



EXECUTIVE GREETINGS



Zakariae El Marzouki
Executive Director of Badrakh Energy LLC

Looking back at what we have accomplished in 2020, we can undoubtedly congratulate ourselves on what has been achieved through our joint efforts and partners, which marked not only an important milestone for our company's operations, but also an even more important milestone in history of the development of the uranium industry in Mongolia. In 2020, we launched the operation of our Zuuvch Ovoo Pilot Plant with the treatment of uranium charged resins of the Umnut Test of 2011. This launch was done in accordance with the authorizations granted to our company from relevant Mongolian authorities. We are happy that this important milestone was successfully achieved without any problem or incident. We are now looking forward for the next important milestone which is the start of uranium extraction at the first Zuuvch Ovoo cell. This step shall mark the start of our pilot test in the full sense of the term and our teams are making all the necessary efforts to achieve this as soon as the current restrictions and conditions related to the COVID-19 allows for.

The year 2020 was marked by the global Covid-19 pandemic. This situation has prompted the authorities to take drastic measures to stem the spread of the virus. This has an impact on all of our daily lives, but it affects in particular our colleagues who work on the site and who must extend their presence on site for a very long period, isolated from those around them, far from their families. I would like to personally thank our on-site staff for their commitment and dedication to the Company at this difficult time. I would also like to thank our subcontracting companies which are, so to speak, in the same boat as us, as well as the families of our employees who are supporting the present situation and whose psychological support is particularly valuable in this context. I am also not forgetting all the teams that are working hard in Ulaanbaatar and Sainshand to provide for the logistical needs of the site and to keep the company running as close to normal as possible.

Thanks to our adaptability and readiness to changes, we successfully carried out studies such as Technical and Economic Feasibility Studies, Detailed Environmental Impact Studies, Environmental Audit among others, whose presentation to different stakeholders will certainly have a positive impact in improving public acceptance of our project. We remain committed to contributing to the economic and social development of the territories we operate in. This commitment is translated through many social projects carried out or underway locally. Our social commitment is framed by the Cooperation Agreement, established in 2018 and was extended in 2020 for one additional year.

In 2021, our teams will mobilize to continue the Pilot Test activities and start the uranium extraction from the first cell while ensuring the highest level of safety and health for our colleagues, teams, neighbors and local communities, as well as the protection of the environment. For 2021, we reaffirm our commitments of responsibility in line with those of Orano Group – commitments to reduce the environmental footprint of our business, develop the skills of our partners to preserve natural resources, thus contributing for the fight against climate change. I thank each and every one of you for your commitment and involvement in this great project. And let's meet with news of success at the end of 2021.



Do not forget to follow us on Facebook to be updated on the progress of our project!
<https://www.facebook.com/badrakhenergy>

MEMBERS OF THE WORKING GROUP FOR THE VOLUNTARY CODEX OF WATER MANAGEMENT VISITED THE SITE OF BADRAKH ENERGY



"The HSE SDLA director of Badrakh Energy LLC Ts.Enkhjargal is presenting the policy and regulations of the company to the members of working group."

The ambassadors of the member entities of the Voluntary Codex of Water Management of the South Gobi visited the Zuuvcch Ovoo Pilot test site on July 3, 2020. The Voluntary Codex of Water Management of the South Gobi is a project sponsored by the International Financial Corporation since 2013. The Badrakh Energy team presented the policies, rules, controls and good practices that are being implemented by the company towards environment, radiation protection, labor safety and health.

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After visiting the production cells and newly constructed processing plant of Zuuvcch Ovoo pilot test, S.Otgonbaatar, Head of water management team at Oyu Tolgoi LLC said:

"A total of 13 entities have currently joined the Voluntary Codex. Our working group has then met every quarter to share our difficulties and good practices. We are glad to have organized our first visit at Badrakh Energy company. Good luck to your team in successfully conducting the first pilot test of uranium production in Mongolia."

THE MANDATORY INDEPENDENT ENVIRONMENTAL AUDIT CONDUCTED AT BADRAKH ENERGY LLC IN FEBRUARY–JUNE 2020 WAS SUCCESSFUL.



The environmental audit assessed the implementation of environmental measures with the satisfactory percentage of 94, 9% for Zuuvcch Ovoo, 97% and 94, 1% for Dulaan Uul licenses.

According to Badrakh Energy's order, Econational LLC specialized in environmental audit has carried out an environmental audit on Umnut, Zuuvcch Ovoo and Dulaan Uul licenses in February–June, 2020 as specified in Article 101 of the Law on Environmental Protection. According to the Law the environmental audit must be conducted every 2 years.

The audit company conducted assessment by determining the audit criteria for each license according to the specifics of operations run on the mining licenses (between 34–178 criteria). Consequently, it assessed the implementation of environmental measures with the satisfactory percentage of 94,9% for Zuuvcch Ovoo, 97% for Umnut and 94,1% for Dulaan Uul licenses respectively.

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The auditing company Econational LLC praised the efforts made by the company saying:

"Badrakh Energy is upholding the effort to keep the environmental impacts due to company's project activities at the lowest possible level in addition to ensuring the application of relevant legislations and standards of environment and nuclear energy. The fact that the company seeks to is planning its activities based on the many scientific researches conducted with the participation of foreign and domestic professional institutions and experts is also a good practice".

BADRAKH ENERGY IMPLEMENTS ITS NEW GRIEVANCE MANAGEMENT MECHANISM

Badrakh Energy LLC implements the international best practices of the extractive industry in terms of transparency and dialogue with stakeholders. Thus, the company is committed to providing to all local stakeholders with access to effective mechanisms to resolve the grievances related to the company. This mechanism is designed to resolve problems by mutual understanding before they lead to potential disagreements or disputes.

By implementing this mechanism, the company strives to receive remarks of the third party expressing a wish and to respond to the requests for an explanation on a specific circumstance which is based on evidences. After recording it, the grievance is considered within a specific period of time while informing the claimant about the progress, as well as the decision regarding his grievance. We invite you to read the detailed Flyer in pages 10–11.

FXB MONGOLIA IS SUCCESSFULLY IMPLEMENTING ITS 3 YEAR PROGRAM IN DORNOGOBI AIMAG



Kh.Tsetsegsuren at the Exhibition "Our Family is a Constructive Family" with her grand-son. She got a milk cow with a calf.

The team of the FXB Dornogobi is successfully implementing its second phase of the 3-year program in Dornogobi aimag with support of ORANO group and in partnership with relevant departments of local administration. The main goal of the second phase of the project which was launched in February 2019 is to fight poverty and allow 100 extremely poor families (about 500 direct beneficiaries) to reach socio-economic autonomy within three years.

In 2020, the FXB Dornogobi team provided the support to 86 households so that they would be able to increase their family income. For example, the citizens of the carpet-weaving cooperative are weaving the carpets at home and are also raising their income by making felt products. In addition, the team provided aid to beneficiary children by giving them school supplies and food products such as vitamins and dairy products for the purpose of supporting their immunity.

The project team helped the families to maintain the sanitary and infection protection regime by distributing masks, hand sanitizers and household disinfectants.

Autumn" that was organized on September 18–19 in Sainshand. There they advertised and sold their products, including felt and wool items, various handcraft items, and fresh and pickled vegetables that was organized on September 18–19, 2020 in Sainshand.

The team of the FXB Dornogobi is fully confident to bring more contribution and support to the families while giving opportunity and enhancing the capacity to exercise a job thus increasing the efficiency of their project.



Ts.Gereltuya at the Exhibition of families running small buiness. She got equipment for socks and shoes.



RADIATION PROTECTION MEASURES TO BE IMPLEMENTED DURING ZUUVCH OVOO PILOT TEST OPERATIONS

This is the interview with B. Batmanlai, the labor safety and radiation protection supervisor at Badrakh Energy LLC

The Zuuvch Ovoo pilot plant has started. Can you briefly describe again your project to readers?

Badrakh Energy has successfully begun the operation of the pilot plant located in Zuuvch Ovoo after obtaining the relevant permission from the Minerals and Petroleum Agency, Ministry of Environment and Tourism and the General Agency of Specialized Inspections, pursuant to the Law of Mongolia on Nuclear Energy, Law on Minerals and other relevant laws and rules. Our project site is on the territory of Ulaanbadrakh soum in Dornogobi province. This plant is located 70 km southwest of Sainshand soum, 35 km southwest of Zuunbayan bag, 50 km northeast of Ulaanbadrakh soum and about 220 km from the border port of Zamyn Uud. The operation of the plant started with the processing of the uranium charged resins from the test conducted in the Umnut area in 2010–2011. The next step is to start of the effective uranium extraction at the first Zuuvch Ovoo cell and it is planned to be done very soon.

This pilot test employing the technology of the in-situ recovery at the Zuuvch Ovoo uranium deposit will proceed according to the relevant national and international laws, rules, regulations and standards and intends to confirm the main technical and economic parameters for the further full-scale production and to demonstrate to all stakeholders that this technology has limited impact on the environment. It is planned to conduct this pilot in 2021–2022. The natural uranium product will be produced through this pilot test and exported.

How many employees personally take part in the pilot test?

59 employees are working in the pilot test, including a chemist, operators, chief repairman, environmental specialist, electrician, data operator, radiation protection specialist, labor safety officer, doctor and a nurse. Our employees have enrolled in the trainings on the labor safety, health, radiation protection and disaster prevention according to the relevant requirements.

In addition, before beginning the project operation, certain professional employees viewed the KATKO plant in Kazakhstan, which employed a similar technology, and exchanged experiences.

Depending on the level of interacting with the natural radioactive material, employees of the company are divided into 2 main groups – workers interacting with radiation and the population. The group of workers interacting with radiation includes employees, who work permanently or for a certain time in the zone of natural uranium ore mining and processing. They undergo a regular control of their individual professional exposure doses. A worker interacting with radiation has a dose limit of 20 mSv per year on average in any subsequent 5 years, but not exceeding 50 mSv in any one year. The workers included in the population group have a dose limit of 1 mSv per year on average in any subsequent 5 years, but not exceeding 5 mSv in any one year, similarly to other ordinary citizens.

The average of the exposure dose received by employees of Badrakh Energy LLC was **1.18 mSv on average in 2018, 0.68 mSv in 2019** and **0.09 mSv in 2020**, which were no more than the radiation exposure dose received by ordinary citizens in one year. This shows that the activity of the company does not cause a radiation impact on employees.

How do you verify that you are receiving the radiation exposure dose much lower than this limit, namely, the same amount of exposure as common citizens?

The radiation safety department implements the supervision of the radiation safety in the company and contractors. This department monitors maintains the radiation safety by monitoring jointly with supervisors of teams and departments whether each team and department engaging in the works and services potentially exposed to the impact of the radiation enforce the radiation safety instructions, providing the management with the professional advice and information, delivering the required information to employees and, if necessary, cooperating with relevant local institutions.

Workers interacting with radiation are subject to monitoring through the personal control dosimeters. The dosimeters are worn for a month, after which they are sent for the measurement and review to the food safety and reference laboratory at the General Agency of Specialized Inspections. This measurement is done continuously. Radiation protection employees impose supervision on the use, registration and measurement of results of the dosimeters.

Workers interacting with radiation are able to take a shower on the site and immediately clean themselves from the surface contamination, should they be exposed to any radiation. In addition, they mandatorily undergo the measurement of the radiation potential contamination after the work, according to the checkpoint policy of the company. We also prohibit eating food, smoking and the use of the cosmetic makeup for women at the workplace within the controlled zone for the purpose of preventing the internal exposure. The internal exposure means a process, whereby, for example, half-life decay products of radon and long life alpha particles of the uranium group may enter the body through food and cause a radiation effect on internal organs.

One of the numerous pioneering experiences introduced today by Badrakh Energy in the uranium industry is the supply of employees with devices to monitor their internal individual exposure doses. The doctor of the company compares, studies and reviews the results from the medical examination and diagnostics that are performed in terms of occupational diseases on workers interacting with radiation. If an employee considers that there has been a radiation accident or a suspected exposure case, such employee is obliged to refer to the company physician at the camp and seek the first aid.

The company presents the measurement results of the radiation exposure control to employees and also regularly reports to the nuclear and radiation safety and supervision department of the General Agency of Specialized Inspections. There has been no radiation contamination incident among our employees. This is verified by inspections done by the supervising institutions such as the National Occupational Disease Research Center and the General Agency of Specialized Inspections.

Monitoring of the radiation at the workplace and in the environment, how is it conducted?

Pursuant to the environmental management plan and the radiation protection program of the pilot project on the in-situ recovery at the site of the Zuuvch Ovoo uranium deposit that were approved by the Ministry of Environment and Tourism, the company performs the monitoring, measurement and analysis of the radiation among the population and employees, in the environment and at the workplace according to the consolidated category, frequency and schedule. Thus, for environmental monitoring we take samples according to the categories: soil, water (herder wells and groundwater), flora and water. We then commission the analysis to the laboratories of the Radiation Research Center, Central Geological Laboratory, SGS, Han Lab and international Algade laboratory.

Regarding the radioactivity in the soil, we took samples of the soil around the 15 and 25-m radius cells of the pilot test in 2016 before beginning the pilot preparation, submitted them for the measurement to the laboratory and verified the pre-pilot condition.

Regarding the radioactivity in the water, in

2014–2015 we took samples from 16 groundwater monitoring boreholes on the site, submitted them for analysis of radioactive isotopes and likewise determined the pre-operation baseline values. We conducted this monitoring again in 2016–2019 and the supervisory institution also did this monitoring and approved it. We will perform again these measurements after the pilot and compare them with the pre-pilot measurement results.

Regarding the radioactivity in the air, we have been conducting regular measurements since August of 2017 after installing on the project site a stationary monitoring dosimeter to register radon-222 and its half-life decay products in the air. In addition, we also placed a stationary alpha dosimeter in April of 2018 and an external gamma monitoring dosimeter in July of 2018 in the herder encampment near the pilot site. These site alpha and gamma dosimeter detectors are analyzed every 4 months in the laboratory of the French company Algade. Doing these measurements makes it possible to show and prove to the people that there is no negative impact.

The monitoring results show that there is no environmental impact from the operations of the company.



THE SOIL AND WATER INDICATORS IN DORNOGOBI AIMAG ARE RELATED TO THE NATURALLY OCCURRING GEOLOGICAL MINERALIZATION AND NOT TO THE COMPANY ACTIVITIES.

www.montsame.mn | October 2020

The working group appointed by Government's Administration to conduct a study and analysis around the uranium plant of Badrakh Energy company in Ulaanbadrakh soum of Dornogobi province presented its conclusion on October 5 of the last year. This working group concluded that there is no impact on the environment and the health of the communities and livestock from the activities of the company called Badrakh Energy. But during this reporting, it was also informed by GASI that the concentration of certain heavy metals was naturally elevated in deep water wells in the vicinity of Ulaanbadrakh soum. State senior inspector for environmental control at General Authority for Specialized Inspection U.Ulziitsetseg was interviewed regarding the study and analysis of water and soil.

The GASI took part in the working group appointed by Government's Administration. Would you like to briefly introduce what studies and analysis your authority conducted?

The working group appointed by the order 131 of the Head of Government's Administration of the year 2020 was made up of sub-groups. The third sub-group to determine whether there was a soil and water contamination was consisted of the professional researchers and scientists of MET, GASI, Chemistry and Chemical Technology Institute, Geography and Geo-ecology Institute at Science Academy, Standard and Methodology Agency and Central Geology Laboratory. As you know Badrakh Energy LLC conducted a test of leaching by sulfuric acid in situ in 2011. And since then the company did not perform any activity of mining neither test. The purpose of our WG was to determine whether the test of 2011 had working group any impact on soil and water,

generally speaking, the soil and water samples were taken to give up a soil and water background of the region. The samples were analyzed at the Central Geology Laboratory, Khan Lab, SGS, an international lab network and at the Geography and Geo-ecology Institute. The analyses were made at different laboratories only because we wanted to ensure the credibility of the analyses. All laboratories working currently in Mongolia are equipped with high sensor, their capacity is improved. A total of 16 water wells and springs were sampled, they are located at 12–85 km from the site where the test was conducted. It involved 2 water wells at 12 km or the nearest location, 5 springs at 27–40 km, 9 deep wells at 46–85 km. The only open spring was Baruunbayan spring that extended from Zuunbayan to Dulaan Uul and was created by the deep fault of Zuunbayan located at 12 km from the area. It is a major representative of the regional surface water.

It sometimes dries up during summer whereas it covers a large area so that its boundary becomes invisible when the water flow increases.

With regards to soil, a total of 11 samples was taken from the vicinity test site, Zuuvc Ovoo Pilot plant, Gunsukhait, Modon shand and Baruun bayan bulag water well and herder household Tserendulam.

For the water used for drinking purpose of the communities and the livestock, the water was very hard and highly mineralized in the four water wells including Gunsukhait, Tsevuun-1, Tsevuun-2 and Tsagaan ereg. Adding to that, the concentration was higher for sulfate, for chlorine, for calcium and for magnesium ion, for some

indicators it was 2–3 times higher, which exceeded the standard respectively. In the water wells of Gunksukhait, Dengiin Us and Uvgun Mod, the uranium exceeds the authorized limitation by 4.4–11 times. The strontium is 1.5–3 times higher than the norms in the water wells of Gunksukhait, Tsagaan Ereg, Tsevuun 1 and Tsevuun 2. The concentration of arsenic is 40–80% higher than the standard in 5 water wells including Naimaa, Bulag shand, Gunksukhait, Khongoriin us and Uvgun mod.

The water well of Gunksukhait where the uranium concentration is the highest is located at 23 km from the test site, Dengiin us at 50 km, Uvgun mod at 25 km. From this fact, we can say that the region is naturally or the geological formation of this region makes the uranium concentration very high. For this reason, the underground water is rich in uranium.

People say that there is sulfuric acid intoxication due to using the sulfuric acid for the test. When being polluted with sulfuric acid, the water becomes acidic with a decrease in pH and increase in sulfate ion. The pH level was 7–8 or low alkaline for the water of all analyzed water wells (alkalinity being the opposite of acidity).

A spring is underground water that appeared on surface due to soil fracture. The only existing Baruunbayan spring is highly mineralized, significantly hard, presents an intense organic pollution, muddy and contains magnesium, sulfate, chlorine, strontium and uranium with a concentration that is 2–25 times higher than the norm. It means the underground water that feeds this spring contains an important quantity of these ions. In other words, the soil rock is composed of minerals that naturally contain these elements so that the underground water demonstrates such indicators.

For the soil, only the arsenic exceeded the norm among the soil contaminant substances and elements and other elements remain under the norm. The arsenic exceeds the authorized norm at the Umnut site where the test was performed. But it is 2 times higher in the soil at Baruun Bayan well which is located at 50 km and at Modon shand well located only at 11 km far from the test site, this shows that the soil of this region is naturally rich in arsenic.

What are the exact impacts to human and livestock health due to the concentration that is above the standard

When drinking the water with high hardness for a long time, there is a danger of provoking cardiovascular and kidney disease that may further lead to death. It is thus necessary to avoid using above water wells for drinking or purify the water if used.

According to the recommendations of World Health Organization, consuming the water that contains uranium for a long period of time causes a kidney disease and the daily acceptable uranium intake is 1–4 µg/day. If a person drinks 2 liters of water from the water well with the highest concentration of uranium (0.33 mg/l) per day, it makes 0.66 mg or 660 µg. It means 660–160 times higher than the daily intake.

The arsenic is a very dangerous substance that damages neural system and provokes various cancers related to lung, skin, liver, kidney, blood and prostate. A common symptom that appears in case of arsenic contamination is a spot on skin.

So the people should understand well that they cannot use on a regular basis the water that exceeds the norm several times according to the analysis.

It was concluded that the elevated concentration of uranium and other heavy metals was due to geological structure. Does it mean that other areas of our country where a uranium deposit exists may have the similar condition?

All water is not drinkable either it comes from underground, river, lake or spring. Mongolia, especially the Gobi region is rich in water with the high concentration of heavy metals as arsenic and elements as fluoride and boron. Researchers identified that the Mongolian water contained relatively high uranium.

When presenting the work results, the working group noted that there was no worsening condition for human and livestock health and environment due to the uranium. However, we can see that some NGOs do not really trust in this conclusion according to their comments. What explanations would you give on this?

An on-site inspection was carried out by an extended working group consisted of experts and researchers pursuant to Governmental resolution 47 in 2013 like this one. This study provided an exactly same answer or conclusion.

There is no way that the state authorities have been influenced by a company. The sub-group in charge of soil and water produce a conclusion after having ensured a comparative study based on the results of samples analyzed at the accredited laboratories. The reason why we are highlighting about the comparative study is because two samples are taken from the same spring and then sent to two different accredited laboratories for the same analysis. Consequently, there was a very little gap between the results of two laboratories.

The working group created in 2013 verified the work results by sending to the Republic of Korea the analysis results along with certain samples. Will you send the analysis results abroad for verification this time?

There is no need to do so. In 2013, the capacity of the laboratories were not so high, they used to analyze only some few elements such as lead. They now use high sensor devices for soil and water and analyzed more than 20 elements with high resolution this time. So it is not necessary to send them abroad.

There was a recommendation about not to use the water of Baruun bayan spring. What does this recommendation mean?

It is not really accurate to use for drinking and cattle husbandry the water of Baruun bayan spring that naturally contains a high concentration of magnesium, chlorine, sulfate, uranium and arsenic. There is a danger that the cattle may purge and even die due to taking from the water of this spring. The company, as well as the local authority were so provided with the recommendations to fence the area. Regarding the company, these soil and water indicators are related to the geological mineralization and not to this company's. The company is so advised to purify and avoid using the nearby deep wells and fence the Baruun bayan spring within social responsibility on the voluntary basis. In general, we proposed the actions that may be implemented within social responsibility such as involving on a regular basis the water wells and springs in the underground water monitoring program and delivering on a quarterly basis the analysis results to basin administration and other relevant state authorities, using after purifying the water of Gunksukhait, Khongoriin us, Dengiin us, Uvgun mod, Tsagaan ereg, Naimaa and Bulag shand that contains uranium and arsenic above the standard and fencing the Baruun bayan spring.



B. Buyankhishig

*Sustainable development
and local affairs officer*

I am working at Badrakh Energy LLC since 2007. Our company is a socially responsible company that implements locally the programs on the areas such as culture, education and human and livestock health according to our sustainable development policy. Badrakh Energy LLC has invested 6 billion MNT for the local development since 2006. One of the most appreciated social projects by the local communities is the Livestock reconstitution program launched in 2006. This three-year livestock reconstitution project has now reached more than 100 household beneficiaries.

The cooperation agreement

Badrakh Energy LLC entered into the Cooperation Agreement with the governors of Ulaanbadrakh soum and of Zuunbayan bagh in Sainshand soum in Dornogobi province in 2018.

This agreement was extended for one additional year in 2020. The company is pleased to be organizing the selection and implementation of the sustainable development projects and programs according to this agreement jointly with the Communication and Implementation Committees that include the representatives of the Parties.



G. Gankhuyag

Chief of the team

I first joined this company in 2006. I am a geophysicist and a mining engineer. I am currently working as the team leader of the Zuuvch Ovoo pilot plant. More than 25 people from Ulaanbadrakh soum and Zuunbayan bagh have been hired to work in our pilot plant. The employees of the pilot test undergo annual trainings on the labor safety, radiation protection and chemistry. Our fellows diligently complied with safety and performed the assembly and connection of the equipment and pipes inside the plant without any accidents under the supervision of the French specialist. I am happy to be working alongside our local fellows.

Local employment

As of December 31, 2020, Badrakh Energy has 86 employees in total. The company had always aimed to support employment where it operates. 33% of the all Mongolian employees come from Ulaanbadrakh soum and Zuunbayan bagh of Sainshand soum.

For the total staff, 76% are male employees and 24% are female employees.



T. Tsolmon

Chief mechanic and driver

I have been with Badrakh Energy since 2011. One of my duties is to monitor the safe functioning of transportation and ensure the smooth running of the company's daily operation. We adhere to the highest safety requirements such as seat-belt wearing, zero-tolerance for alcohol policy and speed limit.

The company ensures a timely maintenance and supply of equipment and spare parts as part of the safety commitments.

Training and development of employees

Employees at Badrakh Energy are provided with the opportunity to participate in professional skills and soft skill trainings, as well as the opportunity to participate in trainings to obtain graduate degrees.

For 2020:

- A total of 49 employees participated in 12 types of trainings,
- 1 employee enrolled in a post-graduate program, for a total of 12 employees participating in degree programs
- A total of 288 employees (duplicate number) participated in 2,840 hours of occupational and radiation safety trainings.



B. Batmanlai

Labor safety and radiation protection supervisor

I started working at Badrakh Energy in 2011, when I was still a student. Since then I have been in charge of supervising the labor safety and the radiation protection.

Uranium, which the company is planning to recover, is a natural product just at the first stage of the nuclear cycle. The laws, rules and the state policy of our country specify that the final uranium product to be exported from Mongolia is the yellow cake.

Natural uranium product

Uranium mined in Mongolia will be exported and will need to go through other transformations to become fuel for a nuclear power plant and produce energy low carbon.

In this way, since electrical energy produced from uranium does not emit CO₂, producing uranium as a raw material for nuclear fuel directly contributes to the fight against climate change which is a global concern and impacts today all countries whether they use nuclear power or not.



GRIEVANCE MECHANISME

OUR CSR COMMITMENT: DIALOGUE & TRANSPARENCY



An observation

A grievance...






... we are here to
listen to you!

To be attentive to the people living near our sites, Badrakh Energy has set up a mechanism for handling grievances.

The aim is to respond to any grievance within a reasonable time frame and to keep you informed throughout the process.

Learning from your observations and grievances allows us to improve and strengthen trust-based relationships.

OUR COMMITMENTS:

-  Listen and Act
-  Answer within a reasonable time frame
-  Address the issue in a transparent manner
-  Search for solutions that meet your expectations
-  Be accountable



Badrakh Energy applies international best practices in the mining sector and implements transparency and dialogue with its stakeholders.



GRIEVANCE MECHANISM

OUR CSR COMMITMENT: DIALOGUE & TRANSPARENCY

An observation

A grievance...

How do I proceed?



Who is eligible?

An individual or a group of individuals.



What kind of grievance can I address to you?

- ☑ A complaint, a request for an explanation on a specific problem, a remark about the company's activity or its impacts (real or perceived) on the community.
- ☑ Your grievance must be fact-based.

The grievance mechanism does not cover matters of legal claims.

How your grievance will be handled:

2 scenarios:

- ☑ You are satisfied with the answer given and the file is closed.
- ☑ You are not satisfied with the answer given. In this case, you can reformulate your grievance and send it to us again. Our teams undertake to re-examine your grievance or complaint.

Your Contacts:

The company's Corporate Social Responsibility (CSR) team

They will mobilize other departments of the company if necessary to provide you with the best possible answers.

How do I submit my grievance?

By phone: 94091185, 99103412

By e-mail:
enkhjargal.tserendorj@orano.group

By post :

Badrakh Energy LLC, ICC Tower, floor 8, Jamiyan Gun street 9, Khoroo 1, Sukhbaatar District, Ulaanbaatar, Mongolia

Our team records the information, opens a file and **sends you a copy within one week.**

How long will take for me to receive an answer?

Badrakh Energy LLC undertakes to process your grievance and to provide you with a response within two months of filing

The scholarship program was launched in 2010 with purpose to prepare the professional workforce in the region of the activities and to support the higher education of the local youth in Ulaanbadrakh soum and Sainshand soum of Dornogobi aimag.

The scholarship covers the entire period of the bachelor's course. The young students wishing to apply issues a request to their graduated school and the local governance, after which the representatives of the company and the local committee select according its criteria. The names of the selected students are presented to the members at the meeting of the Cooperation Council. The scholarship of a student is confirmed after voting.

STUDENTS STUDYING WITH BADRAKH ENERGY SCHOLARSHIP



D. Erdenetuya

University of Finance and Economics

My parents are herders. We are 6 in the family and I am the oldest child. I submitted my application after I found out about Badrakh Energy's scholarship program and I was accepted.

My four-year study is financed as part of this scholarship. Firstly, this four-year study allows me obtaining a superior education.

Secondly, it is a huge financial support to my family. I am indeed happy to have been a part of this scholarship.



E. Batsuuri

National University of Defense

This scholarship helped me fulfill my dream and achieve my goal. If I was not granted this scholarship, it was highly probable that I would not go to university due to the financial situation of my family.

Thanks to this scholarship, I am majoring in the subject as I wished. I believe that I could become a useful servant for my country in the future.

YOUTH STUDIED WITH BADRAKH ENERGY SCHOLARSHIP AND ALREADY STARTED THEIR PROFESSIONAL CAREER



T. Khatanbuuvei

Teacher of the general education school of Zuunbayan bag

I graduated from the Zuunbayan secondary school in 2016 and became a university student. I then paid my tuition fee by myself the first year and the next year I almost dropped out of my school.

During my summer break I returned to Zuunbayan bag and found out about this scholarship on which I decided to compete. And then, the result of this scholarship is now standing in front of you.

I am now a school teacher and I cannot imagine what I would be doing if I was not granted this scholarship. I assume that this scholarship has opened a very big opportunity and created a positive path in my life.



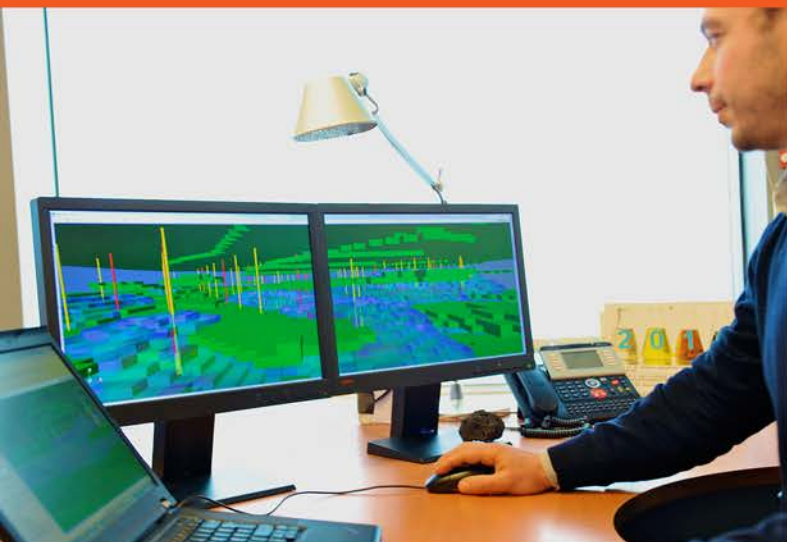
E. Saranzaya

State fund representative at the Governor's office of Zuunbayan bag

We are four in our family. My sister was fourth year student at university when I started university in 2015 so that my family had two students at the same time. It was tough to pay for two students since neither of my parents had a job.

I heard from my teacher about the scholarship. I was employed at the Governor's office in 2019.

A total of 59 students from Ulaanbadrakh soum and Sainshand soum of Dornogobi aimag benefited from 102 counts of scholarships from the program implemented by the company since 2010.



HYTEC IS A SOFTWARE DESIGNED THROUGH A COLLABORATION BETWEEN THE FRENCH UNIVERSITY MINES PARIS TECH AND ORANO MINING RESEARCH& DEVELOPMENT DEPARTMENT.

IT USES DATA FROM GEOLOGISTS' STATIC 3D MODELS REPRESENTING THE DEPOSITS TO SIMULATE THE MINING OF AN ISR DEPOSIT IN A DYNAMIC FORM.

3D dynamic modeling is a technological breakthrough, a major innovation of situ recovery in the mining industry. In in situ mining, as the name suggests, everything happens underground, between 150 and 500 m (deepness can vary depending on ore location) under the feet of the operators. This is a major difficulty of ISR mines: the miner does not see the object he is exploiting

Once mining is under way the operator seeks to optimize the process to improve recovery, and seek mineralization with better concentration, while at the same time looking to minimize the environmental impact. And it is precisely under these conditions that HYTEC modeling tools make all the difference, they make it possible to "illuminate" the deposit and guide the miner.

For the first time in the history of in-situ mining, there is the integration of geology, geochemistry and flow data to simulate and visualize the leaching dynamics of the ore's exploitation: from the dissolution of uranium by the solution injected under the ground to its transportation to the wells that will extract it on the surface

The information is processed for the miner and offers him a revolutionary control of the mine.

HYTEC has been deployed with success at the KATCO mine in Kazakhstan currently being operated by Orano Mining and Kazatomprom.

Let's see what the geologists and mining engineers are saying about this software.

Kuanysh Kasmoldanov

Geological Engineer, 3D modelling, KATCO

We model the flows of solutions and the leaching process and we examine from a geochemical point of view how the leaching solution is having an impact on our uranium reserves. HYTEC allows us to work with all the parameters: geology, geochemistry and extraction.

Olivier Regnault

Mining plan manager, Geochemistry expert, Orano Mining

When ISR injection and extraction wells are positioned over a part of the uranium reservoir non-favorable for extraction, it is possible to represent the difficulty that there will be to extract the uranium effectively. And, in contrast, if the geological model tells us that the conditions for recovery are good, HYTEC makes it possible to achieve easier recovery, or lower acid consumption.

As HYTEC is really the interface between the 3D geological model and production, teams find themselves working more closely together and thus more efficiently, both on the development of the technological block and also during operations too.

Understanding and modelling in real time the evolution of the interaction of elements underground helps miners to adapt operating conditions and better prepare the environmental monitoring and remediation. For example, it helps to calculate the time for remediation.

While the experiment at KATCO in Kazakhstan has shown good results, it is something that is totally transposable to other ISR mines, in particular those in Mongolia and in Uzbekistan.

 MYTH

Radioactivity does only exist where uranium deposit is or where uranium is mined.

Only people and livestock in Ulaanbadrakh soum, Dornogobi aimag are polluted with radioactivity because of the uranium deposit located there.

All radioactive materials are toxic to the health of people and livestock.

 FACT

It is not true. At every corner of the world we are exposed to radioactivity. It is present everywhere, even without human intervention. 28 elements out of the 109 known in the Mendeleyev periodic system—today – occur only as radioactive isotopes. This is the case for uranium, plutonium and radium. It means that except uranium, there are other chemical elements which are naturally radioactive. 70% of the radioactivity to which humans are exposed is naturally occurring. 30% of the radioactivity to which humans are exposed comes from applications of ionizing radiation mainly in the medical field.

FACTS: This is not true. In our daily life whenever we live in the world, we are exposed to radiation coming from cosmic rays, soil, ambient air and food and drink. The majority of the radioactivity we are exposed to are naturally occurring radioactivity. And this radioactivity has four sources.

COSMIC RAYS: Cosmic rays from the sun and outer space. They vary with latitude and even more so with altitude.

TERRESTRIAL RADIATION: Terrestrial radiation is emitted by numerous radioactive elements in the earth's crust, such as uranium and thorium. They vary with the type of soil and thus from one region to another.

AMBIENT AIR: Ambient air is containing emanations of radon, a radioactive gas produced by the decay of uranium in the earth's crust. This figure varies depending on the type of soil, building materials and ventilation.

FOOD AND DRINK: Food and drink contain radioactive elements. Once ingested, these elements settle in the tissues and bones.

70% of the radioactivity to which humans are exposed is naturally occurring

Following the request expressed by local administration and communities of Dornogobi, during the recent years the Government of Mongolia set up extended working groups which inspected whether the activities had a negative impact on environment, health of population and livestock. The inspections including relevant and competent state and government bodies (in 2013, 2019 and 2020) and the study of the international independent organization (Stantec, USA) reached the same conclusion that there was no negative impact to the environment and the health of people and livestock related to Uranium from the project activity. These conclusions are also supported by the experts and their interviews given to various daily newspapers like *G.Bat-Ireedui "Arkhangai province was the leader by the rate of the livestock congenital deformations"*, Zuunii Medee, October 12, 2020, U.Ulziitsetseg *"The soil and water indicators in Dornogobi aimag are related to the naturally occurring geological mineralization and not to the company activities"*, Udriin Sonin, October 22, 2020 and Professor N. Norov *"Uranium directly wasted into the air in Ulaanbaatar is more impactful than uranium lying 200 m deep in Gobi"*, Udriin Sonin, November 3, 2020.

This is not true. The radioactivity is largely used in medical field, industry, food industry, agriculture and in the cultural world as archeology.

In medical field: Radiodiagnosis is used to explore the human body and to diagnose certain diseases. The concept involves injecting specific radionuclides into the organism. This enables an accurate determination of organ morphology and reveal anatomic and functional anomalies.

In agriculture: The ionization of food products such as potatoes, onions and strawberries by gamma rays, electron beams or X-rays improves their preservation by stopping germination and destroying parasites and micro-organisms.

In cultural world: Heritage preservation can use gamma ray irradiation processes to eliminate insects, fungi and bacteria responsible for often-irreversible deterioration. The mummy of Ramses II benefited from just such a process in 1976. Thus, the radioactivity is widely used in many economy fields of the countries.



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