

case study

USA

Peabody Energy completes Mongolia's first coal mine restoration project

As the world's largest, private sector coal company, Peabody Energy set a strong and sustainable precedent when, in 2010, it completed the first coal mine restoration project seen in Mongolia, setting best practice standards for environmental protection. One year after seeding, the restored site is a lush pasture, with waist-high forage, more than four times as productive as adjacent native grazing lands.

Mongolia has some of the richest untapped coal reserves in the world. Bordered on one side by China and the other by Russia, it is ideally situated to serve China and other Asian markets, which are expected to generate approximately 90% of coal's demand growth in the next 20 years. Coal is a key element of Mongolia's long-term economic development strategy.

Peabody Energy acquired the Ereen Mine, located on Mongolia's remote northern steppes, through a joint venture in 2009.



Shortly thereafter, the mine was closed for economic and logistical reasons, creating an important opportunity to establish best practices for land restoration, in what would be a first-of-its-kind project for Mongolia.

The company assembled an international team of more than 60 experts and workers, including its own environmental scientists and engineers, Mongolian engineers and support staff, the Mongolian Agricultural University and the Mongolian Forage Seed Producers Association (MFSPA).

The team was led by Peabody Energy's Senior Manager for International Reclamation, Vern Pfannenstiel, whose three-decade career had previously included work across the western United States and on Black Mesa in north eastern Arizona. Restoration projects on Black Mesa required Pfannenstiel to balance energy resource development with the needs of the local Native American community – an experience that would prove invaluable in Mongolia.

Challenging conditions

It is a nine-hour drive from the capital, Ulaanbaatar, to the remote Ereen site along many unpaved roads, which provided

challenging logistical and resourcing issues. The workforce weathered the highly variable climate conditions at the project camp in traditional, circular felt tents, known as gers.

Specialised seeding equipment needed for the project was nowhere to be found in Mongolia, so the Peabody Energy team had a John Deere box type seeder shipped from the western US to the project site – a five month odyssey. It was the first machine of its kind ever used in Mongolia, and once it was no longer required, the team donated it to the MFSPA.

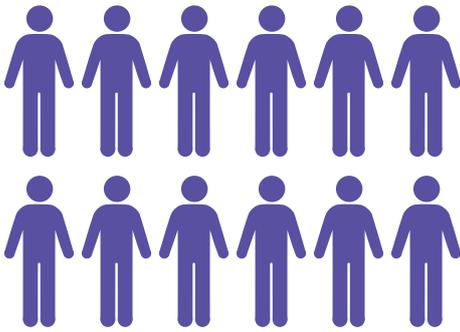
The machine will allow the MFSPA to complete a number of other important restoration projects. Dr D Tumenjargal of the MFSPA – an expert in small restoration research projects, known to the team as “Dr Tume” – called it a “dream come true”.

Specialised skills were equally lacking, so the team trained a skilled workforce from scratch, recruiting people with construction backgrounds and teaching



Population

2,754,685



Area

1,564,115km²



Percentage of area covered with water

0.43%



Find out more

To read more about Peabody Energy's mine restoration work, visit www.peabodyenergy.com

To find out more about the World Coal Association and our work, visit www.worldcoal.org or email info@worldcoal.org

them reclamation, safety and equipment best practice behaviour. The Mongolian workforce rose effectively to the difficulties of the remote site conditions, and met the maintenance and operational challenges with ingenuity and enthusiasm. Despite the challenging working conditions, the project achieved more than 60,000 work hours over 12 months without a lost-time incident.

Think globally, act locally

The \$1 million project transformed the former mine site into 44 acres of lush steppe grassland. It has created productive pastureland for traditional livestock grazing and provided a source of fresh drinking water in an area that did not previously have easy access to potable water.

Peabody Energy carried out the restoration with the nomadic community's long-standing cultural practices and land uses in mind. The new community well separates drinking water from livestock water, protecting the purity of water intended for human consumption. The design took into account the harsh conditions typical in Mongolia.

The restored landscape also incorporates a surface pond where local herders can bring their cattle, goats, horses and sheep to drink. Fencing protects the reclamation area from free-roaming livestock during the establishment phase of the project. Recent monitoring indicates that, with forage production running at four times that of native lands, the site has strong potential as a hay production resource, critical for feeding local livestock during the harsh winter.

All the project's camp supplies, construction materials and parts were purchased locally or through established manufacturers with branch offices in Mongolia. As well as transferring technical knowledge to the local workforce, Peabody Energy donated materials, supplies and housing from the project back to the local governments and herders, and employed local families as caretakers.

Two local families, one of which has grazed its herds at Ereen for generations, accepted responsibility for ongoing site

maintenance and management. Another family took custodianship of the well, and keeps the upstream watershed free from potential contaminants.

Involving the community

Protecting cultural resources and traditions is key to sustainable mining practices. Throughout the project, the team held community outreach meetings to inform the local herders about the need to protect the restored site and sustainably manage it, while the new vegetation is established. Local government officials supported the project from an early stage, and their guidance led to the inclusion of the well and pond.

The governor of the local Saikhan Soum community, officials from the Bulgan province and the Ministry of Mineral Resources and Energy, local residents, Peabody Energy personnel and members of the restoration team all celebrated together when the completed site was dedicated – just one year after the project began.

Peabody Energy has since gone on to help organise and sponsor Mongolia's reclamation training seminars in 2010, which bring together experts from around the world. The company is also helping to train Ministry officials and university students in reclamation and environmental best practices. The foremost reclamation experts in Mongolia today are in Peabody Energy's employ. The Ereen project sets a new model for protecting Mongolia's environment and has been recognised with multiple honours by the Mongolian government.



Ereen Mine Location