



BILLION®

Smart Energy Management System

SEMS™

Customizable Energy Monitoring Software Systems using
Cloud Computing Intelligence and Big Data Analysis

Company Introduction

BILLION

Billion Company Quick Facts

- Founded in 1973 (have been in the market for 43 years)
- Publicly traded since 2000 (TAIEX: 3027).
- Headquarter: Taipei, Taiwan
- Number of employees: 900+
- Billion USA - BEC Technologies established since 2004.



Billion Customer Worldwide

- U.S.
- Canada

- Mexico
- Chile
- Peru
- Colombia

- United Kingdom
- Spain
- Germany
- Belgium

- Morocco
- South Africa

- Turkey
- Germany
- Belgium
- Denmark
- Netherlands
- Italy

- Israel
- Iran
- Kuwait
- India
- Bahrain
- Pakistan
- Nepal
- U.A.E.
- Yemen

- Russia
- Ukraine
- Kazakhstan
- Swiss
- Sweden
- Belarus
- Slovenia
- Bolivia

- Japan
- Philippines
- Hong Kong
- Indonesia
- Singapore
- Malaysia
- China
- Thailand
- Vietnam
- Australia



Dongguan, China
EG-Billion



Hsinchu
Taiwan, R&D Lab



Taipei, Taiwan
Headquarters



Nanjing, China
R&D Lab



Texas, USA
BEC Technologies

International Certifications

Quality Management System

ISO 9001:2008 (Taiwan & China)

ISO/TS 16949:2009 (China)

Environmental Management System

ISO 14001:2004 (Taiwan & China)

Occupational Health and Safety Management System

OHSAS 18001:2007 (China)

Quality Assessment System for Electronic Components

IECQ QC080000:2012 (Taiwan & China)



Press Review & Awards

realwire
Delivering Relevant, Relaying Influence

Issue Date: 21 Apr 2015

PR Newswire
A UBM plc company

YAHOO! FINANCE

Billion Electric Introduces Smart Energy Management Solution to Electric Bicycle Station

REUTERS

**FROM FRIENDSHIP TO PARTNERSHIP
FROM PROFIT TO PROGRESS**

Bloomberg Business

Billion Electric Recruits Channel Partners to Join a Win-Win Business Partnership <3027.TW>

Bloomberg BNA

DRAFT. NEGOTIATE. CI
BLOOMBERG LAW | CORPORATE TRANSACTION | Breaker analytics. More deal data. One game-changing to

Billion Electric Co Ltd (3027: Taiwan)

Last 15-20 Days: Change Today 8.80 (6.00%) | Volume 776.2K | 3027 On Other Exchanges

Year over year, Billion Electric Co., Ltd. has seen 91% change in their bottom line from 34.8B TWD to 64.7B TWD despite revenue that grew from 1.1B TWD to 1.2B TWD. A key factor has been an increase in the percentage of sales devoted to 2013 units from 18.81% to 20.17%.

Business Wire

Billion Electric Brings DSL, 3G/4G LTE, and M2M to Support the Ind Broadband Expansion Plans

TAIPEI, Taiwan, CHINA—CHINA NEWS—Billion Electric, a global leader providing total ICT and solutions, aims to launch its comprehensive portfolio of mobile and broadband networking (M2M) equipment to support the Indonesia's broadband infrastructure plan. Billion today an exhibitor of Connect Expo Comm Indonesia (C2C) during Indonesia Infrastructure Week (IWI 4th) to the 6th November.

"We foresee a tremendous potential for the deployment of telecommunication service. As the Indonesian government released the Smart Street Lighting Initiative (SSLI), we are

Billion, based in Taiwan, was founded in 1973 as a low-voltage systems and smart city technologies in Asia. Billion has invested in the development of advanced intelligent access devices for homes, telecommunications, and manufacturers, design, and distributors in utility control networking equipment to partners based in Europe, Asia and APAC. Billion closed its fiscal year 2014 with a revenue of US\$ 26 million.

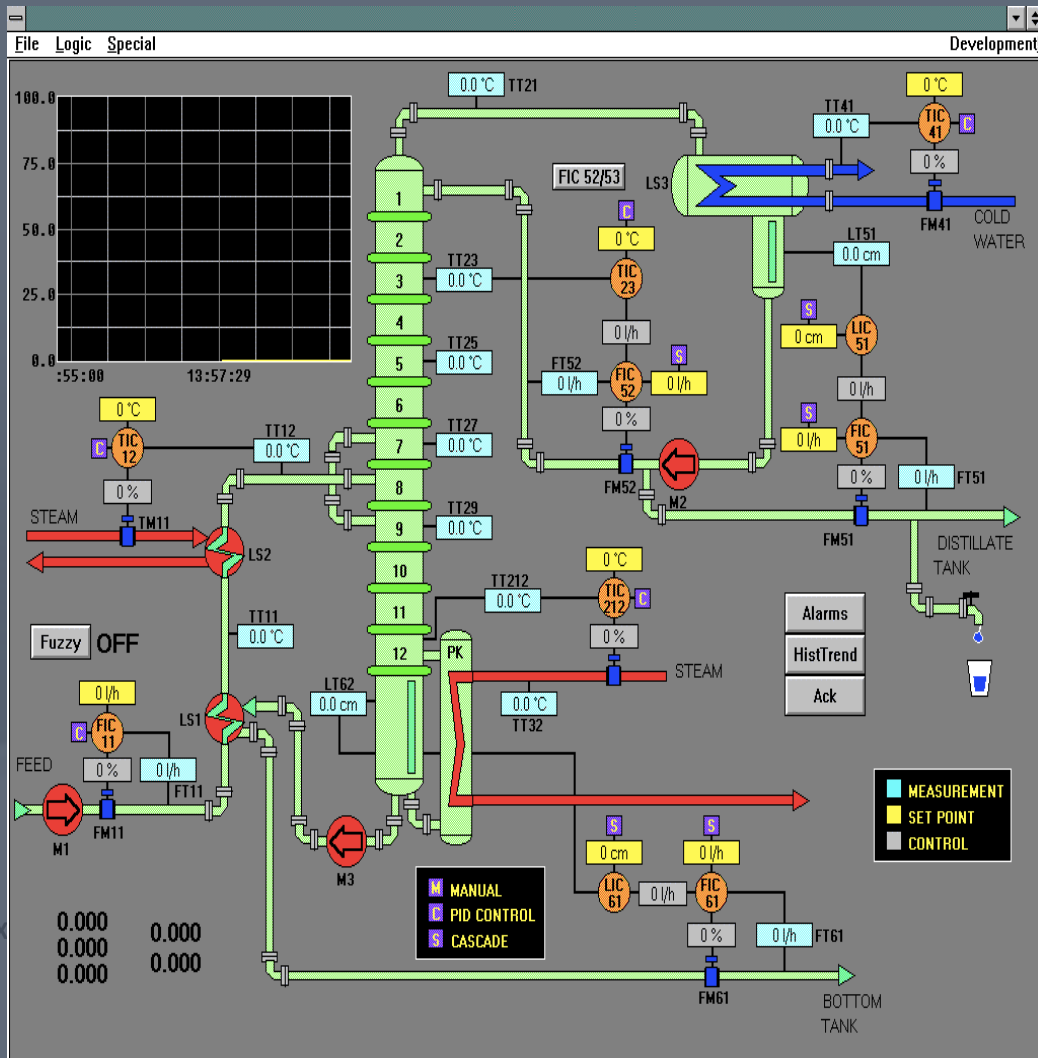


Challenges & Requirement in BMS and Asset Maintenance

BILLION



Current Systems in the Market



No Intelligence

Energy Management Solutions in the market are **collecting tonnes of data but not utilising or analysing them to the fullest potential.**



Local System

Systems are **all local without any remote access and insights** into the system. System is not intuitive and able to scale .



Customers Insights

Customers are getting demanding by the years and would be looking at **gaining more insights and access to the space they are utilising.**

Billion Energy Management System

BILLION



Intelligence

To help Commercial and Industrial Establishments Become **World-Class** -Greener and Smarter



Intelligence



Services

Services

Better **marketing tools for sales/marketing** for data centre and provide **value-added services** to Clients

Operations

Improve **operations, security** and **decision-making** processes within the Commercial or Industrial Space



Operations



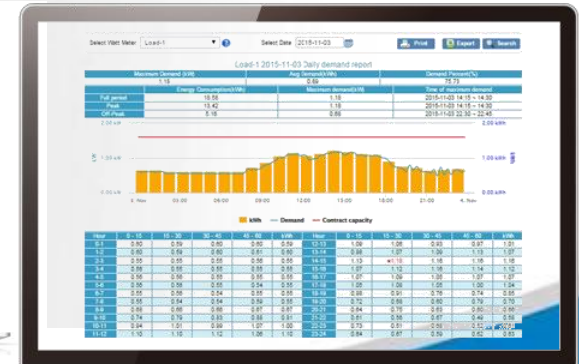
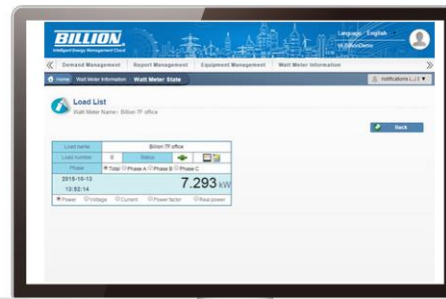
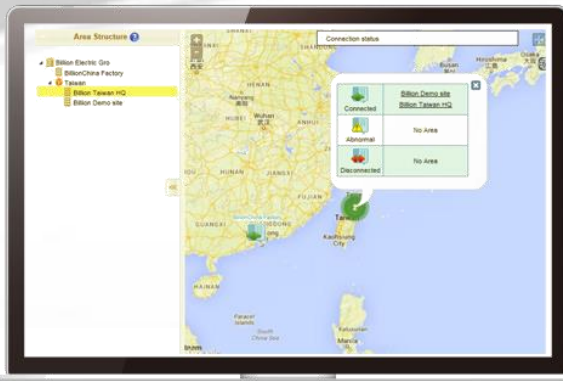
Technology

Technology

Incorporate latest methods and trends in Data Analytics Technology into the EMS system that we build.

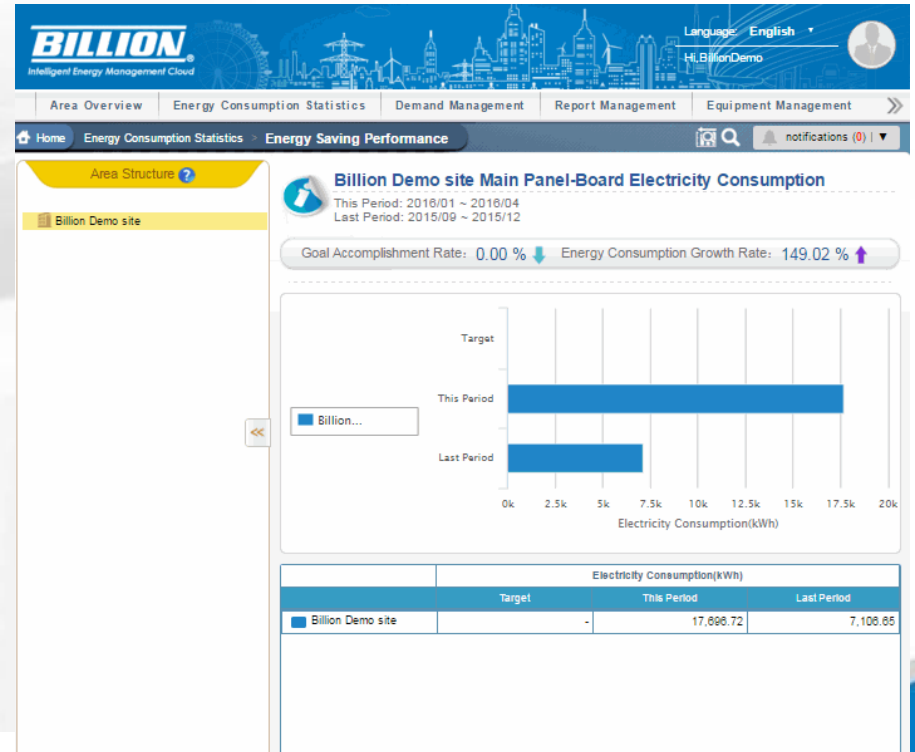
Overview

- SEMS™ was approved by the Taiwanese ICT leading institution (Institute for Information Industry) for its reliable functionality and diverse applications, specially in commercial and industrial energy managements.
- Introduced to more than 300 factories and business establishments both inside and outside of Taiwan, helping businesses succeed and save up 10-20 % of energy through the effective use of energy management.
- SEMS™ is expected to assist Philippines this year through a Taiwan-funded enterprise, saving up to 12% of its energy consumption.
- Cloud based solution using data-driven insights to optimize business performance.
- Instant SMS and email alarms notify any about-to-happen incidents before it takes place.



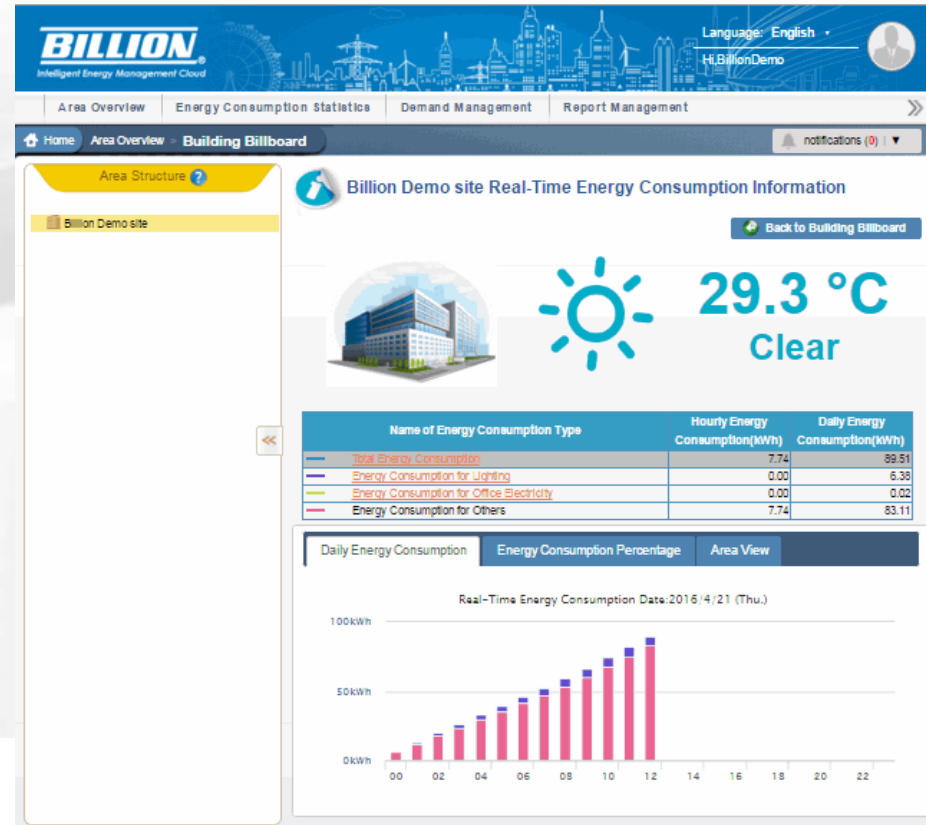
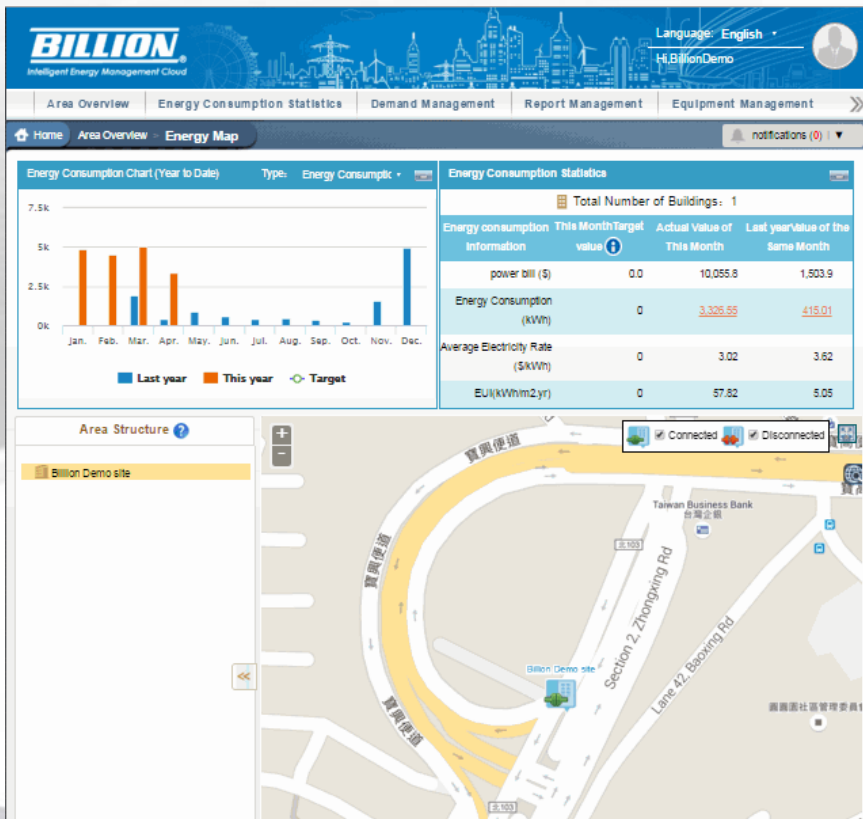
Insights into Everyday Energy Consumption and Saving Performance

1. Energy Consumption Trend
2. Energy Saving Performance
3. Energy Demand Statistic
4. Report & Device Management



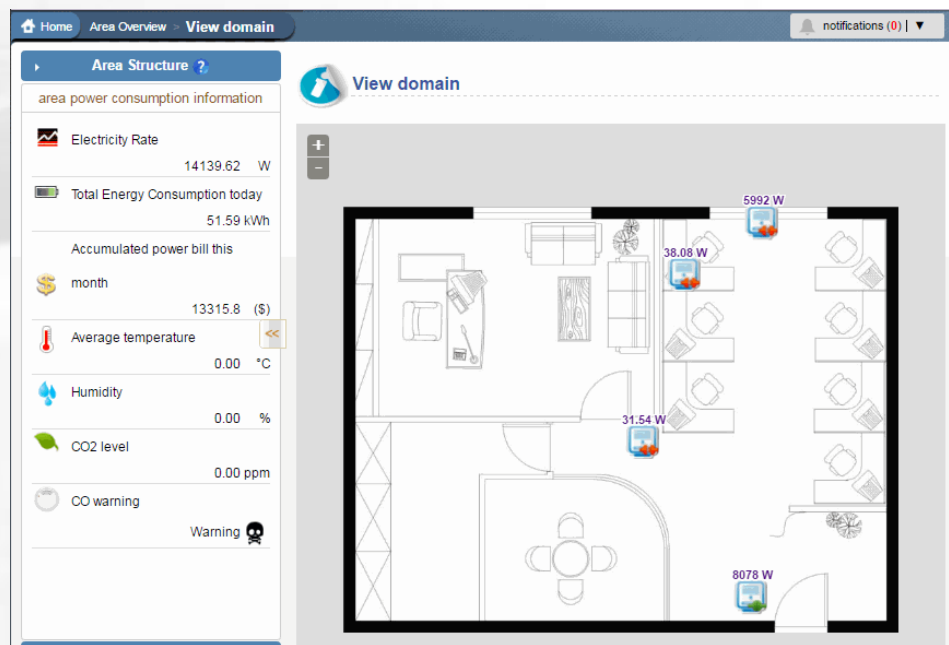
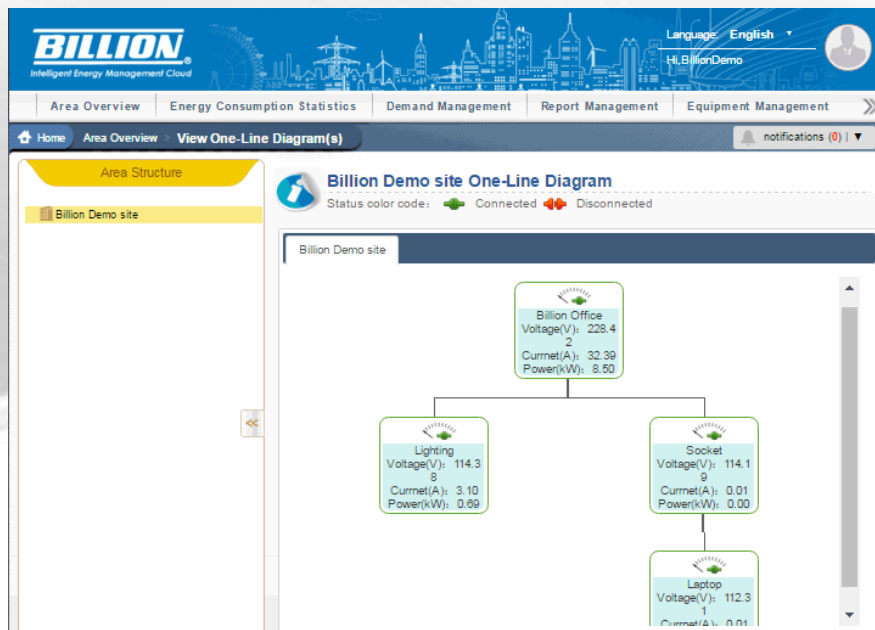
Enterprise-Level Energy management Solution for Commercial Buildings and School Campus

1. Energy Map
2. Building Billboard & Problematic Facility Allocation
3. Real-time billboard & invoice
4. Online facility diagram & location mapping



Optimal Asset Management Starts with Better Energy Usage Information

1. Remotely Manage the Energy Consumption at Different Buildings
2. Reduce Labor Maintenance Costs
3. Keep Track Equipment Lifecycle
4. Predict Facility Failure
5. Maximize the Efficiency of Central Management.



Billion SEMS System Impressions

BILLION



Tracking Your Monthly Electricity Bill



We help you optimize the electricity contract capacity and control the real electrical demand to avoid penalty imposed by the utility company.

Select Watt Meter

Load-1



Select Date

2015-02-01



~ 2015-02-28



Print



Export



Search

Billion Demo siteLoad-1 (BN11000D6F0003E6950C|1) 2015-02-01 ~ 2015-02-28 Monthly demand report

	Energy Consumption(kWh)	Maximum demand(kW)	Time of maximum demand
Full period	306.00	1.64	2015-02-16 16:15 ~ 16:30
尖峰(Peak)	-	-	-
半尖峰	-	-	-
周六半尖峰	-	-	-
離峰(Off-Peak)	-	-	-

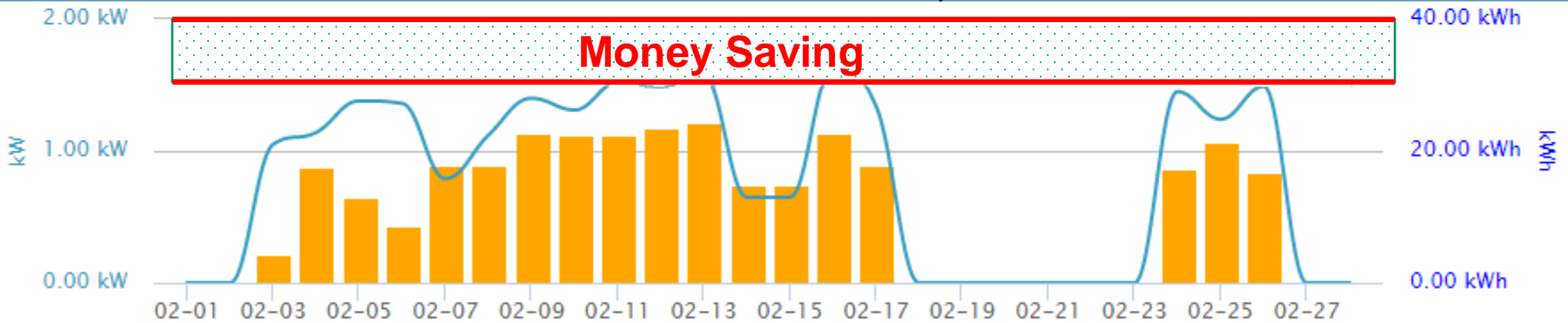
Full period

尖峰(Peak)

半尖峰 (Half-Peak)

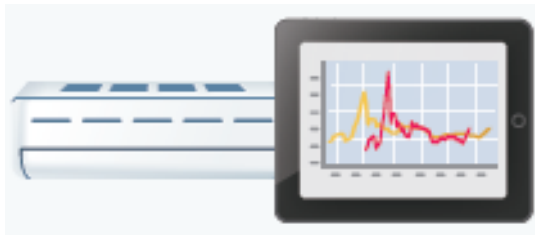
周六半尖峰

離峰(Off-Peak)



■ kWh — Demand — Contract capacity

Highest Work Efficiency in Day-to-Day Operation



Equipment malfunction is a result of electrical fire and machine overheating. Through the SEMS™, administrators can set interactive mechanism to deliver email alerts and notify the occurrence of electrical incidents.

BILLION
Intelligent Energy Management Cloud

Language: English
Hi Billion 管理者



Report Management | Equipment Management | **Watt Meter Information** | Watt Socket Information | System Settings

Home | Watt Meter Information > **Watt Meter State** | notifications () |

Load List
Watt Meter Name : 8F總用電

- Watt Meter State
- Watt Meter Information
- Analysis
- Energy Use Percentage
- Statistics

Back

Load name	8F總用電		
Load number	1	Status	 
Phase	<input checked="" type="radio"/> Total <input type="radio"/> Phase A <input type="radio"/> Phase B <input type="radio"/> Phase		
2015-03-25 17:12:32		108.7 kW	
<input checked="" type="radio"/> Power	<input type="radio"/> Voltage	<input type="radio"/> Current	<input type="radio"/> Power factor <input type="radio"/> Real power

208.7 Inefficient

0.0 No working or damaged

Efficient Energy Management = Less Electricity Waste



Ensure electricity is accurately used at the right time, in the right place, for the right purpose to avoid unexpected electricity consumption waste.

Select Watt Meter ?

Select Date

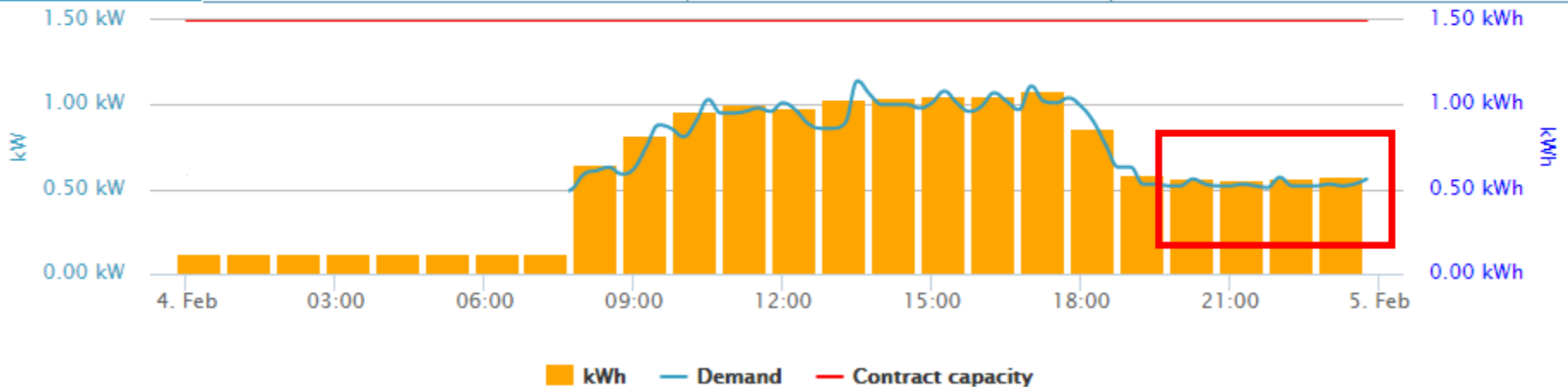
Print

Export

Search

Billion Demo siteLoad-1 (BN11000D6F0003E6950C|1) 2015-02-04 Daily demand report

	Energy Consumption(kWh)	Maximum demand(kW)	Time of maximum demand
Full period	16.86	1.14	2015-02-04 13:30 ~ 13:45

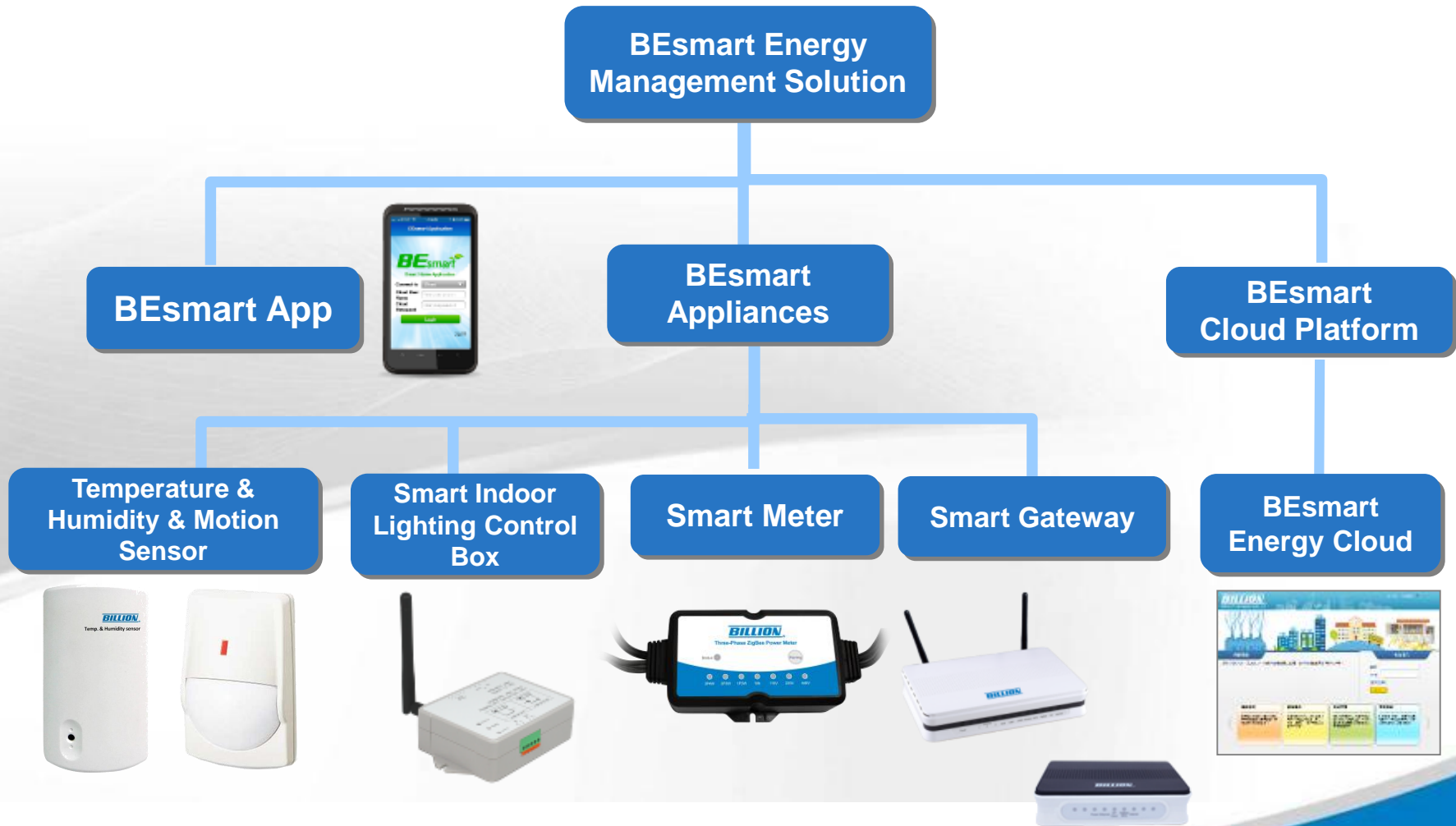


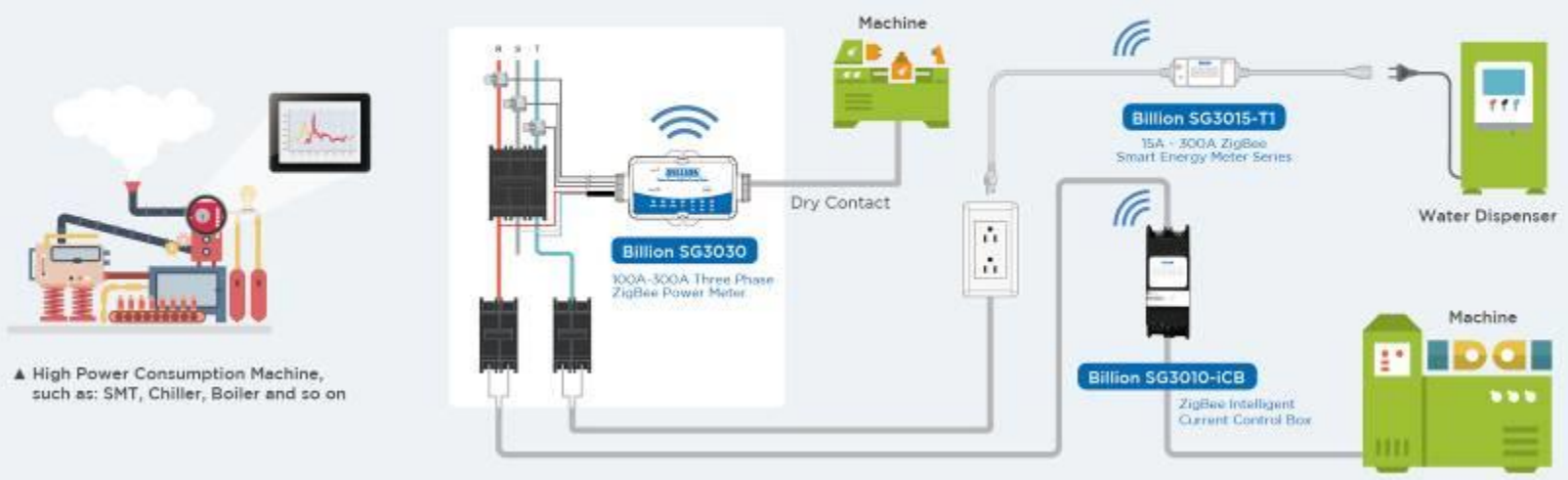
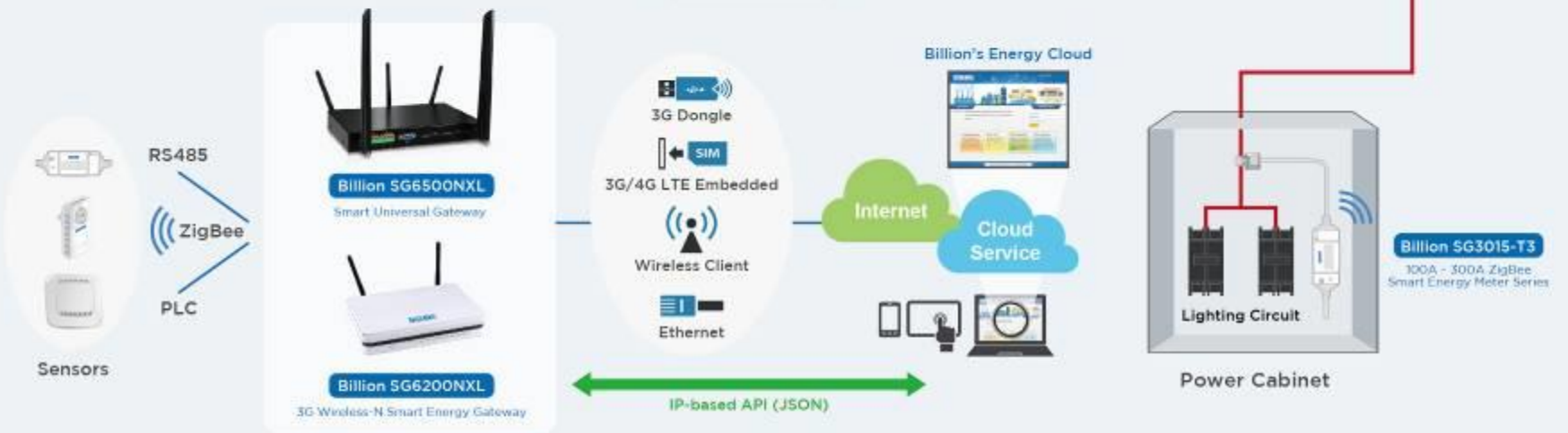
SEMS™ System Architecture

BILLION

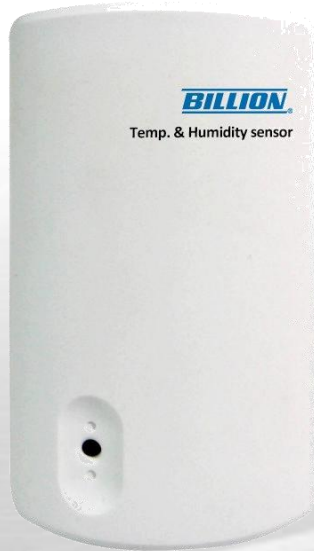


System Architecture



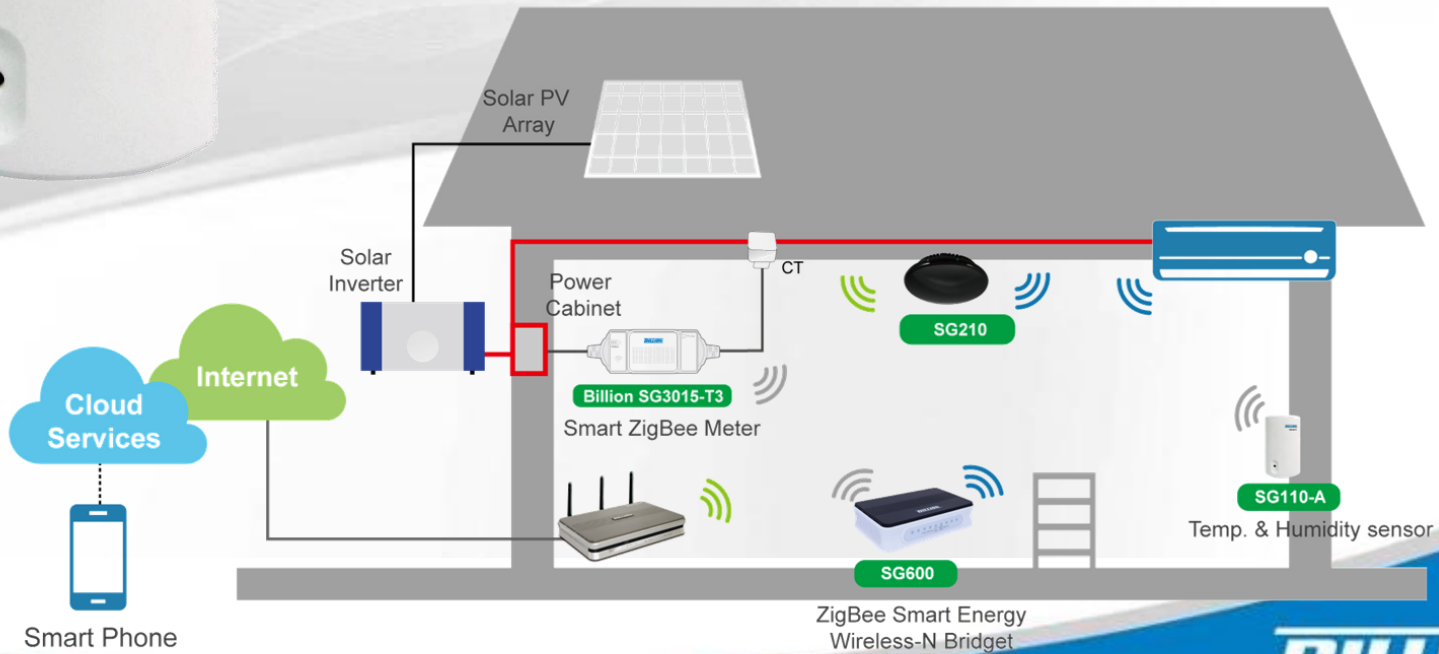


Environmental Sensors



SG110 –A Temperature & Humidity Sensor

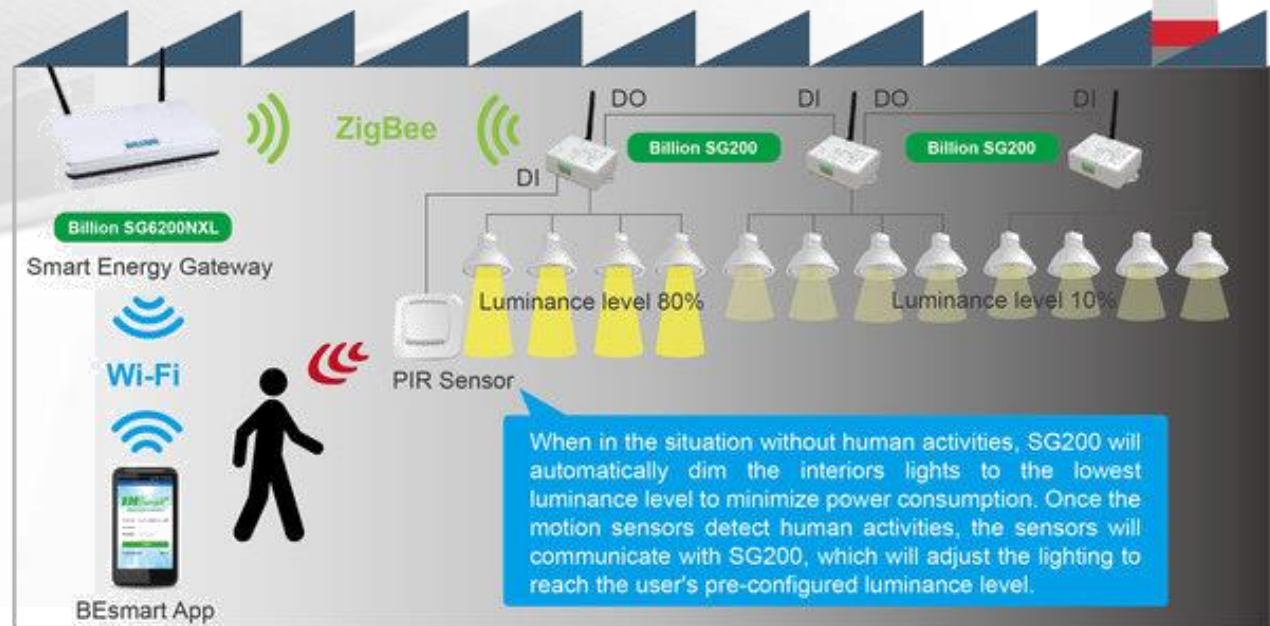
measures the levels of relative humidity and temperature of the air inside a room. This range of humidity/temperature sensors is designed to provide relative humidity measurement and temperature control in all indoor environments.



Environmental Sensors

Motion PIR & Lighting Sensors integrated with SG200

The PIR and Lighting Sensors can automatically create a sequence of indoor lighting adjustments and remote smart meter controls based on motions and environmental brightness levels.



Customer Stories Worldwide

BILLION



In-Snergy Home Energy Management System

• Overview

- Join the “Millions Electrical Appliance Monitoring Project” with the government 's Ministry of Economic Affairs Bureau of Energy
- Monitored the residential energy usages and collected the energy consumption information as a basis for government to develop energy efficiency policy .
- A total of 3,000 households participated in this projects, each household using a Billion Smart Gateway with 5 Billion Smart Meters to monitor energy consumption of household appliances.
- Per household, two main meters were used to measure the energy consumption of air-conditioning and a refrigerator, and the three other meters were flexible for the users to select the electrical appliances which they would like to measure.



經濟部能源局

Bureau of Energy,
Ministry of Economic Affairs



Your
Smart Energy
In-Snergy



BILLION

In-Snergy Home Energy Management System



- Accumulated more than 3,000 households through the integration of a range of hardware devices.
- Consumers can learn through mobile APP and historical energy trends.
- Control advanced scheduling, power overload, and surge protection.
- Remotely control and assist consumers to easily create intelligent and money-saving energy plan.

ViewQwest Data Centre – Pantech21

In Partnership with a Singapore based Energy Management Solutions (EMS) company, the presence of Billion Meters have also been brought into Data Center Management Projects where Data Center Owners are looking at sculpting and improving their current Revenue Model.

A 1st Phase Implementation of 135 Billion SG3015 Energy Meters has been deployed on Site which provided real-time Energy Consumption Information on a Rack-Level from a Cloud-based System.

An Automated Energy Report and Billing System, along with abnormal Energy Notification adds on to the feature of this system which can be accessed remotely.



NEA Smart Metering Project



Billion has been awarded a tenders from the NEA (National Environment Agency in December 2015 for an Energy Metering Project.

Under these project, Billion will be installing Energy Meters in a total of 670 households to collect information on Electrical Appliances as well as Air-Conditioners for the Agency.

A total of more than 1,500 meters and 700 Energy Data Gateways will be installed in Households for this project lasting more than 12 months.



**National
Environment
Agency**

Safeguard • Nurture • Cherish

BILLION

HDB-IDA Smart Home Initiatives

Together with Samsung, Singtel and NCS, Billion has participated in the Smart Home Trials with Singapore's Housing and Development Board, Infocomm Development Authority as part of the Smart Nation - Smart Home Initiatives

Under this project Initiative, Billion is the technology provider of Utilities Management (Energy Management and Water Management) to the potential 3,000 households up for Recruitment in the Yuhua Smart Home Pilot trials.

This project is due to commence in Q2 2016 after the first phase pilot has been completed.



Billion Energy Management Solution (Japan)



Be Recognised and
Rewarded up to
SGD 100,000

NUS Innovation

Be recognised for your innovation
(The closing date for nominations/applications is 8 9 13)

ASIA SOUTHEAST ASIA ECHELON 2013 STARTUPS PRODUCT PEOPLE INVESTMENTS & AC

[Exclusive] Intraix partners Japanese company Smart Integration to reduce energy consumption in Japan

BY ELAINE HUANG | FEB 20, 2013 | ASIA



Who does not want to save money and do their part for Mother Earth at the same time? Intraix will be working with Japanese company Smart Integration to reduce energy consumption in Japan.

Intraix, a local startup which specialises in home energy management systems, signed a contract yesterday with Japanese smart technology company Smart Integration to bring their web and mobile services to Japan. Smart Integration is a subsidiary of Fuji Electric, a global energy...



In February 2013, together with a Software Partner, Billion entered a Partnership with Nara-based Company - Smart Integration Inc. in the provision of HEMS Solutions to Nara-Based Energy Management Solution Company – Smart Integration Inc.

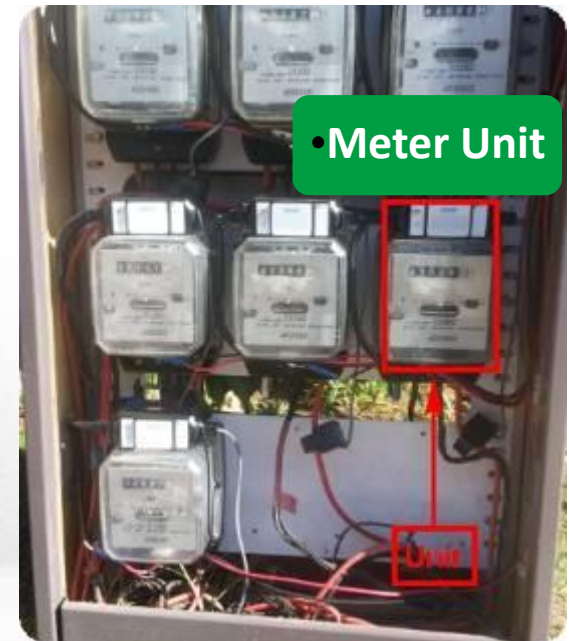
SEMS™ Contribution to the Community

• Overview

- Input advanced work schedule and remote control devices on and off
- Monitor the current, voltage, and energy consumption of electrical appliance.
- Customer used Billion's SEMS™ to run electricity billing for each households.
- Centralized and browser-based energy management and reporting platform.
- Monitor usage to the minute, alerts, thresholds, time based rules, schedules.
- Grant 24/7 access by community tenants and residents.
- Powerful data-driven reporting, including class based comparisons, live monitoring, and more.



Energy Service Provider, South Africa



Manpower-Saving smart energy management solution automatically generates monthly electricity billing information for its community residents. The community equipped with 108 households re-adjusted its electrical contract capacity 10% lower and saved 200KW every month.

Eskom Utility



3Phase 200KVA transformer

Community Complex

Main complex meter for load analysis and checking Eskom charges etc



These single phase meters will be replaced with T3 which will be used for charging for usage. Possibly will use iCB instead of T3 to gain relay capability if required.



(home 12)



(home 11)



This 3PH meter is optional to assist with phase balancing and problem tracking but not necessary for billing.

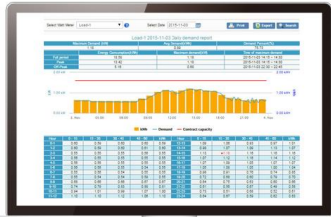
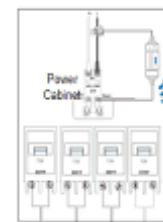


Single home (home 1)

Load controller / meter for geyser will be in db board. Should be T2.

This T3 meter will replace the current meter, which has no ZigBee and no TOU etc. and in complex will be in the outside smaller unit not the db to avoid tampering.

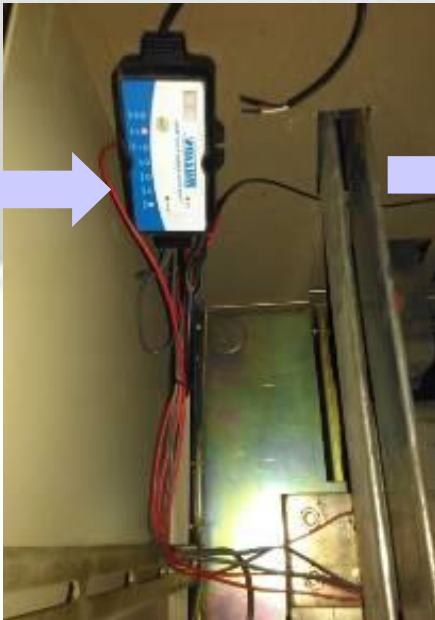
Single-phase 2-wire



Factory Plant, China

SEMS™ provides factory manager a centralized management tool to monitor the energy efficiency and the operation of production line equipments in real time to reduce costs, boost machine efficiency, and to prevent power outages.

This 23,000 sqm. factory was able to reduce 1/4 of the monthly utility cost and 30% of contracted utility demand. Previously EGB was charged USD 5,926 for monthly service. Now the number has been reduced down to USD 4,379. Monthly saving is USD 1,548. After a year, this saving can be summed up to pay for the utility supplied to the factory for an entire quarter.



Main Power Cabinet

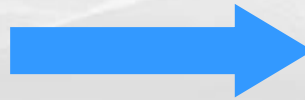


Factory Plant, China

SMT 24 hours lines, heating equipments, reliability testes machines, burning room, dryer, air conditioners, and heavy load equipments are all critical equipments that will impact a factory's productivity.



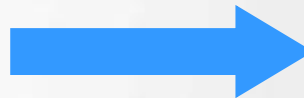
Chillers



Power Cabinet



Compressed Air Dryers

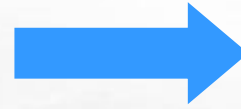


Power Cabinet

Factory Plant, China



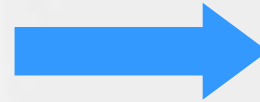
Drying Room



Power Cabinet



Burning in Room



Power Cabinet



Office Building, Taipei

SEMS™ provides building managers the energy consumption breakdown of major power-consumed equipment (ex. chillers, lighting, SMT machines), and remotely monitor the facility efficiency to ensure the optimal performance with zero energy wastes.

This 1,800 sqm. office area (7F & 8F) was able to reduce electricity contracted capacity from 30KW to 22KW, and from 220KW to 180KW, saving up 48KW electricity per month. Previously the office building was charged USD 101,329 for annual electricity. Now the number has been reduced down to USD 90,165. Annual saving is **USD 11,164** through the intelligent energy management solution. The cost of devices is USD 2100, and the **ROI comes to more than 500% with two-month payback period.**



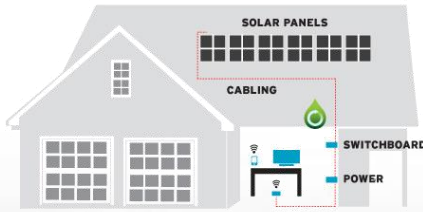
Office Building, Taipei

“Effortless energy-saving through the IOT energy management solution. The system provides a deep insight into our everyday energy activities of different electrical facilities, allowing us to effectively track equipment performance and adjust electricity contracted capacity according to consumption roadmap”, said Albert Yang, Property Manager.



Level	Month	Jan	Feb	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	total:
ROC 7F	2014 Electricity Wattage	2,200	14,520	3,000	21,320	3,440	24,720	4,680	30,440	4,280	27,520	3,320	19,640	159,080
	2014 Electricity Bills	11,826	67,072	14,294	99,204	15,651	130,033	21,540	179,742	19,664	146,155	14,368	91,044	810,593
	2015 Electricity Wattage	1,920	11,880	2,080	19,440	3,080	25,040	3,840	27,720	3,560	24,880	3,480	20,210	147,130
	2015 Electricity Bills	9,916	51,320	10,425	87,036	12,650	126,428	16,524	157,720	15,698	124,387	13,485	89,643	715,232
	Comparison of Electricity Bills	-16.15%	-23.49%	-27.07%	-12.27%	-19.17%	-2.77%	-23.29%	-12.25%	-20.17%	-14.89%	-6.15%	-1.54%	-11.76%
Level	Month	Jan	Feb	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	total:
ROC 8F	2014 Electricity Wattage	32,880	31,760	36,320	40,720	45,280	45,920	55,280	44,640	49,280	41,520	34,720	33,520	491,840
	2014 Electricity Bills	152,317	146,127	163,829	180,409	196,145	212,844	250,144	214,697	229,958	182,258	151,895	148,639	2,229,262
	2015 用電度數	28,560	24,960	29,120	37,440	40,000	49,600	49,600	48,480	41,840	43,280	38,320	31,040	462,240
	2015 Electricity Bills	148,639	116,186	132,225	151,948	159,725	215,362	215,362	212,244	187,299	170,015	152,827	127,874	1,989,706
	Comparison of Electricity Bills	-2.41%	-20.49%	-19.29%	-15.78%	-18.57%	1.18%	-13.90%	-1.14%	-18.55%	-6.72%	0.61%	-13.97%	-10.75%

Solar Installer, Australia



THE MOST ADVANCED
SOLAR MONITORING
SYSTEM IN AUSTRALIA

Overview

Billion has distributed over

- 7,000 sets of smart meters and internet gateway since 2012.
- Solar installation services provided to over 15,000 residential users across Australia.

OUR PRODUCTS

OUR PACKAGES

CUSTOM PACKAGES

MONITOR MY APPLIANCES PACKAGE



GET STARTED PACKAGE



ENERGY AUDIT PACKAGE



MONITOR MY HOUSE AND SOLAR PACKAGE



Is your solar system working? This is a common question that many solar system owners are unsure of.

This package allows you to have one Smart Clamp to monitor the entire house consumption plus an additional Smart Clamp to monitor your solar system.

The website can be set up to alert you in the event that your solar system stops performing.

CONTACT US

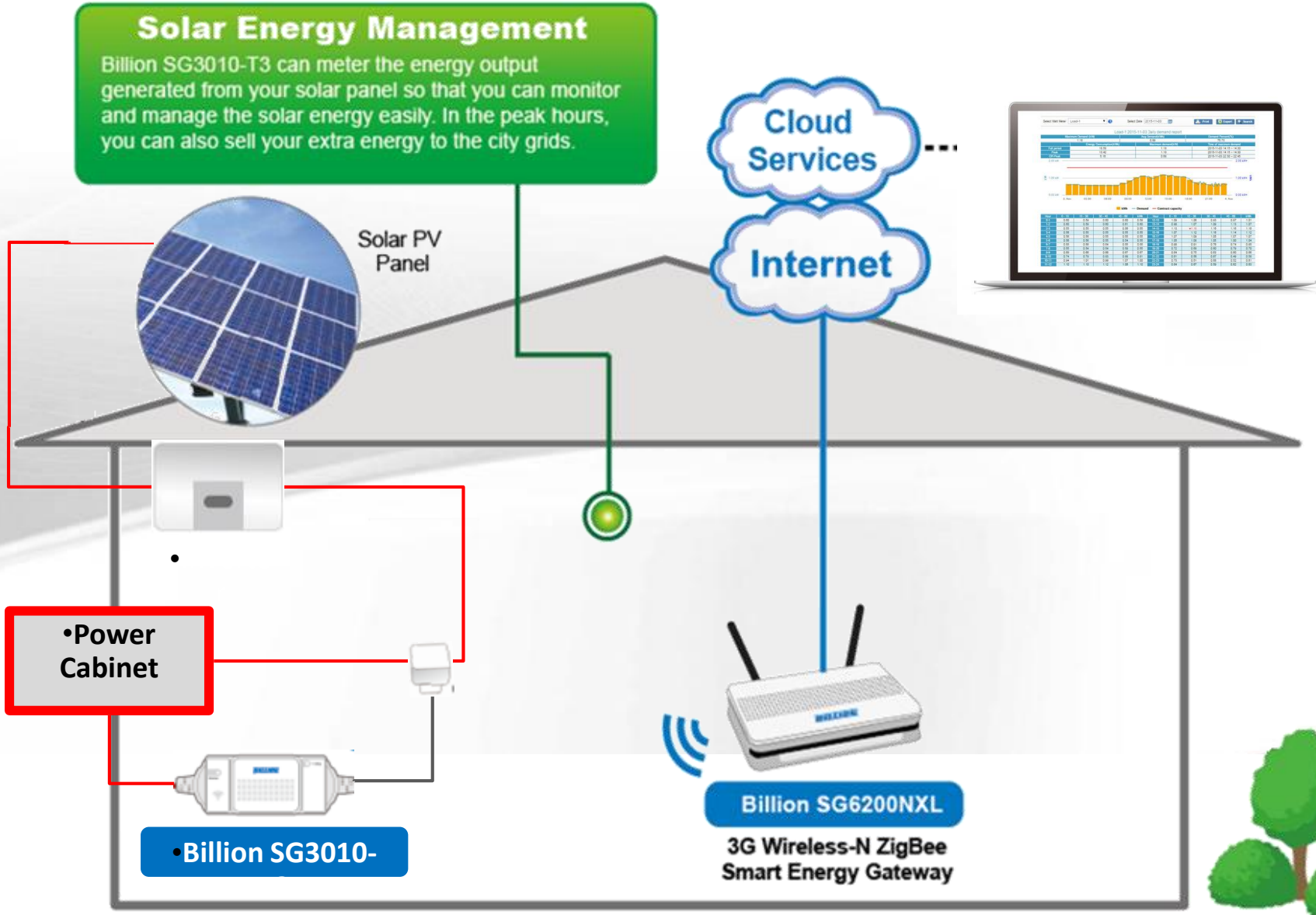
READ MORE...



Application Diagram Solar Energy Management Solutions

Solar Energy Management

Billion SG3010-T3 can meter the energy output generated from your solar panel so that you can monitor and manage the solar energy easily. In the peak hours, you can also sell your extra energy to the city grids.



Electric Bicycle Station, Taiwan

Billion Electric Introduces Smart Off Grid Solution to Electric Bicycle Station

Eco Power Station

BEsmart Energy Management Cloud
Monitor and manage all electrical activities at anywhere you are

SG3010-iCB - Intelligent Current Control Box
Control and measure the power input and output of individual electric bicycle

SG6200NXL - Smart Energy Gateway
Collect and send all digital power consumption data to the cloud monitoring system

SG3015 - Smart Energy Meter
Record the total power consumption, current, and voltage data into digital numbers

Billion Electric provides our smart energy management solution to monitor the electrical activities at the Eco-Power Station (EPS), a modern, off-the-grid electric bicycle charging station that is self-powered by solar energy. We combined power metering and communication technologies to not only help ease administrators on the challenges of the central control of scattered equipment, but also create fast and more efficient workflow between devices to boost productivity and to save energy.

Video Link: <https://youtu.be/e4erWWCIL9c>

 **Ministry of Economic Affairs, R.O.C.**



經濟部推動綠色貿易專案辦公室
GREEN TRADE PROJECT OFFICE
MINISTRY OF ECONOMIC AFFAIRS

BILLION

SEMS System Demo

BILLION



Why Billion?

- ✓ **Achieve Contestability with Energy Retailers**
- ✓ **Improve monitoring, analyses, command & control of existing operations through real-time, data-analytics-driven centralised platforms. This may facilitate the following:**
 - Headcount reductions through elimination of redundant or inefficient labour,
 - Reduce human errors, equipment breakdowns and workplace accidents, thereby improving reliability & safety besides operational costs
 - Improve Vigilance and Security
 - Improve Asset Performances for better recurring returns to stakeholders
 - Improve Service Delivery and Client Experience (tenants, shoppers)
 - Attract investors which focus on Smart, efficient and well-managed buildings
 - giving asset owners more or better options in asset divestment strategy

Why Billion?

✓ **Support government-led Smart/Green initiatives**

- Application of Grants from the authorities for Green campaigns
- Smart-City / Smart Nation (e.g. <http://www.pmo.gov.sg/smartnation>) which would benefit the people, businesses and the government
- **Expand Adaptability & Scalability of existing management systems in view of potential future expansions, upgrades, reconfigurations.**
- Able to integrate with existing centralized building management software to enable a wide-ranging capabilities comprising utilities and other operational needs, such as security, BMS, chiller, etc. through a software SI.
- Software customization can be supported by our local system partners or by customer's partner software developer.





BILLION

Thank you for your attention!

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