Wattguard Efficient Lighting

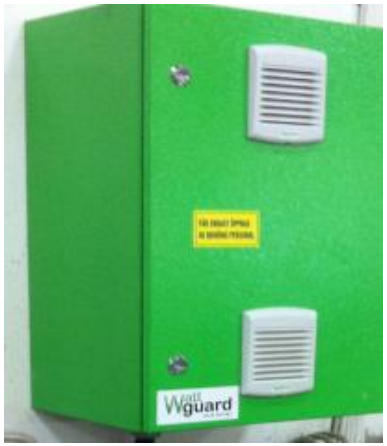
Lighting is the main focus of energy efficiency's measures in buildings

Source: Certificação Energética e Ar Interior EDIFÍCIOS

Wattguard

Wattguard

- Energy optimizers
- Swedish technology
- The easiest way to make significant savings in lighting
- High energy efficiency
- Applicable for fluorescent, Hg, sodium and metal halides technologies



application number: P1000054

PATENT OFFICE

Wattguard

Customer Value Proposition

With
Wattguard

Wattguard
bypass

~40%
energy savings

~10 %
LUX drop

Watt
guard

Wattguard Benefits

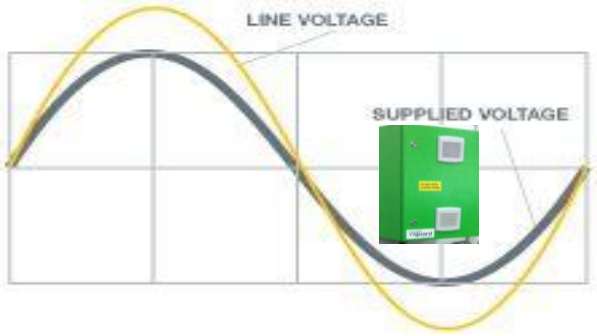
- Improve 30% to 40% the lighting energy efficiency
  - Return on investment below three years
- *One stop installation* without the need for intervention in a number of fixtures
- Increased life span of the lamps whilst reducing maintenance costs
- The most efficient technology market
  - The best score on lumens/watt
- Rental model operating scheme
  - *Wattguard renting*

Unit	Effect (W)	Lumen	Efficiency (lm/W)
T8 (traditional)	58	5.200	90
T5 (HF)	49	4.000	82
T5 (HF)	80	6.500	81
LED	25	1.850	74
T8 + Wattguard	39	4.530	116

Watt guard

How does it work?

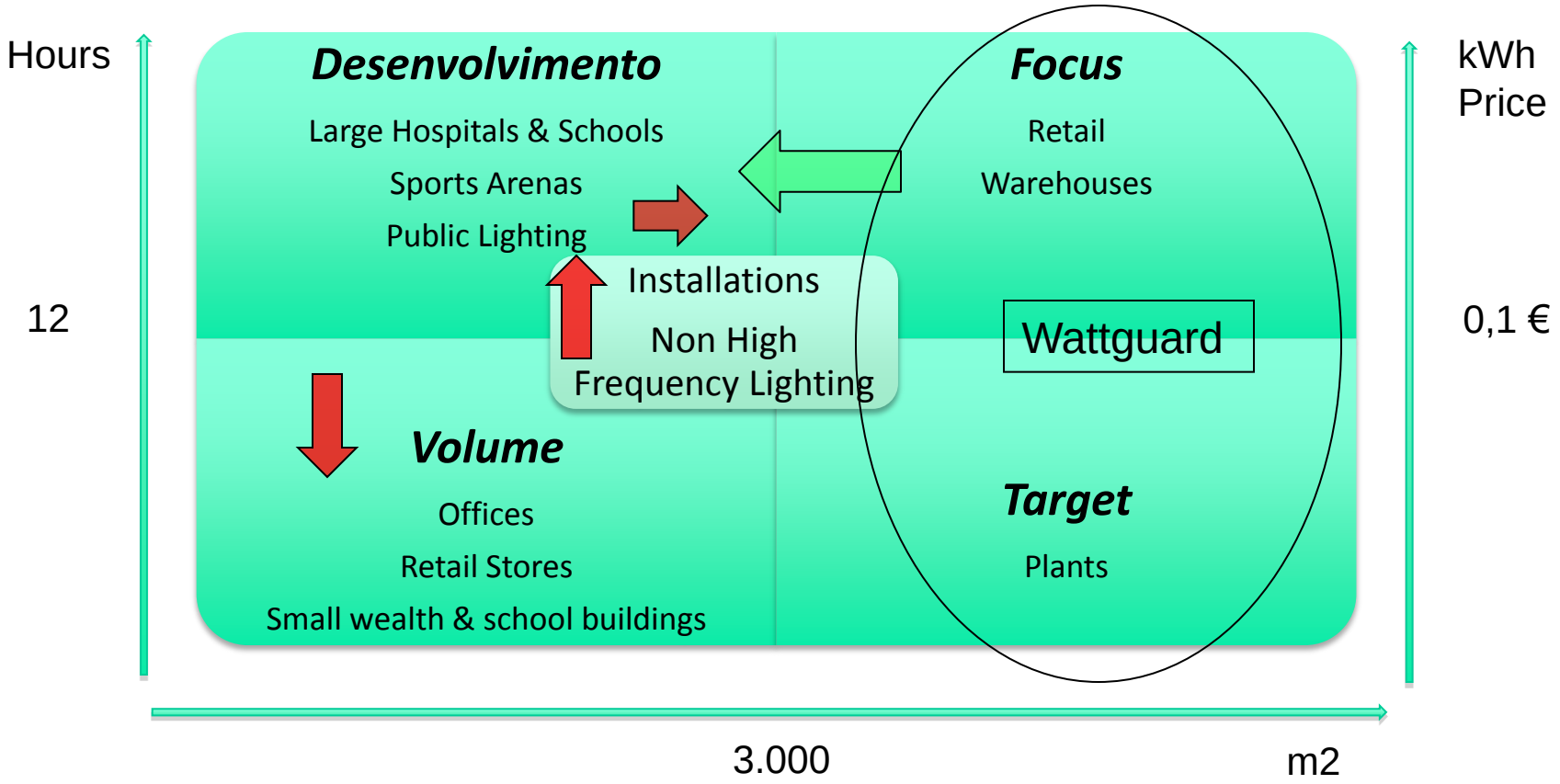
- Transformers with metal cores with special characteristics;
- Provides power for lighting with a phase shift between voltage and amperage;
- Reduces the range of variation of voltage and amperage in the electric circuit;
- The special effect gives rise to an increased speed of electrons;
- The high velocity of electrons increases the number of collisions with Fluor, Sodium or Hg atoms;
- Generation of ultraviolet photons per watt, increased form 40% up to 70%.



Wattguard

Market segments

Current targets:
Warehouses, plants and retail with over 3000 m^2 operating more than 12 hours per day



Business Stages

Focus

- ***Portugal Sales***
- ***20.000 target buildings***

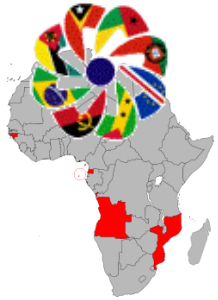



- **Get 5% penetration in five years time**

2013

Growth

- **Spain and PALOP**



- **Service buildings**
- **Public lighting**



2014

Manufactoring

- **Manufacture and assembly in Portugal (Évora)**

- **European Grants**

QUADRO DE REFERÊNCIA ESTRATÉGICO NACIONAL

UNIÃO EUROPEIA
Fundo Europeu de Desenvolvimento Regional

2015

Wattguard

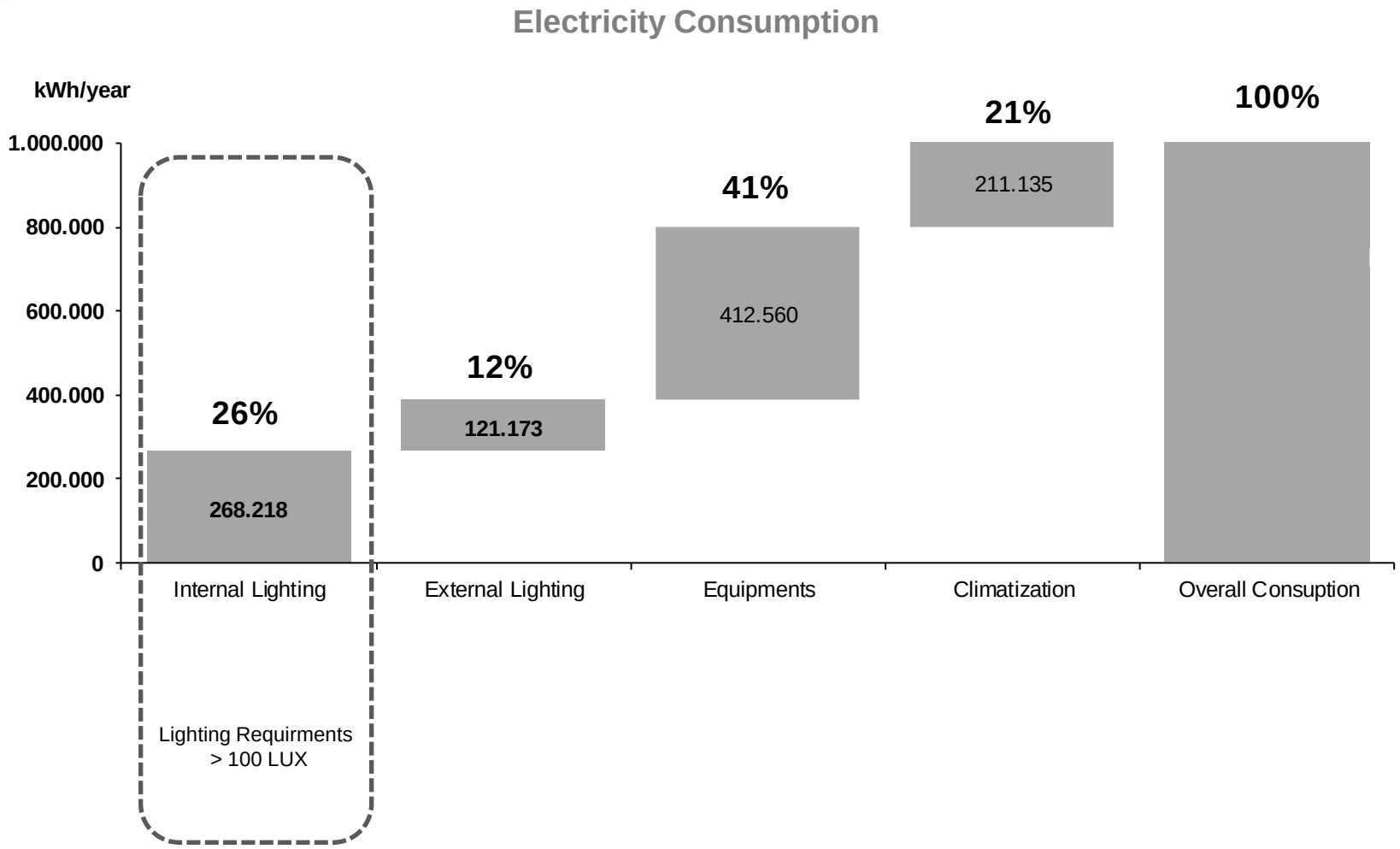
Over three undred installations in 3 years

Sweeden, Denmark and since this year Norway and Portugal

Portugal

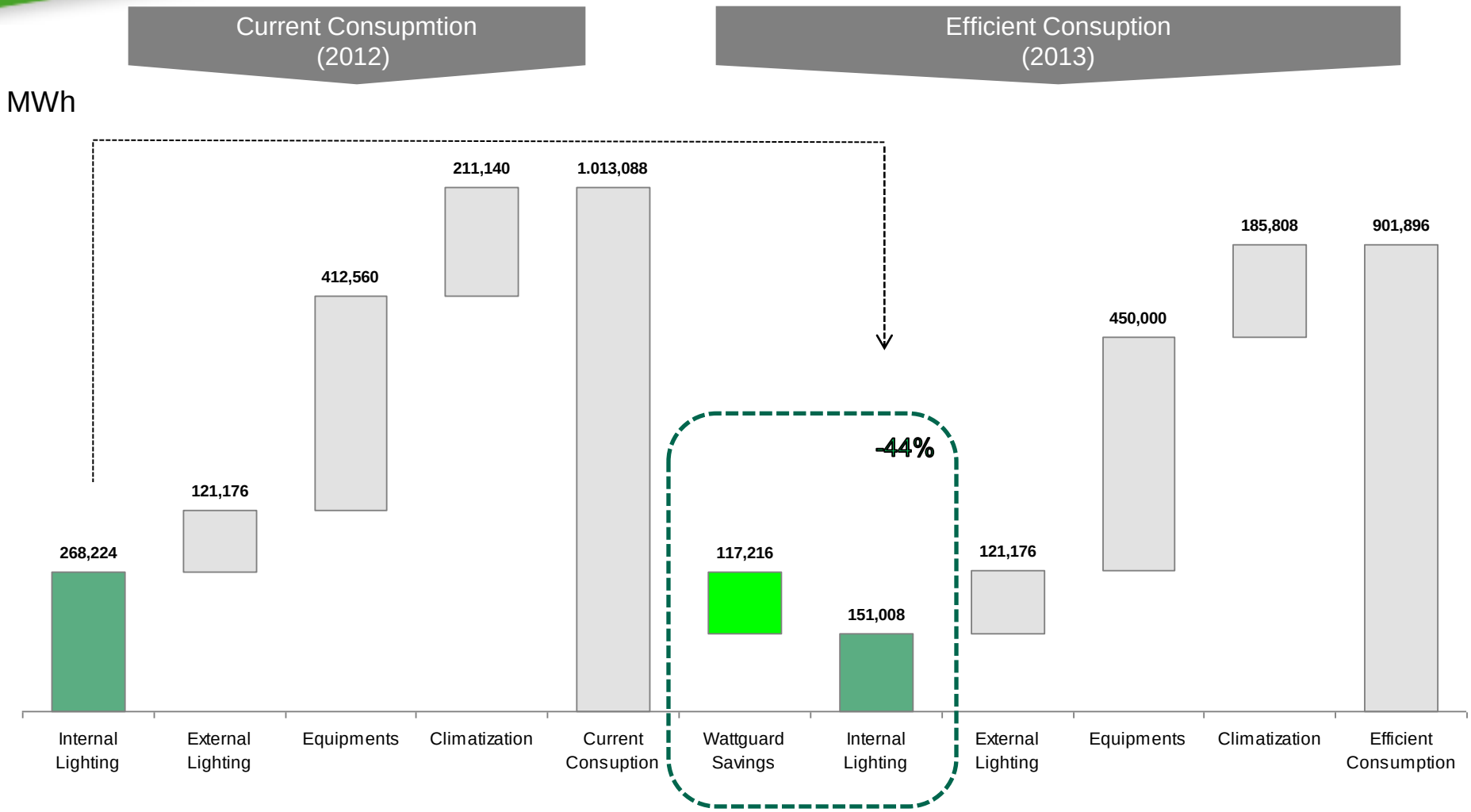
- Business Case in Portugal
  - Warehouse and logistic building
  - Over 17.000 m2 building
  - 16 hours use of fluorescent and metal halid lighting
  - Annual electricity consuption: 1.1 GWh

Lighting is one of the main energy consumption



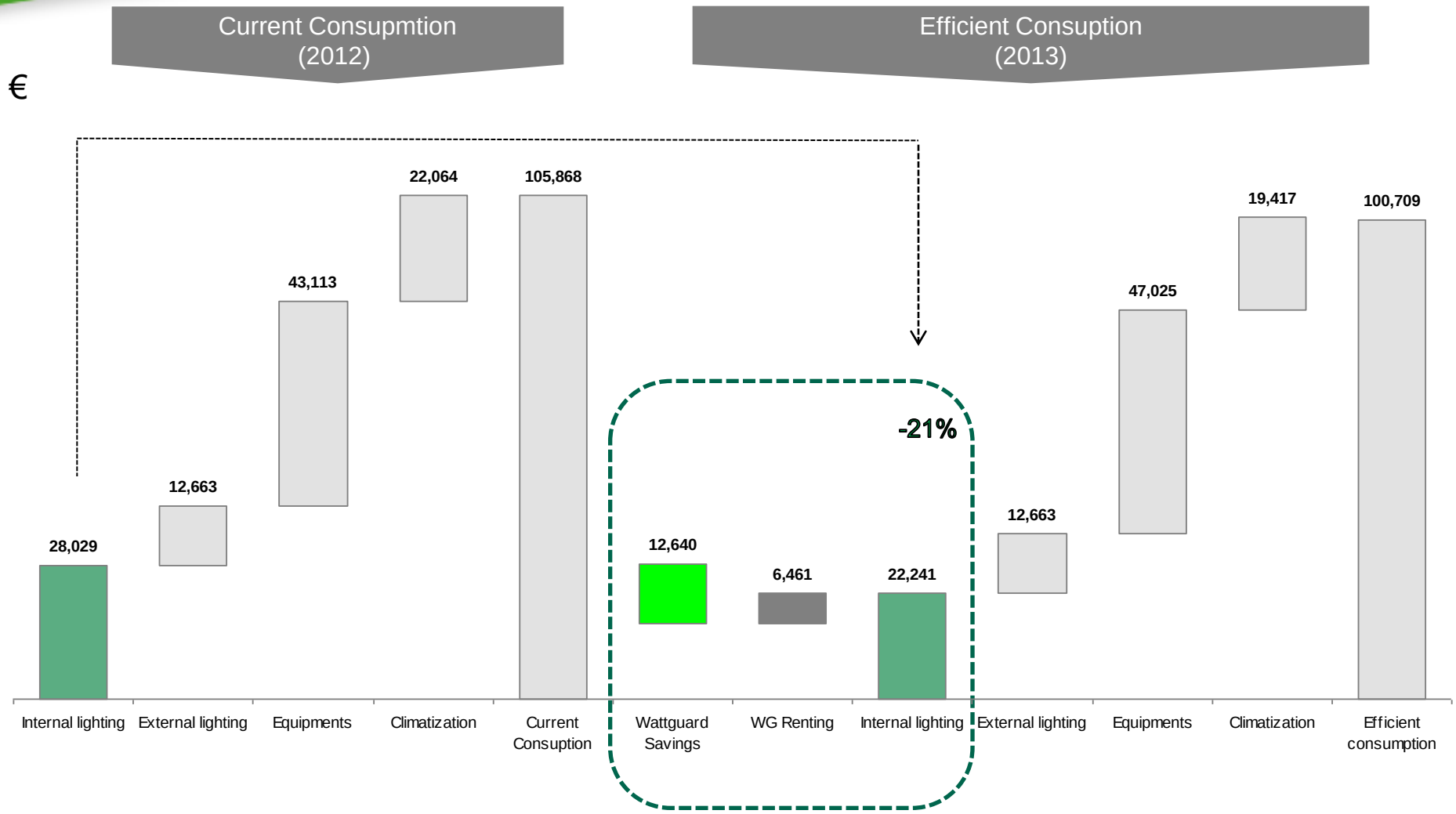
Energy Efficiency (Annual)

Business case



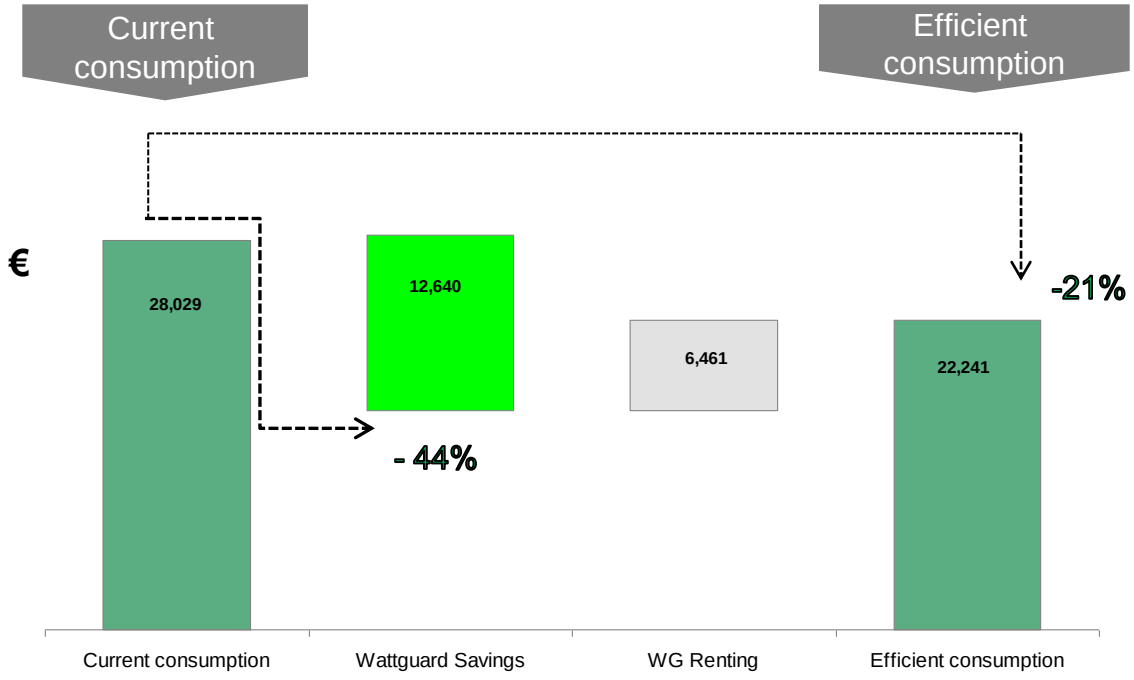
Energy cost impact

Business case



Energy Efficiency on lighting

Business case on a large logistic and warehouse building



Wattguard Pattent Process

HUNGARIAN PATENT OFFICE

application number: P1000054

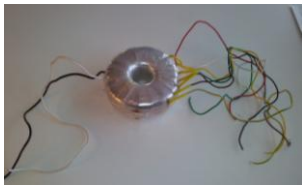
•The invention relates to an **AC voltage conversion and switching device** comprising a main circuit and a switching circuit.

•The input of the device is connected to the power supply, and the output to the consumer. In the **main circuit** a **controlled transformer** is inserted.

•The essence of the invention lies in that the **secondary coil of the transformer is connected in series** between the input and the output, for **decreasing the voltage** at the consumer during operation.

•**The secondary coil of the transformer is bridged** by a first controlled switch, whereas the **primary coil** of the **transformer is connected in series** with a second controlled switch.

•The **serial circuit** formed by the primary coil and the second controlled switch is **connected parallel** with the consumer, the **switches** are in an **operational connection with a central control unit**.



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Wattguard Portugal, S.A.
(2013)

www.wattguard.pt | www.fabriwatt.pt