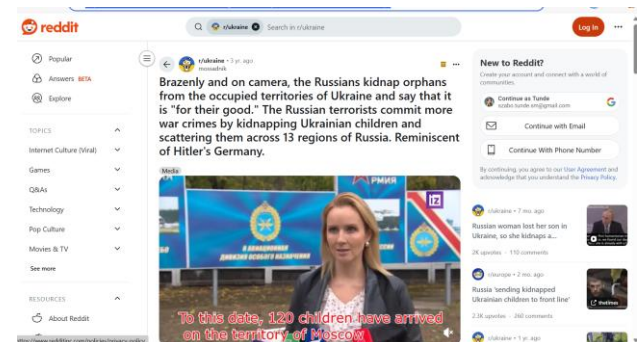
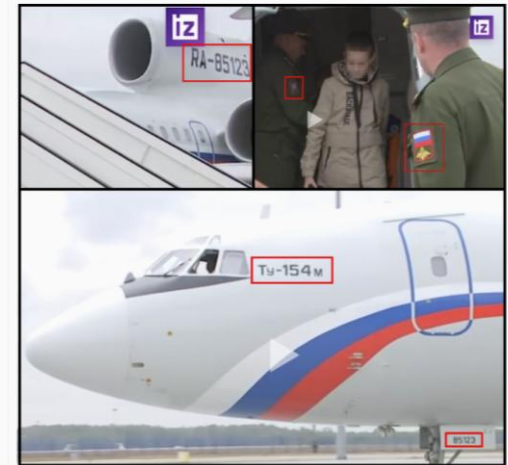


In 2022 and 2023, as the war in Ukraine intensified, subreddit posts emerged suggesting that thousands of Ukrainian children had been taken into Russian territory, allegedly for adoption or “re-education.”

search of the insignia on their arms revealed that this was, indeed, a patch worn by the Russian airforce personnel.



This is not espionage.
This is ethical,
transparent, and
science-based sleuthing
— using open data to
tell truths.

Without further ado, here is the list of exercises!

All feedback is welcome. Have fun!



🧐 – Hard // 🕵️ – Medium



🧐 – Easy ~ Hard // 🕵️ – Easy ~
Medium



🧐 – Medium // 🕵️ – Easy



🧐 – Easy ~ Medium // 🕵️ – Easy

NO₂ Emission Investigation in Göd, Hungary (2022–2024)

Google Earth Engine
in Action



From CRT television factory to Samsung's EV flagship project

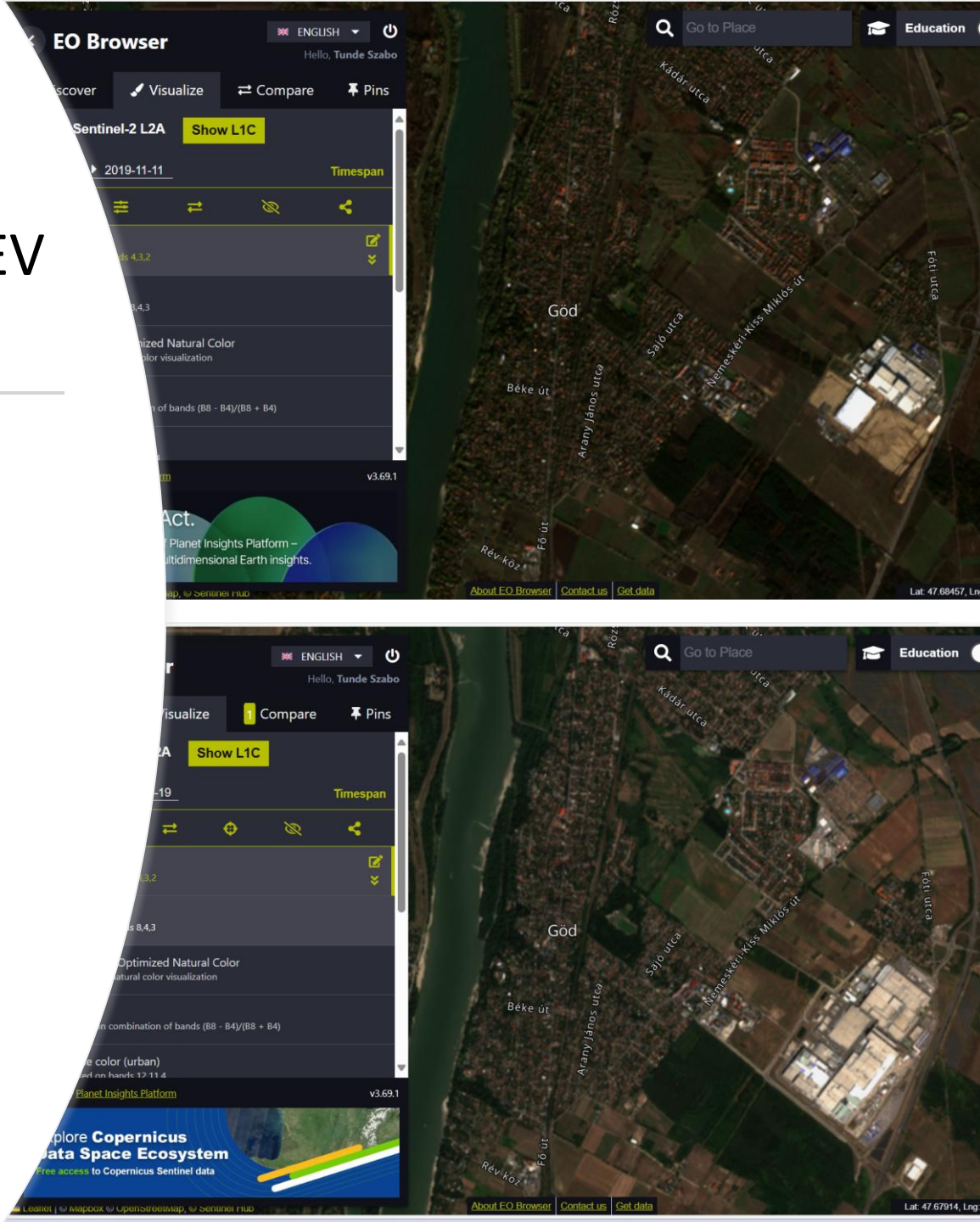
Samsung SDI Göd:
47.679692, 19.166703

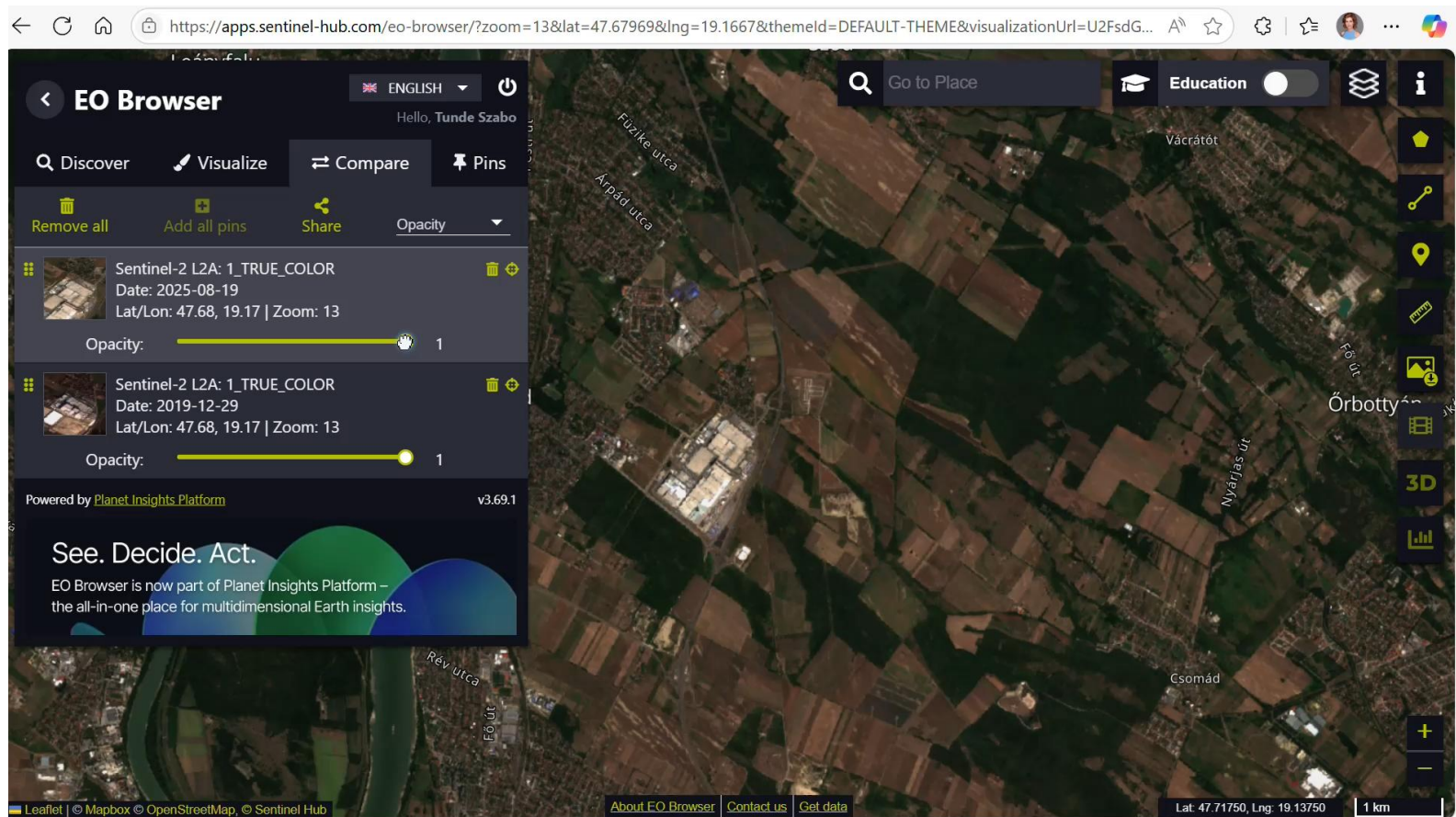
2019. 12. 29.

[Sentinel Hub EO Browser](#)

2025. 08. 19.

[Sentinel Hub EO Browser](#)





Expanding operation right next to the drinking water source of 1,7 M people

Hungary: A Hub for the Far-Eastern EV Boom

Korean and Chinese giants (Samsung SDI, CATL) are rapidly expanding their production in Hungary.

The EU electric vehicle industry's dependence on imported batteries is increasing.

But what are the local consequences?





Operates under
weak legal /
regulatory
framework

Operating without a valid permit

Authorities did not immediately shut down operations,
Expansion Approval during permit disputes

Ambiguities in permit scope and conditions

Which parts of the facility fall under the “unified
environmental permit”

Poor public access to emission data and monitoring

Battery plants emission include solvents, volatile organic
compounds (VOCs), particulates, etc., many of those are
not easily measured or disclosed

Google Earth Engine data provision

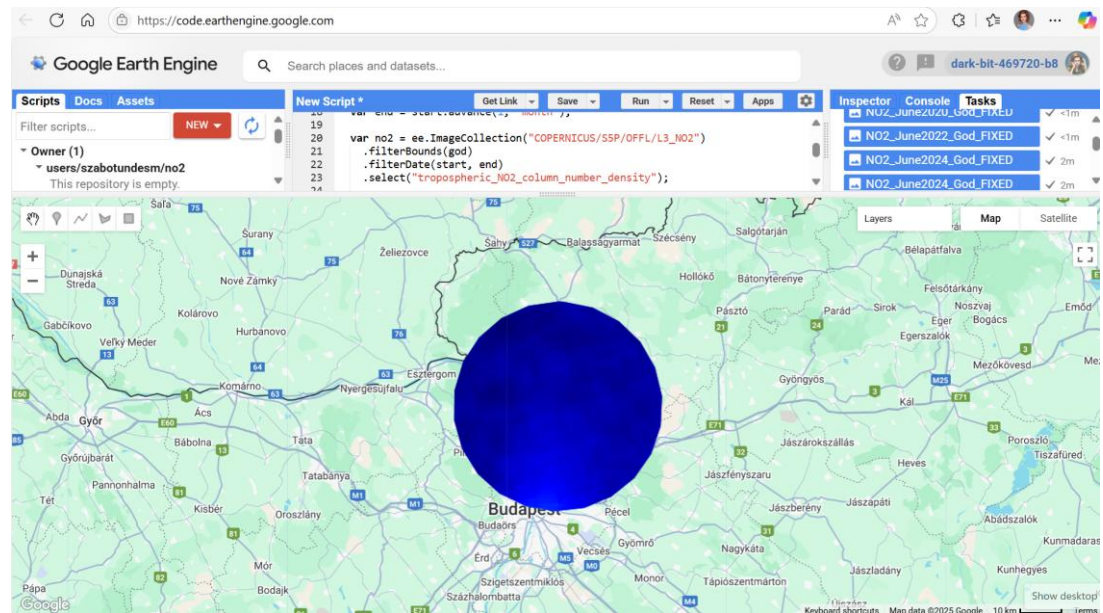
Satellite imagery: MODIS, Sentinel-2, Sentinel-5P, Landsat, VIIRS

Atmospheric data: NO₂, SO₂, O₃, CO, CH₄ (from Sentinel-5P TROPOMI)

Climate models, land use, topography, vegetation indices

Temporal granularity: Daily to monthly composites

Spatial granularity: 10 m to 10 km resolution, depending on the sensor

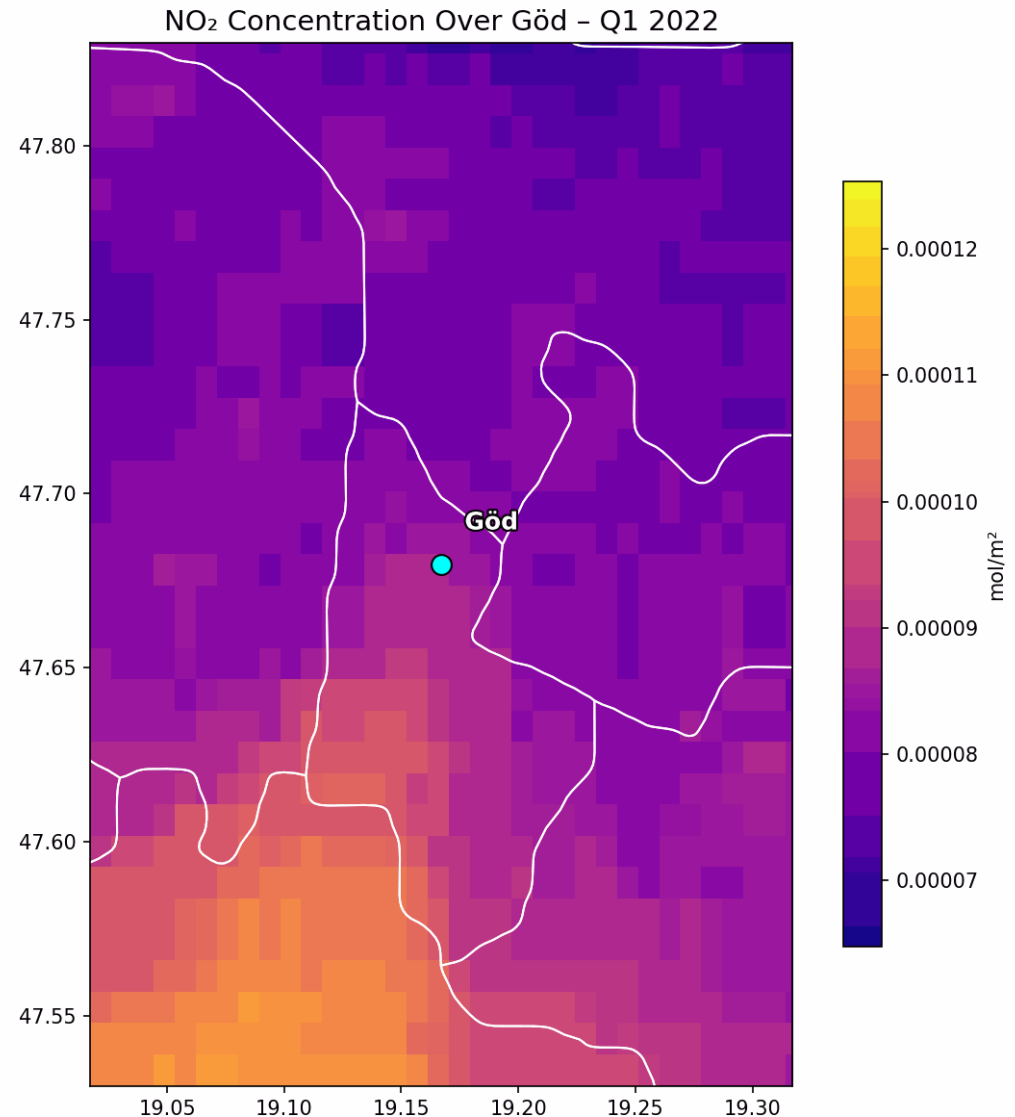


Circumstantial evidence vs. facts

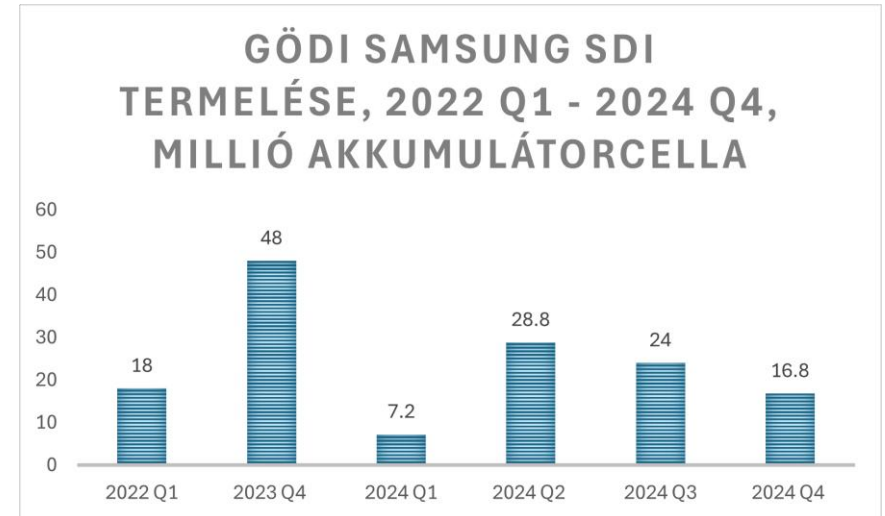
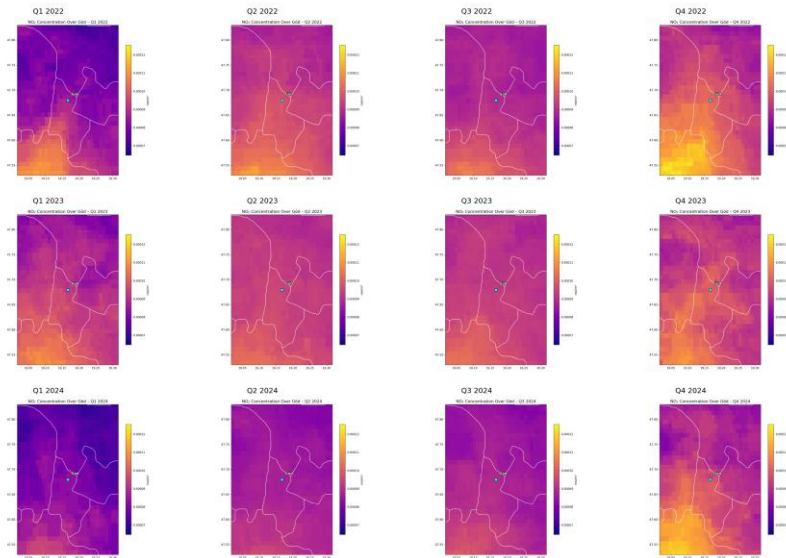
Report on the use of hazardous solvents (NMP) in Hungary: 88 tons over 3 years (Atlatzso)

Residents complain about deteriorating air quality, noise, and shiny airborne deposits coming from the factory

The monitoring wells used to measure groundwater contamination were already buried during the construction phase



Quarterly NO₂ Concentration - Göd (2022-2024)



Output of Samsung SDI Göd, million battery cell

**Earth Observation systems
applied for spatial reasoning**

NO₂ emissions are correlated with changes in production volume

Even in cases where ground-based measurement becomes impossible, we can detect and track pollution sources