

azbil  
FIELD

**Eastern Petrochemical  
Company (SHARQ)**

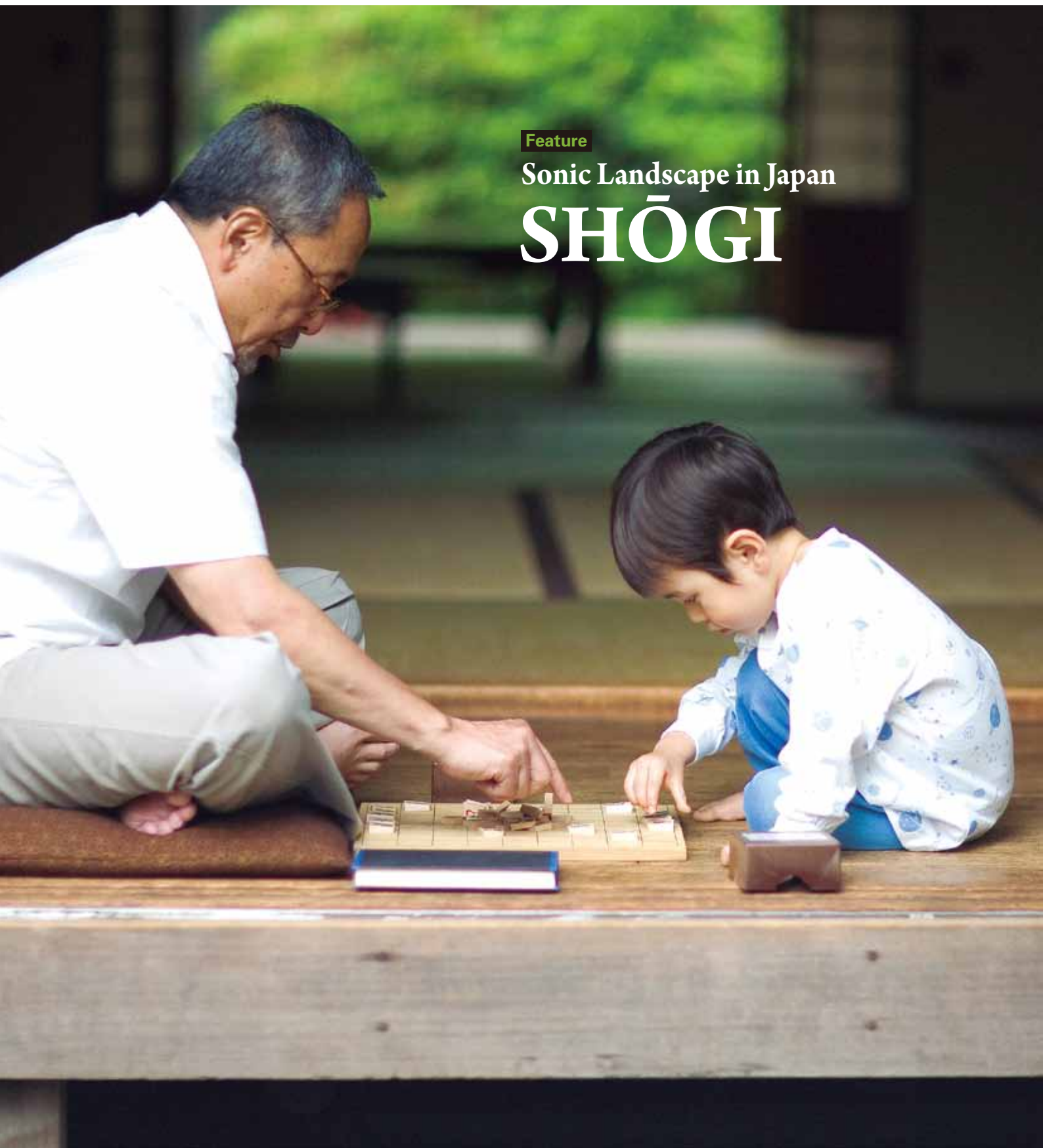
azbil  
MIND

Azbil Taiwan's solutions deliver high added value to customers in Taiwan by bringing together the capabilities of azbil's businesses and cultivating the market from a new perspective

Feature

Sonic Landscape in Japan

# SHŌGI





# SHŌGI

## A traditional Japanese board game

【*pachin*】  
～パチン

Shōgi is a two-player traditional Japanese board game. The number of people who play shōgi at least once a year is estimated to be around six million people. This is significantly lower than in the past, when there were fewer forms of entertainment available to people, but it nevertheless remains one of the most popular board games in the country. Traditional shōgi boards and pieces are made of hardwood. The gratifying sound made when the pieces are deftly laid on the board is often expressed in Japanese with an onomatopoeic word: *pachin*. Two players enjoying a game of shōgi will stare intently and silently at the board, while moving and setting down their pieces in turn: *pachin...pachin...pachin*. The sights and sounds of a game of shōgi are reassuringly familiar to most Japanese.



### A unique and competitive game with a distinctive Japanese background

In shōgi, the players are initially given 20 pieces, which they move around the nine-by-nine square board in turns. The object of the game is to capture the opponent's king.

Like chess, popular in the U.S. and Europe, and *xiangqi*, popular in China, shōgi is said to have evolved from the ancient Indian game of *chaturanga*. *Chaturanga* is thought to be the forerunner to a number of similar games popular throughout Eurasia, including *janggi* in the Korean Peninsula and *makruk* in Thailand.

The game on which shōgi is based is thought to have been brought to Japan as early as the sixth century. The game then evolved and developed the unique set of rules that make it distinct today. Unlike in chess or *xiangqi*, a player's shōgi pieces are not distinguished from their oppo-

nent's by color: both sides use visually identical pieces. Instead, shōgi pieces are five-sided with two sides forming an "arrow" shape. The "arrow" sides of opponents' pieces always face each other, thereby indicating whose pieces are whose.

The rules involving the use of *mo-chigoma*, or captured pieces, make

shōgi different from other chess-like games. The rules allow players to reuse pieces captured from their opponents. This is a concept not seen in similar games. There are different theories surrounding the origin of these unique rules, for example that they reflect the commercial aspects of battle, for example the trading of resources such as gold, silver, horses, and so forth, or that these rules arose because generals were disillusioned with the loss of life in war and began to let pawns (soldiers) live.

### The demanding world of professional shōgi competitors as a reflection of Japanese

There are professional organizations for shōgi. Professional players that participate in tournaments, which are generally hosted by newspaper companies, are referred to as *kishi*. At present, there are about 160 active *kishi*. There are now *kishi* who are university students, but traditionally, a

player who wished to become a professional dropped out of formal education upon graduation from middle school, apprenticed with a professional player, and trained every day to polish the skills they would need for the career that awaited them. In addition to a base salary (awarded by the Japan Shōgi Association) that is linked to their professional rank, professional shōgi players earn fees based on the number of official games they play and bonuses when they win tournaments. There are about 12 major tournaments held per year, including seven title tournaments. Tournament winnings range from several million yen (tens of thousands of U.S. dollars) to a maximum of 32 million yen. Top *kishi* can earn upwards of 100 million yen in a year.

The finals of major tournaments are often held at historic Japanese *ryōkan* (traditional inns) and exclusive Japanese restaurants, and most *kishi* don traditional kimono. Each player is allotted four to nine hours for each game, which are held in best-of-five or best-of-seven style tournaments. Players can choose to spend long periods of their time considering their next move (a process called *chōkō*, which literally means "long thought"). It is not rare for a player to spend two hours or more pondering a single move. A single move and the accompanying *pachin* sound may very well be part of a carefully-considered strategy by that player.

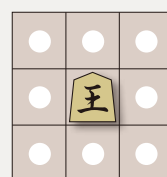
Like other sports, shōgi is often depicted in fiction. It is a common fea-

ture in many works of *manga* in particular. Works that painstakingly illustrate stories of boys and girls cultivating their skills so that they can make it in the unforgiving world of professional shōgi have proved especially popular, and as a result there are numerous *manga* series centered on shōgi aimed at a range of generations, from small children to mature adults.

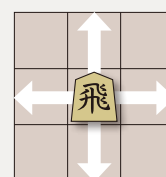
Generally speaking, shōgi is a relatively easy game to get started in.



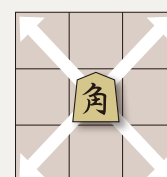
### Shōgi pieces



**King**  
(ōshō)  
The king can move one square in any direction.



**Rook**  
(hisha)  
The rook can move any number of spaces orthogonally, though it cannot jump over pieces.



**Bishop**  
(kakugyō)  
The bishop can move any number of spaces diagonally, though it cannot jump over pieces.



**Gold generals**  
(kinshō)  
Gold generals can move one space orthogonally in any direction, or one space diagonally in the forward direction.



**Silver generals**  
(ginshō)  
Silver generals can move one space directly forward or one space diagonally in any direction.



**Knights**  
(keima)  
Knights can move two spaces forward and one space to the right or left. They can jump over other pieces.



**Lances**  
(kyōsha)  
Lances can move any number of spaces directly forward, though they cannot jump over other pieces.



**Pawns**  
(fuhyō)  
Pawns can move one space directly forward.

**Note:**  
If a player is able to move pieces to within his opponent's encampment (called the "promotion zone"), he can choose to "promote" those pieces once they leave that zone. Promoted pieces are flipped over. Once promoted, rooks and bishops are allowed to move like king, while promoted silver generals, knights, lances, and pawns can move like gold generals. Kings, however, like gold generals, cannot be promoted.

One often encounters local shōgi clubs or just people playing shōgi at public park benches and tables. There are also electronic shōgi games at most arcades. Typical living arrangements in Japan have changed substantially over the years, but many years ago, the sight of neighbors going head-to-head against one another on their sunlit porches was a weekend fixture. The distinctive sound of *pachin...pachin* reverberating in the calm weekend atmosphere was akin to an iconic symbol of peace.



# Eastern Petrochemical Company (SHARQ)



**Eastern Petrochemical Company (SHARQ)\*, located in Saudi Arabia, has upgraded its analog valve positioners to digital ones with communication capabilities in order to improve maintainability of the valves used in ethylene glycol production. As a result, the maintenance workload was greatly reduced. Now that detailed knowledge of valve and positioner condition is available, the company has taken the first step toward realizing “predictive maintenance”.**

\* SHARQ means “east” in Arabic, and the company was so named because it is located in Saudi Arabia’s Eastern Province and it is a joint venture with an eastern country, Japan.

## A partner supporting petrochemical plants for 30 years

Saudi Arabia by itself makes up most of the Arabian Peninsula and it is the largest country in the Middle East. With the largest oil reserves and oil export volumes in the world, Saudi Arabia’s oil resources are the core of its industry and economy. It has been developing oil-related industries such as oil refining and petrochemical as its mainstays.

With its plants in Al-Jubail, one of the world’s leading industrial cities located in eastern Saudi Arabia along the Persian Gulf, Eastern Petrochemical Company (SHARQ) was established as a joint venture between Saudi Basic Industries Corporation (SABIC)\*1 and Saudi Petrochemical Development Corporation (SPDC)\*2 in May 1981. The company manufactures four products: ethylene glycol, linear low-density polyethylene, high-density polyethylene, and ethylene; with a total production

volume of 5 million tons a year.

Ethylene glycol production began at the EG1 plant in 1985, expanding to EG2 in 1993, EG3 in 2000, and EG4 in 2009. These production facilities now rank among the world’s largest, producing 2.2 million tons per year.

Of these plants, EG1, EG2, and EG3 have adopted Azbil Corporation control valves.

Mr. Al-Ahmadi said: “In the first plant, EG1, we rated the reliability and durability of Azbil control valves and the stability of maintenance parts supply very highly. When we expanded production to EG2 and EG3, we continued to use Azbil products.”

Mr. Al-Mutairi said: “When a problem does occur, we only need to give the tag number and, based on that product’s delivery date, etc., the correct replacement part is always delivered, which gives us considerable peace of mind. Azbil has been

our reliable partner for 30 years.”

## Introduction of smart valve positioners greatly reduced maintenance load

At SHARQ, shutdown maintenance\*3 is conducted once every three years, at which time valve operation and leakage are checked. Additionally, once every five years valves are overhauled: after disassembly, cleaning, and reassembly, they are restored to like-new condition.

Previously, maintenance personnel made daily inspections, patrolling sites to check the outward appearance of valves; and also checking the degree of valve opening or other aspects of operation from the DCS\*4. But checking valve appearance will not disclose small problems occurring inside the valves. In some cases, a valve that previously seemed to be free of problems can suddenly malfunction and affect the manufacturing process.



In spite of the severe environment, where sandstorms are likely to blow, Azbil Corporation’s CV3000 Series Pressure Balanced Cage-type Control Valve and SVP3000 Alphaplus Smart Valve Positioner are operating smoothly.

## Expectation from a new Azbil subsidiary

SHARQ hopes to create a system to further reduce valve maintenance work load, enhance safety and peace of mind on the production line, and strictly prevent the occurrence of valve failure.

To that end, when proposing the use of smart valve positioners, Azbil also suggested the Valstaff™ control valve maintenance support system. By introducing this system, data from valves equipped with smart valve positioners can be collected by Valstaff, and device diagnosis and decision-making necessary for maintenance can be made quickly and precisely. Also, field instrument conditions can be checked in the control room without going to sites where environmental conditions are severe. Before using Valstaff, SHARQ plans to systematically introduce smart valve positioners in the plants other than EG1.

Mr. Al-Otaibi said: “Valstaff is the ideal product for achieving predictive maintenance. Valve condition can be monitored and the degree of wear can be checked without opening the valve for inspection, which will be a great help by reducing the number of overhauls.”

Also, SHARQ is looking forward to the support from an Azbil overseas affiliate, Azbil Saudi Arabia Limited, established in 2013.

Mr. Al-Mutairi said: “Now that the new affiliate is established and a valve maintenance center is to open soon, we are looking forward to Azbil’s finely tuned response, such as faster parts supply and expanded service.”

Mr. Al-Ahmadi said: “Above all else, with their new operating base near us, we expect that Azbil will create solutions that meet our needs more than ever. We hope that Azbil, as a good partner, will continue to increase its support of our manufacturing activities.”

## Eastern Petrochemical Company (SHARQ)



Location
Al-Jubail Industrial City, Kingdom of Saudi Arabia
Established
May 1981
Business scope
Production and sale of petrochemical products such as ethylene glycol



Mr. Ali S. Al-Ahmadi  
General Manager  
Maintenance & Technical  
Support

Mr. Naser A. Al-Mutairi  
Manager  
Electrical & Control  
System Dept.



Mr. Sultan Saud Al-Otaibi  
EG Control System  
Superintendent  
Electrical & Control  
System Dept.

## glossary

**\*1▶ Saudi Basic Industries Corporation**  
SABIC is a top-ranking Saudi-Arabian petrochemical company. In the petrochemical industry, SABIC is among the top 10 companies worldwide.

**\*2▶ Saudi Petrochemical Development Corporation**  
Founded in 1979 to support the development of Saudi Arabia’s petrochemical industry, SPDC was established as a research agency by such industrial companies as Mitsubishi Corporation, the former Mitsubishi Petrochemical Co., Ltd. and the former Mitsubishi Kasei Corporation. In 1981 it was restructured into an investment company, with the aid of the Japanese government as a national project.

**\*3▶ Shutdown maintenance**  
Large-scale inspection and repair work conducted regularly in various production facilities or plants. This is carried out when the plant is shut down for a fixed period of time.

**\*4▶ DCS (Distributed Control System)**  
A system that monitors and controls the manufacturing process or production facilities in plants and factories. To achieve even distribution of load, the DCS distributes the functions of each device over a network, resulting in safety and excellent maintainability.



## Azbil Taiwan's solutions deliver high added value to customers in Taiwan by bringing together the capabilities of azbil's businesses and cultivating the market from a new perspective

In view of the mature market conditions in Taiwan, Azbil Taiwan Co., Ltd., a provider of products, services, and solutions to the building and industrial sectors in Taiwan, has begun to approach the market with a new strategy based on the keyword of energy conservation and life cycle solutions. By delivering services and technologies that leverage the strength of the BA, AA, and LA businesses, Azbil Taiwan is striving to provide customers with the high added value that only azbil can.

### Reinforce customer relationships by providing added value to a growing market

The azbil Group has designated the four years of its medium-term plan from fiscal years 2010 to 2013 as the "period of growth," and it is developing business with the objective to contribute to further solving problems at the customer's site. One of the group's key initiatives for growth is the expansion of its global operations. In particular, it considers Taiwan as one of its especially important markets, which has shown stable economic growth in the long term, primarily in the high-tech industry such as semiconductor manufacture.

Azbil Taiwan Co., Ltd. plays a central role in the azbil Group's activities in Taiwan. Since the 1980's, before its establishment as an overseas affiliate (initially Yamatake Taiwan Co., Ltd.), it has been expanding business alongside Japanese companies entering the Taiwan market, and has supplied a multitude of products in both the Building Automation (BA) and Advanced Automation (AA) business domains.

Against this backdrop, Azbil Taiwan was established in 2000, and has since focused on expanding business



**Taro Sento**  
President  
Azbil Taiwan Co., Ltd.

in the factory market. In Taiwan, there are many factories producing raw materials such as thin films for the semiconductor market, including a large number of factories owned and operated by Japanese firms. And the BA business has mainly provided these Japanese transplants with HVAC systems, clean room equipment, and related installation and maintenance.

The AA business also delivers products and services to factories producing raw materials for semiconductors. Furthermore, it has seized the opportunity to provide measurement and control instruments such as valves and sensors, control systems, and maintenance to new factories and ex-

tensions to factories producing basic chemicals, which are essential to the industrial infrastructure for the development of the Taiwan market.

### Outline a growth strategy tailored to Taiwan's mature market

Taiwan, whose rapid economic growth period is over, is now entering the period of economic maturity, similar to Japan. And in a few years, Taiwan is expected to move into a phase of shrinking population. Under these circumstances, large-scale capital investments cannot be expected as before, and it will be difficult to develop business by solely taking the traditional approach. So, during the past several years, Azbil Taiwan has begun formulating a new business model and trying an approach from a different perspective than before.

First, in the BA business domain, azbil's business in Taiwan has centered on providing HVAC systems to factories owned by Japanese firms. However, under the keyword of energy conservation, Azbil Taiwan is also expanding business and broadening channels in other markets, such as for general commercial buildings owned by local companies.



Azbil Taiwan has obtained the qualification to carry out ESCO business activities in Taiwan. It is working toward instilling a more aggressive sales style through employee training programs, and also cultivating new local partners and strengthening cooperation with them. Specifically, the company is aggressively pursuing collaborative partnerships with energy conservation consulting firms, manufacturers of building facilities and equipment such as refrigerating equipment, leasing companies as partners in the financing of ESCO projects, as well as major trading companies. Already, Azbil Taiwan is seeing the results of expanding channels through collaboration with such companies, and is winning orders for large-scale projects to provide energy saving renovations of HVAC facilities and to install monitoring and control systems in universities and shopping malls in Taiwan.

### Increased awareness of preventative maintenance will give an enormous boost to business

Meanwhile, in the AA business domain, Azbil Taiwan is cultivating channels by leveraging its strength of having supplied a multitude of products in Taiwan, from the days of the former Yamatake Corporation. For example, it has been strengthening ties with a major petrochemical company in Taiwan through valve selection, supply, installation, and maintenance; as a result, this petrochemical company is currently using a large number of valves, of which 70 to 80% were pro-



vided by Azbil Taiwan.

Also, like Japan, customers in the industrial sector in Taiwan understand that globalization is necessary for survival, so Azbil Taiwan is employing a strategy of developing business abroad together with the customer. For example, it bolstered cooperation with a Taiwan-based plant manufacturer (and engineering, procurement, and construction (EPC) company) developing its business globally, and is providing full-scale support for the plant maker's projects in China, Thailand, and the Middle East.

In addition, Azbil Taiwan has positioned its maintenance business based on the keyword of life cycle solutions as an important business in its strategy. In 2011, a massive fire and explosion accident occurred at a plant owned by a major petrochemical company in Taiwan, which was caused by the plant's inadequate maintenance and safety measures due to excessive cost cutting. As a result, government authorities have strengthened regulations regarding facility maintenance and safety.

In Taiwan, breakdown maintenance (BM) or "repair after breakdown" has been the norm; however, there is an increasing awareness for preventative maintenance, such as TBM\*1 and CBM\*2. In response, Azbil Taiwan established a valve maintenance center in Kaohsiung City in 2008 to provide finely-tuned maintenance based on Japanese high technology. These days, the center offers local custom-

ers a valve maintenance service for advanced preventative maintenance. This enhancement of the business foundation is expected to be an even bigger boost for Azbil Taiwan, which possesses advanced know how in this field.

Furthermore, equipment manufacturers of semiconductors, fuel cells, and flat panel displays are using non-flammable gases such as liquefied natural gas, nitrogen, and argon in their factories; and Azbil Taiwan can provide flow control of gases. In addition to promoting mutual cooperative ties between the BA business (with its factory HVAC expertise) and the AA business (with its factory process control expertise), the company is aiming to further enhance collaboration in the Life Automation (LA) business domain, together with Azbil Kimmon Technology Corporation, which manufactures gas meters in Taiwan.

In Taiwan, the BA, AA, and LA businesses are working closely together, across business boundaries, to deliver services and technologies that leverage their individual strength. Providing customers with services and technologies with the high added value that only the azbil Group can is an important role of Azbil Taiwan.

\*1 TBM (Time Based Maintenance)  
Periodic maintenance and the replacement of parts and equipment in a specified time period, in order to prevent future failure.

\*2 CBM (Condition Based Maintenance)  
The replacement of individual parts and equipment depending on its condition, in order to maintain the facility appropriately and without waste.

## ■ savic-net FX mini — Compact Building Management System

### The simple and compact BMS that best fits your building's needs

savic-net FX mini is a BMS (building management system) managing 500 points. Environmental considerations such as energy use management and CO<sub>2</sub> emission reduction are strongly required for buildings today. savic-net FX mini not only offers the features (easy operation using web-based browser, flexible and expand-

able system, etc.) of our savic-net FX BMS, but it graphically displays the whole building's energy use (converted to crude oil consumption) and CO<sub>2</sub> emissions so that they can be easily grasped. It thus supports the tasks of managing building energy and monitoring building equipment.



#### Compact Server

All you need is this small server.  
No more, no less.

#### Easy Energy Management

Built-in energy visualization application provides easy visualization of your energy consumption pattern.

#### Simple Operation

Simple UI allows easy operation.  
Building management has just become simple.

#### Software Annunciator

Simple software annunciator screen will make your daily building management work easy.

#### Energy Consumption Calc.

Your energy consumption is now visible.  
This function will support your energy management.

#### One point Trending

You can check how much energy consumption is reduced by simple action on the screen.



**azbil**

<http://www.azbil.com/>

Yamatate Corporation changed its name to  
Azbil Corporation on April 1, 2012.

#### Japan

- Azbil Corporation • Azbil Trading Co., Ltd.
- Azbil Yamatake Friendly Co., Ltd.
- Azbil Care & Support Co., Ltd. • Azbil SecurityFriday Co., Ltd.
- Azbil Kimmon Co., Ltd.
- Azbil Kyoto Co., Ltd. • Azbil TA Co., Ltd.
- Azbil Taishin Co., Ltd. • Tem-tech Lab.

#### Overseas

- Azbil Korea Co., Ltd. • Azbil Taiwan Co., Ltd.
- Azbil Kimmon Technology Corporation
- Azbil Vietnam Co., Ltd. • Azbil India Pvt. Ltd.
- Azbil (Thailand) Co., Ltd. • Azbil Production (Thailand) Co., Ltd.
- Azbil Philippines Corporation • Azbil Malaysia Sdn. Bhd.
- Azbil Singapore Pte. Ltd. • PT. Azbil Berca Indonesia
- Azbil Saudi Arabia Limited
- Azbil Control Instruments (Dalian) Co., Ltd.
- Azbil Information Technology Center (Dalian) Co., Ltd.
- Yamatake Environmental Control Technology (Beijing) Co., Ltd.
- Beijing YTYH Intelli-Technology Co., Ltd.
- Azbil Control Solutions (Shanghai) Co., Ltd.
- Shanghai Azbil Automation Co., Ltd. • Azbil Hong Kong Limited
- Yamatake Automation Products (Shanghai) Co., Ltd.
- CECEP Building Energy Management Co., Ltd.
- Azbil North America, Inc. • Azbil VorTek, LLC • Azbil BioVigilant, Inc.
- Azbil Brazil Limited • Azbil Europe NV • Telstar, S.A.

#### <Branch/Office>

azbil Group PR magazine, azbil 2013 Vol. 2, No. 3

Issued by Mikako Takahashi, Public Relations Section, Corporate Planning Department, Azbil Corporation  
19F Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo 100-6419 Japan TEL: 81-3-6810-1006 FAX: 81-3-5220-7274 URL: <http://www.azbil.com/>



The azbil Group is forging ahead while respecting the natural environment.  
All rights reserved. Unauthorized reprint or reproduction of materials in this magazine is prohibited.