

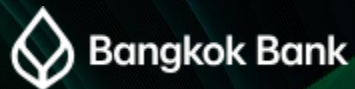
The Great Green Transition

Mongkhon TANGSIRIWIT

Schneider Electric

Cluster President Thailand, Myanmar & Laos

28 March 2025



Life Is On

Schneider
Electric

Ranked #1



GLOBAL100 2025
THE WORLD'S MOST SUSTAINABLE CORPORATIONS ©

Global Industrial Tech leader in electrification, automation and digitization

GLOBAL



€38bn

Group FY 2023 revenues

150k+

Employees in over 100 countries

5%

Innovation investments

18%

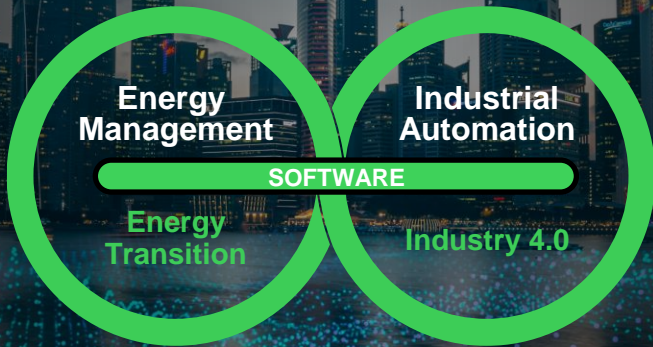
Software and Services

74%

Impact Revenues

679Mtons

Customer CO2 emissions saved since 2018



47y

Presence in Thailand

1.2k+

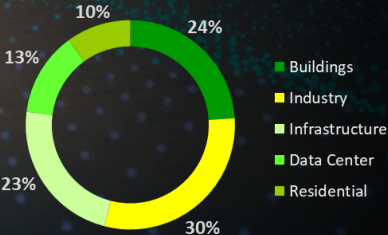
Employees

1

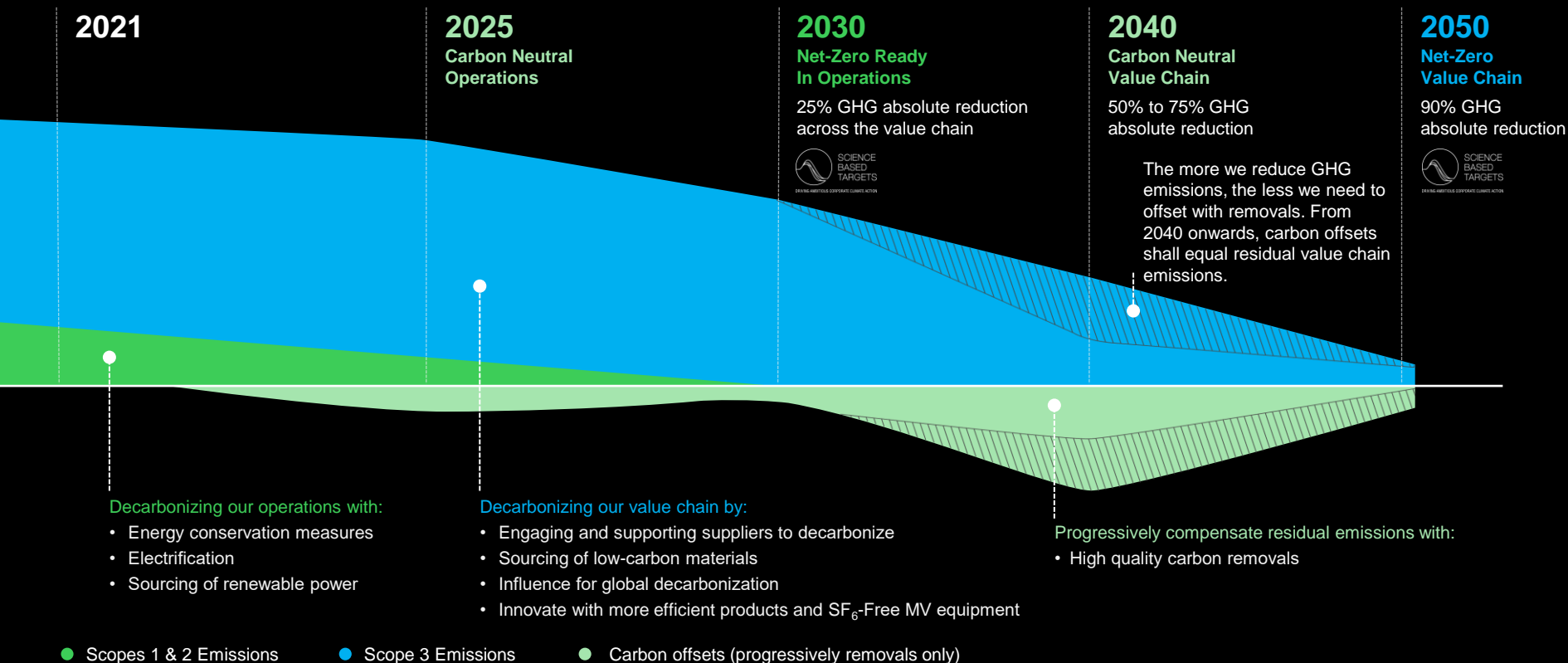
Global Smart and Sustainable Factory in Bangpoo

5000+

Partners and customers



Our Commitment: Net-Zero on entire value chain by 2050



Disclaimer: emission reduction curves are indicative and do not commit the group to annual reduction targets. Proportions between scope 1, 2 and 3 are not exact to facilitate the visualization of our emissions reduction's trajectories. All precise carbon footprint data are published in the Group's Universal Registration Documents, and CDP Climate Change responses and are externally assured by accredited third party verifiers

Leading companies follow an **integrated** approach

Strategize

MEASURE enterprise baseline
CREATE decarbonization roadmap
STRUCTURE program & governance
ENGAGE ecosystem
COMMUNICATE commitment



Digitize

MONITOR resource usage & emissions
IDENTIFY saving opportunities
REPORT and benchmark progress

Decarbonize

REPLACE energy source
ELECTRIFY operations
REDUCE energy use

What decarbonization activities are pursued most **today**?



Replace energy supply

Scope 1
& Scope 2

54%

Sustainability
messaging

56%

Purchasing
Renewables

51%

Define ambition
/ set targets



Reduce for efficiency & circularity

Scope 3

42%

Distributed
energy
resources

44%

Reducing
consumption

40%

Drive
circularity

42%

Supply chain
decarbonization



Electrify processes

31%

Drive
electrification

29%

Drive EVs /
e-mobility

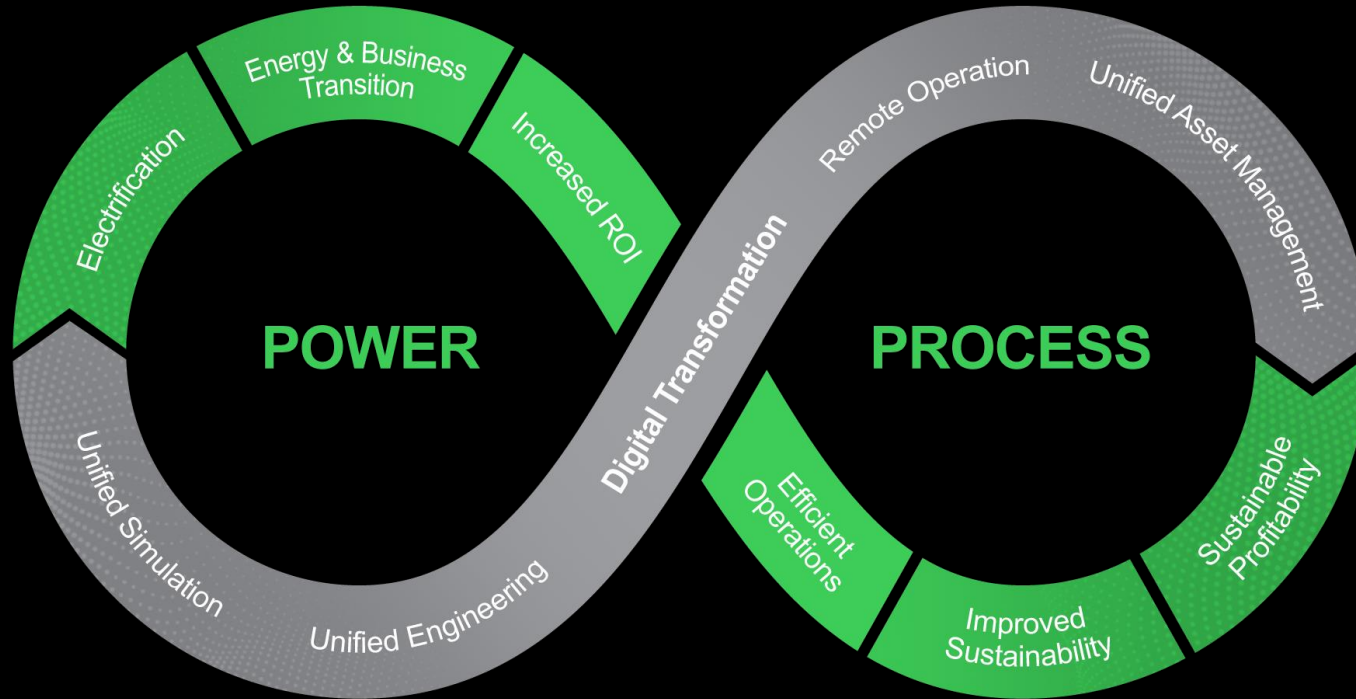
The Equation for the Future

$$\begin{array}{l} \text{Digital} \\ \text{Automation} \\ \text{Software} \\ \text{Data} \end{array} + \begin{array}{l} \text{Electric} \\ \text{Energy} \\ \text{Decarbonization} \end{array} = \underline{\text{Sustainable}} \begin{array}{l} \text{Green and Smart} \end{array}$$

Energy Management For SMEs

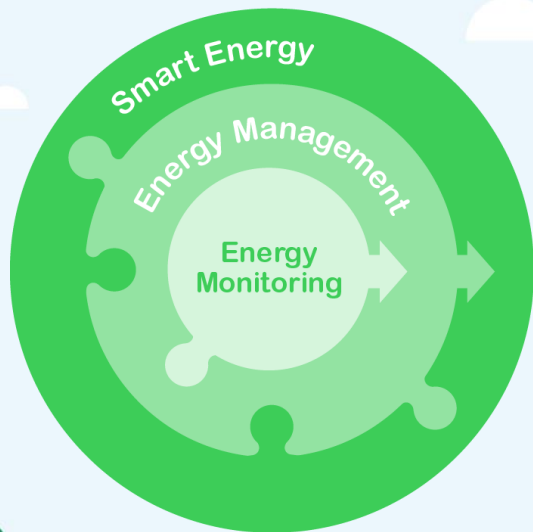


What do SMEs Industries need to concern?



Energy Efficiency

From passive usage to active production, storage and trading of your energy



Cross & multi-layer
integration



Cross-functional
collaboration

Harness the value of your data

The need for sustainable efficiency

- ✓ Reduce consumption
- ✓ Defer CAPEX
- ✓ Maximize savings
- ✓ Drive innovation

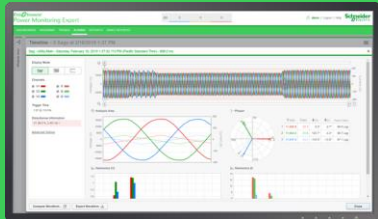
Industry surveys indicate that the average facility can reduce its energy consumption by **10 to 20 percent**¹



1) Efficiency and Innovation In U.S. Manufacturing Energy Use – US Department Of Energy with National Association of Manufacturers

Energy Efficiency

Energy Monitoring – 2 solutions



Power Monitoring Expert

Energy Hub simplifies the management of digitalized electrical and energy systems for facility owners and operators of mid-market Commercial and Industrial buildings looking to comply with codes and standards, achieve sustainability goals, maximize business continuity and operational efficiency.



Energy Hub (Subscription)

Award-winning EcoStruxure™ Power Monitoring Expert (PME) is purpose-built to help power-critical and energy-intensive facilities maximize uptime and operational efficiency. As a key element of EcoStruxure Power, PME is the window to your digitized power network, taking advantage of IoT connectivity and distributed intelligence.

usage awareness and
all production assets.

Apps, Analytics & Services

EcoStruxure Power App



EcoStruxure Power Advisor
EcoStruxure Asset Advisor

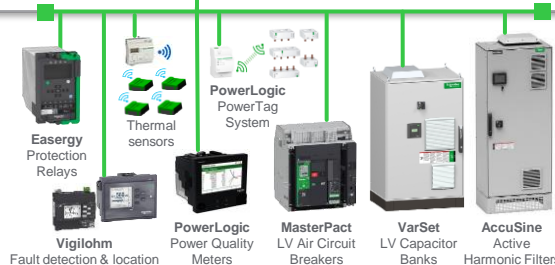
Edge Control

Energy
Management
and Control
Software



EcoStruxure Energy Hub
EcoStruxure Power Monitoring Expert

Connected Products



Energy Efficiency

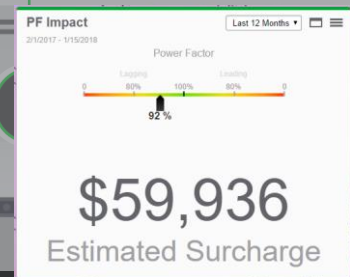
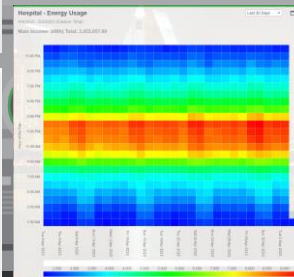
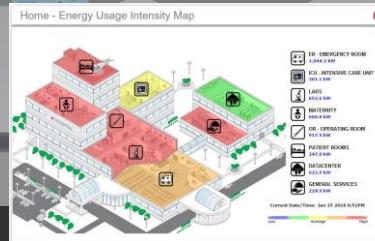
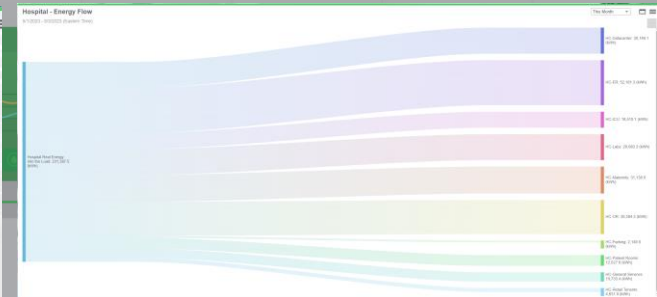
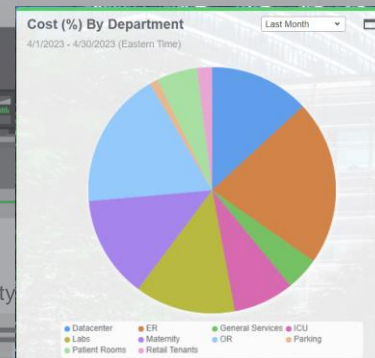
Energy Monitoring



Increase your process energy usage awareness and monitoring capabilities across all production assets.

Cost Monitoring

- Provide visibility to cost and abnormal usage of energy and other utilities (WAGES)
- Avoid penalties and billing discrepancies due to peak demand, power factor and errors in utility bills



Energy Efficiency

Energy Monitoring



Increase your process energy usage awareness and monitoring capabilities across all production assets.

Peak Monitoring

- Profile understanding
- Abnormality detection
- Capacity management



Air



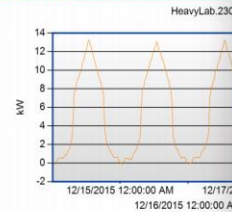
Electricity

Schneider
Electric

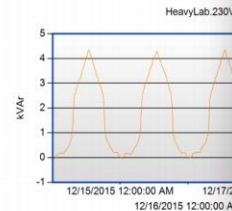
Load Profile Report

12/14/2015 12:00:00 AM - 12/21/2015 12:00:00 AM (Server Local)

HeavyLab.230V



*Maximum Value :13.31



*Maximum Value :4.37

Schneider
Electric

Chiller Plant Calendar Trend Month



Energy Efficiency

Energy Monitoring



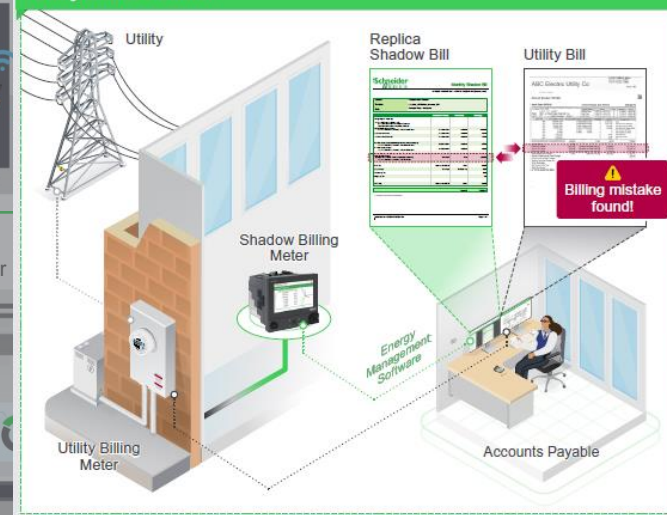
Increase your process energy usage awareness and monitoring capabilities across all production assets.

Utility Bill Verification

The shadow bill includes the same information as the original utility bill to compare key measurements:

- Energy Usage (kWh, kVARh, kVAh)
- Demand (kW, kVAR)
- Power Factor
- Time of Use (TOU) and Seasonal Usage
- Other fees and miscellaneous charges

Utility bill verification



Energy Efficiency

Energy Monitoring



Increase your process energy usage awareness and monitoring capabilities across all production assets.

Greenhouse Gas reporting based on

Equivalent tons of CO₂ emissions

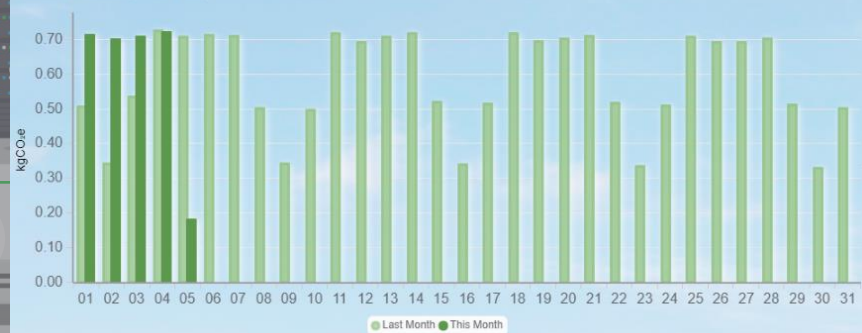
Saved Trees, km driven, etc.

Period over period usage comparison

Building Energy Rating

Carbon Tracking (kgCO₂e)

3/1/2024 - 4/5/2024 (Pacific Time)



Saved Trees

11/2017 - 12/2017



101,685

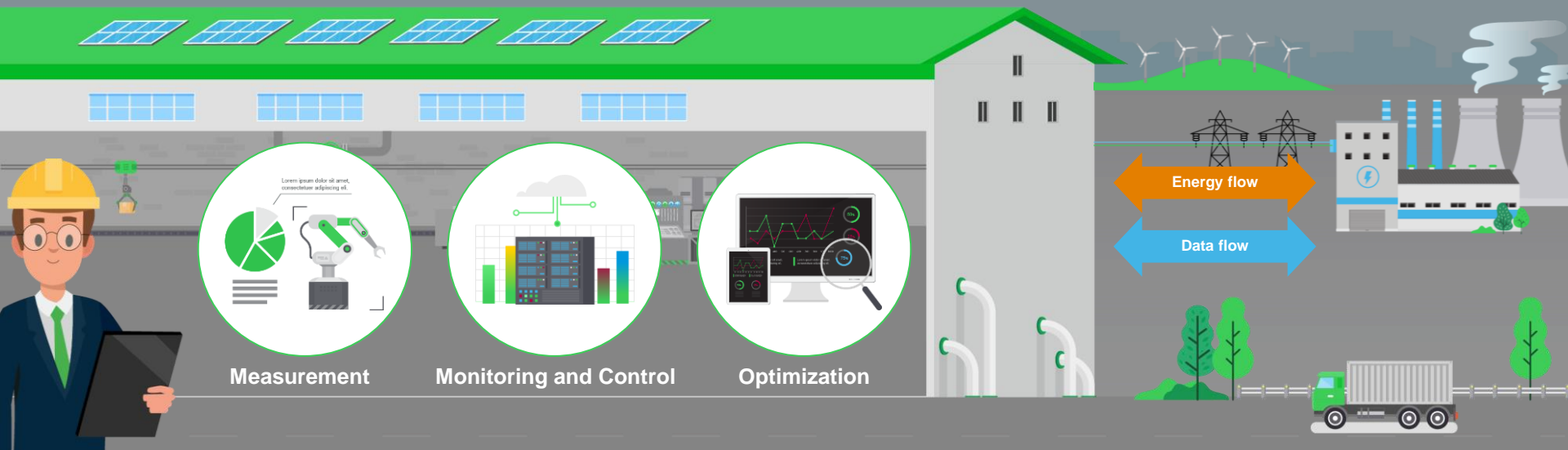
tree seedlings grown for 10 years

Energy Efficiency

Energy Management



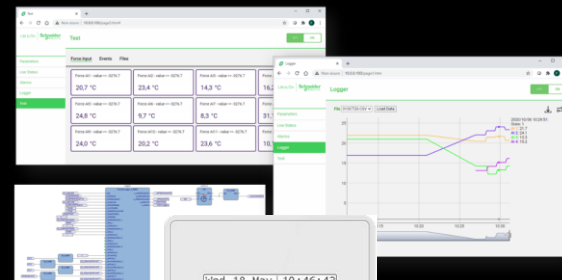
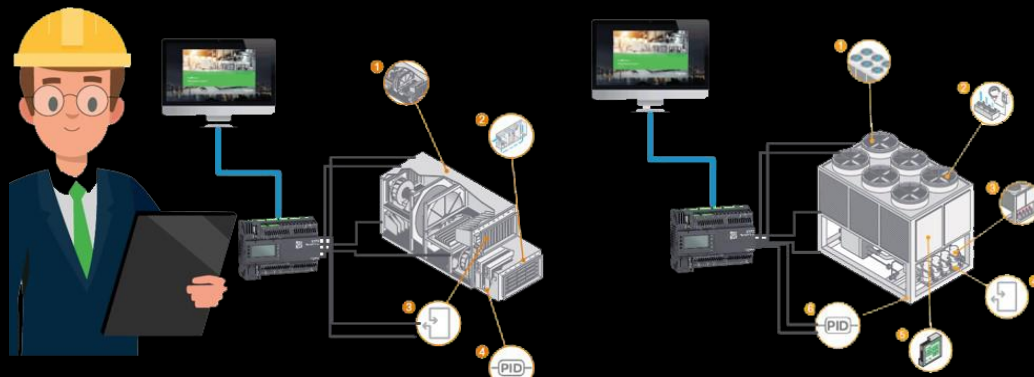
Improve your operational excellence through active process energy conservation and optimization.



Energy Efficiency

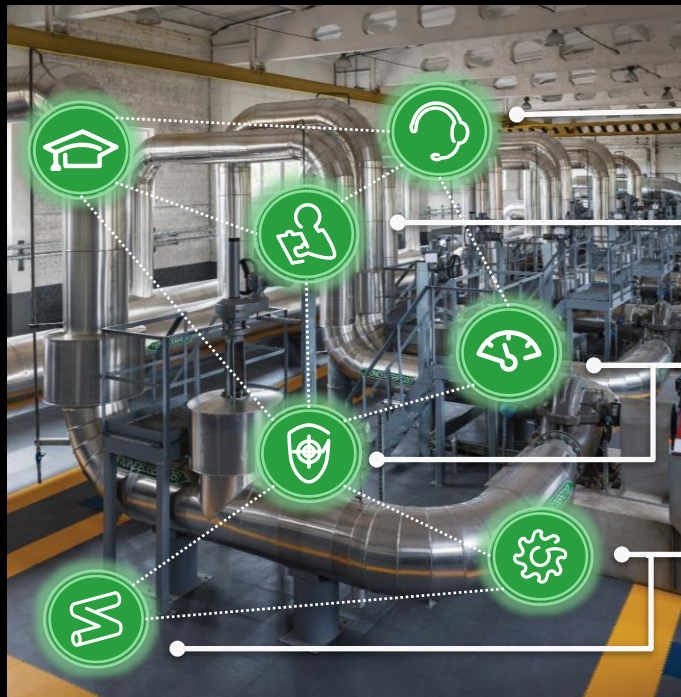
Energy Management HVAC Control

- Save up to 20%
- Monitor and manage VFDs
- Advanced Proportional Integral Derivative control
- Fans control for air-cooled condenser efficiency
- Floating high pressure control for reduced consumption
- Compressors management
- Coefficient of Performance monitoring



Energy Efficiency

Energy Management Pump Station Management



Access to pumping Experts

Standard audit to assess status and evaluate potential savings

Secure cloud-based pump performance app

Simplified field deployment to existing installation

A comprehensive solution leading to sustainable optimization of water and wastewater pumping stations:

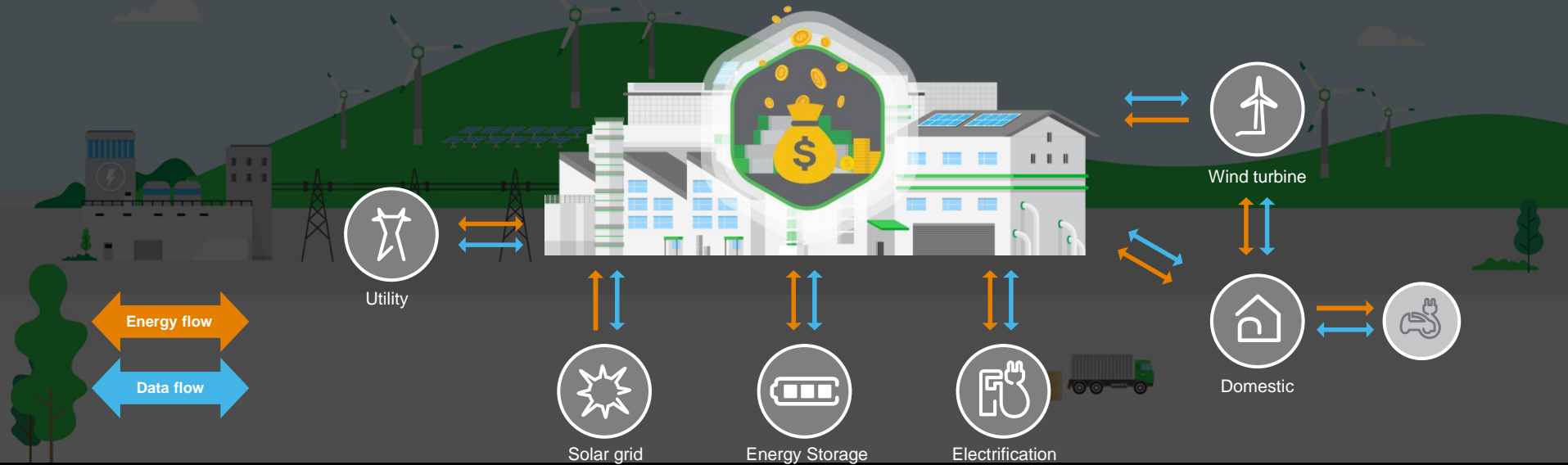
- ✓ **Save up to 15% in OPEX** through pumps optimization:
 - Up to 15% in energy savings
 - Reduction in unplanned downtime
 - Reduced maintenance costs (less site visits, etc.)
 - Longer life of mechanical and electrical assets

Energy Efficiency

Smart Energy



Offset your energy demand through renewable. Become a prosumer.
Gain new opportunities to sell energy on a real-time basis.



Accelerated need for all-digital, all-electric industries designed to be eco-efficient, agile and resilient

1. Energy + Automation

AVEVA EcoStruxure etap

Substation
Operation

Galaxy UPS

MasterPact MTZ Smart power
& Motor Control

2. End Point > Cloud

AVEVA EcoStruxure

EcoStruxure Plant
& Machine SCADA

EcoStruxure
Foxboro DCS

EcoStruxure
Triconex Safety Systems

EcoStruxure
Automation Expert

Modicon PLCs

3. Design & Build > Operate & Maintain

AVEVA

EcoStruxure
Automation Expert

AVEVA™ United
Engineering

4. Site-by-site > Integrated Company Management

AVEVA

Enterprise
Asset Management

EcoStruxure
Plant and Machine
Advisors

5. One Directional Supply > Supply & Demand Integration

EcoStruxure
Microgrid
Operation

EcoStruxure
Microgrid Advisor

Energy & Sustainability
Services,
Power Purchase Agreements
Climate Change Consulting
Services

Impact **20%** improvement in production efficiency **15%** energy savings **30%** increase of workforce efficiency using digital solutions **30%** reduction in maintenance costs with reduced downtime

Source: Schneider Electric™ Sustainability Research Institute

Schneider Bangpoo Plant (1.38 MWp on grid solar solutions on rooftop)



- Solar energy cover **40%** of total annual consumption or **70%** during operation in daytime
- Reduce carbon footprint by cutting down **+1,000 tonnes** of carbon dioxide per year
- **BESS** (Capacity 125KW, 250KWh) & **Microgrid** (Cutting high peak demand, No blackout when grid down, Energy saving) **3%** savings per year
- Zero investment with Project saving **3-5%** per year
- **Digital technology** (PME, Resource Advisors) to **identify, track, monitor & report** Energy efficiency opportunities **saving 30%** since implementation

Transforming our own real estate



KALLANG PULSE

Schneider Electric East Asia
& Japan HQ

Building Age

25 years

Total Gross Floor Area

18,500 m²

Objective

Achieve **100% CO₂
neutrality** by 2020



Software and Analytics

[Building Advisor](#), [Power Advisor](#), [Resource Advisor](#), [Asset Advisor Power](#), [Asset Advisor IT](#), [Workplace Advisor](#), [MicroGrid Advisor](#), [Augmented Operator Advisor](#)

Edge Control

[Power Monitoring Expert](#), [Building Management System \(BMS\)](#), [Security Expert](#), [Facility Expert](#)

IoT-enabled Connected Products

Over 5000 Connected Products

- Power Logic, Power Tag, MTZ
- BTU, Water Meter, PAHU, Chiller Plant (data exchange with BCA Portal through Web Service)
- Motion Sensors, CO2 Sensor, Env Sensor, lighting control KNX/Dali, UPS, InRow, CCTV, Card Access
- Conext Solar/ Battery Monitoring / Battery Energy Storage Solution (BESS)
- Elink(Kone lift), Data exchange with offsite solar energy retailers

Sustainable Rooftop



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Schneider Electric East Asia
& Japan HQ

Building Age

25 years

Total Gross Floor Area

18,500 m²

Objective

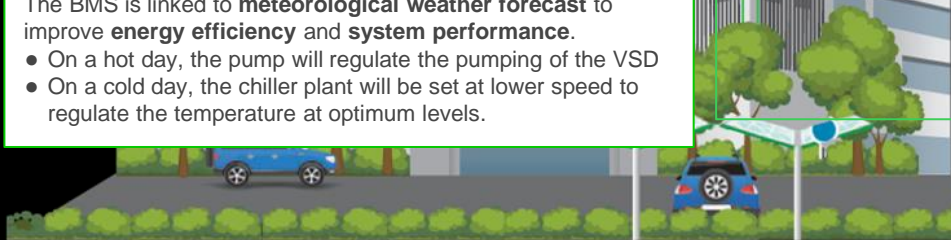
Achieve **100% CO₂ neutrality** by 2020



Integrated with Real Time Data at the IBMS Level

The BMS is linked to **meteorological weather forecast** to improve **energy efficiency** and **system performance**.

- On a hot day, the pump will regulate the pumping of the VSD
- On a cold day, the chiller plant will be set at lower speed to regulate the temperature at optimum levels.



80 Solar Panels on the Rooftop

The building runs on 100% renewable (solar) energy in the daytime (9:30 am to 4:30 pm). Accompanied with offsite solar energy, this accounts for 47% of the building's monthly energy consumption (220Mwh).

Window Panels

The design of the building facade and windows panels meet the Envelope Thermal Transfer Value (ETTV) to enhance energy performance

Magnetic Bearing Chiller with VSD

A chiller plant also acts as a centralized cooling system, providing a portion of air conditioning in the building's HVAC systems. The magnetic bearing chiller with VSD regulates the speed according to the demand. This helps to achieve higher efficiency rating.

Our own Building of the Future



KALLANG PULSE

Schneider Electric East Asia
& Japan HQ

Building Age

25 years

Total Gross Floor Area

18,500 m²

Objective

Achieve **100% CO²
neutrality** by 2020

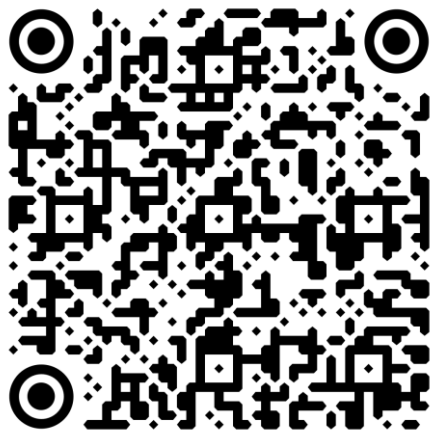


Renewable energy usage

- More than 10 solar panels on car park rooftops and in the gardens
- Electric Vehicle charger stations powered by solar energy
- Landscape lightings and koi pond are powered by harvested solar energy on site
- Battery Energy Storage System (BESS) to store conserved solar energy for nighttime use

ข้อเสนอพิเศษ!

ลงทะเบียนตอนนี้!



เฉพาะ 99 บริษัทฯ!

ฟรี! โปรแกรมตรวจสอบประสิทธิภาพระบบไฟฟ้า
(MPS Walk Through)

โดยทีมงานผู้เชี่ยวชาญ ชไนเดอร์ อิเล็คทริก
มูลค่า 25,000 บาท ฟรี!

- ✓ เพื่อประเมินแนวทางในการประหยัดพลังงาน ลดภาวะโลกร้อน
- ✓ เพิ่มประสิทธิภาพและความปลอดภัย

การตรวจสอบสวิตช์เกียร์ (ตู้ไฟฟ้าแรงดันสูง), หม้อแปลง, เซอร์กิตเบรกเกอร์, รีเลย์ป้องกัน, อินเวอร์เตอร์ รวมถึงระบบ
สำรองไฟฟ้าและการบริหารจัดการพลังงานต่างๆ

The moment is now



Life Is On

