

**SUSTAINABILITY  
REPORT  
2019**





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### **Integrating Sustainability principles into our operation lays solid foundation of successful long-term business.**

Our company has been operating in the energy sector for the last 26 years. During this time, we have contributed to the prosperity of our country by implementing 200 projects that generated more than 793'271'800 kW of energy by December 2019 and provided a constant power supply to the Ukhaa Khudag mine, Tsogttsetsii soum and central energy systems.

In line with global trends, Mongolia's development, company advancement and employees' enhanced qualifications, our company is pleased to present our very first Sustainability Report, based on the 17 United Nations Sustainable Development Goals, to client organizations, employees and the general public.

In this report, we strive to demonstrate that we value the environment, the health and safety of our employees in the workplace and aim to be one of the companies which works in compliance with world standards showing how our operation meshes with general objectives of contributing to social development.

**Our initiatives on environmentally friendly operations** and minimization of adverse impacts include;

- Maintaining air composition indicators in the industrialization environment to a standard level,
- Dedication to bring water consumption levels to a minimum and promote reuse,
- Achievement on becoming one of the organizations that implement International Energy Standards.

Within the framework of balancing use of natural resources and introduction of responsible energy consumption, many initiations on reduction of energy wastage and inefficient internal consumption of Ukhaa Khudag distribution network were organized.

We have been **contributing to the socio-economic development** of our country by supporting domestic producers and suppliers, paying over 63.4 billion tugriks to the state budget over the past 5 years, and in 2019 alone we paid 20.9 billion tugriks in taxes. In addition to increasing the number of indigenous workers in 2019, we actively participated in community friendly events. As part of the housing program for Ukhaa Khudag Power plant employees, the initial stage of distribution began, since we planned to distribute a total of 51 apartments by 2021.

**In the field of workplace safety**, we have successfully equipped innovative safety features and approaches to our work as we cooperated with many international level companies. Moreover, in order to contribute to the career and educational development of our employees, our company organized more than 800 hours of training, costing around 100 million tugriks..

Integrating Sustainability principles into our operation lays solid foundation of successful long-term business.

Therefore, we aim to prepare this report annually to evaluate and improve implementation of our sustainability objectives.

Sincerely,

**DAVAAKHUU Chultem**

Chief Executive Officer

# Our sustainability objectives

## SUSTAINABLE DEVELOPMENT GOALS

As the United Nations promotes the 17 Sustainable Development Goals, companies that strive to be good corporate citizens pay more attention to doing business in accordance with ethical standards, contribute to the sustainability of the environment and society, and direct their activities in accordance with the goals in the field of sustainable development in order to leave our Descendants with the same opportunities and resources of our generation.

Throughout the entire MCS Group, we have defined our Sustainability Principles to be a community that is "environmentally friendly and committed to ensuring occupational safety."



6 Sustainable Development Goals that applies within the framework of MCS international business:





# SUSTAINABILITY OBJECTIVES

BUSINESS TRANSPARENCY	Everyone has the right to report incidents, violations and misconduct and act in accordance with laws, rules and standards.
SOCIAL RESPONSIBILITY	We contribute to the value of society, respect the interests of our customers and act in accordance with the standards of a responsible organization.
EMPLOYEE RIGHTS CENTERED	We respect the interests of our employees and focus on their education and personal growth.
ENVIRONMENTALLY FRIENDLY	We protect the environment by mitigating any impacts related to company operations.
WORKPLACE HEALTH AND SAFETY CENTERED	We continuously strive to eliminate all workplace injuries and illnesses by focusing on prevention measures (LTI prevention is among high priorities), employee engagement and leadership initiations.
ADVANCEMENT AND INNOVATION BASED	We strive to domesticate world engineering advancement in Mongolia, joining the general goal to prosper and develop globally together in search of environmentally friendly solutions.
RENEWABLE ENERGY-OPTION EMBRACED	We prioritize research and continually contribute to the global transition to clean renewable energy resources.

We started mapping our business operations against the UN 17 Sustainable Development Goals and greeted our Sustainability Model.

As illustrated by the diagram below, the MCS International Objectives and MCS Group Principles naturally fit complementary with 6 of the 17 Goals. This model gives us the basis for vision to work with development areas, including Social, Environment and employees Health and Safety.





## Our business at glance

### About MCS International LLC

MCS International LLC, the main pillar of MCS group, was established in 1993 and started business by providing consulting services in the energy sector. MCSI is a well-experienced national engineering company, which contributes to the development of Mongolia and actively participates in the modernization and renovation of energy and infrastructure sectors through developing and introducing integrated solutions, including modern technologies and safety approaches.



2019 Oyu Tolgoi Central heating plant expansion project was successfully implemented. Integrated Management System (ISO 9001:2015, ISO14001:2014, ISO 45001:2018, ISO 50001:2018 ) was introduced

2018 Successfully participated in Sainshand 55MW Wind farm project. Zamiin uud "Gegeen" 15MW and New Airport "Bukhug" 15 MW Solar power were successfully constructed

2017 Successfully participated in Oyu Tolgoi underground critical facilities construction project

2016 Successfully participated in Tsetsii 50 MW Wind farm project

2013 Mandalgobi-Tavantolgoi-Oyu Tolgoi 220kV, 400km OHL project, which is named as a mega project in Mongolia, was successfully implemented

2011 The first Power Plant project built independently by Mongolian engineers was successfully implemented. MCSI UHG branch was established to provide power distribution services to UHG mine and Tsogttsetsii soum areas

2007 EVA, Power Energy Testing, Calibration and Manufacturing Center, was established

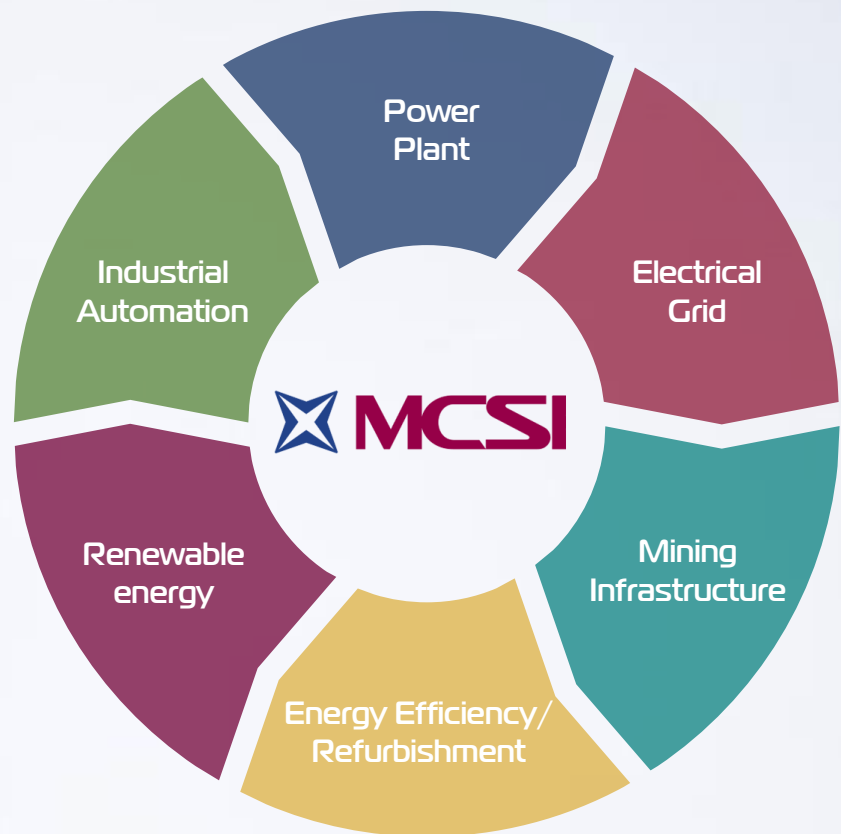
2004 Energy Network LLC was established as an electricity supplier and distributor

2003 Energy Technology center was established to introduce and market new technologies and equipment

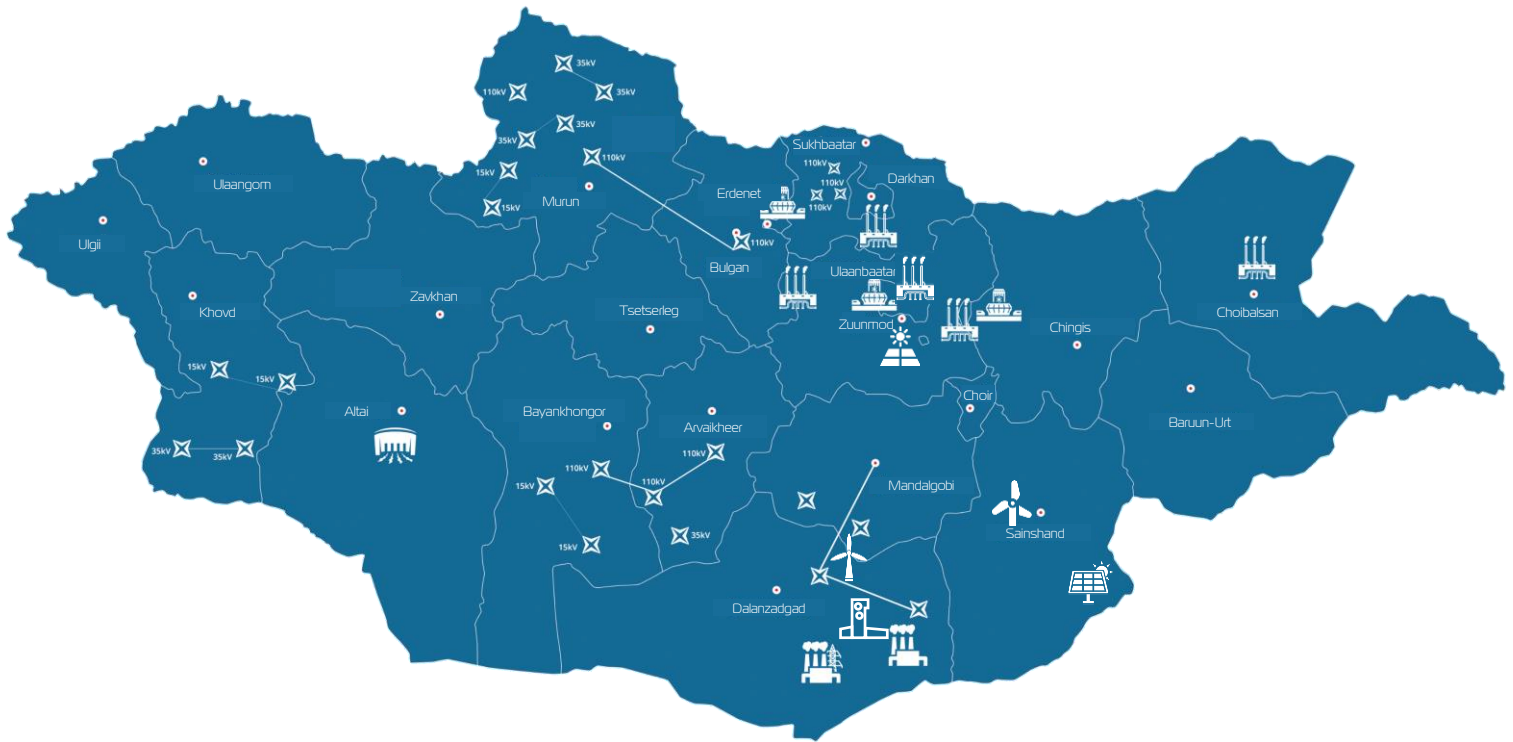
1997 Enerco LLC was established to provide heating supply services Energy Division of MCS International LLC was formed

1993 MCS International LLC was established and started its operations by providing consulting services in the energy sector

## Main fields of business



## OUR PROJECTS



“**TAISHIR**” 11 MW Hydro Powerplant



“**UKHAA KHUDAG**” 18 MW Powerplant



Oyutolgoi **CENTRAL HEATING PLANT EXPANSION**



**AUTOMATION** System Renewal



**HEATING SYSTEM** and Boiler Refurbishment



“**TSETSII**” 50 MW Wind Park



**BULGAN – MURUN** 110 kW Overhead Line, Substation



Oyu Tolgoi **UNDERGROUND CRITICAL FACILITIES**



**MANDALGOBI – TAVANTOLGOI – OYUTOLGOI** 220 kW Overhead Line, Substation



Zamyn-Uud “**GEGEEN**” 15 MW Solar Powerplant



“**SAINSHAND WIND PARK**” 55MW Wind Powerplant



Khushigiin Khundii “**BUKHUG**” 15 MW Solar Powerplant



# Integrated management system

MCS International LLC strives to save energy, reduce its environmental impact, promote health and safety, and meet the needs of commercial or non-commercial parties.

Due to the compliance of MCSI with Integrated Management Systems, it has received an international standard certificate that has been accredited by the JAS-ANZ International Accreditation Forum in the Australian-New Zealand region and certified by the Australian International Standard (BCert).

**ISO 45001:2018**

**ISO 50001:2018**

**ISO 14001:2015**

**ISO 9001:2015**

## Risk management

MCS International LLC carries out risk management in order to successfully achieve its goals and objectives.



MCS International LLC uses the ARM system to manage risks through the means of risk management procedures and risk management guides.

Everyone in our company are involved in risk management, which is important to prevent, reduce and control all possible risks, even the smallest ones.

## Business ethics

MCS International pays special attention to the implementation of Mongolian legal norms in its activities. We are guided by the MCS Group Code of Ethics, acting in strict accordance with the laws and regulations of Mongolia, observing all requirements in legal acts and other legal requirements of the Client.

We prioritize:

- ✘ Valuing business ethics, working in conformance with regulations and standards
- ✘ Prioritizing everyone's interests
- ✘ Avoiding discrimination, violation, threats and defamation
- ✘ Providing equal opportunity to clients and suppliers
- ✘ Treating competitors fairly
- ✘ Disapproving conflicts of interest







MCS International LLC seeks to ensure the health and safety of all its employees and subcontractors. In this framework, we are making continuous improvements in the systematization of activities by developing safety regulations, strengthening the safety attitude, domesticating international experience, and organizing leadership and health programs. Range activity of the company, all project units, and UHG work as part of an integrated system with the OSHA Department.



# HSE QUANTITATIVE TARGETS AND PERFORMANCE

We record and investigate all incidents and near misses. This will allow for an adequate response to each incident and prevent further incidents, and as a baseline and continuous improvement of our annual goals. In 2019, 1 (one) AIFR was recorded with all other targets met. In addition, our LTIFR and AIFR has achieved success by reducing the incident rate by 71-80 percent compared to last year.

## Target

## Performance



Potential Fatal Incident **0**

Improvements were made to the target area to prevent this type of accident



Keep the Lost Time Injury Frequency Rate to a low of **0.36** in 2019

Lost Time Injury Frequency Rate was **0.07**



Significant Incident **0**

No Significant Incident



Not exclude Medical Treatment Case Incident

Medical Treatment Case Incident **1**



First Aid Case, do not exceed **18**

First Aid Case were **17**, eye and finger injuries were the most common, and finger injury prevention planned for 2020.



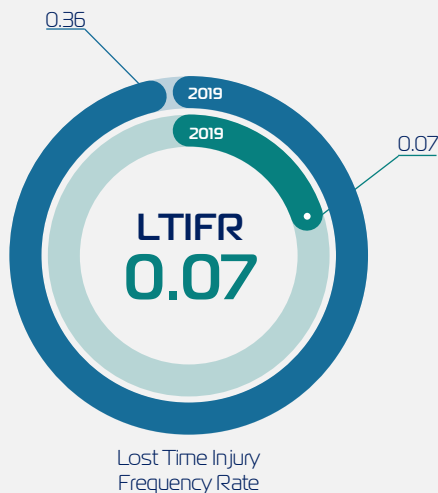
Environment incident, no more than **1**

No incident

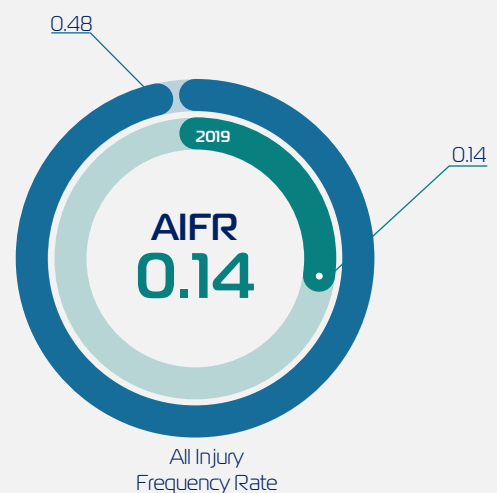


Property Damage, no more than **10**

Property Damage is **6**



In 2018, rate was 0.36 and In 2019, decreased by **80%**



In 2018, rate was 0.48 and In 2019, decreased by **71%**



Ukhaa Khudag Power Plant  
Tsogt Tsetsii soum, Umnugobi  
province.

# VOC VERIFICATION OF COMPETENCY ON HIGH RISK TOOLS

VOC for 34 personnel (overlapped)

 34

VOC on 5 types of tools

 5

We conduct Verification of Competency in order to provide more safety measures for our employees who operate with high risk tools.

Within the framework of VOC, we introduce handbooks for tools, assure compliance with related rules and procedures, provide professional guidance from experienced specialists and verify qualifications with vocational tests.





## VERIFICATION ON ELECTRICAL SAFETY AT WORKPLACE

We treat with respect the safety of ourselves and co-workers when operating in power plants or any high electrical risk locations . Since 2019, we have started digitalizing tests for electrical safety in the workplace which covers operation and equipment use. These mandatory examinations are a Mongolian law requirement and applies to engineering and technical employees. **DIGITALIZING** the test materials provided more opportunity to accurately and quickly evaluate test-takers knowledge.



# ISOLATION PROCEDURE

We have implemented a robust isolation procedure based on data of retrospective or prospective incidents in the Energy sector and lessons learned from those experiences. Ensuring complete isolation on energy sources provides better safety during completion of works.

All employee  
Introductory training

180

Level 1  
ISOLATION  
officers trained

61

Level 2  
ISOLATION  
officers trained

21



Our activities on health protection of employees:

- Organizational health days
- Regular medical checks
- Procedures on health protection
- Corporate sports days
- Daily exercise time
- Companywide insurance services for our employees

Our employees regularly receive medical check-ups and in 2018 we enrolled a total of

**370 employees**

company spending a total of **₮ 105,7M**

Depending on work position types occupational accident coverage insurances worth of **₮ 15-24M** per employee was provided.



## Activities on diminishing environmental impacts

### Renewable energy

Within the framework of supporting renewable energy, MCS International LLC had successfully worked on projects of Solar and Wind Power Plants accumulating a total of 30MW and 105MW respectively.

### Air emissions control

MCS Coca Cola LLC utilizes conventional coal-fired heating boilers and in accordance with the effort to reaching Municipal's objectives to decrease air pollution and support sustainability, MCS International are currently working on the construction of Japanese and Korean made Liquefied Petroleum Gas-fired (LPG) heating boilers which are more environmental friendly.

Also, within the framework of air emissions control, Ukhaa Khudag Power Plant has been equipped with advanced technology electrostatic precipitator (ESP) filtration device that removes fine particles, such as dust and smoke, from a flowing gas 99.9 percent. Moreover, this filtration device is highly energy efficient.

Ukhaa Khudag also is equipped with circulating fluidized bed (CFB) boilers.

As for temperatures inside the furnace, while a regular boiler reaches 1,400-1,500°C, temperatures inside a CFB are in the lower range of 1000°C,

thus inhibiting the generation of thermal nitrogen oxides (NOx whose production is dependent on combustion temperature). Furthermore, with the use of two-stage combustion, NOx generation can be limited to less than 100 ppm making it more environment friendly.

### Water efficiency

While most conventional power plants utilize cooling towers that use water and air to cool down the steam, Ukhaa Khudag's 18MW power plant has an expensive air-cooled condenser installed, which can cool the steam using only air. This allows the plant to use 8 to 9 times less water than a conventional plant, which is the most suitable and eco-friendly engineering solution for power plants located in arid Gobi desert areas.

Ukhaa Khudag's dry bottom ash handling system continuously burns bottom ash, using ambient air instead of water during the extraction and cooling phases. This results in lower emissions and heat energy which is highly suitable for Gobi desert. Dry ash handling technology saves approximately 2 million tons of water compared to that of technology used in conventional power plants.

### Reducing waste

Ukhaa Khudag Power Plant regularly implements

preventative and monitoring measures for possible leakages related to waste fuel and oil. Furthermore, in order to keep the environment clean, Ukhaa Khudag ensures regular cleaning of waste fuel and oil storage units and fencing of the area as part of its environmental impact control.

MCS International successfully completed the Central Heating Plant Expansion Project of Oyu Tolgoi in between 2018 to 2019. Our company had constantly organized activities such as disposal separation campaigns, employee reward events related to waste separation in order to monitor and control waste spreading. MCSI continues to apply these examples to its Ukhaa Khudag Power Plant and projects.

### Energy saving

In order to decrease Internal power consumption, we equipped power plant facilities with frequency inverter. As a result, Ukhaa Khudag had successfully decreased its internal consumption rate to less than 10 percent which is considered highly efficient in comparison to that of other power plants in Mongolia

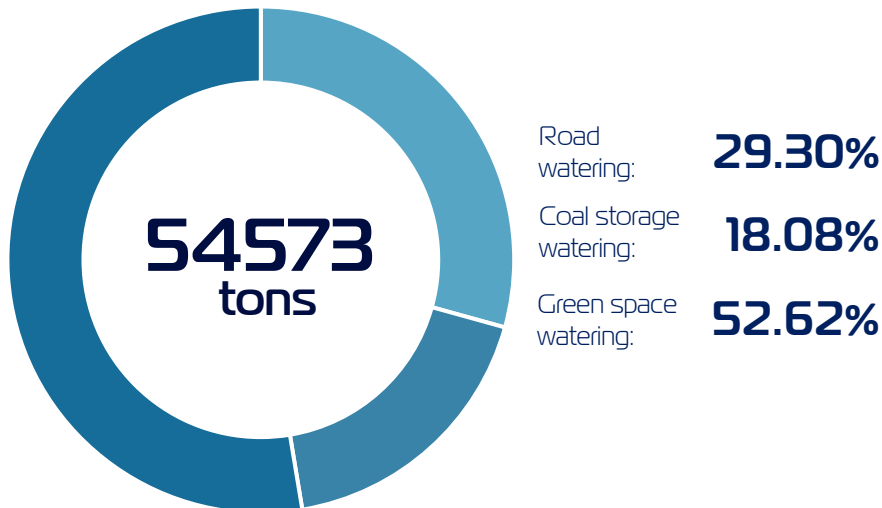


# RESPONSIBLE USE

## WATER USE

Ukhaa Khudag Power Plant had been re-using its treated waste water in light vehicle and through mine roads dust suppression . Part of treated waste water is also re-used in green spaces in the power plant area. In cold weather, we store excess and waste water in a sump after transporting it from the resource. As a result of this effort, we had saved approximately **54573 tons** of water in total.

## DISTRIBUTION OF WASTE WATER RE-USE SHOWN IN PERCENTAGES

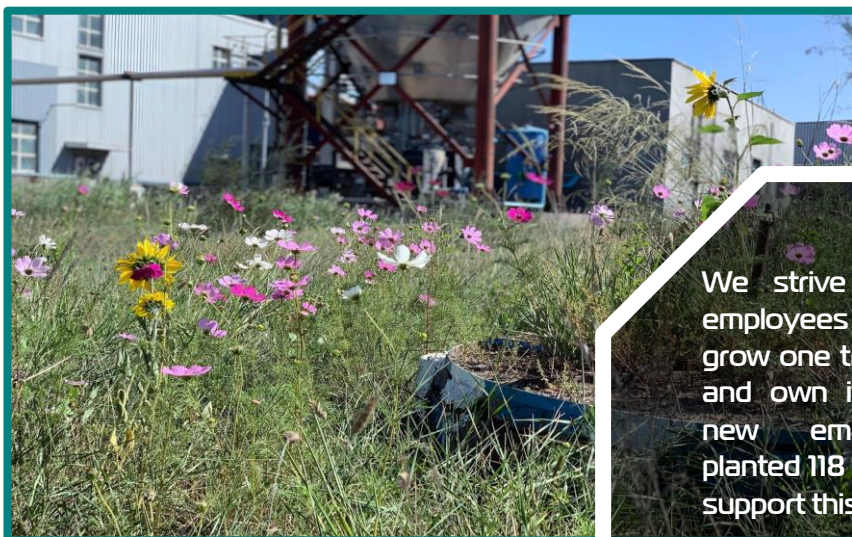


## PREVENTION OF SOIL CONTAMINATION

Ukhaa Khudag continuously implement preventive and monitoring measures for fuel and waste oil spills . In this framework, test results of samples from contamination prone area is regularly meeting the standards. Oil waste storage spot is had been fenced and regularly cleaned.

## IN THE FRAMEWORK OF INCREASING GREEN SPACES

Ukhaa Khudag Power Plant makes great efforts to increase green spaces within the Gobi desert area as it is located in Umnugobi Province. From 2010 to present, we have created green spaces of 15541,6m<sup>2</sup> total and it consists of: Tree plantation of 3505 trees and bushes and lawn plantation of 1852,4m<sup>2</sup>. Currently a growth of 86 percent and we plan to continuously increase green spaces in the future..

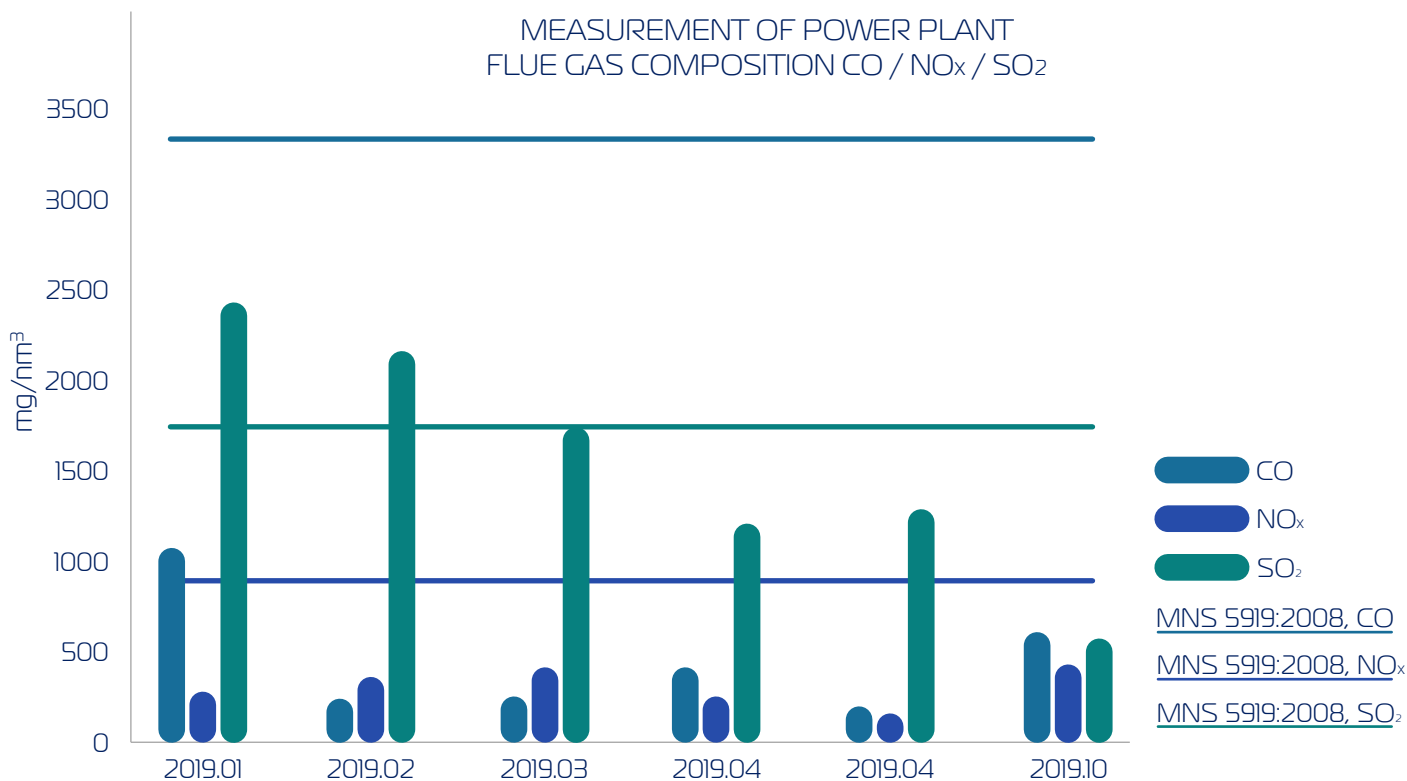


We strive to have our employees volunteer to grow one tree at minimum and own it. In 2019, 26 new employees had planted 118 trees in total to support this objective.

# MEASUREMENT OF POWER PLANT FLUE GAS COMPOSITION

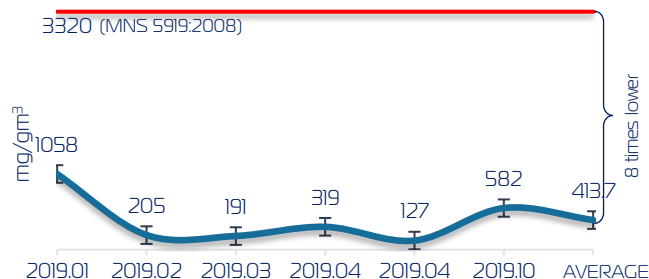
Ukhaa Khudag Power Plant has been measuring flue gas composition and has taken Carbon monoxide (CO), Nitric oxide (NO<sub>x</sub>), Sulfur dioxide (SO<sub>2</sub>) levels under high emphasis and monitoring in order to prevent them from polluting the air. After measuring we convert it into the standard atmosphere and compare it with Mongolian standard MNS 5919:2008.

The international standard atmosphere is a unit of pressure defined as 101,325 Pa, which is equivalent to 760 mm Hg and excess air coefficient rated on = 1.4.

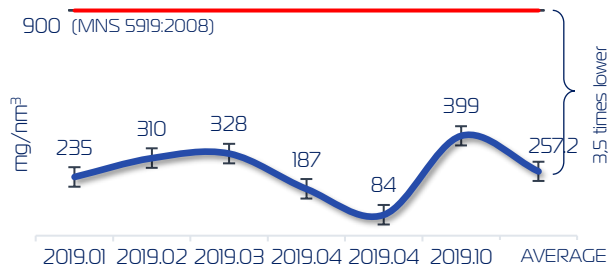


In the first quarter of 2019, Sulfur dioxide (SO<sub>2</sub>) level in flue gas composition was over the rate required by MNS 5919:2008. Corresponding measures of Ukhaa Khudag led to repairing air preheater, metal structure of cyclone separator and changing furnace nozzle. As a result, air flows reached the standard rate, combustion process normalized and decreased the amount of unburned content providing us with a desired result.

CO rate in measurement of power plant flue gas composition



NO<sub>x</sub> rate in measurement of power plant flue gas composition



Ukhaa Khudag Power Plant flue gas composition rates as of today

- Carbon monoxide 8 times less than the rate required by Mongolian standards
- Nitric oxide 3 to 5 times less than the rate required by Mongolian standards
- Sulfur dioxide regularly less than the rate required by Mongolian standards

## Human rights

MCS International had always paid great attention to the human rights and self-development of our employees. We strive to be a good corporate citizen shifting from traditional business methods in an effort to create a comfortable workplace for our employees.

What we prioritize in our activities:

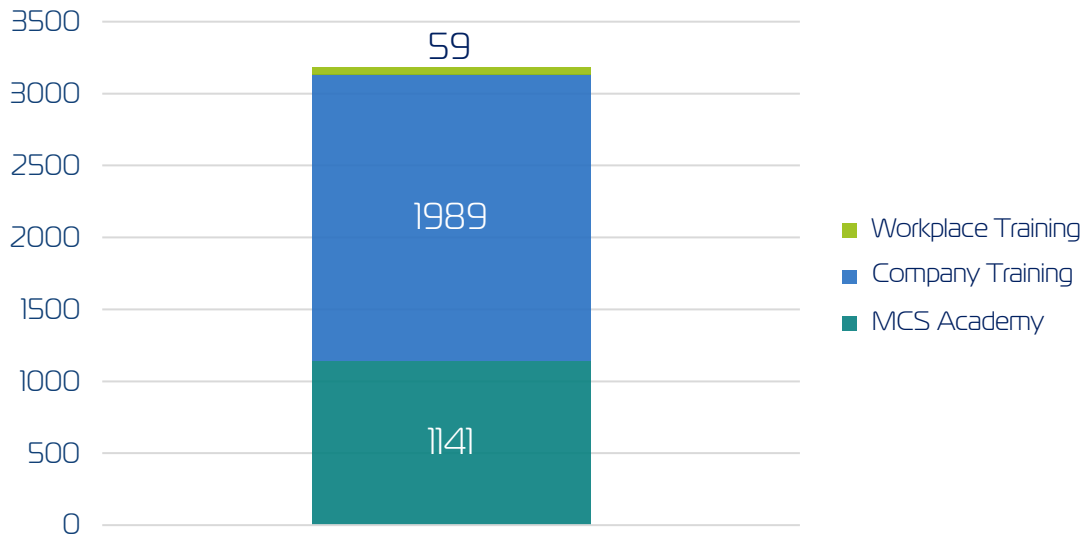
- We treat human rights issues with high importance aspect of decision making when developing rules and procedures regarding business and policy
- We value equality and fairness in labor relations
- We always promote our employees' continuous educational and personal development
- We support employment of indigenous people
- We aim to support gender equality in the work environment which is free of discrimination
- We strive to strengthen our positive work culture everywhere





# EMPLOYEE DEVELOPMENT

## Total training hours

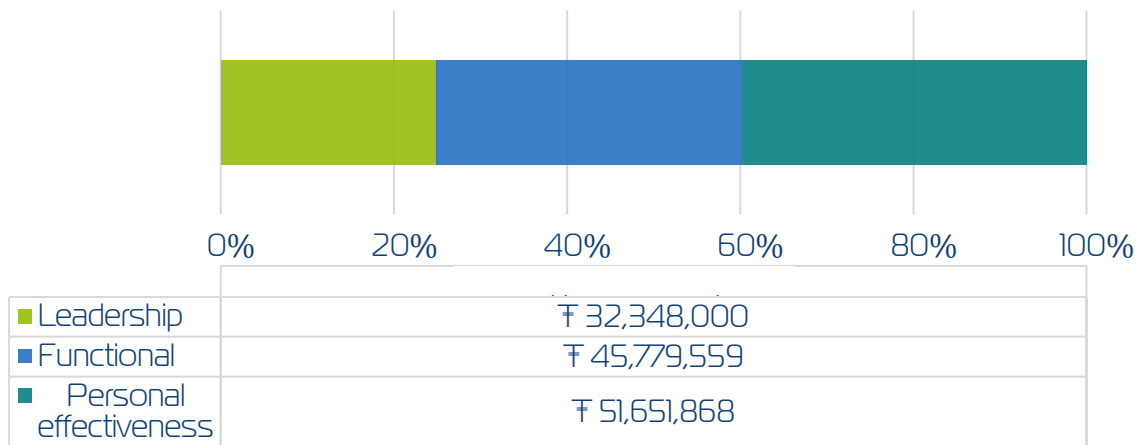


**816** Employee engagement

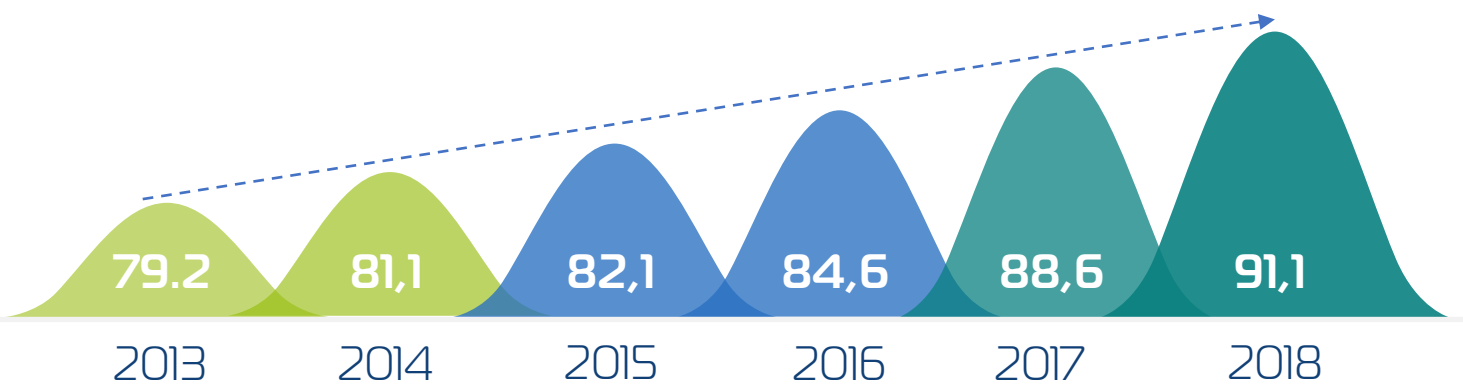
**Total**  
Training cost  
¥ 129,8M

**9'272**  
Training man hours

## Training cost/by categories/



★ **Company culture survey** rating increased by 3 percent in 2018



# LEADERSHIP PROGRAM

Since 2019, we implemented our “Comprehensive Leadership Program” to enhance our employees’ quality of life, opportunities to learn and develop themselves. Within the scope of this program, we have been regularly hosting “MCSI Sunrise” morning meetings in which we invite leaders from different sectors and have conversations while drinking coffee together where we aim to share knowledge and information through these honorable guests.

## MCSI SUNRISE

INSPIRATION

Until now, our “MCSI Sunrise” have got already 4 guests and each meeting has its own distinctive topics. For instance, our very first guest discussed about why we have to read books and where personal development starts from. While our other guests shared from their own experiences about success algorithms, healthy lifestyles, life work balance and mental health.



In addition to Leadership program, in order to keep balance of our employees’ everyday lives and create a working environment which provides content and steady pace for working, MCS International LLC had switched to flexible working schedules. This change had notable impact in positive and steady balance of life and work of our employees thus bringing enhanced efficiency.

## SOCIAL RESPONSIBILITY AND EMPLOYEE RIGHTS

Under the initiatives of “Free housing program for Ukhaa Khudag Power plant employees”, in 2019 we have given 17 apartments out of 51 apartments which we plan to give away completely by 2021. As we started implementing the program, we had already seen contentment with our employees working and living in a comfortable environment with their families.



Within the framework of promoting indigenous workforce, we support and employ locals of the areas where we run our business. Currently, there are 48 employees from Umnugobi province working at our company.



In an effort to sustain and promote equal rights and opportunities, we have currently employed 20 staff with high school education, 9 staff with secondary school education and working together as a team.





# TEAM OF THE YEAR

## award of Oyu Tolgoi Project



In 2019, MCS International LLC received **“Team of the Year”** award from “You are our Pride” success recognition semi-annual event of Oyu Tolgoi LLC.

MCS International LLC participated as a major contractor of the Oyu Tolgoi Central Heating Plant expansion project which was successfully implemented between 2018 to 2019 with Worley LLC (previously known as Jacobs) as Engineering Procurement Construction Manager on the Project.

Within short period, we have successfully overcome the challenges of culture and language differences working together with international specialists, strengthening safety approaches, building positive work environment and improving our performances and proved that we prioritize our people.

In our company culture, we believe that all individuals openly sharing their expertise and knowledge contributes greatly in expanding all employees’ skills. We highly value intellectual and practical skill demonstrations we received from Oyu Tolgoi LLC and Worley LLC.



# Social and economic development

MCS International LLC had eagerly contributed to social and economic development of Mongolia since established. We have been paying taxes on time, promoting local purchases and actively participating in and contributing to volunteer works.

## Taxes paid in last consecutive years:

2016	2016	2017	2018	2019
6,807,321,038.66	6,045,260,607.16	14,831,951,419.92	14,809,740,585.73	20,906,735,078.52

## We promote volunteer works

MCS International LLC employees had contributed to projects such as **Magical place II** and Carebox by **Rotaract Tsetsee Gung Club**



MCS International LLC had fully facilitated a whole classroom of University of Science and Technology of Mongolia



Mongolian University of Science and Technology  
Ulaanbaatar, Mongolia

## We support local business and manufacturing:

Total local purchase amount in 2019 was **115,950,298 MNT**

We have prepared this report in support of United Nations 17 Sustainable development goals and the Global Reporting Initiative (GRI).

We are pleased to receive any thoughts, comments and questions about this report – please email [Munkhsuld.g@mcsi.mn](mailto:Munkhsuld.g@mcsi.mn) to share yours.



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