

Achieving ESG / Net-Zero with Eco-System Partners

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iEMS Solutions, Advantech WISE-IoT

World Trends:

Commitments towards Global GHG Challenges

ESG/Net zero/Carbon Neutrality/Carbon Deduction/CBAM/CCA



Cost/Market/Competitiveness Increment **Crisis**

Countries

Carbon Emission deduction by 2030

- Brazil: 50%
- South Korea: 40%
- EU: 55% of 1990 level
- UK: 68% of 1990 level
- Canada: 40% of 2005 level
- India: 45% and 50% from renewable energy
- Australia: 43% below of 2005 level

Net Zero Carbon Emission

- United State: by 2050
- Japan: by 2050
- Korea: by 2050

137 out of 198 countries committed

Carbon Neutrality

- China: by 2060
- EU: by 2050
- Japan: into Act by 2050
- South Korea: into Act. by 2050
- UK: into Act. by 2050
- Germany: into Act. by 2050

Over 14 countries put into their Law

CBAM / CCA

- EU: "Carbon Border Adjustment Mechanism" (Carbon Border Adjustment Mechanism, CBAM) to levy "carbon tariffs". **2023 start trial, 2027 officially on**
- America: CCA Carbon Tax **2024 officially on**

Enterprises/Investors

Carbon Neutrality

- APPLE : in terms of the company's overall business, supply chain and product life cycle in 2030.
- SONY: including supply chains in 2040

Other

- SONNYY: 100% renewable energy
- AMAZON & MICROSOFT : pledged to raise funds and donate US\$1 billion to US\$2 billion for renewable energy



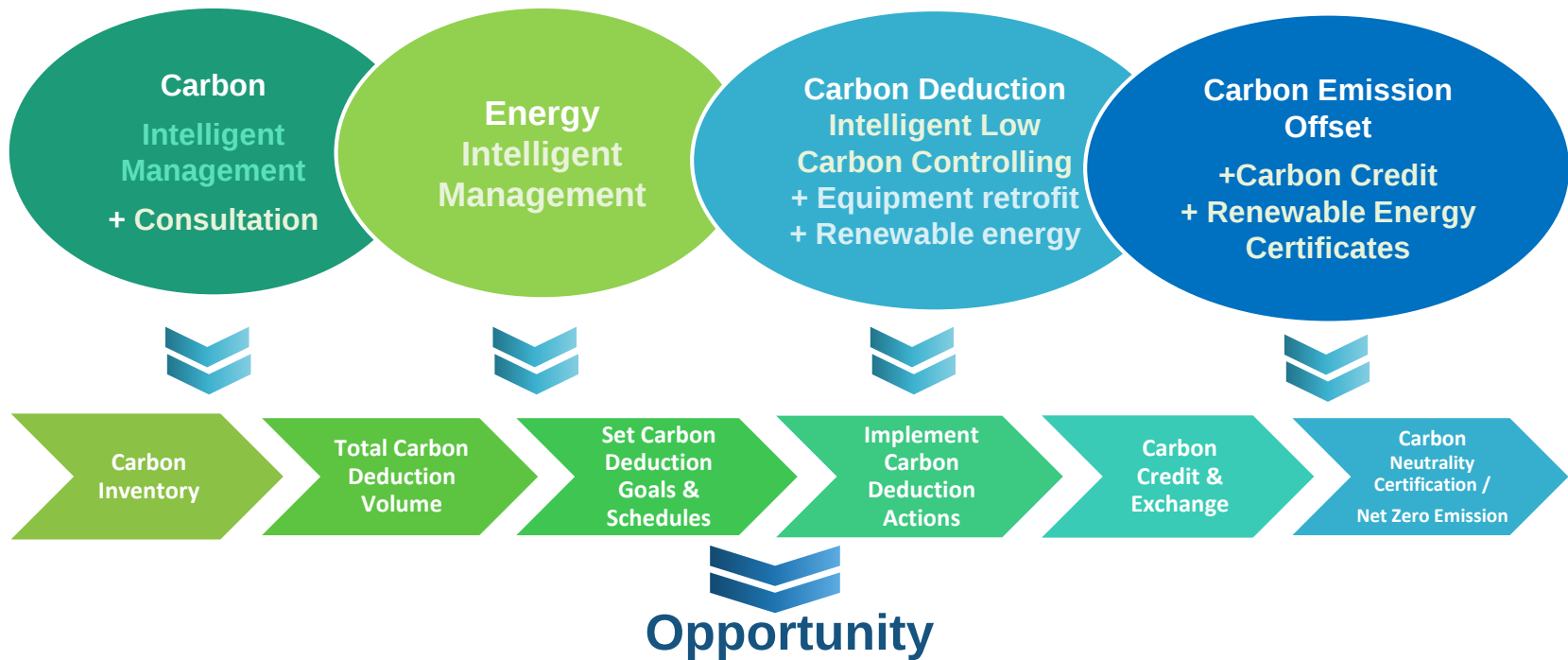
RE100

The Journey to ESG/Net zero/Carbon Neutrality/Carbon Deduction/CBAM/CCA



Advantech Support Enterprises

Low Carbon & Digitalization transformation



Reduce Energy & Labor Cost/Increase Management Efficiency/

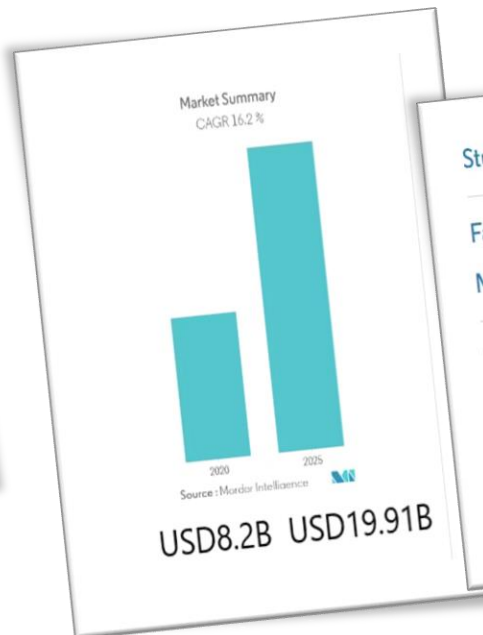
Raise Up Company Competitiveness/Hold Current & Create New Market

Market Size and Potentiality



Study Period:	2018 - 2026
Fastest Growing Market:	Asia-Pacific
Largest Market:	North America
CAGR:	12.31 %

**Carbon
Management**



Study Period:	2018 - 2026
Fastest Growing Market:	Asia Pacific
Largest Market:	Europe
CAGR:	16.2 %
Major Players	

**Energy
Management**

One Stop Comprehensive Total Solutions(Differentiation)

Management Level Carbon & Energy Management		ECOEnterprise Sustainability Management	Review Enterprise global organizations sustainability KPI including energy performance, SBTi & RE100, energy saving result etc.
		CarbonR Carbon Emission Management	Review enterprise carbon emissions and product carbon footprint with digital carbon inventory system and energy efficiency improving strategies. To help enterprise manage their carbon assets in compliance with ISO 14064/ ISO 14067 and thus achieve carbon neutrality target.
		ECOWatch Energy Management	Monitors energy consumption of water, electricity, gas, air, Steam, renewable energy etc., Statistical comparison, demand and allocation management, automatic energy declaration and compliance with ISO50001, Energy Saving Projects management etc., Assisting enterprises to complete energy digital transformation and achieve energy conservation and emission reduction
Operational Level Energy Saving & Equipment Efficiency Management		HVAC HVAC Energy Efficiency Management	Perfect combination of centralized control and information processing of the HVAC system, energy-saving control and predictive maintenance can be realized, thereby improving the management efficiency and minimizing the energy cost of the entire HVAC system
		Compressor Compressor Energy Efficiency Management	Perfect combination of centralized control and information processing of the compressors system, energy-saving control and predictive maintenance can be realized, thereby improving the management efficiency and minimizing the energy cost of the entire compressed air system
		PHM Rolling Pumps Efficiency Management	Detect the abnormality or decline of motor equipment, grasp the status of equipment, improve the management and maintenance efficiency of rotating mechanical motor equipment, increase the service life of equipment and reduce life cycle operating costs.

Carbon



Energy



Critical Energy Consumption Equipment



System Architecture of WISE-iEMS Solution

Vertical Market



Traditional
Manufacturing



High Tech
Manufacturing



Hospital
& Finance



Hotel
& Retail

Sustainable Management
For Business Managers
(Carbon & Energy)

iEMS



ECOEnterprise
Sustainability Management

- Global overview
- Field annual carbon emissions
- RE100 management
- Carbon emission monitoring
- Carbon reduction cost management
- Decarbonization and energy saving actions

iEMS



CarbonR
Carbon Assets Management

- Organization Carbon Inventory
- Carbon Hot spot Analysis
- Data Quality Management
- Product Carbon Footprint
- Coefficient database
- Supply Chain data integration

iEMS



ECOWatch
Energy Management

- Energy Consumption EUI
- Demand Management
- Energy Consumption Analysis
- Energy Saving Management

Intelligent
Energy
Efficiency
Management

iEMS



HVAC
HVAC Energy
Efficiency Management

- Equipment monitor & control management
- Energy Efficiency Diagnosis & Analysis
- Evaluation On Economic Operations
- Optimization of Operational Strategy

iEMS



Compressor
Air Compressor
Energy Efficiency
Management

- Equipment monitor & control management
- Energy Load Analysis
- Preventive Maintenance
- Optimal Control Over Unit Group

iEMS



PHM
Rotating Machinery Motor
Energy Efficiency
Management

- Multiple Vibration Measuring Points
- Real-time Management Of Vibration Signals
- Detection & Prediction of Equipment Degradation

Cloud
Platform



Data
visualization

Public
Cloud

WISE-iEMS
Advantech Smart Energy

Private
Cloud



AIFS framework
services

VisualSuite

InsightAPM

IoTsuite

EdgeSync 360

Data
Acquisition



EdgeLink

ECU-1251
Edge Smart
Gateway



EdgeLink

ADAM-3600
Edge Smart
Controller



WebAccess/SCADA
UNO-2484
Embedded Fanless
Industrial Computer

On-site
Equipment



Cold/Heat
Meter



Electricity
Meter



Water
Meter



Natural Gas
Meter



HVAC



Fan Coil



Illumination



Generator



Air
Compressor



Distribution
Box



Elevator



Water
Pump



Tap
Water



Boiler



Major Power
Consuming Device

Features – One-click Export the Inventory and the Report

ISO Standards: ISO14064-1:2006/2018 , ISO14067: 2018

Report type: Organization Inventory & Report, Carbon Footprint study Report

Export file type : Excel/ Word

WISE-iEMS

CarbonR

Personal Settings

Dashboard

Announcement

Julia.Chih(Advantech)

English

COEFFICIENT CENTER

Coefficient center

GSP

Discharge coefficient

Component coefficient

ORGANIZED CARBON INSPECTION

Organizational

Organizational(Group)

Evaluation criteria

Emissions inventory

Book (according to the category)

Book (according to category)

Book (Category List)

Book (field)

Book (group)

Uncertainty Analysis

Uncertainty Analysis (Group)

Report

Hotspot Analysis

Single Field

Organized carbon inspection--Emissions Inventory--Book (according to the category)

Export

Export to the selected format

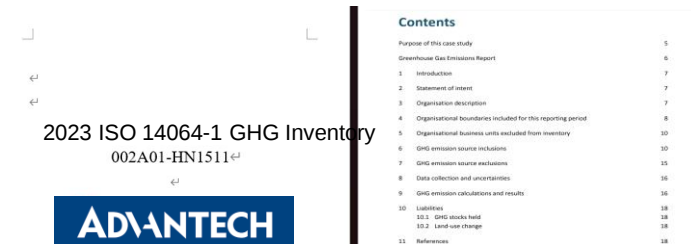
Export

Greenhouse Gas Emissions Inventory (Scope)

盤查期間:2021-01-01~2021-12-31

Process	Device Name	Raw Fuel Material Name	Category	Emission Source Category	Greenhouse Gas Emissions (CO2eq)							Proportion Of Total Emissions (%)	
					CO2	CH4	N2O	HFCS	FFCS	SF6	PF3		Total
		Acetylene (C2H2)	Category	Process Discharge	3.3646	-	-	-	-	-	-	3.3646	0.01 %
		Carbon Dioxide (CO2)	Category	Yasen Emissions Source	0.0500	-	-	-	-	-	-	0.0500	0.00 %
		Motor Gasoline	Category	Motor Burning Source	6.1105	0.0615	0.1806	-	-	-	-	6.3645	0.01 %
		Natural Gas	Category	Fixed Burning Source	37.2045	0.0185	0.0181	-	-	-	-	37.2415	0.07 %
	生活污水	Refrigerant, R134a	Category	Yasen Emissions Source	-	-	-	0.2601	-	-	-	0.2601	0.00 %
	工業冷凍系統設備之製冷劑	Refrigerant, R134a	Category	Yasen Emissions Source	-	-	-	1.2240	-	-	-	1.2240	0.00 %
	住宅冷暖氣設備之製冷劑	Refrigerant, R32	Category	Yasen Emissions Source	-	-	-	0.8481	-	-	-	0.8481	0.00 %
	辦公室冷暖氣設備之製冷劑	Refrigerant, R32	Category	Yasen Emissions Source	-	-	-	86.7375	-	-	-	86.7375	0.15 %
	污水處理廠	Septic tank	Category	Yasen Emissions Source	-	4.4465	-	-	-	-	-	4.4465	0.01 %

Carbon Inventory



Editable Report

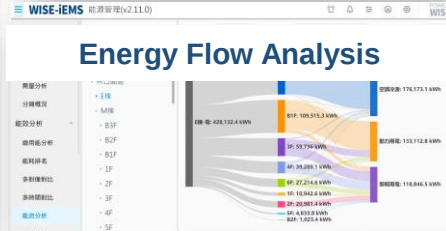
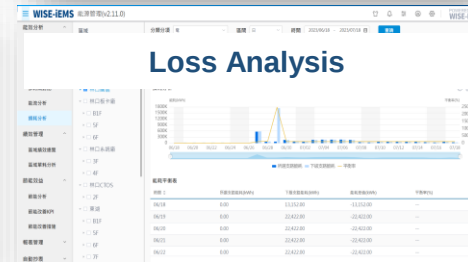
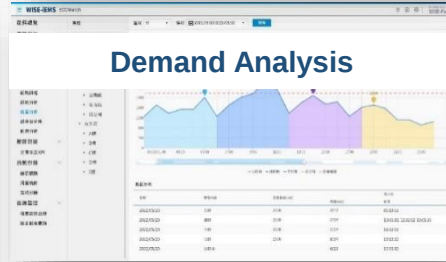
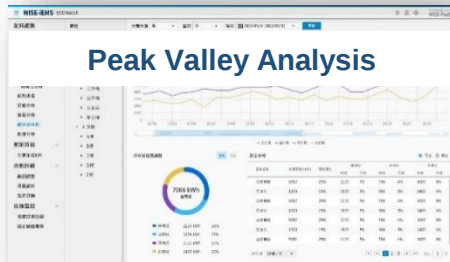
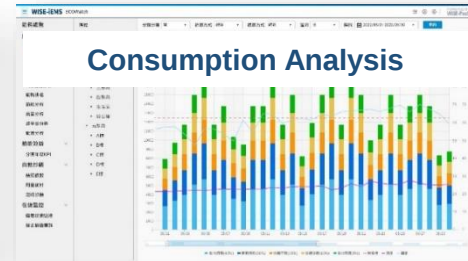
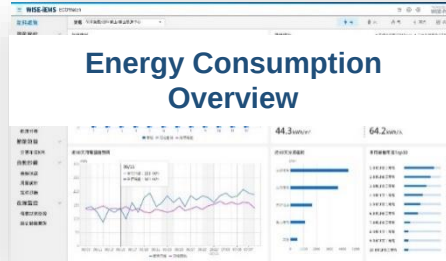
ADVANTECH

Standard Templates, Ready-to-use once data connected

1 Edge Data Collection
upload to Cloud

2 Equipment Data Group
Configuration

3 Standardized Visualize
Dashboard



ECOWatch Precision Management and Set Energy Saving Goals

1. Energy monitoring analysis

Understand enterprises' energy consumption status and discover abnormality

- ✓ Monitoring water/air/gas/ electricity/ steam/renewable energy consumption
 - ✓ Automatic meter reading
 - Historical data and operating curve
 - ✓ Excessive energy consumption alarm
 - ✓ Equipment abnormality alarm
 - Enterprise energy consumption tracking
 - ✓ Copilot OpenAI
- Energy consumption analysis
 - ✓ Demand analysis
 - ✓ Peak to valley analysis
 - Energy comparison analysis
 - Energy consumption ranking
 - Total energy consumption analysis
 - ✓ Unit consumption analysis
 - Year-on-year/ month-on-month (or season-on-season) analysis

Copilot OpenAI

Professional Chatbot

2. Energy performance assessment

Industry benchmarking, department benchmarking

- ✓ Enterprises' annual energy consumption
 - ✓ KPI indicators performance
 - Energy consumption quota plan
 - Energy benchmarking management
 - Daily, weekly and monthly report
 - Energy consumption evaluation
 - Energy balance management
- ✓ Energy-saving projects management
 - ✓ Energy Saving Items maintain plan
 - Energy Saving KPI setting
 - ✓ Energy Saving ROI & Saving results

3. Energy-saving Projects Management

Energy Saving Projects tracing & saving analysis

4. Energy-saving Effects Outcome

An overview of energy-saving implementation results

Structure optimization and performance comparison

The energy performance indicators for sites/ office buildings - EUI

Production energy performance indicators – ECPU

- ✓ Energy & Efficiency Declaration Report

- ✓ Internal & External Audit Report Generation ISO 50001

Key energy management functions – Auto Meters Recording

Grassroots
Employees



Manual meter reading are heavy loaded, low timeliness, and human error might occur in the data.

WISE-iEMS ECOWatch (v2.11.3)

Energy Monitor

- Consumption
- Cost Analysis
- Demand
- Item Summary
- Effect Analysis
- Performance
- Performance View
- Unit Consumption
- Energy Benefits
- Report Mgmt.
- Auto Recording
- Meter Reading
- Usage Amount
- Scheduled Record**
- Online Monitor
- Basic Settings

Scheduled Record

- ☐ Rule name
- ☐ 林口園區統計日報
- ☐ 陽光大樓月報(00:00)

Add report rule

Basic information

- * Report name: Default text (0 / 50)
- * Report type: Monthly
- * Statistic type: Meter Reading
- * Reading time: 00:00

Meter

Area: 陽光大樓

- ☒ 1F公設及地下停車場
- ☐ 1F實驗室
- ☐ 2F
- ☐ 3F
- ☐ 4F
- ☐ 5F
- ☐ 6F
- ☐ 7F
- ☐ 林口園區
- ☐ 林口板卡廠
- ☐ 林口系統廠
- ☐ 林口CTOS
- ☐ 東湖
- ☐ 其他公共區: RF 1F B2F B3F

Select all

- ☐ YG:ACP1
- ☐ YG:M1_L
- ☐ YG:M1_31_35
- ☐ YG:M1_35
- ☐ YG:M1_33
- ☐ YG:M1_31
- ☐ YG:M2_L
- ☐ YG:ACP2
- ☐ YG:M2
- ☐ YG:M3_L
- ☐ YG:ACP3
- ☐ YG:M3
- ☐ YG:MP1
- ☐ YG:M4_L

0 meter(s) selected

Report viewing rights

- ☐ Private
- ☒ Public

Cancel OK

Report rule name/creator

+ Add report

Report generated

Operate

10/page

Go to 1

Simplify data management,
automatically generate internal and
external audit reports and send
email to relevant personnel to
enhance management efficiency
and data accuracy.



Key Functions: Patrol Inspection- Integration with Automated Reporting

- **Auto Work Order Creation**

Auto creates work orders with data monitoring service and condition setting. Achieve quick linkage and construct automation scene.

- **Report Maintenance with QR code**

QR code scanning with mobile device to report and obtain information simultaneously, increase efficiency and reduce errors.

- **Real-time Status Tracking**

Track work order processing progress and feedback at any time, with traceable processing links.

The image displays a web-based 'Report Maintenance' (报修派工) form and two mobile app screens. The web form includes fields for '选择业务' (Select Business), '报修派工 (BMS)' (Report Maintenance (BMS)), '标题' (Title), '公司ID' (Company ID), '设备名称' (Equipment Name), '设备类型' (Equipment Type), '设备部件' (Equipment Parts), '故障描述' (Fault Description), '公司名称' (Company Name), '优先级' (Priority), '设备编号' (Equipment Number), '设备类型ID' (Equipment Type ID), '故障时间' (Fault Time), and '故障图片' (Fault Image). Below the form are two mobile app screens. The left screen shows '报修工单详情' (Report Maintenance Work Order Details) with fields for '办公室日常维修0707', '工单编号' (Mission-202107070001), '工单类型' (Mission Task), '申请人' (Admin), '创建时间' (2021-07-07 17:33:51), '故障描述' (包含11条巡检内容, 16个设备/资产, 共20个巡检项), '工作流转信息' (Workflow Information), and '开始报修' (Start Report). The right screen shows '反馈上报' (Feedback Report) with fields for '反馈内容' (Feedback Content), '附件' (Attachments), and '图片' (Images).

CERTIFICATE

Certificate-ID: C-07-2023-21259719

Certificate for: Audited energy data management system

Certificate holder: **ADVANTECH** Advantech Co., Ltd.
No.7, Street 6, Shangdi Zone,
Haidian District, Beijing, China

Test report: B-07-2023-21259719

Products: Advantech WISE-iEMS Intelligent Energy Management Solution with software and hardware components as specified in the appendix to the certificate

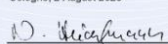
Basis of certification: Audited energy data management system in accordance with the catalogue of requirements Version 3.0 (as of 03/2018)

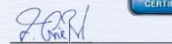
Scope of certification: Document and system review of functionalities for use with energy management systems in accordance with ISO 50001, ISO 50006 as well as energy audits in accordance with ISO 50002

It is herewith confirmed that the functionalities and characteristics of the software and hardware components of Advantech Co., Ltd. named above as well as in the appendix I to the certificate have been verified within the framework of a document and system review. The components verifiably support compliance with the requirements of the chapters of the standards ISO 50001, ISO 50002 and ISO 50006 as listed in the appendix to the certificate.

This certificate is valid until 31 July 2025.

Cologne, 2 August 2023


Norbert Heidelmann
TÜV Rheinland Energy GmbH
Sustainability and Carbon Services


Florian Greßl
TÜV Rheinland Energy GmbH
Sustainability and Carbon Services



Energy Data
Management
System
Regular
Surveillance
www.tuv.com
ID: 0000085248



CONGRATS TO

WISE-iEMS

ECOWatch

on achieving certification
from TÜV Rheinland
for ISO 50001 Energy
Management System.

Energy Management System

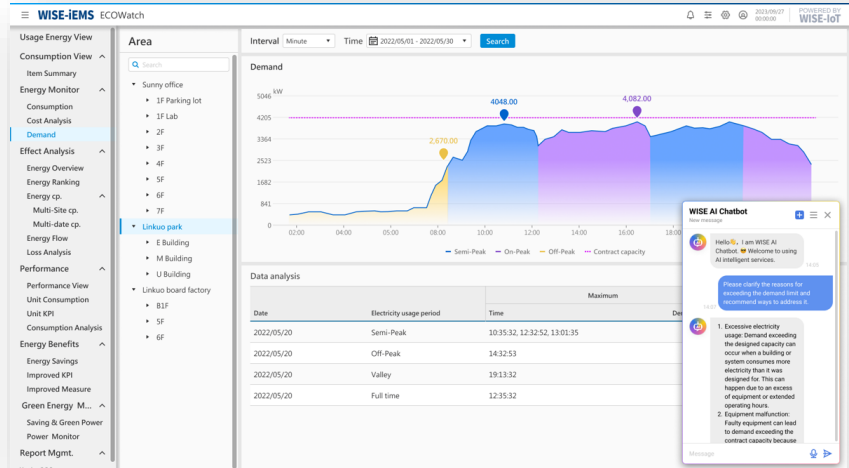
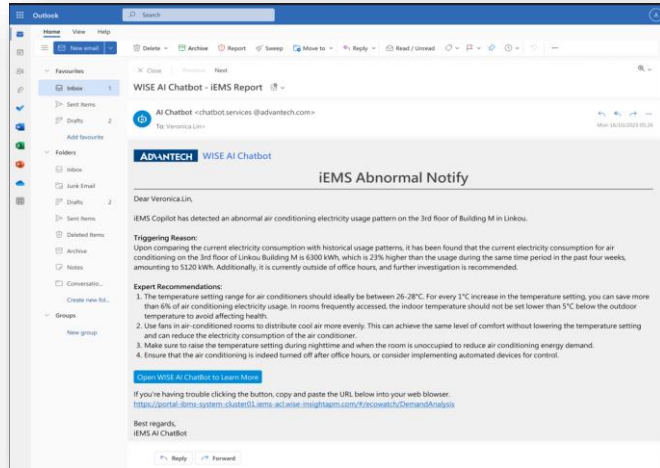
- ISO-50001
- ISO-50002
- ISO-50006

This certification demonstrates the strength and capability of iEMS/ECOWatch, which is comparable to the world's leading energy management products. It also highlights Advantech's commitment to innovation and product stability.

ADVANTECH

Create Distinctive Value in Intelligence through OpenAI

Timely Mitigation of Operational Risks and Losses associated with Critical Equipment Abnormalities

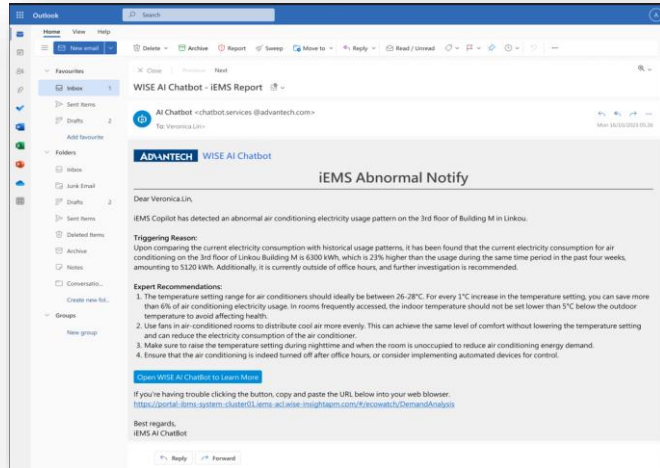


- It will automatically send the abnormality Notification once there is an abnormality in equipment or in energy usage.

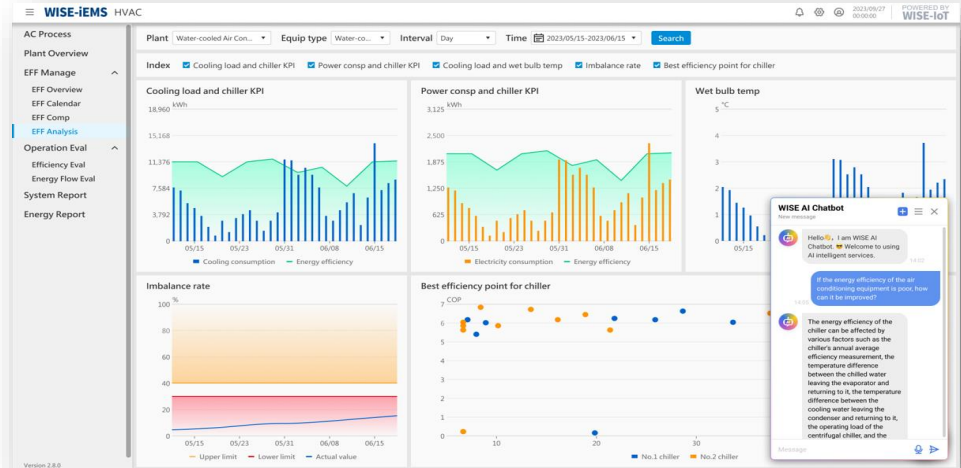
- Allow users to have interaction(conversation) with OpenAI expert to get details of the issue, suggestions & solutions to fix the issue in time and to improve the energy efficiency.

Create Distinctive Value in Intelligence through OpenAI

Timely Mitigation of Operational Risks and Losses associated with Critical Equipment Abnormalities



- It will automatically send the abnormality Notification once there is an abnormality in equipment or in energy usage.



- Allow users to have interaction(conversation) with OpenAI expert to get details of the issue, suggestions & solutions to fix the issue in time and to improve the energy efficiency.

WISE-iEMS x OpenAI Demo Video

The screenshot displays an Outlook email client interface. The left sidebar shows the 'Favourites' section with 'Inbox' selected, containing 1 item. Below it are 'Sent Items', 'Drafts' (2 items), and 'Add favourite'. The 'Folders' section lists 'Inbox', 'Junk Email', 'Drafts' (2 items), 'Sent Items', 'Deleted Items', 'Archive', 'Notes', and 'Conversations...'. The 'Groups' section shows 'Create new fol...' and 'New group'.

The main email view shows an email titled 'WISE AI Chatbot - iEMS Report' from 'AI Chatbot <chatbot.services@advantech.com>' to 'Veronica.Lin>', dated 'Mon 16/10/2023 05:26'. The email content is as follows:

ADVANTECH WISE AI Chatbot

iEMS Abnormal Notify

Dear Veronica.Lin,

iEMS Copilot has detected an abnormal air conditioning electricity usage pattern at the Warehouse of AESC.

Triggering Reason:
Upon comparing the current electricity consumption with historical usage patterns, it has been found that the current electricity consumption for air conditioning on the 3rd floor of Linkou Building M is 2,445 kWh, which is 185% higher than the usage during the same time period in the past four weeks, amounting to 856.33 kWh. Additionally, it is currently outside of office hours, and further investigation is recommended.

Expert Recommendations:

1. The temperature setting range for air conditioners should ideally be between 26-28°C. For every 1°C increase in the temperature setting, you can save more than 6% of air conditioning electricity usage. In rooms frequently accessed, the indoor temperature should not be set lower than 5°C below the outdoor temperature to avoid affecting health.
2. Use fans in air-conditioned rooms to distribute cool air more evenly. This can achieve the same level of comfort without lowering the temperature setting and can reduce the electricity consumption of the air conditioner.
3. Make sure to raise the temperature setting during nighttime and when the room is unoccupied to reduce air conditioning energy demand.
4. Ensure that the air conditioning is indeed turned off after office hours, or consider implementing automated devices for control.

[Open WISE AI ChatBot to Learn More](#)

If you're having trouble clicking the button, copy and paste the URL below into your web browser.
<https://portal-ibms-hvactest-cluster01.axa-dev.wise-paas.top/#/hvac/energyManagement/energyAnalysis>

Best regards,
iEMS AI ChatBot

iEMS Solutions Value

Energy Saving



↓ 5% ~ 50%

Overall Energy
Saving

Management Efficiency



↑ 90%

Management
Efficiency

Equipment Life Time



↑ 10%~30%

Extend Life
Time Of
Equipment

Maintenance



↑ 10% ~ 35%
Maintenance
Efficiency

↓ 30%
Manpower
Cost

Operation Safety



↑ 60% ~ 90%

Safety & Reliability
Increment

↓ 90%

Accidents
Reduced

Cost Saving



↓ 20% ~ 50%

Energy /
Manpower /
Maintenance

Intelligent & Low
Carbon
Transformation

Delicacy
Management

Innovative
Technology



Case Collection

Smart Factory Energy Management

ADVANTECH
WISE-iEMS

Semiconductor
manufacturing plants

Vishay Technology



Tianjin Vishay semiconductor factory

- ✓ **Monthly electricity consumption is reduced by 15-30%**, and annual electricity bills are saved nearly one million yuan
- ✓ Equipment efficiency and resource utilization are greatly improved, and maintenance and operating costs are greatly reduced
- ✓ Integrate with MES to analyze the power consumption of production units and accurately capture unreasonable power consumption

Electronics
manufacturing plants

立訊精密



Apple Ecosystem Smart Factory

- ✓ Plant energy consumption: **overall energy efficiency reduced by 8%**
- ✓ Factory management: **management efficiency increased by 25%**
- ✓ Plant operation and maintenance: **staffing reduced by 30%, 20% longer equipment life**

Electronics
manufacturing plants

Advantech

ADVANTECH

Advantech Kunshan Intelligent Factory

- ✓ The output **value ratio of electricity consumption** in the factory area decreased **from 0.7% in 2013 to 0.229% in 2021**. Based on 2013, it can now achieve **annual savings of more than 20 million**.
- ✓ With the 3D park management platform as the carrier, integrate the decentralized system to achieve the integration of the management platform.
- ✓ Achieve the goals of **saving people and improving efficiency, safe operation, energy conservation and emission reduction**.

Chemical
manufacturing plants

Ningxia Beilite Chemical



Beilite Ningxia Factory

- ✓ Build a comprehensive energy monitoring platform for chemical plants based on APM and ECOWatch
- ✓ Multi-dimensional analysis under different process flows to **diagnose possible abnormalities in equipment and abnormal energy losses**

Welding consumables
manufacturing plant

Weifang Qianjin welding Materials



Weifang Special Steel Factory

- ✓ Integration with PSM systems for real-time monitoring of material processing processes
- ✓ Through smart meters and gateways, collect meter data from field devices and analyze the function of equipment
- ✓ Real-time analysis of equipment utilization and utilization rate to provide operational basis for decision makers

Refractory manufacturing
plant

Sinosteel Luoyang Institute



中钢集团洛阳耐火材料研究院有限公司
Sinosteel Luoyang Institute of Refractories Research Co., Ltd.

Sinosteel Luoyang Institute Henan factory

- ✓ Real-time monitoring of the real-time operation status and various working indicators of 30 high-energy-consuming equipment production kilns in the hospital
- ✓ Analysis data on the energy consumption of equipment in daily use through energy system
- ✓ Provide energy-saving recommendations to decision makers through energy-saving analysis functions, so that managers can make decisions through data

Automobile
manufacturing plants

Nanjing NAVECO



Nanjing NAVECO Qiaolin Factory

- ✓ Collect data such as water, electricity, natural gas, hot and cold, compressed air, etc., and connect them to the system
- ✓ Provide one-stop energy management and control services such as remote control, law analysis and decision optimization for enterprise energy control
- ✓ Supervise the management and application of the energy life cycle of the factory in various aspects, diagnose various abnormal problems during energy use, and reduce the production cost of the enterprise

Food manufacturing
plants

Want want



Want Want Beijing Factory

- ✓ Comprehensive energy data collection and multi-dimensional refined analysis of water, electricity, natural gas, water vapor, etc
- ✓ The data of the photovoltaic system is connected and analyzed, and the statistics of comprehensive energy and green power are realized, as well as the accounting of carbon emissions.
- ✓ Docking video services, weather stations, smoke sense, temperature sensing data to achieve multi-dimensional monitoring of energy environment.
- ✓ Through comprehensive energy analysis, it helps enterprises locate energy abnormalities, provides a basis for energy-saving transformation, energy distribution and management, and helps enterprises save energy and reduce carbon emissions.



Case Collection

Smart Park Energy Management

ADVANTECH

WISE-iEMS

Science and technology park

Space Intelligence

A park in Lingang, Shanghai



- ✓ On average, a building can **reduce electricity consumption by about 3,000 kWh per month and emit 3 tons of carbon dioxide, which is equivalent to planting 160 additional trees**
- ✓ The **efficiency of building operation and maintenance management is increased by 20%**, and the **complaint rate is reduced by 40%**, creating a better service experience
- ✓ Configure reasonable photovoltaic energy storage and energy consumption strategies for users, achieve peak shaving and valley filling for enterprise energy use, and reduce peak power load

Data Center

Tiancha intelligent technology

Taiwan State Grid Center intelligent computer room



- ✓ The war situation room is managed in a unified manner and has an overview of the overall situation
- ✓ Improve the grasp of environmental information in the computer room **and real-time alarms of equipment/power abnormalities**.
- ✓ In order to avoid abnormal conditions of the ice water host and pump, the AIFS/PHM predictive diagnosis and analysis scheme is introduced to **predict the positive abnormal trend and maintain and maintain in advance**

Office Building

Panasonic

Panasonic Japan Smart Office Building

Panasonic

- ✓ Dynamically predict the peak of electricity consumption, warn management personnel in advance, and do a good job of **peak reduction measures**
- ✓ Realize the perception, access and management of equipment, use platform data, realize refined management and control of building energy, and improve equipment energy utilization
- ✓ **Configure reasonable photovoltaic energy storage and energy consumption strategies** for users, achieve peak shaving and valley filling for enterprise energy use, and reduce peak power load

Public buildings

Nanjing Energy Control



A government building in Nanjing

- ✓ Open up cross-industry and data between different devices, extract commonalities from various fragmented application solutions, and achieve rapid project delivery
- ✓ Real-time monitoring and **management of power supply and distribution systems, cooling and heating source systems, HVAC, elevators, fire protection, water, access control and other systems to achieve remote operation and maintenance and reduce operation and maintenance costs**
- ✓ Effective management of energy-consuming equipment to **reduce unnecessary energy consumption costs**

Science and technology park

TERMINUS

TERMINUS 特斯联

A low-carbon intelligent park in Deyang

- ✓ Economic benefits: **at least 10% reduction in overall energy consumption**
- ✓ Social contribution: Achieve net-zero carbon emissions and fulfill the social responsibility of the park
- ✓ Park operation: Intelligent O&M is realized, and the **efficiency of building O&M management is increased by about 20%**.

hospital

Huaqin

A hospital in Chongqing

- ✓ Establish a unified logistics integrated management and control platform to realize the integrated management of people, equipment and energy
- ✓ Information management of equipment ledger, quickly locate fault information, and improve equipment supervision efficiency
- ✓ Intelligent management is achieved through automatic inspection, maintenance management, intelligent dispatch, etc., and the efficiency of operation and maintenance is comprehensively improved
- ✓ Statistics on energy consumption data according to department items, all-round refined control is realized, and departmental energy consumption KPIs are quantified

Industrial parks

Chuangkai Electric

Sichuan Kai Chengdu Low-carbon Industrial Park



- ✓ The system has been first applied to the production park of Chuankai Electric in Chengdu, which currently has an annual power generation capacity of 1.72 trillion megabytes of photovoltaics, and has built a microgrid system to achieve self-sufficiency in energy
- ✓ **Achieve refined management of energy consumption in the park, rationally allocate energy-using equipment and electricity peaks and valleys, and achieve energy conservation and consumption reduction**
- ✓ The function of dispatching workers to inspect can be handled in the first time, **improving efficiency, reducing hidden dangers, and reducing operation and maintenance costs**

Science and technology park

Advantech

ADVANTECH

Advantech, Taiwan Linkou Science and Technology Park

- ✓ Real-time grasp of the energy consumption of the plant, the average **monthly energy consumption is reduced by 7%** compared with the same period last year
- ✓ Dynamic prediction of electricity peaks, early warning of management personnel, and peak reduction measures; Effectively improve equipment utilization and extend equipment service life
- ✓ Optimize property operation and maintenance management, **and improve the work efficiency of property personnel by 40%**.



Case Collection

Smart Park Energy Management

Science and technology park

Joyiot Tech

An innovative energy demonstration park in Inner Mongolia



- ✓ Park BIM model and data display on large screen
- ✓ Data access to water, electricity, cooling and heat in the park
- ✓ Equipment monitoring, energy consumption analysis, energy metering, report management. Role management of functional permissions; Online graphical monitoring; Statistical analysis of energy consumption classification; Device alarms and energy consumption limit alarms

hospital

Nanjing Energy Control

A Hospital in Jiaozuo / A Hospital in Haimen



- ✓ Hospital building integrated management platform
- ✓ Integrate building automation systems such as air conditioning, access control, video, and energy, **provide comprehensive operation status of each subsystem in important places, and enhance the ability to deal with emergencies**
- ✓ The APM low-code platform assists SI to quickly deploy landing projects



Case Collection

Power Energy Management

Wind power

Goldwind



Goldwind Integrated Energy Carbon Management Platform

- ✓ Help realize **"100% electric drive, 100% green electricity, and 100% self-sufficiency"** of the second container automated terminal of Tianjin Port
- ✓ Based on APM, a zero-carbon terminal smart energy management solution is quickly built to optimize the allocation and **intelligent prediction of clean power generation and load, improve energy utilization, and help terminals operate efficiently and with low energy consumption**

Power distribution industry

Chuankai Electric

Chuankai Intelligent Energy Management System



- ✓ Based on APM and iEMS, build an industry golden partner solution of "intelligent power distribution cabinet + energy management system"
- ✓ **Real-time monitoring of the power distribution room**, including the distribution system diagram, the switching status in the system diagram, the load parameters, the fan status in the transformer, the three-phase temperature, the temperature, current, voltage, etc. of the power line

Smart Campus

Fujian NewLand



Fujian New World Internet of Things Training Base

- ✓ Using standardized or non-standardized communication interfaces, **through a unified platform, the whole process of centralized detection, monitoring and management of each subsystem is realized.**
- ✓ It covers multiple intelligent subsystems such as access control system, security system, energy consumption system, environmental system, epidemic prevention system and so on

Office Building

達實智能



Dash Shenzhen Building

- ✓ Assist Dash AIOT IoT intelligent management and control platform
- ✓ Integrate multiple subsystems to help establish **a unified integrated energy management platform**
- ✓ Real-time monitoring and management of systems such as cold and heat sources, elevators, air conditioning and ventilation, water supply and drainage, fan coils, VAVs, intelligent lighting, and electronic monitoring to **achieve remote operation and maintenance and reduce operation and maintenance costs**

Power industry

Tsingneng Huakon



Tsingneng Huakon Energy IoT Platform

- ✓ Build an energy IoT platform based on APM
- ✓ At both the end of energy supply and energy demand, such as large-scale public buildings (smart airports, intelligent buildings) demand-side carbon emissions, **reduce carbon emissions, construction and operation and maintenance costs, more accurately measure the leveled cost of electricity**, escort digital power systems, and jointly help the transformation of new power systems.

solar energy

JinkoSolar



Anhui Jinko Solar Production Base

- ✓ Power safety monitoring
- ✓ **Electricity consumption data collection, output value energy consumption analysis**
- ✓ **Air pressure flow data collection, air pressure flow/output value energy consumption analysis**

Advantech success stories



金风科技
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中国航天



Uni-president



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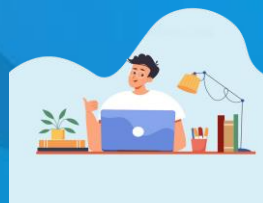
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