Energy Management Information System

Sustainable **management** of your buildings

Real estate
Manage your property assets
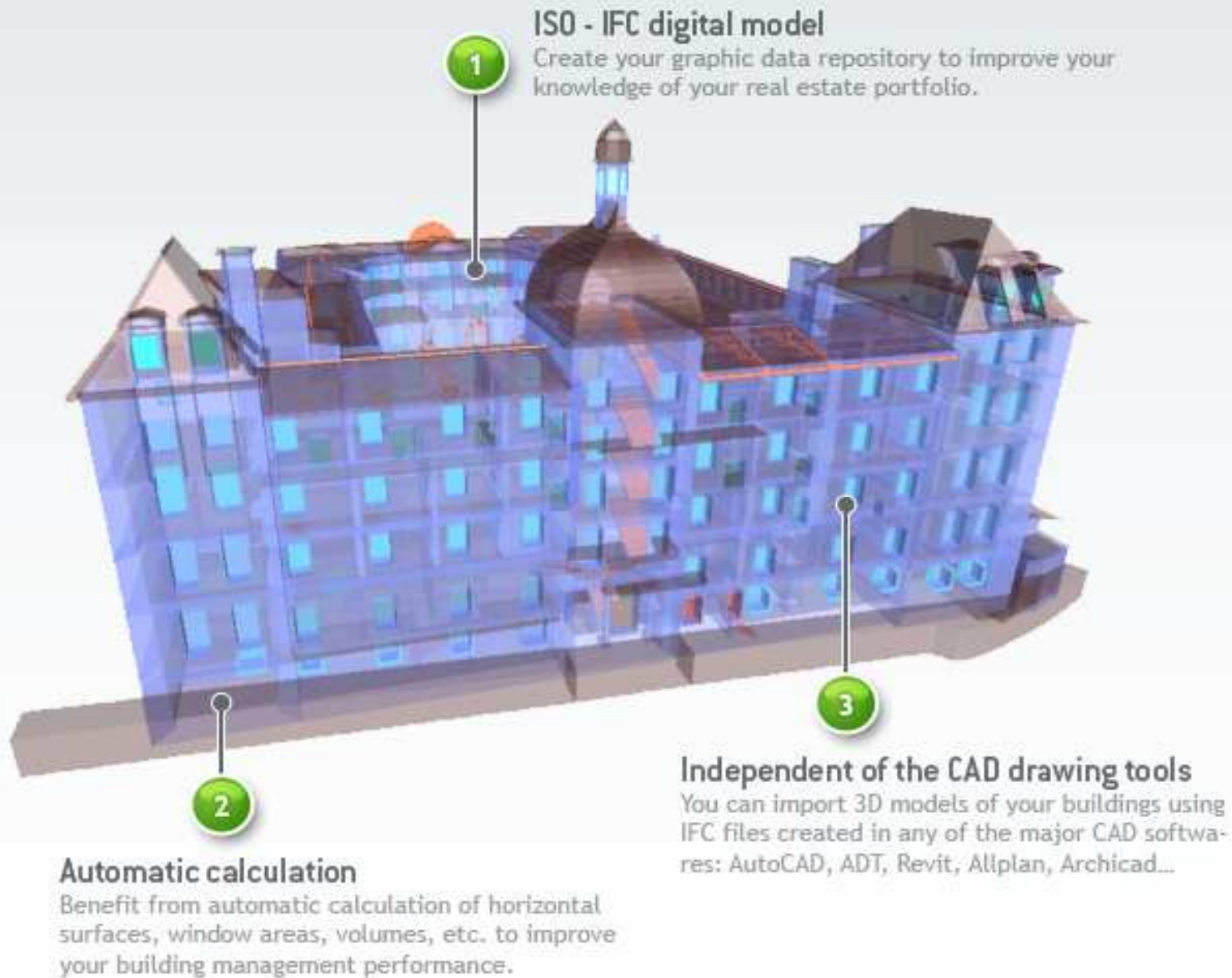
Maintenance
Optimise your maintenance work

Energy
Display your sustainable commitments

ISO - IFC digital model
Create your graphic data repository to improve your knowledge of your real estate portfolio.

Automatic calculation
Benefit from automatic calculation of horizontal surfaces, window areas, volumes, etc. to improve your building management performance.

Independent of the CAD drawing tools
You can import 3D models of your buildings using IFC files created in any of the major CAD softwares: AutoCAD, ADT, Revit, Allplan, Archicad...

Would you buy a car without knowing the fuel consumption?

- Nearly nine out of ten Fortune 1000 senior executives feel a moral responsibility to make their companies more energy efficient

- Obstacles to energy efficiency
  - Complexity of buildings and leases
  - Awareness of energy use

> **The first step is the hardest**
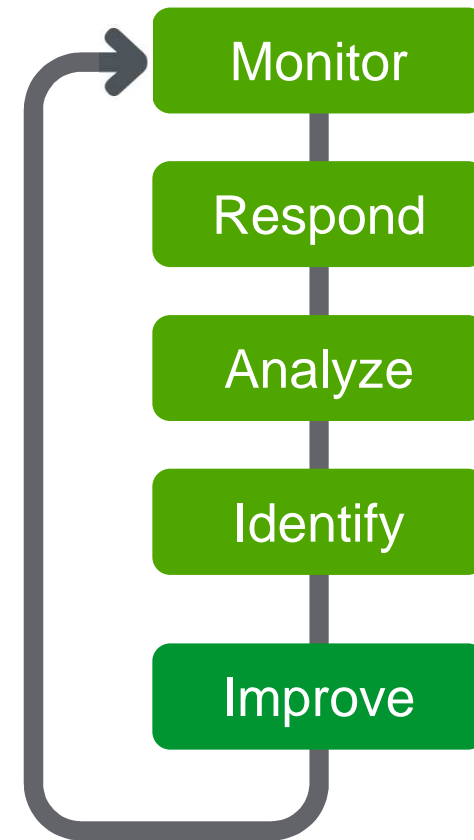
Drivers for energy monitoring

- More savings with direct measurement

- Green Certifications

- Tenant Awareness

- Corporate Social Responsibility

- Access to Data

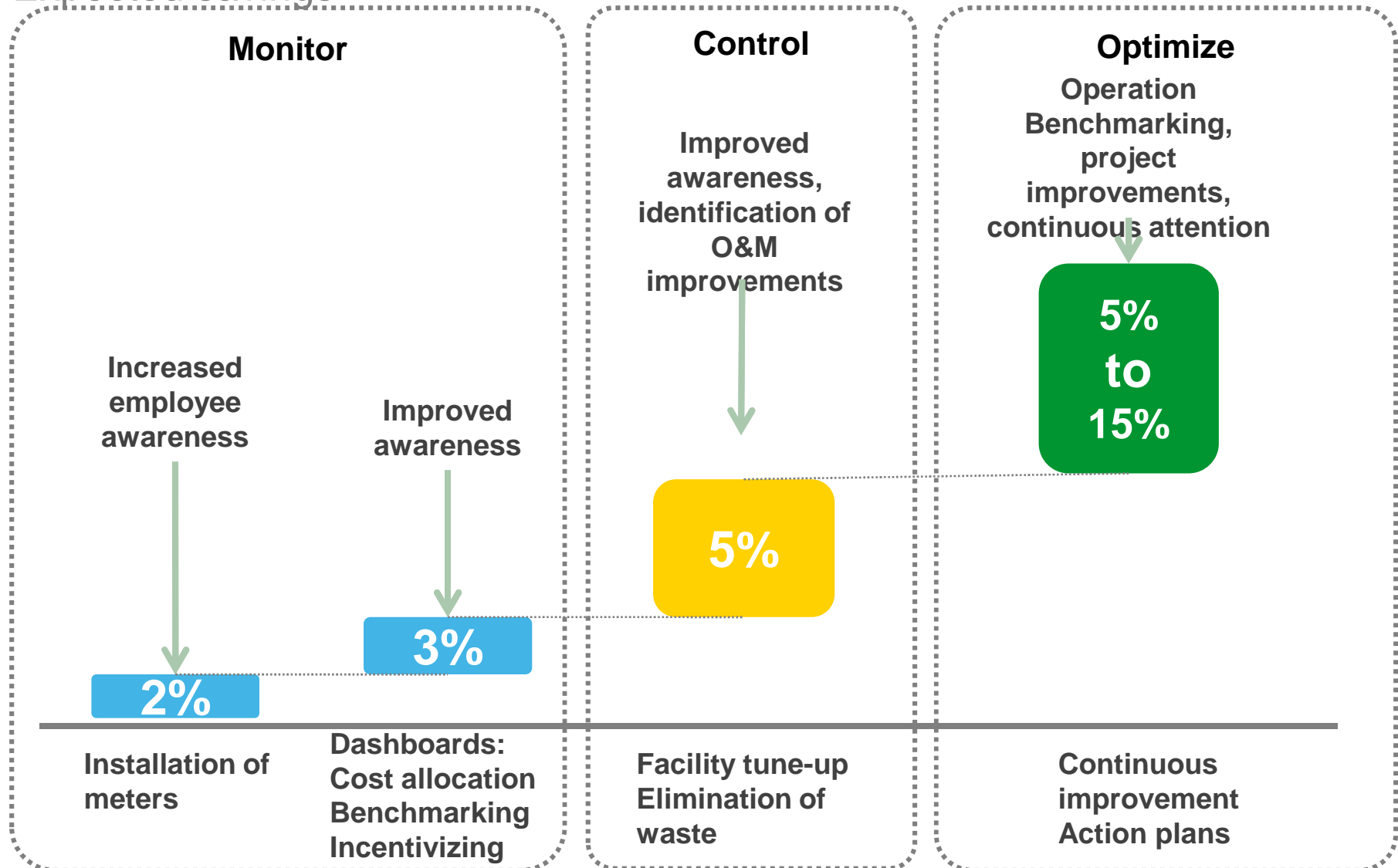# Energy monitoring is the first step

- Review real time energy use – not just monthly bills

- Analyze use and facility needs to reduce energy and meet business goals

- Identify energy conservation measures to decrease use and increase comfort

- Obtain ongoing advice to retain energy savings and continue reductions

> **The first step toward energy savings**

Monitor

Respond

Analyze

Identify

Improve

How Energy Savings are generated

Expected savings

Monitor

Control

Optimize

Operation Benchmarking, project improvements, continuous attention

5% to 15%

Improved awareness, identification of O&M improvements

5%

Increased employee awareness

Improved awareness

3%

2%

Installation of meters

Dashboards:
Cost allocation
Benchmarking
Incentivizing

Facility tune-up
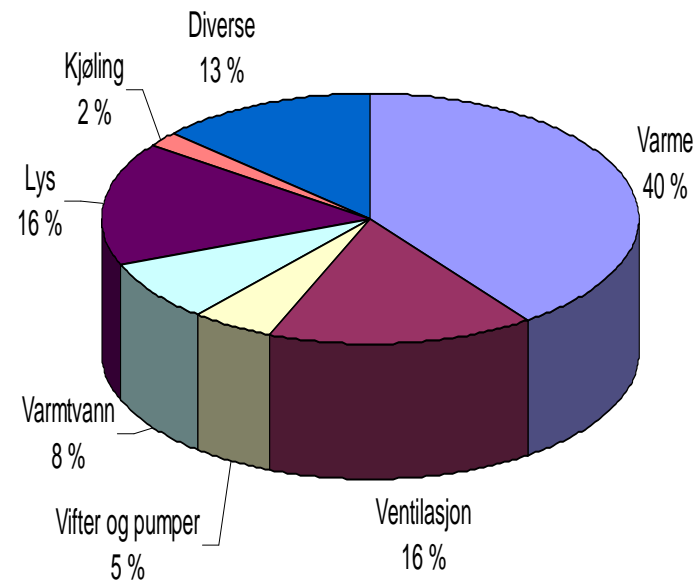Elimination of waste

Continuous improvement
Action plans

Source: Schneider best practices, US Department of Energy Metering Guide, Feb 2006

Hva bruker energi i et bygg?

**85% av energiforbruket styres
av byggets BMS**

**Belysning
Ventilasjon
Kjøling
Oppvarming
(Vannforbruk)**

Fordeling av totalt energiforbruk i kontorbygg

Diverse 13 %
Kjøling 2 %
Varme 40 %
Lys 16 %
Varmtvann 8 %
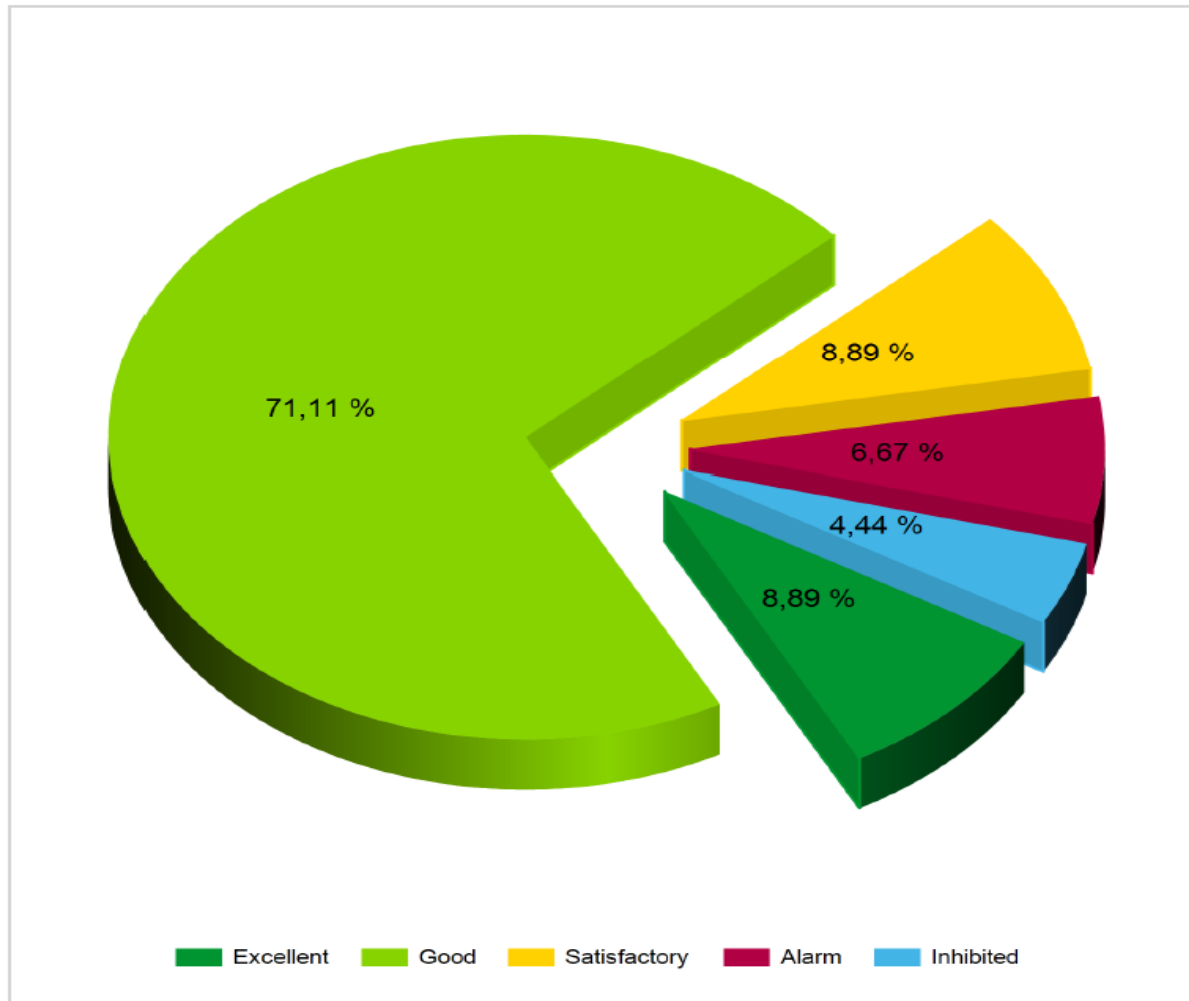Vifter og pumper 5 %
Ventilasjon 16 %

Schneider Electric

SMART rapportering

-Essensen i et SD anlegg er :

-Alarmer og varsler - Varsel om at noe har gått galt, eller ikke er normalt.

-Regulatorer – Er det som bruker / missbruker energi i SD anlegget.

Schneider Electric

Control Loop Summary

Building - BYGG 40 Ventilasjon DNB 3.etg
36_413
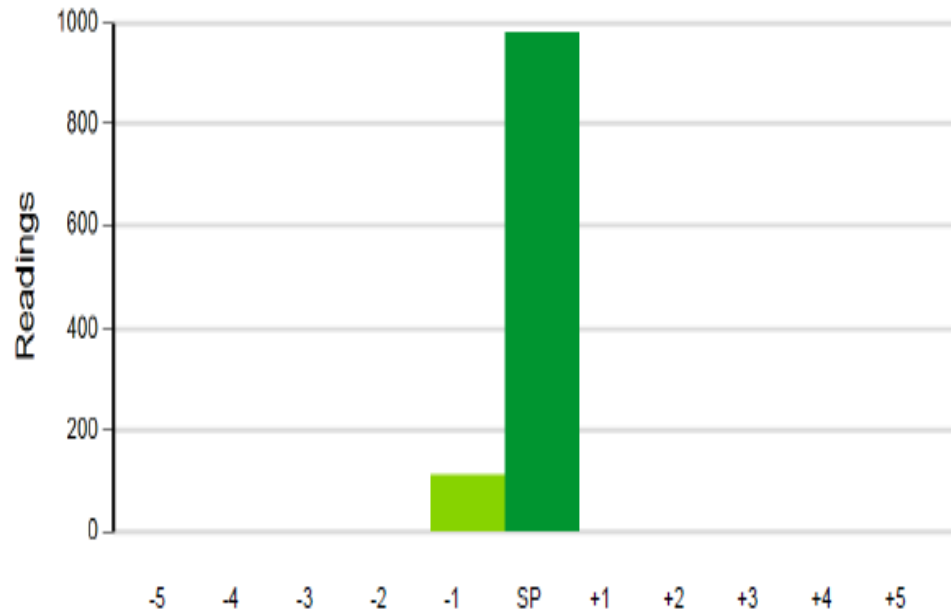Object Address: 36_413

Performance

98,2%

Readings

Usage 100%
Successful: 1093
Failed: 0
Inhibited: 0
Max SP: 21
Min SP: 19,5
Min Value: null
Max Value: null
Avg Value: null
Units: °C
Scale Factor: 1

Distribution: 06.01.2012 - 31.03.2012

Schneider Electric   SMART

Building - BYGG 40 Ventilasjon FRIDAYS 36_414
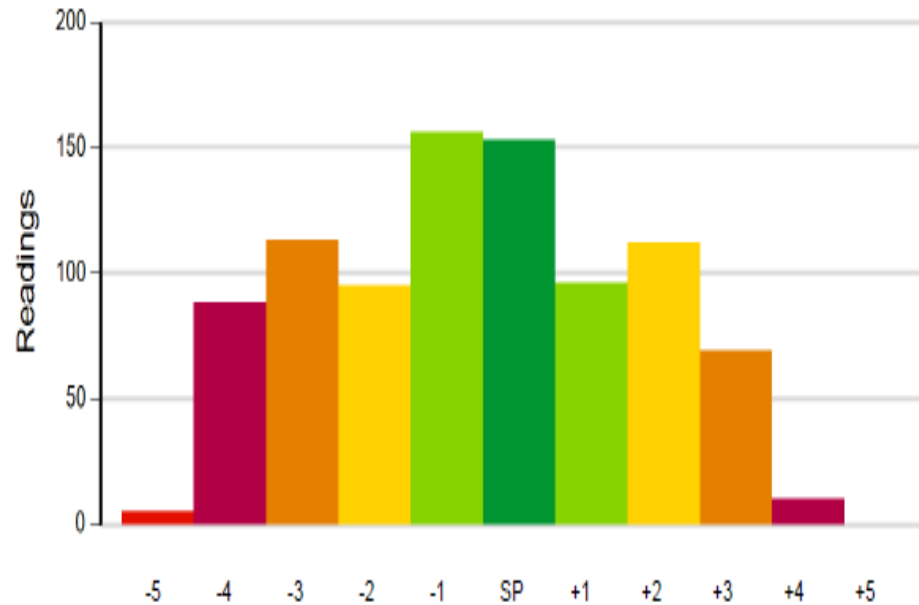
Object Address: 36_414

Performance

69,8%

Readings

Usage 82,04%
Successful: 897
Failed: 0
Inhibited: 209
Max SP: 18
Min SP: 17
Min Value: 0
Max Value: 0
Avg Value: 0
Units: °C
Scale Factor: 1

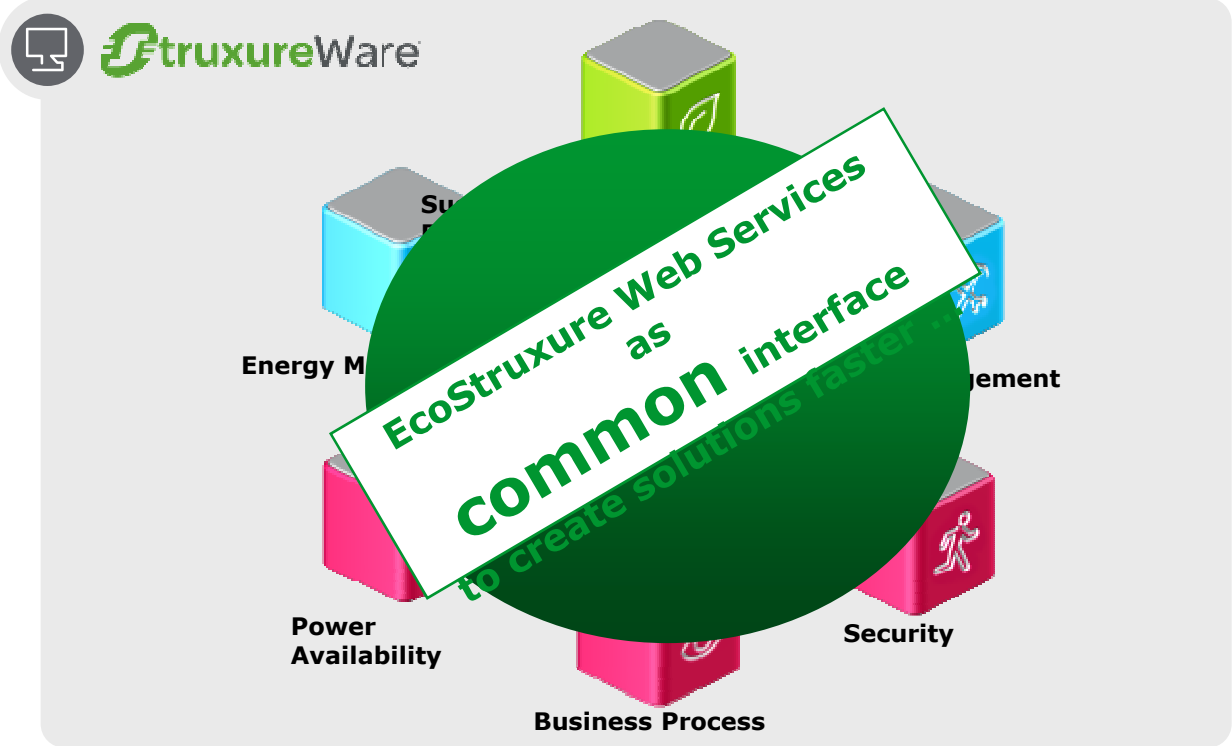**Distribution: 05.01.2012 - 31.03.2012**

Demo

http://demo.energyoperation.schneider-electric.com/#

What is EcoStruxure Web Services?

EWS is a CONNECTOR for StruxureWare

truxureWare

EcoStruxure Web Services as **common** interface to create solutions faster ...

Su...
Energy M...
Power Availability
Business Process
Security
...gement

Enterprise
"I Conserve our enterprise resources"

Operations
"I Optimize our operations and assets"

Control
"I Control our facilities processes"

You can drive business performance while conserving enterprise resources
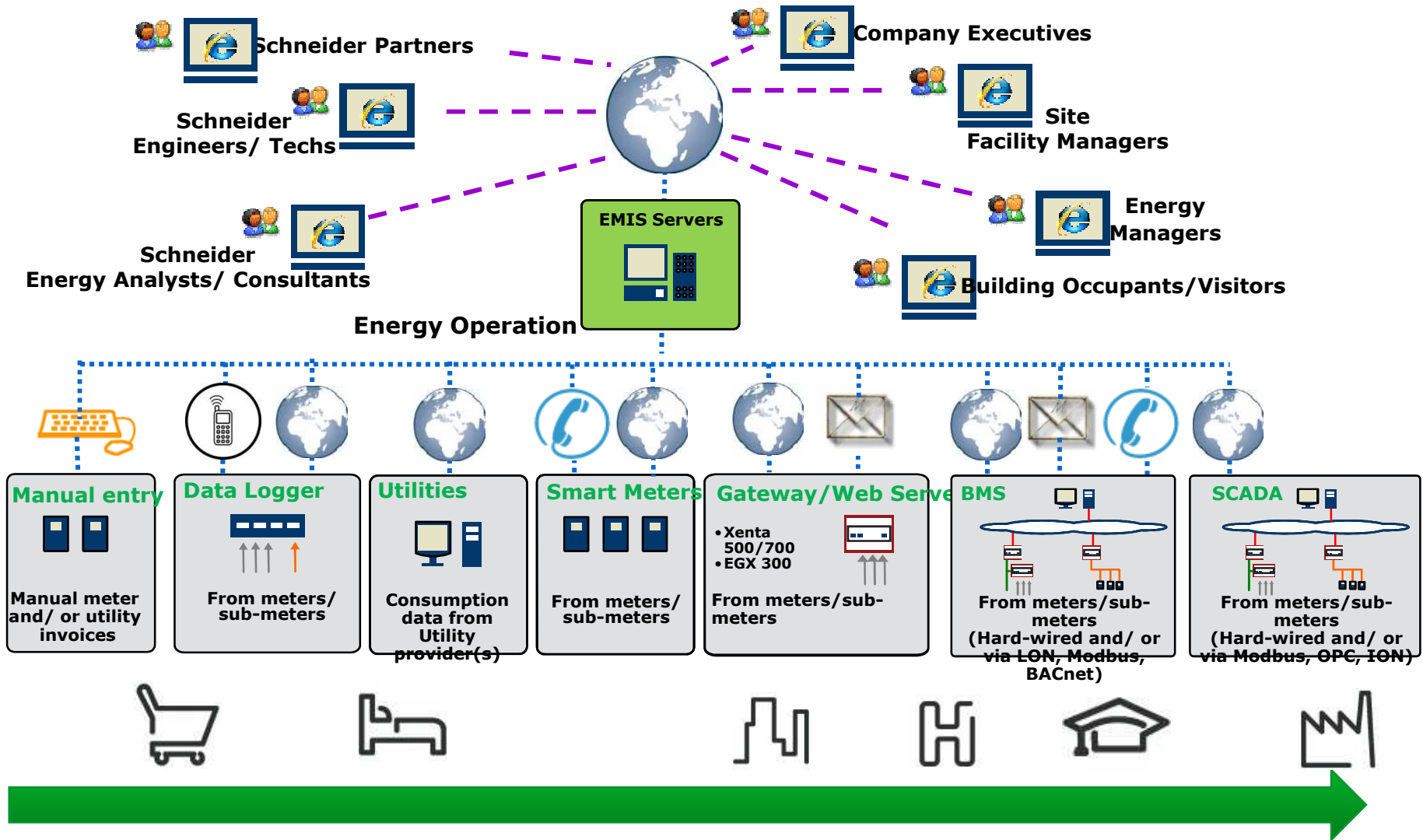
You can drive network stability, integrate renewables, and manage the energy grid efficiently

From ETL to Web Services

- Native support between platforms – no need to develop custom extract algorithms
- No additional software for data integration is needed
- Ability to remove middle layer software – can access to devices directly (i.e. Automation Server), hence cost effective
- No need to do protocol conversion – whatever the underlying protocol is (i.e. LON, Modbus, M-Bus, BacNet etc…), EWS is the unique language
- IT-friendly and flexible

Global Architecture & Connectivity Options

Schneider Partners

Schneider Engineers/ Techs

Schneider Energy Analysts/ Consultants

Company Executives

Site Facility Managers

Energy Managers

Building Occupants/Visitors

EMIS Servers

Energy Operation

Manual entry	Data Logger	Utilities	Smart Meters	Gateway/Web Server	BMS	SCADA
Manual meter and/ or utility invoices	From meters/ sub-meters	Consumption data from Utility provider(s)	From meters/ sub-meters	•Xenta 500/700 •EGX 300 From meters/sub-meters	From meters/sub-meters (Hard-wired and/ or via LON, Modbus, BACnet)	From meters/sub-meters (Hard-wired and/ or via Modbus, OPC, ION)

Ensuring Efficient Integration

- Network Security – Firewall
  - Strict IT policies and lack of willingness to open a port
  - EWS – pull from the cloud
- Inadvertent IT policy changes
- Maintenance
  - Maintenance personnel may shut down the devices without notice
- Various data/file formats from 3rd party tools
  - Requires development effort (creation of custom tools – ETL)
- Data Quality
  - Problems in the underlying data collection – Spike or Gap in the data due to various reasons
  - Incorrect data mapping

Are you ready to take the

First Step ?

?

Questions

Make the most of your energy™