Public utilities as Lifeline of Society in Occupied Territories?

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Mariupol, June 2022. Photo: t.me/andriyshTime/1480

Overview of infrastructure damage and reaction – example of October 10-12, 2022

Energy

30% of facilities affected Oct. 10

Threat to the Ukrainian unified grid: transmission & grids

Rolling blackouts throughout the country to manage the power supply

Suspension of electricity exports to EU

Still: electricity payment levels at 70%

Water

Large-scale water supply collapse due to power outages in at least 100 settlements.

Generators and water trucks.

ICRC – provided emergency water to 8 million people since 2014.

Plans to import generators that can supply cities of up to 100000

Consumers pay but due to the loss of population, loss of revenue.

Ihor Kolykhaev, mayor of (occupied) Kherson: Ukraine is where Ukrainian utilities are

- “Да, Херсон готовится к отопительному сезону, потому что здесь остались наши жители. Напоминаю, что *по украинскому законодательству городской голова ОБЯЗАН* готовить городское хозяйство к зиме..” *(June 6, 2022, FB page)*

- “Yes, Kherson is preparing for the heating season, because our residents have remained here. I remind you that *according to Ukrainian legislation*, the mayor is OBLIGED to prepare the municipal economy for winter.”

Methodology & Sources

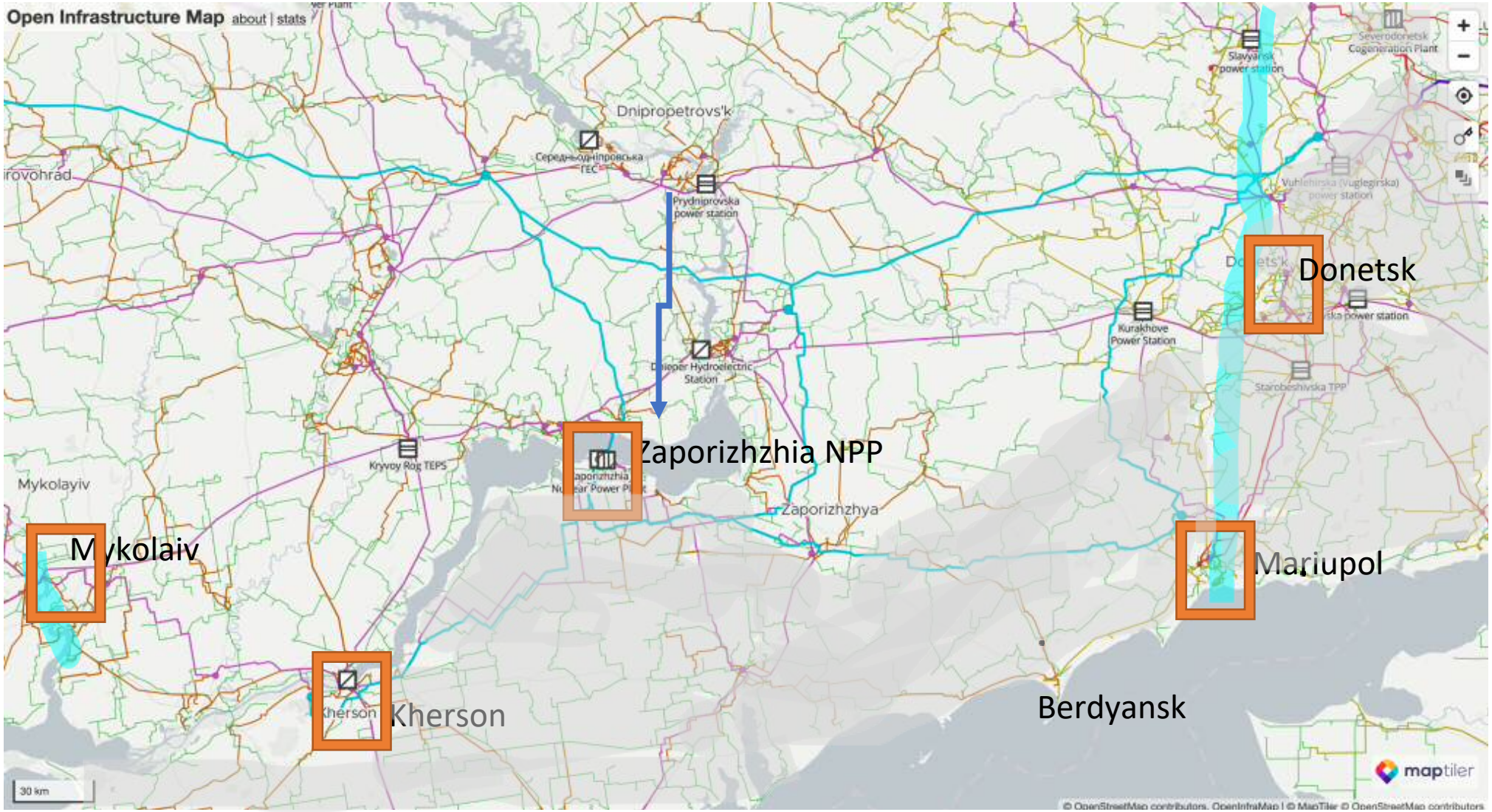
➢Ethnographic fieldwork:

- Water supply in Donbas (May 2018 – August 2022) : Observation and interviews with Voda Donbasu managers and workers in facilities in/near Avdiivka and Toretsk
- Interviews with local authorities, international aid/humanitarian organizations, OSCE, Metinvest, VD Donbasu managers in Kyiv, Mariupol, Sloviansk, Avdiivka, Toretsk, Pokrovsk.
- Power distribution in Budzhak, Odesa oblast (preliminary August 2022) : Interviews with DTEK's distribution company's managers and workers (DTEK-seti) in Ismail HQ and Artsyz sub-power station.
- Follow-up telephone interviews

➢Online research:

- Corporate and personal pages/feeds, www, Telegram, Facebook, Twitter.
- Open street map's open infrastructure map https://openinframap.org/#2/26/12

Utilities under Occupation : a connected grid & clues about the role of utilities



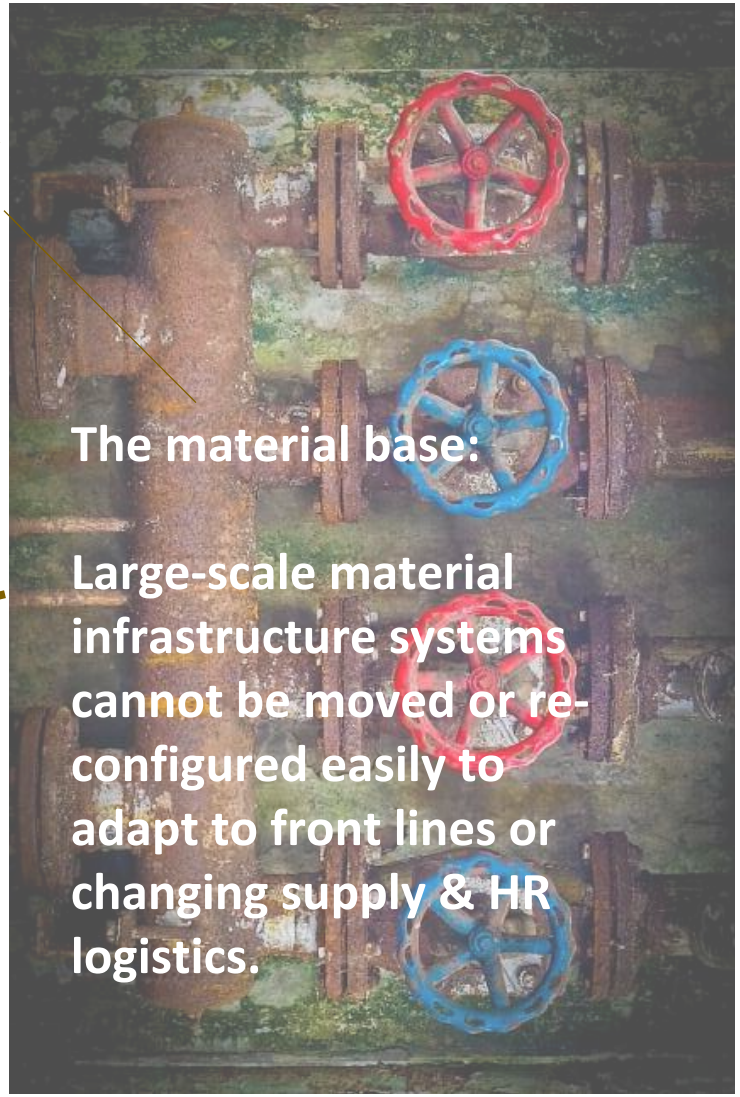
Conceptual framework : utilities as alternative forms of belonging and sovereignty through utilities

- Sovereignty is about legitimacy of the sovereign power through norms, institutions and perceptions (Fisun and Villynova 2021)
- “Infrastructure citizenship” - the continuous efforts to control, maintain, and manage the system creates social bonds of civic belonging (Anand 2017,)
- Sovereignty can be expressed in many alternative ways - political activism, technical achievements, art and architecture (Zvi Ben-Dor, Geroulanos Jerr, 2017)
- Definition of utilities as extensions of public services and the state through public service/regulation/ownership

- <u>Utilities as mediating sovereignty ?</u>

How: The actors of technical sovereignty from below?

- Paying consumers as patriots
- Utilities workers as heroes and patriots: managers, workers, sub-contractors and partners
- Political authorities: municipal authorities (city/hromada), military administration (oblast) ; occupation forces;
- Economic actors-suppliers



Hypothesis: this large-scale hardware encompassing large swaths of territory constitute in times of occupation another spatial dimension that is “above” or ”below” battlefields, borders/boundaries, and embattled sovereignty.

DTEK-grids electricians repairing connections at a TPP

Toretsk, Donetsk obl. February 7-9, 2022. Plumbers repairing water pipes near the front line

Utilities as social actors in war: agency and common practices

- (based on Voda Donbasu fieldwork / DTEK grids in Budzhak)
- Swift intervention
- Corporate culture adaptation to wartime
- On the job: improvisation (smuggling spare parts, repairing cables)
- Re-configuration of social, economic, political ties
- Shift up and out: expansion and internationalization of networks
- Transformation of corporate identity
- Utilities workers as “patriots” and “heroes”

Utilities mediating civic “Ukrainian” bonds thtrough:

- Space: Importance of connection of occupied terrotiries to mainland Ukraine : the hardware connects where territory does not “connect”
- Practices: practices executed by Ukrainians are performative of sovereignty ; practices that go against the interests of utilities’ workers are “collaboration”
- Discourse: utilities as heroic work, bonding with civic org, international, state and consumers.

- Technical sovereignty from below?

Thank you for your attention!

Water, power, heating: Kherson

- Situation: Occupied by Russian forces since March 2.

- Russian forces: Russian forces occupied official buildings; increasing in violence and hunt for Ukrainian “nazis” in summer; kidnapping and disappearance of mayor I. Kolykhaev
- Ukrainian authorities: mayor Ihor Kolykhaev refuses to leave, cites his duty to citizens.
- Kolykhaev is critized, suspected of collaboration.

Power: Zaporizzhzhia Nuclear Power Plant

- Infrastructural situation: The power plant is on Russian-occupied territory, the cooling system is connected to the Ukrainian grid, Dnipro TPP, 200 km north.
- Occupation forces: Russian troops occupy the plant. As of Oct 10 Russia confiscated the plant to the benefit of Rosatom, are forcing Ukrainian staff to apply for Russian citizenship and sign new work contracts.

- Ukrainian authorities (through Ukrenergo): praising “heroes”, courage to stay; calling on them not to “collaborate”

- Utilities workers: Many have left the plant, enough have stayed for rotations

Water& power: Berdiansk

- Situation : under occupation since February 28, 2022
- Occupation forces: established a system of payment, but many breakdowns
- Ukrainian utilities: *Don't pay!* Berdiansk city council called on its populations under occupation NOT to pay for water until it can be established that the money actually goes to the Ukrainian workers of the water utility (Patriot Ukrainy, June, 14 2022)

Water: Donetsk & Mariupol

- Situation : under Russian-backed control by separatist DPR since spring-summer 2014. Reliance on a water supply network across the demarcation line with Kyiv-controlled Ukraine.

Two phases:

- War in Donbas, 2014-March 2022. Forced cooperation through KP Voda Donbasu (Water of Donbas). Company develops corporate culture of “neutrality” in the name of human rights (“Water is Life”), informal practices to circumvent the political-military borders; identifications as corporate citizens of Ukraine.
- Spring 2022: shared system collapses. Donetsk is practically without water. Mariupol’s utilities’ collapse after the destruction of a main sub-station in March.
- Occupation authorities: offensive to control the watershed Siverski Donets; build a pipeline to establish a direct connection. Import of utlities workers from Russia ; coercive utilities (obligation to register)

Water&heating&power: Mykolaiv

- Situation: Mykolaiv is in Kyiv-controlled territory but is cut off from normal water supply from Dnipro by Russian army. June-July: several weeks without ANY water. Villages near the frontline can only heat with coal/wood stoves
- Ukrainian utilities: improvised a water supply route fron am estuary in the Black sea. Salt water.
- Ukrainian authorities: Popular governor Kim, head of regional military adminstration takes on responsibilities under Martial Law, oversight&control of utilities.
- Civic initiatives in nearby Odesa, collecting water to supply Mykolaiv

Needs

Example of technical equipment needed by energy supplier DTEK after October 10-12 –

(only available as imports with support of international community)

- 1. **Mobile substation** 154 (110) kV (40 kVA transformer + set of switchgear 110, 35, 10, 6 kV), 3 pcs
- 2. **Complete secondary substation** (2x630 kVA) with transformers, 30 pcs
- **3. Circuit breakers**
- · Circuit breaker ABB LTB-420E2 or analogue I=3150A, U=400 kV, I disconnect=40 kA, 5 pcs
- · Circuit breaker ABB LTB-420E2 or analog I=3150A, U=400 kV, I disconnect=40 kA, 4 pcs
- · Circuit breaker HPL 245B1 or analog I=3150A, U=220 kV, I disconnect=50 kA, 2 pcs
- · Circuit breaker 110 kV SF6, 10 pcs
- · Circuit breaker 330 kV SF6 type LTB 420E2, 3 pcs
- · Vacuum circuit breaker 35 kV, 3 pcs

4. Transformers:

- Current transformer 220 kV Koncar AGU-245 1200/1U=220 kV, class 0.2S, 5P or similar, 7 pcs
- Current transformer 330 kV, 2 pcs
- Current transformer 330 kV ABB (busbar switch), 1 pc
- Power transformers 63 MVA 110/35/10 kV, 2 pcs
- Power transformers 10 MVA 35/10 kV, 6 pcs

5. Other equipment

- Coupling capacitor 110/√3 2100 F (line 238), 1 pc
- Insulator IOS-35/1000, 350 pcs
- Conical pole for OHL (22m), 16 pcs
- Wires (Aluminum steel) 120-300 mm2, 20 tone
- Cables 6-10 kV with XLPE insulation 1x120 - 1x800 mm, 102 km
- Connecting cable joint (POLJ 24) 1x120 - 1x800 mm, 754 pcs
- Joint for cable end (POLT 24) 1x120 - 1x800 mm, 502 pcs