

Your PV scenario

2025 weather & market replay · 58.36881° N · 26.7153° E

canonical · editable planning assumptions

29 Oct 2026, 20:08 EET



Maa- ja Ruumiameti ortofoto, extracted 2026-10-26. Source-context crop around the hypothetical footprint; this is not a site recommendation.

Annual production

Same array · three modeled conditions

Clear-sky reference

31,970 kWh

Modeled clear atmosphere

Weather adjusted

18,648 kWh

ERA5 · before local shadows

After local shadows

18,013 kWh

Surface horizon estimate

Local shadows: 635 kWh (3.4%) of modeled weather-adjusted production. Specific yield: 901 kWh/kWp. Shadow impact on household benefit: €50/yr.

Array parameters

Facing azimuth: north = 0°, east = 90°

Nominal capacity

20 kWp DC

Inverter AC limit

Not specified

Grid export limit

Not specified

Tilt / facing azimuth

35° / 180°

Height above terrain

2 m

Electrical losses

14%

Footprint area

360 m²

Export sales margin

5 €/MWh

Consumption & value

Local demand and PV · historical wholesale prices · comparison without storage

Estimated day / night consumption

10 kWh/daytime + 4 kWh/night · 07:00–23:00 local day · Europe/Tallinn

Consumption coverage 100% · 8,760 / 8,760 hours · 0 estimated gap hours

Demand

5,110 kWh

PV used on site

2,417 kWh

Grid import

2,693 kWh

Grid export

15,596 kWh

Self-consumption 13.4% · Self-sufficiency 47.3%

Annual economic comparison

Import adder 0 €/MWh · export margin 5 €/MWh

Replay year

2025

Without PV

€420

With PV¹

−€351

Benefit²

€771

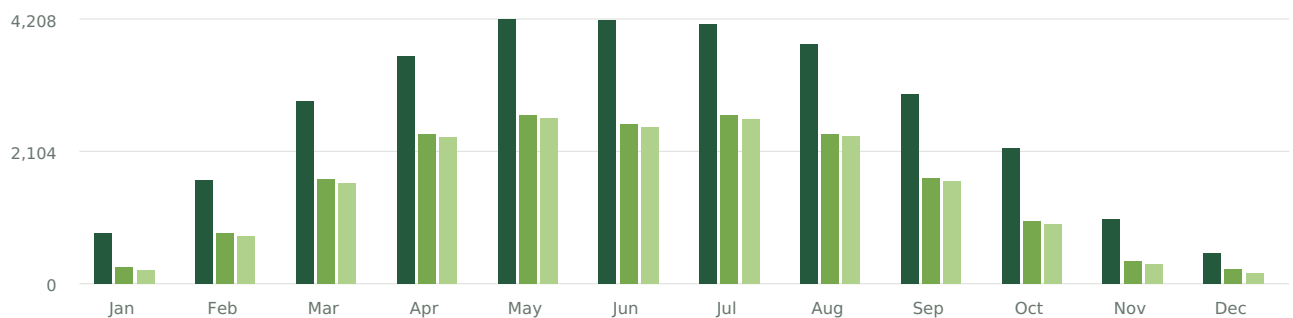
Export receipts

€596

¹ Import cost less export receipts. ² Without-PV cost minus with-PV net grid cost; excludes investment, fixed charges, tax and financing. Missing coverage remains unknown (—), never zero.

Monthly energy · 2025

Available AC kWh · before grid-limit curtailment



Month	Available PV	Used on site	Import kWh	Export kWh	Benefit €
Jan	216	99	335	118	24
Feb	763	144	248	619	106
Mar	1,595	206	229	1,389	86
Apr	2,327	245	175	2,082	70
May	2,631	289	145	2,341	78
Jun	2,485	299	121	2,185	44
Jul	2,618	299	135	2,319	53
Aug	2,339	268	166	2,072	111
Sep	1,623	217	203	1,406	86
Oct	945	168	265	776	68
Nov	309	107	313	202	33
Dec	162	75	359	88	13

Evidence & assumptions

Read the coverage and model limits alongside the estimate.

Uncalibrated historical planning estimate

Weather coverage 100% · price coverage 100% · complete horizon rays 94.9%. Unobserved obstacles can add losses.

How this estimate works

- 01** Clear sky: Haurwitz reference and Erbs decomposition. Hourly ERA5 irradiance is transposed to the tilted array with isotropic diffuse sky and ground reflection.
- 02** Production: 20 kWp DC, NOCT temperature adjustment and 14% aggregate electrical/conversion loss. No specified inverter AC cap. Hourly-average clipping misses shorter peaks; no MPPT, snow or degradation model. Storage disabled.
- 03** Local shade: 5 m surface grid, 9 receiver samples and 500 m horizon radius. DSM treats buildings and trees as opaque; tree seasonality and electrical mismatch are unresolved.
- 04** Surface dates: DSM catalogue describes 2017–2020 acquisitions; exact local dates are unknown. The frozen surface can differ from the historical weather year and misses small objects.
- 05** Consumption: fixed local day/night totals distributed uniformly within each period. This assumed load shape is not a measured household profile.
- 06** Valuation: import at EE spot plus 0 €/MWh; export at spot less 5 €/MWh, including negative prices. Quarter-hour 2025 prices are averaged hourly; all figures exclude investment and taxes.

Source snapshots

Weather	Open-Meteo / Copernicus ERA5 · coarse reanalysis grid Retrieved 2026-10-26 · SHA-256 39751c8858 / bd7029eaef / 47962b70e2 / 117d63b07c
Market	Elering EE day-ahead · licence status unresolved Retrieved 2026-10-26 · SHA-256 39f6ed20bb / 0e2dc5a1d2 / d165caa714 / 5772860f65
Surface	Maa- ja Ruumiamet DSM / DTM · 5 m retained grid Retrieved 2026-10-26 · SHA-256 ebfc3bd172 / e603ba2be6
Buildings	Maa- ja Ruumiamet ETAK · context, not PV detections Retrieved 2026-10-26 · SHA-256 221831e66d
Imagery	Maa- ja Ruumiamet · rendered display context Retrieved 2026-10-26 · SHA-256 bd6a28359c

Government solar records in the checked application are municipal counts, not installations. Aerial detection and installation inventory accuracy have not been evaluated. Full source URLs, licences and SHA-256 pins remain in the project manifest.

Generated with AI using the free OpenMapStack toolkit

Project author: Jaak Laineste · Solar Atlas

Source run: run-20261029-180756 · 2026-10-29T18:08:03.141281+00:00

Report exported: 29 Oct 2026, 20:08 EET · Current parameters and footprint are captured here.