

Active energy efficiency: The fastest way to solve the energy dilemma

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Schneider Electric at a glance

18.3

Billion global sales in 2008 (in€)

32% of sales in new economies
x2 compared to 2004

110 000+

people in 100+ countries

5%

Sales devoted to R&D

170

Years of history through
innovation and leading brands

The global specialist in
Energy management

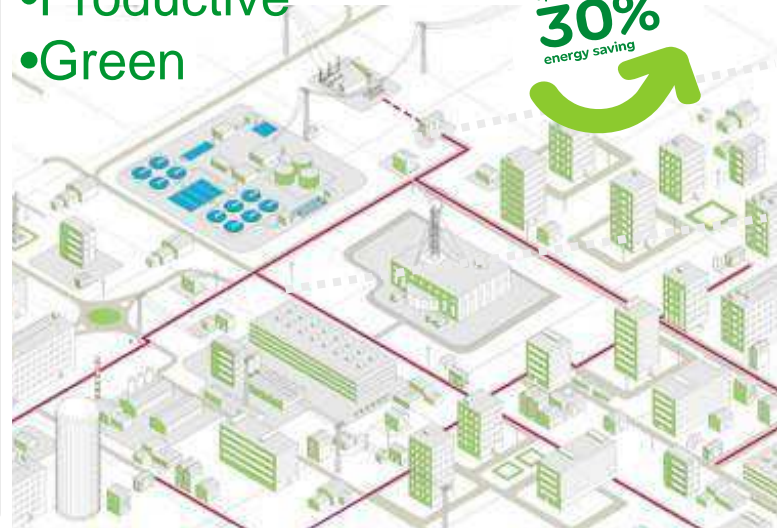
Making energy:

- Safe
- Reliable
- Efficient
- Productive
- Green

Covering
72%
World Energy
consumption

up to
30%
energy saving

Energy production
& transmission

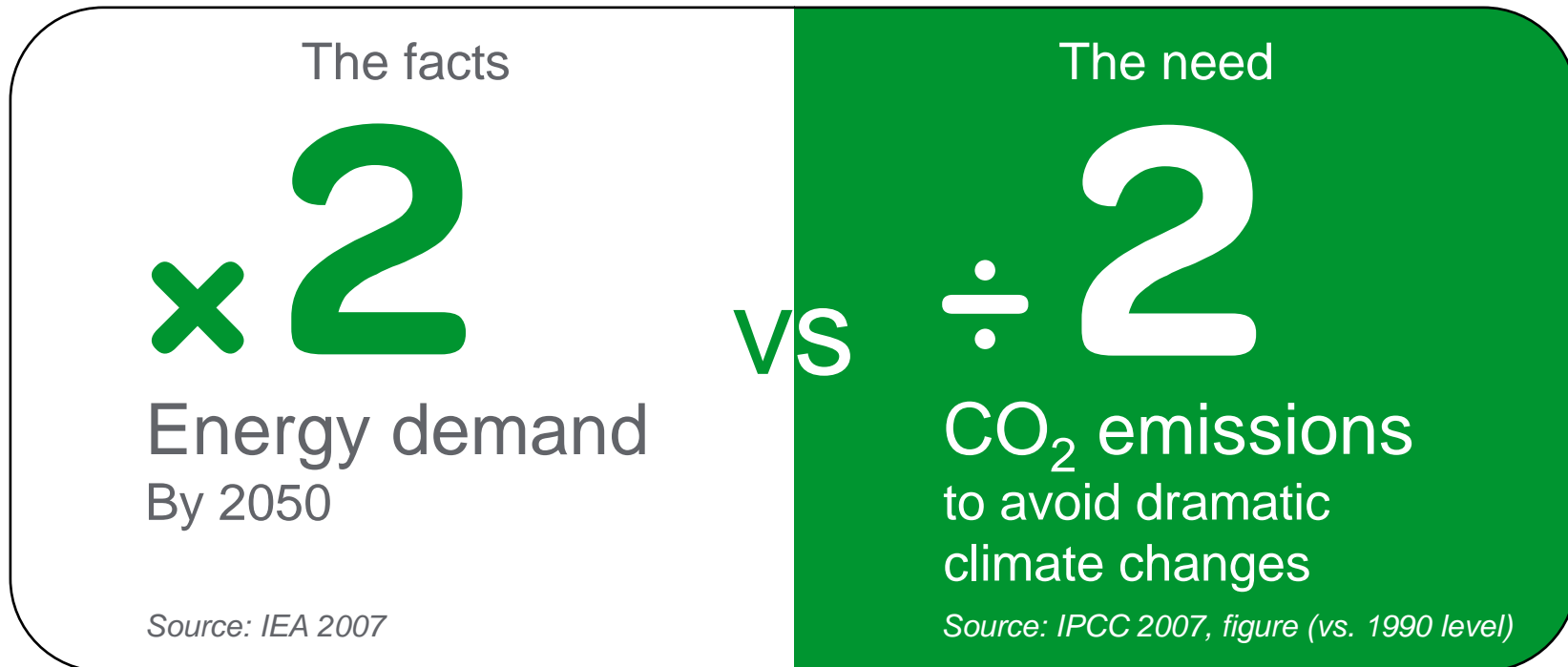


Energy usage

A Recognised
Sustainable commitment



The energy dilemma is here to stay

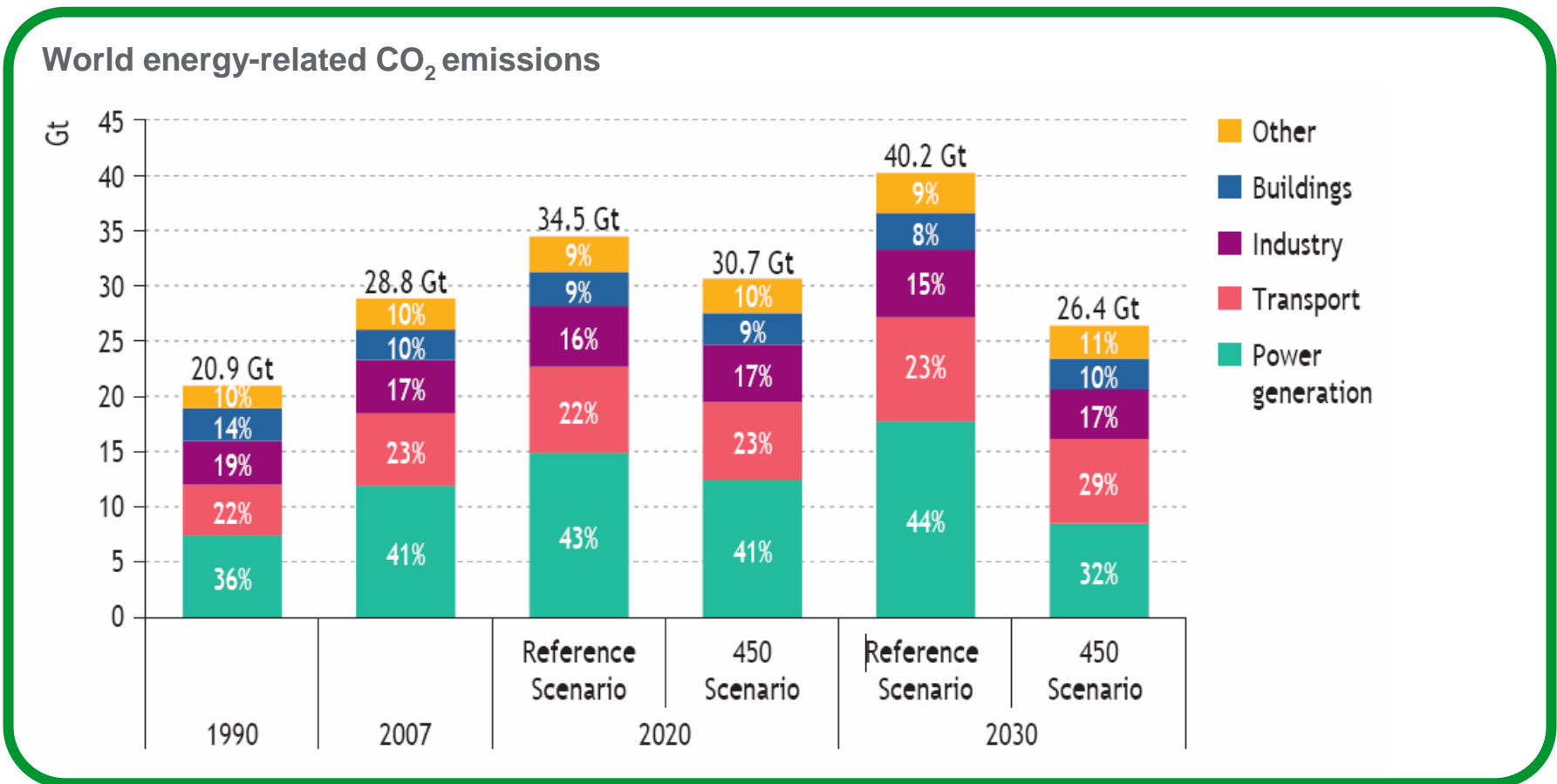


Energy management is the key
to address the dilemma

Generation supply matters

but demand behavior matters most, first!

- Over 67% of CO₂ emissions reduction will come from power generation

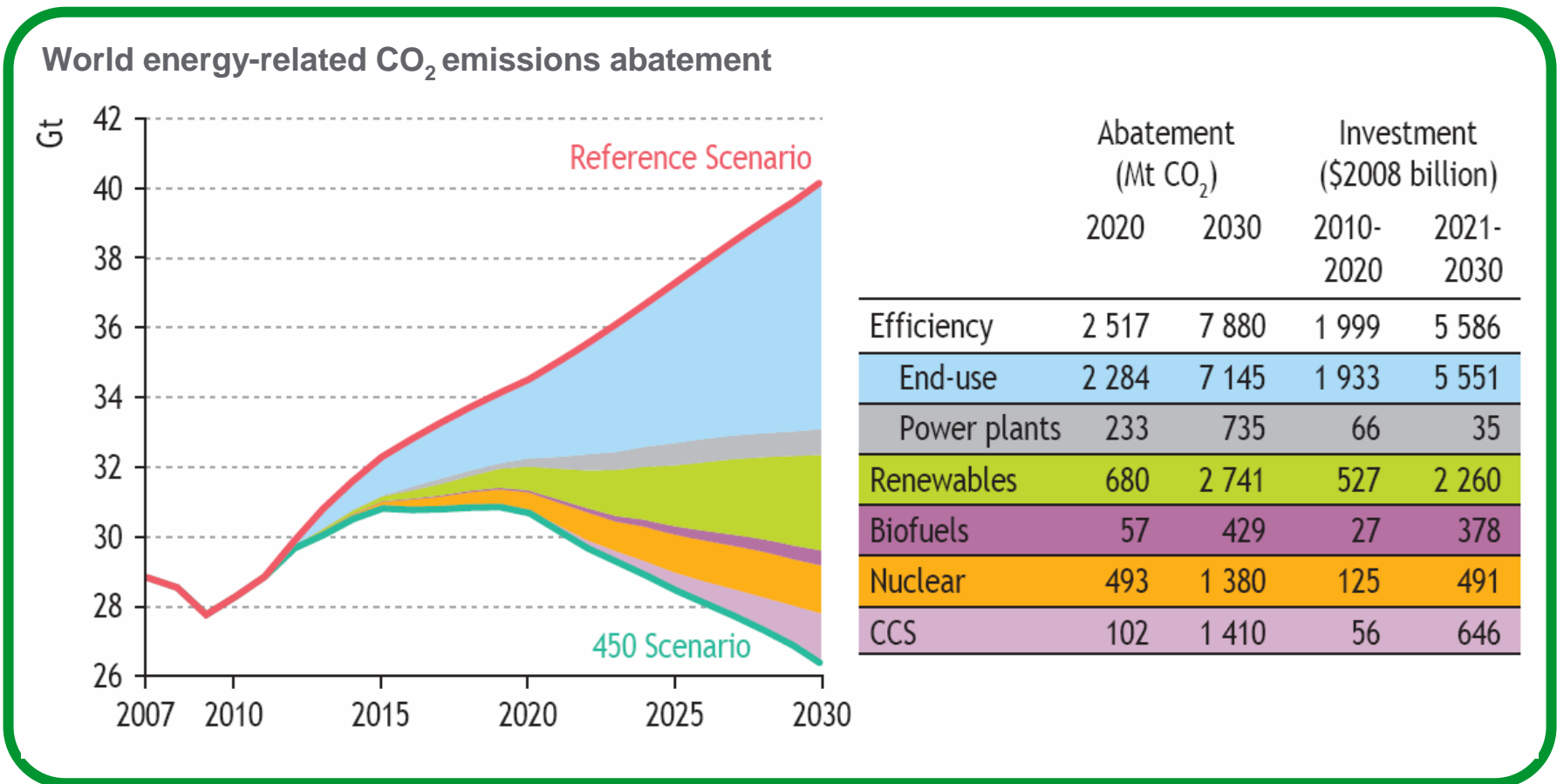


Source: World Energy Outlook 2009, OECD / IEA₄

Generation supply matters

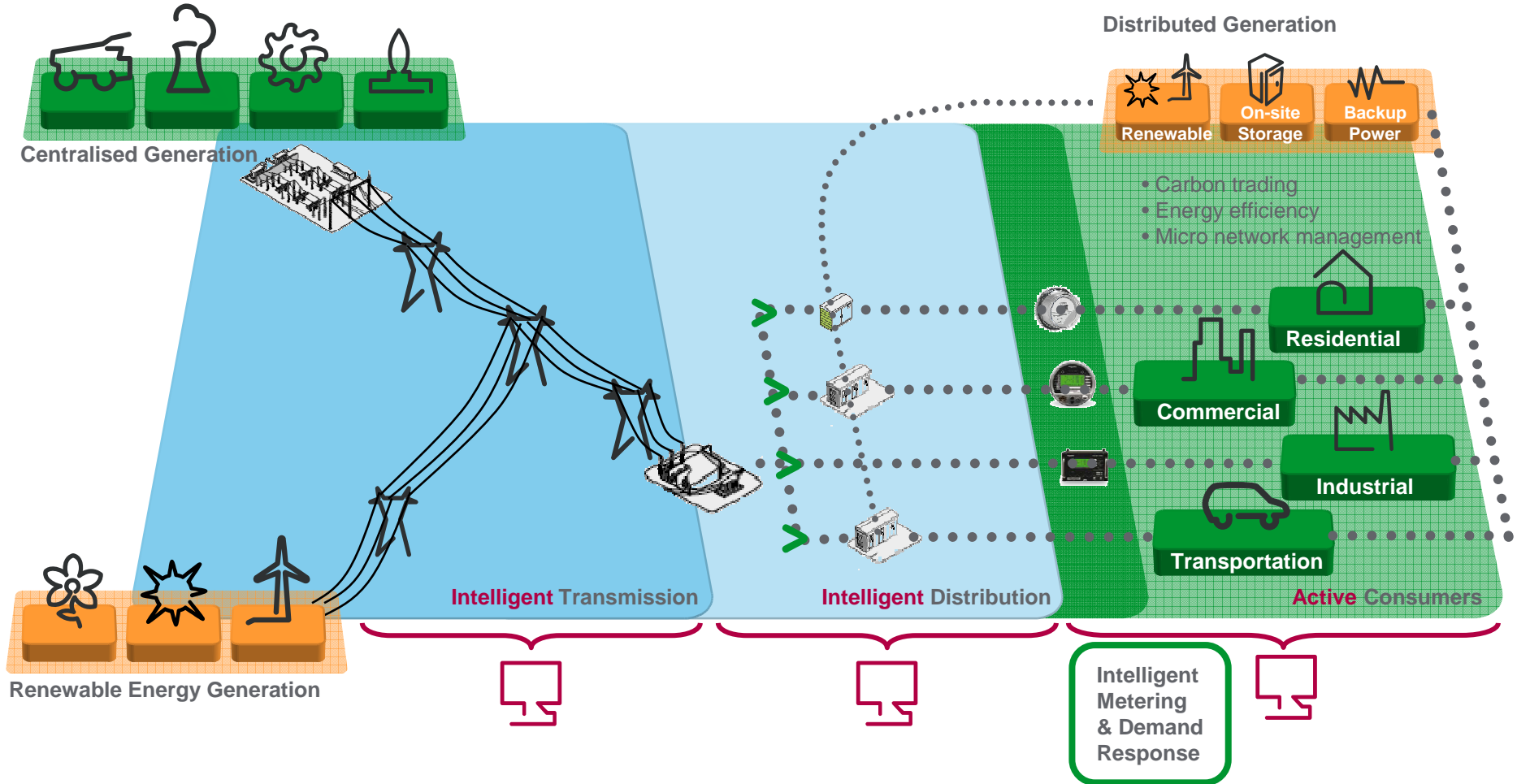
but demand behavior matters most, first!

- Over 50% of CO₂ abatement will come from end use energy efficiency



Source: World Energy Outlook 2009, OECD / IEA₅

A quick evolution towards Smart Grid



We have 10 years... to fix 4 critical problems

The quickest wins: 50% of CO₂ cut
must come from behaviour

Generation:
> 10 years to fix

Transmission:
> 10 years to fix

Buildings and Process:
1- 5 years to fix

Point of Use:
1-5 years to fix



Problems:

CO2 Emissions
Transmission Efficiency
Capacity Constraints



Stranded Capacity
Capacity Constraints



Stranded Capacity
Service Entrance Capacity

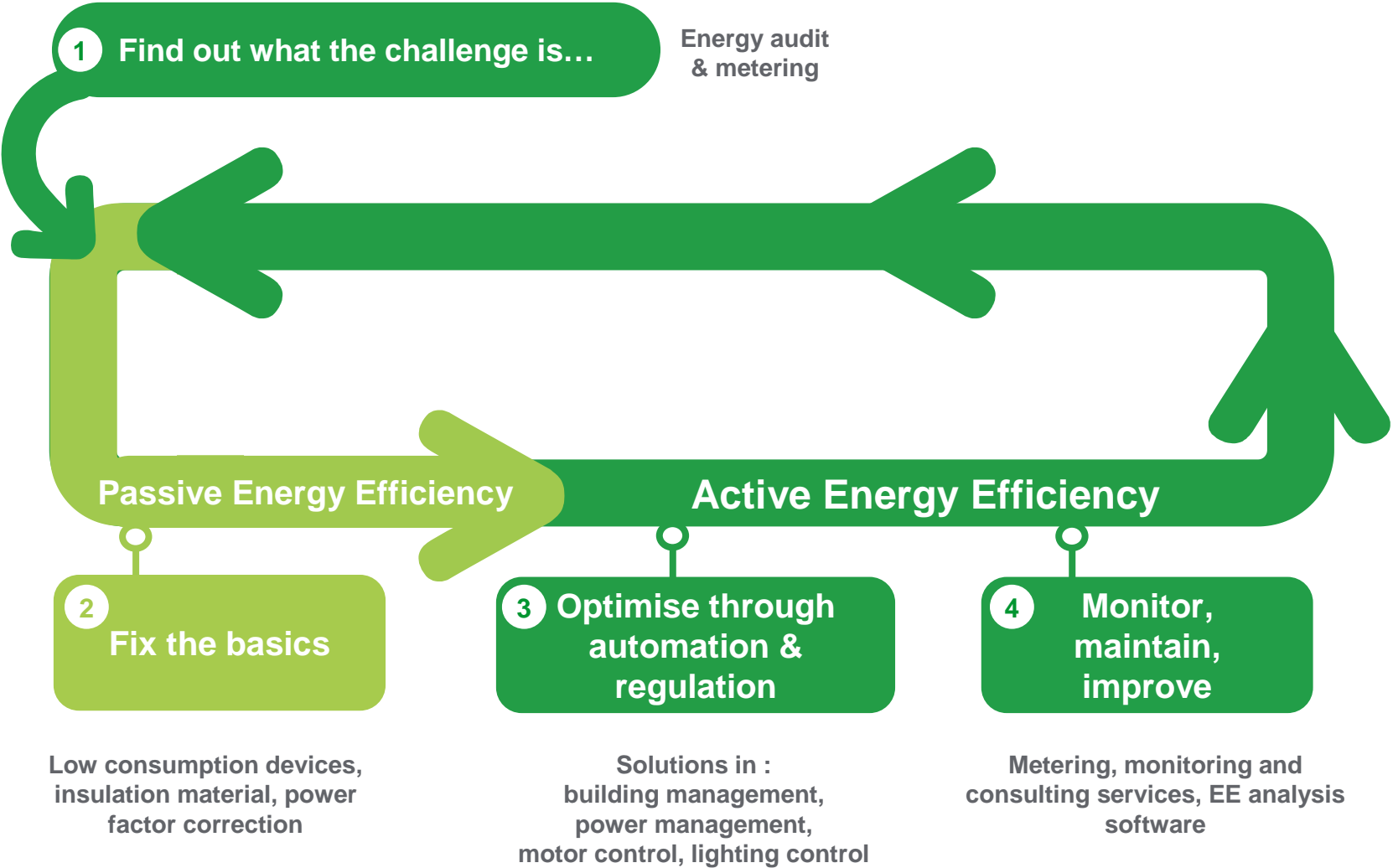


Efficiency
and Integration



Focusing on **point of use architecture** provides **fastest impact** and frees
upstream capacity through Power Plant to Plug Optimization

Our approach to active energy efficiency



Passive + **Active EE** solutions = Sustained Energy Savings

Active energy
efficiency in action



Reduce CO2 emissions by 20%

Bella Center on target to achieve its climate objective

Project at a glance

- **Project Type**
 - Energy, indoor climate and technical facility management
- **Location**
 - Copenhagen, Denmark
- **Size of building**
 - 122,000 m²
- **Applications**
 - Lighting
 - Ventilation
 - Cooling systems
 - Circulation pumps
 - Security & access control systems

Customer benefits

- Less temperature fluctuation
- Better air quality
- Permanent lighting regulated according to need and light penetration
- Secure and safe environment
- Energy optimisation pays for a better indoor climate
- Prepared for environmental certification
- Future-proof operational savings
- Enhances environmental and climate friendly company profile

The Solution

A turnkey contractor for all technical solutions

- **Lighting**

- 1756 new fittings and 5268 energy-saving lighting tubes plus control systems in three halls and in the Center Hall.

- **Ventilation**

- Motors and ventilators to be replaced.
- Frequency converters to be installed for managing airflow, according to requirements.
- Heat recirculation system.

- **Pumps**

- Replacing 107 circulation pumps with energy saving pumps from Grundfos. The replacement will be concurrent with the upgrading project in order to minimize disruption.

- **Energy management**

- • LON cards to be installed at all electricity and energy meters for remote reading and control.
- • Energy consumption to be monitored by TAC Vista FM (Energi).

- **Window screening**

- Interior 3M solar film

“ We decided to award the contract to Schneider Electric which, as an ESCO company, specialises in energy optimisation and indoor climate.

Following an in-depth analysis of Bella Center's energy consumption, we realised that we needed to prioritise our efforts to enable us to focus on maximising energy savings and, therefore, reduce CO₂ emissions in the most efficient way possible. ”

Technical Director, Kristian Ortving

The Bella Center bottom line

Financial results

- annual savings of approximately **€268,000**
- an expected cost-recovery period of **less than 8 years**
- a saving of **300,000 kWh** annually by installing new lighting
- energy savings of between **30-50%** with the new circulation pumps
- a reduction of **1,150 tonnes CO₂** by December 2009.

The final word...



“International customers are increasingly asking about our environmental policy before making decisions. This is why intelligent control of energy and the indoor climate makes good business sense. At the same time, it’s a sound long term investment because a good indoor climate and maximum comfort is a real sales argument that will apply long after the Climate Summit at the Bella Center in 2009 is over ”

Technical Director, Kristian Ortving

National Carwash, United states
33% energy savings

Ville d'Amiens, France
30% energy savings with lighting solutions

Eco-building **Technopolis, India**
30% energy savings with building management system

Sun Microsystems, India
17% energy saving in a new data centre

Ideapark, Finland
25% energy savings in all the mall facility

Station Princess Elisabeth
10Kwh/sqm/year thanks to renewables integration, remote monitoring and energy management systems in the Antarctica polar station

\$2,5 M
Savings for this US movie studio and theme park

Mississippi University, USA
30% on electricity bill, ie 750K€

Michelin, France
9% in energy consumption on one industrial site

An Jia Ling Coal Selecting Plant, China
RMB 2.4 M saved thanks to power factor correction and energy efficient systems

Veolia, France
25% energy savings

Bird Nest Olympic stadium, Beijing
>10% savings

Tatenergo, Tatarstan
20% energy savings

Pumping station, La Rochelle, France
25% energy savings

National Carwash, United states

The war on waste has already started, we are leading it

solutions with energy efficiency
features made up

30%

of our 2008 global revenue

Schneider Electric



Visit us



Hall 4, booth 4405
(next to the BP Carbon Theater)

Tour the booth and be entered into our daily lottery

The lucky winner to receive a brand new
Amazon Kindle e-reading device right away!

Make the most of
your energy™

