AGÊNCIA DE ENERGIA E AMBIENTE DA ARRÁBIDA

ICT AT THE SERVICE OF BUILDING ENERGY MANAGEMENT

3 APPROACHES:

ENERGYOFF

ESMARTCITY

POR UM TURISMO SUSTENTÁVEL

ENERGYOFF

www.energyoff.pt

ENA
AGÊNCIA DE ENERGIA E AMBIENTE
DA ARRÁBIDA

RNAE
Associação das Agências
de Energia e Ambiente
Rede Nacional

ERSE
ENTIDADE REGULADORA
DOS SERVIÇOS ENERGÉTICOS

ENERGYOFF
Login
Registo
Home
Projeto
A Ferramenta
Prémio
Notícias
Contactos
SABE QUANTO CONSOME DE ENERGIA NO SEU ESCRITÓRIO?
QUER REDUZIR A SUA FATURA ENERGÉTICA?
PARTICIPE NO PROJETO ENERGY OFF!

THE PROJECT

ENERGYOFF is the main tool of SMART OFFICES PROJECT - *Energy Literacy and Management in Portuguese Offices,* aiming to support self energy consumption diagnosis on offices' in order to make them more efficient introducing energy management strategies.

OBJECTIVES

Creation of an online energy self-diagnostic tool in line with the principles of ISO 50001

Recommendation of energy efficiency measures (specific measures to reduce consumption)

Energy Benchmarking between Offices

Provide practical examples and typical savings values, best practices and other pedagogical methodologies

HOW

Improving energy literacy through:

✓**Diagnostic and consumption management tool** available 24/7;

✓**Awareness raising materials**;

✓**Training** integrated in the tool: tutorial video; webinars; purchase guide for office equipment; energy handbook for offices.

THE PLATFORM

✓**Free**

✓Based on the international energy management standard: **ISO 50001**

✓ Provide to office manager concrete recommendations for energy consumption reduction by replacing equipment and/or changing behaviours.

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ENERGYOFF
Plataforma de Gestão de Energia

- Home
- Os Meus Edifícios
- Sub-Gestores
- Registo de Leituras
- Benchmarking
- Relatórios
- Planeamento de Melhorias
- Área de Formação
- Contactos

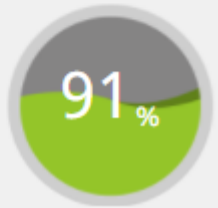
ADMINISTRAÇÃO | EDITAR PERFIL | 68 NOTIFICAÇÕES | LOG OUT

Próximo passo

Defina um objectivo de redução de consumo energético

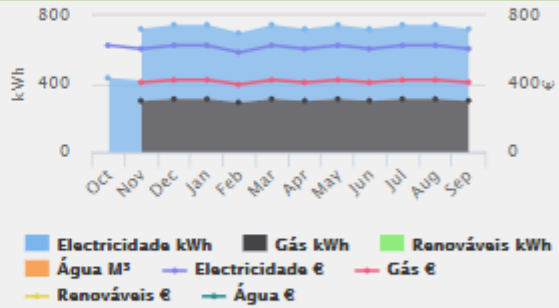
PROSSEGUIR

Nível de Utilizador

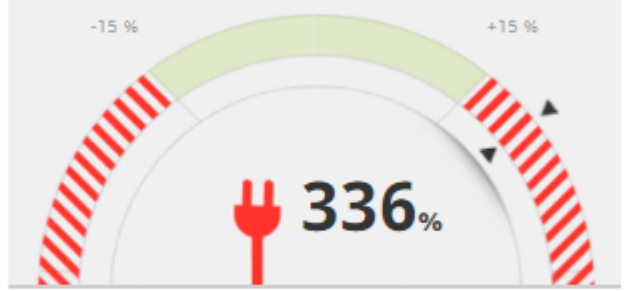


- ~~Registe os seus equipamentos~~
- ~~Defina as zonas do seu edifício~~
- Defina um objectivo de redução de consumo energético
- ~~Planeie uma iniciativa de gestão energética~~

Consumo e custo mensal por vector energético



Desvio de Consumo



© 2020

FINANCIAMENTO ERSE

PROMOTOR rnae

ENERGYOFF

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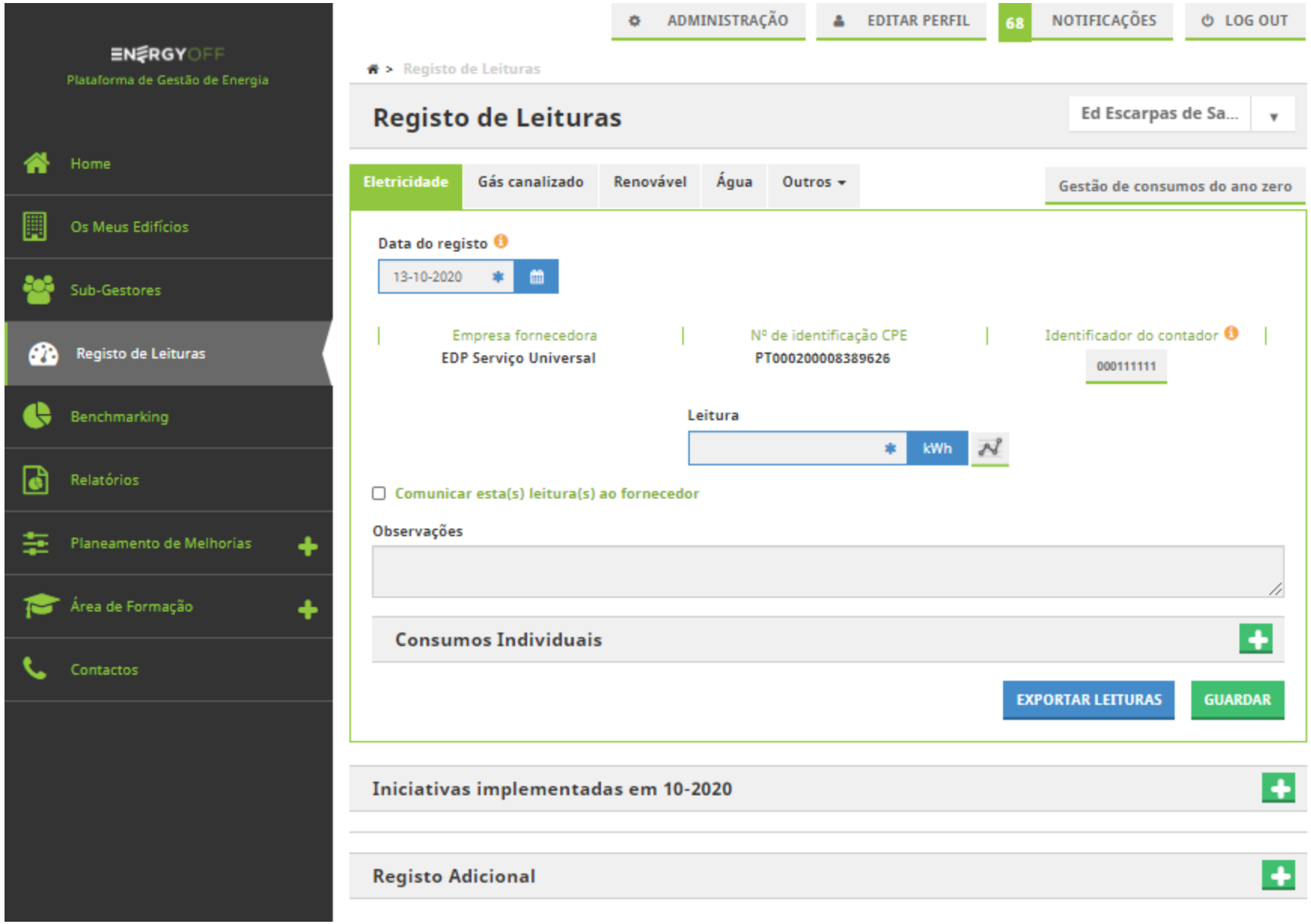
ENERGYOFF


ENERGYOFF
Plataforma de Gestão de Energia
Home
Os Meus Edifícios
Sub-Gestores
Registo de Leituras
Benchmarking
Relatórios
Planeamento de Melhorias
Área de Formação
Contactos
ADMINISTRAÇÃO
EDITAR PERFIL
68
NOTIFICAÇÕES
LOG OUT
> Registo de Leituras
Registo de Leituras
Ed Escarpas de Sa...
Eletricidade
Gás canalizado
Renovável
Água
Outros
Gestão de consumos do ano zero
Data do registo
13-10-2020
Empresa fornecedora
EDP Serviço Universal
Nº de identificação CPE
PT000200008389626
Identificador do contador
000111111
Leitura
kWh
Comunicar esta(s) leitura(s) ao fornecedor
Observações
Consumos Individuais
EXPORTAR LEITURAS
GUARDAR
Iniciativas implementadas em 10-2020
Registo Adicional

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ENERGYOFF
Plataforma de Gestão de Energia

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- Benchmarking
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- Planeamento de Melhorias
- Área de Formação
- Contactos

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> Benchmarking

Benchmarking

Ed Escarpas de Sa...

Os campos com * são obrigatórios.

Área útil *: até 100m2

Período de tempo *: O semestre anterior

Tipologia de edifício *: Todas

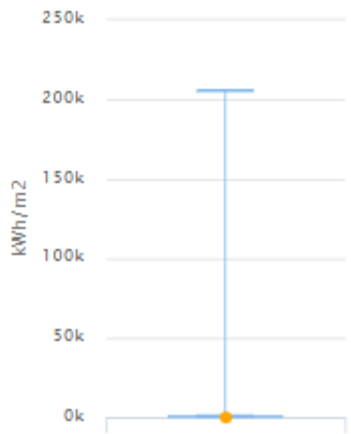
GERAR

Período de Benchmark 01-2020 a 06-2020

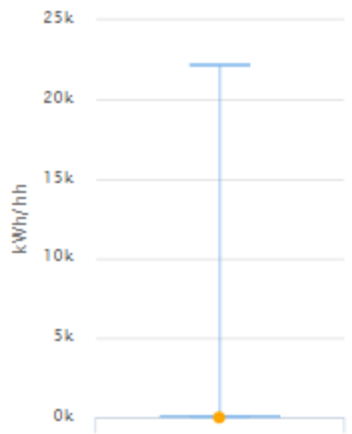
Os gráficos apresentados nesta secção resultam da ordenação dos valores dos indicadores de performance energéticos calculados para cada edifício registado na plataforma de modo a que possa

As primeiras linhas de cada gráfico representam o edifício que apresentam o valores mais baixo para o respectivo indicador as segundas limitam 25% dos resultados

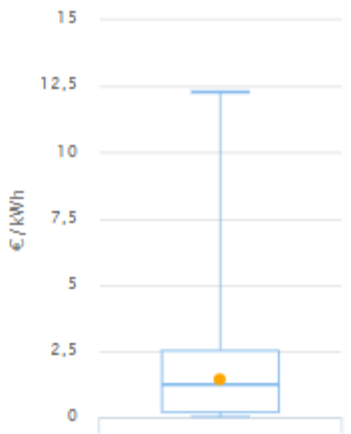
Consumo Energético por área útil



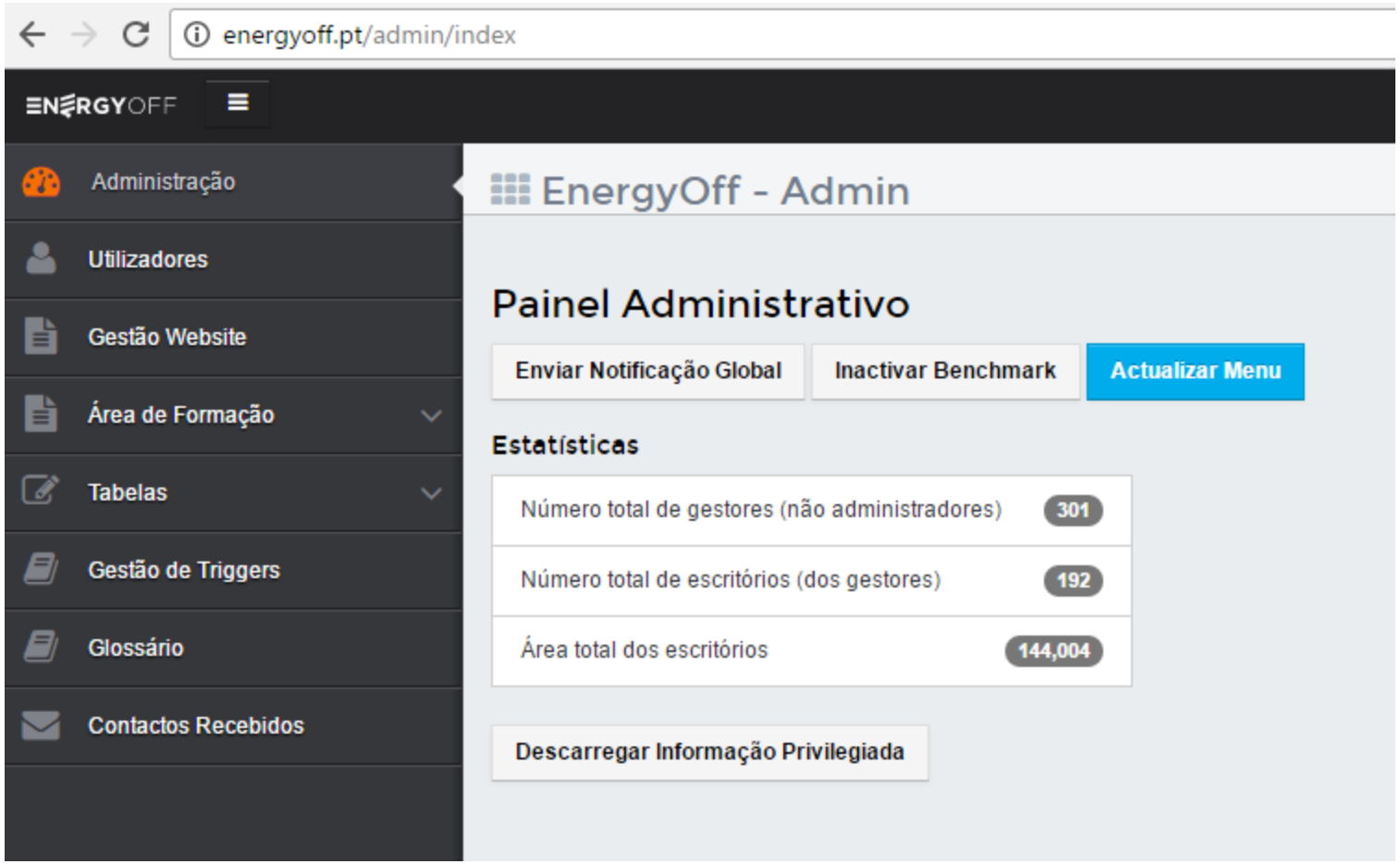
Consumo Energético por hora de trabalho



Custo médio da energia



ENERGYOFF


energyoff.pt/admin/index
ENERGYOFF
Administração
Utilizadores
Gestão Website
Área de Formação
Tabelas
Gestão de Triggers
Glossário
Contactos Recebidos
EnergyOff - Admin
Painel Administrativo
Enviar Notificação Global
Inactivar Benchmark
Actualizar Menu
Estatísticas
Número total de gestores (não administradores) 301
Número total de escritórios (dos gestores) 192
Área total dos escritórios 144,004
Descarregar Informação Privilegiada

https://esmartcity.interreg-med.eu/

THE PROJECT

ESMARTCITY aims at improving energy efficiency in public buildings and public lighting networks in the MED Area by using new technologies. Its objective is to promote Mediterranean smart cities developing pilot actions in each partner's territories.

ENA's PILOT: establish energy consumption smart metering system in public buildings in Palmela, Setúbal and Sesimbra to monitor, control, optimize and test energy parameters.

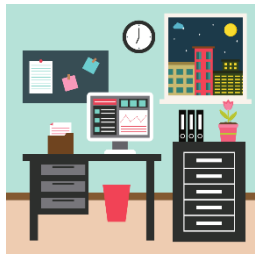
PILOT DESCRIPTION

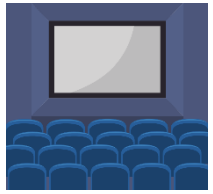
Energy consumption smart metering devices

- ✓ In 24 Municipalities' buildings + 5 buildings with existing metering systems that will be integrated into the same online monitoring platform
- ✓ Public service buildings opened to public

4 PUBLIC MARKETS

3 CITY HALLS

3 OFFICE BUILDINGS 

5 CULTURE HOUSES /CINEMAS/THEATRES 

7 SCHOOLS AND LIBRARIES

7 PUBLIC SPORT HALLS/ SWIMMING POOLS

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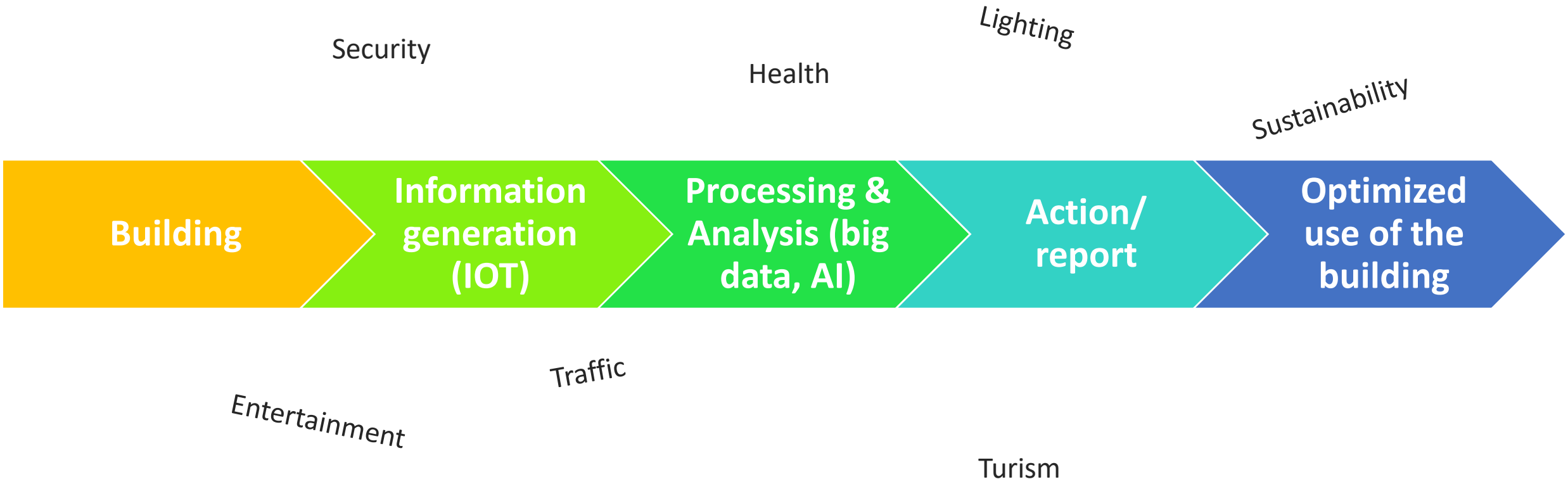
Interreg Mediterranean ESMARTCITY


Security
Health
Lighting
Sustainability
Building
Information generation (IOT)
Processing & Analysis (big data, AI)
Action/ report
Optimized use of the building
Traffic
Entertainment
Turism

Barreiro
Moita
Seixal
Alhos Vedros
Arrentela
Amora
Coina
Aroeira
Fernão Ferro
Q.ta do Anjo
Azeitão
Municipality
Reserva Natural do Estuário do Sado
Parque Natural da Arrábida
Portinho da Arrábida
Sesimbra
N11
A33
A39
A2
N252
A12
N5
IP1
N10
N10-4

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Consumos

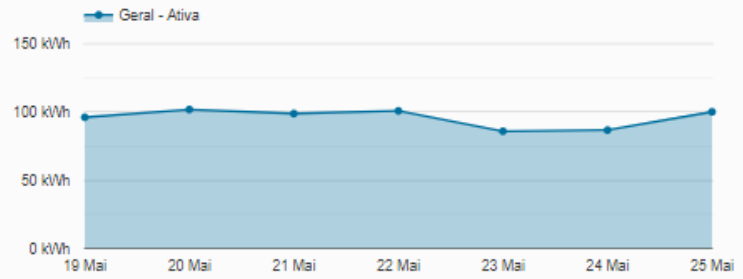
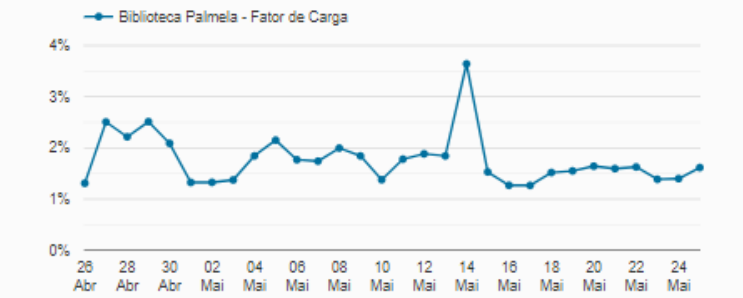


Tabela De Evolução

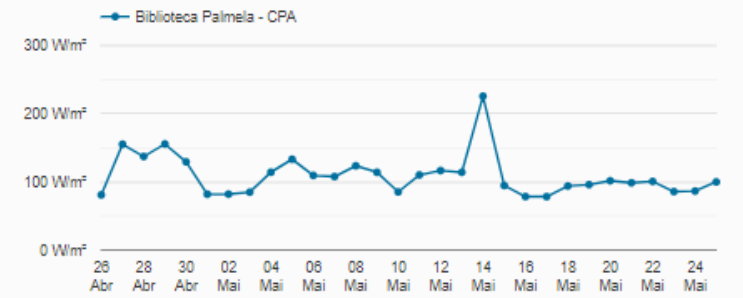
Mês | Ano actual

	Período 1: Mar 2020	Período 2: Apr 2020	
Geral - Ativa	3 965,6 kWh	3 474 kWh	-14,2%
	0 €	0 €	-

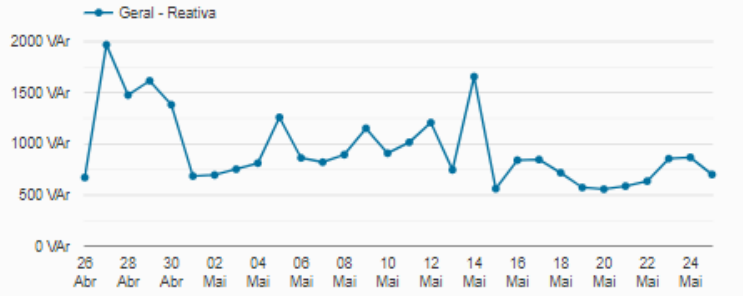
Fator de Carga



Consumo por área [Wh / m2]



Energia reativa



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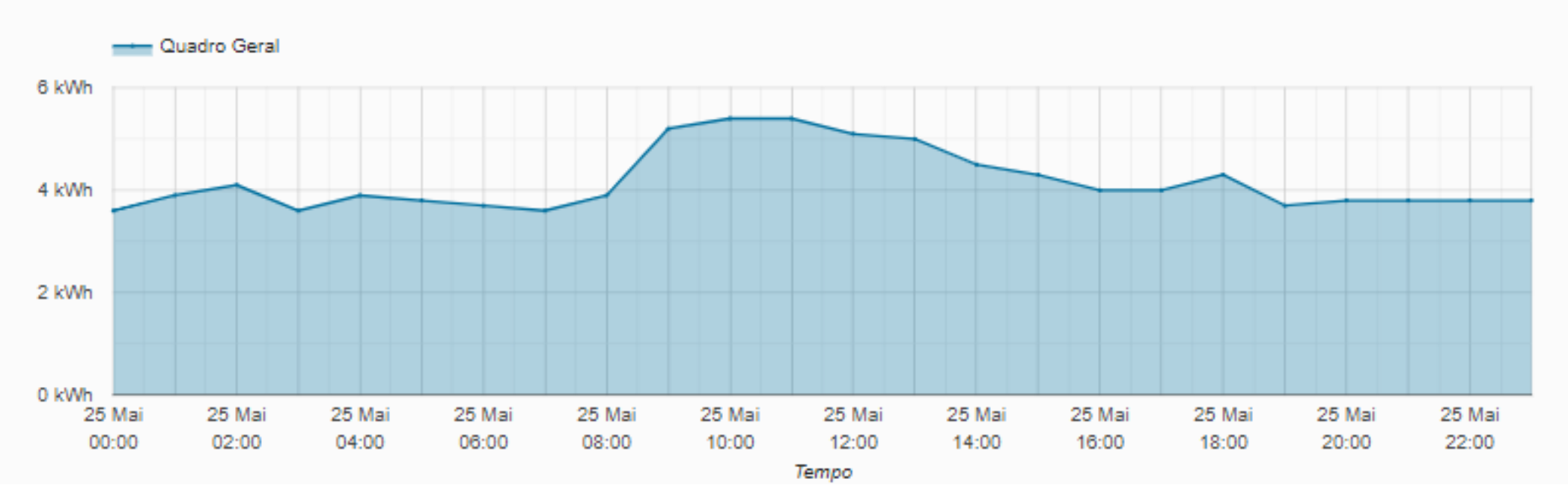
Quadro Geral
6 kWh
4 kWh
2 kWh
0 kWh
25 Mai 00:00
25 Mai 02:00
25 Mai 04:00
25 Mai 06:00
25 Mai 08:00
25 Mai 10:00
25 Mai 12:00
25 Mai 14:00
25 Mai 16:00
25 Mai 18:00
25 Mai 20:00
25 Mai 22:00
Tempo

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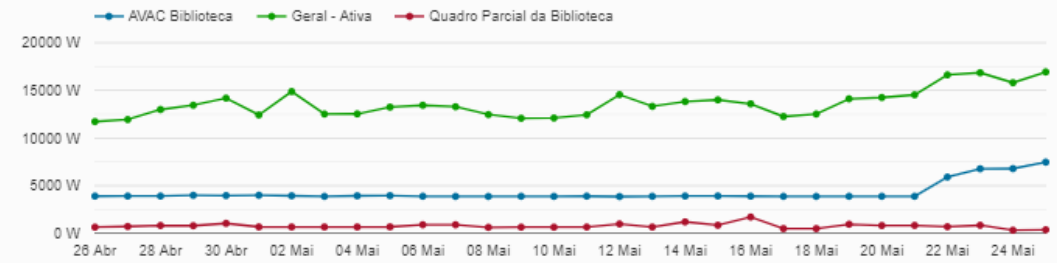
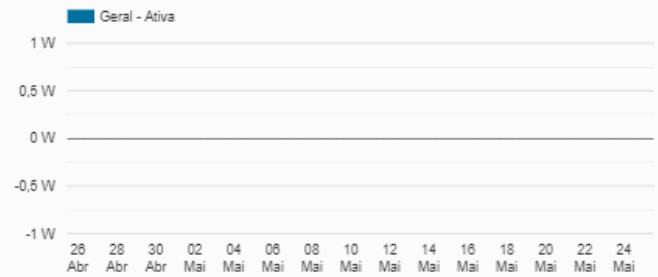
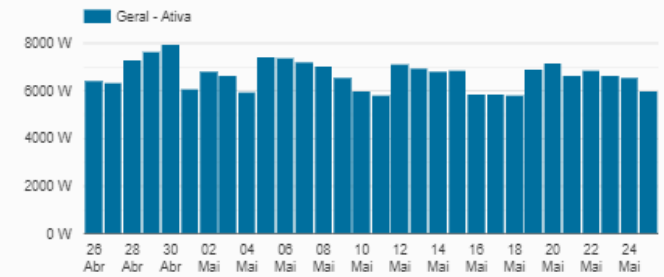
Cine Teatro João Mota



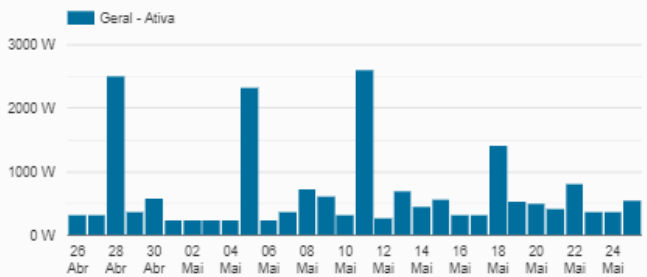
Mercado Municipal de Sesimbra



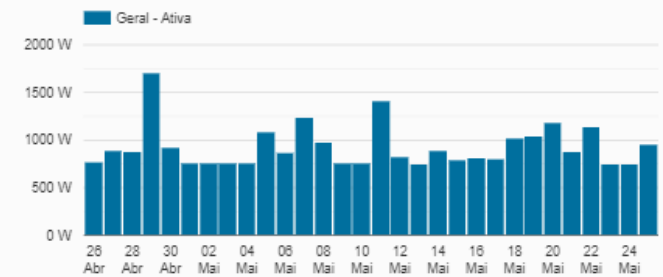
Mercado Municipal da Quinta do Conde



Pavilhão Quinta do Conde



Pavilhão de Sampaio



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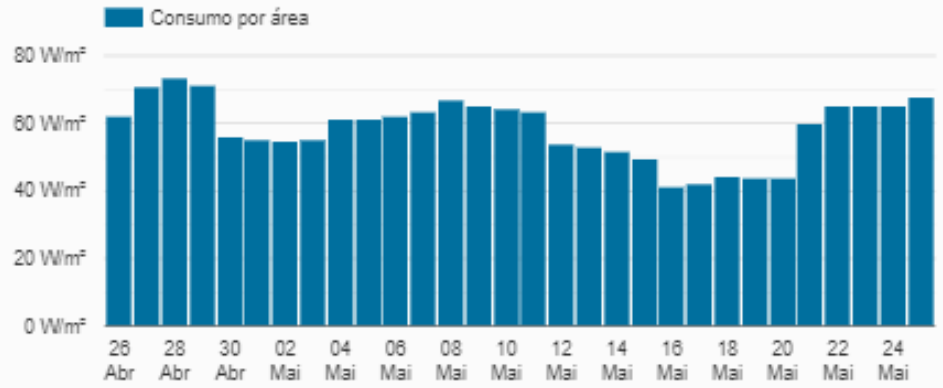
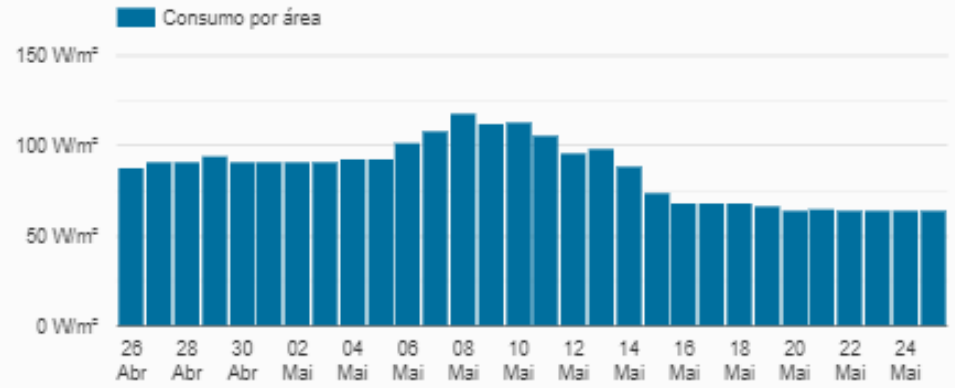
Global Sesimbra | Global Palmela | Mapa de Consumos | Global Setúbal | **Escolas** | Mercados | Bibliotecas | Piscinas | Cineteatros | + Adicionar

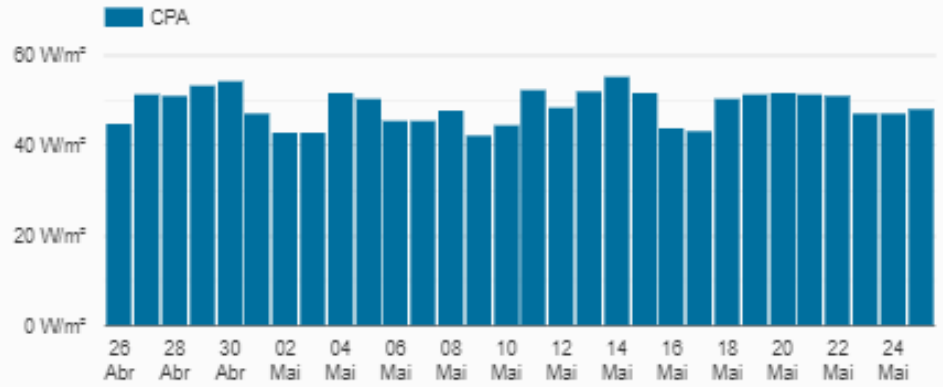
Consumo por área EB Matos Fortuna



Consumo por área EB Aires Pacheco



Consumo por área E.B.Salgueiro Maia



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POR UM TURISMO SUSTENTÁVEL

EFICIÊNCIA ENERGÉTICA NO SETOR HOTELEIRO

www.porumturismosustentavel.pt

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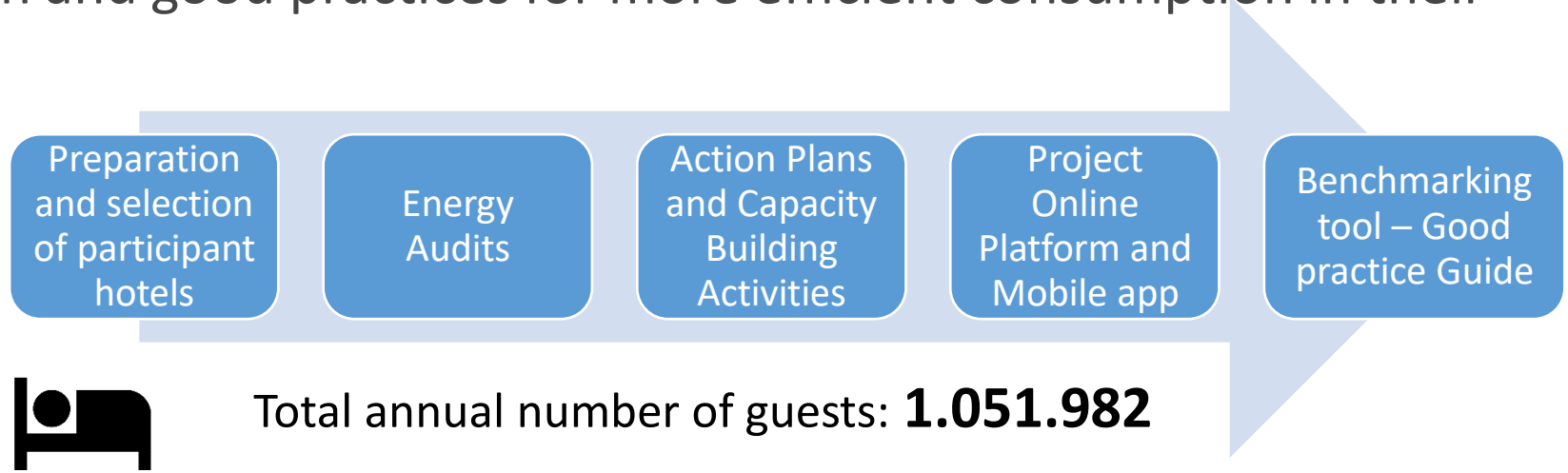
AHP HOTELARIA DE PORTUGAL
ASSOCIAÇÃO DE UTILIDADE PÚBLICA

ERSE
ENTIDADE REGULADORA DOS SERVIÇOS ENERGÉTICOS

THE PROJECT

POR UM TURISMO SUSTENTÁVEL is aimed to promote energy efficiency in the hotel industry, carrying out energy audits and providing hotel professionals with a set of measures, information and good practices for more efficient consumption in their establishments.

20 HOTELS PARTICIPATING



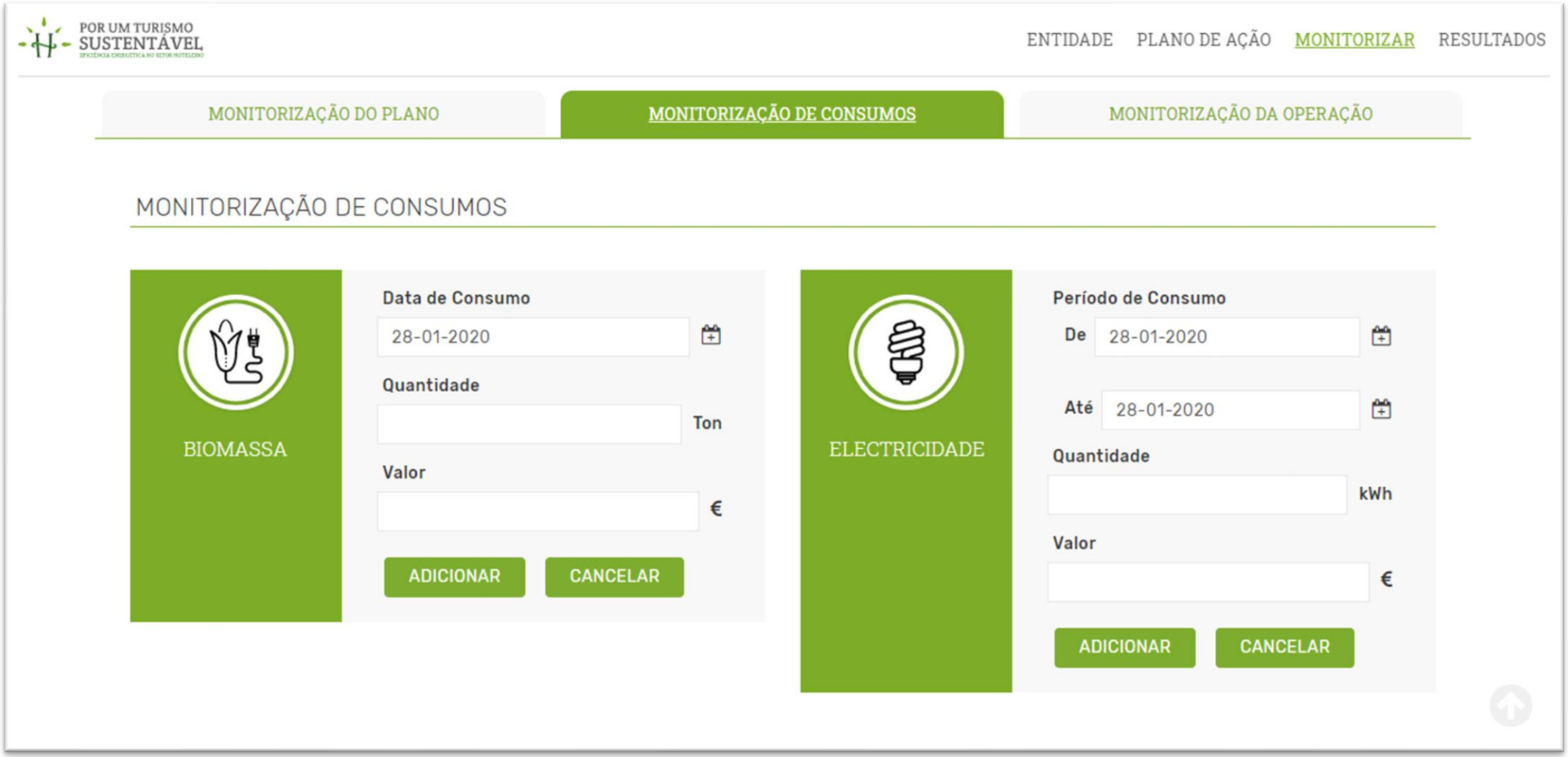
Total annual number of guests: **1.051.982**

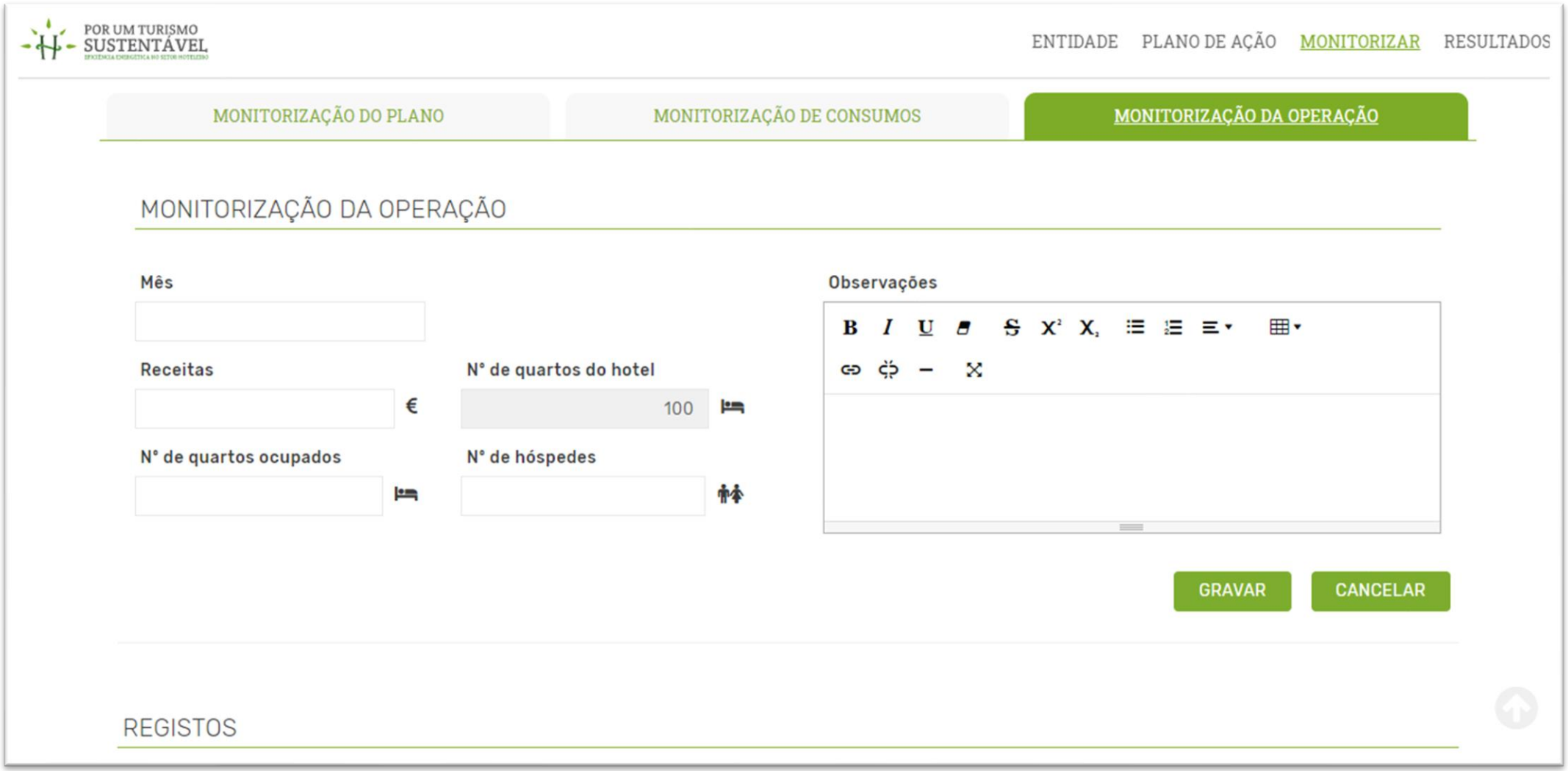
Total number of rooms: **1.614**

ENERGY AUDITS, ACTION PLANS & CAPACITY BUILDING ACTIVITIES

ENERGY MANAGEMENT PLATFORM

POR UM TURISMO SUSTENTÁVEL
ENTIDADE
PLANO DE AÇÃO
MONITORIZAR
RESULTADOS
MONITORIZAÇÃO DO PLANO
MONITORIZAÇÃO DE CONSUMOS
MONITORIZAÇÃO DA OPERAÇÃO
MONITORIZAÇÃO DO PLANO
Selecione a Medida
Deslastre de cargas em horas de ponta
Eliminação de consumos em período noturno
Investimento (€)
0.00
€
Data de registo
28-01-2020
Estado
A Iniciar
Em Curso
Concluída
Cancelada
Redução do Consumo Real
kWh
Descrição
Observações


POR UM TURISMO SUSTENTÁVEL
ENTIDADE
PLANO DE AÇÃO
MONITORIZAR
RESULTADOS
MONITORIZAÇÃO DO PLANO
MONITORIZAÇÃO DE CONSUMOS
MONITORIZAÇÃO DA OPERAÇÃO
MONITORIZAÇÃO DE CONSUMOS
BIOMASSA
Data de Consumo
28-01-2020
Quantidade
Ton
Valor
€
ADICIONAR
CANCELAR
ELECTRICIDADE
Período de Consumo
De
28-01-2020
Até
28-01-2020
Quantidade
kWh
Valor
€
ADICIONAR
CANCELAR


POR UM TURISMO SUSTENTÁVEL
ENTIDADE
PLANO DE AÇÃO
MONITORIZAR
RESULTADOS
MONITORIZAÇÃO DO PLANO
MONITORIZAÇÃO DE CONSUMOS
MONITORIZAÇÃO DA OPERAÇÃO
MONITORIZAÇÃO DA OPERAÇÃO
Mês
Observações
Receitas
€
N° de quartos do hotel
100
N° de quartos ocupados
N° de hóspedes
GRAVAR
CANCELAR
REGISTOS

AGÊNCIA DE ENERGIA E AMBIENTE DA ARRÁBIDA

CSV Excel P

Receita bruta do

N° de quartos dispor

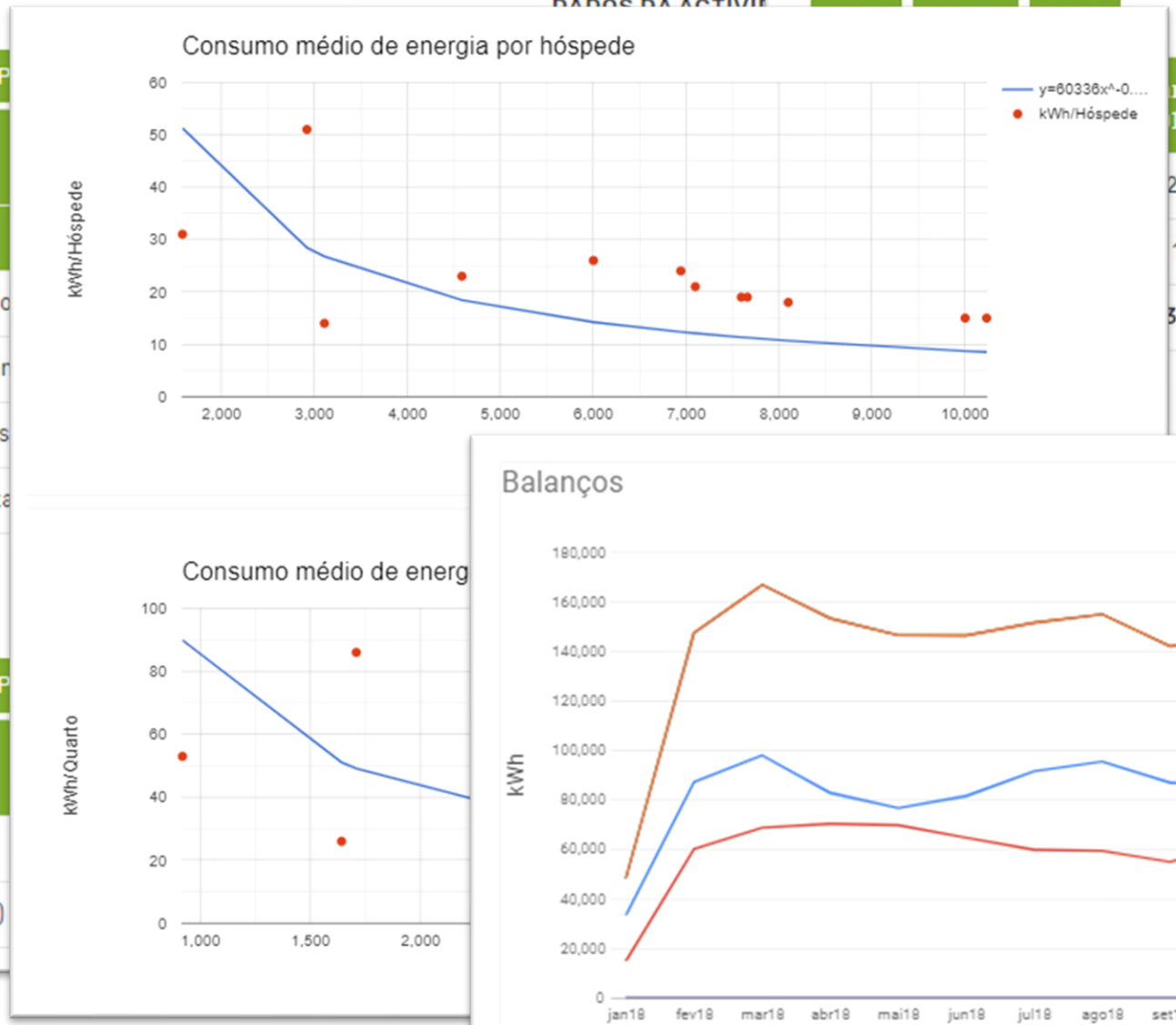
N° de hóspedes

N° de quartos ulilizа

CSV Excel P

Biomassa (kWh)

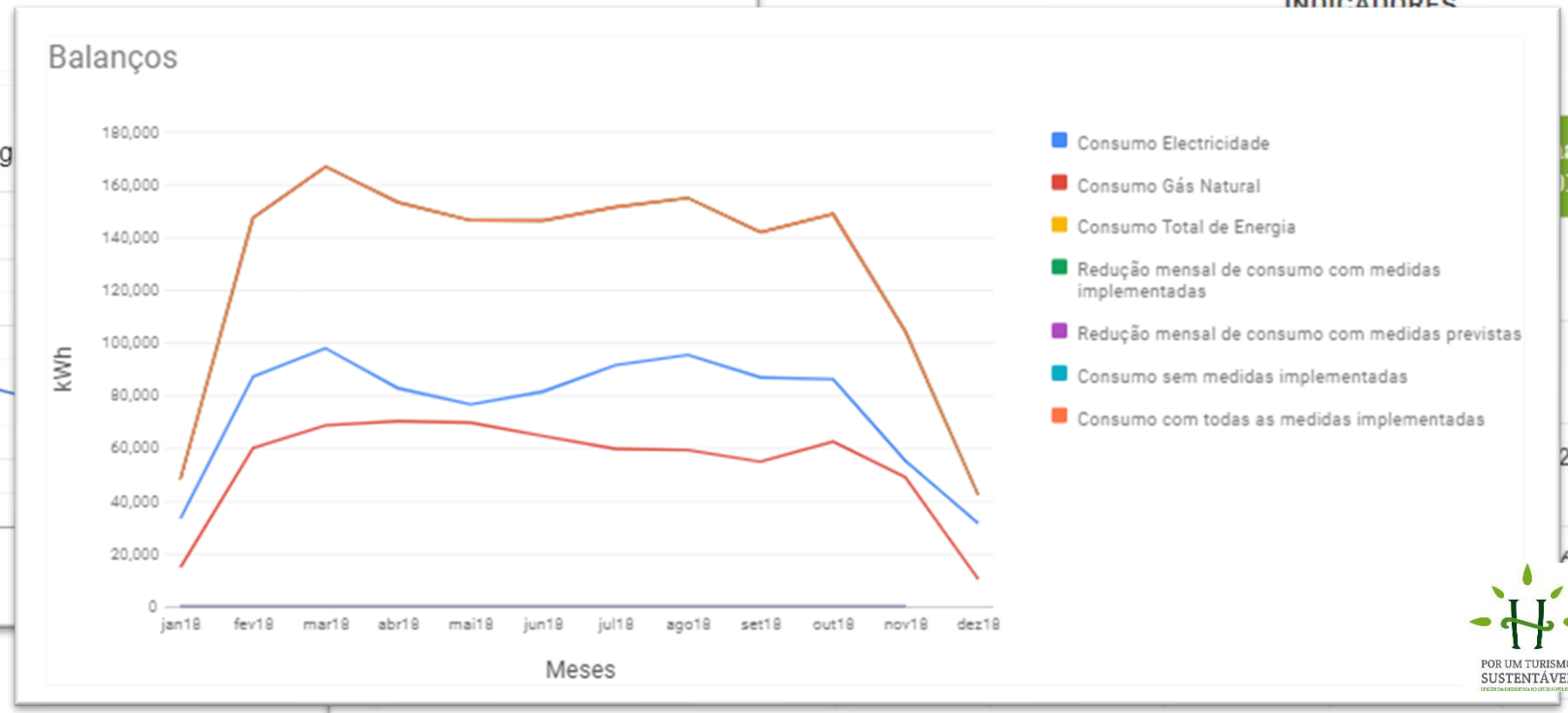
Electricidade (kWh)



EVOLUÇÃO DOS CUSTOS

n 19	fev 2019	mar 2019	abr 2019	mai 2019	jun 2019
21,38	308,60	255,15	143,50	0,00	0,00
11,73	382,43	1 063,30	153,83	222,22	0,00
33,10	**691,03**	**1 318,45**	**297,33**	**222,22**	**0,00**

INDICADORES



POR UM TURISMO SUSTENTÁVEL

BENCHMARK

Tool to compare Hotels' energy performance indicators with the average values of all hotels registered on the platform, or a segment of hotels determined by their characteristics (typology, classification and facilities).

To ensure the information confidentiality, results will only be available when the analysis group for benchmark has at least 5 hotels.

Benchmark area is only available for hotels providing data from at least 6 of the last 12 months.

SAMPLE RESULTS

Annual energy consumption: **31,8 GWh**

Annual electricity consumption: **20,2 GWh**

Total cost of energy consumed: **2.763.417,56 €**

Average daily energy cost per hotel unit: **378,55 €**

SAMPLE RESULTS ELECTRICAL ENERGY MAIN CONSUMERS

Equipment /sector	Appearances
Chiller	12
Pumping	10
HVAC	3
Kitchen	3
Heat Pumps	2
Domestic Hot Water	2
Lighting	1
Rooms	1
Emergency Circuits	1
Laundry	1
SPA	1

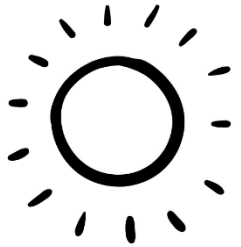
SAMPLE RESULTS NIGHT-TIME CONSUMPTION

Night-time period: from 0:00 until 6:00

Average power in night-time period compared to daytime period: 68%

Maximum: 89 %

Minimum: 58 %



Electrical energy used at night: 4,1 GWh

Huge savings potential in reducing night-time consumption

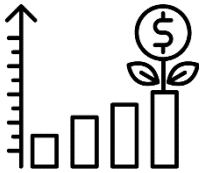
SAMPLE RESULTS INDICATORS

	Average value	Maximum	Minimum
kWh/guest	36,3 kWh	97,4 kWh	19,5 kWh
kWh/room	64,4 kWh	168,7 kWh	34,5 kWh
€/room occupied	6,93 €	13,34 €	2,93 €
€/room available	5,25 €	9,84 €	2,44 €

SAMPLE RESULTS MEASURES IDENTIFIED

Measure	Appearance	Investment per measure	Total anual consumption reduction	Total anual costs reduction	Pay-back [years]
Load management	6	2.550,00 €	340.219 kWh	41.867,00 €	0,4
Building Management System implementation	8	tbd	1.080.546 kWh	114.737,00 €	
Self consumption production system	12	74.416,67 €	1.579.593 kWh	172.147,95 €	5,2
Building Management System optimisation	3	tbd	1.079.378 kWh	94.125,00 €	
Replacement of heating/cooling equipment by more efficient ones	2	32.500,00 €	93.823 kWh	10.856,61	6,0
Replacement of lihgting equipment by LED	2	6.759,50 €	71.471 kWh	7.937,00 €	1,7

SAMPLE RESULTS MEASURES IDENTIFIED



Total investment identified: **986.819,00 €**

Consumption reduction: **4 GWh** (**12 %** of total energy used)

Energy costs annual reduction: **412.988,15 €**

Overall payback: **4,2 years**

"As hotel professionals, we have to be more and more aware about the expenses we make every day, namely in water, gas and electricity. Not only by financial reasons, but also for the sustainability of our Hotel and our environment. This concern led us to participate in the Project ***Por um Turismo Sustentável****, conducted by ENA - Energy and Environment Agency of Arrábida. With the knowledge provided by ENA and the energy audit carried out in our Hotel, it was possible to identify the locations and equipment with the highest energy consumption, and thus reduce the energy waste that we have not identified so far. The crucial performance of ENA has enabled our Hotel to make effective savings in electricity,* ***reducing the energy bill by 15% compared to the same period in previous years, without any financial investment****. It was incredible to understand that* ***only changing the Hotel's behaviour****, such as turning off equipment when it is not needed, or taking advantage of the outside temperature to cool the Hotel areas, are capable of such a* ***significant impact on the Hotel's energy management****".*

Pedro Miguel Pereira
Novotel Head of Maintenance

Thank you!

Orlando Paraíba

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