

# TERMS OF REFERENCE FOR INDIVIDUAL CONSULTANTS/CONTRACTORS

TITLE	Technical assessment on water tariff and its cost-structure in Ukraine – National Consultant on the Engineering component
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## Background:

In Ukraine, water and sanitation services are provided by water utilities called “vodokanals”, which work in specific cities, towns and/or settlements, and are institutionally and economically independent of each other. According to the National Vodokanal Association<sup>1</sup>, as of July 2023, approximately 2,000 vodokanals were in operation in Ukraine. The water tariff for vodokanals serving more than 100,000 people is directly set by National Commission for State Regulation of Energy and Public Utilities (NKREKP)<sup>2</sup> based on a calculation methodology that considers the vodokanal’s cost structure (salaries, energy, fuel, reagents, etc.). For smaller vodokanals, the water tariff is set by local authorities, generally following similar guidelines as those set by the NKREKP. The current water tariff structure, as of September 2023, was set by NKREKP in December 2021 and enforced in January 2022.

The current water tariff, fixed by NKREKP, contemplated operation costs of the vodokanals in December 2021, which have since become obsolete following the escalation of the conflict in Ukraine less than 2 months later. Inflation rates soared, energy and chemical costs increased drastically, and the clientele for many utilities dwindled as millions abandoned the country. Some vodokanals, especially those from liberated areas and in the vicinity of the contact line saw their infrastructure pillaged and/or heavily damaged.

According to the 2023 Rapid Damage Needs and Assessment (RDNA)<sup>3</sup>, between February 2022 and February 2023, the Ukrainian water supply and sanitation sector had suffered damages amounting to approximately US\$2.2 billion, with the most significant damages noted for large physical water and sanitation infrastructure. Financial losses for the sector were estimated at US\$7.5 billion, with loss of revenue due to reduced water consumption accounting for 40% of the losses, and 30% of losses due to increased energy cost. The remaining losses originated from increased fuel consumption, increased prices of materials and equipment, lack of required repairs, tariff deficits, water losses, increased costs for chemical reagents, and required demolition and debris management. This has only added to the already fragile situation of the Ukrainian vodokanals, wherein pre-existing vulnerabilities and deteriorating infrastructure present limited alternative sources and considerable challenges for water quality. As per a concept note of the Government in 2020, around 40 percent of existing networks are in critical condition, and almost 35 percent of treatment facilities are in need of upgrade<sup>4</sup>.

In practical terms, the current tariff structure and governance model for water and sanitation services are considered by many stakeholders as highly problematic<sup>5</sup>. Notably:

- i. **No cost recovery:** The current tariff structure does not allow for vodokanals to fully cover their expenses while they may not incur in any interruption of the service as per Ukrainian legislation, forcing vodokanals to accumulate large debts. In February 2023, the national cost recovery for vodokanals was estimated at 85%.
- ii. **Large reliance on tariff:** Alternative sources of financial support to vodokanals, such as transfers and/or subsidies from the national budget, are scarce.
- iii. **No investment for efficiency and sustainability:** The critical financial situation of the vodokanals has direct repercussions on investment in maintenance, expansion, and modernization of the infrastructure, which is neglected to cover the operation costs.

<sup>1</sup> <https://ukrvodokanal.in.ua/>

<sup>2</sup> [https://www.nerc.gov.ua/storage/app/sites/1/Docs/Sfery\\_Voda/taryfy\\_na\\_vodopost\\_ta\\_vodovidved\\_01.01.2022.pdf](https://www.nerc.gov.ua/storage/app/sites/1/Docs/Sfery_Voda/taryfy_na_vodopost_ta_vodovidved_01.01.2022.pdf)

<sup>3</sup> <https://ukraine.un.org/en/224376-ukraine-rapid-damage-and-needs-assessment>

<sup>4</sup> Concept for the implementation of state policy in the field of centralized water supply and sanitation, Minregion, 2020.

<sup>5</sup> <https://documents1.worldbank.org/curated/en/844681624034932176/Ukraine-Water-Supply-and-Sanitation-Policy-Note-Toward-Improved-Inclusive-and-Sustainable-Water-Supply-and-Sanitation-Services.docx>

- iv. **Inadequate regulatory tools:** The governance model adopted by NKREKP is based on that of OFWAT<sup>6</sup>, which was developed to regulate private monopoly services in England. However, NKREKP is regulating utilities which are almost exclusively public, of very diverse sizes and capacities, and not profit-maximization driven.

With decades of underinvestment and minimal maintenance below cost-recovery tariffs, the situation of the Ukrainian water and sanitation sector was described by the World Bank's 2021 policy note as a "downward spiral". The policy note also identifies severe governance challenges in the Ukrainian water sector to introduce EU standards (such as those described by the EU Drinking Water Directive), highlights inconsistent legislative frameworks, and flags critical missing aspects such as consumer rights protection<sup>7</sup>.

As vodokanals struggle to cover their minimal operational costs (mainly salaries, electricity, and chemicals), the quality and the continuity of services are put in direct jeopardy, hence becoming a major concern to ensuring safe and secure water and sanitation for all, motivating the requirement of this technical assessment to improve future policies and efforts.

#### **Purpose of assignment:**

With this technical assessment, UNICEF seeks to inform much-required institutional reform in the Ukrainian water and sanitation sector, particularly through the Ministry of Infrastructure, the National Regulator (NKREKP), the Ukrainian Vodokanal Association and other key partners, such as the European Union, the World Bank, and key agencies from WASH Cluster, amongst others. The aim is to trigger a decision to engage in the revision/updating of the national water tariff structure to support sustainable and affordable water supply and sanitation services for all, especially given the unforeseen hardships that the country is facing since the escalation of the conflict with Russia since February 2022, and the aspiration of the Government of Ukraine for EU integration.

Such a decision would not only prevent the potential economic downfall of vodokanals and subsequent collapse of the sector but would also open an overdue discussion about the suitability of the current tariff structure and governance model, in which the regulator's only jurisdiction are the largest water utilities.

It is also pertinent, in view of an armed conflict expected to plunge 30% of Ukrainians into poverty<sup>8</sup>, to advocate for a "pro-poor" water tariff structure, which allows the most affected households (IDPs, single mother households, people with disabilities) to access water and sanitation services at affordable prices, i.e. through a cross-subsidy system, while simultaneously allowing vodokanals to recover financially.

#### **The main objectives to be achieved by this consultancy are:**

- v. To present in an objective and factual manner the state of play of the current tariff structure and its financial impact for centralized water supply and drainage enterprises (vodokanals), whose activities are subject to regulation by the NKREKP, and ultimately affect the ability of vodokanals to provide consumers with safely managed and affordable drinking water supply and sanitation services.
- vi. To make actionable recommendations to gradually enhance the water metering and tariff structure, with relevant options/scenarios and measurable milestones for each of these.
- vii. Using best practices from the EU or from other inspiring countries, include in the proposed scenario "pro-poor" tariff options to be evaluated by the Government of Ukraine, e.g. preferential/waived rates for most disadvantaged households, cross-subsidy approaches, etc.
- viii. To describe a roadmap for the seamless integration of the Ukrainian and EU water sectors, by identifying strengths and weaknesses and setting realistic milestones, mainly from a legal framework and institutional framework perspectives, allowing for gradual financial recovery.

The results are required to be summarized in a comprehensive report, accompanied by a policy brief, to be used to launch a series of high-profile dialogue sessions between actors from the Ukrainian regulatory bodies and ministries, vodokanal

<sup>6</sup> <https://www.ofwat.gov.uk/>

<sup>7</sup> <https://documents1.worldbank.org/curated/en/844681624034932176/Ukraine-Water-Supply-and-Sanitation-Policy-Note-Toward-Improved-Inclusive-and-Sustainable-Water-Supply-and-Sanitation-Services.docx>

<sup>8</sup> [The Development Impact of the War in Ukraine: Initial projections | United Nations Development Programme \(undp.org\)](https://www.un.org/en/development/desa/policy/20220401/undp-ukraine-report-20220401.pdf)

representatives, IFIs (World Bank, European Bank, etc.), donors, and other humanitarian actors interested in developing the Ukrainian water sector.

### Methodology:

The present study will compile information from a variety of sources, these being literature reviews, KIIs and workshops, depending on the subsection (see deliverables).

- i. **Literature review:** An extensive literature review will be conducted at the start of the assessment, through which the consultant, working in close collaboration with the team leader, will describe the inner workings of the Ukrainian water sector, in particular the technical aspects pertaining to the calculation of the water tariff, the parametric used by the water regulator NKREKP and current calculation basis, and the tariff calculation rationale applicable to smaller vodokanals which are not under the sphere of NKREKP. The consultant may go through the websites of NKREKP<sup>9</sup> the State Agency of Water Resources of Ukraine<sup>10</sup> and the State Agency for Reconstruction and Development infrastructure of Ukraine<sup>11</sup>. Furthermore, relevant organizations will be reached out in order to source documents that are not available in the public domain, as it is the case of the cost of consumables, labor, and other associated costs specific to each vodokanal. The most frequent tariff systems in dedicated, short and factual case studies need also be documented.
- ii. **Key Informant Interviews (KII):** These may be in-person interviews, phone calls, video calls or surveys, with people in key positions in ministries, governmental agencies, the Vodokanal Association or individual vodokanals, municipal authorities, or even people within a certain community (community leaders, residents, professionals, etc.) who have firsthand knowledge about the communities' activities and behavior. KIIs will be instrumental to determine the relation between the population's water consumption habits and income level, particularly since the beginning of the war, as specific and consolidated information sources are unavailable. These will also prove critical to understand the reasons behind certain sectors of the population resorting to bottled or other sources of water instead of drinking water from the tap, and to get a picture of the willingness to pay for the water and sanitation services by the community should there be changes in the water tariff. The consultant, who will be knowledgeable on the technical side of the water tariff structure in Ukraine and is expected to have an extensive contact network in the sector, will aid the team leader in identifying the most valuable actors for the task.
- iii. **Workshops:** For particular instances in which information must be derived from the interaction between several actors rather from the individual actors themselves, workshops will be held. Workshops are also required during the final stages of the research (see Deliverable 3: Water governance in EU countries and roadmap to EU integration) in which the roadmap to integration of the Ukrainian water sector with that of the EU is to be drafted and validated by the multiple actors that comprise the Ukrainian water sector. Though typically conceived as structured and formal events, workshops do not necessitate large number of people nor a physical venue; these can be semi-formal meetings, either face to face or online, between the consultancy team and relevant actors, such as designated representatives of NKREKP and the Ministry of Infrastructure, authorities from the Ukrainian Vodokanal Association and municipal authorities, as well as selected counterparts in EU countries. The participation of delegates from IFIs with potential interest in the integration (World Bank, European investment Bank, etc.) is encouraged. The consultant will make sure that high-ranking technical staff from the sector, especially from NKREKP and the Ministry of Infrastructure have been duly identified and invited to these events.

Research questions	Suggested methods and data source
<b>Water Tariff and State of Play</b> <ol style="list-style-type: none"> <li>i. How is the water tariff determined, by whom, who does it apply to, and what parameters does it consider?</li> <li>ii. Why has the water tariff not been reviewed since the beginning of the war, and what problems does this bring to the water utilities?</li> </ol>	<p>Literature review on NKREKP and Ministry of Infrastructure websites, World Bank policy briefs.</p> <p>KIIs with NKREKP, Ukrainian Vodokanal Association, Ministry of Infrastructure, selected vodokanals.</p>

<sup>9</sup> <https://www.nerc.gov.ua/sferi-diyalnosti/holodna-voda>

<sup>10</sup> <https://davr.gov.ua/>

<sup>11</sup> <https://restoration.gov.ua/>

iii. What options are viable to overcome these problems?			
<b>Financial burden on the population, and pro-poor water tariff structure.</b>			
i. What is the current relation between a household's income and it's water consumption, both in terms of water volume and payment for services? ii. How would a modification in the water tariff affect the households' water use pattern? iii. What fraction of a household's income is used for purchasing drinking water? How does this vary across different households' income levels? iv. What are the reasons behind a household not using tap water for drinking purposes?			
Literature review and case study documentation.  KII with Ukrainian Vodokanal Association, Municipal authorities, community leaders, etc.			
<b>Water governance in EU countries and roadmap to EU integration.</b>			
i. Which are the most common water governance models amongst the EU countries? ii. Which are the guiding principles, directives and standards that characterize the water sector in the EU countries? iii. Which EU countries have implemented pro-poor water tariff structures, and what was the basis for their implementation? iv. What are the most notable strenghts and weaknessess of the Ukrainian water sector? v. What steps constitute an acceptable roadmap for the seamless integration of the Ukrainian water sector with that of the EU?			
Literature review and case study documentation.  KII with EU water sector authorities from selected countries and/or water utilities.  Workshops with key Ukrainian players (NKREKP, Ministry of Infrastructure, Vodokanal Association, etc.) to review key scenarios and options and finetune the most relevant ones as per the feedback received.			
<b>Minimum requirements:</b>	<b>Education</b> <i>[specify disciplines]</i>	Master's degree	An advanced university degree preferably in the field of Engineering, with studies relevant to the field of water, such as water supply, sanitary engineering, water treatment, water governance, etc. PhD in any of the above disciplines will be considered an asset.
	<b>Professional experience</b> <i>[number of years, relevant to the assignment, other specifics]</i>	<ul style="list-style-type: none"> <li>• 15 or more years of general experience in municipal water supply, municipal wastewater treatment, water tariff, water governance, water management, master planning, or related areas.</li> <li>• 10 or more years of experience in topics relevant to water and sanitation governance and financing, such as feasibility studies, tariff structure, financial risk assessment, etc.</li> <li>• Extensive knowledge and expertise relevant to the Ukrainian water sector, especially in the topic of water tariff and water governance is mandatory.</li> <li>• International experience will be considered an asset, including working with foreign experts and international donors.</li> </ul>	

	<b>Language</b>	Ukrainian	Proficient/Native [C2]
		English	Upper-intermediate [B2]
	<b>Skills and competencies</b>	<ul style="list-style-type: none"> <li>• Technical knowledge of the theories, principles, and methods in the following areas: municipal water supply, municipal wastewater treatment (centralized and decentralized), non-revenue water, sustainable water management, and related disciplines.</li> </ul>	

#### Work assignment overview:

Deliverable	Deadline	# of w/ days
<b>Deliverable 1: Baseline characterization of the Ukrainian water and sanitation sector</b> <ul style="list-style-type: none"> <li>• Description of the Ukrainian water and sanitation sectors in terms of population coverage of the services, geographical areas of coverage and non-coverage, percentage of population connected to centralized water supply and piped sanitation, and in particular in those regions under the orbit of NKREKP. Provide indications of the number of vodokanals not regulated by NKREKP (excluding those in NGCAs), indicating the population this represents.</li> <li>• Qualitative description of the conservation and operational condition of the largest drinking water and wastewater treatment plants in Ukraine, under the orbit of NKREKP.</li> <li>• Calculation of Non-Revenue Water (NRW) at local and national level, and estimation of losses due to leakages, metering inefficiencies and theft. An estimation on the number of metered household connections (micro-metering) will be a necessary input for this component, as well as a description of the payment scheme for those clients who have no water meter.</li> <li>• Secure Key Informant Interviews with representatives of NKREKP, the Ukrainian Vodokanal Association and/or representatives of the largest vodokanals.</li> <li>• Describe the obligations that vodokanals are subjected to, in light of the Ukrainian Water Code (No. 213/95-BP) enacted in 1995 and amended in July 2022, particularly in relation to the provision of water supply and sanitation services.</li> <li>• Estimate the short, mid and long-term impact that the current tariff structure can have on the vodokanals' service provision, and alert about critical situations (if any) that could jeopardize the quality of continuity of the water supply and sanitation services. either by closing their operations, failing to perform mandatory quality controls, downscaling sewage treatment, raw sewage discharge into the surface waters, etc.</li> <li>• Obtain data for the cost of the main consumables indicated in the cost structure breakdown considered for the 2021 scenario, and present-day scenario (this information might need to be obtained partially from the vodokanals directly).</li> <li>• Identify if other factors, other than the tariff set by NKREKP are responsible for the financial situation of the vodokanals and describe them (if any).</li> </ul>	20/11/2023	30
<b>Preliminary report N°1</b> Highlights of the main outcomes of the study based on the aforementioned topics. All supplementary information deemed relevant for the report (survey questionnaires, interviews, recordings, photos, etc.) will be handed over to UNICEF in digital format. The consultant will also make themselves available for a brief presentation of the		

outcomes in UNICEF premises (or other location/mode agreed upon with UNICEF supervisory team), preferably within 7 days of handing over the preliminary report.		
<p><b>Deliverable 2: Estimate the financial burden to the population for essential WASH services, and propose pro-poor water tariff structure using the global experience.</b></p> <ul style="list-style-type: none"> <li>• Conduct KIIs about water usage at household level to determine the amount of monthly water usage per household (or per person) based on the income level of said household (or person), if the household has a water meter, and if/how their water consumption habits would be influenced by a modification in the water tariff.</li> <li>• Gather qualitative and quantitative data about the use at household level of tap water for drinking purposes and inquire on the reasons for not doing so when the answer is negative. In these cases, the consultant will inquire about the source of the drinking water used by the household members, the reasons behind the rejection of the water (smell, taste, appearance, mistrust, etc.).</li> <li>• Provide technical expertise to the team-leader an alternative model to the current “flat rate” tariff structure suitable for the Ukrainian water sector. The proposed model will be of the “pro-poor” type, and it will attempt to balance the water tariff burden proportionally across the different income groups within the Ukrainian society. Increasing block tariff structures or other models such as cross-subsidies may be explored by the consultant.</li> </ul> <p><b>Preliminary report N°2:</b></p> <p>Highlights of the main outcomes of the study, especially in terms of the water usage habits from the Ukrainian population and any particular issues behind the rejection of use prompted by lacks in quality. All supplementary information deemed relevant for the preliminary report (survey questionnaires, interviews, recordings, photos, etc.) will be handed over to UNICEF in digital format. The consultant will also make itself available for a brief presentation in UNICEF premises (or other location agreed upon with UNICEF supervisory team), preferably within 7 days of handing over the preliminary report.</p>	11/12/2023	15
<p><b>Deliverable 3: Water governance in EU countries and roadmap to EU integration.</b></p> <ul style="list-style-type: none"> <li>• Analysis of strengths and weaknesses of the Ukrainian water sector, including a description of the differences between the current quality standards for drinking water production, sewage treatment, and surface water quality valid in Ukraine and in the EU, as well as between the technical drinking water and wastewater processes of most common use in either region. The consultant is encouraged to refer to documents such as:               <ul style="list-style-type: none"> <li>-EU directive on the quality of water intended for human consumption.<sup>12</sup></li> <li>-EU directive on environmental quality standards in the field of water policy.<sup>13</sup></li> <li>-EU directive concerning urban waste-water treatment.<sup>14</sup></li> </ul> </li> <li>• Draft an action plan with well-defined milestones (stating extension and responsibilities, timeframe and measurable outcomes) to progressively guide the Ukrainian water utilities, government and regulatory bodies into adopting EU standards, regulations, and procedures. This action plan will comprise short-term, mid-term, and long-term milestones for the Ukrainian water sector to fully adopt EU standards, regulations, and procedures by 2038. Examples (indicative) of elements to be included in this action plan are:</li> </ul>	25/12/2023	10

<sup>12</sup> <https://eur-lex.europa.eu/eli/dir/2020/2184/oj>

<sup>13</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0105>

<sup>14</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31991L0271>

<p>Short term (5 years):</p> <ul style="list-style-type: none"> <li>-Increasing block tariff structure adoption, favoring the poorest sectors.</li> <li>-Introduction of mandatory smart water metering in water distribution networks.</li> </ul> <p>Medium term (10 years):</p> <ul style="list-style-type: none"> <li>-Creation of a centralized water authority that can rule in terms of water tariff, water standards (for drinking water, wastewater treatment and water bodies), water quality monitoring, etc, and which can actively engage in promoting specific legislation on water governance.</li> </ul> <p>Long term (15 years):</p> <ul style="list-style-type: none"> <li>-Creation of national legislation on efficient energy usage on water and wastewater treatment facilities.</li> <li>-Creation of national legislation on water conservation, including water network leak reduction and control, water reclamation, efficient water usage on household levels (dual flush toilets and other water saving devices), etc.</li> </ul> <p><b>Preliminary Report N°3:</b></p> <p>Highlights of the main outcomes of the study, putting a clear emphasis on the gap to be overcome by the Ukrainian government, regulators and utilities in terms of standards, technical processes and capacity building for coming 15 years, for a seamless integration of the Ukrainian water sector with that of the EU.</p>		
<p><b>Deliverable 4: Integrated Report and 2-pager Policy Brief</b></p> <p>The final deliverable will consist of two components, namely:</p> <ul style="list-style-type: none"> <li>• A fully integrated report of the previous sub-sections:           <ul style="list-style-type: none"> <li>- Water Tariff and State of Play</li> <li>- Financial burden on the population, and pro-poor water tariff structure</li> <li>- Water governance in EU countries and roadmap to EU integration</li> </ul> </li> </ul> <p>The report will clearly describe the situation of the Ukrainian Vodokanal in terms of existing infrastructure, capacity, operational issues, quality of produced water and treated effluents, etc. From a technical standpoint, it will provide a rationale to the current water tariff and its shortcomings, justifying an alternative pro-poor tariff model based on the gathered evidence. The report will include a comparison of the Ukrainian water governance model and the ones followed by example EU countries, and propose realistic milestones to be achieved for a seamless integration of the Ukrainian water sector with that of the EU.</p> <ul style="list-style-type: none"> <li>• A 2-pager policy brief aimed at Ukrainian authorities, vodokanals, IFIs and humanitarian organizations, briefly summarizing the main outcomes of the study and highlighting recommendations for upgrading the water tariff structure and advocating for a pro-poor water tariff, while providing a tentative roadmap with specific milestones for the integration of the Ukrainian water sector with that of the EU.</li> </ul>	01/01/2024	5
	<b>Sub-total:</b>	<b>60</b>
<b>Lumpsum for travel [refer to travel plan*]:</b>		
		<b>Grand total:</b>