ZOÏ
environment network

Zoï Environment Network is a non-profit organization that helps build sustainable societies through **informed analysis, visual communication, design** and **action**.
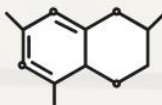
Our topics are

War on Ukraine

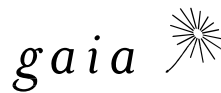Climate change

Biodiversity

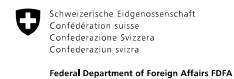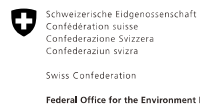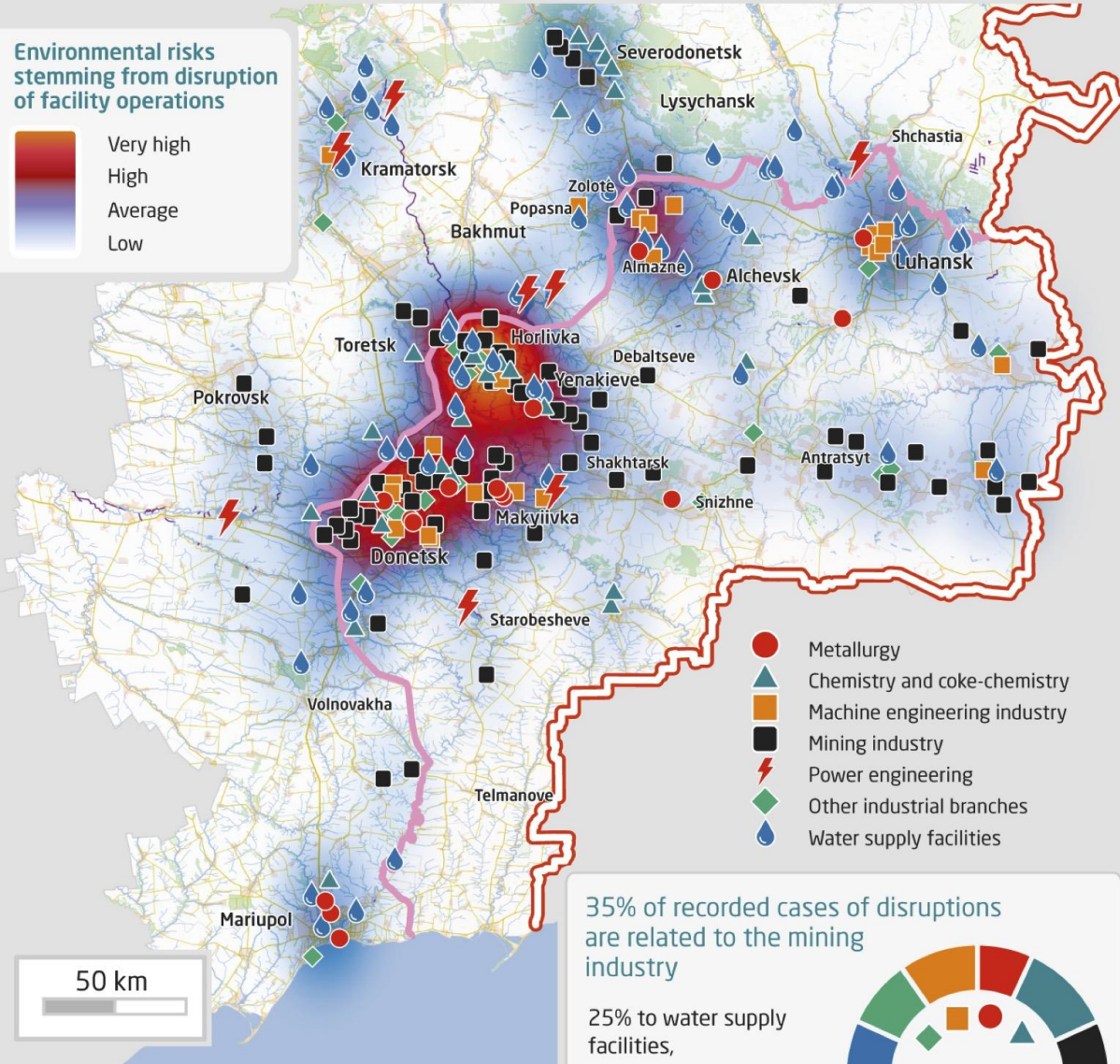Chemicals and Waste

Security and conflict

Water

2021 annual report
zoï environment network

ONE MONTH INTO the WAR ON UKRAINE
context and the impact on the environment

zoï partners

Donbas 2014

Environmental risks stemming from disruption of facility operations

Very high
High
Average
Low

Severodonetsk
Lysychansk
Shchastia
Kramatorsk
Zolote
Popasna
Bakhmut
Almazne
Alchevsk
Luhansk
Toretsk
Horlivka
Debaltseve
Yenakieve
Pokrovsk
Antratsyt
Shakhtarsk
Snizhne
Makyiivka
Donetsk
Starobesheve
Volnovakha
Telmanove
Mariupol

50 km

● Metallurgy
▲ Chemistry and coke-chemistry
■ Machine engineering industry
■ Mining industry
⚡ Power engineering
◆ Other industrial branches
💧 Water supply facilities

35% of recorded cases of disruptions are related to the mining industry

25% to water supply facilities,

11% to chemical and coke-chemical industry,

10% to machine engineering industry.
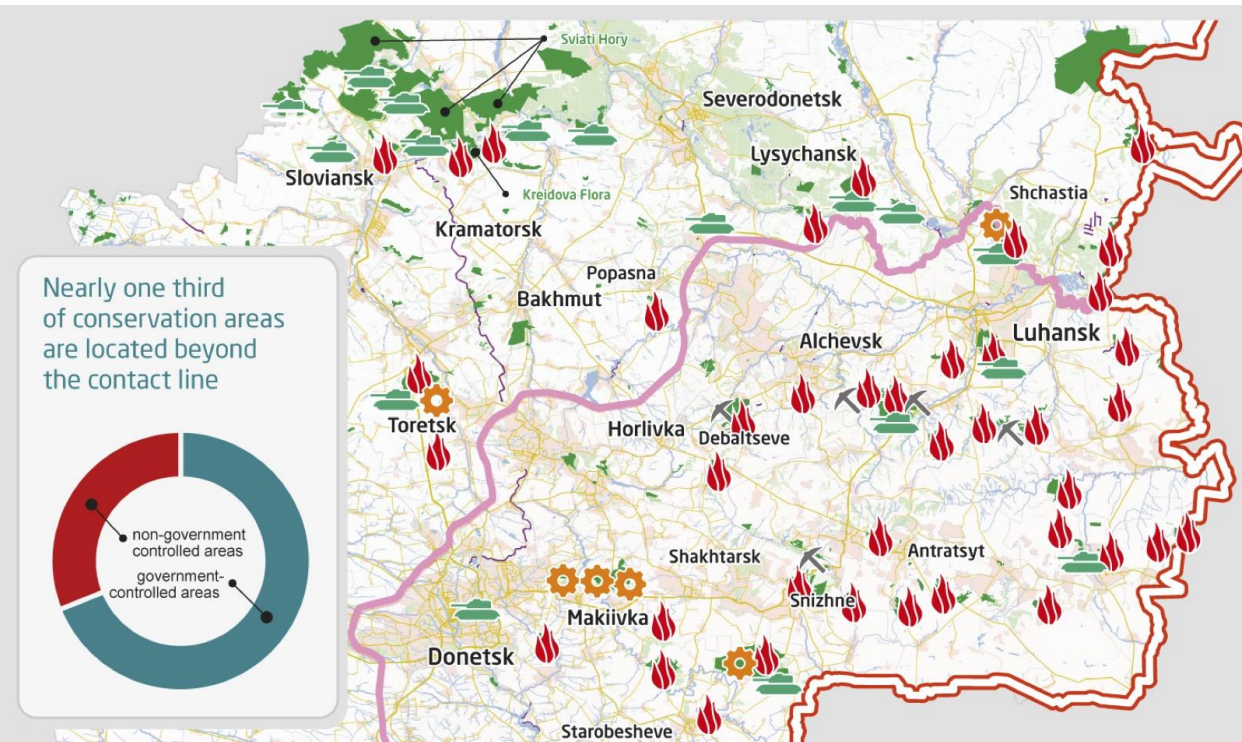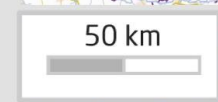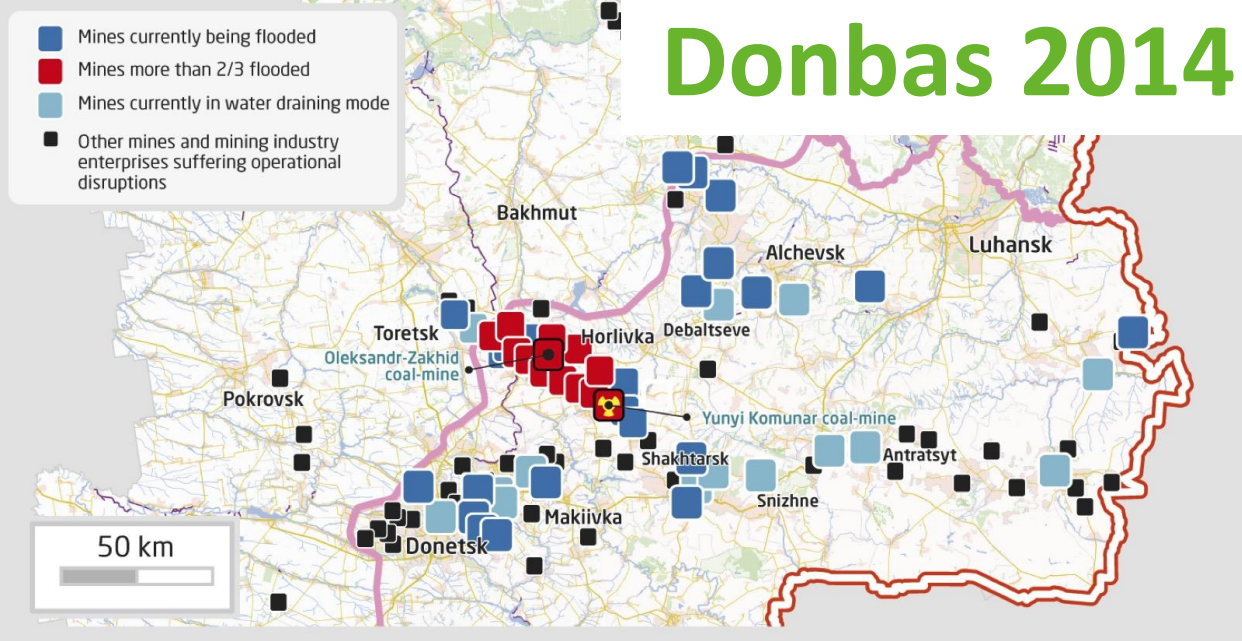
Low
Average
Very high
High
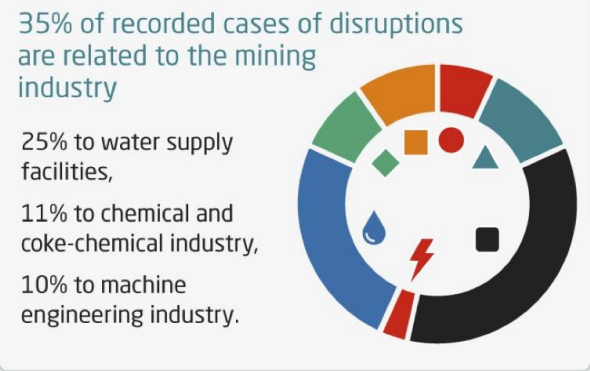
More than 80% of the facilities damaged during hostilities have high or very high environmental risk levels. The highest environmental risk zones are seen at the population agglomerations of Donetsk – Makiivka, Toretsk – Horlivka – Yenakieve, and in the city of Mariupol in the Donetsk oblast. In the Luhansk oblast, sites of highest risk include: Luhansk, Alchevsk and the population agglomeration of Almazne – Irmino – Zolote.
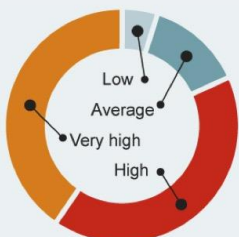
■ Mines currently being flooded
■ Mines more than 2/3 flooded
■ Mines currently in water draining mode
■ Other mines and mining industry enterprises suffering operational disruptions

Bakhmut
Alchevsk
Luhansk
Toretsk
Oleksandr-Zakhid coal-mine
Horlivka
Debaltseve
Pokrovsk
Yunyi Komunar coal-mine
Shakhtarsk
Antratsyt
Snizhne
Makiivka
Donetsk

50 km

Sviati Hory
Severodonetsk
Lysychansk
Sloviansk
Kreidova Flora
Shchastia
Kramatorsk
Popasna
Bakhmut
Alchevsk
Luhansk
Toretsk
Horlivka
Debaltseve
Shakhtarsk
Antratsyt
Makiivka
Snizhne
Donetsk
Starobesheve

Nearly one third of conservation areas are located beyond the contact line

non-government controlled areas

government-controlled areas

Damage to protected areas

ONE MONTH INTO THE **WAR ON UKRAINE**
context and the impact on the environment

March 2022

Residue waste and toxic sludge in tailing storage facilities
billion tonnes

- Dnipropetrivska oblast (4.0)
- Dnipro basin (4.8)
- Siversky Donets basin (0.54)
- Azov Sea coast (0.34)
- Dniester basin (0.16)
- Poltavska oblast (0.46)
- Kirovohradska oblast (0.13)
- Zaporizhska oblast (0.11)
- Donetska oblast (0.10)

The number of refugees
2 140 000

- 5 000
- 270 000
- 260 000
- 320 000
- 370 000
- 560 000

Background information

- Russia-controlled areas per 22 February 2022
- Mass presence of Russian troops
- Russian advances
- Major flows of refugees
- Nuclear power plants
- Decommissioned nuclear power plant
- Major hydropower plants
- Major thermal power plants
- Major chemical facilities
- Refineries
- Non-operational refineries
- Oil and gas pipelines
- Water canals
- Natural protected areas

Environmental concerns and damage

- Strikes and attacks on cities
- Strikes and attacks on airports and military facilities
- Incidents and attacks at facilities with radioactive materials
- Strikes at industrial facilities
- Release of toxic chemicals
- Damage to gas distribution networks
- Damage to water and wastewater facilities
- Attacks on strategic resource-control locations
- Damage or disruptions in protected areas
- Vegetation fires in February–March 2022

Information per 23 March 2022
Sources: monitoring of national and international mass media and social networks, reports from the field, World Nuclear Association, Impact Initiatives, Ukrhydroenergo, ProtectedPlanet, CEOBS, Entsog, REEFMC, Ecoplatform, Mapstand, UNHCR, Openstreetmap, Wikipedia.

0   100 km

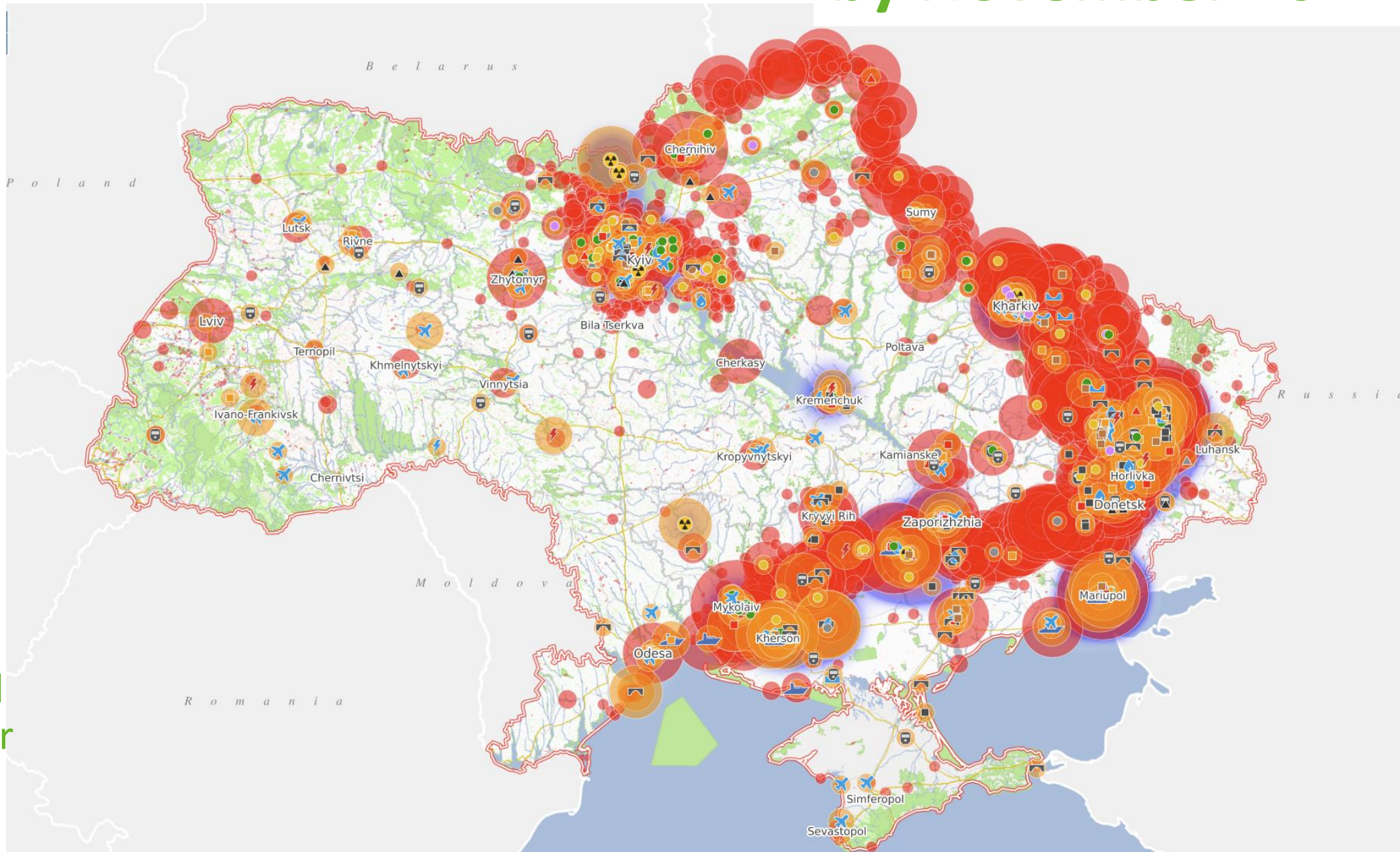Map produced by Zoï Environment Network, March 2022

by November 2022

21,000 incidents in **1,900 cities**, towns, villages

1000 incidents at **530 industrial or infrastructure** facilities

10x larger share of **forests** burned inside the war zone
(15x for pine & spruce)

30% of protected areas damaged or occupied

▶ www.ecodozor.org

Nuclear threat

Ukraine conflict environmental briefing

Conflict and Environment Observatory & zoï environment network

joint product

Nuclear power plants by type
Differentiated by shape

- VVER-440
- VVER-1000
- AP1000
- RBMK

Nuclear power plants by operational status
Differentiated by colour

- Operating
- Temporarily shut down per 15 July 2022
- Projected
- Decommissioned
- Destroyed
- Research reactors

- Radioactive waste interim confinement point
- Uranium mining and milling
- Peaceful nuclear explosions

Kyiv SSE Nuclear sites with incidents as a result of the conflict
Russia-controlled areas per 5 July 2022
Former presence of Russian troops

Map produced by Zoï Environment Network, July 2022
Source: Statista Research; World Nuclear Association; Wikipedia

Incidents at nuclear facilities in Ukraine 2022
Aggregated per week

- Infrastructure destruction
- Disruption of work
- Power supply
- Dismantling

- Chernobyl NPP
- South Ukraine NPP
- Zaporizhzhia NPP
- Neutron Source Nuclear Research Facility (Kharkiv)
- Kyiv State Specialized Inter-oblast Enterprise
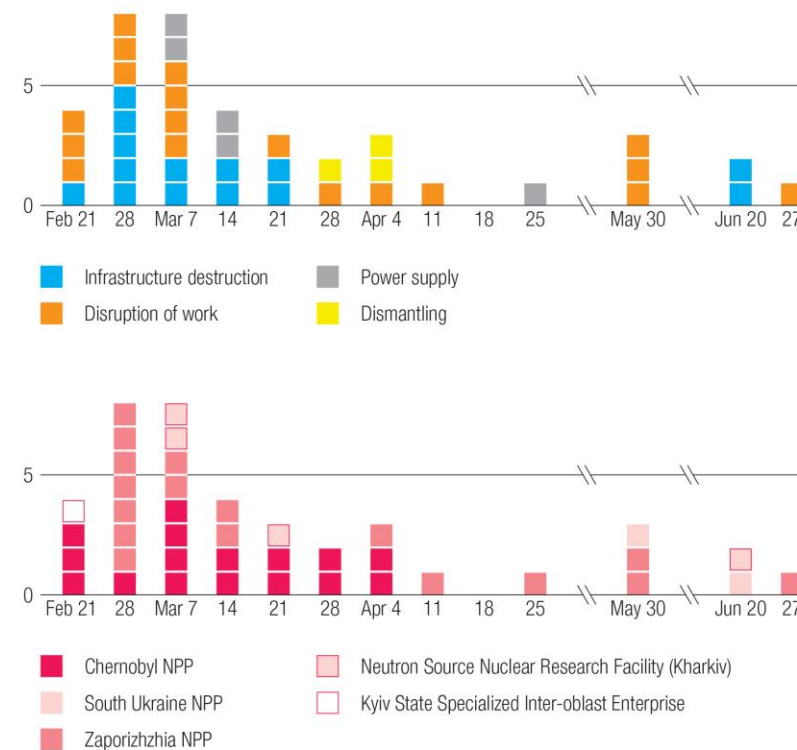
Diagram produced by Zoï Environment Network, July 2022
Data: www.ecodozor.org

joint product

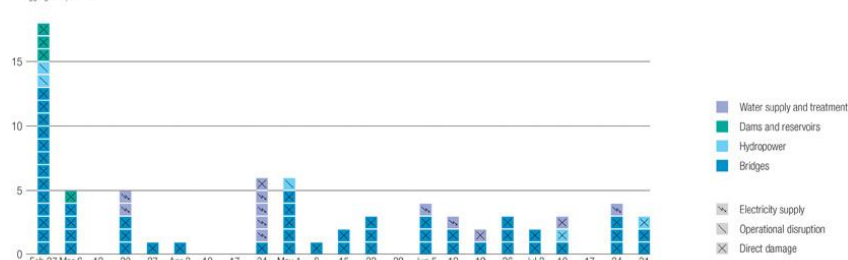Conflict and Environment Observatory & zoï environment network

Ukraine conflict environmental briefing
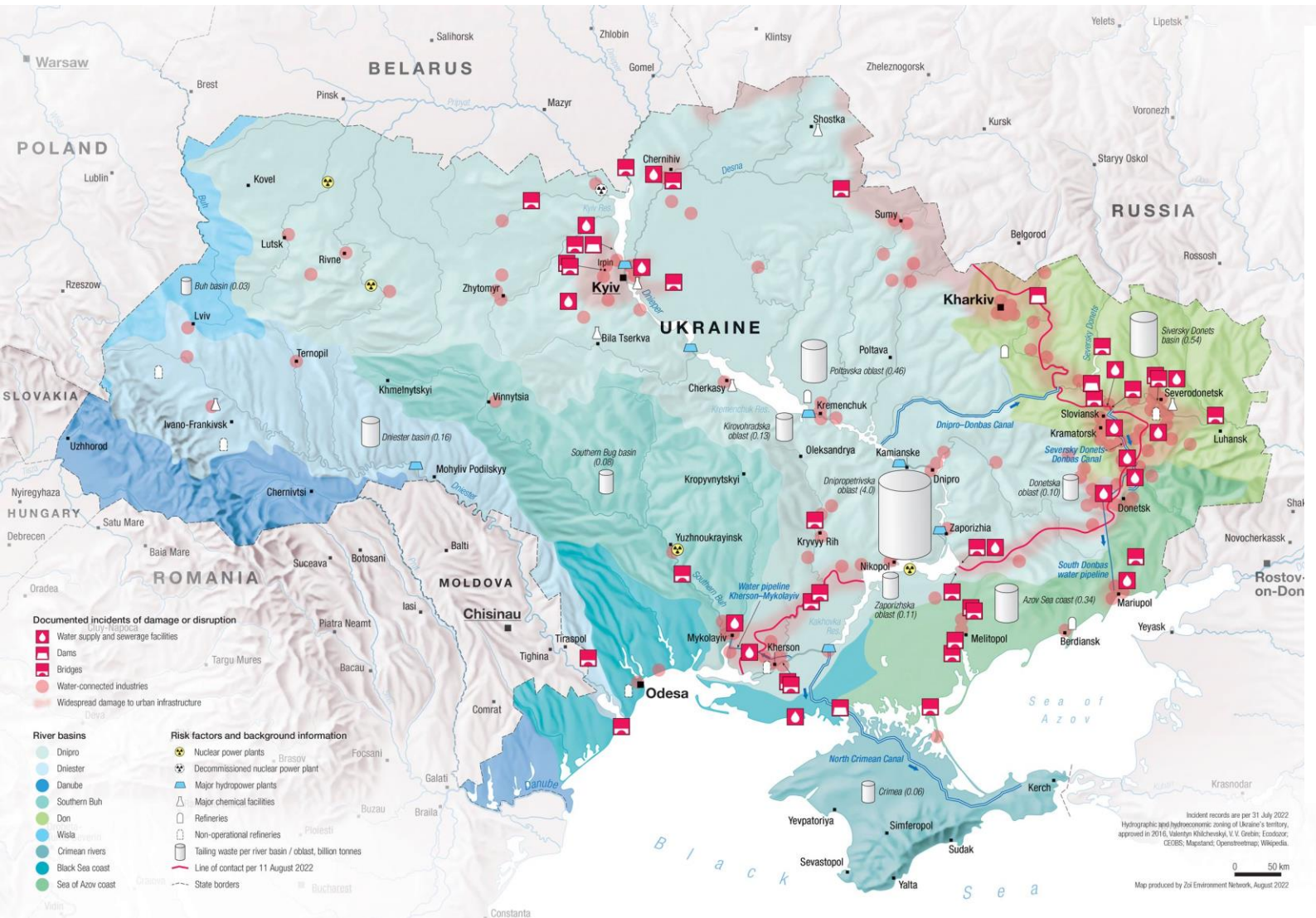
Water related incidents in Ukraine per 31 July 2022

Damage or disruption to water-related infrastructure
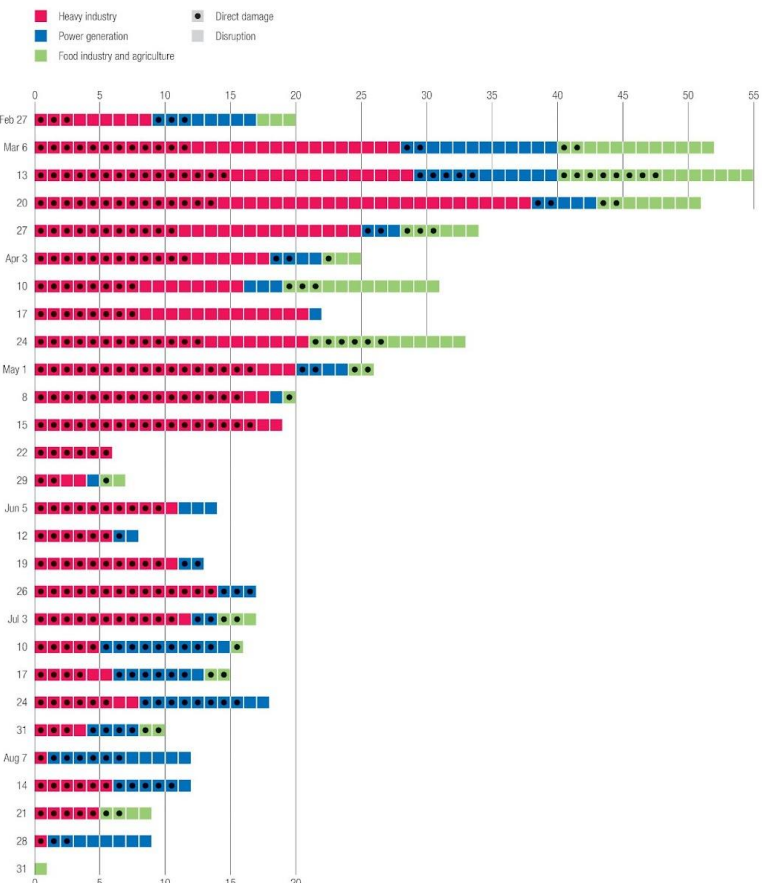*Aggregated per week*

Water supply and treatment
Dams and reservoirs
Hydropower
Bridges

Electricity supply
Operational disruption
Direct damage

Direct damage to water-connected industries
Aggregated per week

Nuclear power
Thermal power
Hydropower
Mechanical engineering
Mining
Chemical and coke industry
Metallurgy and metalworking
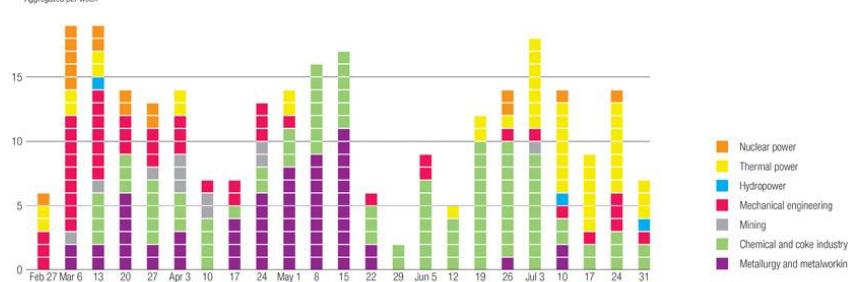
Diagram produced by Zoï Environment Network, August 2022
Data: www.ecodozor.org

Documented incidents of damage or disruption
- Water supply and sewerage facilities
- Dams
- Bridges
- Water-connected industries
- Widespread damage to urban infrastructure

River basins
- Dnipro
- Dniester
- Danube
- Southern Buh
- Don
- Wisla
- Crimean rivers
- Black Sea coast
- Sea of Azov coast

Risk factors and background information
- Nuclear power plants
- Decommissioned nuclear power plant
- Major hydropower plants
- Major chemical facilities
- Refineries
- Non-operational refineries
- Tailing waste per river basin / oblast, billion tonnes
- Line of contact per 11 August 2022
- State borders

Incident records are per 31 July 2022
Hydrographic and hydroeconomic zoning of Ukraine's territory, approved in 2016, Valentyn Khilchevskyi, V. V. Grebin; Ecodozor; CEOBS; Mapstand; Openstreetmap; Wikipedia.

0   50 km

Map produced by Zoï Environment Network, August 2022
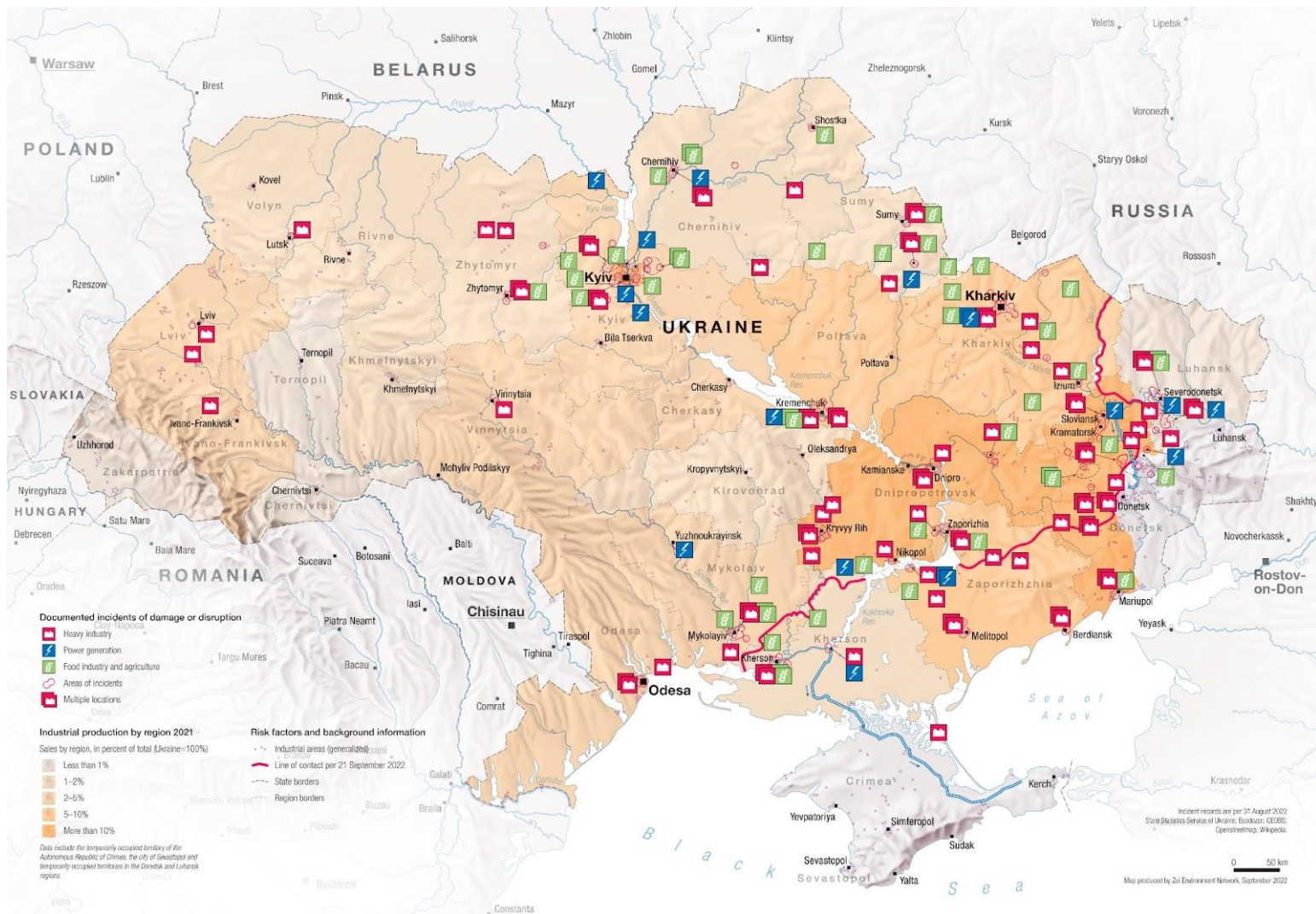
Industry related incidents in Ukraine per 31 August 2022

Fossil fuel

Conflict and Environment Observatory & zoï environment network
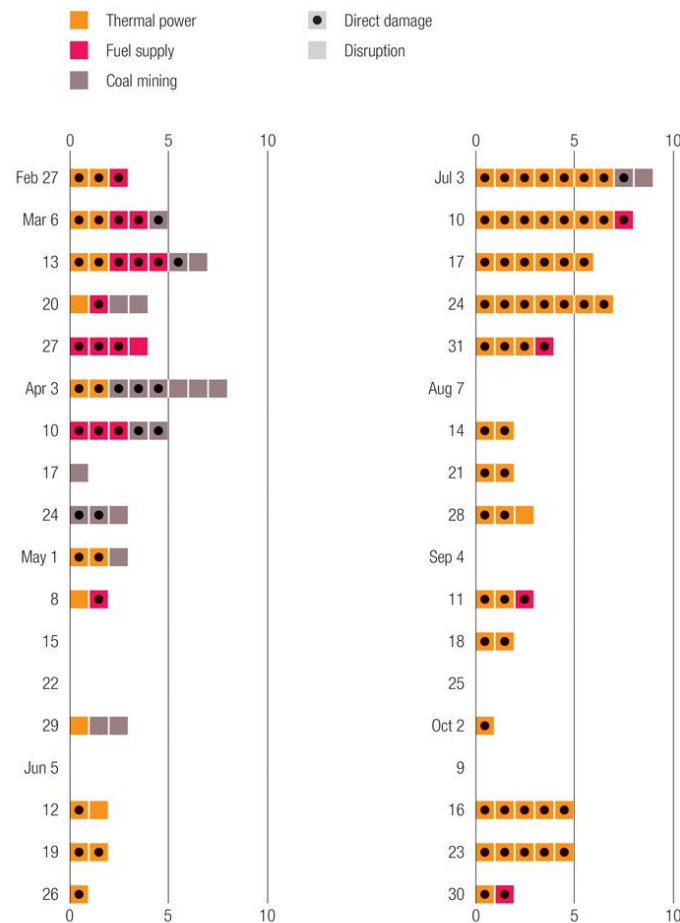
Ukraine conflict environmental briefing
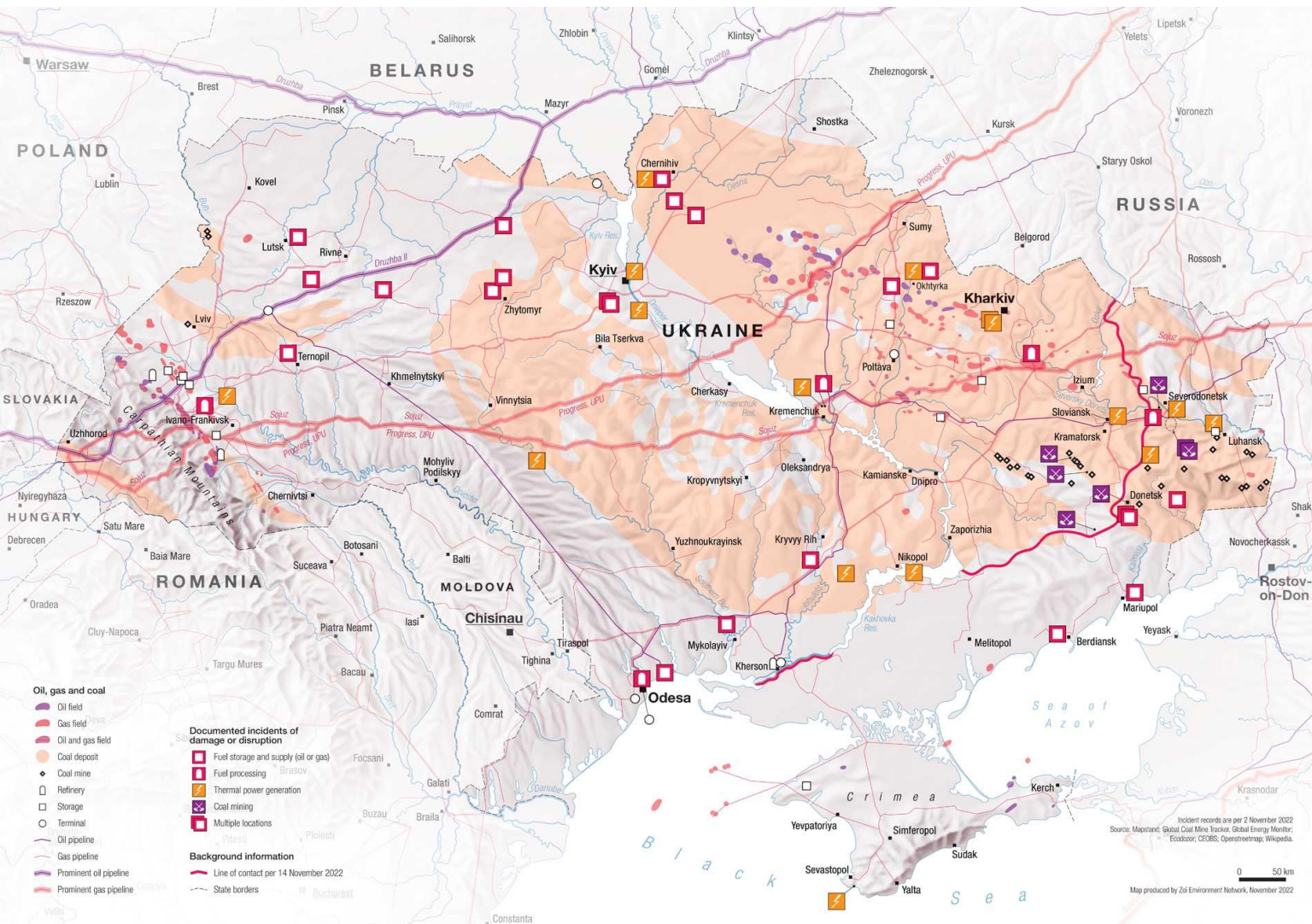
Fuel related incidents in Ukraine per 31 October 2022

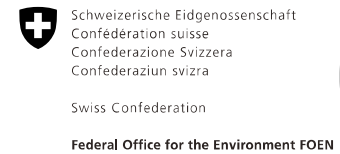Damage or disruption to fuel-related infrastructure
Aggregated per week

Diagram produced by Zoï Environment Network, November 2022
Data: www.ecodozor.org

Users of Ecodozor.org data and insights

United Nations (UNEP, UNDP, OCHA…)

Organization for Security and Co-operation in Europe

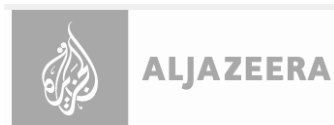Environmental authorities

Diplomatic community

Environmental NGOs

Humanitarian organisations

Research and academia

Media