



# Resource Conservation Project



## Jilin Methane Power Project

This project captures methane from the Meihe coal mine in the Jilin Province of China, and uses it to generate electricity. The total emissions reduced are estimated at 81,200 tCO<sub>2</sub> equivalent, verified to the Voluntary Carbon Standard.

## Technology partner

Liaoyuan Coal Mining Group Co., Ltd.

## Country

China

## About your project

Coal is formed from the gradual breakdown of organic matter, creating methane, which is stored in large quantities within coal seams. Methane is 21 times more powerful as a greenhouse gas than carbon dioxide (CO<sub>2</sub>) and during mining, the coal fractures and this gas is released.

Before this project, over four million cubic meters of methane were extracted from the mines and directly released into the atmosphere through extraction stations and a well ventilation system. Now methane is captured from two of these wells, No. 2 and No. 3, and used to generate electricity. This energy is sold to the Northeast China Grid, displacing some of the electricity which would otherwise have been derived from fossil fuel power plants. As such, the emission reductions generated by this project are twofold: preventing coal mine methane being released into the atmosphere, and displacing electricity supplied to the Grid with cleaner energy.

Methane reduction projects like this can also improve mine safety and productivity, increasing revenue and helping to promote the development of integrated resource utilisation technology in China's coal mining industry.

In addition to the climate benefits, this project has helped support the local people through the creation of 20 jobs and avoided pollutants such as sulphur dioxide, nitrogen dioxide, dust and solid waste resulting from fossil fuel power stations.



These images have been provided by individuals working with the project partners

## About coal mine methane

Coal mine methane (CMM) is released from coal and surrounding rock strata through mining practices, including surface and underground mining. Methane is an explosive gas which is hazardous to coal miners at certain concentrations in underground mines, so is usually extracted and released into the atmosphere before or during mining activities to protect miners. However, methane is also a potent greenhouse gas (GHG) so preventing its release into the atmosphere presents an important opportunity to lower global emissions. CMM is primarily released from: drainage systems that employ vertical or horizontal wells to extract methane before mining; ventilation systems that circulate fresh air to dilute in-mine concentrations to below explosive levels; closed/abandoned mines from where CMM escapes over many years through open shafts and cracks. Installing wells which extract CMM to the surface for capture and combustion prevents it from being vented into the atmosphere. During combustion, methane is converted into carbon dioxide, significantly reducing its global warming potential. In some instances, this waste gas is also captured and utilized to produce power and heat, through the installation of generators. This displaces energy produced from fossil fuel power stations, further lowering GHG emissions.



## How carbon offsetting helps the project

It is expensive to develop and operate methane capture technologies and that is where carbon finance can play an important role. Coal mine projects like this one, are not required by law to capture methane and often have to overcome financial and technological barriers to realize implementation. Carbon finance provides an additional revenue stream helping to make these projects an attractive and viable option. In this case, the incentives from carbon finance are enabling the capture and combustion of landfill gas rather than allowing methane to escape into the atmosphere.

The reductions in CO<sub>2</sub> emissions achieved by this project are incremental to 'business as usual' and measured by an independent verifier to internationally recognized standards. These are bought as 'carbon credits' by clients of The CarbonNeutral Company to 'neutralize' their own emissions.

### Verification:

This project is being verified to the Voluntary Carbon Standard (VCS). A copy of the documents relating to this project can be found within the project registry of CarbonNeutral.com



Project area co-ordinates:

No.2 Well has geographical coordinates of latitude 42°20'00" North and longitude 125°26'00" East. No.3 Well has geographical coordinates with latitude 42°20'48" North and longitude 125°28'11" East.