



Disclosure report on the results of the preliminary environmental and social assessment

Almaty CHP 2 Modernisation,
Kazakhstan

Version: 2.0

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Document Details

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ACRONYMS AND ABBREVIATIONS

Name	Description
ADB	Asian Development Bank
CHP	Combined heat and power plant
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESAP	Environmental and Social Action Plan
JSC	Joint-Stock Company
JSC "AIES"	Joint-Stock Company "Almaty Electric Stations"
NGO	Non-governmental organizations
NTS	Non-Technical Summary
pre-EIA	Report on Possible Environmental Impacts
SEP	Stakeholder Engagement Plan
SPZ	Sanitary Protection Zone

1 INTRODUCTION

The European Bank for Reconstruction and Development (“EBRD” or the “Bank”) and Samruk Energy of Kazakhstan are considering the modernisation and reconstruction of CHP-2 of Almaty (the “Project”), one of the three CHPs that provide heat to the district heating network of the city operated by Almaty Electric Stations JSC (“JSC AIES” or the “Company”). JSC “AIES” is the company that owns and operates the main heat supply infrastructure for the city of Almaty consisting mainly of the CHP-1, CHP-2, CHP-3 and the Heat Only Boiler.

The main purpose of the Project is the full replacement of coal by natural gas as the primary fuel.

This document is a **Disclosure Report on the Results of Preliminary Environmental and Social Assessment**, based on the Company's preliminary environmental impact assessment in accordance with the requirements of the national legislation of the Republic of Kazakhstan (pre-EIA) conducted in 2021, as well as studies conducted by consultants of potential lenders in 2022, which included Project Gap Analysis against requirements of potential lenders, development of the Environmental and Social Action Plan, Resettlement Framework, Stakeholder Engagement Plan and a Non-Technical Summary.

2 INFORMATION DISCLOSURE

2.1 PUBLICATION OF DOCUMENTS

The main reporting materials, which have been developed based on the results of conducted studies and preliminary impact assessments, were published on the Internet resource of Samruk-Energo JSC: [The Project \"Modernization of Almaty CHP-2 including reduction of environmental footprint\" \(samruk-energy.kz\)](http://The Project \)

The Project page was created on February 28, 2022 and, subsequently, supplemented with materials developed by a potential lenders' consultant in July 2022. Thus, at the time of the public consultations in November 2022, the website provided brief information on the goals and objectives of the Project, its current status, as well as published the following documents:

- Environmental and Social Action Plan (ESAP);
- Non-Technical Summary (NTS);
- Resettlement Framework;
- Stakeholder Engagement Plan (SEP);
- Report on Possible Environmental Impacts (pre-EIA).

In addition, a report on possible environmental impacts (pre-EIA) was previously published on the official portal <https://ecoportal.kz/>. The document is available for review for registered users.

2.2 DISTRIBUTION OF INFORMATION ON THE PUBLIC CONSULTATIONS

Announcements about the consultations were posted in the local newspaper \"Vecherniy Almaty\" (Figure 1) and public places (Figure 2).



Figure 1: Announcements on the Public Consultation in a Local Newspaper



Figure 2: Announcements on the Public Consultation in Public Places

Additionally, information about the upcoming consultations was personally addressed to key stakeholders identified in accordance with the SEP, in particular, representatives of public organizations and dacha communities located near the CHP-2.

2.3 PUBLIC CONSULTATIONS

Public consultations of the Project and preliminary results of the impact assessment on environmental and social components were held on October 21, 2022 in the assembly hall of CHP-2 (Figure 3).





Figure 3: Assembly Hall of the CHP-2

Total of 28 people took part in the discussions, including representatives of the public: residents of Almaty and dacha communities located near the CHP-2, independent experts, NGO representatives and the media. The list of participants' registration for the hearings is presented in the appendix below (Annex 2).

As a part of the consultations, brief results of the Project implementation were presented, including the following:

- Historical background and current status of the Project implementation,
- Main technical parameters of the Project,
- Preliminary identified impacts on environmental and social components,
- Further steps in terms of Project impact assessing and development of mitigation measures,
- Stakeholder engagement activities, which have been carried out and planned for further implementation and introduction of an updated Grievance Mechanism.

A presentation with brief results of the Project is presented in the appendix below (Annex 3).

A Q&A session was held as a part of the consultation. The key issues raised by the representatives of local residents, media and NGOs during the public discussions included the following:

- **Rate of electricity and heat tariffs for final consumers.** As a result of the Project, electricity and heat tariffs are expected to increase due to the transition of CHP-2 to a more expensive type of fuel and the need to cover the costs associated with the implementation of the Project and the payment of loan fees. At the same time, the increase in the cost of electricity and heat production will be distributed among consumers all over Kazakhstan Republic, so the tariff increase for Almaty residents will only be associated with increase of the fuel costs, while other

components of the cost increase will be covered by Samruk-Energy JSC through the distribution to other Kazakhstan regions.

- **Public awareness and Project information disclosure .** Several information disclosure activities have been conducted as a part of the Project: relevant documents on the Project's environmental and social assessment and key Project characteristics are published on the several internet resources, as well as consultations with the general public and key stakeholder groups are held. A Stakeholder Engagement Plan was developed for the Project. It describes in detail the upcoming engagement activities. A responsible person was appointed to respond to public questions and suggestions: Bauyrzhan Bolatovich Kaliyev, Chief Engineer of CHP-2, tel. 250-31-53.
- **Project Timeline.** The Project timeline is preliminary defined in accordance with the tender documentation – 2024-2026. Construction is expected to last for about 70 months, the exact timing will be decided based on the tender results.
- **Impacts on dacha communities and resettlement.** According to the Feasibility Study, it is expected to use only land located within the existing area of CHP-2. The current SPZ of CHP-2 is 1,000 m, but it is assumed that it can be reduced during the Project implementation. The estimated SPZ will be established at the design stage at the minimum size of 500 m. The size of the SPZ will be further verified based on the results of the key indicators monitoring during the first year of CHP-2 operation. Therefore, no resettlement is currently planned as part of the Project; its necessity will be clarified based on the results of the actual SPZ. If resettlement is necessary, a Resettlement Plan will be developed for the Project, which is subject to disclosure and discussion with affected parties.
The Project is expected to result in significant reductions in pollutant emissions and noise levels in the area around CHP-2. The road used by local residents to access the dacha communities will not be used as part of the Project.

A complete list of questions and comments from the Project representatives is presented in the table below (Table 1).

Table 1: Results of the Q&A Session during the Public Consultations

No	Question	Answer
<i>Socio-economic aspects</i>		
Public awareness		
1	I'm a social activist. If there are public hearings, everyone should know about it. In some rag newspaper, it is not known how, they printed it, and then they began to send it to each other. For some reason they didn't invite Melse Yeleusizov. I know that he is against your project for many reasons. Why are there no channels, why has no one been officially invited? Today, none of the activists knew, human rights activists wanted to come. It was necessary to somehow do this in advance and invite everyone in due manner. Why hasn't everyone, environmentalists and the like, been officially invited?	<p>Project Consultant:</p> <p>In fact, the ad was available in several newspapers, as well as on the Internet. In addition, more than 160 people, those who were in the address list of AIES PR manager, have been personally notified by the public relations office. Whether TV channels or newspapers to come on the meeting, it was their own decision.</p> <p>The meeting is not for deciding anything right now. We have no goal now to vote for or against the Project.</p> <p>This consultation is aimed to inform you and other stakeholders about its status and to learn your further concerns and know your wishes. If you consider the information about the consultations that was provided was not sufficient, next time we will ensure more comprehensive coverage. If you leave some means of communication convenient for you, next time the public relations office will be happy to inform you personally and the wider public.</p> <p>Also, if you have more questions/concerns, then you can always reach out to CLO, whose contact details are provided on the company's website, as we've mentioned during presentation.</p>
2	Will the civil society be provided with a monthly timeline of what work will be done so that activists can check the progress of	ALES representative:

№	Question	Answer
	the work? Since citizens are responsible for the project payback, they will pay for it. Consequently, the public needs to know how the work is being carried out.	<p>Indeed, this is within our competence. All your questions and contacts have been recorded; you can also use the contact number to get answer to your questions.</p> <p>Project Consultant:</p> <p>It should be borne in mind that now this schedule exists only as milestones which have been presented. Once a formal contractor has been appointed and has such schedule in place, it can be adapted for public disclosure.</p>
Cost, rates		
3	Who will pay for this CPH?	<p>ALES representative:</p> <p>The Project's CAPEX will be covered by Samruk Energy through different tools, including the capacity market, dissolving in the tariffs on the whole Kazakhstan etc. For Almaty region the main factor of rising the price it will be mainly be the gas component. We assume that the fuel component in the electricity tariff is about 30%. It would be very incorrect to name the selling price in tenge now.</p>
4	The price in the Feasibility Study for heat (Gcal) and electricity (kWh)?	<p>ALES representative:</p> <p>The Feasibility Study does not include this information in a way you are looking for. As already mentioned, the fuel component in the electricity tariff is 30%. As of today, the price of gas is twice the current price of coal. Consequently, if coal is replaced by gas, the tariff will increase by at least 30%. As for the end tariff for the consumer, it is established not by ALES, but by Energosbyt which purchases electricity from ALES and other sources and supplies it to the end consumer. The tariff for the city of Almaty is a collected value, i. e. the tariff for the end consumer is some weighted average value based on the collected amount. Today, sales of electricity through a single purchaser are being considered. By the time this Project is implemented, such single buyer is most likely to have been determined. The tariff formation system will also have been determined, and the city of Almaty will hardly feel potential increase in the electricity cost. Major suppliers of thermal energy in the district heating zone are ALES and Teplokommunenrego, which already produces heat energy using gas. Teplokommunenrego's tariff is currently 5,560 tenge. ALES' tariff is 3,929 tenge. We expect that the new ALES tariff will be comparable to the Teplokommunenrego tariff as the coal component in the heating tariff will be replaced by gas. As already mentioned, the price of gas today is twice the price of gas. What price will be at the end of construction is unknown. And it is hard to say now what the tariff will be in 2027, when the CHP is put into operation.</p>
5	This means there is a price for electricity and a price for heat from 2025. We ask you to name this figure. We ask you to name this figure. We will then calculate the effect ourselves and distribute this figure on the total heat and electricity supply to the city. Just name the figure. Tell us about the selling price. Is there a calculation in the feasibility study? Or is it also only general reasoning, like "30% of the total component"?	<p>ALES representative:</p> <p>The task for the design institute was to determine the cost and the prime cost of these products, but not the tariff. The tariff is determined, as the financial director has said, based on the total ALES production and across the entire energy system of the city. Consequently, it is not possible to name this figure today.</p>
6	There are financial tables: cash flow, expense report and balance sheet. These tables contain specific figures called 'revenue', which is the sum of the volume multiplied by the price. I'm asking a simple	

No	Question	Answer
	thing – name the price at which you expect to supply heat and electricity.	
7	The price of electricity is a social issue, hardly anything is 'more social'. Name the price.	
8	I'll tell you personally as an economist. No economic project will be undertaken without knowing the figures, even if you're going to produce chairs. First, you must be motivated and start from the numbers. The previous speaker is right when he asks you to name specific figures. What is the secret here? Or will they be so sky-high? Before developing a design, you must have made an economic appraisal, right? Did you prepare an economic appraisal? Give the numbers from there.	
9	Voice what is written in your Feasibility Study, we are not asking for anything more.	ALES representative: What we can guarantee today is only the price that we know. As for the future, we can only predict. I told you that the transfer from coal to gas will increase the tariff by at least 30%.
10	Will the bank loan you money for a project with such a 'feasibility study'? The European Bank for Reconstruction and Development gives money for a feasibility study in which there are no numbers. It's just a scandal. The colleague has asked a simple question, and we have a terrible scandal. It turns out that neither the consultant, nor the project manager, nor the financial director of the plant know the price of electricity after conversion to gas.	ALES representative: You are right, we do not know at what price we will sell electricity in 2027. I can tell you what the rate will be at the current price. This is what is happening to the Project according to its existing model. We have developed a feasibility study. According to the feasibility study, the cost of the Project is 324 billion tenge. This is not the final cost. Why? Today we say that an international two-stage open tender will be held. This tender will give us the opportunity to re-select the equipment configuration and layout for CHP-2. Because the banks believe that such an open selection and discussion procedure will enable the most optimal technical solution, financial proposal, and future performance. Though the final cost of the Project is not defined yet, we are just on the verge of making this decision. The tender will show us what the cost will be.
11	Name the cost price of heat, the cost price of electricity and the fee per kWh. What indicators are currently included in the model?	ALES representative: The price is formed not only by the cost price from the generator. It is impossible to name specific figures now.

Roads, Transport

12	I'm a resident of Energostroitel, the gardening community closest to CHP-2. The question is: will they leave the road which we use for access; will they leave the transport, the bus that has just been provided to carry children?	Project Consultant: The road will not be affected. It is planned to use the existing road to the CHP site.
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Resettlement

13	Which households may be subject to removal or resettlement after revision of the sanitary protection zone in 2028? You say that the site boundaries and areas of work will not be changed.	Project Consultant: According to the Feasibility Study, only areas inside the existing site boundary (inside the fence) are supposed to be used. So as of now no resettlement is required for the project. The current sanitary protection zone is 1,000 m. The entire territory of Energostroitel is within the SPZ. The Project will improve the environmental performance and
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No	Question	Answer
		<p>reduce the SPZ size to 500 m. In addition, it is planned to move the CHP-2 site boundary, which is the starting point of the new SPZ.</p> <p>If no residential building are located wit the new SPZ, none of households will be at risk of resettlement.</p> <p>According to the legislation of the Republic of Kazakhstan, the procedure is as follows. The estimated SPZ is established at the design stage at the minimum size of 500 m. Upon commissioning of the facility, the sanitary authorities oblige enterprises to confirm the SPZ size. To do this, they need to conduct measurements during the year and prove that the impact does not exceed the Maximal Permissible Concentrations. The relevant air monitoring points will be set up by the Project to confirm the possibility to reduce the SPZ to 500 m.</p>

Risks

14	Has the potential risk that we may be left without gas been considered? Like it is happening now in Europe. Will it be envisaged that one block will run on gas, and some operation will continue to use coal?	<p>Project Consultant:</p> <p>This is a legitimate question. There may be interruptions in gas supplies; pipelines are also not perfect – there is always a risk of accidents. Therefore, one existing unit is just mothballed, and gas will be supplied from two sources via two pipelines with separate connection points. A storage tank is also assumed.</p>
15	They have been trying to switch the whole of Almaty to gas for many years. It does not work, because the prices for switching to gas are high. Public transport cannot be converted to gas either. There is not enough gas at gas stations, or it freezes, which leads to a transport collapse in the city. Question: have any calculations been made to determine how long the gas will last when all the 3 CHPs are converted to gas? Construction of a new highway. Is this considered in the Feasibility Study? Is construction of the highway reflected in the timeline?	<p>Project Consultant:</p> <p>In September, the Republic of Kazakhstan has adopted the national strategy for the development of the mineral resource base and energy security until 2026. It is envisaged that gas will come from several sources, including the transfer from the western regions of Kazakhstan. Now gas comes mainly from Uzbekistan and, partly, from Kyrgyzstan. Only a small quantity is provided by the Kazakhstan deposits. The goal that has been set is to ensure that up to 90% of gas is produced in Kazakhstan. Naturally, this task cannot be addressed by AIES.</p>
16	Huge corruption risks were mentioned at the hearings and the press conference we attended. Who will check this issue?	<p>Project Consultant:</p> <p>The anti-corruption policy is of the highest priority for lenders. You will immediately find the relevant information if you visit a website of any of Project lenders including appropriate mechanisms.</p> <p>It must be understood that all projects undergo a comprehensive evaluation before a decision is made to finance them. And financial auditors will ensure fulfilment of the lenders' anti-corruption requirements.</p>

Environmental Aspects

Safety, accidents

17	If you switch from coal to gas and, God forbid, there is an explosion, then it will not be the same as it would be when running on coal. Accordingly, it will be way heavier.	<p>Project Consultant:</p> <p>Both Lenders' requirements and state review procedure provides for a separate audit of such risks. That is, not just an assessment of potential environmental impacts, but identification of hazards by professional experts based on the equipment characteristics in accordance with special procedures. All this will certainly be done, because no one is interested in an emergency situation occurring at the facility. All preventive measures will need to be taken. Therefore, relevant requirements are established in building code of the Republic of Kazakhstan.</p>
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№	Question	Answer
Noise		
18	How will the noise from the stacks decrease?	<p>Project Consultant:</p> <p>The noise will decrease significantly, exact numbers will be available at a later Project phase.</p>
Suggestions		
19	<p>I am the vice-president of the Public Ecological Fund and, since recently, the head of the Almaty branch of the Baitak Green Party. We are also engaged in various evaluations of projects, primarily from the point of view of science. A lot of questions have arisen. What we haven't heard during the presentation is a scientific justification. I think, such questions will always arise, since there should be references to specific scientists, to specific conclusions, and specific studies. Most questions relate to the technology. For example, we have a unique Institute of Fuel, Catalysis and Electrochemistry named after Sokolsky in Almaty, which repeatedly offered their models for installing filters. Their filters do not have to be considered as a final equipment option, but as an intermediate solution for the start-up period. Moreover, they will not only purify air, but will continue to function after conversion to gas the burning of which also emits harmful particles that must be dealt with. So, I would suggest considering and evaluating a unique project developed by our scientists. At least as a transitional model to consider. You evaluate from the point of view of the banks, while I evaluate as a resident of the city, a stakeholder, as a representative of the population of our city. Let us approach the task through the prism of science, and not only through the prism of financial and economic indicators, i.e., profitable/unprofitable. There was a slide that showed effects from coal. Then there is a slide where the filters are shown. However, the most interesting thing is that this is all only hypothetical. No one has tested this empirically; carbon filters have never been installed here. Let's try it and see. Now that you will convert to gas, there will probably be no visual smoke, but the absence of harmful particles and soot is not a fact. Let us allow for a scientific assessment, e. g., the second Almaty Energy Forum under the auspices of the UN will be held here on November 14, 15 and 16. There will be two Deputy Secretary Generals of the United Nations. The Minister of Energy will arrive. The Head of State is expected to attend. Let us raise these questions during this session. Let us invite the scientific community, conduct an examination, and, I think, that after that a lot of uncertainties will disappear.</p>	<p>Representative of the Design Institute (the one developed the Feasibility Study):</p> <p>We worked with the Sokolsky Institute and considered this proposal - this was considered as the third option within the framework of the Feasibility Study.</p> <p>ALES Representative:</p> <p>Your proposal as such is correct, without doubt. We will take it into account as it was not a question, but a proposal, thank you.</p> <p>Project Consultant:</p> <p>To say that science played no part in the justification of this Project is not correct. There are models that consider the air and pollutant dispersion in the environment. These models factor in a huge number of parameters, including meteorological conditions.</p> <p>All these calculations, including information on the responsible parties and experts, are available on the websites of the Samruk Energy Company and the ALES.</p> <p>The Project has several stages. You are now saying that the possibility of installing filters on the existing equipment has not been considered.</p> <p>The preliminary assessment was performed by the project designer. At the Feasibility Study stage, several options are reviewed, and these are but very rough estimates. To date, we have been through only the first stage, i. e., overview and selection. Next comes the detailed design- it is when exact coordinates of each emission source are known, and considered not just one stack, but all sources, including small ones, evaporation pond and everything that exists on the site, including some transport emissions that will occur during construction. Only after that we can talk about more detailed modelling.</p> <p>As for the installation of the filters which, as you say, is possible, the chief engineer has mentioned that some it was already considered during review of this Project design. Your proposal can be considered for the period of coal generation is still operating – just send us the relevant documentation, please.</p>
20	Your calculations were made for one year and for a certain number of trees. You didn't consider the trees which have been	<p>Project Consultant:</p> <p>As discussed above, the level of details available at current Project stage does not allow for such detail</p>

No	Question	Answer
	planted there by now. You haven't considered that.	modelling. The factors you are mentioning will be considered at later design phases.

General Project Information

Further operation of CHP-2

21	I am a journalist. You say that one block will be mothballed. What will happen to the rest of the existing CHP-2 and the ash dumps?	ALES Representative: I have information that everything will be mothballed.
22	Is the site away from the existing building?	ALES Representative: Yes.

Terms, stages of construction

23	I'm a member of the Community Council of Almaty. In what year is it planned to complete the first stage?	Project Consultant: The 1 st stage is to be completed in 2025.
24	Have you already selected a Technical Representative? Have they already prepared their bidding documents?	ALES Representative: Yes, it's a consortium of companies. The tender documentation has already been prepared.
25	What is the construction period from the signing of the contract according to the tender conditions?	ALES Representative: According to the tender documentation, it is from 2024 to 2026. The Feasibility Study specifies 70 months, but the exact timing will be known after the tender.
26	Why can't the Project be completed in 2024? Are you building a completely new plant on a completely new site?	ALES Representative: There is a building order. It will be a new station, but not a completely greenfield project. The Project will use some of the existing infrastructure. First, it is an operating facility. The construction site is located aside from the existing operation building. There is a capacity distribution scheme, a water supply scheme, and some infrastructure. This will also be utilised.
27	So, it will take two years to carry out the switchover? What is the problem?	ALES Representative: We plan to commission the first block in December 2024. There will be only 3 blocks of 200 MW. Why 3? The chain consumption of the Almaty region is 1,640 MW. The unit power that we can provide is no more than 200 MW, which means that single blocks of 600, 300, etc. cannot be used. This is about the dynamic-statistical stability. We have line 208 and 209; we connect to this line and disconnect from the 110 kV network for further development of the station. The first block is scheduled to be commissioned in December 2024, and the third block will be commissioned in 2025, if time permits. Regarding construction timeframe. This is a gas turbine station. There are only three companies producing gas fuel stations such as required for CHP-2: GE, Mitsubishi, and Siemens. Each manufactures different equipment. For CHPP-2, GE 150 or Siemens 200 were considered in the Feasibility Study machines. The manufacturing of each unit takes at least 14 months, i.e., 17 to 18 months including the delivery time. The tender has been announced, and we expect to conclude a contract in March. The supplier immediately executes a contract. The supplier will develop design and expert documentation. The equipment will be manufactured in 15-16 months after execution of the contract. Siemens units will be built in Berlin. GE – also in Europe or, maybe, in America. As for logistics, it will probably be possible to deliver via the Caspian Sea and the Black Sea.

№	Question	Answer
		<p>The delivery is very complicated now and may take 2 to 3 months. However, during this time, we plan to complete the design and working documentation by the end of 2023, and in January 2024 we will start preparatory construction work on the site. The equipment will arrive probably in July-August. This is what we plan for the first block. When the equipment arrives, we already have the design and can start erection to complete the work by December 2024. This is the task set by the government, so we must complete it on time.</p> <p>Then the work on 2nd and 3rd blocks will immediately begin. The building for the gas turbine plants, measuring 225 m by 95 m, will be already in place. In 2025, we receive the equipment and install these two units. First, we must complete the 600 MW station by December 2025. Then there are four or five water heating boilers, we will build in 2026.</p> <p>In summer, the consumption by the city is 180 Gcal, and in winter – 605 Gcal, this is what we need. Today we have 1,400 Gcal, but we have reserved 816 Gcal – this is up to 2030 – the heat balance has been calculated.</p>
28	When will the tender be announced?	<p>ALES Representative:</p> <p>The tender documentation is ready, the tender will be announced soon. It is assumed that several bidders will apply. We will consider their proposals and, once the final proposal has been selected, we will have a clear idea of the implementation timeline.</p>
Funding		
29	How do banks plan to recover their funds?	<p>Project Consultant:</p> <p>It is planned that when the cost of the Project becomes known upon the tender completion, the Company will apply to the authorized body, announce the cost of the Project and ask that the capacity market provide an opportunity to recoup this cost. This will include all capitalized project costs. As for everything related to the tariff, there is still too many uncertainties and number of issues related to finance modelling.</p> <p>ALES Representative:</p> <p>As of today, the government decree does not allow an increase in tariffs for basic resources (and gas is the main resource) by more than 15%. We made this assumption in our calculations. We need to be honest here, we do not know the decision that the authorized and regulatory bodies will make regarding the final gas price each year (indexation may be less than 15% or it may be equal to 0). When these figures become available, then it will be possible to answer the question.</p>

ANNEXES

ANNEX 1

PHOTOLOG OF THE PUBLIC CONSULTATIONS OCTOBER 21, 2022







ANNEX 2

LIST OF PARTICIPANTS OF THE PUBLIC HEARINGS OCTOBER 21, 2022

Приложение к Протоколу

Лист регистрации участников круглого стола по обсуждению с заинтересованной общественностью проекта «Модернизация Алматинской ТЭЦ-2 имени А.Жакутова с минимизацией воздействия на окружающую среду»

Дата проведения: 21 октября 2022 года в 17-00 часов

Место проведения: г. Алматы, Алатауский район, ул. 7, дом 130, актовый зал химического цеха на территории ТЭЦ-2, каб. 307

№ п/п	ФИО участника (Қатысушының аты-жөні)	Статус участника (Қатысушының мәртебесі)	Подпись (Қолы)
1	Смлик	институт Казахстана и ТЭЦ им. Соколовского	
2	Мерген	ОФФ. Nature First	
3	Ирмен	Ведущий Ассистент	
4	Ансеркина	Депутат Горного	
5	Нотанов	СГ Меридиан	
6	Седен	Житель мкр. Алмада	
7	Баймак	Житель мкр. Алмада	
8	Алиев	Житель мкр. Алмада	
9	Душев	СГ Куртес-Басар	
10	Мифид	Банк ЕБРР	
11	Мерген	Житель мкр. Алмада	
12	Чесба	Житель мкр. Алмада	
13	Мусман	Житель мкр. Куртес-Басар	

14.	Алматы	АБР	
15.	Астана	жилищно-коммунальное хозяйство	
16.	Астана	жилищно-коммунальное хозяйство	
17.	Астана	жилищно-коммунальное хозяйство	
18.	Астана	жилищно-коммунальное хозяйство	
19.	Астана	жилищно-коммунальное хозяйство	
20.	Астана	жилищно-коммунальное хозяйство	
21.	Астана	(ЭКО) ОЖК, САРЗУС	
22.	Астана	общественные организации	
23.	Астана	Аэропорт Алматы	
24.	Астана	жилищно-коммунальное хозяйство	
25.	Астана	жилищно-коммунальное хозяйство	
26.	Астана	информационные технологии	
27.	Астана	информационные технологии	
28.	Астана	нефтедобыча	

ANNEX 3

PRESENTATIONS ON THE RESULTS OF PROJECT IMPLEMENTATION OCTOBER 21, 2022

Almaty CHP 2 Modernisation Project

Almaty
October, 2022



Discussion Program

Project and Project
Alternatives

Environmental Impacts

Social and Economic
Impacts

Information Disclosure,
Consultations, Questions



Project Status

Project Alternatives

History of Zhakutova CPH 2

1974 - 2016

- 1974: Beginning of construction. Design capacity of the first stage was 240 MW.
- 1980-1983: Commissioning of three steam boilers BKZ-420-140-7S and three steam turbines PT-80/100-130/13
- 1985-1989: Construction of the second stage. Commissioning of another four steam boilers BKZ-420-140-7S, one steam turbine R-50-130/13 and two steam turbines T-110/120-130-5.
- 2016: Commissioning of Boiler Unit No. 8, type E 420-13.8-560 KT.

Stages of an E&S impact assessment development

Feasibility Study in accordance with the requirements of RoK legislation
Alternative Analysis
Pre-EIA
Public discussions

The Project Gap Analysis against EBRD and ADB requirements
Compliance audit of the E&S management system against requirements of potential lenders

Completed documents:

- Environmental and Social Management Plan (ESAP)
- Stakeholder Engagement Plan (SEP)
- Resettlement Framework



Stakeholder engagement activities

Past events

Public hearings on the Pre-EIA report:

- ✓ Date: November 29, 2021.
- ✓ Location: Almaty city.
- ✓ Participants: 86 people.
- ✓ Discussed: Main design solutions and the Report on possible impacts, KazNIPiEnergoprom Institute JSC

E&S documentation are disclosed on the Samruk Energy website.

Upcoming events

- Further disclosure and engagement actions are specified in the *Stakeholder Engagement Plan*
- Implementation of the updated *Grievance Mechanism*
- Appointment of a person responsible for stakeholder engagement
- Public consultations
- Development of a *full-scale ESIA* and disclosure of its results

Project Implementation Requirements

Legislation of the Republic
Kazakhstan
International Conventions



Requirements of Potential
Lenders



Best International
practices and
technologies

- Best available technologies (BATs)
- IFC EHS Guidelines

Corporate Standards of
Samruk Energy, JSC



Internal Documents of AIES,
JSC



Where to find information about the Project?

Environmental and social documents

- Gap Analysis report
- Environmental and Social Action Plan (ESAP)
- Nontechnical Summary (NTS)
- Resettlement Framework
- Stakeholder Engagement Plan (SEP)
- Report on Potential Environmental Impacts

Soft copies

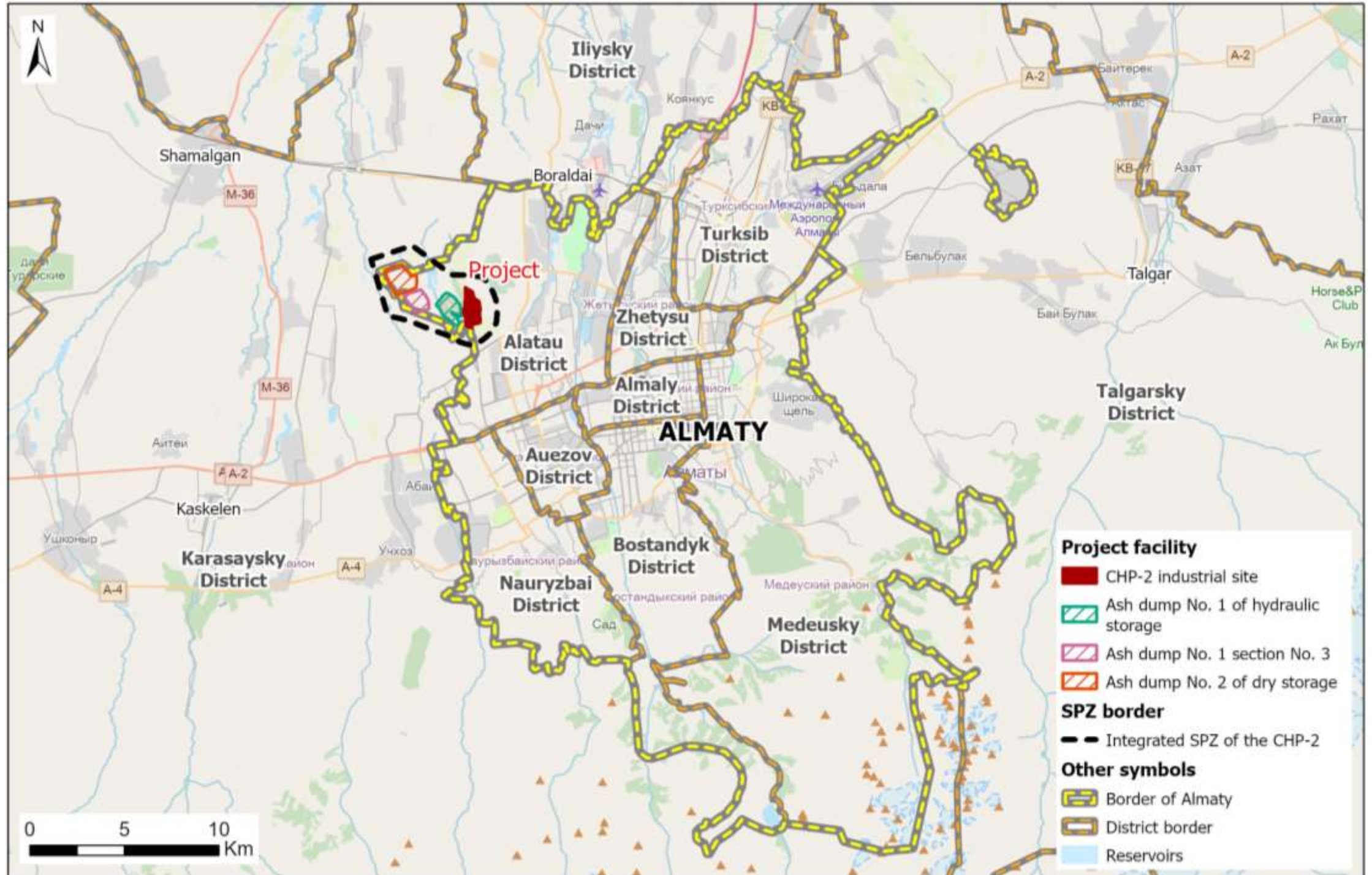
samruk-energy.kz

<https://www.ebrd.com/work-with-us/projects/psd/52821.html>

Hard copies

- Office of AIES, JSC
Almaty, Dostyk Ave., 7
- CPH-2, Almaty, Alatau District,
Algabas, 7th Street, 130





Project Alternatives Analysis

Modernisation options

- Type of fuel
- Production technology
- Gas cleaning technology

Primary modernisation goal:

**Minimization of Environmental
Impact**

Major criteria

- Preservation of CHP-2 as the main source of heat supply
- Uninterrupted operation of CHP-2
- Coverage of prospective thermal loads
- Minimization of environmental impact and compliance with BAT
- Project implementation within the existing plot boundaries

Modernisation Options

Option 1

Conversion to natural gas

Option 2

Modernization of existing boilers 1-7 to ensure nominal productivity when burning Ekibastuz coal with the installation of gas cleaning units (GCU) on the boilers

Option 3

Gas turbine plants for hot water supply

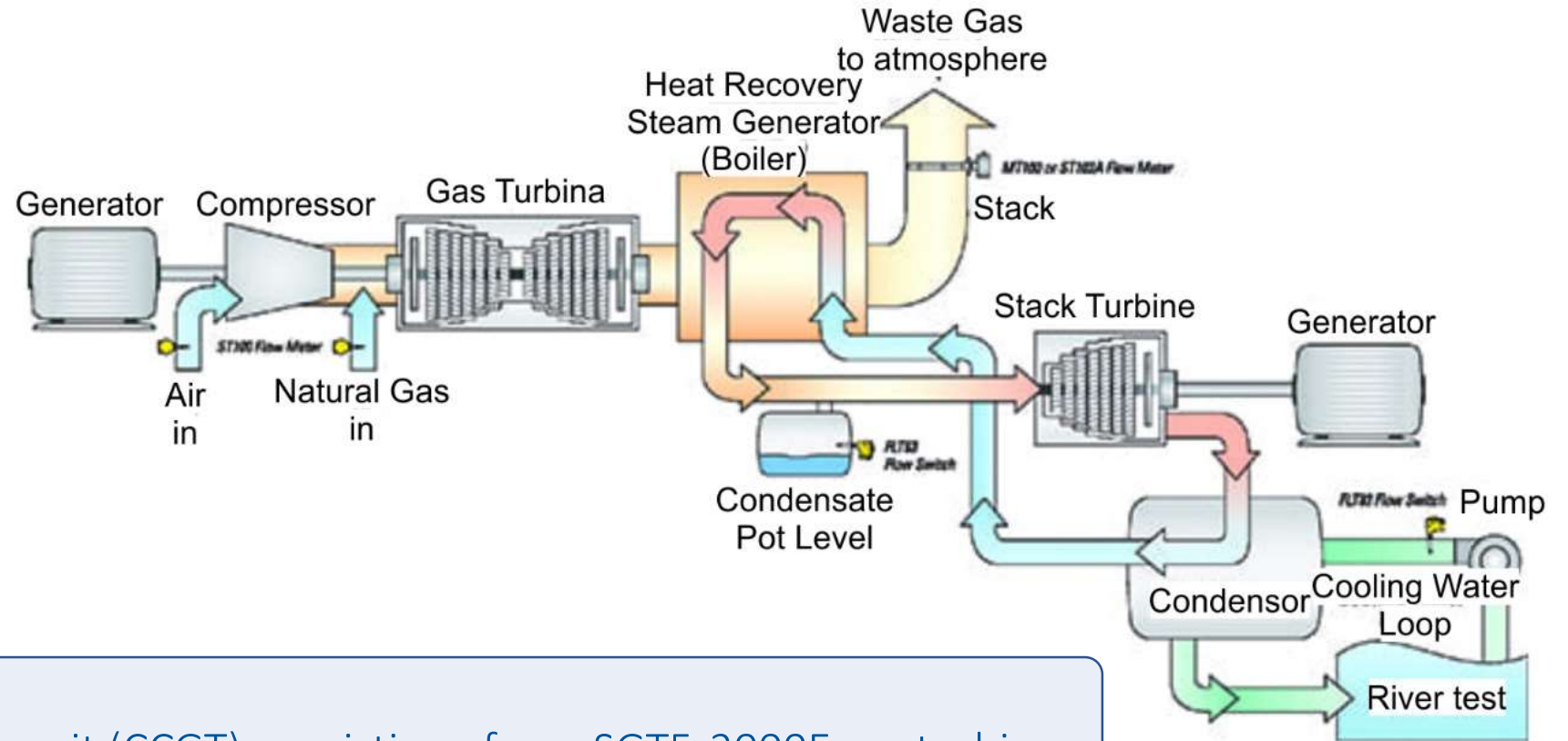
Modernization of existing boilers with GCU installation (similar to option 2) to cover the heating demand

Option 4

Construction of a new power plant based on CCGT to cover major heat load and hot water boilers during peak loads using the existing site infrastructure

Configuration of the main equipment of gas turbine units in the recommended option

Two gas turbine power units with cogeneration, each consisting of one SGT5- 2000E gas turbine (SIEMENS) and one hot water heat recovery boiler (PJSC "ZiO")

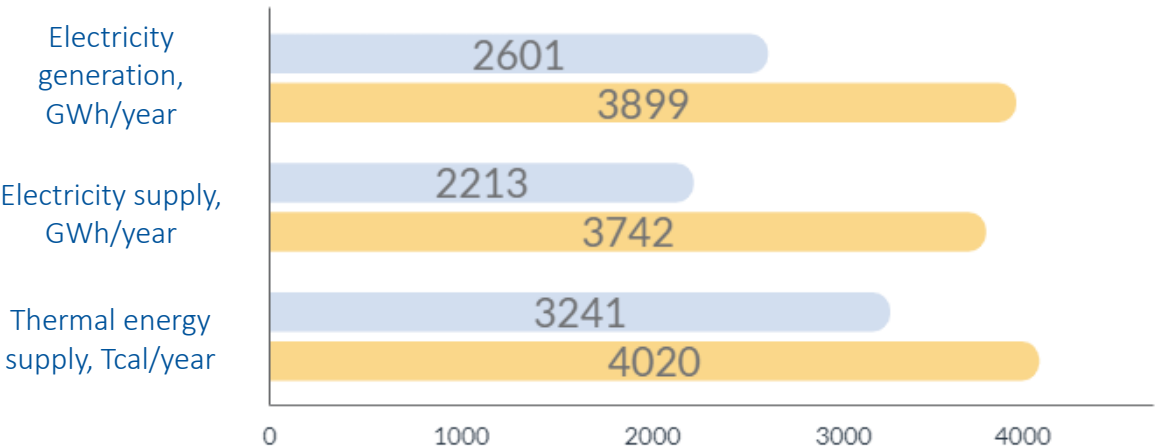
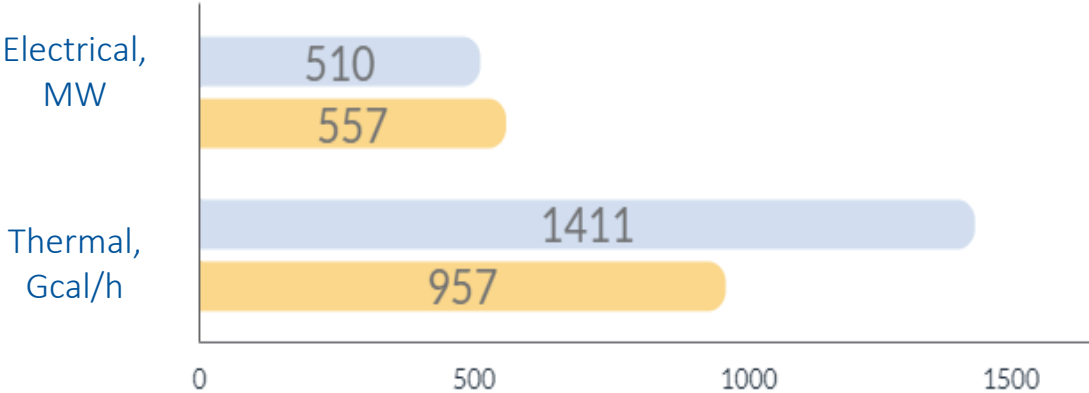


One combined-cycle gas power unit (CCGT) consisting of one SGT5-2000E gas turbine (SIEMENS), one heat recovery boiler E-224/66.7-7.9/0.46-508/210 (PJSC "ZiO") and one SST 600 steam turbine (SIEMENS)

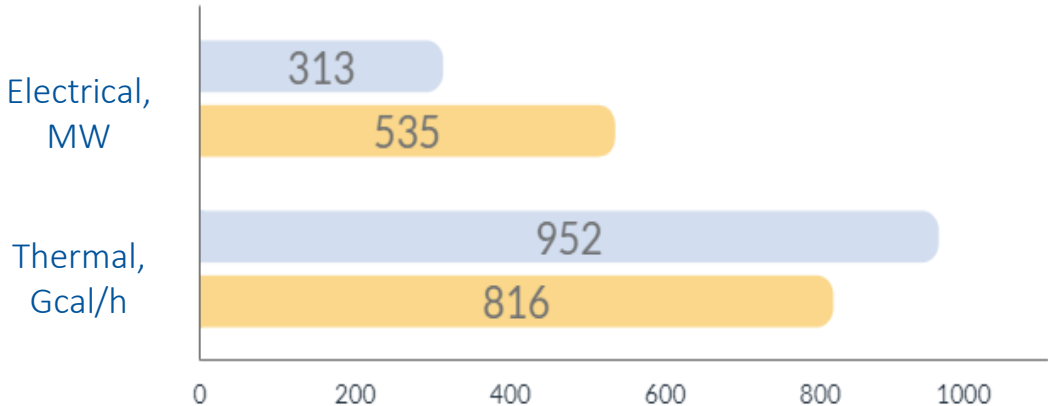
Modernisation Targets

BEFORE AFTER

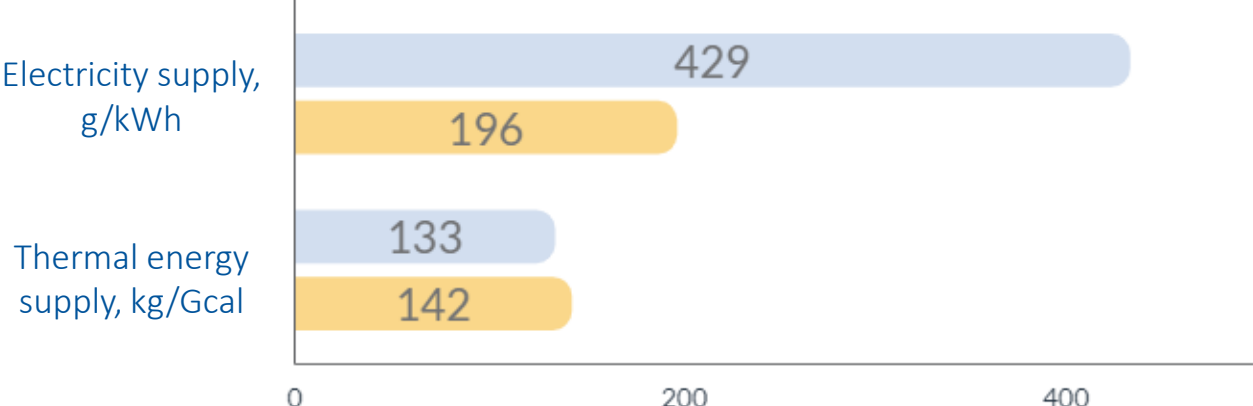
INSTALLED CAPACITY



AVAILABLE CAPACITY



SPECIFIC CONSUMPTION OF CONVENTIONAL FUEL



Gas Supply

Gas supply infrastructure

- Construction of the gas pipeline from the boundaries of the Project site to the main gas pipeline (about 3 km from the site)
- Construction of the internal gas supply infrastructure within the Project site: supply gas pipelines, Gas treatment unit, on-site gas supply systems

Demand	Consumption
Hourly	201,614 Nm ³ /h
Annual	1,122.6 million Nm ³ /h

Gas supply source

Several sources, including gas fields of Western Kazakhstan (more than 90%)

Water supply and disposal

The main water source of the CHP-2 are the existing artesian wells of the Talgar aquifer

Production effluents of the CHP are supposed to be directed to the evaporation field on one of the sections of the existing ash dump

The Project will continue using evaporation fields in sections No. 1 and No. 2 of ash dump No. 1 with an area of 120 hectares. No additional land acquisition is envisaged

Compliance with Best Available Technologies (BAT)

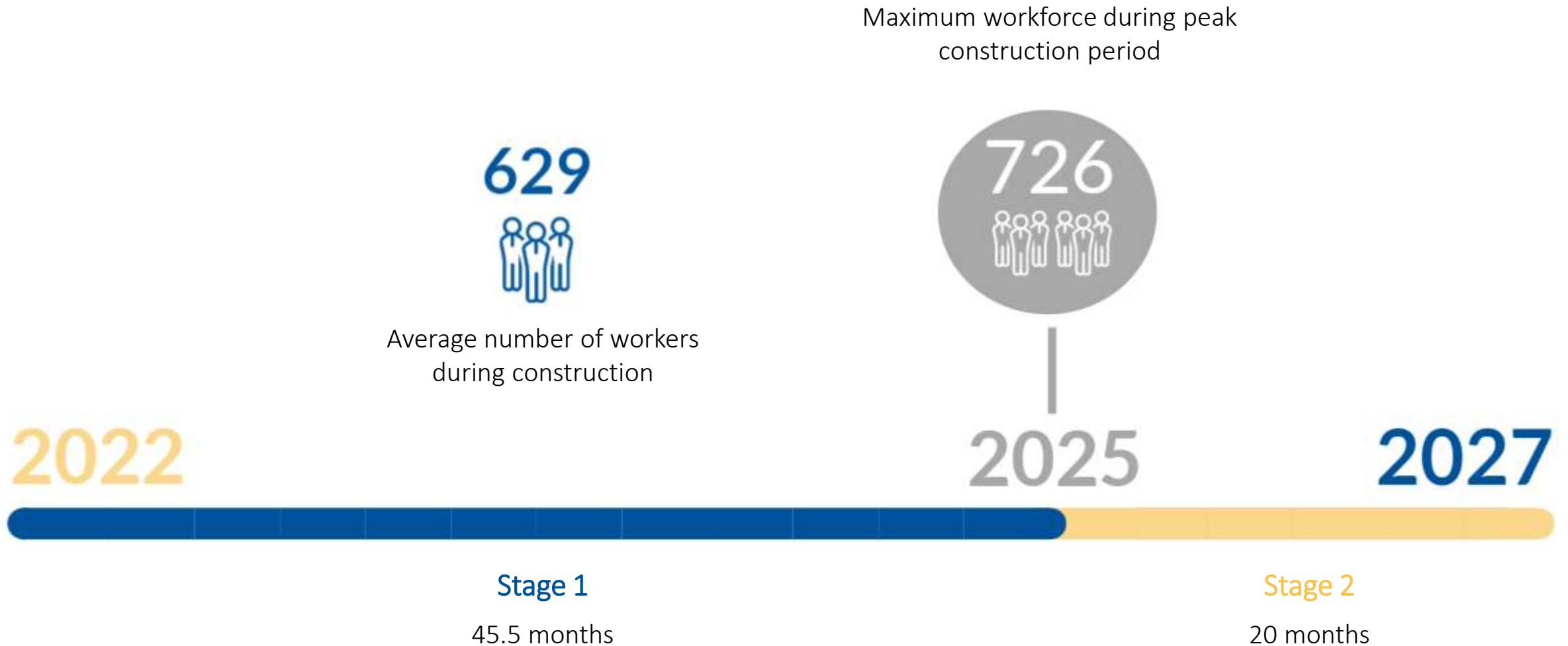
Applicable BATs

- Minimization of environmental impact and reduction of emissions due to replacing fuel with natural gas
- NO_x emissions will be reduced to less than one tenth of the current level, to 50 mg/Nm³, which is consistent with the relevant BAT
- SO₂ and ash emissions will be completely eliminated
- After conversion to gas, total GHG emissions from CHP-2 will be reduced to one third, and specific GHG emissions per generated electricity and heat energy will decrease to nearly one fifth against the current level
- Introduction of recycling water supply will reduce fresh water demand
- BAT Commercial Statement at an early project design stage
- Environmental and Social Action Plan includes measures to ensure BAT compliance

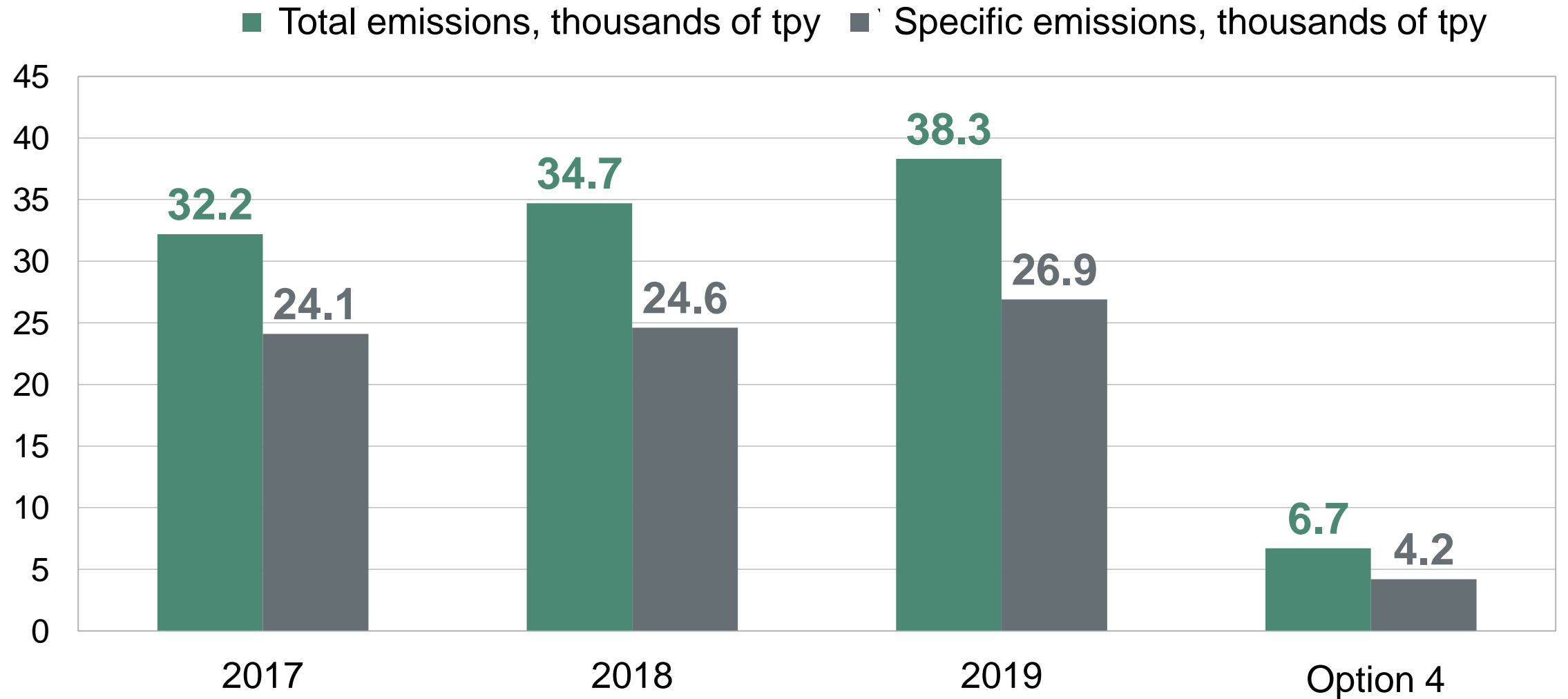


Environmental Impacts

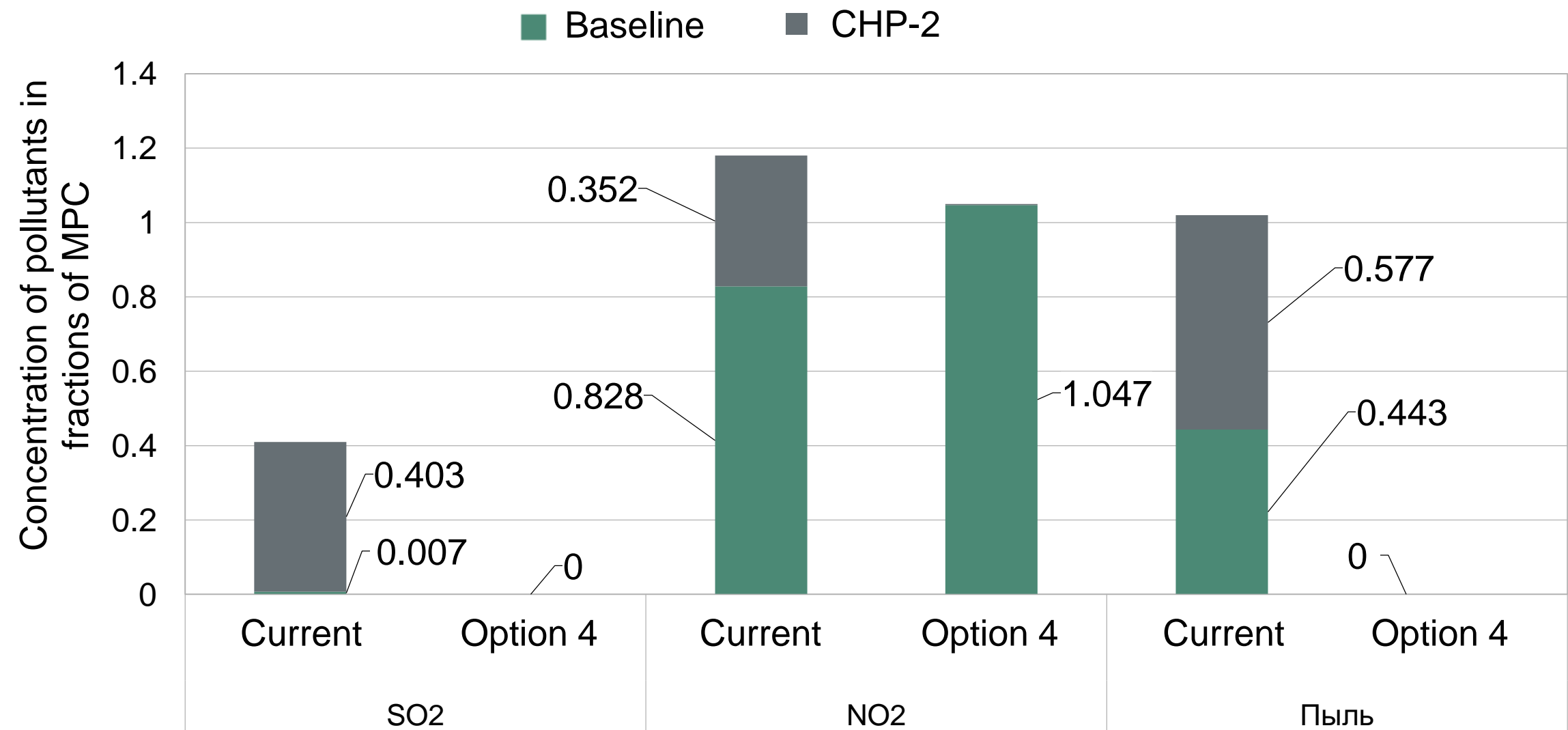
Construction Phase



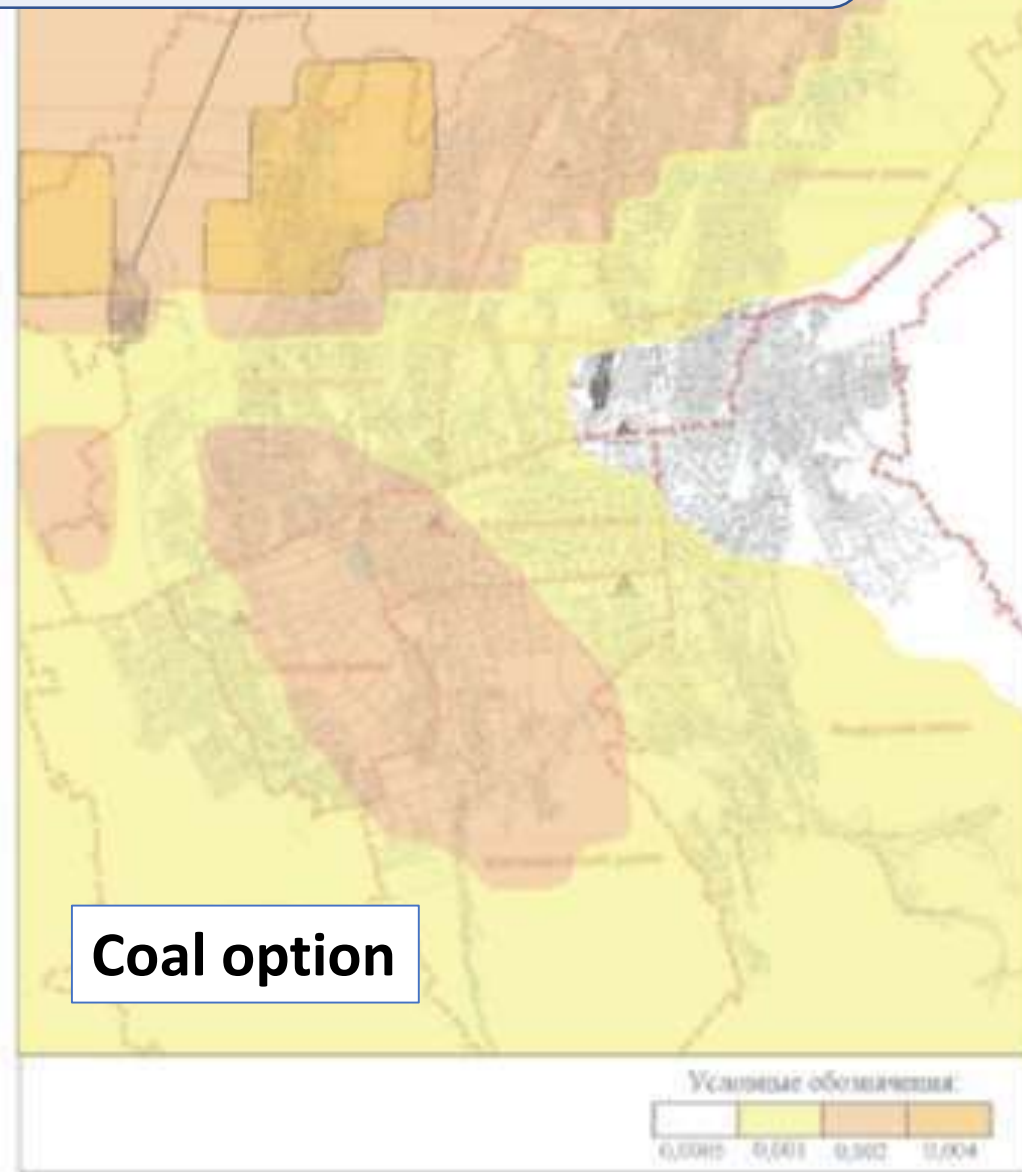
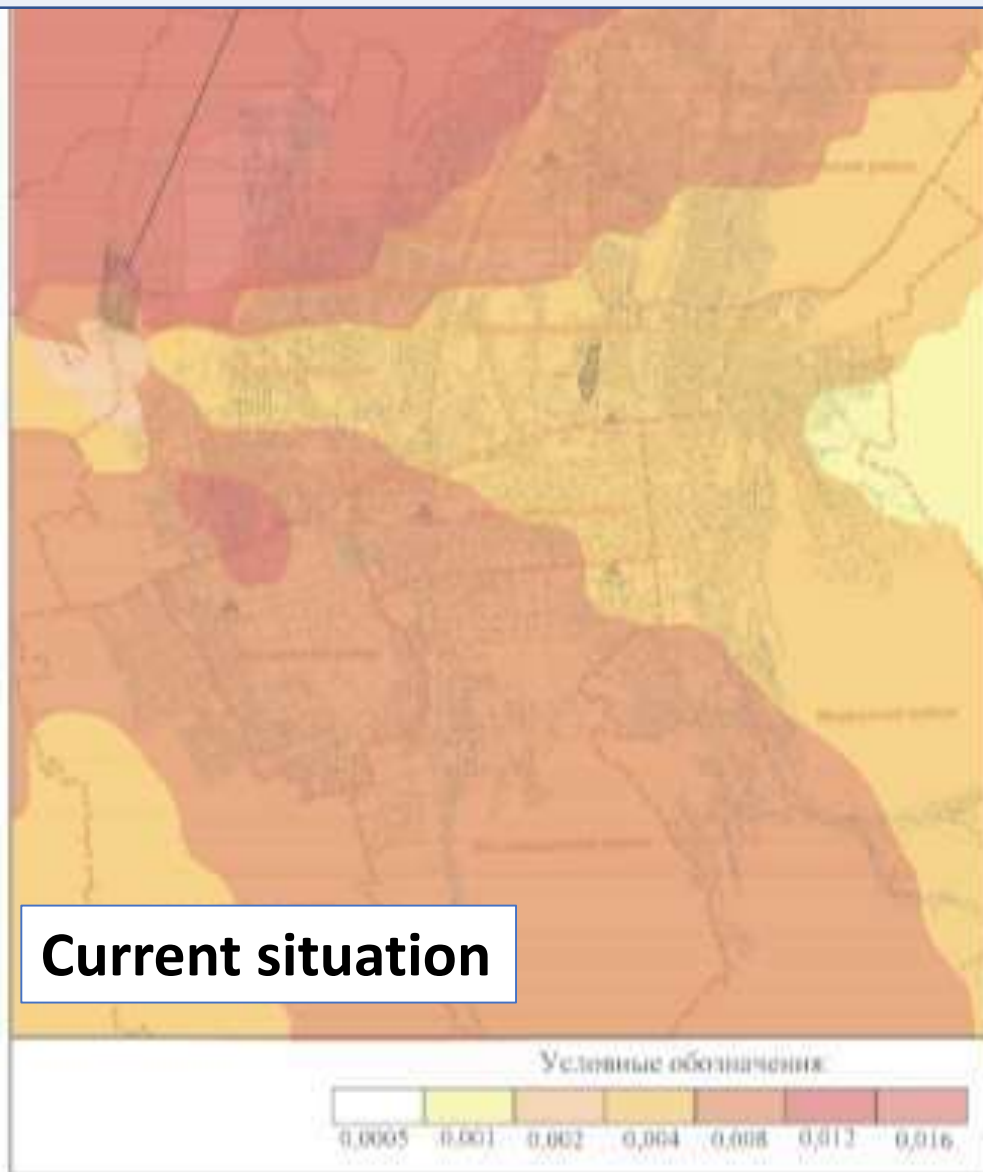
Predicted Emissions



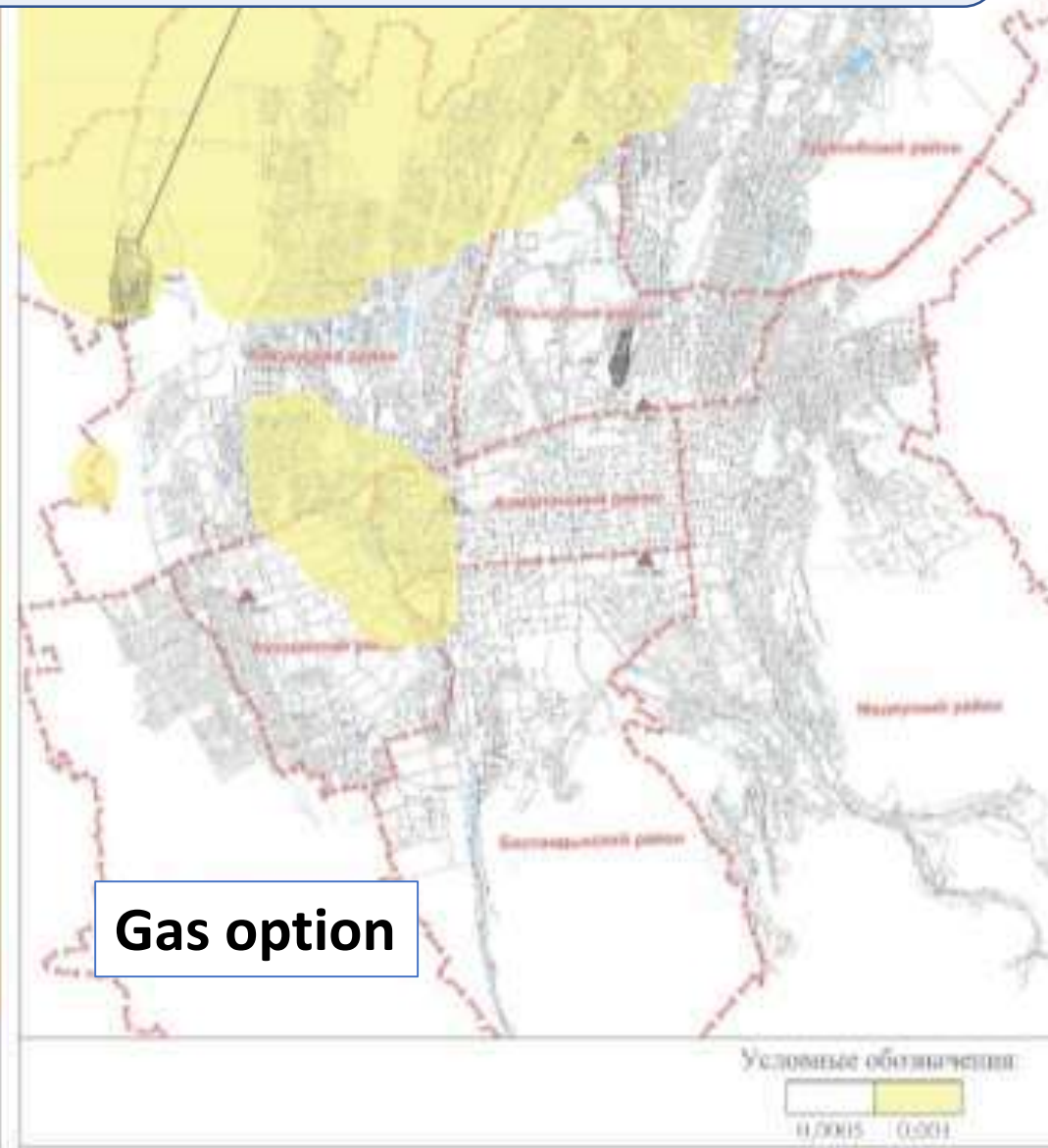
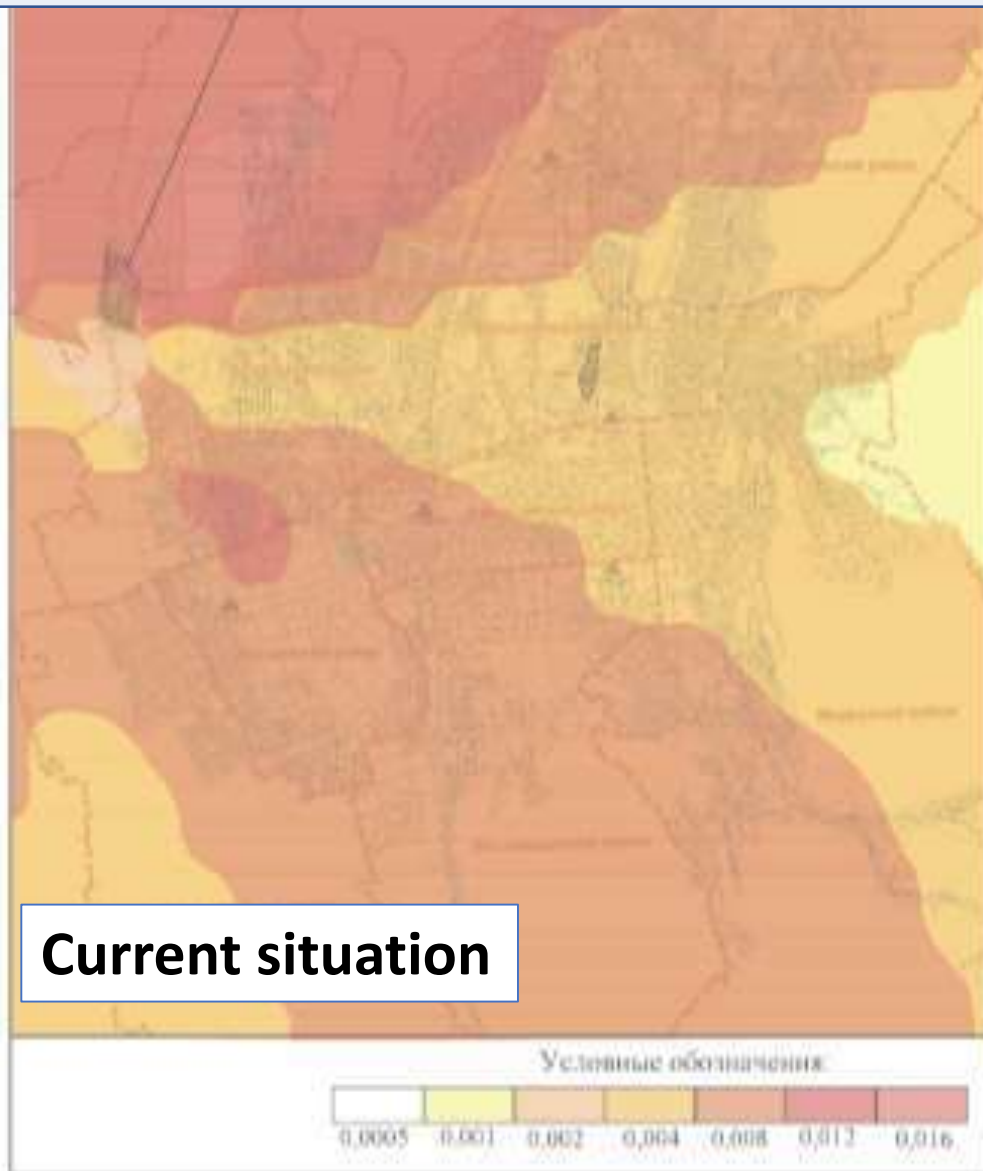
Predicted Emissions



Zoning of the city according to the risk of non-carcinogenic chronic effects



Zoning of the city according to the risk of non-carcinogenic chronic effects



Climate and GHG Emissions

- ✓ Reduction of GHG emissions by 1,354,000 t CO₂e/year due to:
 - conversion to gas
 - more efficient production
- ✓ Further development may include conversion to hydrogen as the main fuel



Full compliance with the Paris Agreement and Kazakhstan's commitment to achieve zero carbon emissions by 2050

Environmental impact: natural waters, soil, relief, and landscapes

Construction

Potential adverse impact of the Associated Facilities



To be determined as part of the ESIA and addressed via relevant mitigation measures in the ESAP (as appropriate)

Operation

- ✓ No direct adverse impacts
- ✓ Improved state of the environment due to reduced aerogenic pollution of ecosystems of Almaty and its suburbs



Social Impacts

Labor and working conditions

AIES, JSC

Compliance with EBRD PR2 is required:

- Update the HR Policy
- Update the Employee Grievance Mechanism
- Develop a Collective Dismissal Management Plan

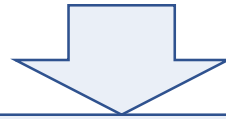
Contractors during the construction

Compliance with EBRD PR2 and ABD requirements:

- Develop a Labor and Working Conditions Management Plan, including:
 - Analysis of the accommodation conditions;
 - Compliance with non-discrimination requirements, etc.
- Update the Grievance Mechanism in relation of Project workers

Reduction of personnel

- ✓ Modernization of CHP-2 and the introduction of new technologies may lead to a reduction in maintenance personnel

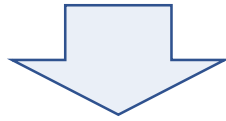


If JSC AIES identifies the need to reduce the number of personnel, the Company will take the following actions:

- During the ESIA process, a Collective Dismissal Plan will be developed in accordance with the RoK Labor Code and Lenders' requirements, defining the rights of employees to compensation and support measures
- The Plan is subject to disclosure and discussion with the affected parties
- Gradual transfer of employees to other enterprises of JSC AIES

Impact on the economy and labor market during the construction

- ✓ Creation of additional jobs, positive impact on local labor market and local residents income (629 people, in the peak period - 726)
- ✓ Procurement of some goods and services on local markets

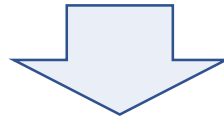


During the ESIA process some recommendations on measures to enhance these impacts in order to maximize the positive impact on local communities will be given

Tariff policy

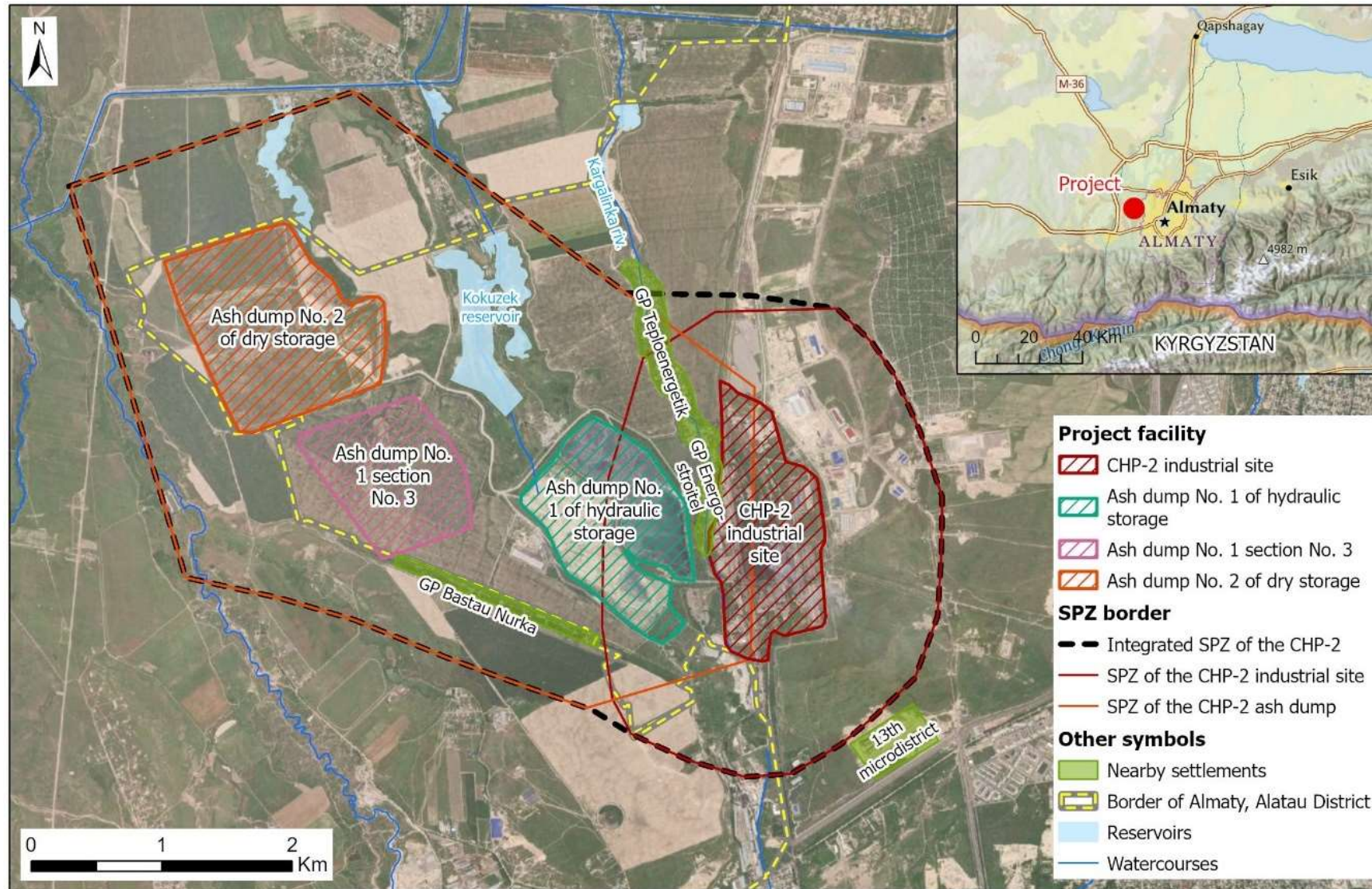
General factors of tariff increase :

- ✓ Changes in the fuel structure (switch of coal to gas)
- ✓ Repayment of the principal debt and loan remuneration
- ✓ Inflation expectations



In order to reduce the growth rates of tariffs for the production of electric and thermal energy, the repayment of loans is planned to be carried out at the expense of income received from the capacity market

Current SPZ configuration and location of dacha communities



Impact on land use

Project is going to be implemented within **the current site of CHP-2.**

Currently, there is **no need to acquire additional land plots**

- Resettlement is the exceptional measure
- If the updated SPZ is approved in such a way that residential buildings fall within its boundaries, an assessment of impacts on land users will be conducted.
- If required a Resettlement Plan will be developed



General principles within the Resettlement Plan in case impacts on land use near the CHP-2 are identified:

- Full replacement cost
- Consideration of formal and informal land users rights
- Development, disclosure and consultations of the RP with all affected parties
- Assistance during transportation and relocation
- Introduction of the updated Grievance Mechanism

Local impacts associated with quarry operations and cargo transportation

Transportation of building materials that will be mined in local quarries (sand, gravel, etc.) and delivered to the site via local roads

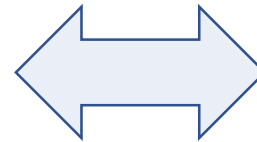


- Dust and noise due to quarry operation and traffic
- Increased traffic intensity/load
- Risk of accidents and deterioration of road quality

As part of the ESIA, such impacts will be assessed and mitigation measures will be developed

Emergency Preparedness and Response

- ✓ Management system based on national legislation and ISO 450001
- ✓ Personal responsibilities for labour protection and emergency preparedness are defined in accordance with national legislation
- ✓ Responsible employees are provided with the necessary resources and trained in accordance with the requirements of national legislation and internal standards of Samruk Energy



- Emergency Response Plan of Samruk Energy requires updating and amendments
- Responsible personnel must receive training in national legislation

Further steps

Full-scale Environmental
an Social Impacts
Assessment in accordance
with the requirements of
national legislation and
potential lenders

Introduction of the
Grievance Mechanism

ESIA will include :

- Analysis of BATs compliance
- Assessment and management of environmental and social components of the Project
- Proactive engagement of stakeholders during all Project stages

Compliance audit against requirements of
potential Lenders – ongoing process

An updated SPZ will be
confirmed during the
monitoring of key
indicators. If required
impacts on nearest
dacha communities will
be assessed and
Resettlement Plan will
be developed.



Grievance Mechanism

Community Liaison Officer

Kaliev Bauyrzhan Bolatovich, CHP 2 Chief Engineer, 250-31-53



- AES telephone : +77272540331
- AES email: kancel@ales.kz
- по тел. ТЭЦ-2: +77272503140



Hotline telephone number: 8-800-080-47-47



WhatsApp messenger via number: 8-771-191-88-16



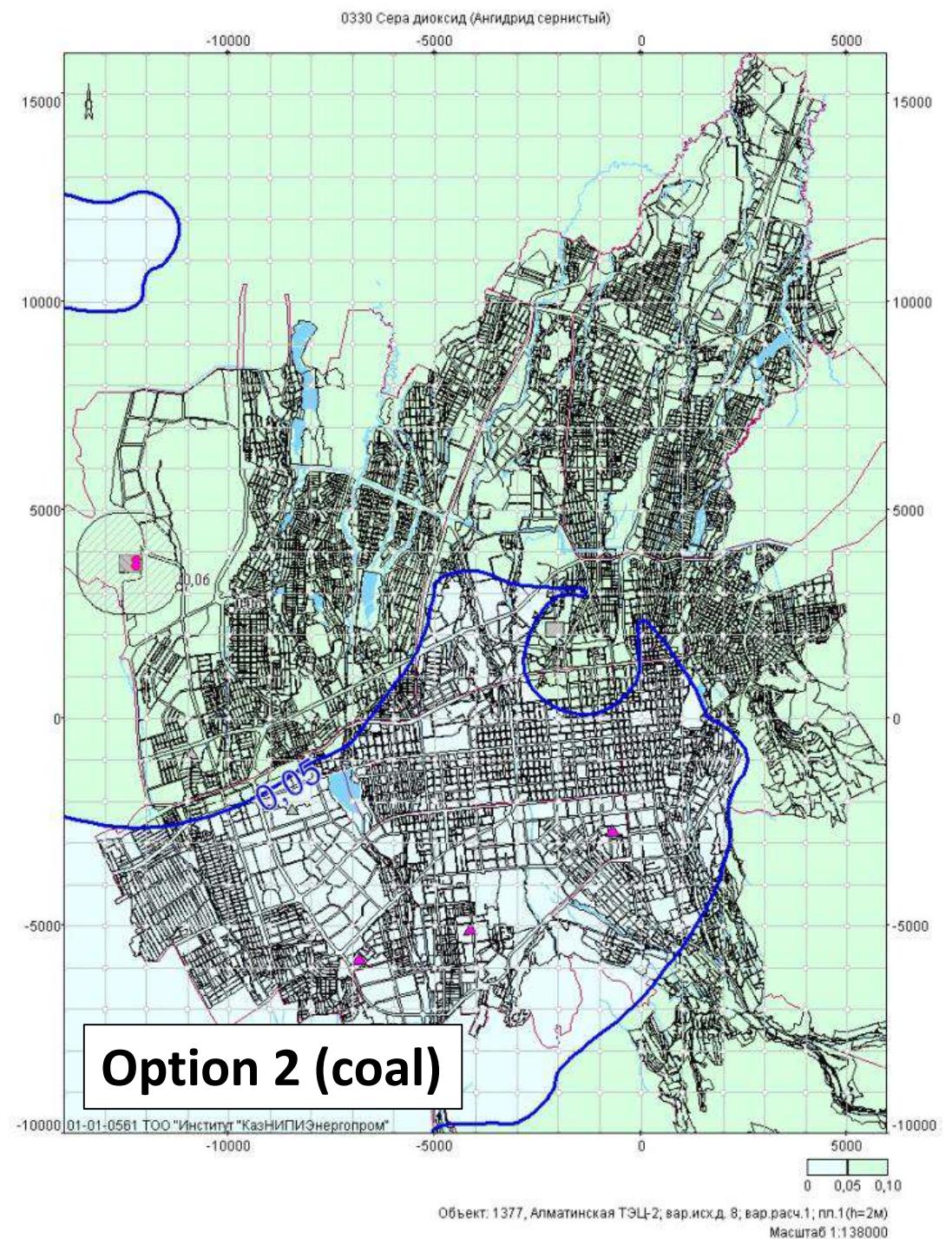
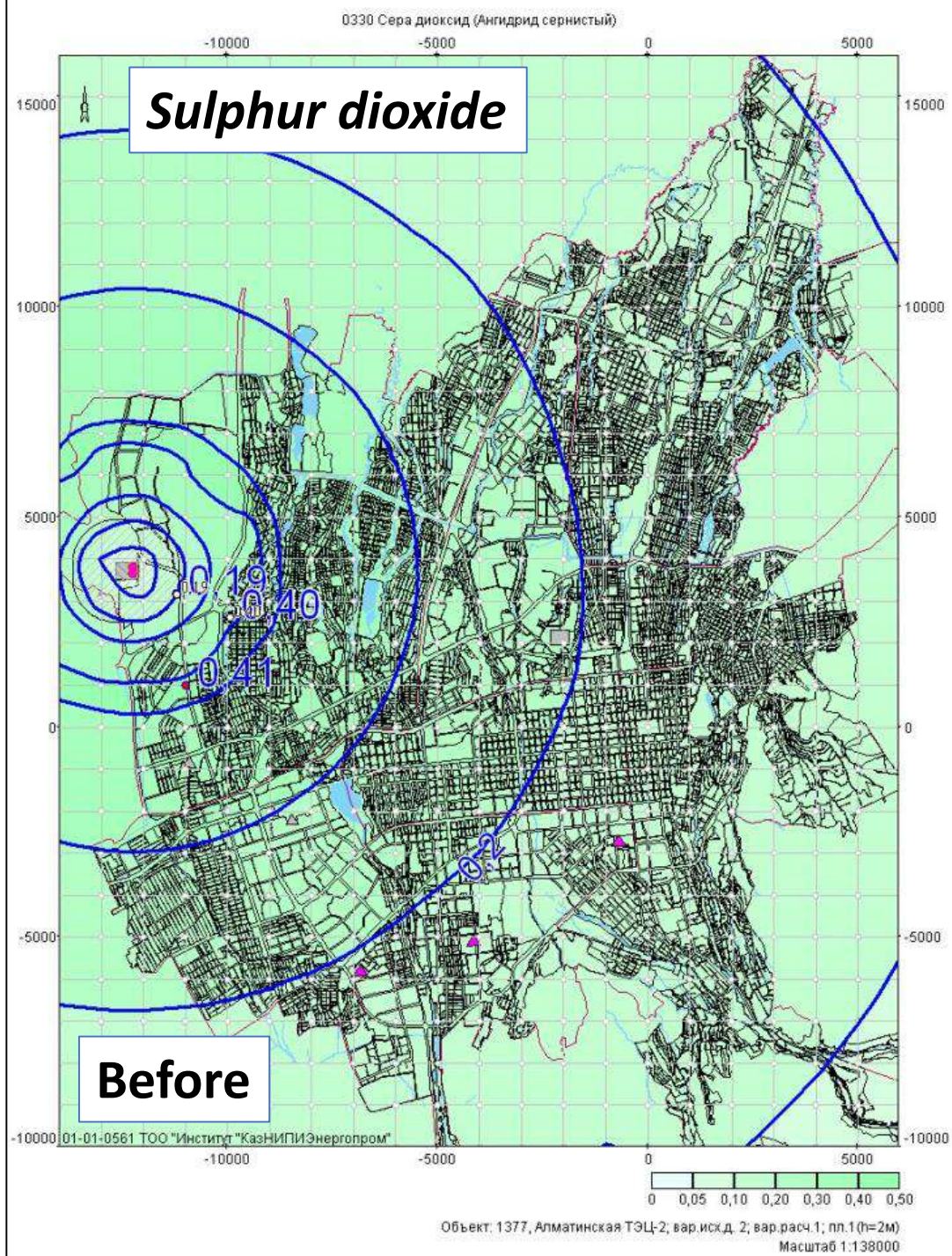
Internet portal: www.sk-hotline.kz

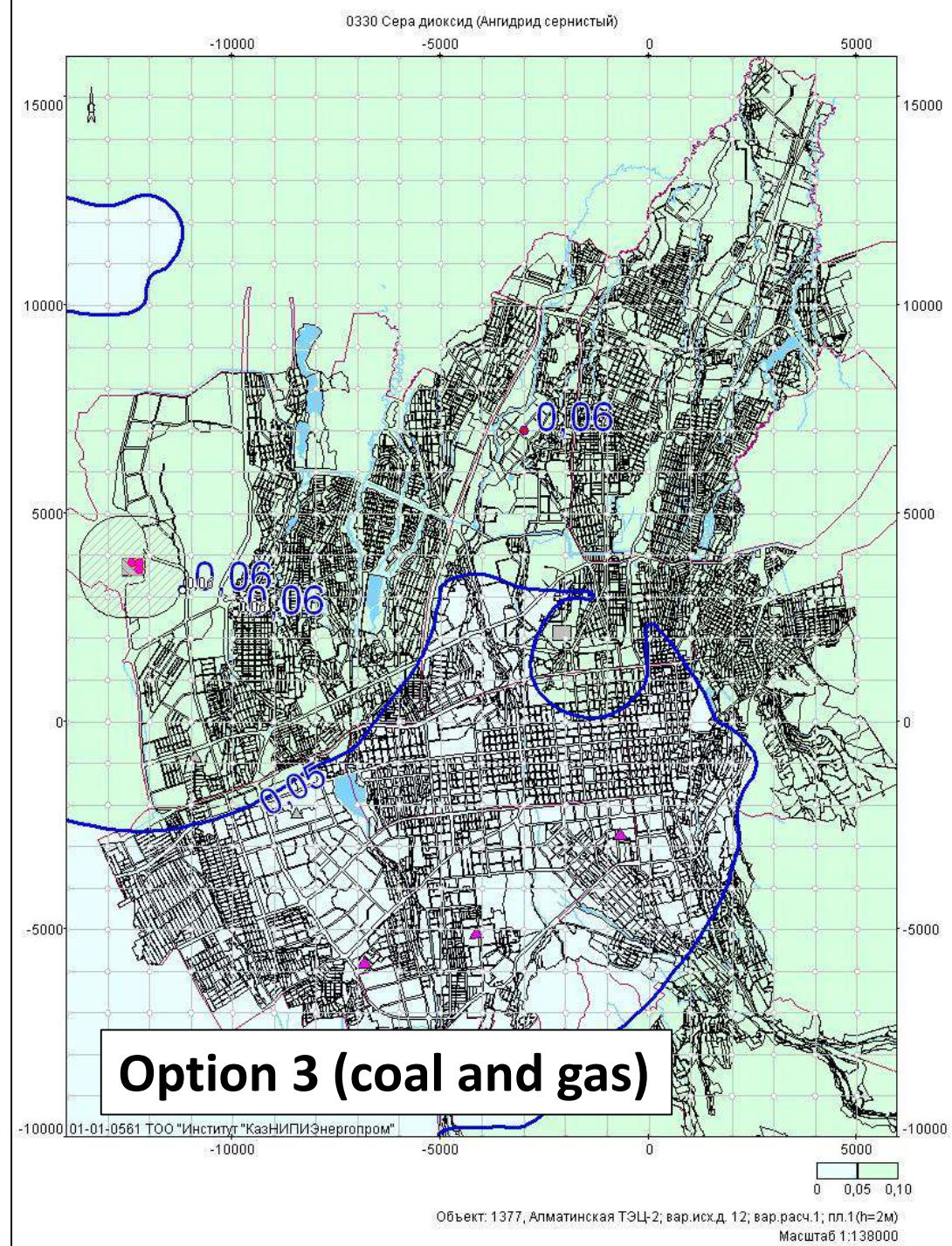
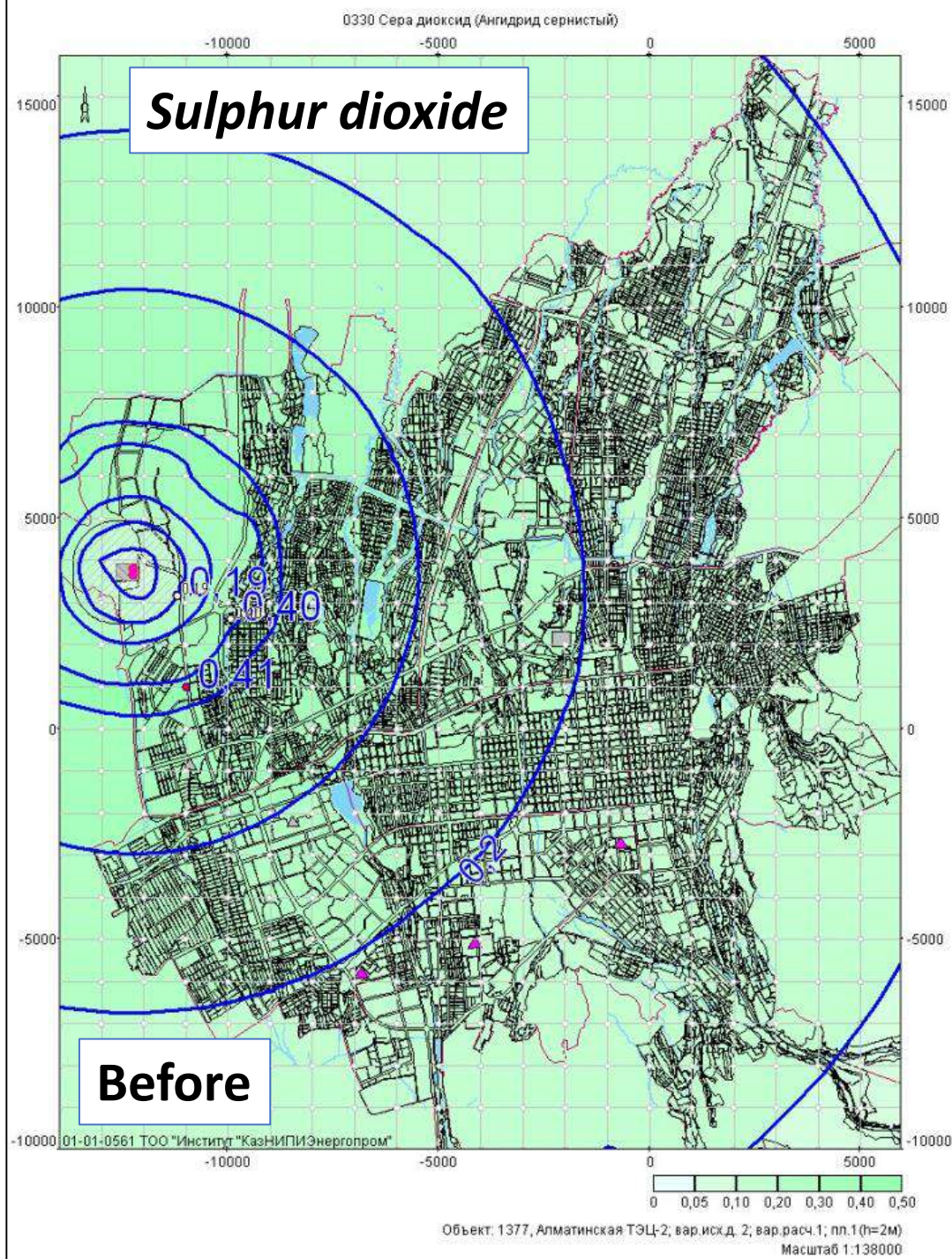


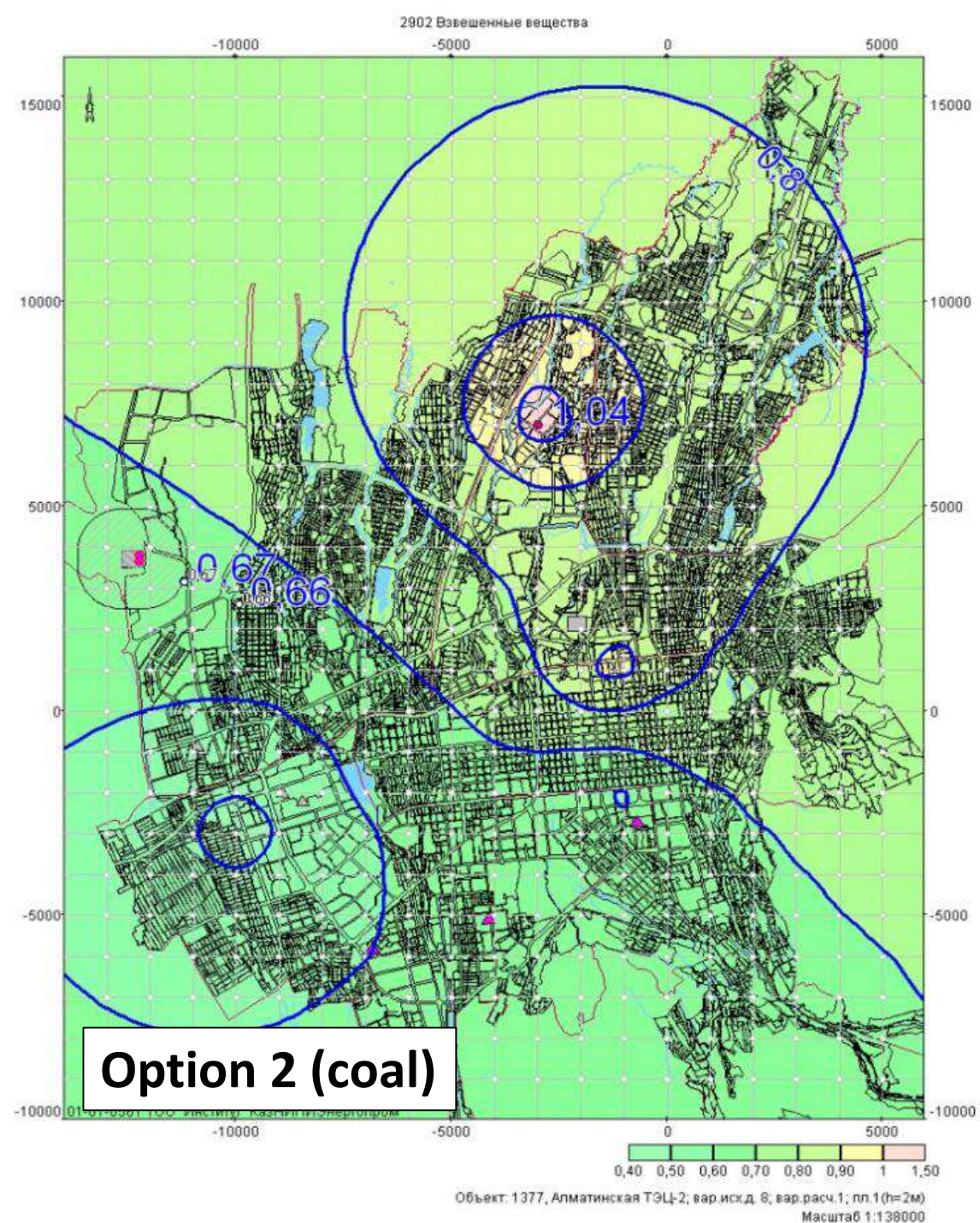
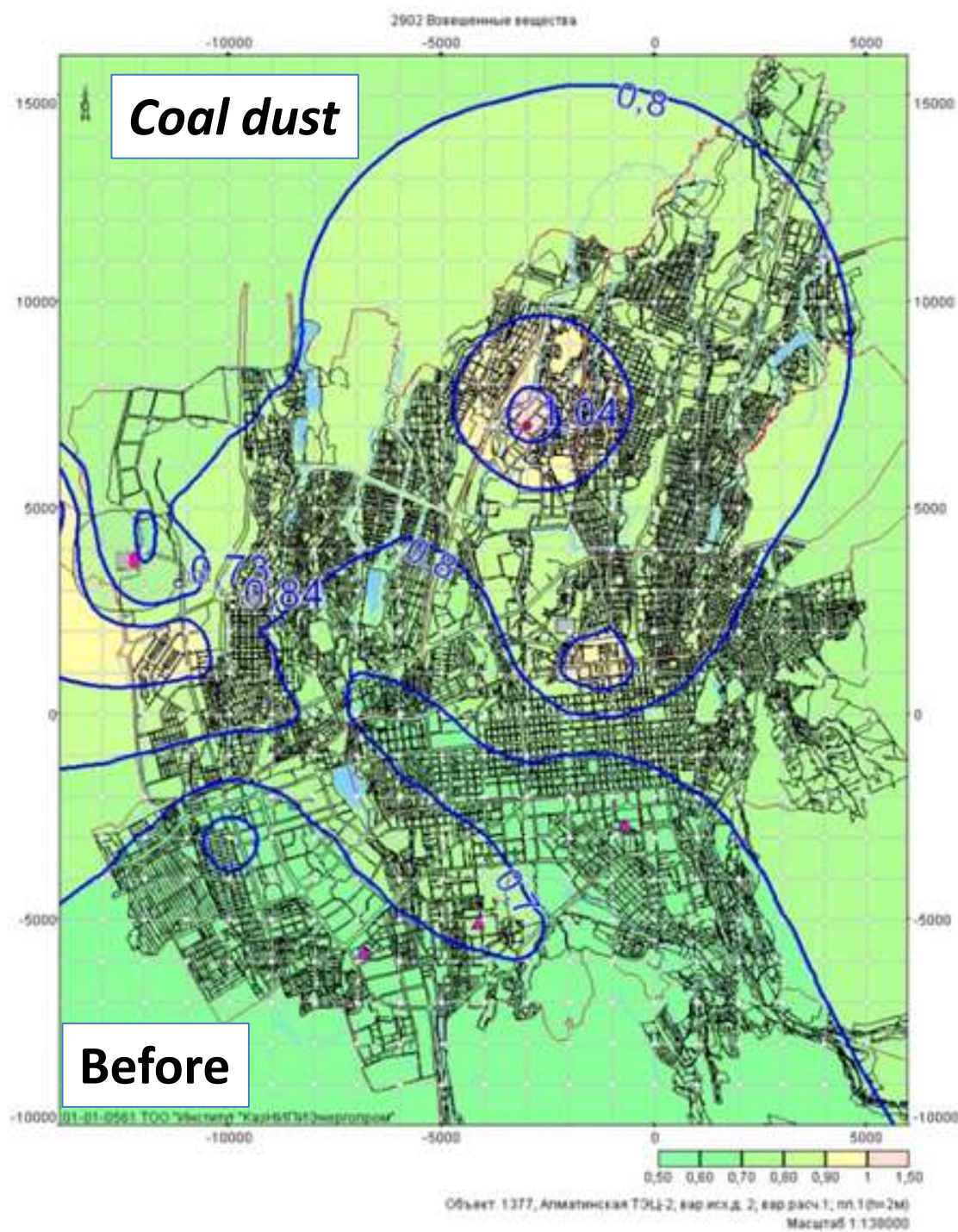
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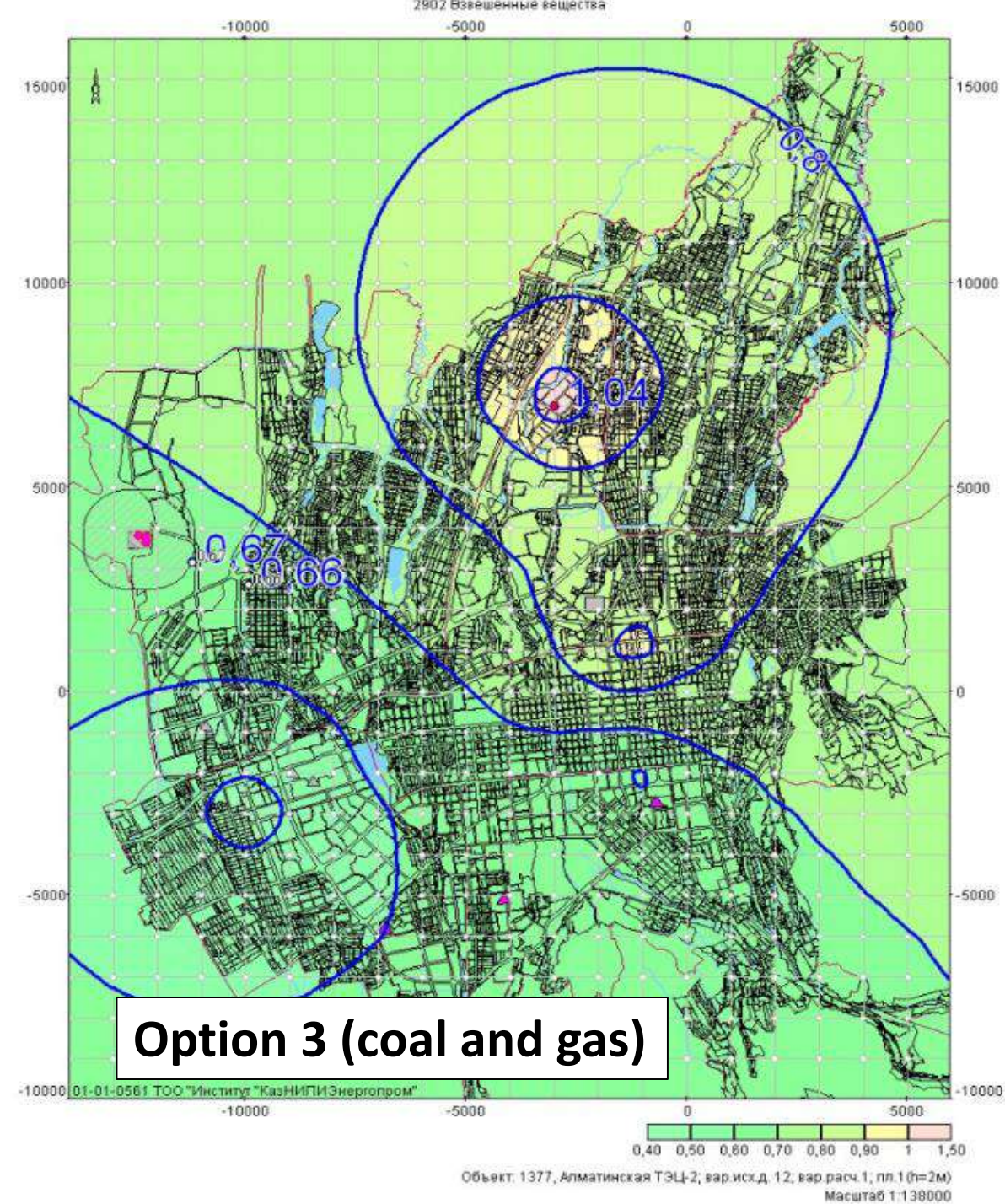
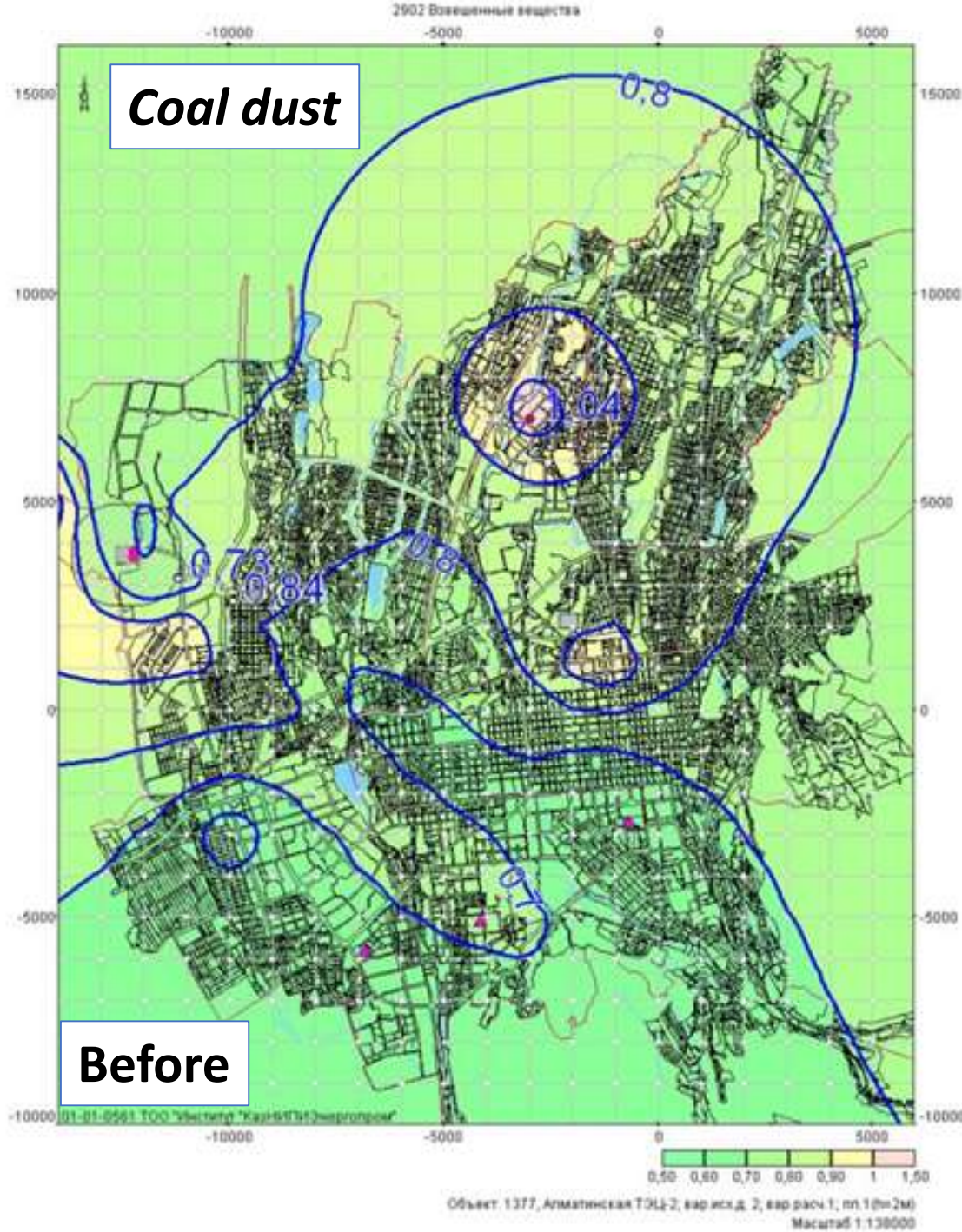


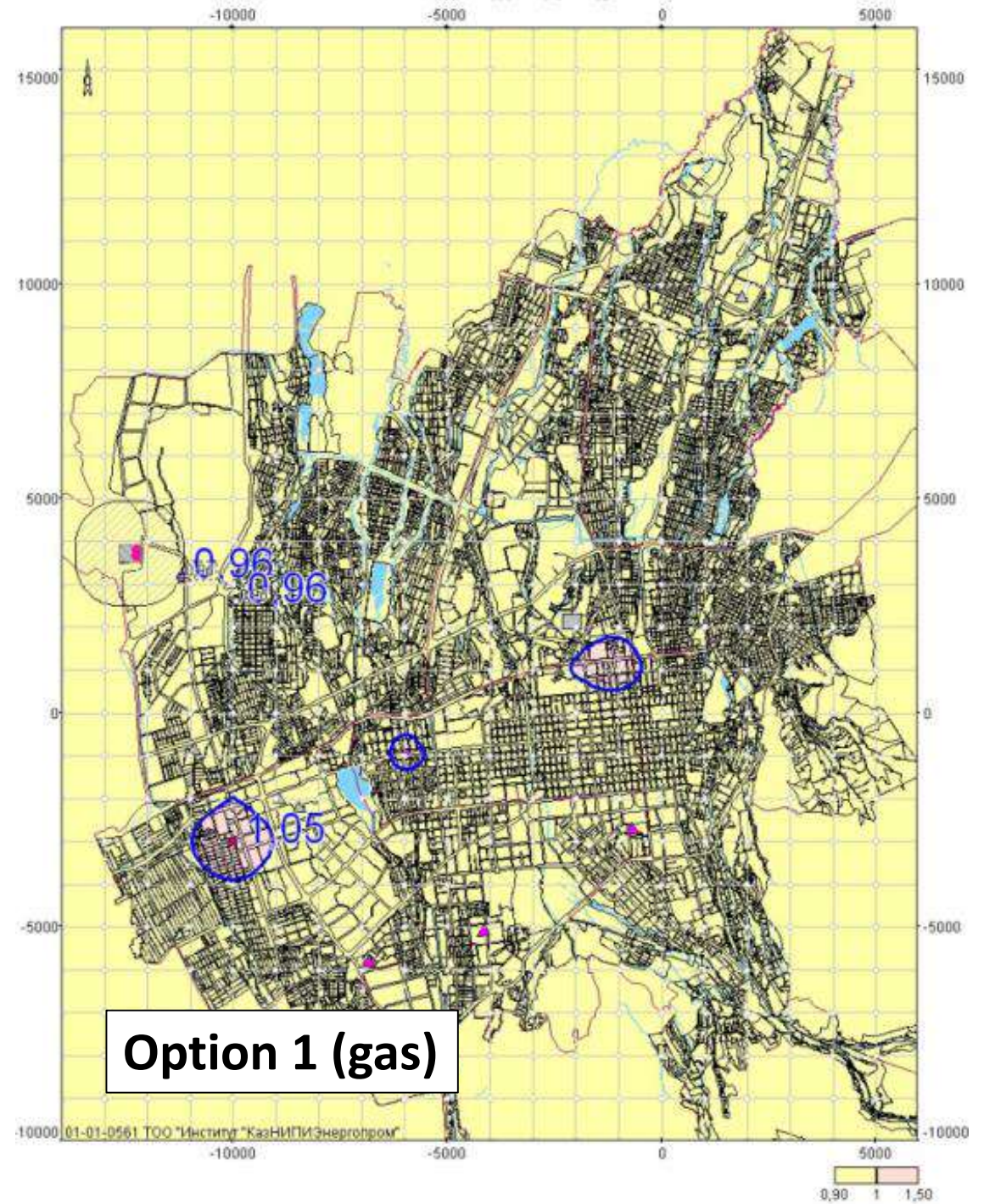
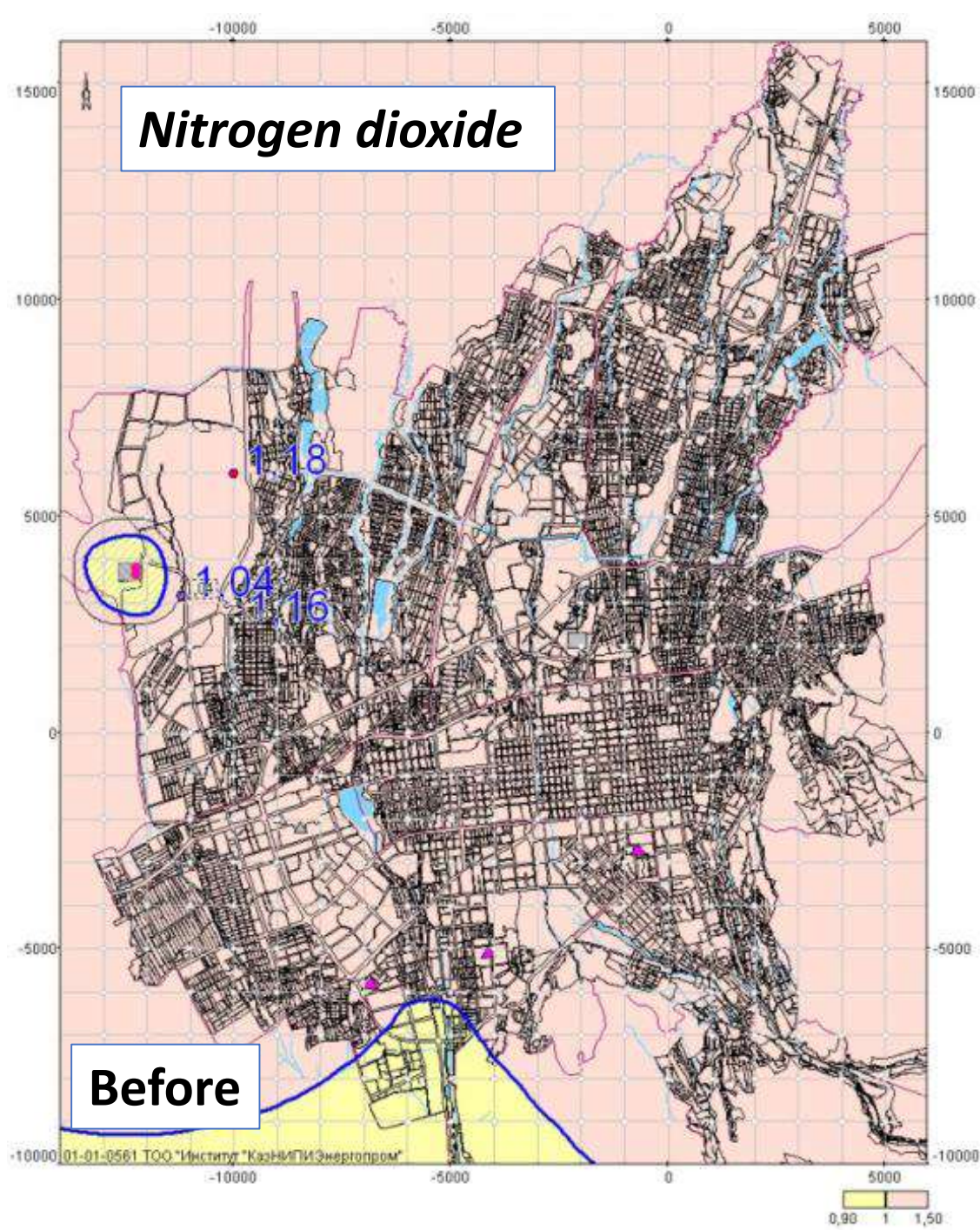
Thank you

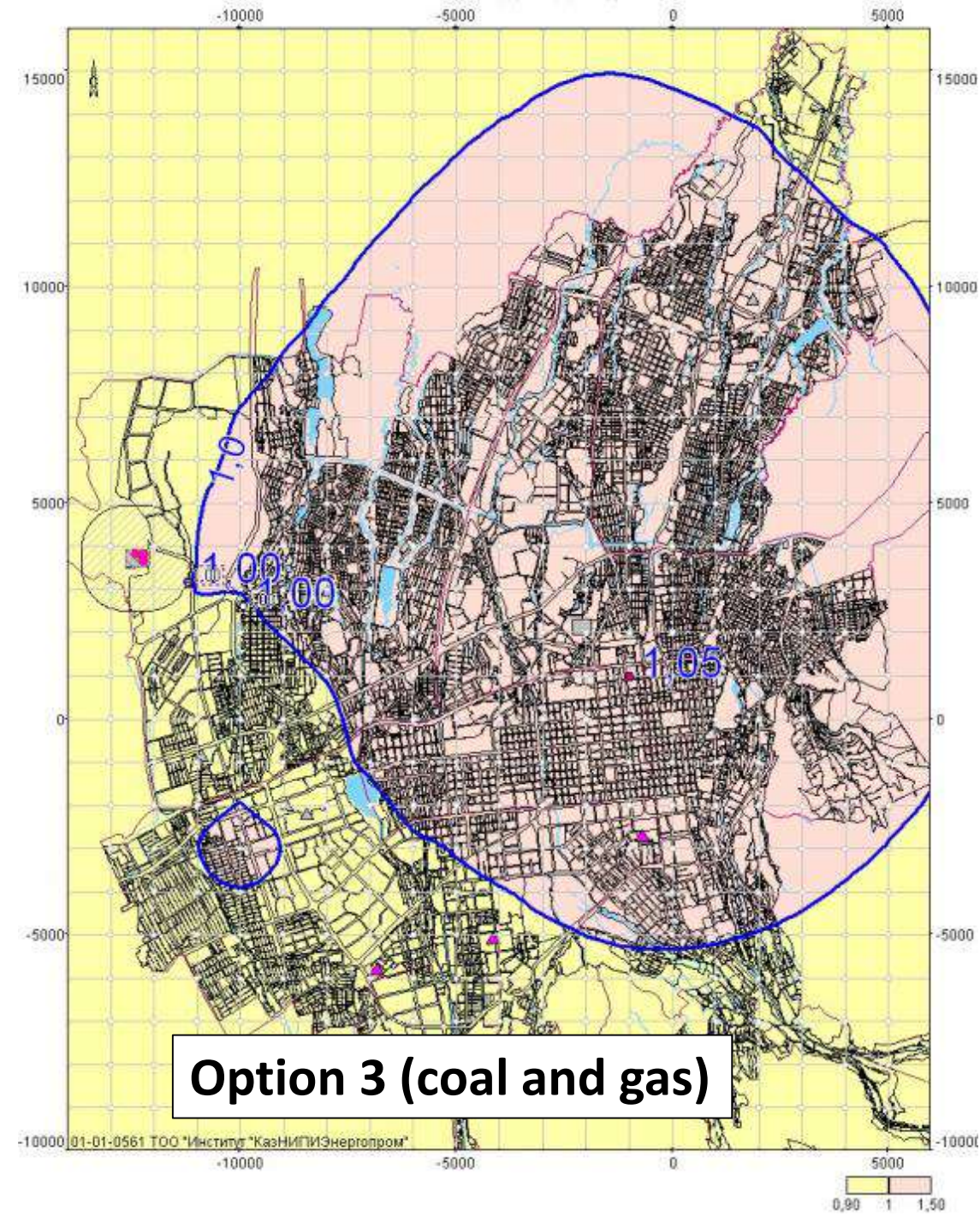
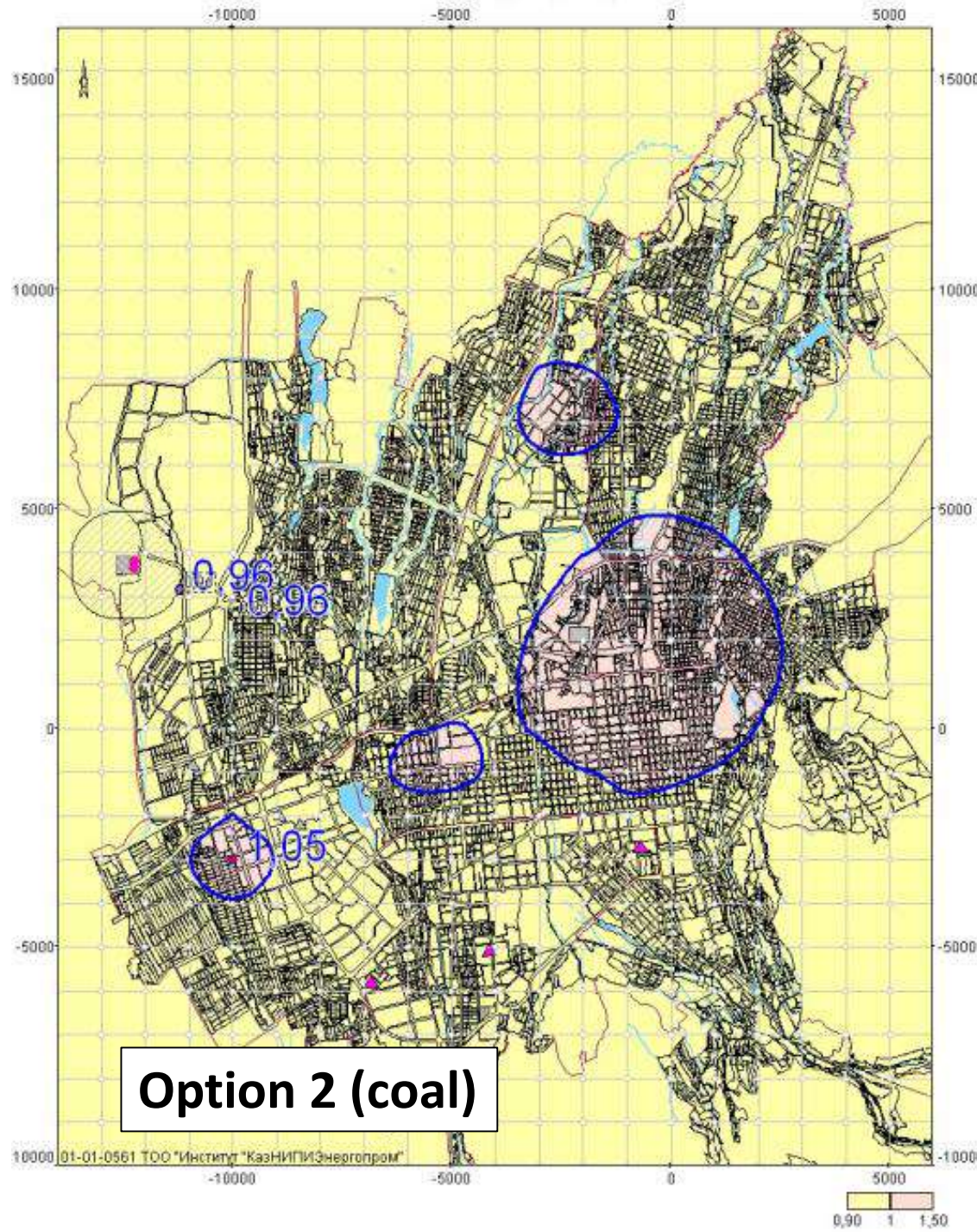












Contact details:

Almaty Power Stations, JSC

Address: 050002 Almaty, pr. Access, 7

Phone: (+7 - 727) 2 54 03 31

Fax: (+7 - 727) 2 50 79 74

Email address: kancel@ales.kz

