CONTACT DETAILS:

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PROJECT DESCRIPTION:

BACKGROUND

A key priority of the EU is to reduce CO2 emissions and promote renewable energy sources. The related quantified goals are laid down in the EU "20-20-20" targets. To reach these targets, the actors along the electricity value chain need to overcome some technical and operational challenges. Energy storage is considered to play a critical role in this regard. However, the wider deployment of currently available technologies for long-term storage is limited due to geographic site requirements, development gaps and capital costs.

The transition towards a more sustainable European energy system poses a number of challenges for electricity grids, and new ways to facilitate an increased feed-in of volatile distributed renewable energy sources (DRES) are required.

OBJECTIVES

The overall objective of the project is the improved and sustainable national air quality assessment and management system in Georgia, which ensures reduced impacts of air pollution and climate change and increased environmental cooperation and awareness.

The specific objective of the project is to develop a feasibility study on the introduction of an Air Quality Monitoring system in Georgia in compliance with EU requirements, including development of the Programme of the National Ambient Air Monitoring System and elaboration of relevant guidelines.

EXPECTED RESULTS:

The Consultant will aim to develop a feasibility study for the implementation of the National Plan for the Development of the Air Quality Monitoring System in Georgia and design a modern air quality monitoring network system, relevant to the compliance with the EU standards and improving environmental awareness through national and local cooperation and through the involvement of civil society (NGOs) and the private sector.

The main deliverables of the pilot project are:

1. Comparative report (state of the art in the EU, Georgia and other partner countries) and guidelines for designing of National Ambient Air Monitoring Network in compliance with EU requirements,
2. Preliminary assessment of air quality in Georgia on urban, regional, and national scale,
3. Design of the air quality monitoring network for Tbilisi,
4. Draft National Programme for the Development of the Air Quality Monitoring System in Georgia,
5. Feasibility Study for the Implementation of the National Programme.

RESULTS

The following activities were completed as part of the National Pilot Project feasibility study:

- An outline of the existing ambient air monitoring network and air quality in Georgia and national legislation and statutory instruments relating to air quality existing Georgian was completed.
- A preliminary assessment of the existing air quality against EU air quality directives was undertaken, using data from the existing air quality monitoring network, national emissions inventories, air quality modelling outputs and short-term passive sampling. It was identified that there was a clear risk that levels of air pollution in parts of Georgia were above EU concentrations thresholds for which fixed measurements were deemed necessary. Road transport was concluded to be the main source of pollution affecting the majority of the Georgian population. There were potential impacts upon residential populations as a result of pollutants from the emissions of point sources to the south east of Tbilisi, the area surrounding Kutaisi as well as Gori and Batumi;
- An air quality monitoring network design for Tbilisi was developed based upon the population distribution, a detail emissions inventory for the city, existing ambient monitoring data and on the output from the ADMS-Urban model for Tbilisi.
- A draft programme for the development of a National Ambient Air Monitoring System in Georgia was outlined. This explored the minimum number of measuring stations required for both minimum and maximum exposure scenarios.

CONCLUSIONS

As a consequence of the National Pilot Project feasibility study the following recommendations were made:

- Use of a diverse body of legislative instruments to organise the air quality monitoring and assessment at a national level, with the intention that these form complementary strands within an overall framework;
- Development of a national air quality strategy for Georgia;
- Further development of the air quality evidence base, including source identification and emission inventories, allowing further improvements to the assessment of Georgia air quality;
- Georgia to be sub-divided into 9 specific zones and 1 agglomeration (Tbilisi), for air quality management purposes;
- A rationalised passive sampler survey needs to be operated alongside the national

monitoring network;

- Continued development of an emissions inventory from both domestic and dispersed sources;
- An ideal urban air quality monitoring network for Tbilisi would involve 5 fixed locations, with stations monitoring NO_x, CO, SO_2, PM_{10}, $PM_{2.5}$, lead, O_3, benzene. This would include a background location in Tbilisi, a roadside location, an industrial/ traffic sampling point of road transport emissions in Agmashenebeli Street, Tbilisi and a suburban location and a maximum point of ground concentrations in the city;
- A CAFE directive compliant national network would require a minimum of 9 additional fixed continuous monitoring stations (including existing EU compliant station in Tbilisi);
- Modelling of air quality in Georgia should continue at the national level, to supplement monitoring data;
- All network procedures should be subject to an rigorous QA/QC process in order that the Georgia National Air Quality Monitoring Network can meet EU data quality objectives;
- A secure and realistic funding stream needs to be identified, in order to assist in overcome the NEAs resource and skills shortages and meet annual running costs;
- Non-governmental finances and resources should be sought, possibly from external donors and/ or industry.

Figure 1. Zones and Agglomerations of Georgia

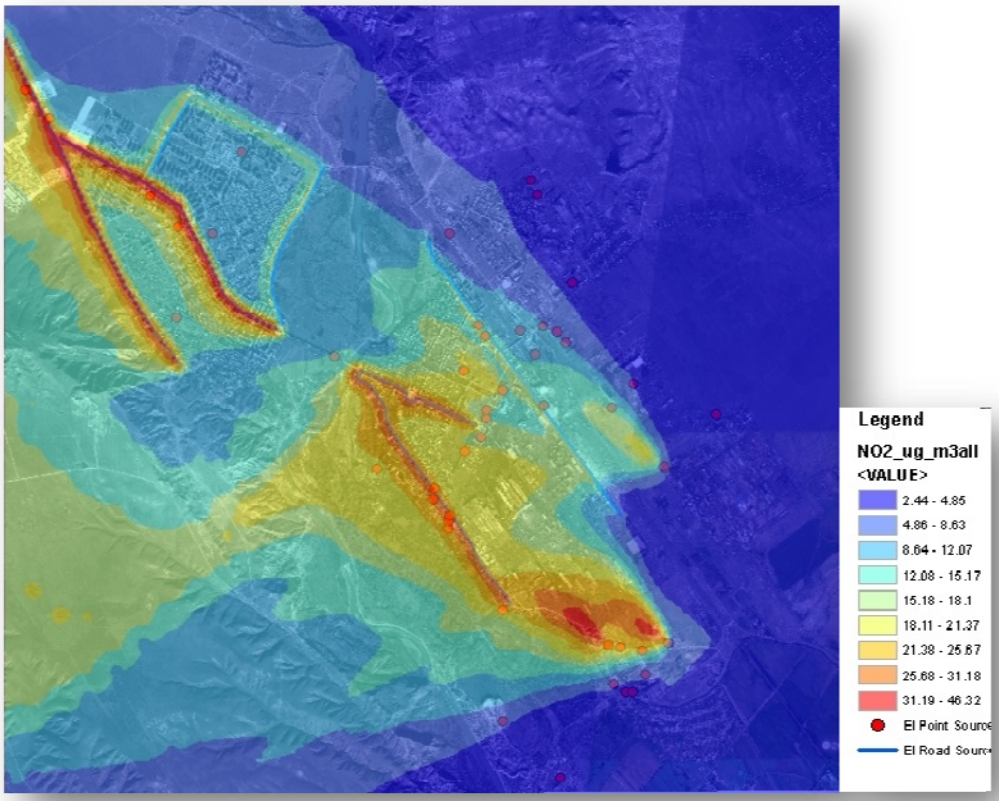

Figure 2. NO2 emissions in Rustavi

Zone Number	Potential Monitoring Locations	Min Number Monitoring Stations If Max Concentrations exceed UAT	
		Pollutant SO2, NO2	PM10+2.5
1	Imereti Region:	1	2
	Kutaisi		
	Zestaphoni		
	Chiatura		
5	Adjara region:	2	3
	Batumi		
8	KvemoKartli:	2	3
	Rustavi		
10 (Agglomeration)	Tbilisi	4	6

Figure 3. Number of monitoring stations for the selected scenario

ENVIRONMENTAL ISSUES ADDRESSED:

THEMES

Air quality

KEYWORDS

Air quality, CAFE Directive, emissions

NATURA 2000 SITES

Not applicable

BENEFICIARIES:

COORDINATOR	CENN, the Caucasus Environmental NGO Network
TYPE OF ORGANISATION	SME Small and medium sized enterprise
DESCRIPTION	CENN - Caucasus Environmental NGO Network - is a non-governmental, regional organization established in 1998 and specialized in the fields of civil society development and institutional strengthening, environmental research and policy, resources management, compliance management and sustainable development and communication. Since its establishment, CENN has worked at the local, national and regional levels in the Caucasus region. CENN believes in networking and cooperation in the context of environmental issues. We have already a serious record of joint activities and projects implemented regionally, where all three South Caucasus countries – Armenia, Azerbaijan and Georgia participated equally to find the solutions to local and regional environmental challenges.
PARTNERS	

ADMINISTRATIVE DATA:

PROJECT REFERENCE	2010 / 232231
DURATION	01-SEPT-2013 to 17-NOV-2014
TOTAL BUDGET	

EU CONTRIBUTION	
PROJECT LOCATION	Georgia