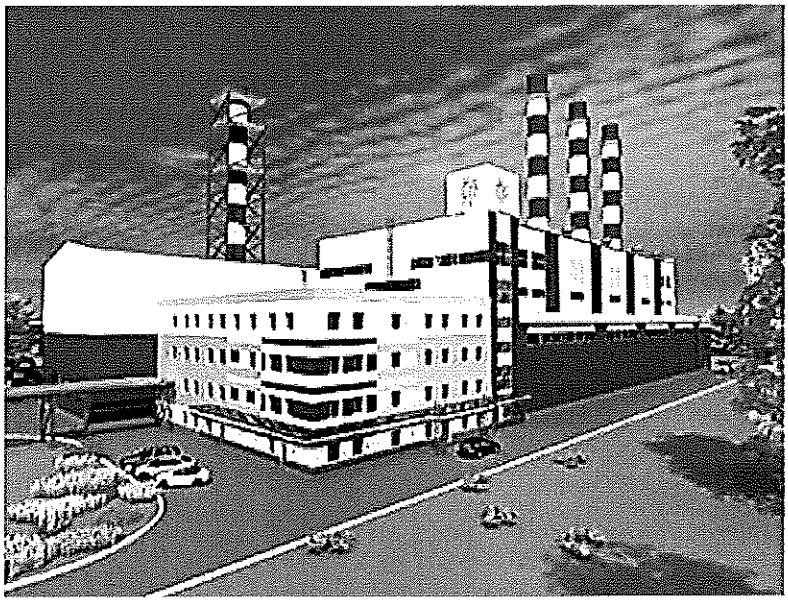
Non-Technical Summary

Construction of GTU-CHP on CWSBH site in the City of Vladivostok (CHP Vostochnaya)



October 2012

JSC «RAO Energy Systems of the East»
Russia 675000, Amurskaya oblast,
Blagoveschensk, Shevchenko str., 28

Content

1. Introduction

1.1 Who we are, and what we are proposing?

ESV is the largest participant of the energy market both across Russia and in the Far East of Russia (www.rao-esv.ru).

ESV, its subsidiaries and affiliated companies form a Holding, which operates in all regions of the Far Eastern Federal District and is the successor to most of the rights and obligations of JSC "RAO UES of Russia" in respect of the power sector of the Far East of Russia.

The main activity of ESV is to manage generation and distribution companies to meet the requirements for electricity and thermal energy of the Far Eastern Federal District and neighbouring regions.

The planned development comprises the construction of a new gas-fired high-efficiency co-generation plant on CWSBH site (CHP Vostochnaya, the Project) within the City of Vladivostok, the administrative centre of the Primorsk Krai.

The Project will meet a growing demand in the City for heat and energy, as well as increasing reliability of heat and power during the transition of the City's other main plant (Vladivostok CHP-2) from coal operation to gas.

The planned Project (and subsequent conversion of CHP-2 to gas) will enable both Plants to achieve and sustain compliance with the requirements for European Union (EU) Best Available Techniques (BAT) while increasing efficiency, reliability and capacity of electricity and heat generation for the inhabitants and industry of the City of Vladivostok; enabling vast improvements in environmental conditions.

1.2 Purpose of this Document

This Non Technical Summary (NTS) presents key elements of the Project in order to allow all stakeholders involved to understand the planned investments and their impacts on both the Company's operations, the neighbouring community and the local environment.

2. GTU-CHP on CWSBH site in Vladivostok (CHP Vostochnaya, the Project)

2.1 Why is the Project Needed?

The Project is needed to:

- Increase the heat supply efficiency by reduction of heat and steam losses during heat distribution via long steam pipeline
- Meet the growing demand for power and heat for the inhabitants and industry of Vladivostok
- Enable continued economic development of our City
- Ensure Vladivostok maintains its position as an economic hub for the Far East of Russia
- Encourage economic development links with neighbouring countries
- Support the conversion of CHP-2 to natural gas from coal, enabling vast improvements to heat and power generation and environmental emissions within the City

2.2 Where is the Project Located and what is its Area of Influence?

The Project is located in Pervorechensky district of Vladivostok between the street Snegovaya and the existing railway line at the reference address 22, Snegovaya, in the old part of the City of Vladivostok (Figure 2.1). On site is the Central Water Steam Boiler House (CWSBH) which is operated by Primorsk Heat Networks (PHN). The CWSBH will remain on site and operational in respect to equipment and facilities ensuring heat supply and distribution.

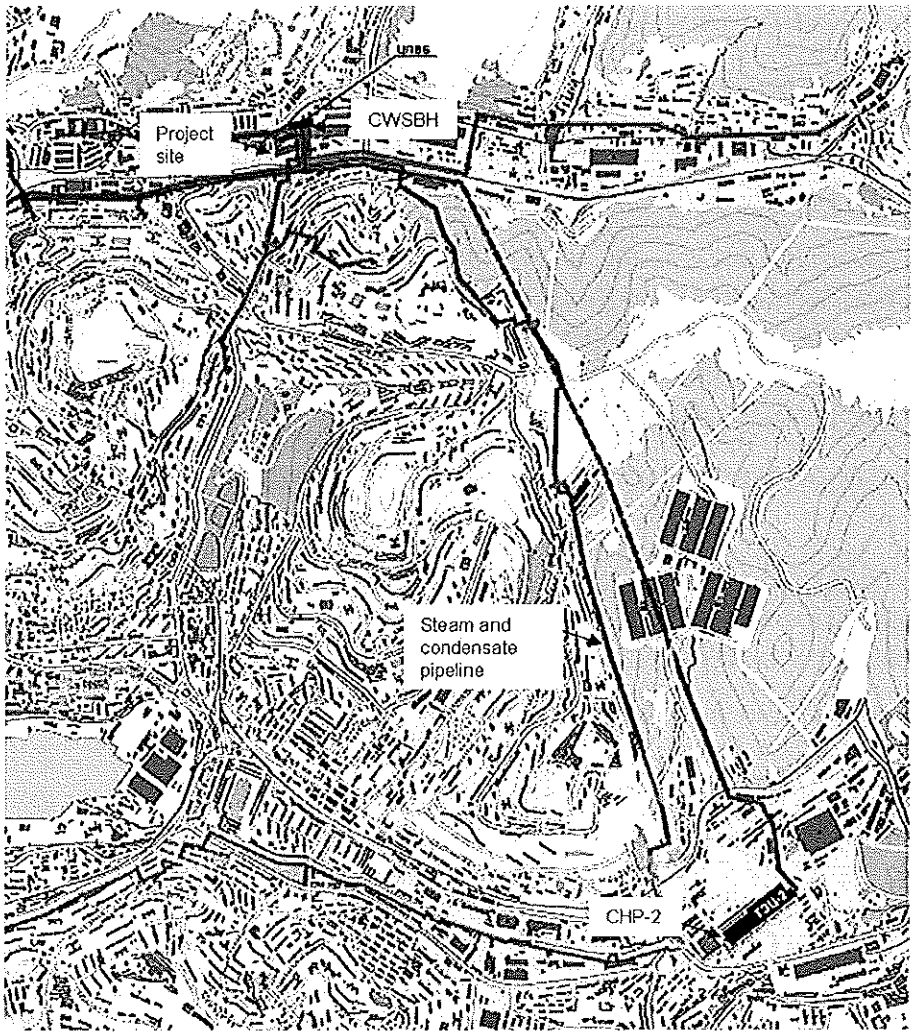
The main Project site is to be developed on the site of a former coal power plant which was decommissioned in 1987. The Company identified this as an appropriate site due to the existing infrastructure, and existing district heating system. Further information on site selection is presented in Section 2.5.2.

On site there are buildings which are either currently disused and will be demolished for construction of the Project or are in use and associated with the CWSBH. These buildings include:

- CSWBH building;
- Feed water storage tanks;
- Snegovaya Heat and Power Plant building (to be demolished);
- Liquid fuel storage tanks (to be demolished);
- Facilities and structures for coal supply (to be demolished);
- Warehouse building (to be demolished); and
- Other buildings and structures (to be demolished).

The main Project site is owned by JSC Far East Generation Company (DGC) (Certificate of the State Registration of Rights of 18.10.2011).

Figure 2.1: Project Area of Influence and Key Infrastructure



Source: Primorsk Heat Networks (2005)

Green line - heat pipeline of Semersky district; Red - heat pipeline of Central district; Yellow - heat pipeline of Eastern district; Blue - previously proposed heat pipelines, now is not considered

The current Project area of influence can be defined as follows:

- The Project site;
- Grid connection (transmission line) and gas pipeline adjacent to the site;
- Temporary access road to be constructed from the south-west corner of the site, linking to the existing access road within the industrial area. The exact location of this road is still to be decided;
- Area of impact from the plant emissions where impacts are considered significant, including Sanitary Protection Zone (SPZ) of the site; and
- Steam and condensate pipelines (hereinafter – steam pipeline) connecting VCHP-2 and the Project site and to be dismantled or re-built as a result of the project development (the decision will be confirmed early 2013).

2.3 What is the Project and its associated infrastructure?

The planned development comprises the construction of a new gas-fired high-efficiency co-generation plant, in the City of Vladivostok, the administrative centre of the Primorsk Krai.

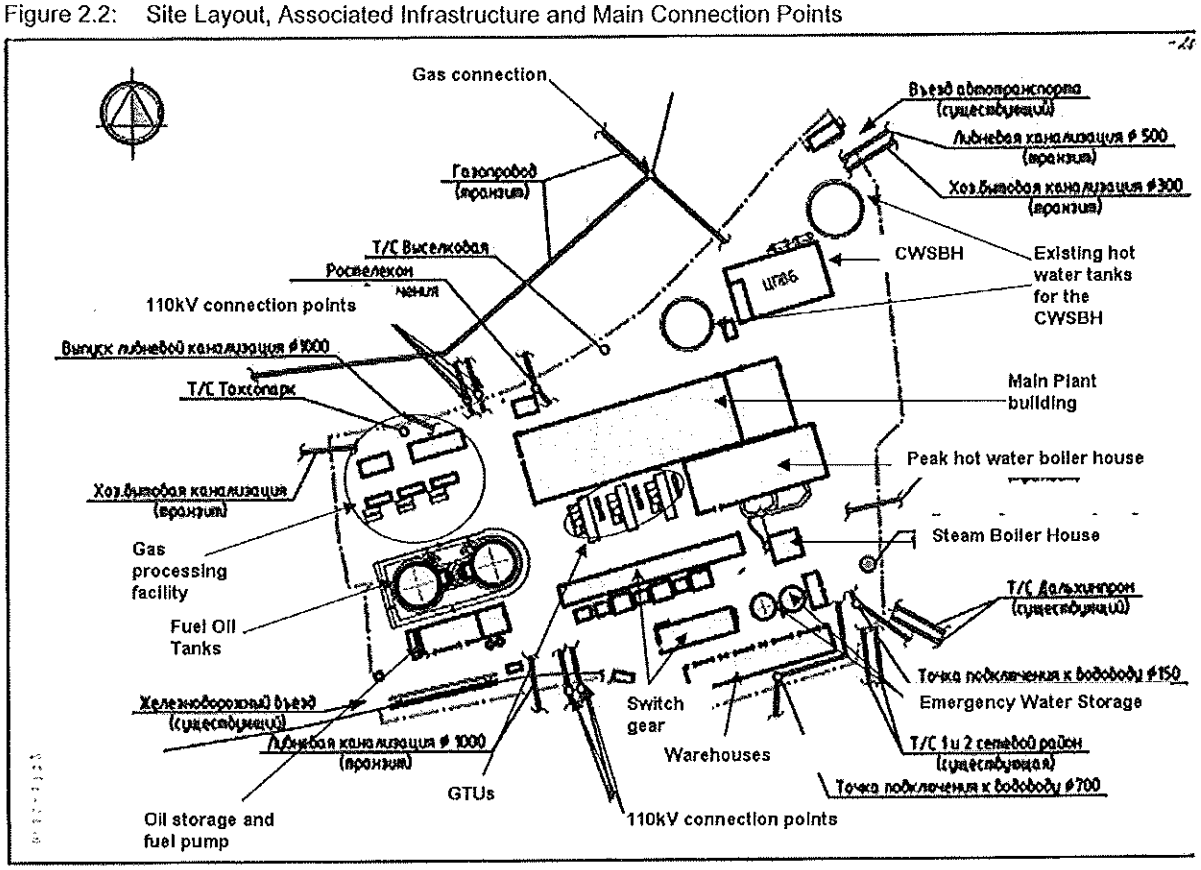
The Project will consist of three units comprising a gas turbine (GT) and heat recovery steam boiler (HRSG), a peak hot water boiler house with three hot water boilers and two steam boilers (Table 2.1 below). The steam boilers will supply the needs of the Project as well as external consumers. The hot water boiler house will provide heat to meet winter demand to the users within the City.

Table 2.1: Technical parameters of the main equipment

Equipment	Manufacturer	Quantity
GTU LM 6000 PF Sprint	General Electric	3
HRSG	-	3
Hot water boiler KB-ГМ-116,3-150	JSC Dorogobuzhkotlomash	3
Steam boiler OPTI 1000	Unicon Danstoker	2

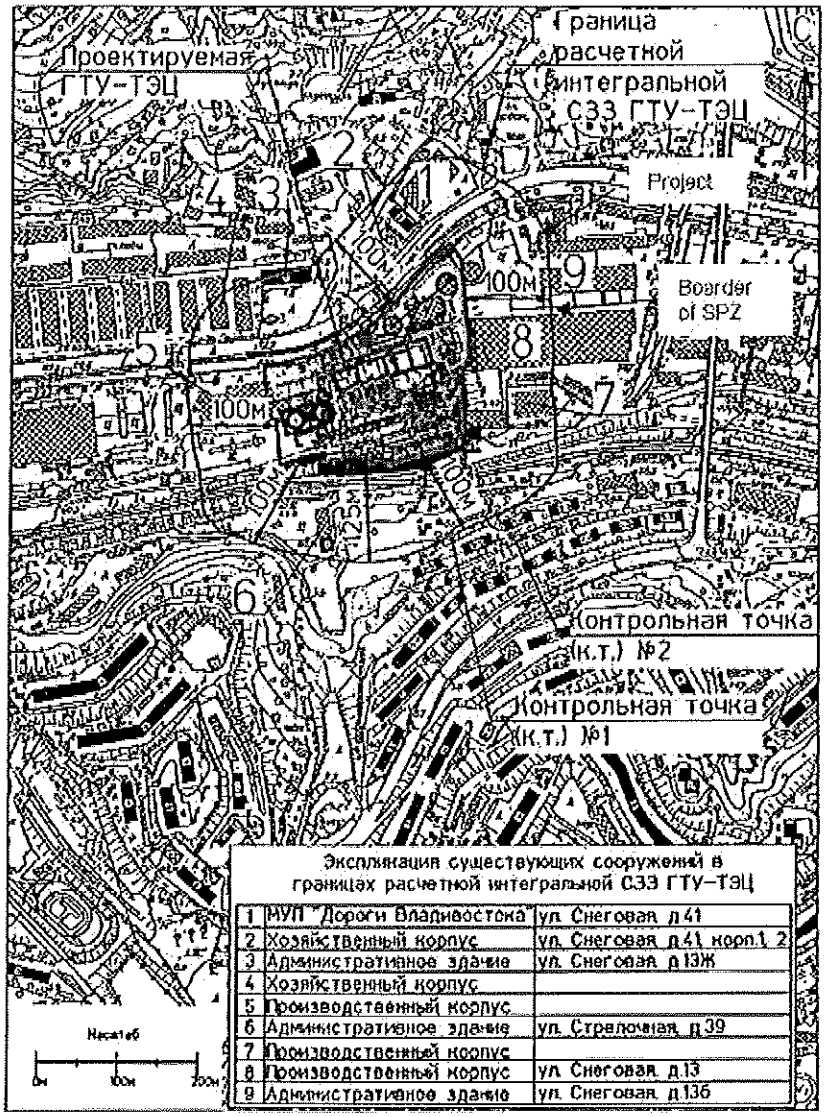
Source: Russian EIA.

Figure 2.2: Site Layout, Associated Infrastructure and Main Connection Points



Source: ESV

Figure 2.3: Site Layout and Sanitary Protection Zone



Source: Russian EIA

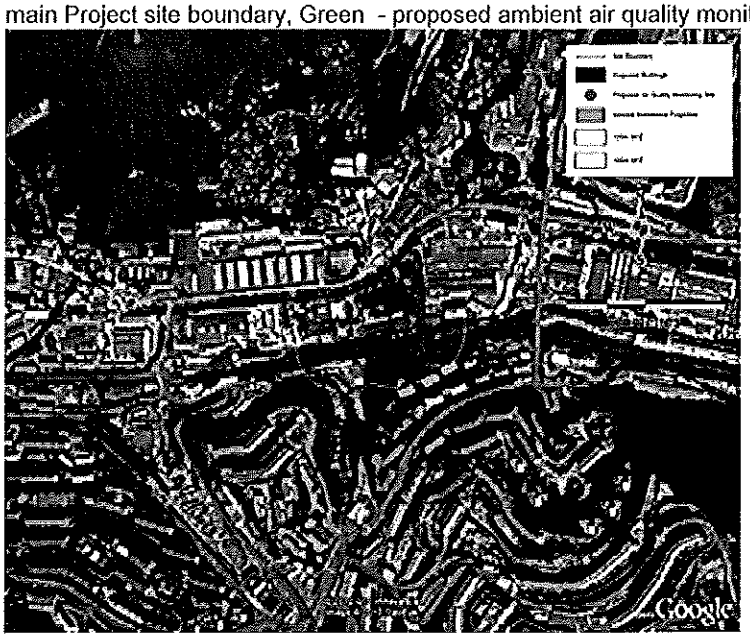
Translation of Key:

Existing facilities within the sanitary zone

1. Utility "Vladivostok roads"; 2. Outbuilding; 3. Administrative building; 4. Outbuilding; 5. Industrial building; 6. Administrative building; 7. Industrial building; 8. Industrial building; 9. Administrative building

The nearest residential properties are located between 105 – 120m to the south of the site boundary (see Figure 2.4)

Figure 2.4: Location of Residential Receptors - Red lines SPZ boundaries; Blue – main Project site boundary, Green - proposed ambient air quality monitoring station



Source: Mott MacDonald, basemap Google Earth used under licence

2.4 How will the Plant work and what technology will be used?

The Project has been designed to meet the requirements of the Russian Federation. Furthermore, the Project will meet the environmental requirements as set out in the EU Industrial Emissions Directive (IED). The main goal of the European Union (EU) IED is to provide an integrated approach to environmental protection by installation and implementation of management and control systems to minimise environmental emissions. This approach is supported by the adoption of appropriate preventive measures and technology choices as prescribed through the application of the EU principles of "Best Available Techniques".

The following provides a description of the key technology proposed for the Project and confirms its compliance with the adoption of the EU principles of "Best Available Techniques".

The Project will consist of three units comprising a gas turbine (GT) and heat recovery steam boiler (HRSG), a peak hot water boiler house with three hot water boilers and two steam boilers (Table 2.1 above). Use of HRSG's is considered to be "Best Available Techniques" for generating steam or hot water as it uses waste heat from the electricity generation process rather than burning new fuel to generate it.

Three identical HRSGs, one for each gas turbine exhaust, will provide the steam requirement of the steam turbine for the combined cycle power production. A stream of hot water will be taken from the exit of the HRSGs, passed through a module in which the water is heated by the waste exhaust gas, and supplied to a district heating system at a maximum temperature of 82-130°C.

Water will be returned from the district heating system at around 40-70°C and delivered back to the power plant at the network pumps intake. Hot water will be supplied to the CWSBH (on the Project site) to provide district heating.

The adoption of a district heating system further emphasises the efficiency of the system, whereby the hot water by-product of the energy generating process is utilised for local heating purposes. Waste heat from this is then returned to the Plant allowing re-use for on-site activities. This closed loop system limits the generation of waste water and represents indicative "Best Available Techniques" for gas turbine technology as required in the European Union.

The type of gas turbine proposed for the Project can achieve efficiencies as high as 58.5 %. This compares with electrical efficiency for new gas turbines of 36 to 40% and combined cycle without supplementary firing (HRSG) in CHP mode of less than 39%. With the use of HRSG the predicted efficiency of the main Plant is estimated at 83% and is further demonstration of the Project's adoption of "Best Available Techniques".

Water cooling for the gas turbines is not required. The gas turbines include a Sprint system where the injection of demineralised water is used for cooling of air coming into the compressor. This increases the air consumption through the turbine which increases the turbine capacity. Other main and additional equipment is cooled with close system of water cooling with ventilator towers. The proposed cooling is considered representative of "Best Available Techniques".

The gas turbines include dry low emission (DLE) combustors to achieve emissions of less than 25 ppm (51mg/Nm^3) nitrogen oxides (NO_x) without the use of fuel diluents, such as water or steam. This results in less consumption of water and more environmentally friendly operation. Use of DLE is considered the adoption of "Best Available Techniques".

The Project has two steam boilers that will be used to generate steam for the Project's own needs and the needs of the neighbouring facility producing reinforced concrete slabs (located on the western boundary). The boilers will run on natural gas.

The Project includes three hot water boilers which will be used during the winter months to provide additional heat and hot water for district heating. The boilers will run on natural gas.

The use of main steam and hot water boilers to meet the Project's and City's peak steam and heat demands in winter means that there will be reductions in the overall emissions of nitrogen oxides (NO_X) and other pollutants, by replacing small unregulated combustion plants or coal plant (CHP-2) and is considered to represent the use of "Best Available Techniques" for meeting peak steam and heat demands while minimising overall environmental emissions.

2.5 What Alternatives Were Considered?

2.5.1 Overview

Throughout the course of the Project development, many decisions are made concerning, for example, the type of technologies, the location and the processes involved in the proposed development. The following provides a brief summary of the alternatives technologies and fuels that could have been chosen for the Project.

2.5.2 Site Selection

During the initial planning stages of the Project, the Company looked at different site locations for the development of the Plant in order to chose the most appropriate location. The site was selected for the following reasons:

- This site is located in the centre of high heat loads area of Vladivostok;
- Rehabilitation of degraded brownfield land which was previously used for power generation so no new green field site would need to be developed;
- Existing heat distribution infrastructure on site so no new infrastructure would need to be built;
- Existing gas distribution and transmission infrastructure which could be utilised with minimal upgrades;
- The land is already owned by DGC's so there would be no requirement to buy land for the Project;
- The site is surrounded by an industrial area so the Project would not encroach on residential or undeveloped areas; and
- The district where the site is located currently experiences a deficit in heat and power supply.

For these reasons the site was considered the most favourable choice for the location of this Project.

2.5.3 Fuel Choice

The combustion of fossil fuels (coal, oil, natural gas) results in the creation of gaseous emissions such as nitrogen oxides (NO_x), sulphur dioxides (SO_2), particulate matter, carbon monoxide (CO) and carbon dioxide (CO_2). The use of natural gas however results in lower emissions of NO_x, CO and CO_2 and negligible emissions of particulate matter, volatile organic compounds (VOCs) and SO_2 when compared with other hydrocarbon fuels and as such is the preferred fuel for the Project.

2.5.4 Alternative Generating Technologies

Alternative generating technologies include use of renewable technologies i.e. solar, wind etc, conventional gas fired boilers capable of utilising natural gas and gas turbines. Renewable technologies have been dismissed as they would not be able to provide the necessary steam and hot water demands required by the Project. The use of gas turbine technology with HRSG has been chosen as the preferred option and is currently considered the "Best Available Technique" and is the most efficient and environmental friendly technology available for the combustion of natural gas.

2.5.5 NOx Abatement Technology

Consideration has been given to possible viable options for reducing the levels of NOx emissions from the Plant.

Various techniques are available for reducing thermal NO_x emissions produced as a result of combustion in gas turbines and boilers. The primary techniques recognised as "Best Available Techniques" are summarised as follows:

- Combustion modifications for example reduce temperature, flue gas recycling, DLEs, staged combustion, reburning and water and steam injection; and
- Secondary abatement methods including - Selective catalytic reduction and selective non-catalytic reduction (SNCR).

As described in Section 2.4 above, the Project has adopted the use of DLEs, which reduces NOx emissions to a level that meets Russian emission standards while not incurring the high additional costs that would be associated with installing a secondary abatement method.

2.6 Permitting Status

The development cycle for the Project includes a continuous process of obtaining various permits and approvals. The environmental permits are considered as a part of overall required permitting documentation, including approvals from all state bodies responsible for their respective areas (i.e. forest, water, air quality. etc. depending on the project nature). A project can only be implemented upon receipt of a state expertise approval of the project design documentation (positive conclusion) and the following construction permit. Once the facility's construction and commissioning are underway and before operation starts, permits for air emissions / wastewater discharges / waste limits must be obtained or renewed as appropriate. Together these measures can be considered as equivalent of European facilities' 'environmental permit'. If the environmental procedures described in the project / design documentation are not observed or other environmental violations of environmental legislation are committed, civil, administrative or criminal liability measures may be imposed.

The Project has received a number preliminary approvals including use of water resources, approval of environmental survey results, etc. The design documentation including the Russian EIA section was submitted to State Expertise. The findings of the State Expertise will highlight the main areas in terms of compliance with national legislation and technical norm requirements. The construction permit will be applied for as soon as the positive expertise conclusion of the Project is received.

Post commissioning the Project will receive, and further on annually renew, its emission permit. This will require development and approval of the following:

- Inventory of the pollution sources (after the first year of operation);
- Design of Maximum Allowable Emissions for 5-year forecast;
- Confirmation from the sanitary authorities of the size of the SPZ; and
- Wastewater discharge permit and waste disposal limits (permit for solid wastes) which will also be approved after the Project commissioning and renewed on a regular basis.

3. Environmental and Social Impacts of the Project

3.1 Overview

Table 3.1 describes the main environmental and social impacts (positive and negative) associated with the Project for construction and operation and the mitigation measures which will be implemented to remove or reduce the level of impact from the Project.

Table 3.1: Summary of Environmental and Social Impacts and Proposed Mitigation Measures

Air
Overview An air quality assessment has been undertaken in accordance with EU requirements to assess the potential construction and operational phase air quality impacts resulting from emissions to air during the operation of the Project on sensitive receptors using and an internationally recognised advanced dispersion model, ADMS. The assessment focuses on combustion related emissions and qualitatively assesses the cumulative impacts with the existing CHP-2. The emission sources from the Project are the three gas turbines, two steam boilers and three hot water boilers. The specifications of which are presented in Table 2.1 above. Construction and Decommissioning Emissions Construction and decommissioning impacts will result in temporary impacts from dust. However, it is considered that these impacts can be effectively managed through the use of simple environmental management techniques which would be adopted for site activities during construction and decommissioning phases. Operating Emissions The combustion of fossil fuel gives rise to a number of pollutants with the potential to negatively affect sensitive receptors. The Project has chosen a fuel and technologies that minimise air emissions. From natural gas (the proposed fuel source of the Project), the primary pollutants of concern following combustion are nitrogen oxides (NO_x) and carbon monoxide (CO). Emissions of CO from the Plant will be small in comparison the relevant Russian Federation and EU standards. Emissions of sulphur dioxide and particulate matter will not be produced during the operation of the Plant, as they are not present in significant quantities in the fuel chosen. The main emission from the Plant will be NO_x. The modelling undertaken shows that the area affected by NOx emissions is minimal, especially if compared against the same size plant using coal. Additionally, 1 hour average ambient air quality standard for NO_2 will be within Russian and EU standards. To confirm good operation and emissions from the Plant, the Company will monitor NOx emissions and throughout operation, using continuous emissions monitoring. Recorded emissions will be disclosed in annual reports.
Carbon

A carbon assessment has been undertaken. The carbon assessment calculates that the Project will emit approximately 1259 k/tones CO_2e per year. This figure is considered high, however, it is approximately 70% less than if the Project was using coal as a fuel. Additionally, the Project will support the conversion of CHP-2 from coal to gas. This will result in overall carbon reduction for power generation in Vladivostok of approximately 3809 k/tones CO_2e per year.

Noise

The Project is located within an industrial area in proximity to residential properties. Ambient noise levels are regularly monitored and it has been confirmed these ambient noise levels are high.

The noise levels generated during the construction phase of the Project are likely to be higher than those produced during operation and decommissioning due to the greater need for heavy plant and impact activities.

Once operational the Project will produce noise from a range of low height noise sources such as transformers, medium height noise sources like the boiler house and also high elevation sources such as the exhaust stack. There will also be miscellaneous noise emissions associated with the daily operation of the Plant, such as a limited number of vehicle movements.

Noise assessments undertaken identified noise emission limits which are very close to the established national standards during night time i.e. 45dBA at the nearest sensitive receptor (105m south of the Plant boundary).

Noise abatement measures are included within the main Plant design; these include silencers on air intakes, mufflers on exhaust fans and the turbines, sound proofing insulation in the walls and use of double glazing in windows for buildings etc. The steam and hot water boiler houses will be housed and the gas turbines will be enclosed which will minimise noise emissions from these items of equipment.

Once operational we will undertake regular noise monitoring at the nearest sensitive receptors to ensure we are in compliance with the requirement emission limits and to confirm the boundary of the SPZ is correct.

Water

Under normal operating conditions there will not be any impacts to surface water features from the Project's activities. On-site wastewater treatment of Plant effluent will achieve best practice emission limits, as set out in the maximum allowable concentrations for a fisheries classified river within the Russian Federation, and EU Industrial Emissions Directive wastewater emission limits.

Oily industrial waters collected on-site will be treated and discharged to the existing collector network. Surface run-off will be collected separately, treated and discharged to the municipal sewer.

Wastes

As part of the Project's environmental management system, waste will be managed and regulated in accordance with the requirements of the Russian Federation. This will ensure the safe and correct disposal of wastes and minimize any potential environmental risks associated with the temporary storage, handling and disposal of the Project's wastes.

Ground, Surface Water and Groundwater

The main Project site was formally occupied by a coal power plant (decommissioned in 1987). Coal power plants often have ground contamination associated with the use of coal and disposal of fly ash. Heavy metal contamination is common. Ground condition surveys undertaken for the Project identified no radioactive contamination, but identified several hot spots of heavy metal (zinc, copper, cobalt, nickel and lead) contamination at various monitoring points in mobile and non-mobile forms. Mobilisation of this contamination could result in impacts to the underlying aquifers and near-by surface waters.

The Company are required to comply with Rospotrebnadzor's requirements for assessment and remediation of land contamination. This will include demonstrating to Rospotrebnadzor the site is clear from contamination. As such, during construction activities we will remediate any identified areas of contamination.

Landscape and Visual

There is the potential for impacts on the landscape and visual amenity of the surrounding area, in particular on existing and future residential populations. However, given the industrial setting of the proposed development the landscape and visual impacts are considered in-significant and the Project will improve the currently degraded nature of the area.

Flora and Fauna

There will be limited impacts to flora and fauna (terrestrial or aquatic) from the development of the Project. The area is already heavily degraded due to industrial operations and urbanisation of the City. The majority of the vegetation of interest has been destroyed by human influence and continuing development of the City. Fires are also common which results in constant regeneration of ruderal colonising species of limited ecological interest.

There are number of bird and bat species found within the Project Area of Influence, however, these species have not been identified at the main Project site and although there maybe temporary disturbance to these species during construction, these impacts are considered short-lived and temporary.

It is considered unlikely that the Project will result in any irreversible harm to any protected species.

Traffic and Transport

Given the location of the Project within the City, the Project can utilise existing road and rail networks during construction and operation.

The main traffic impacts would be during construction, both in the delivery of materials to site as well as large turbine components and specialist construction equipment. Some of these deliveries would be made by long / slow moving vehicles.

Traffic impacts for the steam pipeline will be minimal and localised. During dismantling or construction trucks will need to have access to areas in proximity to the pipeline for removing and delivering equipment. The urban setting of the steam pipeline means that the majority of the route will be in proximity to existing roads. There maybe temporary disturbances whilst works are going on, however, these will be short-lived (3-5 days at each location).

A framework for transport management plans will be provided as part of the construction management and monitoring plan to minimise disturbance to the local communities and users in the area as part of the

requirements of the Russian Federation. The operational impacts to traffic and transport are considered in-significant.

Cultural Heritage

The main Project site is considered of in-significant archaeological interest. The site has been used for industrial purposes since 1960 and excavations for the existing buildings would have disturbed any buried artefacts.

The steam pipeline if to be reconstructed will not require significant excavations and is considered unlikely to impact on undiscovered artefacts. The area around the pipeline is not considered of cultural interest.

Generation of Employment

Employment generation is expected to be a key positive impact. Approximately 357 temporary jobs are expected to be created for the construction phase expected to last approximately 42 months and approximately 124 permanent new positions are expected to be created once the Project becomes operational. The construction workforce will be mainly low-skilled whereas the new operational positions will provide more skilled roles.

An indirect employment benefit will be the provision of a stimulus to local businesses from the influx of additional persons to the local area. For example the income of local hotels, landlords, shops, restaurants, entertainment etc facilities will be boosted.

Economic

The Project will result in an improvement in the financial well-being of the construction workers and their dependents. Additionally, the Project will meet the large demand for electricity and heat within the City which is currently hindering economic development. The generation of extra capacity of heat and power will attract more regional and foreign investment and enable greater development of the region.

Community Health and Safety

A SPZ has been designed for the main Project site (see Figure 2.3 above). The SPZ has been calculated to ensure that there will be no impacts to the community from the main Project site. The Company will receive formal approval of the SPZ following one year's post commissioning monitoring. There are no residential areas located within the proposed SPZ for the main Project site. However, there are a number of commercial buildings i.e administrative buildings, industries and outbuildings (see Figure 2.3). These commercial buildings which will remain within the SPZ as they are not used for residential purposes.

On the main Project site there were some commercial tenants. These include, a warehouse for storage of spare parts of equipment and a transport shop. These tenants have been given a formal three month notice period (required by their lease contracts) that they will need to find alternative locations for their operations.

The local community will be informed of the grievance mechanisms that they can use to complain about risks from the Project, for example about non-adherence of traffic speed limits and safe driving rules and the site will be fenced to prevent un-authorised access from children or other individuals. A community complaint register will be maintained in order to allow local people to raise their concerns regarding the safety issues.

Land Acquisition

No formal land acquisition or resettlement is required for the Project, as the Project will utilise land already

under the ownership of Primorsk Heating Networks or JSC DGC.

Temporary Economic Displacement

Currently it is planned by ESV that the steam pipeline between CHP-2 and the Project site will exist and stay in operation until the full commissioning of the Project and probably for the first half a year of operation for ensuring reliability of heat supply for the City (Figure 2.1 depicts the steam pipeline).

The current understanding of the steam pipeline is that it will be either decommissioned or reconstructed using the same route corridor.

If the steam pipeline is reconstructed using the existing route corridor there will be "temporary restricted access during demolition" as 3-4 meters from one side of pipeline is required for the vehicle access, with "temporary economic displacement" for several sheds (2-3m along the pipeline route).

Taking into consideration the location of garages, and if the steam pipeline will be demolished completely, there could be minor (few days) "temporary restricted access during demolition", as 3-4 meters from one side of pipeline is required for the vehicle access, with minor (few days) "temporary economic displacement" for several sheds (2-3 along the pipeline route).

Under national legislation, all of the garages and car market are constructed illegally within the protection zone of a pipeline (3m - 20m from the pipeline), and no compensation is required to be provided by JSC DGC for the owners of these features.

If JSC DGC are going to demolish the steam pipeline, they may sell the land associated with the pipeline and its SPZ. This could potential result in the garages and car market having to move.

ESV will consult with the owners / users of the structures above when we have further details on our proposals for the steam pipeline to ensure all those impacted are appropriately informed and advised on the proposed works. Consultation will be undertaken in line with the requirements of EBRD's PR 10.

Indigenous People

Two groups of indigenous people are found within the within the Primorsk Territory:

- Тазы (Tazs)
- Удэгейцы (Udege)

There are believed to be approximately 100 indigenous people are living in the City of Vladivostok, including non-resident students. The Association of Indigenous People confirmed that the indigenous people within the City of Vladivostok do not pursue their historical trades and are living and working within mainstream society. The Project will not impact on these persons.

Cumulative Impacts

Throughout the environmental and social review and assessment above and the Russia EIA and associated infrastructure, the cumulative impacts that the development could potentially have on the site and the surrounding area has been assessed. In essence, cumulative impacts are those which result from incremental changes caused by other past, present or reasonable foreseeable actions together with the proposed development. Therefore, the potential impacts of the proposed development cannot be considered in isolation but must be considered in addition to impacts already arising from existing or planned development.

The environmental assessments undertaken above and for the Russian EIA considered the potential for cumulative impacts to arise as a result of the proposed development in conjunction with other similar developments in the local area i.e. air, noise, carbon, socio-economic etc. These assessments have concluded that the Project will not cause negative cumulative impacts when considered in addition to existing and forthcoming developments in the local area. The Project will provide a clean and more energy efficient source of energy and heat to the residents of Vladivostok and temporary and permanent skilled employment. Once operational the Project will enable the conversion of CHP-2 from coal, which will result in improved air and carbon emissions for the City of Vladivostok as a whole.
Trans-boundary Impacts
The Project is not considered to contribute to trans-boundary effects with respect to all the pollutants concerned. No Project related waste or wastewaters will be disposed off outside of the territory of the Russian Federation.

Source: Mott MacDonald, September 2012 and Russian EIA March 2012.

3.2 How are environmental and social effects going to be mitigated?

In order to ensure implementation and effective management of the planned mitigation measures during the life of the Project, an Environmental and Social Action Plan (ESAP) will be developed for the Project based on the findings of the environmental impact assessment and consultation with the public and key stakeholders. The Company will use best practice when operating the Plant, and among other measures will install a continuous NO_X emission monitoring system on each stack. A summary of emission results will be provided in annual reports from the Company, allowing transparency on emissions from the Plant throughout operation. .

The ESAP is supported by more detailed environmental and social management plans (ESMPs) for the construction and operational phases of the Project. The ESMPs provide a framework for wider environmental management systems (EMS) that will be created during the construction phase by the EPC Contractor and during operation by the future site operator. The EMS will be aligned to the international standard ISO 14001.

A health and safety system in accordance to the international standard OHSAS 18001 will be developed and implemented.

A commissioning audit will be undertaken of the Project, to verify that all the Project designs have been fully implemented.

4. Further Information

4.1 How do I find out more about the Project?

JSC RAO Energy Systems of the East is developing a Stakeholder Engagement Plan to enhance public information and stakeholder engagement in the Project. All internal and external stakeholders have been identified and a programme of information disclosure events have been developed to further inform the public and stakeholders regarding the Project. To involve stakeholders we will be doing the following:

- Disclosure of Project information via mass-media (newspapers, magazines, radios, television, internet);
- Public exhibitions with the public (e.g. roundtable meetings with public representatives);
- Open days and site tours;
- Awareness-raising booklets and leaflets;
- Annual report (including information on targets achieved in environmental protection, health and safety, and community development); and
- Support to various community development projects.

All documents regarding the Project, including the Environmental Impact Assessment have been made available for public consultation on our website (www.rao-esv.ru), and at PHN offices:

Primorsk Heating Networks
690091 Vladivostok, St. West, d. 29.
3 FL., room. 319,
Tel. 8 (423) 243-20-01,
www.primts.ru

4.2 How do I have my say?

A mechanism for public grievance has been developed: concerns and requests can be submitted by filling a Public Grievance Form (see Appendix A) and sending it to the contact details below:

Written answers will be provided to each request within 30 days.

Company Name	**Local Branch of JSC DGC "Primorsk Heat Networks"**
Company Contact	Alexey Nikolaevich Subbotin, Press Secretary
Postal Address	690091, Vladivostok, Zapadnaya str., 29
Telephone Number	Press service +7 423 279 62 03 Reception + 7 423 243 25 81 Hot line +7 423 279 00 01
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Appendices

Appendix A. Grievance / Comment Form

Glossary

AAQS	Ambient Air Quality Standard
ACC	Air Cooled Condenser
ADMS	Dispersion model, software
BAT	Best Available Techniques Assessment
CHP	Combined heat and power
CWSBH	Central Water Steam Boiler House
CO	Carbon monoxide
DLE	Dry low NOx Emissions
EBRD	European Bank of Reconstruction and Development
EIA	Environmental Impact Assessment
EMS	Environmental management system
ESMP	Environmental and Social Management Plan
ESAP	Environmental and Social Action Plan
ESV	JSC RAO Energy Systems of the Far East
EU	European Union
GE	General Electric
GHGs	Greenhouse gases
GT	Gas Turbine
HRSG	Heat Recovery Steam Generator
IED	Industrial Emissions Directive
IPPC	Integrated Pollution Prevention Control
JSC DGC	Far East Generating Company
MW	Mega Watt
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
OVOS	Russian Environmental Impact Assessment
PHNs	Primorsk Heat Networks
PR	EBRD Performance Requirements
RF	Russian Federation
RPP	Regional Power Plant
SPZ	Sanitary Protection Zone
SEP	Stakeholder engagement plan
SO_2	Sulphur Dioxide
SOx	Sulphur oxides
VCHP-2	Vladivostok CHP-2