

Case Study

Taiwanese Energy Company

“We provide gas detectors that meet the customer’s specific requirements; they have both gas and dust certifications and provide bespoke sensor and output ranges. Part of the scope of supply is maintenance support and spares availability, and our Taiwanese distributor has provided excellent local support.”

Gix Lee, Area Sales Manager, Crowcon

> The Background

The client in this case study is a long-established, state-owned energy company in Taiwan, providing electricity to the island’s 23 million residents and many enterprises. This places the firm at the very heart of Taiwan and makes it fundamental to domestic life, traditional industries and emerging high-tech businesses.

The energy company currently operates three nuclear and five coal power plants, as well as various smaller plants based on hydro, wind, thermal and solar power.

There are plans to decommission the coal-fired plants and move to natural gas by 2023; the coal plants are largely old, with dated equipment and increasing maintenance costs, the price of fossil fuels has been consistently high for some time and demand for low-carbon energy has risen. The enterprise now favours a policy of energy conservation and carbon reduction.

> The Requirement

Coal power plants create several challenges related to hazardous gases and their detection. Firstly, the transportation and pulverisation of coal makes plants incredibly dusty and this poses a high risk of combustion. Fine, bituminous coal dust becomes suspended in air and highly explosive. The smallest spark, for example from plant equipment, can ignite the dust cloud and cause an explosion that sweeps up more dust, which explodes in turn and so on in a chain reaction. This can cause serious harm to both people and property.

Secondly, coal power plants generate large volumes of carbon monoxide (CO), which is both highly toxic and flammable, and must be accurately monitored. Other dangerous gases found on site include methane (CH₄) and hydrogen (H₂).

These risks make gas detection extremely important for the customer in this case, which became clear when a 2014 tender for the phased replacement of dated gas detectors – a contract that was supposed to support the energy company through a six-year upgrading project – did not deliver.

Back then, Crowcon did not tender for the project because it called for detectors with ATEX flammable dust certification. At that point, Crowcon did not have dust certification. The customer appointed another supplier, but things did not go well. The competitor’s detectors proved unstable and readings ‘drifted’, also the output (4–20mA) was not scalable.

> The Approach

With the launch of Xgard Bright, Crowcon was able to meet the client's dust certification requirement and provide a solution to their gas detection problems. In 2017, Crowcon offered the energy company a trial of Xgard Bright, which has dust certification and scalable outputs.

Conventionally, signal output follows sensor range, but this firm wanted a range of 0–100% LEL with an output of 0–25% LEL. **Xgard Bright** can do this. The company was also conscious of the risks arising from dust and flammable gases – **Xgard Bright** has ATEX flammable dust certification, as well as gas certification and the ability to detect multiple flammable and toxic gas hazards. The many gases it can detect include those of particular interest to this client, namely methane (CH_4), hydrogen (H_2) and carbon monoxide (CO).

The energy firm's trial of Crowcon's **Xgard Bright** was very successful, and the company now specifies **Xgard Bright** of its plant renewal program.

> The Outcome

Crowcon has delivered 150 units of **Xgard Bright** detectors for use in the customer's new plant and will provide another 150 later in the year as part of their plant renewal program.

The arrangement between this prominent Taiwanese energy firm and Crowcon includes maintenance support and spares provision, and Crowcon's Taiwanese distributor has provided excellent local support, leading to great outcomes all round.

