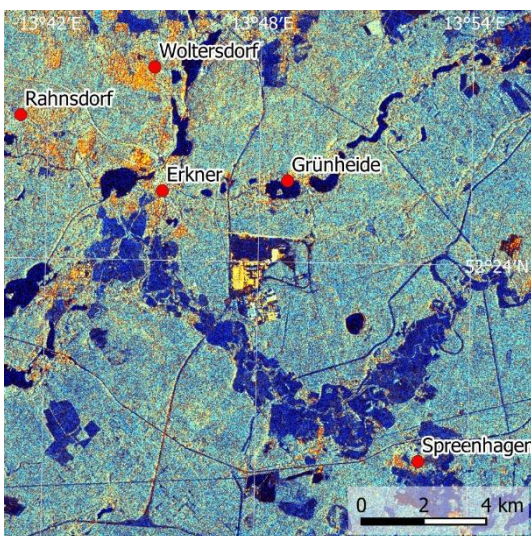




Sentinel-2, 2019-07-26. Before the construction of the Gigafactory (the built-up area near the center is a logistic hub that existed already before)..



Sentinel-2, 2026-05-29. The Gigafactory at the centre of the satellite image.



Located near Grünheide, about 35 km southeast of Berlin, Tesla's **Gigafactory Berlin-Brandenburg** is one of the largest industrial projects built in eastern Germany since reunification in 1990. First announced in November 2019, the construction began soon afterwards. The first Model Y vehicles were produced in March 2022.

The factory occupies about **300 hectares**, an area roughly equivalent to 420 football pitches. The first stage involved investment of several billion euros. By 2026, almost **12,000 people** were employed at the site, and Tesla announced plans for another 2,500–3,500 jobs. The factory produces about one hundred thousand electric vehicles and millions of battery cells per year. According to Tesla it is its first European site where both batteries and electric vehicles are produced.

Planning documents describe the original surroundings as being dominated by forest with scattered settlements, while the factory transformed a large part of this landscape into an industrial area. This development can be seen in satellite data showing the expansion of buildings, roads, cleared forests and new infrastructure over time.

The factory has brought environmental benefits as well as environmental concerns. The production of electric vehicles supports the transition away from petrol and diesel cars, reducing greenhouse-gas emissions especially when the vehicles are charged with low-carbon electricity.

However, building such a large factory also changes the local environment. About 300 hectares of land were developed, including forest. The location has raised concerns about water use and groundwater protection, because parts of the factory area are within a water-protection region.

Tesla has attempted to reduce some of these impacts. According to recent figures, the factory's freshwater consumption fell from about 457,000 m³ in 2024 to 305,000 m³ in 2025, with production wastewater being recycled on site. Solar-power capacity at the factory also increased to about **15.9 MW** in 2025.

Economically, the Gigafactory has transformed Grünheide and the wider region. Thousands of direct jobs have been created, with additional employment in transport, construction, housing, services and companies supplying the factory.



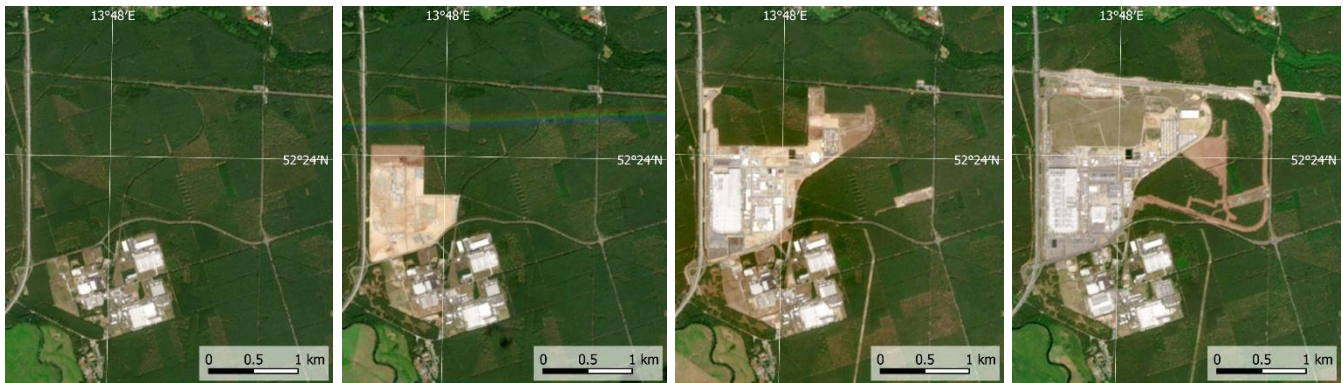
Sentinel-1, 2026-05-30. The radar satellite image clearly shows the deforested area.

Exercises

• *Satellite Map:*

- Look at the satellite image maps above and describe the situation. Try to identify different landcover types (forest, water, fields, built-up areas).
- Try to identify the site of the Gigafactory. Compare with the detail images shown below.
- Use the scale bar in the detail satellite image maps to estimate the areas of the construction site as the factory grows.
- Look at the Sentinel-1 radar image and compare with the Sentinel-2 image in true colors. Which of the landcover elements identified above are visible in the radar image better, which worse?
- Look at the forests around the Gigafactory. What patterns can you detect? Try to find arguments why this is not a natural but a cultivated forest.
- Try to find arguments why the Gigafactory was built in that place. Think e.g. about the vicinity of Germany's capital Berlin, the airport, and the availability of land and water.

Additional Material



Growth of the Gigafactory Berlin-Brandenburg (Sentinel-2, from left: 2019-07-26, 2020-07-30, 2022-07-20, 2026-05-29)

Links and sources

- <https://www.theguardian.com/technology/article/2024/aug/22/trees-cut-down-site-tesla-gigafactory-germany-deforestation> - A 2024 report about the forest clearing as seen from satellite.

