query](#) on sheep availability found:

- New York has about 83,000 sheep.

- Grazing every utility-scale solar project now in the interconnection queue at the usual solar-grazing stocking rate would need about 127,000 sheep, or roughly 1.5 times the state’s flock.
- The solar buildout the state plans for 2050 would need about 1 million sheep, or 10 to 14 times today’s flock.

2. Prime Farmland Conversion

Department of Agriculture and Markets goal

In [prepared testimony in the Trelina Solar Article 10 case](#), Michael Saviola of the Department of Agriculture and Markets stated:

The Department’s goal is for projects to limit the conversion of agricultural areas within the Project Areas, to no more than 10% of soils classified by the Department’s NYS Agricultural Land Classification mineral soil groups 1-4, generally Prime Farmland soils, which represent the State’s most productive farmland.

Horseshoe Solar numbers

Measure	Value
Project area	3,748 acres
Prime farmland (MSG 1–4) converted	552 acres
Share of project area	14.7% (about 15%)
Department goal	10%

The [ORES Summary and Assessment of Public Comments](#) includes a supporting comment that “In the final site plan, over 800 acres of mineral soil groups 1-4 were avoided, leaving approximately 550 acres in the panel area.” ORES also stated that the developer voluntarily removed arrays from 181 acres in Rush and 725 acres in Caledonia that included prime farmland. The ORES regulations require developers to avoid, minimize, and mitigate impacts to prime farmland only “to the maximum extent practicable.”

In my [Solar Development Prime Farmland Scorecard](#) I found that six of seven approved projects with available agricultural exhibits exceeded the Department’s goal.

3. Capacity, Energy, and the River Crossing

Capacity versus energy for the Rush panels

Glocker estimated that the 8.4 MW of nameplate capacity in Rush would produce 20%, or 1.68 MW. That is the average output over a year, which is an energy measure, not the output available at any given time.

Measure	Basis	Rush (8.4 MW)	Whole project (180 MW)
Annual energy, NYISO fleet 18%	8.4 MW × 8,760 h × 18%	13,245 MWh	283,800 MWh
Annual energy, NYISO fleet 19%	× 19%	13,981 MWh	299,600 MWh
Annual energy, developer 23.4%	× 23.4%	17,219 MWh	369,000 MWh
Average output	nameplate × capacity factor	1.5–2.0 MW	32–42 MW
Effective (accredited) capacity	NYISO CAF 13.85%–15.33%	1.2–1.3 MW	25–28 MW

The effective capacity values use [NYISO’s final capacity accreditation factors for the 2026–2027 Capability Year](#). Rest of State solar is 13.85% (CHPE-In) to 15.33% (CHPE-Out), compared to 100% for the conventional generator class.

Horizontal directional drilling timeline

Date	Event	Source
Nov 28, 2025	ORES issues Notice to Proceed for the Genesee River crossing using HDD	ORES Notice to Proceed
Feb 3, 2026	Groundwater surfaces from two bore holes; state filings report nearly 400 feet underground at 50–100 gallons per minute	13WHAM
Feb 24, 2026	ORES approves Minor Modification No. 4 for chemical grouting of HDD bore #4	ORES letter, Aug 26, 2026
Mar 8, 2026	Company completes grouting of the two bore holes	13WHAM
March 2026	Company reports four homes in Meadowood and one on East River Road with low water levels; drinking water and temporary potable-water systems supplied	News10NBC
Apr 15, 2026	ORES approves Minor Modification No. 5 for more grouting of bore #4	ORES letter, Aug 26, 2026
Apr 20, 2026	Three of seven holes reported filling with water (42.8%)	House of Green
May 21, 2026	Grouting complete and contractor demobilized; seepage still occurring	ORES letter, Aug 26, 2026
Jun 24, 2026	Area reported “significantly dried up and groundwater surfacing has been eliminated”	ORES letter, Aug 26, 2026
Aug 26, 2026	ORES requests a plan within 30 days for at least 12 months of monitoring of the extent, volume, and causes of seepage, with recommendations for further action	ORES letter, Aug 26, 2026

The Department of Public Service told [13WHAM](#) that “Encountering pressurized water during horizontal directional drilling operations is unusual.” Glocker reported that six homes were affected and that Invenergy received additional time to submit the monitoring plan.

Point of interconnection

According to the [ORES Summary and Assessment of Public Comments](#), the point of interconnection is National Grid’s 115-kV Golah Substation in Rush, adjacent to the project’s collection substation, switchyard, and O&M building. Output from the Caledonia arrays must therefore also cross the river. ORES stated: “There is no request before this Office for review of an alternative POI in the Town of Caledonia.”

4. Subsidies and Local Costs

COMIDA application figures (Monroe County portion only)

Item	Application benefit schedule	MRB cost-benefit analysis
Sales tax exemption	\$16,708,642	\$1,517,585
Mortgage recording tax exemption	\$125,315	\$125,315
Property tax abatement (PILOT vs. full taxes)	\$2,520,139 (discounted)	\$3,293,409 nominal; \$2,437,479 discounted
Total	\$19,354,096	\$4,936,309 nominal; \$4,080,379 discounted

Sources: [COMIDA application](#) and [benefit schedule](#). The Monroe County portion is \$33,417,283 of a \$422,526,066 total project cost and 8.4 MW of the 180 MW. I cannot explain the difference between the two sales tax figures; an 8% sales tax on the entire Monroe County cost would be about \$2.7 million.

The application states:

Large scale renewable energy systems are not financially viable absent financial assistance from Industrial Development Agencies. While there are some tax exemptions that already apply, such as the sales tax exemption on production equipment, absent significant assistance on the remaining sales tax cost, real property taxes, and mortgage recording tax, this project is not financially viable.

The [September 26, 2023 COMIDA board minutes](#) record the request for a real property tax abatement and sales and mortgage recording tax exemptions, with a stated cost-benefit ratio of 10:1.

Jobs and investment claims

Source	Claim
Horseshoe Solar website (whole project)	\$3 million total economic investment; 300+ construction jobs; 3 full-time jobs
COMIDA application (Monroe portion)	3 full-time and 0.5 part-time jobs created three years after completion
MRB analysis (Monroe portion)	204 temporary construction jobs (111 direct); 18 ongoing jobs (4 direct)

Subsidy per permanent job (3 FTE)	Value
Using MRB total (\$4.94 million)	about \$1.6 million
Using application total (\$19.35 million)	about \$6.5 million

PILOT schedule (25 years)

Item	25-year total
Estimated PILOT payments	\$470,845
Taxes on full assessment	\$3,764,255
Difference	\$3,293,409

Tax rates per \$1,000 of assessed value: County \$7.02, Local \$3.11, School \$18.67, Total \$28.80.

Electricity prices

The [Empire Center found](#) that New York’s average residential electricity price was 29.93 cents per kilowatt-hour in May 2026, the third highest in the nation behind Hawaii and California.

5. Archaeological Impacts

- **Site sensitivity:** An [independent archaeological review](#) paid for with intervenor funds describes the confluence of Honeoye Creek and the Genesee River as a longstanding center of human activity. It reports that SHPO recommended avoidance of the Canawaugus Reservation and Parcels 25, 31, and 39 (Golah), and that an October 29, 2019 OPRHP letter identified about 1,227 acres of alluvial soils with the potential for deeply buried cultural deposits.
- **The bone:** A [bone analysis report](#) by Dr. Robyn Wakefield-Murphy concluded that the bone found at the Golah Road site was a “proximal human foot phalanx” from an adult at least 18 years old, not the heron or bear bone suggested by earlier consultation.
- **Seneca Nation statements:** The [ORES Summary and Assessment of Public Comments](#) records a statement attributed to the Seneca Nation Tribal Historic Preservation Officer: there were 46 known archaeological sites within 500 feet of

the project, plus numerous known or forgotten burial locations. The Nation requested a Phase II investigation using ground penetrating radar.

- **Construction disturbance:** Commenters described 40,000 to 80,000 steel beams driven 10 to 20 feet into the ground, 52 miles of five-foot-deep trenches, and Seneca graves found less than two feet deep.
- **ORES response:** The developer removed approximately 150 acres and 20 MW of arrays south of State Route 5 to avoid the former Canawaugus Reservation, plus additional arrays in Rush and Caledonia. ORES, in consultation with SHPO, found that the facility “would not result in potential significant adverse impacts to any archaeological resources listed or eligible for listing on the National or State Register of Historic Places.” It required a Cultural Resources Avoidance, Minimization and Mitigation Plan with construction monitoring and an unanticipated discovery plan.
- **Unverified items:** I could not independently verify Glocker’s statement that 46 graves were excavated at Golah in the 1960s.

6. Utility and Developer Requirements

National Grid’s [Article VII case 25-T-0235](#) covers:

- the rebuild of the Mortimer to Golah 109 and 110 transmission lines;
- construction of a New Golah Substation; and
- decommissioning of the existing Golah Substation in Rush.

Horseshoe Solar is a party to the case.

National Grid’s [Phase III Data Recovery Work Plan](#) (August 2025) reports:

- After a Phase II examination, SHPO found an Indigenous site eligible for the State and National Registers, which required Phase III data recovery.
- A geophysical survey identified four potential palisade features, six potential house features, and four potential hearth features. The report noted that Indigenous burials can be difficult to identify.
- If potential human remains are found, all nearby work stops until SHPO, the county coroner or medical examiner, local law enforcement, and all consulting parties are notified.

Project	Archaeological work
National Grid Mortimer–Golah (Article VII)	Phase IA, Phase IB, Phase II, Phase III data recovery
Horseshoe Solar arrays (ORES)	Phase IA (expanded) and Phase IB, construction monitoring, unanticipated discovery plan

I could not find the specific DPS Staff request quoted by Glocker in the public docket.