

TECHNICAL SUMMARY – REMEDIATION OF HIGH PRIORITY HOTSPOTS IN WESTERN BALKANS

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COUNTRY : BOSNIA & HERZEGOVINA

SITE: 1 Ugljevik Municipality: Open-pit coal mine and thermo power plant

SITE: 2 Tuzla Municipality: Thermo Power Plants within urban core

ENVIRONMENTAL/HUMAN HEALTH PROBLEM

For Ugljevik there is a concern that the current industrial waste water treatment plant release in excess of 50,000m³ quantity of highly saline water to the Janja and Mezgraja rivers negatively impacts on the river ecology and the people who using water for river for private and agricultural activities.

INTERVENTION & WORKS

For Ugljevik the proposed intervention aims to reduce wastewater and salts (45 tons a yr) entering the river by 35-40% from through the industrial wastewater treatment system through its modernization and replacement of parts. The increased efficiency of the treatment process would also significantly reduce the amount of water (i.e. by 17000 cubic meters per yr), electricity and water treatment chemicals used in the process and in turn significantly reduce the quantity of Green House Gases produced and finite resources consumed in delivering treated industrial water. Before and after monitoring of both the discharge quality of the wastewaters and upstream/downstream water quality is proposed.

For Tuzla Works would involve the decommissioning of two inefficient and unfiltered coal fired boilers within the urban core which provide steam and heating to two clinics and replace this by connecting **to the district heating system thereby using 'waste heat' from the power station. The project would** involve the mechanical and project costs to undertake the connections and the means required to document the improvements in air quality and waste reduction.

BASELINE AND EXISTING INFORMATION

For Ugljevik there is baseline data available in relation to both the discharge quality of the water from the industrial wastewater treatment process, other discharges from various point sources on the premise and also monitoring of the water quality in the Janja and Mezgraja both above and below the discharge points. There has been no quantitative information provided on how or where the power station and coal mine are specifically impacting on the ecology or on water uses though there has been some anecdotal information about quantity of fish in the river, fish kills etc and a concern that the power station activities are somehow related to this.

For Tuzla some baseline information is available on exceedances of certain air quality parameters above the recommended levels for human health (i.e. sulfur dioxide) at the regional level. There are fixed air quality and meteorological stations which provide some overtime analysis of certain air **quality parameter's which show some trends above the acceptable human health levels** (i.e. particulates, sulfur dioxide etc). The information however is not specific to impacts from the boilers to be decommissioned and would reflect the wider Tuzla regional inputs from the large thermal power

plants, local biomass burning, traffic combustibles and other industry combustion discharges from the wider Tuzla area. Quantitative Local studies on air quality and human health impacts have not been provided.

SITE VISIT - 4 March 2008

"Ugljevik - Industrial Water Treatment Plant"

An inspection of the site and waste water treatment plant showed the close proximity of the Janja and Mezgraja rivers to the power station complex. It showed a functional but old industrial wastewater treatment process still in use. While much of the process line appeared in reasonable working condition there were a number of corroded and non functional lines and taps. The industrial consumables that were present in large fixed tanks were not separated (i.e. incompatibles stored together (Sodium Hydroxide/Hydrochloric Acid) though tanks were in good condition. No bounding to contain spills was present and no warning signs in relation to occupational health and safety. No automatic alarms for accidental spillage or loss of product were present. Analytical information on monitoring and discharge/intake sites was provided along with schematic and process diagrams of the wastewater system and industrial water treatment process for the site. Discussion on further environmental improvement programs were also discussed and included the introduction of better pollution control devices to minimize stack discharges and a refurbishment of the onsite wastewater (sewerage) treatment plant.

"Tuzla – coal fired boilers"

An inspection of the site showed the close proximity of the urban core to the clinics and their respective coal fired boilers and discharge stacks. The stacks were relatively low with no apparent pollution control devices to minimize the loss of combustion products, crude boilers with limited process controls, broken temperature monitoring equipment, un-insulated pipes and stockpiles of fuel coal and ash were in evidence. Plan diagrams of the connection to the district heating supply were discussed as well as phasing out of the boilers and the introduction of gas heating to allow sufficient steam production for clinic activities outside of the heating period.

RECOMMENDATIONS

Processes for conducting works on both Ugljevik waste water treatment improvements and Tuzla decommissioning of the coal fired boilers are well developed and appear well structured in relation to project management and delivery of the technical elements. The main recommendations which have been provided through comments on the draft ToRs are as follows:

- Relevant human and environmental health concerns reported and attributed to the Tuzla/Ugljevik activities should be collated & discussed within the EIA with other potential causes considered;
- All relevant air quality/water quality should be tabulated and summarized with a comparison to established human/ environmental thresholds to chemicals discharged (air & water) to provide a comprehensive baselines prior to works being undertaken;
- An inventory on resources saved, wastes avoided and greenhouse gas reductions to be made and highlighted in the EIA;
- A program of local air monitoring is to be conducted (Tuzla) before, during and after boiler **decommissioning to show the 'net' improvement of air quality and a 'local' baseline;**
- A program of local water monitoring is to be conducted (Ugljevik) before, during and after water **treatment improvement works boiler decommissioning to show the 'net' improvement of air quality and a 'local' baseline.**