

COPERNICUS EARTH OBSERVATION

DATA VISUALISATION WORKSHOP SERIES



PROGRAMME OF THE
EUROPEAN UNION

Copernicus
Europe's eyes on Earth



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Introduction to EO Data Visualisation

Working with Spatial & EO Data a Journalistic Perspective

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Data Visualisation Workshop Series
Introduction to EO Data Visualisation

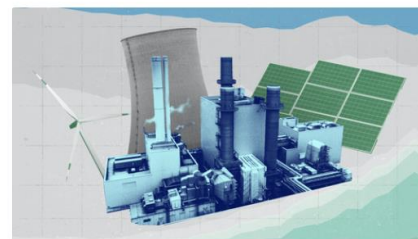
Energiekrise



Livedaten zur Energiekrise

Die Erdgasversorgung in Europa und Deutschland im Überblick

5 Min



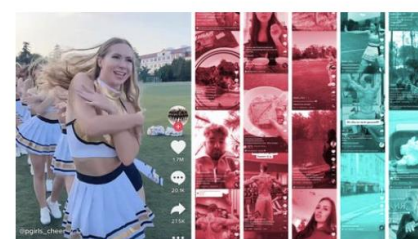
Energiedebatte

Warum verstromen wir in Deutschland immer noch Gas?

7 Min



Algorithmen



Selbstversuch

So tickt der TikTok-Algorithmus

8 Min



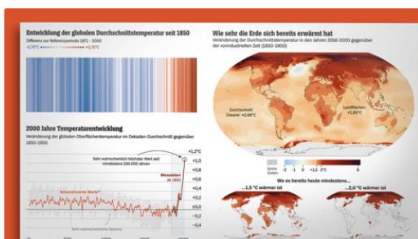
Video-Empfehlungen vor der Wahl

Wie YouTube es allen recht machen will

10 Min



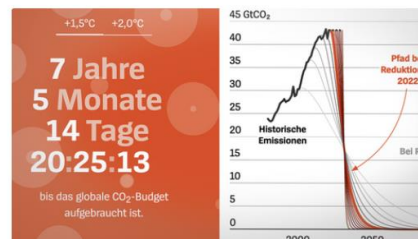
Klimakrise



So steht es um die globale Erwärmung

Plus 1,2 Grad und kein Ende in Sicht

10 Min



CO₂-Budget

Wie viel CO₂ darf die Menschheit noch ausstoßen?

7 Min



Mobilität



Zwischenbilanz der »Öffi«-Offensive

Wer vom 9-Euro-Ticket profitiert – und wo es floppt

9 Min



Paris und Barcelona vor Berlin

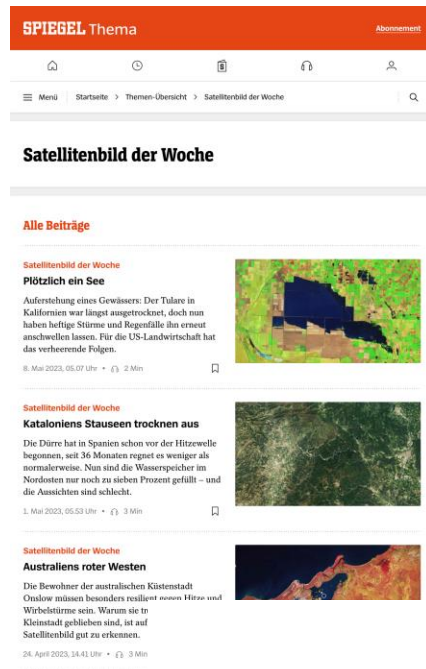
Deutschland verpasst die Verkehrswende

12 Min



EO & Spatial Data Usage @ Der Spiegel

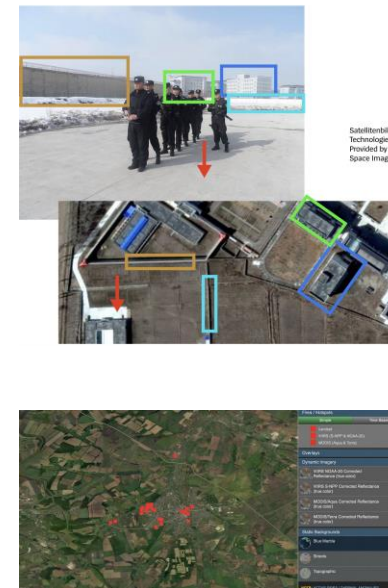
Satellite Image of the Week



Coverage of News Events

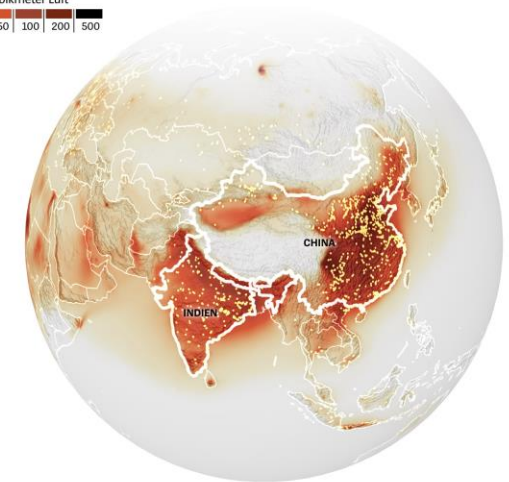
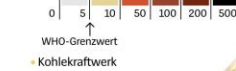


OSINT & Verification



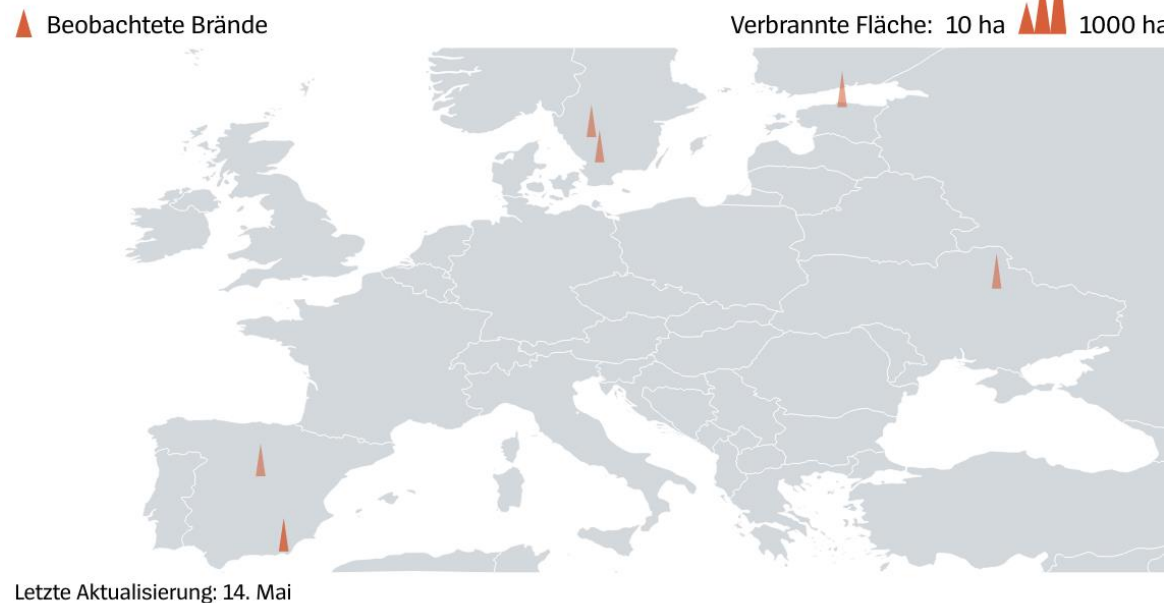
Storytelling & Data Journalism Projects

Feinstaubkonzentration im
Jahresmittel
PM_{2,5} an der Oberfläche, 2022
Mikrogramm pro Kubikmeter Luft



Example "Forest Fires in the European Union"

Von Satelliten beobachtete Brände während der letzten sieben Tage



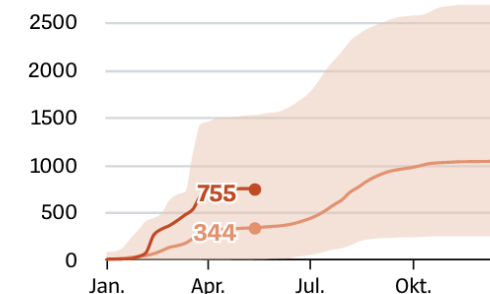
Process & Tools

- Source European Forest Fire Information System (EFFIS), NASA
- Visualization with Svelte & Data Wrapper

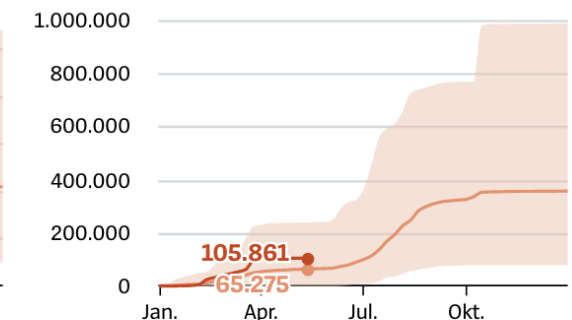
Feuer in der Europäischen Union

— 2023 — Durchschnitt 2006 bis 2022 — Minimum / Maximum 2006 bis 2022

Anzahl der Brände, kumuliert



Verbrannte Fläche, kumuliert, in Hektar



• Quellen: EFFIS, Nasa



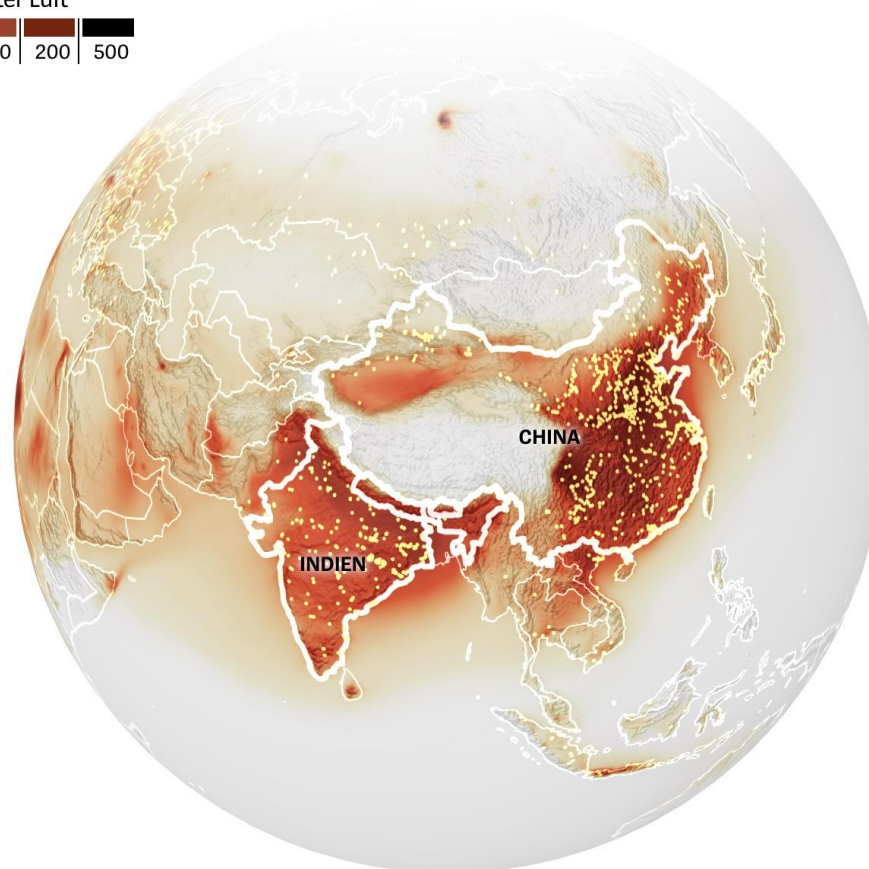
Example "Global Air Quality"

**Feinstaubkonzentration im
Jahresmittel**
PM_{2,5} an der Oberfläche, 2022
Mikrogramm pro Kubikmeter Luft

0	5	10	50	100	200	500
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↑
WHO-Grenzwert

• Kohlekraftwerk



Process & Tools

- Source still frames: NASA's Global Modeling and Assimilation Office
- Visualization with Svelte and Threejs



Example "Wind Farm Legislation"

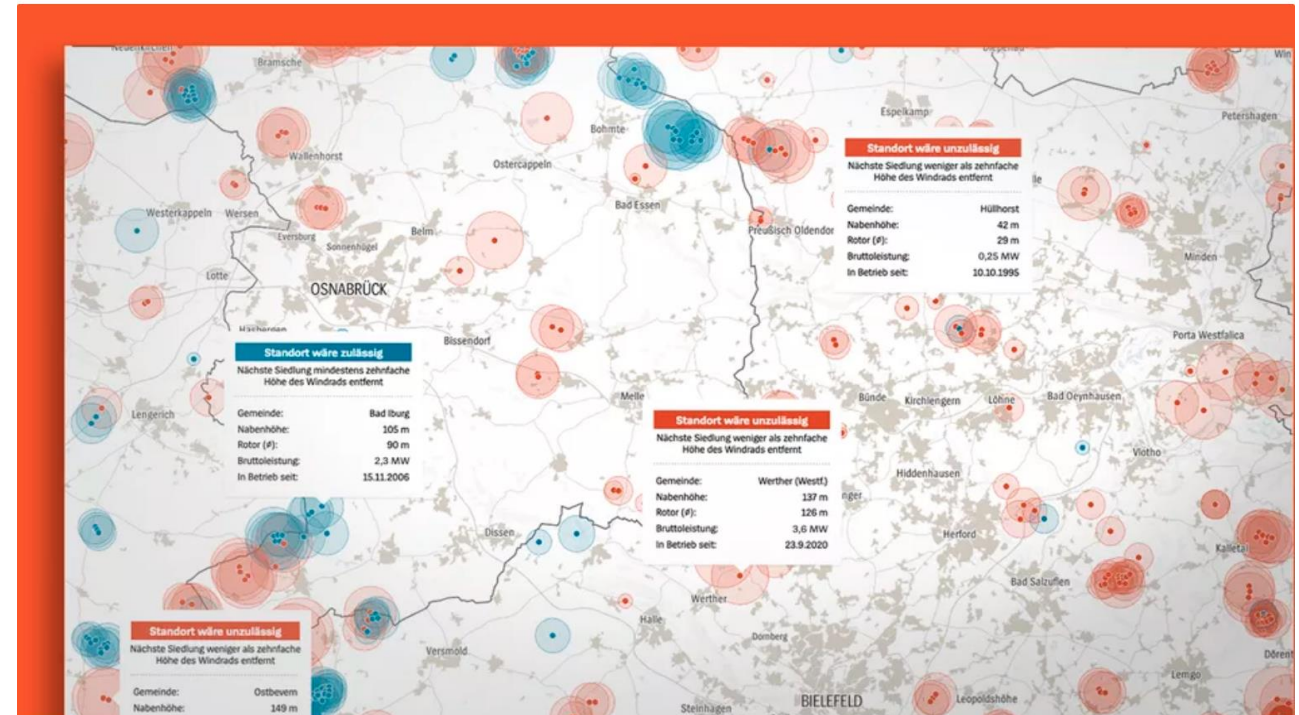
Streit über Abstandsregeln

S+ Wie Bayern den Windkraftausbau blockiert

Die Energiewende wird zu einer Frage der nationalen Sicherheit. Doch was, wenn alle Bundesländer bei der Windkraft so strenge Regeln hätten wie Bayern?

Process & Tools

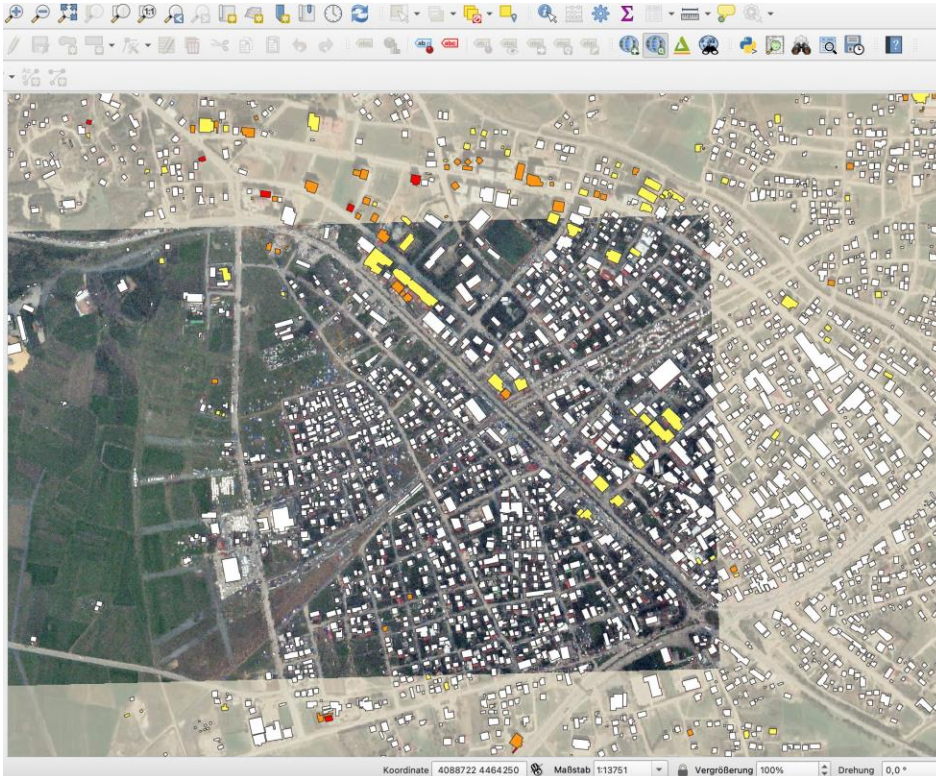
- Source: "Marktstammdatenregister"
- Processing in PostGIS & Python / Pandas
- Visualization in Mapbox



Welche Windkraftstandorte wären mit der 10H-Regel noch zulässig? Der Spiegel



Example "Earthquake in Turkey/Syria"

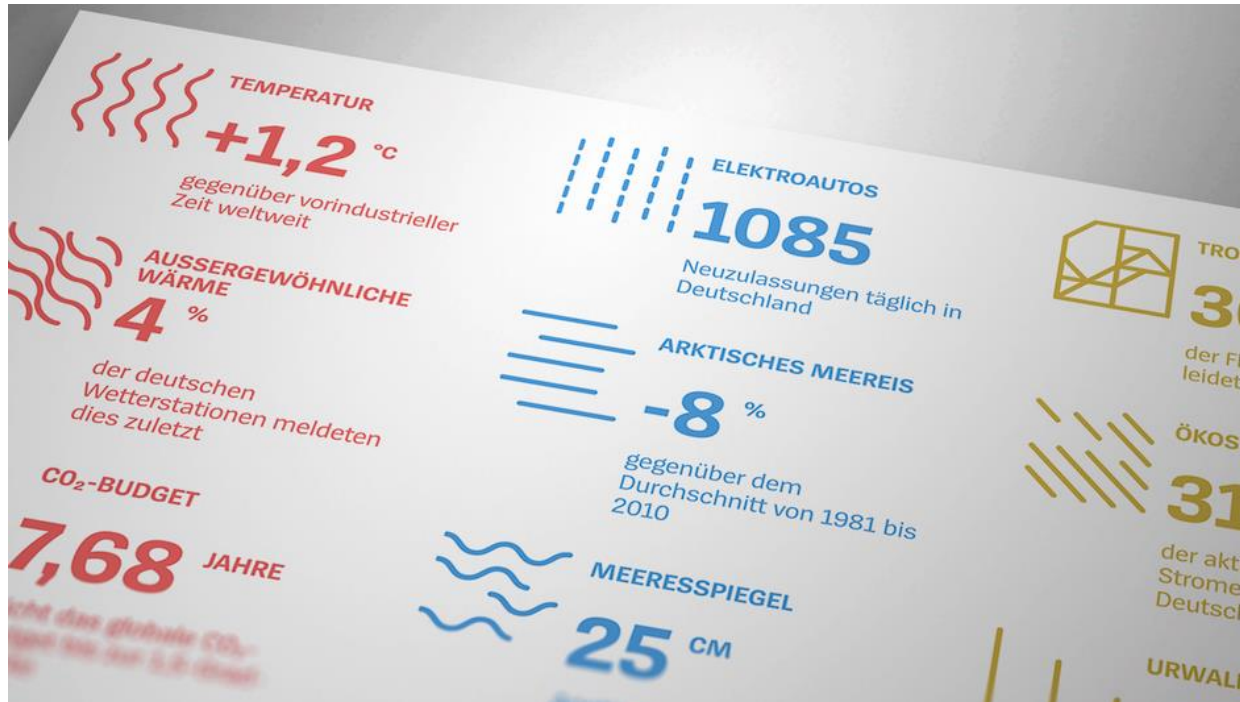


Process & Tools

- AI damage assessment
- Study and most important results in brief
- Link to the whole study for background information
- Short description of methodology
- Geopackage
- Link to available satellite imagery



Example "Climate Dashboard"



Process & Tools

- Dashboard of climate-relevant variables
- Data is pulled daily via python scripts from various data sources like DWD
- Minimalistic design as part of continuous reporting



Challenges in using EO Data

- Shifting topics and domains on a daily basis
- Balancing multiple stories and data sources
- Quickly grasp complex data and understand how to make it work for stories
- In most cases: no time for in-depth processing



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In a perfect world we have...

- A short description of what the dataset says and why it is important
- Visualization-ready data: CSV and GeoTIFF files as well as a detailed documentation about the classifications
- Clear, acronym-free(ish) descriptions
- Easy-to-replicate graphs and maps
- Access to domain-specific experts for verification and to available satellite imagery if possible



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Thanks!
Happy to chat more about it...



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