Energy Community Secretariat

Uniting Europe's Energy, Today

CROSS-BORDER SUSTAINABLE RENEWABLES ACCELERATION AREAS IN UKRAINE · PHASE II

Case studies:
Planning RAAs in Ukraine

Viktor Putrenko

Агенція геопросторових рішень АГЕОРА

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Five pilot areas, two solar approaches

Four ground-mounted solar assessments

Drohobytska, Lvivska Oblast – Degraded Land
Horodkivska, Vinnytska Oblast – Mines and quarries
Kolomyiska, Ivano-Frankivska Oblast - Degraded Land
Rukshynska, Chernivetska Oblast - Farms solar

The main estimates apply 8.5 m² of land per kWp.

One rooftop solar assessment

Yasinianska, Zakarpatska Oblast - Rooftops_and_Facades_of_Buildings
Yasinianska uses 11.6 m² of building footprint per kWp. Its 110.86 ha settlement boundary is not an installation area.

Comparable reporting, different calculation bases

Area (ha), installed capacity (MW) and modelled annual generation (GWh/year) appear separately. Reduced scenarios retain the studies' assumptions.

Drohobytska: Location and site conditions

Lvivska Oblast / 39.97 ha

Location

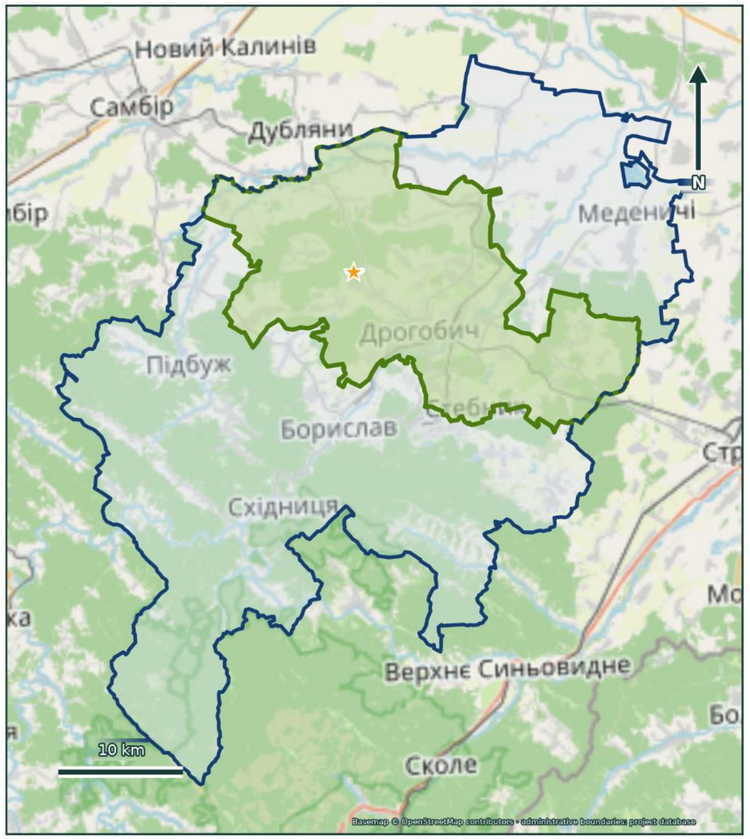
Near Lishnia and Monastyr-Lishnianskyi, northwest of Drohobych. Outside settlement boundaries.

Land and current use

One municipal parcel with energy use code 14.01. Tree and shrub cover extends across the site.

Terrain and access

Mean slope 2.97°, maximum 8.50°. Unpaved access roads require a delivery and access check.



49.393898° N, 23.436196° E

Drohobytska: Relief, landuse, solar irradiation

Land information

Relief

Elevation ranges from 316.52 to 350.44 m, with a mean of 335.98 m. The elevation range is 33.92 m.

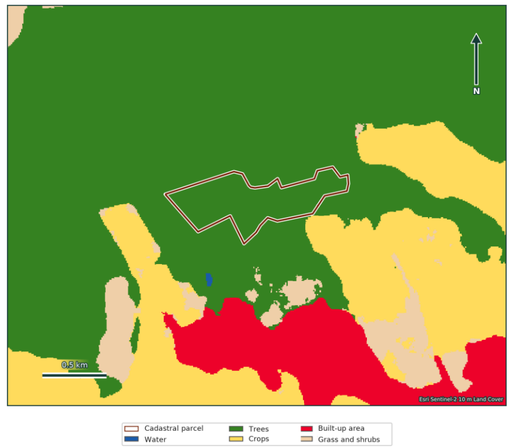
Land and current use

South-facing slopes account for the largest share of aspects, at 27.27%.

Energy profile

Annual total solar irradiation ranges from 1128.62 to 1130.08 kWh/m², with a mean of 1129.75 kWh/m².

A



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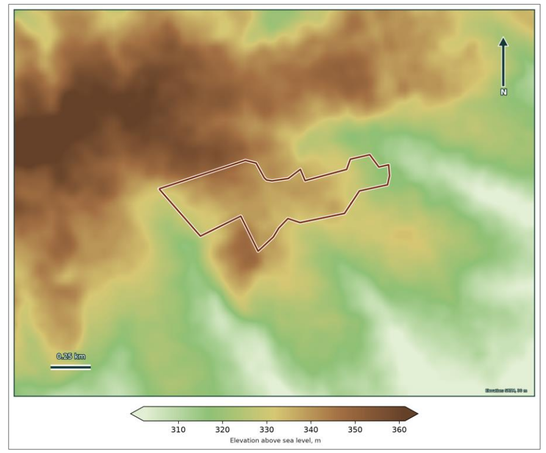

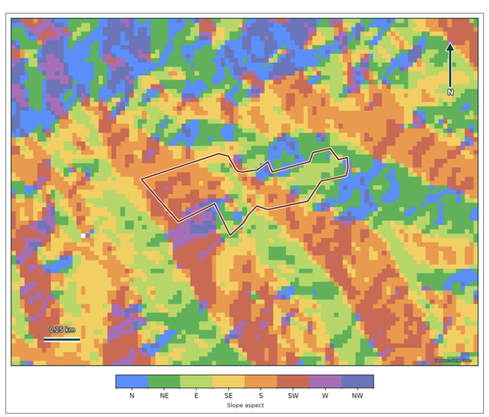

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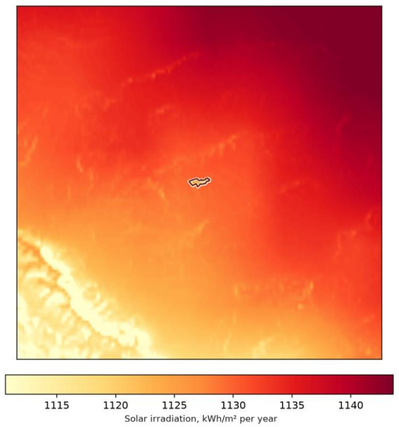

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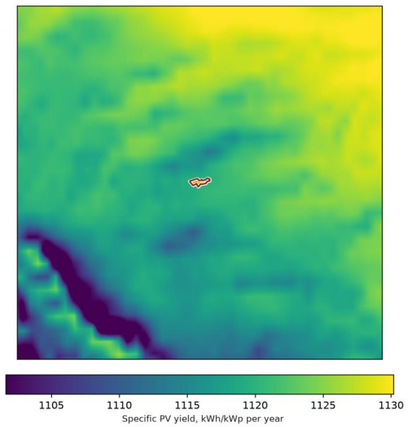


E

A –Land use, B – Relief, C - Slope aspect, D - solar irradiation, E - specific photovoltaic

Drohobytska: Solar generation potential

47.02 MW

Full-site theoretical scenario

52.66 GWh/year

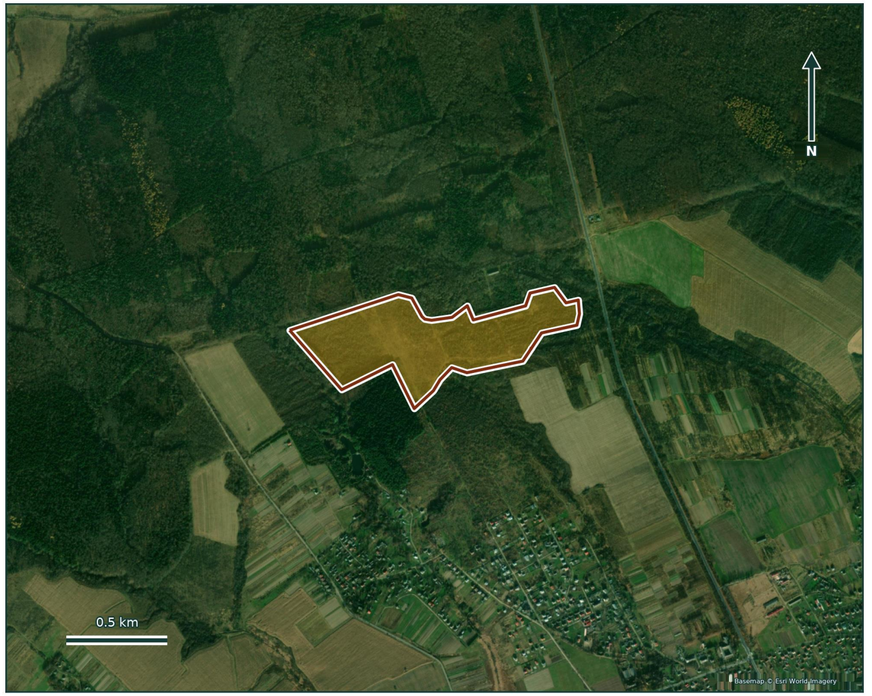
Alternative / usable-area estimate

Whole-parcel theoretical estimate. The study has not confirmed the developable area.

Grid proximity

35 kV line: 0.36 km
Bronytsia 35/10 kV substation: 5.96 km

No mapped protected-area overlap. Watercourse 20.93 m away.
Vegetation status and water setbacks remain unresolved.



Pilot boundary on satellite imagery

Mean irradiation: 1,129.75 kWh/m²/year

Horodkivska: Location and site conditions

Vinnytska Oblast / 16.10 ha

Location

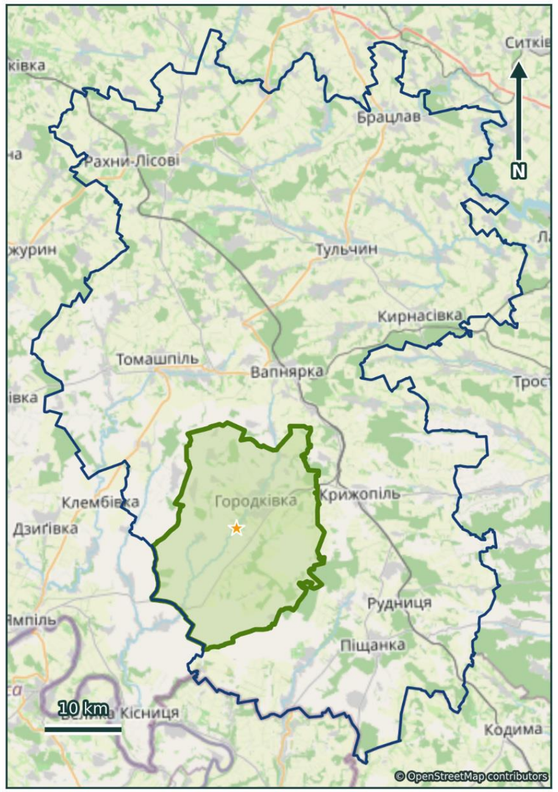
Near Horodkivka, Tulchynskyi District. An exhausted limestone quarry outside the settlement.

Land and current use

One state-owned reserve parcel, use code 16.00. Reclamation and an appropriate energy land use are required.

Terrain and access

Mean slope 8.01°, maximum 19.23°. A 700 m field road links the site to road C-02-09-14.



48.347858° N, 28.652212° E

Horodkivska: Solar generation potential

18.94 MW

Full-site theoretical scenario

23.05 GWh/year

Alternative / usable-area estimate

Whole-parcel theoretical estimate. Usable area and an engineering layout remain unconfirmed.

Grid proximity

35 kV line: 2.13 km
Dzhuhastra 35/10 kV substation: 2.08 km

Woody vegetation overlaps 1.2070 ha (7.50%). Northern aspects dominate. Ground stability, drainage and shading need study.



Pilot boundary on satellite imagery

Mean irradiation: 1,248.75 kWh/m²/year

Kolomyiska: Location and site conditions

Ivano-Frankivska Oblast / 20.59 ha

Location

Near Tovmachyk, west of Kolomyia and north of Pechenizhyn. Outside the settlement boundary.

Land and current use

Abandoned pasture. The council reports municipal reserve land, but parcel registration and rights need confirmation.

Terrain and access

Mean slope 1.41°, maximum 3.65°. Local roads provide access. Road T-09-05 and a railway lie to the south.



48.586530° N, 24.873647° E

Kolomyiska: Solar generation potential

24.22 MW

Full-site theoretical scenario

27.96 GWh/year

Alternative / usable-area estimate

Excluding the forest overlap: 19.88 MW and 22.95 GWh/year. This remains a conditional scenario.

Grid proximity

35 kV line: 208.96 m
Lisna Slobidka 35/10 kV substation: 7.61 km

Woody vegetation overlaps 3.6896 ha (17.92%). Watercourse 28.38 m away. No mapped protected-area overlap.



Pilot boundary on satellite imagery

Mean irradiation: 1,160.31 kWh/m²/year

Rukshynska: Location and site conditions

Chernivetska Oblast / 3.00 ha

Location

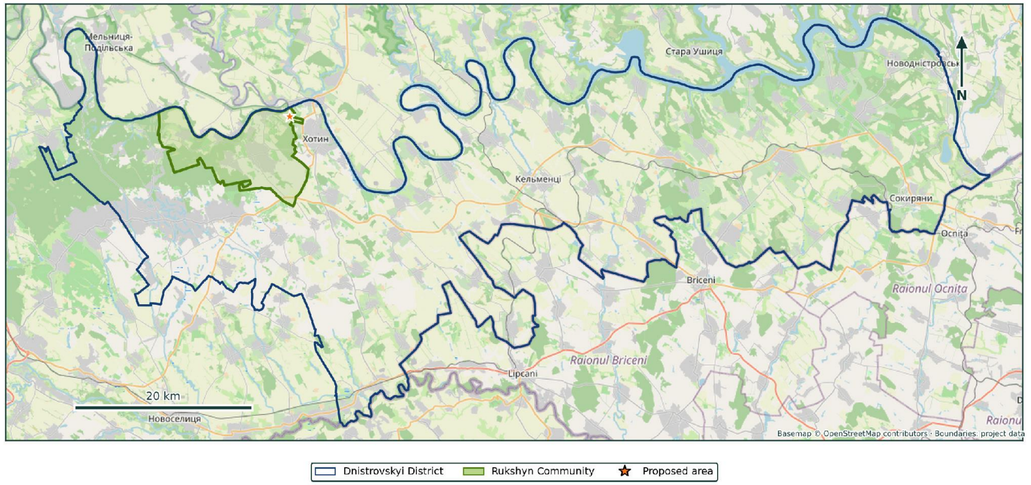
Near Pryhorodok and Khotyn, south of the Dniester valley. Outside the settlement boundary.

Land and current use

Registered municipal energy parcel, use code 14.01. Remains of unfinished industrial structures occupy the site.

Terrain and access

Mean slope 1.39°, maximum 2.64°. Road C-261101 runs beside the parcel and is predominantly unpaved.



48.529734° N, 26.445249° E

Rukshynska: Solar generation potential

3.53 MW **4.16 GWh/year**

Full-site theoretical scenario

Alternative / usable-area estimate

Approximately 2.4 ha after the line protection zone: 2.82 MW and 3.33 GWh/year.

Grid proximity

35 kV line crosses the parcel
Nearest 35 kV substation: 1.09 km

35 kV line protection zone: 0.6145 ha (20.48%). Khotynskyi National Nature Park is 193 m away. Bird migration route overlaps.



Pilot boundary on satellite imagery

Mean irradiation: 1,210.58 kWh/m²/year

Yasinianska: Location and site conditions

Zakarpatska Oblast / 110.86 ha

Location

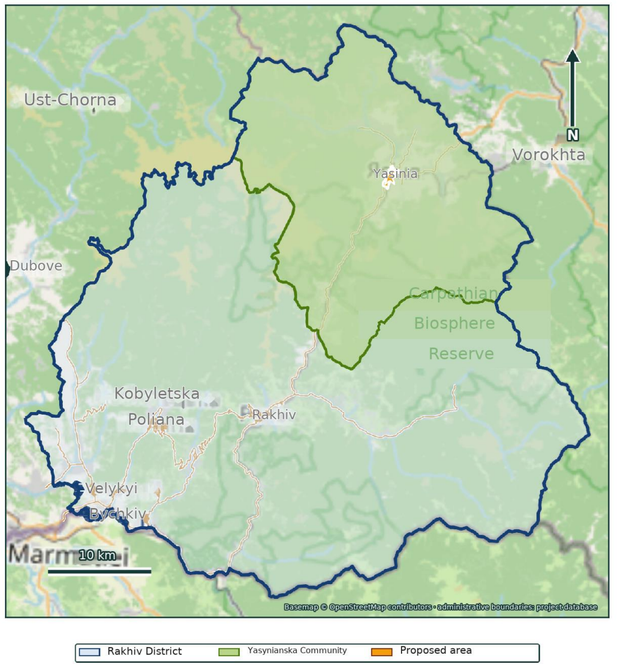
Within Yasinia, in the Chorna Tysa mountain valley. Development follows the H-09 transport corridor.

Land and current use

412 building footprints cover 90,011.57 m² (9.00 ha), or 8.12% of the pilot area. Rooftop PV is the assessment focus.

Terrain and access

Mean ground slope 2.72°. Mountain horizons, roof orientation, structural condition and access matter for each building.



48.267035° N, 24.356108° E

Yasinianska: Solar generation potential

7.76 MW **8.68 GWh/year**

Full building-footprint scenario

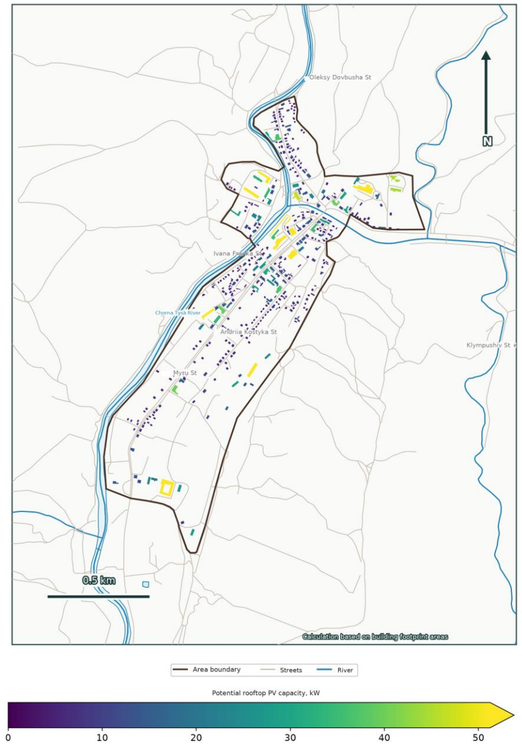
Alternative / usable-area estimate

Partially suitable roofs: 4.36 MW and 4.87 GWh/year, using assumed suitable shares by building class.

Grid proximity

35 kV line: 0.41 km
Yasinia 35/10 kV substation: 1.36 km

Nature Reserve Fund overlap: 3.0615 ha. Emerald Network: 3.8436 ha. Watercourses cross the area.



Rooftop capacity map: partially suitable roofs scenario

Mean irradiation: 1,121.37 kWh/m²/year

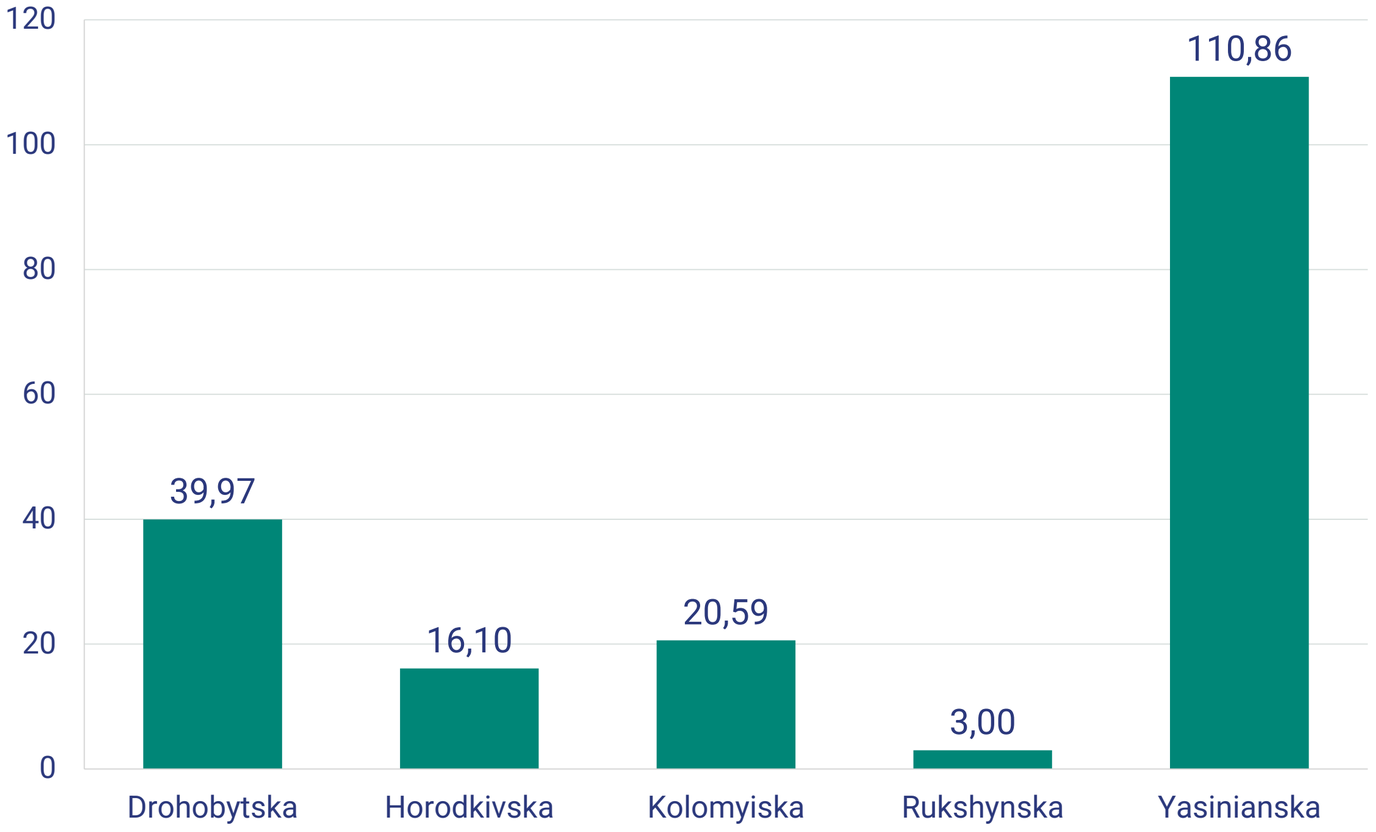
Distribution of pilot areas

190.51 ha

Total delineated area

Yasinianska accounts for 58.2% of the total area. Its buildings occupy only 9.00 ha.

Four ground-mounted sites together cover 79.65 ha.



Area in hectares. Yasinia’s settlement boundary includes buildings, streets, vegetation and water features.

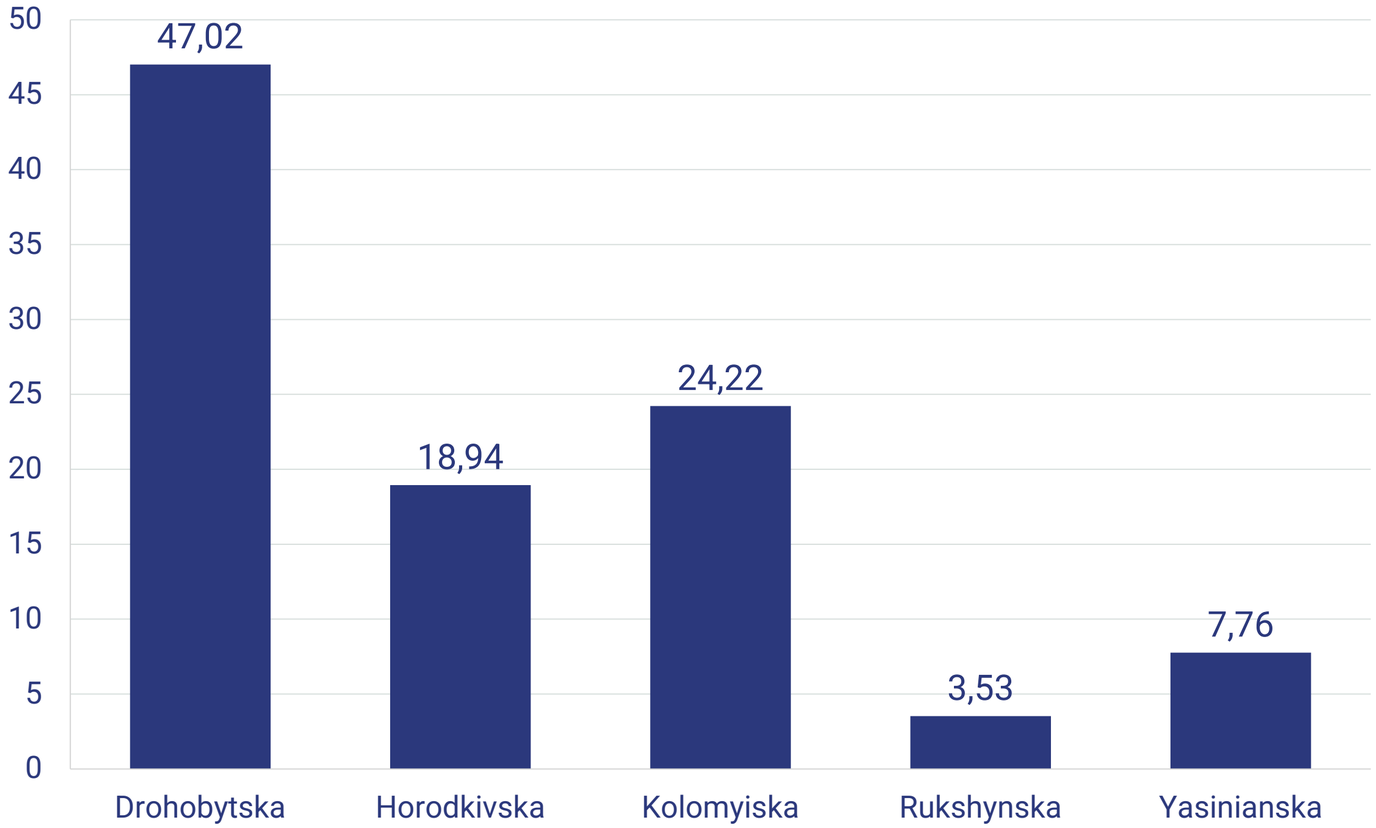
Distribution of solar capacity

101.47 MW

Sum of headline estimates

Drohobytska contributes 46.3%. Together with Kolomyiska, it accounts for 70.2%.

Ground-mounted: 93.71 MW
Rooftops in Yasinia: 7.76 MW



Full-site ground-mounted scenarios plus full building footprints in Yasinia. This is not a deployable-capacity total.

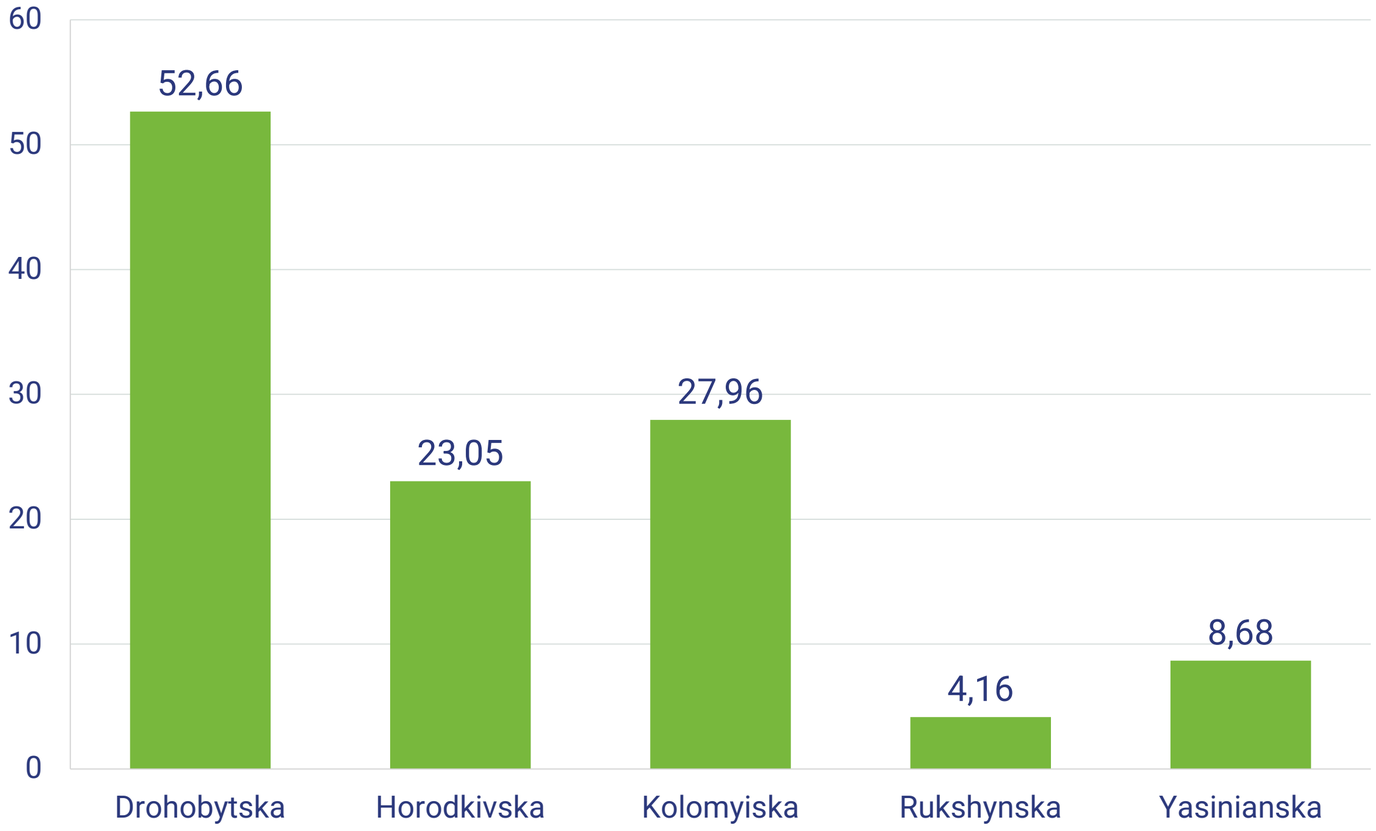
Distribution of annual electricity generation

116.51

GWh/year in headline scenarios

Drohobytska contributes 45.2% of modelled annual generation.

Ground-mounted: 107.83 GWh/year
Rooftops in Yasinia: 8.68 GWh/year



Long-term modelled output under the same headline scenarios as the capacity comparison. Actual output will vary.

Headline and reduced scenarios

Reduced scenarios

Pilot area	Headline MW / GWh per year	Reduced MW / GWh per year
Drohobytska	47.02 / 52.66	39.00 / 42.18
Horodkivska	18.94 / 23.05	16.80 / 19.05
Kolomyiska	24.22 / 27.96	19.88 / 22.95
Rukshynska	3.53 / 4.16	2.82 / 3.33
Yasinianska	7.76 / 8.68	4.36 / 4.87

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THANK YOU FOR YOUR ATTENTION!

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Energy Community Secretariat
Am Hof 4, Level 5, 1010 Vienna, Austria