Energy Performance Contacting Plus (EPC+)

Financing energy efficiency in Greece and Cyprus

Royal Olympic Hotel Athens, 31 May 2018

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Why EPC projects are not implemented in Greece

- Improving energy efficiency has never been a priority for investment such as RES.
- Until today, the renovation of 3% of the surface of public buildings has not begun (obligation from 1.1.2014 according to Law 4342/2015). There are still legal problems with the implementation of EPC.
- Businesses do not have access to specific funding for these projects. EPC is not considered as a guarantee and the assessment of investments is problematic. Practices applied abroad are not adopted (e.g. KfW special financing terms depending on the percentage of energy savings, repayment period, etc.). Funding should not be limited to “Exoikonomo kat’ oikon”.
- Although energy utilities are obliged to reduce their annual sales volume by 1.5% through the promotion of energy efficiency improvement measures. Their current strategy to reach the target is done by means of communication actions (brochures, instructions, etc.)
- ESCOs (those that are not energy utilities or equipment suppliers) are not willing to finance energy efficiency projects, because they limit the number of projects they undertake. Accounting wise, will be loss-making companies until the repayment of each investment.
- Although that, the obligation for enterprises to carry out energy audits (Law 4342/2015) can lead to projects with EPCs.

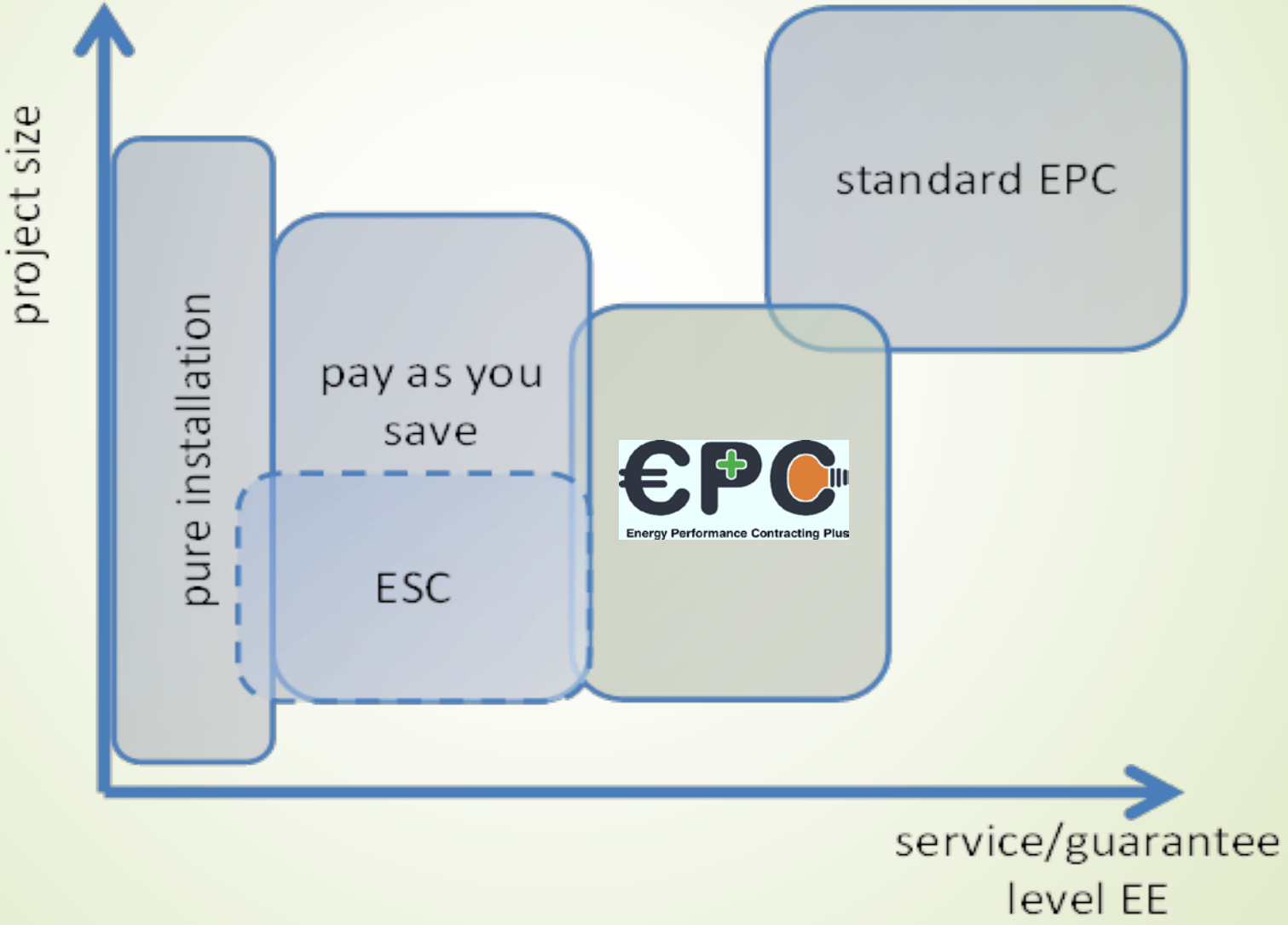
Implementation of EPC projects from 2015 to the present Private Sector

European Union

- **Standard EPC** – All projects implemented so far, have been financed mainly from the client. In these cases, the ESCO's risk is related to its **remuneration** which is linked to the achievement of guaranteed energy savings
- Where **Third Party Financing** (TPF) projects were implemented, the energy performance guarantees were from zero to low, e.g.
  - **Pure Installation** – Simple commission (with supplier's credit) repayable through installments regardless of energy saving.
  - **Energy Supply Contracts (ESC)** – (selling energy from PV, solar thermal, cogeneration etc)
    - while reducing conventional fuel and / or electricity consumption, in most cases, they are not accompanied by energy saving measures.
  - **"Pay as you save" contracts** – investment is repaid by energy savings, but in most cases there is little guarantee of energy savings and of the final payback period.

EPC+ Project Outcomes

Market Gap


project size
pure installation
pay as you save
ESC
standard EPC
€PC
Energy Performance Contracting Plus
service/guarantee level EE

The value added of the EPC project

- **Standardization** - Creation of tools at Technical, Economic and Legal level
  - A technical toolbox for any kind of selected intervention (e.g. measurement and verification methodology, links to available tools for dimensioning and / or simulation) supports the communication between market actors
  - Creation of an economic toolkit for assessing the financial viability of a project .
  - Simplified EPC model contract with the option of adding relevant (ready-to-use) articles depending on how the project is financed.

- **National Partnerships** - Promoting cooperation among companies specialized in energy efficiency.

- **European Partnerships** - Creation of an international platform for cooperation between partnerships

www.epcplus.org

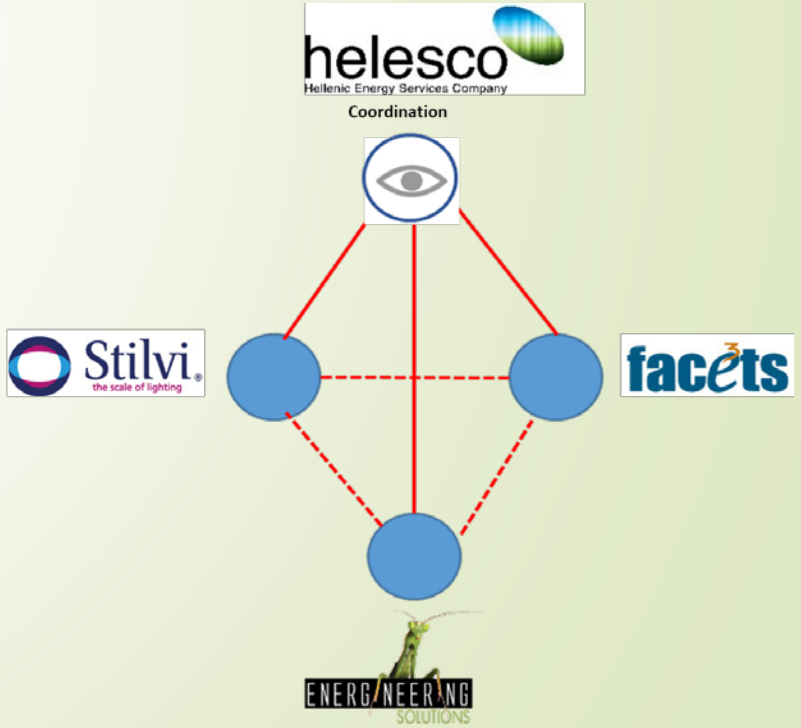
www.energyefficiencynetwork.eu

Implemented projects

- **Small and medium-sized enterprise partnerships –**
  - A total of 19 partnerships were set up in the 11 countries that participated in the project.
  - 28 pilot / demonstration projects were implemented
  - Approximately € 3.3 million was leveraged into the private sector as a direct result of the project
  - As a result of the pilot / demonstration projects, approximately 2.4 GWhel / year and 6.7 GWhth / year are saved

Characteristics of Greek Partnership

- Creation of a virtual network of companies having high expertise and experience that can compete larger companies, while maintaining the low fixed operational costs of an SME and its flexibility. Helesco SA, is the coordinator of the partnership activities.
- helesco SA and its partners are already present on the market in their field of expertise. The services we provide together are complementary and not competitive. The partnership aims at long-term cooperation.
- The precondition for achieving the objectives of the partnership is either to have a mature or a maturing market in Energy Services.



Partnership Services – The European example

Partnerships of Small and Medium-sized European Enterprises

- Mandatory energy audit compliance support
- Energy efficiency audits in each EU member state
- Measurement and Verification of energy savings
- Implementation of energy monitoring systems
- Implementation of energy management systems (ISO 50001)
- Support in voluntary public private programs
- Energy performance contracting services
- Financing of energy efficiency investments.

Energy Performance Contract projects

Pilot / Demonstration projects

Country	Requirement EPC+	Implemented
Austria	4	6 **
Belgium	3	3
Bulgaria	2	0 *
Germany	6	0 *
Greece	2	2
Ireland	2	2
Italy	3	3
Spain	3	3
Portugal	2	3**
Slovenia	3	3
Czech Republic	3	3
Total	**33**	**28**

Relighting and Operational Optimization at a retail store Greece

COUNTRY: Greece
BUILDING: Commercial Shop
TECHNOLOGY: Lighting
TYPE OF MEASURE: Relighting
INVESTMENT: <10,000 €
ENERGY SAVINGS: 4,758 kWh/year
PAYBACK PERIOD: 4 years
CO_2 Saving Potential: 4.2 tons CO_2/year
CONTACT: Helesco SA Email: info@helesco.gr http://www.helesco.gr

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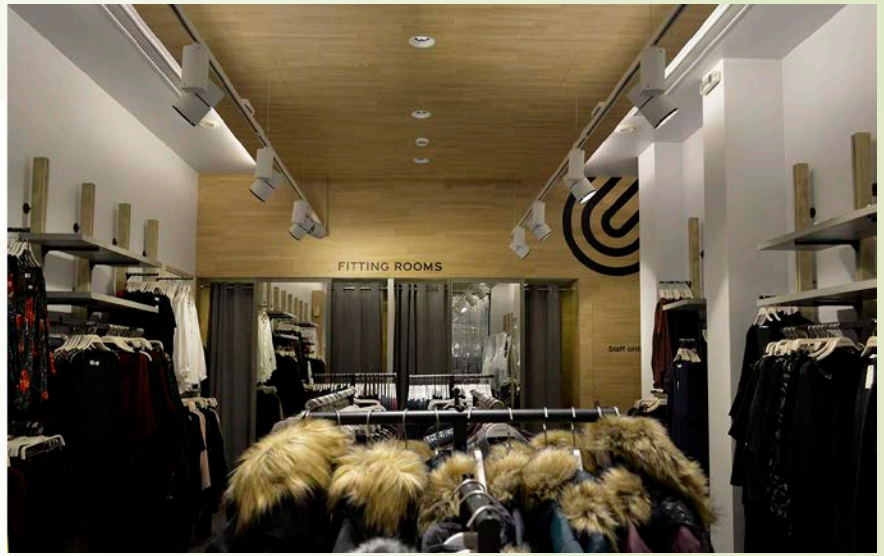
Hellenic Energy Services Company

Stilvi
the scale of lighting



ESCO funding

Upgrade of optic comfort levels can realize energy savings.

A considerate displacement of and modification of existing SSL based lighting fixtures and a slight differentiation of lighting design with involvement of additional key fixtures led to an excellent glare limitation and a balanced light distribution

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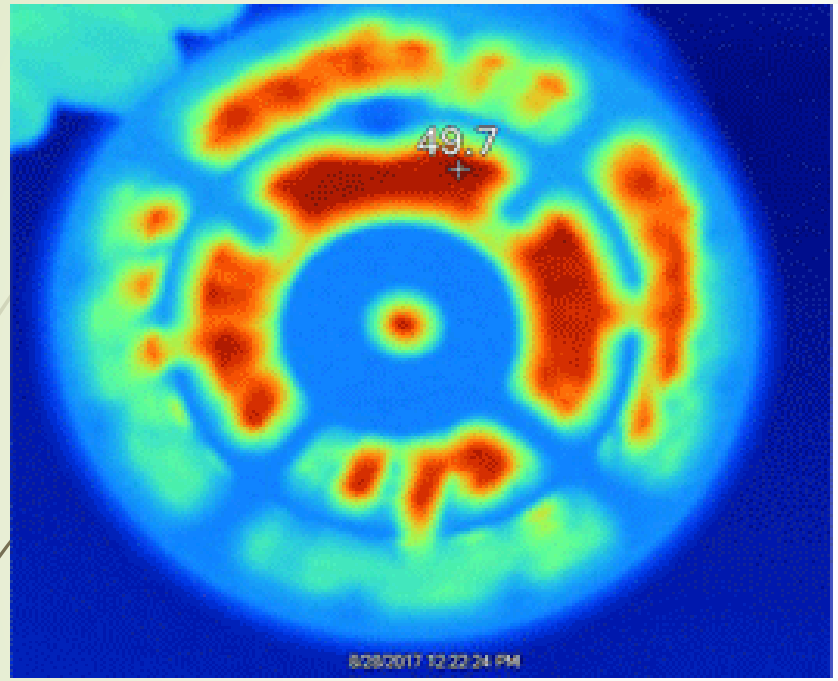
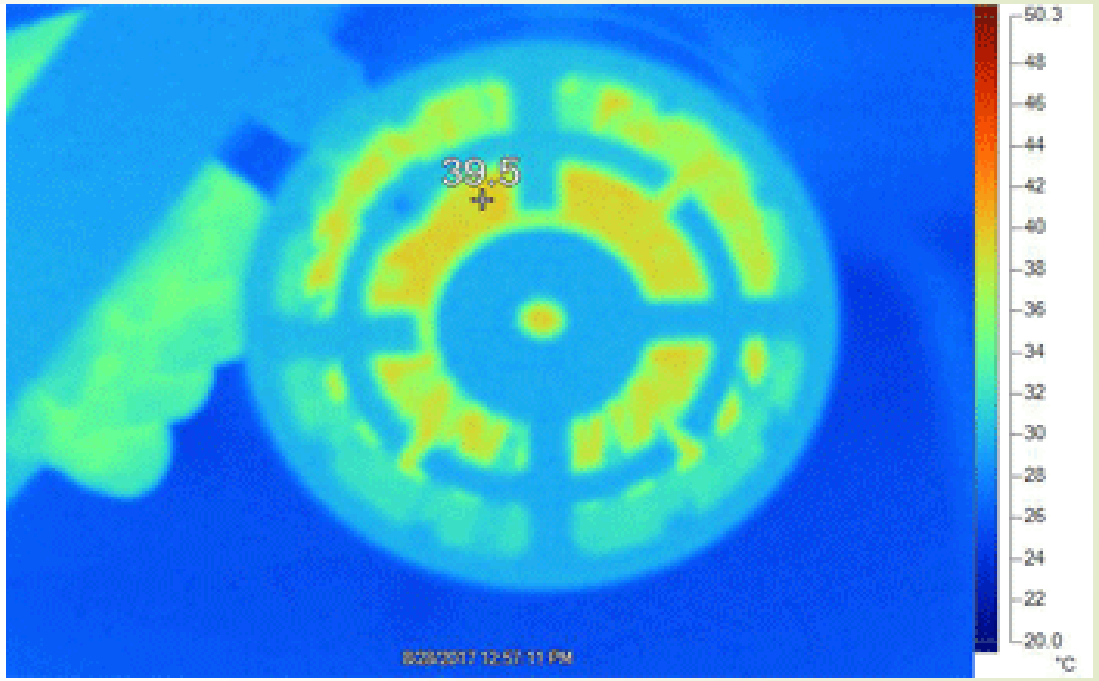
the scale of lighting

Intervention to Existing LED Lights





Before $T_{heatsink}$=49,7°C

$T_{heatsink}$=39,5°C

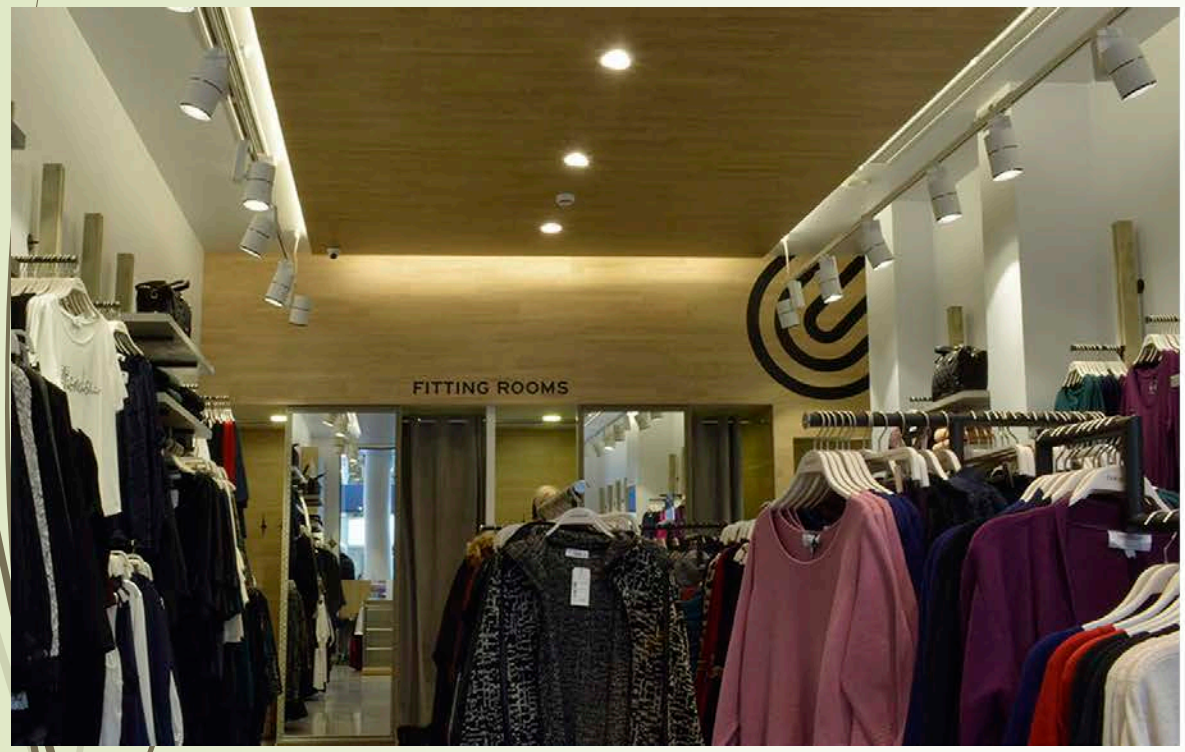
- Decrease in Power Absorbed
- Decrease of the temperature in heatsinks
- Reduction in maintenance costs

After

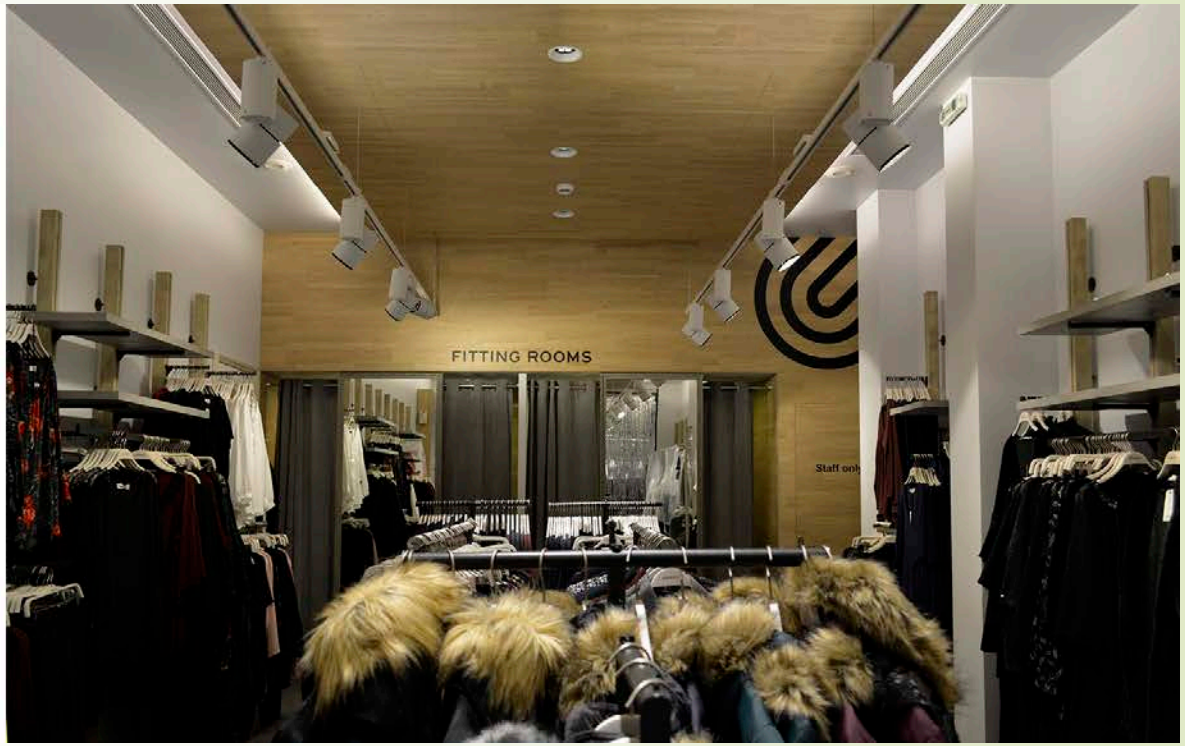
- Increase of the LEDs light output
- Increase of useful working hours
- Residual value of the luminaires removed

helesco Hellenic Energy Services Company

Stilvi the scale of lighting



Before
6676 kWh/annum



After
3068 kWh/annum

Optimization of the BMS in a hospital Austria

COUNTRY: Austria
BUILDING: Hospital
TECHNOLOGY: Heating system, including hot water and ventilation system.
TYPE OF MEASURE: Adjustment of the building management system. This includes the optimisation of the parameters of HVAC systems.
INVESTMENT: < 10,000 EUR.
ENERGY SAVINGS: 718,738 kWh/year
PAYBACK PERIOD: for all measures < 1 year
CO_2 SAVING POTENTIAL: 85.74 tons CO_2/year
CONTACT: Klemens Leutgöb e7 Email: klemens.leutgoeb@e-sieben.at www.e-sieben.at

Own Funding of the Client

During the implementation of several optimization measures the team found various shortcomings at the technical facility.

These shortcomings will be eliminated through comprehensive investment of up to 100,000 euros.

They will ensure a high level of comfort at lowest energy demand

VSDs and Motor System Control of Chilled Water Portugal

COUNTRY: Portugal
BUILDING: Industrial plant
TECHNOLOGY: Modernisation of Electrical Motors | Improvement of Chilled water distribution system for the machine tooling
TYPE OF MEASURE: Application of Variable Speed Drives to a group of induction motors (pumps)
INVESTMENT: < 15,000 EUR
ENERGY SAVINGS: 144.910 kWh/year
PAYBACK PERIOD: 1 year
CO_2 SAVING POTENTIAL: 54 tons CO_2/year
CONTACT: Schneider Electric Portugal Email: luis.hagatong@schneider-electric.com https://www.schneider-electric.pt/pt/

INSTITUTO DE SISTEMAS E ROBÓTICA
UNIVERSIDADE DE COIMBRA

contra watt
CONSERVAÇÃO DE ENERGIA

Schneider Electric

Funding from equipment supplier

The client is a large company producing piston rings for automotive industry. The type of products being produced require tight control of indoor conditions, for example, type and quality of light, temperature of the chilled water for the surface treatment equipment and specific air pressure.

The fact that there was an energy efficiency reduction obligation to achieve (transposition of Article 8 of the EED 2012/27/EU) was a major driver for the improvements through an EPC

Bulgaria

BSERC
black sea energy research centre

Reasons?

- Large subsidized savings program in the domestic sector

Germany

ASEW DAS EFFIZIENZ-NETZWERK FÜR STADTWERKE

Reasons?

- Low energy costs (relative to living standards)
- Very low cost of financing and easy access to it

helesco
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Energy Efficiency
Network Europe