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| **Research Methodology Note**  **Human Aspects of Utilities Failures in Winter**  **UKR2310**  **Ukraine** | |
| **5/8/2025**  **Version 1** | **C:\Users\Megan\AppData\Local\Microsoft\Windows\INetCache\Content.Word\REACH logo white (for a coloured background).jpg** |

# Executive Summary

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country of intervention** | Ukraine | | | | | | | | |
| **Type of Emergency** |  | Natural disaster | x | | Conflict | | |  | Other *(specify)* | | |
| **Type of Crisis** |  | Sudden onset |  | | Slow onset | | | x | Protracted | | |
| **Mandating Body/ Agency** | BHA  ECHO | | | | | | | | |
| **IMPACT Project Code** | 64BAO  64HXX | | | | | | | | |
| **Overall Research Timeframe** *(from research design to final outputs / M&E)* | 5/8/2025 to 1/11/2025 | | | | | | | | |
| **Research Timeframe** | 1. Pilot/ training: 29/8/2025 | | | 6. Preliminary presentation: 8/10/2025 | | | | | |
| 2. Start collect data: 1/9/2025 | | | 7. Outputs sent for validation: 10/10/2025 | | | | | |
| 3. Data collected: 14/9/2025 | | | 8. Outputs published: 17/10/2025 | | | | | |
| 4. Data analysed: 28/9/2025 | | | 9. Final presentation: 1/11/2025 | | | | | |
| 5. Data sent for validation: 29/9/2025 | | |
| **Number of assessments** | X | Single assessment (one cycle) | | | | | | | | |
| □ | Multi assessment (more than one cycle) | | | | | | | | |
| **Audience Type & Dissemination** | **Audience type** | | | **Dissemination** | | | | | |
| X Strategic  □ Programmatic  □ Operational  □ [Other, Specify] | | | X General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors)  X Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting  X Presentation of findings (e.g. at HCT meeting; Cluster meeting)  X Website Dissemination (Relief Web & REACH Resource Centre)  □ [Other, Specify] | | | | | |
| **Stakeholder mapping** *Has a detailed stakeholder mapping been conducted during research design to identify all actors that could* ***contribute*** *to and/or* ***benefit******fom*** *the research?* | X | Yes | | | | □ | No | | | |
| **General Objective** | To document the humanitarian consequences of actual or potential extraordinary electricity outages caused by war, in order to inform prioritization of the response for the most vulnerable people in urban and rural areas caused by electricity outages and energy infrastructure damage. | | | | | | | | |
| **Specific Objective(s)** | 1. To describe the human aspects, policy, processes, culture, and minimum standards that exist in the state response to emergency utilities failure (particularly, electricity). 2. To describe actual and potential scenarios at the regional level. 3. To examine the interoperability between governmental and humanitarian actors during such responses. | | | | | | | | |
| **Research Questions** | 1. What is the defined national framework for emergency utility response, formally and in practice ? 2. Is there a "typical" response or set of needs when a utility fails, and if so, what does it involve? Who are the key agencies? 3. How does the operational picture for how utilities failures are handled differ between agencies? 4. How do different actors (state, humanitarian, public) conceptualize the severity of human crisis triggered by utilities outages? 5. How do affected people perceive these risks, and how do they prepare or cope? | | | | | | | | |
| **Geographic Coverage** | A map of a large area with red dots  AI-generated content may be incorrect.  All of Ukraine, with a focus on pink areas where emergency utilties outages are most frequent, or major incidents are recorded, and fieldwork is most feasible.  Colour coding of access levels according to ACTED access assessment.  Rural areas selected near to Chernihiv and Kharkiv. | | | | | | | | |
| **Secondary data sources** | See section 3.3 | | | | | | | | |
| **Population(s)** | □ | IDPs in camp | | | | □ | IDPs in informal sites | | | |
| *Select all that apply* | □ | IDPs in host communities | | | | □ | IDPs [Other, Specify] | | | |
|  | □ | Refugees in camp | | | | □ | Refugees in informal sites | | | |
|  | □ | Refugees in host communities | | | | □ | Refugees [Other, Specify] | | | |
|  | □ | Host communities | | | | X | People affected by utitlities failure | | | |
| **Stratification**  *Select type(s) and enter number of strata* | □ | Geographical #:\_ \_ \_  Population size per strata is known? □ Yes □ No | □ | | Group #: \_ \_ \_  Population size per strata is known?  □ Yes □ No | | | □ | *[Other Specify]* #: \_ \_  Population size per strata is known?  □ Yes □ No | |
| **Data collection tool(s)** | □ | Structured (Quantitative) | | | | X | Semi-structured (Qualitative) | | | |
|  | **Sampling method** | | | **Data collection method** | | | | | |
| **Semi-structured data collection tool # 1**  Key informant interviews about general incident response | Purposive  Chernihivska and Kharkivska | | | 15 Key informant interviews | | | | | |
| **Semi-structured data collection tool # 2**  Key informant interviews about specific cases | Purposive  Kirovohdraska (Kropyvnytskyi) & Mykolaivska  Odesa | | | 15 Key informant interviews | | | | | |
| **Semi-structured data collection tool #3**  Focus group discussions with residents who experienced persistent power cuts | Purposive  Chernihivska and Kharkivska | | | 3-5 focus group discussions  Two groups: urban and rural | | | | | |
| **Consultations**  With relevant experts from civil protection, ermergency response, industry, humanitarian field | Purposive, snowballing | | | As required | | | | | |
| **Disaggregation by gender and age**  *Are you planning to conduct sex/age disaggregated analysis?* | Gender | | | Age | | | | | |
| □ | Yes | | | | □ | Yes | | | |
| X | No | | | | X | No | | | |
| **Data management platform(s)** | X | IMPACT | | | | □ | UNHCR | | | |
|  | □ | [Other, Specify] | | | | | | | | |
| **Expected ouput type(s)** | □ | Situation overview #: \_ \_ | X | | Report #: 1 | | | □ | Profile #: \_ \_ | |
| □ | Presentation (Preliminary findings) #: 1 | X | | Presentation (Final) #: 1 | | | X | Factsheet #: 1 | |
| □ | Interactive dashboard #:\_ | □ | | Webmap #: \_ \_ | | | □ | Map #: \_ \_ | |
|  | □ | [Other, Specify] #: \_ \_ | | | | | | | | |
| **Access** | X | Public (available on REACH resource center and other humanitarian platforms) | | | | | | | | |
| □ | Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms) | | | | | | | | |
| **Visibility** *Specify which* ***logos*** *should be on outputs* | **REACH** | | | | | | | | |
| **Donor:** BHA, ECHO | | | | | | | | |
| **Coordination Framework:** NA | | | | | | | | |
| **Partners:** NA | | | | | | | | |

# Rationale

* 1. Background

In the context of a full-scale invasion of the country by the Russian Federation, Ukraine faces continuous bombardment which is damaging key infrastructure. Since 2022, there have been repeated emergency disconnections of electricity, gas and water across the country. Disconnections affect individuals at the household level and also affect people at the systems level. Failure in one utility can lead to further failures, for example when access to water is cut off because electric pumps cannot operate. This happens year-round, although the potential humanitarian consequences are potentially more severe during the winter when people are left exposed to cold weather.

The Winter Response Plan 2025 - 2026 objective is that “the most vulnerable people are protected from cold weather in winter through the provision of multisectoral critical aid and services.”[[1]](#footnote-1) The plan mitigates long-term challenges in heating the home by planning to provide cash or in-kind assistance for winter fuel, including for areas close to the front line where gas piping is chronically disconnected or was never installed. The plan mitigates emergency disruption to district heating through targeted assistance to the companies. The third strategic priority is “Emergency response after strikes”.

However, the plan identifies information gaps. It calls for more understanding of household coping strategies for heating, and for more understanding about the capacity local authorities and utility providers have for winterization-related activity. The Winter Response Plan describes a “key gap”: “the impact of electricity outages and energy infrastructure damage to inform prioritization of the response for the most vulnerable people in urban and rural areas/cities”.

Ukraine has a developed Civil Protection Code. REACH conducts research and consults on the production of contingency planning at the local level through the “3P” project.

This new project contributes further to strategic awareness, by: describing needs during “typical” outages, exploring situations where local authorities have had to respond to severe utilities failures; and, identifying possible humanitarian needs which arise in such cases.

* 1. Intended impact

The key actors that this project informs are strategic-level leadership of national and international NGOs, who may have a role to play in the event of an extraordinarily severe utility failure, or in understanding the toll of on-going disconnections.

The project is intended to increase understanding of the existing state-level Civil Protection norms and doctrine, and to contextualise this in terms that are relevant to humanitarian actors. This is intended to address a specifically named gap in humanitarian planning, namely as to “the impact of electricity outages and energy infrastructure damage to inform prioritization of the response for the most vulnerable people in urban and rural areas/cities”.

# Methodology

* 1. Methodology overview

The project begins with a review of the relevant legislation, to understand the framework and processes for emergency response and civil protection in Ukraine.

After this, available datasets (DiXi group, HSM, ACAPS, ACLED) are analysed to contextualise the framework in terms of actual incidents since 2022.[[2]](#footnote-2) As there is an available dataset (“DiXi energy map”), the study focuses on electricity outages.

Based on this analysis, case studies are chosen for qualitative study. Cases are selected from the DiXi database of power outages, according to their characteristics. Relevant actors from local government, utilities companies, state emergency services, and other relevant contingency planners or responders, are interviewed about the incident, the response, and the needs of the population at that time.

* 1. Population of interest

The project uses case studies where there were more severe consequences as a result of utilities failures, with an emphasis on electricity failure. Following the legislative framework, the geographical areas can be: 1) State-level, 2) Regional-level, 3) Local-level, or 4) Object-level. The project focuses on Regional (raion) and Local (city/hromada) cases, where the most severe consequences arose in terms of number of people affected, length of crisis, and intensity of need arising from the crisis.

Key informant interviews will be held with professionals concerned with emergency response and contingency planning, in different regions where there are frequent and severe utilities failures. These will include people working on city or regional commissions on technogenic-ecological risks and emergencies[[3]](#footnote-3), utilities companies’ workers, social workers in the local authority, and strategic regional humanitarian leaders.

The key informant interviews are broken down into two groups, with distinct questionnaires. One group are interviewed about their general experience and viewpoints on the risks, vulnerabilities and mitigations linked to utilities failures in winter. The other group will be interviewed on specific cases, which will be identified through the secondary data review.

The data collection will also use focus group discussions with the general public in areas where there are frequent and intense power cuts. One set of groups will be urban, and the other will be rural.

Throughout the project, REACH will consult with relevant subject-matter experts to further clarify information.

* 1. Secondary data review

|  |  |
| --- | --- |
| **Secondary source** | **Purpose of source** |
| [DiXi Group “UA Energy Map”](https://map.ua-energy.org/en/datasets/3faa179e-321c-4a36-a0c5-c599932bd82f)  Database of incidents of electricity failure reported by Distribution System Operators and Regional Military Authorities  Database of duration of power outages  Other databases monitoring energy sector in Ukraine | * Provides a source on the frequency and intensity of disconnection, with links to the original statements for further analysis |
| [REACH HSM Dashboard](https://dashboards.impact-initiatives.org/ukr/hsm/gca_2025/) | * Longitudinal data on utilities outages |
| [Razumkov](https://razumkov.org.ua/images/2025/06/16/2025-ENERGY-June.pdf) energy sector reports | * Contextual analysis of the energy sector damage and repair |
| [IOM](https://dtm.iom.int/reports/ukraine-winterization-ukraine-housing-utilities-mobility-and-needs-december-2024) Winterisation themed General Population Survey study | * Contains information about resilience to power outages |
| [Physicians for Human Rights](https://phr.org/wp-content/uploads/2024/12/REPORT-PHR-TRUTHHOUNDS-UKRAINE-Health-Care-in-the-Dark-2024_Updated-12-20-24.pdf), “Health care in the dark” | * Thematic study |
| [Education Cluster](https://reliefweb.int/report/ukraine/learning-during-winter-risk-and-response), “Learning During Winter: Risk and Response” | * Thematic study |
| [Mery Corps](https://uacat.org/posts/thematic-report-ukr-ukraine-energy-crisis-impact-on-farmers-p6czn-f7jmd-tcb8e-tbgf7-86xh3), Ukraine’s Energy Crisis: Impact Farmers | * Thematic Study |
| [Mercy Corps](https://uacat.org/posts/thematic-report-ukr-ukraine-energy-crisis-impact-on-farmers-p6czn-f7jmd-tcb8e-tbgf7-86xh3-db945-6atz6), Ukraine’s Energy Crisis: Impact on Small and Medium Enterprises | * Thematic Study |
| [Mery Corps](https://uacat.org/posts/thematic-report-eng-ukraine-energy-crisis-government-strategies-humanitarian-impacts-p6czn-f7jmd-tcb8e-tbgf7), Ukraine’s Energy Crisis: Government Strategies and Humanitarian Impacts | * Thematic Study (focussed on engineering and healthcare) |
| [ACLED](https://acleddata.com/ukraine-conflict-monitor/#data)  General database of conflict events  “Attacks on Ukrainian infrastructure” dataset | * General dataset provides trends in explosions and battles, which drive destruction including to power infrastructure * “Attacks on Ukrainian infrastructure” provides further re-analysis, with the general dataset automatically retagged |
| [ACAPS](https://www.acaps.org/en/countries/ukraine) “Ukraine damages” dataset | * Provides trend analysis of publicly available reports of destruction to infrastructure including energy |
| [Protection Analysis Framework](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fglobalprotectioncluster.org%2Fsites%2Fdefault%2Ffiles%2F2023-01%2Fappendix-01_paf-analysis-tools_080621_0.xlsx&wdOrigin=BROWSELINK) | * Protection Cluster conceptualisation of humanitarian needs, including in connection to “Energy” |
| [Code of Civil Protection](https://zakon.rada.gov.ua/laws/show/5403-17#Text) | * Provides the overall framework for emergency response in Ukraine |
| [Emergency Response legislation](https://zk.dsns.gov.ua/uk/zakonodavstvo/perelik-normativno-pravovix-dokumentiv-shho-reglamentuyut-diyalnist-pidrozdiliv-dsns-ukrayini/departament-reaguvannya-na-nadzvicaini-situaciyi) | * Aggregates other relevant legislation for the description of emergency response |
| “Plans for responding to emergency situations in life support systems in the territory” of hromadas | * Official documents that outline planning for contingencies |
| Read-out of official figures on Emergencies and their Consequences, as defined by [CMU Resolution no 738 of 9/10/2013](https://zakon.rada.gov.ua/laws/show/738-2013-%D0%BF#Text) | * Clarifies incidents which are specifically recognised |

* 1. Primary Data Collection

Key informant interviews – Kharkivska, Chernihivska, Odesa, Kirovohradska/Mykolaivska – 15 on specific case studies and 15 on the general situation

Method: semi-structured interviews with key informants carried out by the field team, online or in-person as appropriate.

Sampling: purposive sampling, with participants who have familiarity with the contingency planning, emergency response, and actual cases of power outages in their area. Participants are selected according to their profession in local government, social services, emergency response or utilities engineering.

Focus group discussions – Kharkivska, Chernihivska – at least 1 rural and 1 urban per oblast

Method: semi-structured interviews with members of the general public, carried out by the field team in person.

Sampling: purposive sampling, with participants who live in the affected area and have experienced power outages.

Consultations – number as appropriate according to snowballing approach

Method: interviews with relevant experts from civil protection, ermergency response, industry, humanitarian field.

Sampling: purposive, snowballing – reaching out to the authors of research papers, or to organisations working on topics connected to the issue of the human impacts of power outages, to gain further context and clarify details in their public outputs.

Technique

Tools: Semi-structured tools will be prepared by the assessment team, and shared with enumerators in a training which will include a contextual briefing.

Briefing/debriefing: Enumerators will be given contextual training on the pre-data collection training day, and they will debrief with the field team during the data collection, to flag unexpected responses or new directions for consideration.

Location selection: Locations are selected according to two main criteria: 1) being places that experience power outages, according to secondary data 2) being relatively accessible, to safely hold focus group discussions. The locations include those in the lowest subcategory of the highest category of risk, according to organisational assessment.

* 1. Data Processing & Analysis

Transcript data will be analysed using MaxQDA in order to ensure a standardized and efficient coding process. The questionnaires have been designed with reference to the research questions, and will be coded accordingly. The coding system will be exported as a data saturation grid built via MAXQDA to highlight the key themes, areas of consensus, and areas of disagreement, with the possibility of disaggregating findings by location. A summary of findings will be written and included in the data saturation grid. Any irrelevant information will be removed, and any missing or incomplete information will be addressed through careful data triangulation. The research team will additionally critically examine the data for potential biases, inconsistencies, or errors. Finally, the cleaned data is documented and stored in a secure manner, and subsequently analysed to develop a narrative.

* 1. **Limitations**

Publicly available datasets are limited in their descriptive power. For example, the DiXi dataset is made from collections of public statements made by different authorities. The format is inconsistent, and so cannot be used for statistical claims although it provides a useful reference point.

Qualitative research is inherently partial, and reflects the viewpoints of the participants. It is not possible to include every viewpoint, and recollections can differ. Findings should be considered indicative only, and not exhaustively representative of the experiences across all areas or populations affected by power outages. In particular, the experiences of the general public in locations closest to the frontline will not be captured in focus groups due to access constraints.

# Key ethical considerations and related risks

The proposed research design meets / does not meet the following criteria:

|  |  |  |
| --- | --- | --- |
| ***The proposed research design…*** | ***Yes/ No*** | ***Details if no (including mitigation)*** |
| … Has been coordinated with relevant stakeholders to **avoid unnecessary duplication** of data collection efforts? | Yes |  |
| … **Respects respondents, their rights and dignity** (*specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants’ time, ensuring accurate reporting of information provided*)? | Yes |  |
| … Does not **expose data collectors to any risks as a direct result** of participation in data collection? | Yes |  |
| … Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection? | Yes |  |
| … Does not involve **collecting information on specific topics which may be stressful and/ or re-traumatising** for research participants (both respondents and data collectors)? | No | The topic of discussion is damage to infrastructure as a result of war, and the consequences of this on the population. This is inherently traumatic.  The research will be conducted sensitively. Participants will be assured that they can stop discussions or pause, if they want to do so. |
| … Does not involve **data collection with minors** i.e. anyone less than 18 years old? | Yes |  |
| … Does not involve **data collection with other vulnerable groups** e.g. persons with disabilities, victims/ survivors of protection incidents, etc.? | Yes |  |
| … Follows IMPACT SOPs for management of **personally identifiable information**? | Yes |  |

# Roles and responsibilities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Description** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| Research design | *Senior Assessment Officer* | *Research Manager* | *HQ Research Quality Assurance (RQA) Unit* | *WASH, Energy Coordination Group, AAWG* |
| Supervising data collection | Field team | Senior Assessment Officer |  |  |
| Data processing (checking, cleaning) | Field team | Senior Assessment Officer | *HQ RQA Unit* |  |
| Data analysis | Senior Assessment Officer | Research Manager | *HQ RQA Unit* |  |
| Output production | Senior Assessment Officer | Research Manager | *HQ RQA Unit* |  |
| Dissemination | Senior Assessment Officer | Research Manager |  |  |
| Monitoring & Evaluation | Research Manager |  |  |  |
| Lessons learned | *Research Manager* |  |  | *Country Coordination* |

***Responsible:*** *the person(s) who executes the task*

***Accountable:*** *the person who validates the completion of the task and is accountable of the final output or milestone*

***Consulted:*** *the person(s) who must be consulted when the task is implemented*

***Informed:*** *the person(s) who need to be informed when the task is completed*

# Data Analysis Plan

[Separate document.](https://repository.impact-initiatives.org/document/repository/d50f209b/REACH_UKR_DAP_WinterPowerOutages_August2025.xlsx)

1. [Ukraine Winter Response Plan (October 2025 – March 2026) | Ukraine Winter Response Plan (October 2025 – March 2026) | Humanitarian Action](https://humanitarianaction.info/document/ukraine-winter-response-plan-october-2025-march-2026/article/ukraine-winter-response-plan-october-2025-march-2026) [↑](#footnote-ref-1)
2. See secondary data review (3.3) [↑](#footnote-ref-2)
3. As described in paragraph 11 of the [Procedure for Classifying Emergencies](https://zakon.rada.gov.ua/laws/show/368-2004-%D0%BF#Text) [↑](#footnote-ref-3)