

TERM OF REFERENCE

Consultancy assignment - Extended Landfill Gas Study

1. Background

The Swedish Agency for International Development Cooperation (Sida) has commissioned SALAR International and Avfall Sverige to implement a multi-year Program for Swedish support to reforms of the Municipal Solid Waste (MSW) sector in Ukraine (WM4U).

One Component of the Program aims at supporting the mitigation of climate impact by managing landfill gas emissions more effectively and enhancing the recovery of energy from this gas. Additionally, the aim is to establish a unified national strategy to decrease the emissions of climate gases from waste disposal sites. In the longer term, compliance with EU rules will require Ukraine to close and remediate landfills and dumpsites.

This Component will culminate in a detailed report outlining specific investment strategies, technological solutions, and financing options for the top 300 priority landfill sites and has the potential to position Ukraine as a leader in landfill gas management.

Pre-study

A pre-study (see Annex) on landfill gas emissions in Ukraine has been conducted September 2023 – March 2024. It resulted in a report containing a detailed estimation of actual municipal solid waste (MSW) landfills' impact on the environment and climate change, development of measures and estimation of investment needs required for mitigation of this influence in terms of regions of Ukraine and specific MSW landfills.

2. Scope of Service

This assignment builds forth on the earlier conducted pre-study and will explore models and systems for implementation of landfill management measures, introducing best international/EU practices.

The assignment will result in a proposal for concrete feasibility studies for climate mitigation measures on selected landfills and/or dumpsites throughout Ukraine. Initial efforts will focus on improvement of 30 sites.

The feasibility studies should act as test beds for important actions divided into a variation of size and thus become showcases and best model for the great number of landfills in Ukraine.

The assignment will focus on landfill gas emission reduction but also address energy generation perspectives and other environmental improvements related to landfills such as storm/surface water management and leachate control.

3. Methodology

The previous pre-study forms the background to this assignment. The consultant will prepare a general approach to landfill gas management at existing landfills/dumpsites, depending on their size and characteristics. The approach should describe the steps and activities required to mitigate the impact of uncontrolled methane emissions. Indicatively, it includes the following methods/systems, but the consultant is expected to elaborate if needed:

1. Closure and degassing.
2. In-situ remediation.
3. Removal of waste.

These systems should be described in detail, but they must remain generally applicable as a blueprint, so that in a next step feasibility studies can be prepared without the need for further in-depth analyses.

Based on the developed systems, the study should select a total of 30 existing landfill sites/dumpsites which can fit into these models. Priority should be given to sites located in the Program's pilot regions (Ivano-Frankivsk, Kharkiv, Poltava and Odesa). However, deviation from this principle may be allowed based on factual reasons.

The defined methods should then be applied to a total number of 12 sites (out of the 30 selected before) and include a concrete approach, including "basic" design (drawing/sketches), to the proposed landfill gas system and estimated results in terms of landfill gas and GHG reduction, energy generation and so forth.

At some point, the assignment will need field visits and meetings with landfill owners/operators. Travel to Sweden is not envisaged.

At the start of the assignment the expert should present a structure of the report with headlines, that should be agreed with Avfall Sverige.

SALAR International/Avfall Sverige will own the rights of ownership, use and disposal of deliverables based on the results of these Services.

4. Resources and steering

The study will be carried out by an independent consultant and expected to be completed within 4 months from signing the contract. The maximum allocated input for the assignment is 50 working days.

The consultant can execute the work from its own office but will be advised to carry out some work at the WM4U office in Kyiv.

The consultant will regularly consult with and report to the Technical Program Manager and Senior Advisor of the Program, as well with beneficiaries (ministries). On-line meetings may also be arranged with other partners in the Program.

The WM4U Program will organize so that the consultant can coordinate work with the program of the Swedish Environmental Protection Agency (SwEPA), which also will include landfill issues. Also, the Program will organize meeting with potential actors to take next steps in terms of feasibility studies in order to streamline activities and make further investments possible.

5. Qualifications

- Post-graduate qualification in relevant areas (environmental engineering, environmental science or related field)
- Over 7 years' experience of working with issues concerning landfill gas management and site remediation
- Well-connected and generally knowledgeable regarding current Ukrainian reform efforts in the field of waste management
- Experience in the preparation of field research and analyzing data collected concerning landfill gas management
- S/he should have prior experience of drafting similar analysis/project documentation and competence in writing and preparing publications of an analytical nature in English and Ukrainian language
- S/he must be independent and free from conflict of interest.

6. Deliverables

The expected deliverables to be achieved under this assignment are the following:

1. Interim Report presenting the proposed standardized methodology/approach to landfill gas management at different types of sites. (1 month after commencement).

2. Final Report applying the proposed methodology to a selection of 12 landfills/dumpsites. The selection of sites must be prior agreed with Avfall Sverige. (4 months after commencement).
3. Presentation on-line of the Final Report.

Both reports will be submitted in English.