

Atlas Copco China Provides Total Solution for Coal Bed Methane Drilling **- Complete drilling equipment and services increase overall efficiency**

As a premium energy and chemical raw material, coal bed methane (commonly known as “coal mine gas”) is a non-conventional natural gas found in coal beds, composed primarily of methane. It is mainly absorbed on the coal particle surfaces or dissolved in water on the coal bed. Since gas is the main potential hazard for causing coal mine explosions and also generates greenhouse effects 21 times that of CO₂ when discharged directly into the atmosphere, the Chinese Government is keen to better understand how coal bed methane may be utilized for various applications. In the “11th Five-Year Plan” it clearly states that more efforts shall be made in scientific research, exploration and development. In addition, preferential policies will be developed for related enterprises in terms of taxation and equipment investment so that the green and environmentally friendly industry of developing and utilizing coal bed methane can receive greater attention.

It is stated in the 11th Five-Year Plan that four objectives shall be achieved by 2010:

1) the national total output of coal bed methane (coal mine gas) shall reach 10 billion m³, including 5 billion m³ coal bed methane extracted from the ground and 5 billion m³ gas extracted from wells;

2) the quantity of coal bed methane utilized shall reach 8 billion m³, including 5 billion m³ coal bed methane extracted from the ground and 3 billion m³ gas extracted from wells;

3) the newly added geological reserve of coal bed methane shall reach 300 billion m³; and

4) efforts shall be made to gradually establish a coal bed methane and coal mine gas, development and utilization industry system.



Since the world is running short of energy supplies, the prospect of large-scale development and utilization of coal bed methane as a premium, high-efficiency and clean energy is very attractive. According to some experts, coal bed methane has many advantages and potential uses as it contains nearly no sulfur and therefore results in

minimal corrosion to related equipment; it generates few pollutants upon combustion; it combusts to give off a gaseous fertilizer that can enhance photosynthesis in plants;

it can reduce methane emission and effectively alleviate the greenhouse effect. Therefore it can bring about enormous economic benefits as a high-efficiency, clean energy. If coal bed gas is fully utilized it can be used to produce electricity, industrial fuel and residential fuel; as well as liquefied into automobile fuel and other extensive uses including the production and synthesis of ammonia, formaldehyde, methanol and carbon black.



In China, Shanxi province is a major coal producer. The Qinshui basin, located in southern Shanxi province, is now an industrial developer and producer of coal bed methane using one of the top gas belts with a gas reserve of more than 1000 billion m³. The coal bed of Qinshui basin is of moderate depth (300-1000m), high in gas content (19-26 m³ per ton) and has good coal bed methane resources. Its stratum occurrence is smooth with few faults, and the coal bed has high cleat development (530-580 streaks/m) and penetration rate (0.5-1.0md) offering good geological conditions for coal bed methane development. One of the main local companies specializing in coal bed methane extraction, utilization, collection and transportation is Qinshui Lanyan Coalbed Methane Co., Ltd. (“Qinshui Lanyan”), a subsidiary under Jincheng Coal Mine Group.

In 2008, Qinshui Lanyan purchased an RD20 truck-mounted drill manufactured by Atlas Copco, which was matched with an Atlas Copco XRVS476 portable air compressor. When using a total set of Atlas Copco “down the hole” air drilling

equipment, a 400-500m well can be completed within 5-6 days. By comparison with traditional domestically-made mast-type water 2000 drilling rigs, the speed using Atlas Copco equipment is increased by 300%, while labor savings of 2/3 are made to create overall efficiency improvements of 70%. More significantly, this construction technique has little impact on the environment, reduces the workload of the workers and generates substantial economic benefits overall. Acknowledging these benefits, the company has purchased a second Atlas Copco truck-mounted drill and portable air compressor, and added a **70 bar Hurricane booster (model B7-41/1000)** for use in coal mines 700-800m in depth or in situations where there is a high volume of gushing water underground. So far, all the equipment has been transported and installed at the construction site of Qinshui Lanyan and the first well has been completed.

The main equipment necessary for shallow oil and gas air drilling includes a vehicle-borne drilling rig and device, a portable air compressor and a booster. In May 2008, Atlas Copco acquired the Hurricane booster business from Grimmer Industries, Inc., a manufacturer of boosters for more than 40 years. This has made Atlas Copco the only manufacturer that is able to provide the entire set of equipment. It not only provides customers with full experience and actual application guides, but also provides all after-sales services, therefore removing the need to coordinate multiple suppliers simultaneously and save customers time. It is believed that in the near future, a complete set of Atlas Copco's yellow air drilling equipment will become part of the beautiful scenery in the major oil and gas fields of China.

Atlas Copco is a world leading provider of industrial productivity solutions. The products and services range from compressed air and gas equipment, generators, construction and mining equipment, industrial tools and assembly systems, to related aftermarket and rental. In close cooperation with customers and business partners, and with 136 years of experience, Atlas Copco innovates for superior productivity. Headquartered in Stockholm, Sweden, the Group's global reach spans more than 160 markets. In 2008, Atlas Copco had 34 000 employees and revenues of BSEK 74 (BEUR 7.7). Learn more at www.atlascopco.com.

Atlas Copco's Compressor Technique business area develops, manufactures, markets, and services oil-free and oil-injected stationary air compressors, portable air compressors, gas and process compressors, turbo expanders, electric power generators, air treatment equipment and air management systems. It also offers specialty rental services. It innovates for superior productivity in applications such as manufacturing, construction, and the process industry worldwide. Principal product development and main manufacturing units are in Antwerp, Belgium. More information is available on www.atlascopco.com.