

# Veolia approach for Building Energy Services

EU Research & Innovation Day  
November 23, 2017

Shopping Mall

BAR HOTEL

CINEMA

Supermarket



# Our understanding of the challenges

## Enhancing

attractiveness to customers  
and tenants

## Reducing

costs without compromising  
quality and comfort

## Increasing

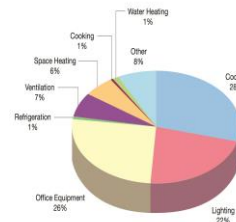
property value  
and promoting sustainability



# Our understanding of the energy challenges



Reducing energy costs



Addressing energy consumption



Risk avoidance



Increasing energy performance



Enhancing sustainability, environmental footprint



Guaranteeing comfort with long term energy efficiency

answering guests' concerns about their impact on the environment and the actions they are taking to reduce.



# Bringing experience and innovation to Commercial and Mixed-Use Buildings

## UAE

Mall of Emirates  
Dubai

**233 500 m<sup>2</sup>**

**10%**

Energy savings

**24/7**

Energy monitoring

**3%**

Overachievement  
in energy savings

## Spain

Indra  
Madrid

**211 900 m<sup>2</sup>**

**15%**

Contractual savings

**65**

Office buildings

**2 350**

Tons of CO<sub>2</sub> emissions  
avoid per year

## Australia

74 Castlereagh Tower  
Sydney

**30 000 m<sup>2</sup>**

**38%**

Guaranteed energy savings

**41%**

Savings on gas achieved

**1 to 4**

NABERS rating upgrade  
Green certification guaranteed

## China

Jiaheyumao Business  
Complex – Chongqing

**120 000 m<sup>2</sup>**

**0,7 MWe**

Combined Heat and Power BOT

**7,2 MW**

Heating capacity

**2 650 TR**

Absorption cooling capacity



# Bringing experience and innovation to over 500 Hotels & Reports

## UAE

Pullman Accor  
Dubai

**481 rooms**

**24/7**

energy monitoring  
and  
asset management system  
with integrated  
HelpDesk service

## Spain

Chamartin  
Madrid

**450 rooms**

**20%**

total guarantee

**24/7**

energy monitoring

## UK

Marriott  
International

**~5 000 rooms**

**~10%**

energy savings

**14**

Hotel buildings

**6 713**

Tons of CO<sub>2</sub> emissions  
avoid per year

## USA

The Venetian  
Las Vegas

**8 000 rooms**

**35 000**

preventive and repair works

**24/7**

availability

**3 300**

Assets on total life-cycle guarantee

# Bringing experience and innovation to Healthcare

## Ireland

Stewarts Care  
Dublin

**300 beds\***

**13%**

Energy savings

**1 250**

Tons of CO<sub>2</sub> emissions  
avoided per year

**15**

years of total guarantee

## Belgium

Hospital ULB Erasme  
Brussels

**1 000 beds**

**18%**

Savings on gas and electricity

**2 350**

Tons of CO<sub>2</sub> emissions  
avoided per year

**15**

years of total guarantee

## Spain

Hospital Universitario  
La Paz-Madrid

**1 300 beds**

**23%**

Energy savings

**46%**

Reduction in CO<sub>2</sub> emissions

**30%**

Savings on O&M

## France

Assistance Publique  
des Hôpitaux de Paris

**23 000 beds**

**66 500**

Containers managed per year

**100%**

Traceability from on-site sorting  
to treatment facilities

**781**

Tons of medical hazardous waste



# Performance levers



Monitor  
and review

1

Bring behavior  
change

2

Optimize systems  
efficiency

3

Improve  
essential services



Progress

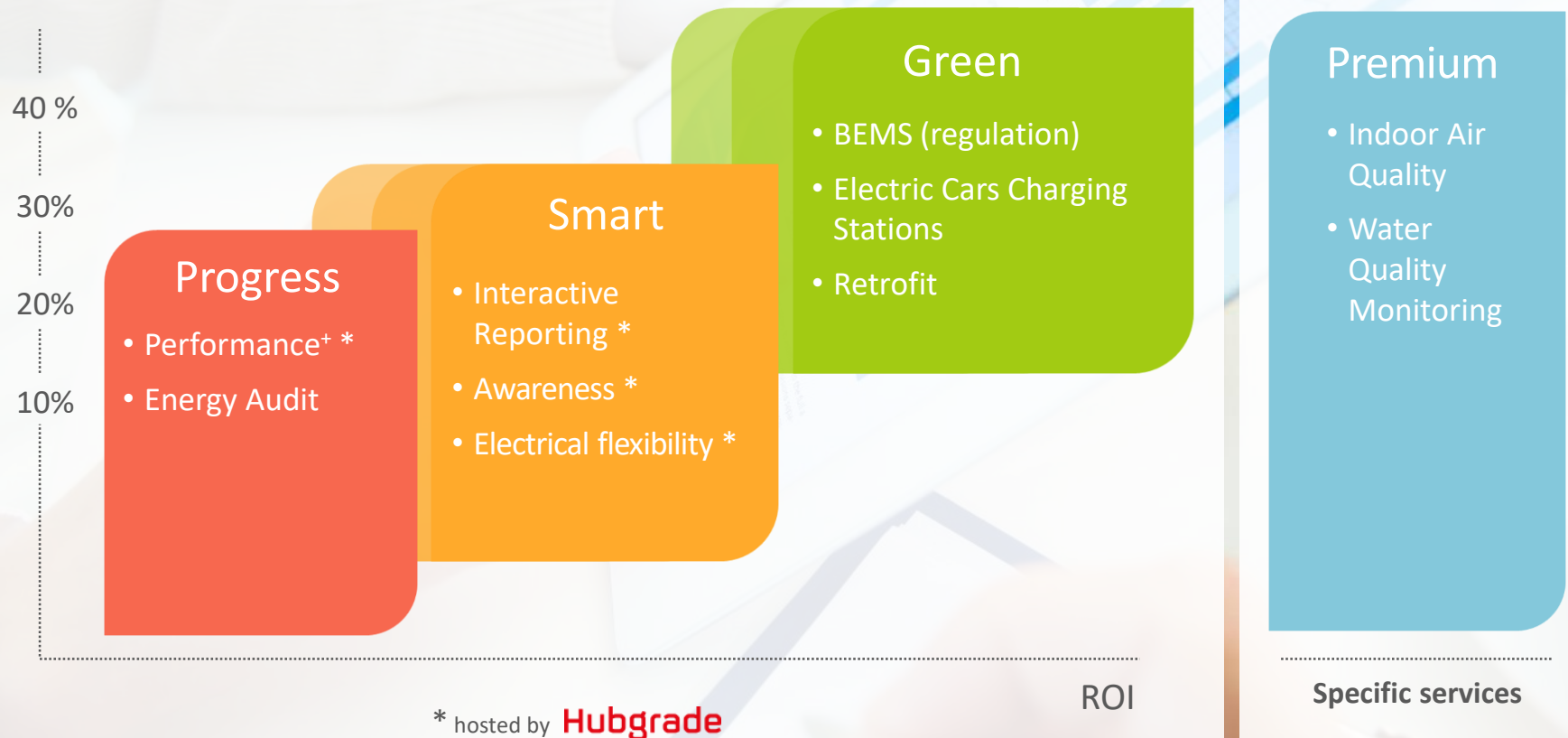
Smart

Green

Premium

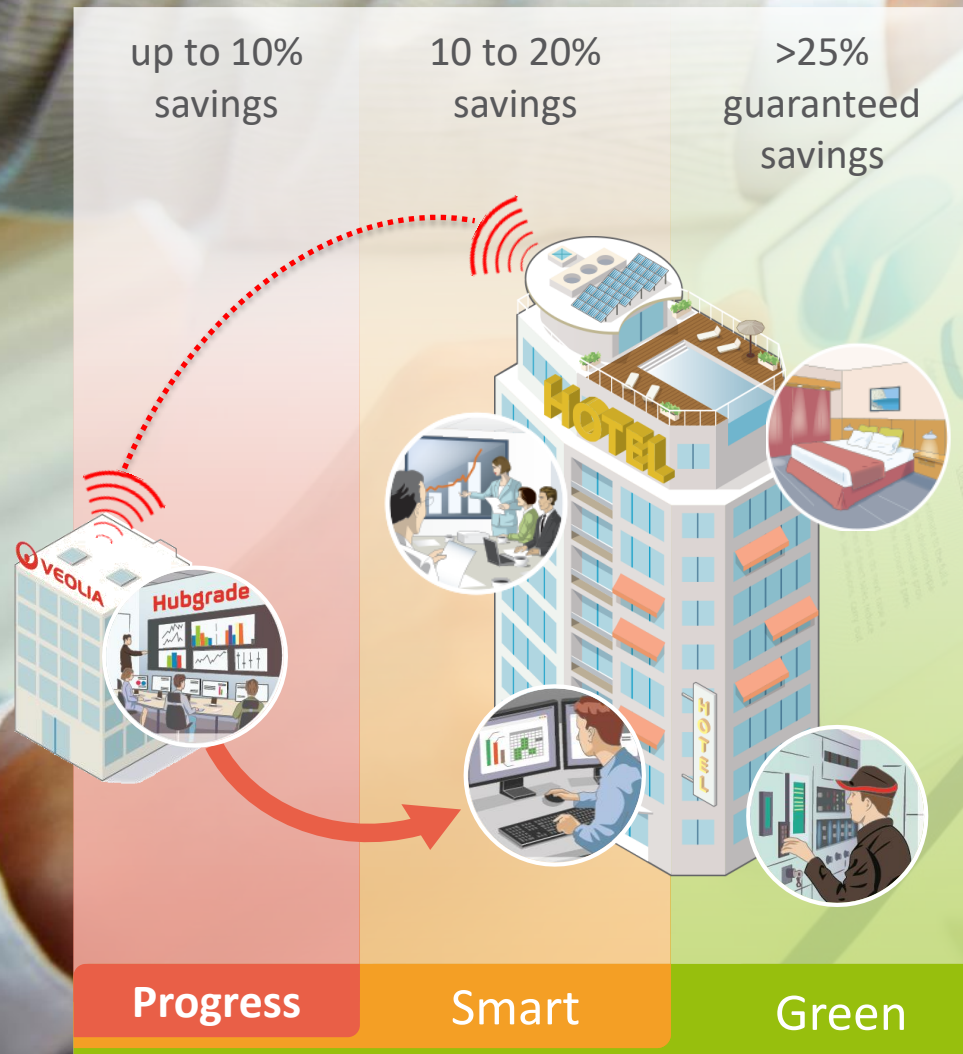
# Guaranteed energy savings

energy savings





# Levers for Energy, Water and Waste Performance



## Our commitments

### Progress

- Monitoring, analysis and reporting with new generation of Energy Management and Smart Waste Solutions

### Smart

- Real-time reporting
- Live communication to users
- Submetering and bill verification

### Green

- Contractual cost savings
- Energy and water savings
- Waste minimization and optimized recycling rates
- Carbon footprint reduction
- Highest Health & Safety Standards
- Comfort conditions and reliability
- Green Mark Certification level: Certified, Gold, Gold Plus, Platinum



# Smart monitoring center

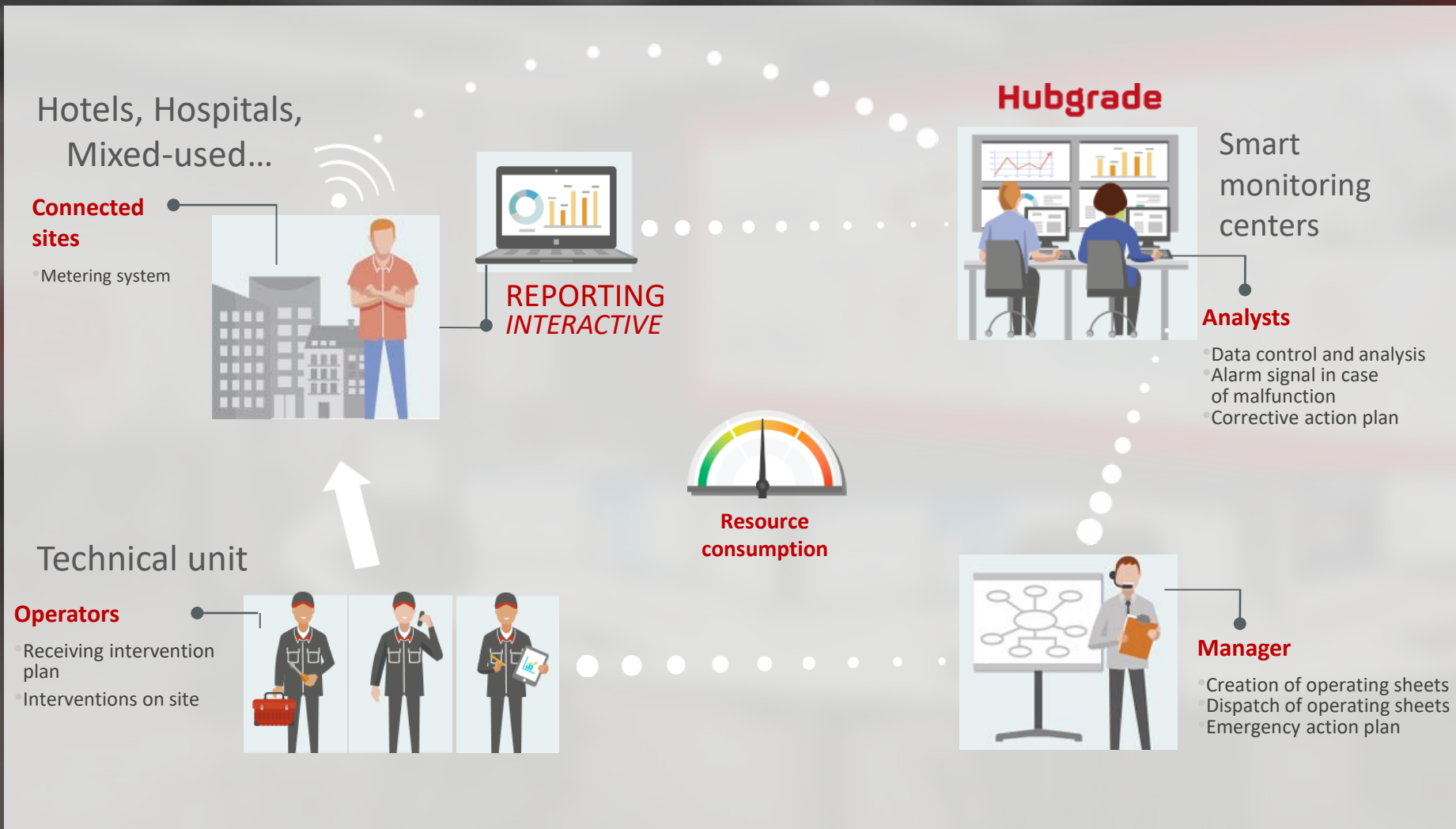


## Hubgrade

- Energy, water and material flows analysis
- Real-time to boost performance
- Monitoring, control, optimization and autonomy
- KPIs, benchmarking and advanced analytics
- Extra-savings and extra-revenue for clients
- Transparency and traceability



# Monitoring, analysis and optimization





# Upgrading services

A core service

Performance<sup>+</sup>



Included



Reporting *Essential*

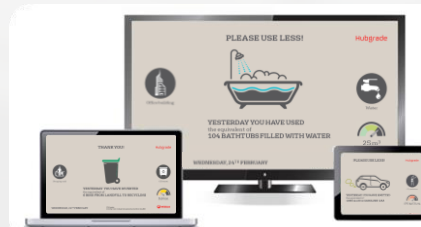
3 complementary  
value-added services

Reporting

Interactive & Advanced



Awareness



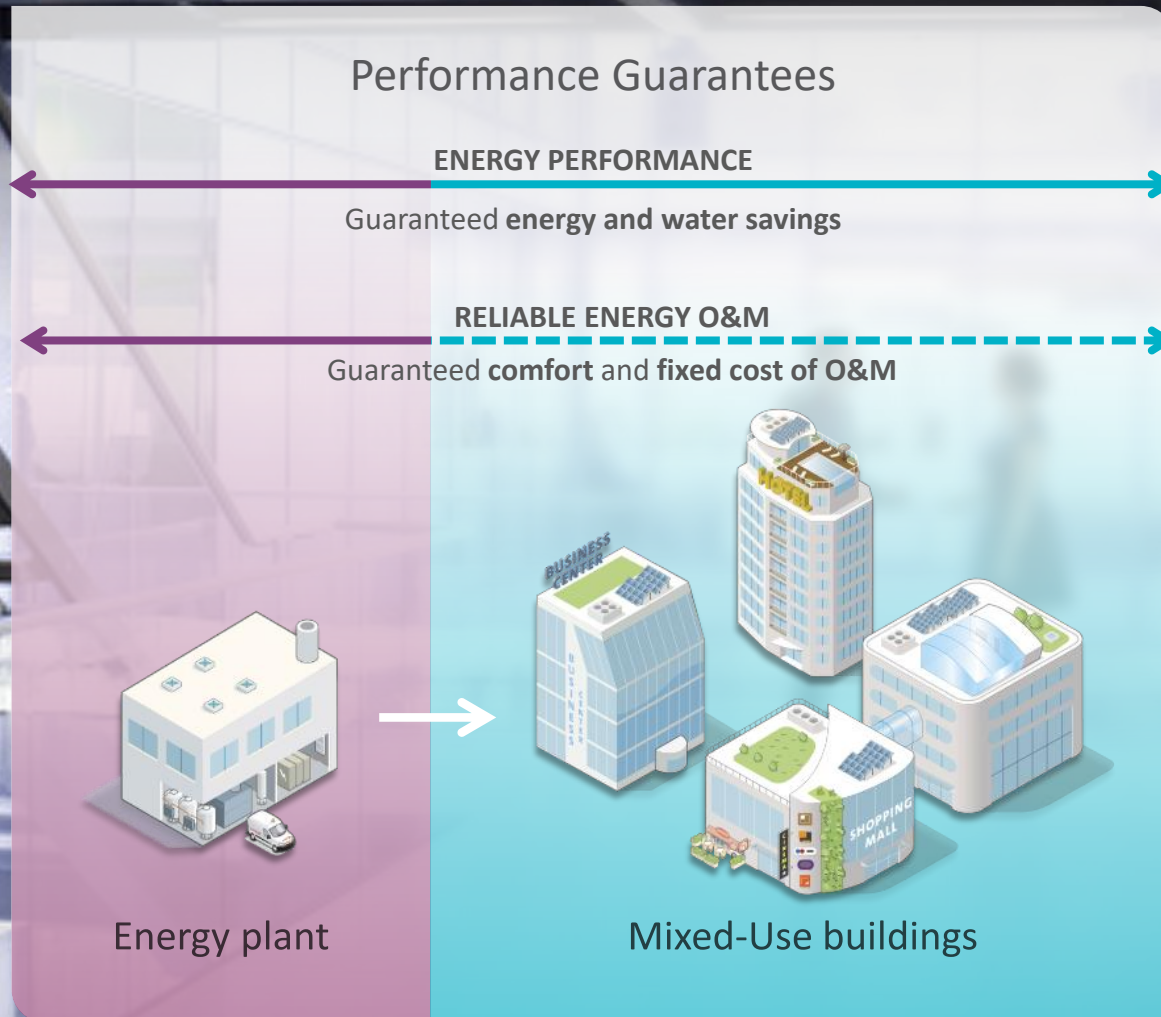
Submetering





# Our commitments

1 / 2



## Performance Guarantees

### Reliable Energy O&M

- 24/7 Energy
- Quality of utilities
- Fixed cost of O&M
- Comfort: Temperatures, Lighting, Indoor Air Quality...

### Secure Energy Supply

- Cost of utilities
- Efficiency of energy systems

### Energy Performance

- Energy, water and cost savings
- Carbon emission reduction
- Green certifications: LEED, BREEAM, ISO 50001 ...



# Our expertise

## Services delivery

- Single Point of Contact for all energy, water and waste management challenges
  - HelpDesk 24/7
  - CMMS/CAFM system
  - Mobilization plan
- Performance monitoring and analysis

## ENERGY

- Energy Performance Contracting (EPC)
- Design, Build, Operation and Maintenance
  - HVAC systems and networks
  - Electrical facilities and BMS
  - Building Energy Management Systems (BEMS) and metering solutions
- Emergency and back-up generation
- Combined Heat and Power (CHP)
- Engineering and installation works
- Electrical efficiency
  - High frequency electricity monitoring
  - Demand response / Flexibility
- Renewable energy solutions
  - Solar,
  - Biomass
  - Geothermal

## WATER

- Maintenance of the cooling towers
- Control of legionella and health related risks
- Water conservation programs
- Water and waste water treatment plants

## WASTE

- Hazardous and non-hazardous waste management
- E-Waste disposal & recycling
- Biowaste solutions
- Integrated Facility Management

# Case study: AG Insurance headquarters

## AG Insurance headquarters

*Brussels – Belgium*



### The Challenge

- Reducing energy consumption
- Replacing equipment to reduce consumption dramatically
- Formulate mid-term objectives for a better use of energies and water
- Respect energy quotas
- Be transparent and have a reporting to illustrate AG's environmental efforts

### Solutions

- Connection to Hubgrade for real-time performance optimization
- Energy Performance Contract
- High frequency electricity monitoring for audit phase
- Clear consumption analysis to validate baseline consumption
- Modelling of consumption to integrate climate change
- Clear commitment to reduce consumption during the contract

### Benefits

- Guaranteed comfort for occupants
- Savings in consumption
  - 15 % of gas
  - 9 % of electricity
  - 15% of water
  - 550 tons of CO<sub>2</sub> avoided/ year
- Transparency for the customer reporting
- Low-capex investment to achieve big savings



# Case study: Mall of the Emirates

## Mall of the Emirates

*UAE – Dubai*



### The Challenge

- Keeping attracting customers and retailers
- Remain one of the most productive shopping centers in the world.
- Improve customers' comfort and the asset value.

### Solutions

- Connection to Hubgrade for real-time performance optimization
- Energy Performance Contract
- Consultancy : Facilities & Energy Management operations, MEP systems and facilities design.
- Operations and maintenance of all HVAC equipment, heating and cooling infrastructure, mechanical refrigeration equipment, along with water distribution system
- Project development with specialized subcontractors

### Benefits

- 7% guaranteed energy savings (3% overachievement)
- Improved profitability
- Increased competitiveness
- Reduced risk profile
- Greater sustainability of services & assets
- Enhanced "green" image

# Case study: Indra

## Indra

*Spain – Madrid, Barcelona, Salamanca, Sevilla, Cadiz, Marbella, Malaga, Granada, Pamplona, Valencia, Alicante, Tenerife*



## The Challenge

- Reduce consumption
- Reduce price of energy
- Avoid O&M unexpected costs
- Reduce emissions

## Solutions

- Connection to Hubgrade for real-time performance optimization
- Energy Performance Contract
- Investments in new heating, cooling and lighting equipment
- Switch fuel consumption to natural gas

## Benefits

- 15% guaranteed energy cost savings
- Consolidated energy reporting for 65 buildings in real-time
- CO<sub>2</sub> emission reduction
- ISO 50 001 certification for bigger buildings
- Fixed cost for O&M and asset lifecycle replacement



# Customer benefits

## More savings guaranteed

A partner for audit, works  
and operations in Energy Performance  
Contracting

## Optimized reliability

Long-term view on energy  
and asset management programs  
to avoid unexpected costs

## Worldwide experience

Over 100 million square meters  
of complex buildings entrusted

## Smarter building

Transparency and traceability  
for all stake holders:  
managers, tenants and end-users

## Sustainability commitment

Reduced carbon emissions,  
fossil fuel dependency  
and water consumption

## Energy Efficiency in Buildings



Smart and green solutions for all  
the energy challenges of buildings.