

## Environmental and Social Data Sheet

### Overview

Project Name:	EL TO ZAGREB - COMBINED CYCLE POWER PLANT
Project Number:	2016-0822
Country:	Croatia
Project Description:	Construction of a Combined Cycle Gas Turbine, heat and electricity cogeneration plant to replace obsolete, oil and gas-fired, environmentally non-compliant heat generation assets in Zagreb.
EIA required:	yes
Project included in Carbon Footprint Exercise <sup>1</sup> :	yes

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

### Environmental and Social Assessment

#### Environmental Assessment

The project is benefiting from high-efficiency cogeneration technology and the need to bring online new heat generation capacity to replace retiring units, whilst at the same time supporting the energy efficiency objectives of the Republic of Croatia and EU. The investment, being a CCGT CHP unit, complies also with the Low-Carbon Development Strategy for Croatia, the document prepared by the Croatian Government on request by the European Commission. The entire electricity generated by the plant will be cogenerated at high efficiency as defined by the Energy Efficiency Directive 2012/27/EU. The primary energy savings for the plant over separate generation of electricity and heat will reach 30%. The unit will work with efficiency over 90% on an annual basis and will use only natural gas.

In line with Croatian legislation, the project has gone through the full Environmental Impact Assessment (EIA), in accordance with the EIA Directive 2011/92/EU as amended, including public consultation. The Ministry of Environmental and Nature Protection issued "Decision on the environmental acceptability with the application of the environmental protection measures and with implementation of the environment monitoring program" on 17 July 2014. The Decision is based on Environmental Impact Assessment Study (EIAS) prepared by EKONERG Ltd from Zagreb. The competent authorities issued also the "Certificate on project compliance with the physical planning documents of the Ministry of Construction and Physical Planning" (17 January 2014) and the "Decision by the Nature Protection Directorate of the Ministry for Environmental and Nature Protection" (17 February 2014) that the planned project is acceptable for the ecological network.

<sup>1</sup> Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO<sub>2</sub>e/year absolute (gross) or 20,000 tons CO<sub>2</sub>e/year relative (net) – both increases and savings.

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The EIS found the project's impact on environment acceptable. The project complies with the atmospheric emission limits for NO<sub>x</sub>, CO, particulates and other pollutants defined by the Directive 2010/75/EU on Industrial Emissions.

The new CCGT plant will be located on an existing power plant site in a free space and no special land or soil remediation actions are expected. The project's main environmental impacts during construction phase are flue gas emissions from vehicles and equipment used during construction, dust fugitive emissions, generation of waste waters, noise, waste generation due to removal of existing buildings and excavation works, and other. The relevant protection measures include washing of wheels of vehicles, using protective covers when transporting the cargo, using relatively new construction machines made or imported after specified deadline (February 2009), using a sanitary waste water and rainwater sewage system, performing all fuel manipulation activities on a water-proof surface, using low-noise construction machines and equipment, organisation of noisy works during the day, management of waste carried out by authorised entities, and other.

The project's main environmental impacts during operation include the impact on air quality, mainly through increased concentration of NO<sub>x</sub> in the vicinity of sources, generation of waste water, noise, waste generation during maintenance and repair works, and other. The list of mitigants includes using only natural gas as a fuel, installation of two 60 m stacks to release the flue gases, implementation of continuous emission monitoring system, installation of gas turbines with low NO<sub>x</sub> burners, implementation of several protective measures to treat various streams of waste water, collection of waste in special containers, and data collection and reporting on generated waste. Noise dispersion was modelled for several points along the border with the residential area. The results indicate that the noise levels are going to be significantly below the regulatory limits. Nevertheless, an additional noise protection study will be prepared and its conclusions implemented.

The EIAS has considered the possible impact of the investment on sites of nature conservation including Natura 2000 sites, the nearest one being located 4.5 km from the plant (HR2000583 Medvednica). The EIAS and the Decision by the Nature Protection Directorate state that the operation will not have any significant negative impact on nature protection sites.

The project promoter is a major energy company in Croatia, ISO 14001 certified, has a high capacity to manage environmental and social impacts and risks, and to implement the measures listed above. Based on the outcomes of the environmental assessment process and on the evaluation of the capacity of the project promoter to manage and implement the mitigation measures, the project is acceptable for Bank financing, subject to the conditions and undertakings identified.

### **EIB Carbon Footprint Exercise**

The estimated emissions of the project in a standard year of operation are 301,500 tonnes of CO<sub>2</sub> equivalent per year, based on the combustion of natural gas fuel. The estimated emissions savings compared to the alternative are 218,100 tonnes of CO<sub>2</sub> equivalent per year. The baseline for the alternative is generation from a combination of existing and new natural gas-fired CCGT power plants for electricity and an industrial natural gas-fired boiler for heat.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.



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### **Public Consultation and Stakeholder Engagement**

The EIA process included public consultations which took place between 15 May and 13 June 2014. A notice on these consultations was published in a daily newspaper, notice boards of the City of Zagreb and also websites of HEP and the Ministry of Environmental and Nature Protection. No complaints, proposals or statements of any kind were expressed or submitted.

### **Conclusions and Recommendations**

The promoter provided requested documents linked to environmental matters, such as the Decision on the Environmental Acceptability of the investment from 17 July 2014 and the Integrated Permit for the EL TO site from 23 December 2016.