

BUILDING DIGITALIZATION ENERGY MANAGEMENT ENERGY SAVING WITH A.I. LED & FACADE LIGHTING COOLING SOLUTION

ENERGY STORAGE

SOLAR POWER

The positive impact of the Paris Agreement in aligning 195 countries to commit in the reduction of CO<sub>2</sub> emissions is huge, and so do the negative impact of Greenhouse Gas (GHG) emissions from the recent practices and activities relying on high carbon energy sources. The wind of change is blowing in the power market. Renewable energy with low carbon emission is our new future, and also our new economy for the children of tomorrow.

And Anderson a street

I ACCALLANCE

ALC: NO

Since 2008, Synergy Group Holdings International Limited (Synergy) has been providing energy saving and management services to a wide range of clients, including reputable multi-national companies and conglomerates. Up till today, Synergy has helped its clients in achieving totally 307,382,630kWh of electricity reduction, 224,070,360kg of CO<sub>2</sub> emissions reduction, and HK\$218,768,560 of savings through Energy Management Contract (EMC).

Today, Synergy has its footprints in over 20 different countries and regions, including Australia, Indonesia, Malaysia, Africa, Japan, etc. The Group is now one of the leading EMC providers in Asia, and the first Energy Service Company (ESCO) listed on the Hong Kong Stock Exchange. Synergy involves in three main sectors, namely energy efficiency and artificial intelligence technology, renewable energy and energy storage. The Group provides a full range of capabilities with the latest green technology including product customization, on-site inspection, energy audit, monitoring and analysis, project funding, implementation, operation and management as well as consultation services.



#### Synergy Group

Green tech economy : our new economy



# **Synergy Corporate Identity**









Synergizing Resources



Green Tech Economy : Our New Economy

#### With EMC business model,

Synergy's interest is always aligned with our clients' benefits -Achieving maximum energy efficiency while improving and maintaining the highest operational standard

# **Progress and Development of Synergy Group**

- 2018 Stake Acquisition in Negawatt specializing in Building Digitalization with Artificial Intelligence and Big Data Analysis
  - Investment in a Vanadium Resource and a Processing Facility for Electrolyte Supply to Energy Storage Market
  - BOCHK Corporate Environmental Leadership Awards EcoChallenger
  - WGO Sustainable Business Award
- 2017 Selected in the Top 100 Most Promising Listed Company by Forbes China
  - Selected as the Strategic Partner of the Silk Road International Association in Environmental Protection
- 2016 Listed on HK Main Board (Stock Code: 1539 HK)
  - United Nations and SERI Social Caring Awards for Green Excellence
  - Launched Synergy Energy Efficiency Index (SEEI) with WGO
  - WGO Sustainable Business Award
  - PCCW & YP The Excellent Brand Award
- 2015 Completed the first solar project in Guinea
  - Listed on GEM Board of HKEX
  - BOCHK Corporate Environmental Leadership Awards EcoPartner
- 2014 Completed the first LED media display project, One Peking
  - Established Synergy ESCO (Malaysia) Sdn Bhd
- 2013 Introduced proprietary technology "Cooling & Water Treatment Solution"
- 2011 Launched Synergy Group new identity
  - WWF Hong Kong Corporate Member
  - Received Caring Company certificate
  - HKPC's Green Manufacturing Network Member
  - Launched EMC with new induction lamp and LED products
  - Launched EMC in HK with hydrocarbon energy saving refrigeration
- 2010 CAPITAL Outstanding Green Excellence Awards
  - CAPITAL Entrepreneur Green Enterprise Awards, 1st runner-up
  - Prime Magazine and Business Environment Council Prime Awards for Eco-Business
  - Economic Digest The Best SME Partners
  - Productwi\$e Label of the Hong Kong Awards for Environmental Excellence
  - Established overseas partnership for "Tube-in-Tube (TIT)" System
- 2009 Purchased "TIT" worldwide patent rights
  - Outstanding Chinese Patented Invention Award from the State Intellectual Property Office (SIPO) of the PRC
- 2008 Founded Synergy Lighting Limited





# **Synergy Group Major Markets**



For USA and EU, data from the government agency is referenced.

\*\* United Nations Framework Convention On Climate Change Intended Nationally Determined Contributions.

# **Energy Management Contract**



# Synergy Energy Saving & Management Services

In Synergy, we provide one-stop energy saving and management solutions for reputable multi-national companies and conglomerates to achieve energy efficiency. With the help of our professional team of energy specialist from Synergy, you can enjoy a wide range of services with absolutely no upfront investment cost.

> From the design to the implementation of energy saving and clean energy projects, we can help you achieve energy efficiency and reduce electricity expenses up to 80% within a year. Our services include but not limited to retrofitting, energy conservation, comprehensive energy audit for the facilities, and provide consultation advices in identifying possible improvements.

# THE EMC MODULE



# How it works? One-Stop Energy Saving & Management Service

Synergy covers all necessary capital investments, and provides technology knowhow for our clients. Our experienced team of engineers and project managers strives to assist you in achieving a maximum amount of guaranteed savings with our expertise in the clean energy, energy saving and management field.

Energy Audit	Establish Baseline and Identify Savings Opportunities
Send a professional team of energy specialists, CEng, BEAM Pro, and Certified Energy Manager to perform energy audit	Baseline energy E consumption p establishment, energy saving and clean energy measures identification. Computer-aided software for system preliminary design, scientific measurements and evaluations

The EMC module enables you to reduce energy expense, energy consumption and carbon footprint at no opportunity cost. In return, Synergy will share part of the total energy cost you have saved through enjoying our services as the project cost.





# **Our Solutions**



#### **Building Digitalization**

Our subsidiary, Negawatt, provides a scalable cloud-based platform which serves as an artificial intelligence (A.I.) virtual engineer to assist building owners to achieve easy and smart building management through electrical and mechanical digital transformation. We offer 3D visualization and comprehensive document control, energy and key indoor environmental quality parameters monitoring and analysis, fault detection and diagnostics, predictive maintenance planning, energy saving measures identification, and automatic reporting for the building.

Negawatt also provides an intelligent platform to automatically optimize chiller operations through A.I. and machine learning in order to save energy.

#### Solar Energy

Synergy provides a wide range of world class, high efficiency solar energy products in accordance with customer needs. We have a specialized team of professionals to provide a turnkey solution from funding, design, installation and commissioning, to operation and maintenance of Photovoltaic (PV) plants.

#### Facade Lighting

The Synergy LED media display excels in quality and design practices, including but not limited to unparalleled high transparency, slim size, light weight, high brightness and low power consumption.

#### Energy Storage - VFB

Synergy offers a wide range of energy storage solutions and in particular, a patented core vanadium flow battery (VFB) technology with more than 15 years of operational experience at over 50 sites worldwide. It is a battery with high safety and long life expectancy of over 25 years of heavy duty cycle services. It is extremely scalable with best-in-class efficiency and power density.

#### Cooling



Synergy Coologic<sup>®</sup> Energy Management Platform offers a comprehensive set of cooling energy saving solutions which can help to achieve 20-40% savings in air conditioning energy consumption. The solutions include Environmental Condenser Water Treatment solution & Chilled Water Treatment solution, Air Handling Unit (AHU) Optimization, Inverter Control, Cooling Load Management, Overall System Optimization and Data Mining Analysis on saving strategies.

#### Lighting



# **Building Digital Transformation**

Negawatt helps buildings to become smart through Electrical & Mechanical (E&M) digital transformation.



As a virtual engineer, Negawatt Building Operating System (BOS) is a cloud-based software with artificial intelligence designed to collect, manage, and analyze all building information under one platform - to improve energy efficiency, increase building operator's productivity and optimize resources for building excellence.



**Building Sustainability Manager** Visualization & Documentation Control

Energy & Resources Manager Monitor & Analyze Energy Usage

**Chiller Analytic Manager** Optimize Cooling Efficiency with Machine Learning

**Smart Reporting Manager** Auto Report Generation

Integrative Corporate Manager Corporate Level Energy Management with Smart Detailed Reporting

# Vanadium Resources & Vanadium Flow Batteries



Long lifespan of 25+ years with minimal degradation

No Fire/Explosion or **Emissions Risk** 



Instant Release on Demand with **High Conversion Efficiency** 

**Extremely Scalable** 



Wide Temperature Range with No Risk of Cross-Contamination

Long Duration Stable Storage Application

Modular Architecture, Simple Installation & Arrangement

High-Reliability Plug & Plav Arravs

Our chosen Vanadium Flow Battery (VFB) is a US patented core technology with specialized cell stack and electrode design. It is recognized by Pacific Northwest National Laboratory and independent engineering consultant. VFB has been proven in the market for more than 15 years at 50+ sites. It has also been used in US military/navy bases.



To be the leading Vertical, Fully-Integrated, Low-Cost High Purity Vanadium Producer and VFBs Supplier for the hundred-billion dollar Energy Storage industry market



# **Cooling Solution**

# Synergy Coologic<sup>®</sup> Energy Management Platform



### 3-6%

Environmental Chilled Water Treatment Solution



Environmental Condenser Water Treatment Solution



20-30%

Energy Saving Refrigerant



# 5-10%

Variable Frequency Drive



System Design Optimization



Equipment Optimization



Cooling Load Efficiency Optimization



# **Lighting Solution**

# Ultra High Output LED Lighting



	Synergy LEDs	Competitors LEDs
Energy Savings	81% (190lm/W, 8W)	57-62% (100-120lm/W, 16-18W)
Product Life Span	100,000 hours (low maintenance)	20,000 - 50,000 hours (high maintenance)
Heat Generation	75% less heat generation, save cooling, stable product	High heat generation, more cooling, high failure
Lux Performance Guarantee	Lumen drop ≤ 2 ~ 4 % per year	High lumen drop 10 ~ 20 % per year
Product Failure Rate	≤ 0.01% per year	10 - 15% after 2nd year 50% by end of life
LED Driver Failure Rate	Patented high efficiency driver with 1% power loss	High failure rate with 12% power loss

# **Our Case Studies**

#### Er

Energy Saving & Building Digitalization Solutions p.17-29		
South Africa	A Major Retailer	Retail (Hypermarket /CG Store)
China	China Overseas - The UniMall	Property Development
Malaysia	WCTH - Paradigm Mall	Retail (Shopping Mall)
Malaysia	Kuala Lumpur International Airport	Aviation
Malaysia	Sungei Wang Plaza	Retail (Shopping Mall)
Indonesia	Lippo Group - Hypermart	Retail (Hypermarket)
Indonesia	Lippo Group - Matahari	Retail (Department Store)
Singapore	Singapore Airport Terminal Services	Catering
Hong Kong	International Commerce Centre	Property Development
Hong Kong	The Kowloon Motor Bus Co. Ltd.	Public Transportation
Hong Kong	Citibank Tower	Property Development
Hong Kong	Towngas Headquarters	Utility
Hong Kong	Sun Hung Kai Centre	Property Development
LED Media Disp	lay	p.31-36
Hong Kong	Prada Canton Road Flagship Store	Retail
Hong Kong	Miu Miu Canton Road Store	Retail
Hong Kong	One Peking	Property Development
Hong Kong	Miramar Shopping Centre (Mira Mall)	Retail
Hong Kong	No. 26 Wellington Street	Property Development
i Hong Kong	YOHO Midtown	Property Development

#### LE

ergy Saving	& Building Digitalization Solutions	p.17-29
outh Africa	A Major Retailer	Retail (Hypermarket /CG Store)
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Malaysia	Sungei Wang Plaza	Retail (Shopping Mall)
ndonesia	Lippo Group - Hypermart	Retail (Hypermarket)
ndonesia	Lippo Group - Matahari	Retail (Department Store)
Singapore	Singapore Airport Terminal Services	Catering
long Kong	International Commerce Centre	Property Development
long Kong	The Kowloon Motor Bus Co. Ltd.	Public Transportation
long Kong	Citibank Tower	Property Development
long Kong	Towngas Headquarters	Utility
long Kong	Sun Hung Kai Centre	Property Development
D Media Dis	play	p.31-36
long Kong	Prada Canton Road Flagship Store	Retail
long Kong	Miu Miu Canton Road Store	Retail
long Kong	One Peking	Property Development
long Kong	Miramar Shopping Centre (Mira Mall)	Retail
long Kong	No. 26 Wellington Street	Property Development
long Kong	YOHO Midtown	Property Development

#### Solar Energy and Energy Storage

Guinea	
Indonesia	

Roof-Top Photovoltaic (PV) Plant Ground-Mounted PV Plant and Battery Storage

p.38-39



### A Major Retailer South Africa



The retailer is the largest consumer goods retailer with over 2,600 outlets in Africa. It is listed on the Johannesburg Stock Exchange Limited in the "food retailers & wholesalers" sector. Secondary listings are also maintained on the Namibian and Zambian Stock Exchanges. Synergy has helped in reducing lighting electricity cost for superstores, supermarkets and convenient stores. Scope of Work: Existing T8 fluorescent tubes in over 2,500 stores are being replaced with Synergy LED lightings to enhance energy efficiency

Project Date:

Project:

May 2017 – present

#### Description

53-67% energy saved

3 ~ 200M kWh energy reduction in a year

 $co_2 = 198,000$  tons CO<sub>2</sub> emission reduction in a year

Planting 9,000,000 trees

The emission factor is assumed to be 0.99 kgCO\_/kWh based on Eskom utility company data It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life Preliminary estimation and project subject to deployment







#### China Overseas - The UniMall

China





Project:	UniMall, a brand mall series, is developed by China Overseas Property Holdings Limited, which is listed
	on the Hong Kong Stock Exchange (02669.HK). It is a subsidiary of the China Overseas Holdings Limited
	with business in more than 70 major cities across China. It is managing over 672 contracted projects
	servicing an area of about 130 million m <sup>2</sup> .

**Scope of Work:** Existing lightings are being replaced with Synergy LED lightings to enhance energy efficiency for the UniMall in Nanjing

Project Date: 2018 – present

#### Description

62% energy saved

- 300,500 kWh energy reduction a year
- $cop = 299,600 \text{ kg CO}_2 \text{ emission reduction in a year}$
- Planting 13,760 trees

[Note] The emission factor is assumed to be 0.997 kgCO $_2$ /kWh based on online tanpaifang source It is assumed that each tree can absorb 21.8 kgCO $_2$  throughout its life



# WCTH - Paradigm Mall

#### Malaysia



Project:	Paradigm Mall was built in 2012 with a total GFA Paradigm integrated commercial development. It WCT Holdings Berhad (WCTH). WCTH is listed on t is mainly involved in engineering and construction, p The major owner of Pavilion Group has acquired a s
	Paradigm and Synergy have entered into a five-yea and cooling electricity cost for the Mall.
Scope of Work:	Existing lightings have been replaced with Synergy LE seven solutions of Synergy Coologic <sup>®</sup> Energy Manage
Project Date:	September 2014 – present

Description

45% energy saved (71% in lighting, 33% in cooling)

7.7M kWh energy reduction in a year

cop = 5,706 tons CO<sub>2</sub> emission reduction in a year

= Planting 262,061 trees



[Note] The emission factor is assumed to be 0.74 kgCO\_2/kWh based on Malaysia Authority It is assumed that each tree can absorb 21.8 kgCO\_2 throughout its life



A of 65,032m<sup>2</sup>. It is part of the RM1.8 billion dynamic It is managed by WCT Malls Management under the in the Main Market of Bursa Securities (KLSE:WCT) which in, property development, investment and management. a stake in WCTH.

ear Energy Management Contract for reducing lighting

LED lightings to enhance energy efficiency. Implemented gement Platform

## Kuala Lumpur International Airport Kuala Lumpur, Malaysia





Project: Kuala Lumpur International Airport (KLIA2) is the largest and busiest airport in Malaysia with site spanning over 100 km<sup>2</sup>. The airport handles more than 50 million passengers a year. It is operated by Malaysia Airports Holdings Berhad (MAHB) which is listed on the Malaysian stock exchange (MYX:5014). KLIA2 and Synergy have entered into a ten-year Energy Management Contract for the carpark.
 Scope of Work: Existing T5 lightings have been replaced with Synergy LED lightings to enhance energy efficiency
 Project Date: March 2016 – present

Description



Project:	Sungei Wang Plaza, with a total GFA of 47,4 shopper traffic of 13.8 million.
	Sungei Wang Plaza and Synergy have entered lighting and cooling electricity cost for the Mall.
Scope of Work:	Existing lightings have been replaced with Syn seven solutions of Synergy Coologic <sup>®</sup> Energy N
Project Date:	September 2016 – present

# 77% energy saved -20% increased brightness

942,000 kWh energy reduction in a year  $698,020 \text{ kg CO}_2$  emission reduction in a year  $698,020 \text{ kg CO}_2$  emission reduction in a year  $698,020 \text{ kg CO}_2$  emission reduction in a year

[Note] The emission factor is assumed to be 0.74 kgCO<sub>2</sub>/kWh based on Malaysia Authority It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life



44% energy saved (86% in lighting, 29% in cooling)

8.0M kWh energy reduction in a year

 $co_2 = 5,901$  tons CO<sub>2</sub> emission reduction in a year

Planting 271,050 trees

Sungei Wang Plaza

[Note] The emission factor is assumed to be 0.74 kgCO\_z/kWh based on Malaysia Authority It is assumed that each tree can absorb 21.8 kgCO\_2 throughout its life



7,483m<sup>2</sup>, is one of the longest running malls in Malaysia with

ed into a five-year Energy Management Contract for reducing I.

nergy LED lightings to enhance energy efficiency. Implemented Management Platform

#### Description





#### Lippo Group - Hypermart Indonesia



### Lippo Group - Matahari Indonesia





Hypermart is the largest hypermarket retailer with over 100 stores in Indonesia. It is operated by PT Matahari Putra Prima Tbk (MPPA), Indonesia's prominent multi-format modern retailer listed on the Indonesian stock exchange (IDX:MPPA), under Lippo Group. Lippo Group is one of the largest real estate developers in Indonesia with 16 listed companies across Asia.	Project:	Matahari Department Store is the largest chain of depa space of over one million m <sup>2</sup> . It is listed on the Indon under Lippo Group which is one of the largest real companies across Asia.
Hypermart and Synergy have entered into a seven-year Energy Management Contract for reducing lighting electricity cost for superstores.		Matahari Department Stores and Synergy have entered i reducing electricity cost for retail stores.
Existing lightings have been replaced with Synergy LED lightings to enhance energy efficiency	Scope of Work:	Existing lightings have been replaced with Synergy LED I
April 2016 – present	Project Date:	December 2015 – present



# Description 78% energy saved



[Note] The emission factor is assumed to be 0.85  $\rm kgCO_2/\rm kWh$  based on PLN figure It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life

#### 22 Green tech economy : our new economy

The emission factor is assumed to be 0.85 kgCO<sub>2</sub>/kWh based on PLN figure It is assumed that each tree can absorb 21.8 kgCO, throughout its life

Project:

Scope of Work:

Project Date:





epartment stores in Indonesia, operating a business donesian stock exchange (IDX: LPPF). It is operated eal estate developers in Indonesia with 16 listed

ed into a seven-year Energy Management Contract for

D lightings to enhance energy efficiency



### Singapore Airport Terminal Services Changi Airport, Singapore





Proi	iect:	

Singapore Airport Terminal Services (SATS) is the leading provider of gateway services and food solutions in the region and listed on the Singapore stock exchange (SGX:S58). SATS controls about 80% of Changi airport's ground handling and catering business.

SATS and Synergy have entered into a five-year Energy Management Contract for reducing lighting electricity cost.

Scope of Work: Synergy has replaced high bay metal halide lamps and induction floor lights with Synergy Energy Saving Induction Lamps

Description

**Project Date:** 2013 – 2018



-🏹- 30% increased brightness

3.0M kWh energy reduction in a year

 $\Box_2 = 1,294$  tons CO<sub>2</sub> emission reduction in a year

= Planting 59,428 trees

#### [Note]

The emission factor is assumed to be  $0.43 \text{ kgCO}_2/\text{kWh}$  based on Singapore Market Authority - Singapore Energy Solutions It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life

# International Commerce Centre

#### Hong Kong



Project:	International Commerce Centre (ICC) is th operator, MTR Corporation Limited and one It houses some of the most prominent finance
	ICC and Synergy have entered into a six- electricity cost.
Scope of Work:	LED conversion for general lightings in carpa
Project Date:	2015 – present



Besei

79.2% energy saved
 -☆- 16% increased brightness

208,750 kWh energy reduction a year 208,750 kWh energy reduction a year 112,720 kg CO<sub>2</sub> emission reduction in a year 12,720 kg 5,177 trees

[Note] The emission factor is assumed to be 0.54 kgCO\_/kWh based on CLP figure It is assumed that each tree can absorb 21.8 kgCO\_2 throughout its life



the tallest building in Hong Kong developed by sole metro e of the largest property developers, Sun Hung Kai Properties. Incial institutions in the world.

k-year Energy Management Contract for reducing lighting

bark, commercial floor corridors and toilet areas

#### Description



#### The Kowloon Motor Bus Co. Ltd.



#### Hong Kong



The Kowloon Motor Bus Co. Ltd. (KMB) is one of the world's biggest public transport companies and the largest bus company in Hong Kong in terms of fleet size and number of bus routes. It is a subsidiary of Transport International Holdings Limited (00062.HK).

KMB and Synergy have entered into two consecutive four-year Energy Management Contracts for reducing lighting electricity cost.

**Scope of Work:** Existing high bay lamps and fluorescent systems at four depots have been replaced with Synergy induction lamps and LED tubes

Description

Project Date: 2011 – present

Project:



- 🔆 50% increased brightness

2.6M kWh energy reduction in a year

 $\Box_2$  = 1,389 tons CO<sub>2</sub> emission reduction in a year

= Planting 63,775 trees

[Note] The emission factor is assumed to be 0.54 kgCO<sub>2</sub>/kWh based on CLP figure It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life

## Citibank Tower Hong Kong



Project:	Citibank Tower is a 50-storey Grade A comme Champion REIT listed on the Hong Kong stor
	Citibank Tower and Synergy have entered into electricity cost.
Scope of Work:	T8 fluorescent tubes have been replaced w Citibank headquarters and back office
Project Date:	2011 – 2017



Descri

601,130 kWh energy reduction in a year 602 = 468,880 kg CO<sub>2</sub> emission reduction in a year

= Planting 21,536 trees

[Note] The emission factor is assumed to be 0.78 kgCO<sub>2</sub>/kWh based on HEC figure It is assumed that each tree can absorb 21.8 kgCO<sub>2</sub> throughout its life



nercial tower with a floor area of over 6,000 m<sup>2</sup>. It is owned by ock exchange (02778.HK).

o a six-year Energy Management Contract for reducing lighting

with Synergy patented "Tube-in-Tube" lighting system in

Description



### **Towngas Headquarters** Hong Kong





Project:

Towngas is Hong Kong's first public utility and one of the largest energy suppliers in Hong Kong (00003.HK).

- Deployment of Building Sustainability Manager (BSM), Energy & Resource Manager (ERM) and Chiller Scope of Work: Analytic Manager (CAM) for Towngas headquarters including the car park. The following has been implemented:
  - 20% energy saved on air-conditioning system with no hardware investment
  - Chiller optimization through artificial intelligence/ big data analysis to identify the optinum operating condition while minimizing energy use
  - Smart metering structure establishment with indoor environmental quality and energy usage monitoring
  - Customized dashboard and alarming system
  - Thermal line evaluation in accordance to ISO certification approach
  - System establishment to consolidate all types of information such as equipment specifications and layout

**Project Date:** 

#### @com ∉erm ∧bsm

### Sun Hung Kai Centre Hong Kong



Project:

Sun Hung Kai Centre is a Grade A commercial building in Wanchai with a floor area of over 83,980 m<sup>2</sup>. It is owned by Sun Hung Kai Properties listed on the Hong Kong stock exchange (00016.HK).

Scope of Work:

Deployment of Building Sustainability Manager (BSM), Energy & Resource Manager (ERM), Chiller Analytic Manager (CAM) and Smart Report Manager (SRM) for Sun Hung Kai Centre including the office premises, retail mall and the underground car park. The following has been implemented:

- condition while minimizing energy use
- monitorina
- Customized dashboard and alarming system
- Thermal line evaluation in accordance to ISO certification approach
- System establishment to consolidate all types of information such as equipment specifications and layouts to achieve ISO50001 certification
- Consultancy work on green building assessment (Beam Plus)
- Smart reporting system for data consolidation and Environmental, Social and Governance (ESG) report preparation

**Project Date:** 

2017 – present

2017 – present



• Chiller optimization through artificial intelligence/ big data analysis to identify the optinum operating

• Smart metering structure establishment with indoor environmental quality and energy usage

#### 🗲 srm 🍯 cam 🥠 erm 🙏 bsm



## Prada Canton Road Flagship Store Hong Kong



Type:

Networked Video Wall Digital Signage System

Project Date:

June 2016

#### Description

#### 1st in the World in PRADA GROUP

The Ultrafine P3 LED display wall 6,628mm (W) x 2,496mm (H) has been incorporated with automatic wireless control swing door system. Seven top commercial grade video walls with different sizes are connected together so that Prada headquarters in Milan can manage and update the contents remotely via cloud network. This is the first design that has been applied in Prada Global Store network.







# Miu Miu Canton Road Store

#### Hong Kong



Type:

P3 Indoor LED Display

Project Date: May 2016

#### Description

#### FHD In-store LED Display

The Ultrafine P3 LED display 5,568mm (H) x 1,920mm (W) has been incorporated into the design of the stairwell in the store.





## **One Peking** Hong Kong



Туре:	P200 Outdoor See-through LED Display

Project Date:

October 2014

#### Description

#### Energy Saving and High Quality LED Media Display with Long Lifespan

After the success of the CITIC Tower project, One Peking is another P200 LED media screen with the size of 814m<sup>2</sup>. This LED Media Display sits on the roof top of an iconic building situated in the heart of Kowloon, overlooking the spectacular view of Victoria Harbour.





# Miramar Shopping Centre (Mira Mall)

#### Hong Kong



Type:

Curtain Wall Media Display

Project Date: October 2015

#### Description

#### Outdoor Advertising with Cutting Edge Content Management and Live Broadcast Technologies

A shopping, dining and business hub in the prime location on Nathan Road, Tsim Sha Tsui. 2 nos. of Curtain Wall Media Displays located at the main and side entrance (Knutsford Terrace) of the shopping mall, both are equipped with cutting edge content management and live broadcast technologies that can greatly enhance the event and marketing promotion capabilities.





### No.26 Wellington Street Hong Kong



Type:

Curtain Wall Media Display

**Project Date:** 

October 2015

#### Description

#### Eye-grabbing LED Media Display for Outdoor Advertising Situated in the Heart of Central

The first curtain wall building LED media display with the measurement of 11.92m (H) x 9.4m (W) that covers 4 storeys in Hong Kong.

With over 1.1M pixels of display resolution, our LED media display retains its unparalleled high transparency of 75%.







# YOHO Midtown Hong Kong



Туре:

LED Light Boxes and Control System

Project Date: Novemeber 2014

Description

#### Smart and Automatic Control Signboard System

Our intelligent control system automatically reacts to preset outdoor lighting level and/or time schedule.

Six signboards were installed with over 220,000 nos. of Nichia (Japan) LEDs. It measures a total area of 1,500m<sup>2</sup> facing both Castle Peak Road and Yuen Ching Road.







#### Roof-Top Photovoltaic (PV) Plant Guinea, West Africa





Type:

318W Mono-Crystallite Back-Contact Technology without Light Induced Degradation (LID) Effect

**Project Date:** July 2015

Description

#### A Roof-Top Grid Connected Solar Power System using the World's Highest Efficiency Solar Modules

Synergy has built the largest grid-connected roof-top (29,500mm x 10,200mm) solar PV system in Conakry in 2015. 128 PV modules were connected to the grid through four 12.5kW solar inverters. The PV Module has an efficiency of over 19.5%. The adaptation efficiency is more than 99.9% with multi-Maximum Power Point (MPP) trackers.

#### Ground-Mounted PV Plant & Battery Storage

West Papua, Indonesia



Type:

250W Mono-Crystallite PV Module

**Project Date:** 

September 2016

#### Description

#### A Leading Approach - An Integrated Solar Energy and Battery Storage System

40 mono-crystallite PV modules were installed in an off-grid village in Indonesia. The modules were connected to a 10kW lowfrequency solar inverter. A valve-regulated and maintenance-free 14.4kWh gel battery was also installed to store excess solar energy for later usage when required (e.g. at night) to optimize the use of the PV system and enhance its reliability.





# **Our Clients**











40 Green tech economy : our new economy





【傳郑

"Coupled with their investmentfree saving sharing program, strong customer service and technical support, Synergy Group has assisted Henderson Land Group in cutting operational costs and more importantly contributing to a greener environment."



Kwok Lam JP, MH **Executive Director** Henderson Land Group 00012.HK (Henderson Land Development)



"Citybase believes that environmental protection is essential in quality property management and is committed to creating a low carbon living environment for occupants by implementing sustainable green policies and promoting energy saving products as well as carbon management solutions."

Unilever

DKSH





Jim Huna Kin General Manager Citybase Property Management Limited 00001.HK (Parent Company) "As one of our first partners in the energy saving field, Synergy Group has allowed us to achieve energy savings, reduce operational costs and succeed in our aim of improving energy efficiency without requiring any up front capital."

#### 華懋集團 **Chinachem Group**



1210

Dr. Kung Yan-Sum Chairman Chinachem Group

#### Whampoa Property Management

A member of Hutchison Whampoa Property Group

"Synergy Group proved to provide a professional and efficient service to us. As what they have committed, it makes the property achieve Carbon Reduction and substantial saving in electricity cost."





Paul Li Assistant General Manager Estate Management Whampoa Property Management Limited 00013.HK (Parent Company)



"We formulate our Environmental Management Policy to stipulate our green services, objectives and targets. Through our enormous property asset and facility service network, we work hand in hand with our customers to endeavour for a cost-effective and green living environment and contribute to the sustainable development of the Earth."





Dr. Edmond Cheng Managing Director Urban Group



"Energy saving is one of our top priorities, not only with regard to the positive effects on the environment and to reduce climate change but also to reduce our operational costs."



Tim Chalk Chief Executive Officer 7-Eleven Hong Kong & Macau



"We fully appreciate the high level of professionalism and the "can do" spirit of the Synergy Group. The quality of the device provided to us is excellent and satisfies our highly demanding requirements."





James C Louey Commercial Director The Kowloon Motor Bus Co. (1933) Limited 00062.HK (Parent Company)



"Synergy Group cutting edge energy efficient and longer lasting Synergy "Tube-in-tube" lighting system was introduced and considered a feasible solution to our need."



Shirley Hughes Chief Executive Officer New Media Group



"We have gone through a very stringent tendering process and carefully selected Synergy Group as our energy saving solution provider. We are able to enjoy more benefits such as better electricity savings and lighting performances with Synergy's advanced and customized solutions compared with other LED manufacturers."



Clarissa Joesoep Chief Financial Officer PT. Matahari Department Store Tbk. IDX:LPPF

#### LHGROUP 🚱 叙福樓 🌆

"LHGroup supports ecofriendly ways of doing business. Our use of Synergy Group's energy saving "Tube-in-tube" has reduced not only electricity costs but carbon emissions as well. Thus we are able to enjoy the benefits of both economic savings and environmental protection, a win-win result that we are very pleased to see."



Simon Wong Executive Director LHGroup





"The implemented comprehensive cooling solution from Synergy has demonstrated over 20% saving in air conditioning energy & ventilation services consumption while maintaining all operational standards. We are very impressed by their professionalism in managing the whole energy saving project and able to offer complete set of cooling solution ranging from water treatment solution, AHU optimization, inverter control, cooling load management and overall system optimization. Coupled with Synergy's lighting solution and carpark fan control with saving of over 70% in energy

consumption."

arpark fan control 70% in energy Head of Operations of Paradigm Mall WCT Malls Management Sdn. Bhd. KLSE:WCT (Parent Company)

"As a big business and employer like RBS, we believe we have a duty to manage our environmental impacts and help save resources over the coming years. Setting up targets is a good opportunity for us to show that RBS is changing and that we recognise our responsibilities as a global citizen."

# **¾ RBS**<sup>™</sup>



Mark Brown Head of Corporate Services APAC The Royal Bank of Scotland Group plc LON:RBS

# PRUDENTIAL

"Prudential Hong Kong started a working committee in December 2009 to launch a series of environmental friendly initiatives. We encourage a culture of reduce-reuse-recycle to bring a greener future for next generation."



植向

Derek Yung Chief Executive Officer Prudential Hong Kong 02378.HK





"We are committed to

providing the market in the

region with the best quality

products and services to

meet the ever-changing

market environment in East

Asia. However, corporations

can no longer only care for

business outcomes. As a large

corporation, we at the Jebsen

Group have embraced our corporate social responsibility,

committing ourselves to ensuring that carbon management is a permanent

issue in our group."



Helmuth Henning Managing Director Jebsen Group



李錦記 LEE KUM KEE





Lee Man Tat Group Chairman Lee Kum Kee



"The professionalism, the fast response to our requests, the flexibility and mobility of your system and your staff all have impressed my team and myself. The Negawatt BOS Platform guarantees no loss in our building information and data. It is the kind of IoT (Internet of Things) technology that we implement in our daily operation system performance and energy signature. From the records of the past year, we confirmed that this system help us to save energy significantly upon our already very efficient oil free chiller system. You have convinced us that "mining" of energy saving opportunities work to an intensive and comprehensive levels."

Nelson Lo Assistant General Manager Property & Projects Management 00003.HK



"The three intelligent platforms, viz., BSM (Building Sustainable Manager), ERM (Energy and Resource Manager) and CAM (Chiller Analytic Manager) perform brillantly in terms of documentation and information management, energy accounting and auditing and chiller optimization operation analysis... the ERM is the most comprehensive visual dashboard and report generator for our energy metering systems they ever seen... Your tool will definitely help us to explore a deeper level of "mining" energy saving in the coming future."

Kwan Yu Kuen, Ricky Consultant S.H.K. Real Estate Management Company Ltd. 00016.HK



#### ENERGY SAVING | ENERGY MANAGEMENT