

## **SPEEDIER**

SME Program for Energy Efficiency through Delivery and Implementation of EneRgy Audits

# D5.2 - SUMMARY REPORT ON RESULTS OF FIRST AND SECOND SPEEDIER SERVICE PILOT

# Lead Contractor: AEEPM Author(s): Ion DOGEANU (AEEPM)

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Contact persons	Padraig Lyons	Padraig.lyor	ns@ierc.ie
Website	www.speedierproject.eu		

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Deliverable Contributors		
Deliverable leader	Name	lon Dogeanu
	Organisation	AEEPM
	Role/Title	Executive Director
	Email	ion.dogeanu@managenergy.ro
Contributing Author(s)	Name	Stephen Murphy
	Organisation	LIT
	Role/Title	Researcher and Consultant
	Email	Stephen.Murphy@lit.ie
	Name	Nicola Di Giusti
	Organisation	POLIMI
	Role/Title	Business Analyst
	Email	nicola.degiusti@polimi.it



SPEEDIER

	Name	Blanca Gomez
	Organisation	РСТ
	Role/Title	Information Sciences
	Email	bgomez@pctcartuja.es
	Name	lon Dogeanu
	Organisation	AEEPM
	Role/Title	Executive Director
	Email	ion.dogeanu@managenergy.ro
Reviewer(s)	Name	Padraig Lyons
	Organisation	IERC
	Role/Title	Head of Group/Primary Project Coordinator
	Email	padraig.lyons@ierc.ie
Review and	Name	Tom Flynn
quality approval	Organisation	TFC Research and Innovation Limited
	Role/Title	WP9 Leader
	Email	t.flynn@tfcengage.com
Final review and	Name	Padraig Lyons
submission	Organisation	IERC
	Role/Title	Head of Group/Primary Project Coordinator
	Email	padraig.lyons@ierc.ie

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# **TABLE OF CONTENTS**

10

TABI	LE OF TABLES
TABI	LE OF FIGURES
ABB	REVIATIONS8
EXEC	CUTIVE SUMMARY9
1	INTRODUCTION AND METHODOLOGY
1.1	Introduction
1.2	Approach Error! Bookmark not defined.
1.3	Objectives12
1.4	SMEs engagement and recruitment strategy of SPEEDIER experts12
1.5	Pilot targets14
2	PILOT IMPLEMENTATION15
2.1	SPEEDIER Services Pilot Ireland15
SME	Tipperary Glass Ltd Error! Bookmark not defined.
2.2	SPEEDIER Services Pilot Italy16
2.3	SPEEDIER Services Pilot Romania17
SME	: Pensiunea Carol Hotel17
2.4	SPEEDIER Services Pilot Spain19
SME	: BP8 alGenio19
3	CONCLUSIONS & LESSONS LEARNED22
3.1	Energy Conservation Measure (ECM) Sheets22
3.2	Monitor First Approach23
3.3	DigiECO23
3.4	Free Audits (SEAI and LEO new initiatives)



3.5	Energy Efficiency in Transport23
3.6	Integrating ESCOs into the SPEEDIER Service
3.7	ESCOs adopting the SPEEDIER approach Error! Bookmark not defined.
3.8	The One-Stop-Shop approach in SPEEDIER24
3.9	Ring-Fencing Approach25
Annex	1
Ireland	pilot
Spain p	ilot31
Italy pi	lot40
Roman	ia pilot45
Annex	290
Ireland	pilot90
Italy pi	lot92
Roman	ia pilot93
Spain p	ilot94



## **Table of tables**

Table 1: Targets and revised targets	14
Table 2: Ireland Pilot	15
Table 3: Italy Pilot	16
Table 4: Romania Pilot	17
Table 5: Spain Pilot	19
Table 6: Spain Pilot 1	21
Table 7: Spain Pilot 2	21



# **Table of figures**

re 1: SPEEDIER Service Activities11
-------------------------------------



## **Abbreviations**

CEP Clean Energy for all Europeans' Package. EC European Commission. EED Energy Efficiency Directive. ECM Energy Conservation Measure. **ESCO** Energy Service Company. MS Member States. NEEAP National Energy Efficiency Action Plans. NECP National Energy and Climate Plans. SME Small and Medium-sized Enterprise. WP4 Work Package number 4 is about the Development of content for SPEEDIER training materials. WP5 Work Package number 5 is about the Implementation of SPEEDIER Service in SMEs and large enterprises in 4 pilot regions. WP6 Work Package number 6 is about the Training of SPEEDIER Experts and future Trainers on SPEEDIER guidelines.



## **Executive Summary**

SPEEDIER is a highly innovative one-stop-shop solution that applies an integrated approach to SME's energy management, providing information, advice, capacity building, energy auditing, financing, implementation of energy efficiency solutions, and monitoring of impacts. The developed solution is being piloted and evaluated by SMEs in four pilot countries: Ireland, Italy, Romania, and Spain.

The SPEEDIER Service is aimed at supporting Article 8 of the EU Energy Efficiency Directive in achieving its energy efficiency objectives by providing a means of easy uptake of energy auditing and implementation of suggested energy-saving measures.

SPEEDIER delivers a self-financing outsourced energy management service enabling SMEs to implement energy conservation measures and to obtain access to the energy services market.

The Service is available via SPEEDIER Experts (i.e., energy consultants, auditors, and experts). It streamlines for SMEs, the process of identifying and implementing Energy Conservation Measures (ECM) by outsourcing all time-consuming energy management activities that require technical expertise from a SPEEDIER Energy Expert.

In the first part of the document, a summary report on the implementation of the SPEEDIER Service in the different pilot sites and the innovative approach in the COVID-19 situation is presented.

Additionally, a series of lessons learned have been extracted, and are they further developed throughout the report. The lessons learned that we have collected referred to ECMs implementation approach from the point of view not only of SMEs but also for the energy experts since they play a very important role in the SPEEDIER Service.



## **1** Introduction

The objective of this report is to summarise the activities of the SPEEDIER service pilot implementations in the four jurisdictions.

The SPEEDIER Experts and SMEs come from different industries in Ireland, Italy, Romania, and Spain. They have piloted and supported the evaluation of SPEEDIER Services.

The lessons learned can help other European projects dealing with SMEs and energy conservation measures.

In the main body of this report a summary of the methodology used in the pilots and the pilot implementation activities in each region are presented. This is followed by conclusions and lessons learned from the pilots with a focus on the key innovative concepts, processes and tools that were piloted during the SPEEDIER project programme. In Annex 1, data detailing the pilots is provided and Annex 2 samples of ECM Sheets and Expert Agreements are provided.



# 2 Pilot Methodology

### 2.1 Impact of Covid-19

The SPEEDIER Service was piloted in four European countries, namely, Ireland, Spain, Romania, and Italy, in a single execution phase. As per the grant agreement, the SPEEDIER Service was planned to be implemented in two phases, where lessons learned from the first phase would have been implemented in the second phase.

However, this original implementation plan was not possible due to the Covid-19 pandemic. For example, travel restrictions prevented SPEEDIER experts and pilot leaders to have site visit with individual SMEs and conduct energy assessments. The economic impact of Covid-19 resulted in the temporary closure of many business and the associated impact on business resulted in energy efficiency being pushed further down the list of priorities, when they reopened their premises for business. Their focus was making sales, resuming day-to-day business activities, and making a profit.

Due to the impact of the Covid-19 pandemic, it was agreed that both phases of the SPEEDIER Service pilot implementation was merged. The SPEEDIER Service was implemented in a single phase and a continuous learning approach was adopted.

### 2.2 SPEEDIER Implementation Overview

Activities involved in SPEEDIER Service implementation are illustrated diagrammatically in **Figure 1**, below.



Figure 1: SPEEDIER Service Activities

As per **Figure 1** SPEEDIER experts and pilot leaders undertook the following SPEEDIER Service implementation activities:



- **Engaged** with the SMEs and obtain commitment to participate in SPEEDIER Service pilot implementation.
- Established the baseline energy consumption for each participating organization.
- Used the SPEEDIER energy expert support tool, developed in Task 4.2 (SPEEDIER Tool for Experts, Development and Optimisation), to assist SPEEDIER Experts in carrying out an energy assessment for the SME and **identify** zero cost, low cost, medium cost, and high-cost ECMs that could be implemented.
- Delivered a brief energy assessment to the SME.
- Delivered the training and capacity-building events for general staff and decisionmakers using the training materials developed in Task 4.3 (Development of training content for organisations participating in SPEEDIER).
- Guided the individual SMEs on how to **implement** most suitable energy saving measures and where possible measured and verified the savings from these actions for the ring-fencing mechanism.
- Agreed on the financing model with decision-makers in participating organizations for **ring-fencing of savings** and reinvestment into low, medium, and high-cost actions
- Assisted SMEs on how to manage the use of the ring-fenced savings to implement further low/medium/high-cost ECMs. This includes any further measurement and **review**/verification of energy savings.

### 2.3 Objectives

The SPEEDIER Service has been piloted in four countries Ireland, Spain, Romania, and Italy, and supported the generation of significant, valuable learning and outcomes in WP4, 5, and 6.

The summary shown in this deliverable is based on the results of Work Packages 5. (Task 5.2 and Task 5.3)

To demonstrate and comprehensively evaluate the effectiveness of SPEEDIER Service, each pilot country had different target sector for implementation of SPEEDIER Service:

- The Irish pilot focused on SMEs with industrial production activities;
- The Italian pilot focused on engaging with ESCOs and delivering the SPEEDIER Service to SMEs and other size enterprises from different industries;
- The Romanian pilot focused on the hospitality industry (small and medium-size hotels);
- The Spanish pilot focused on SMEs co-located in business park buildings from the industrial and technology park Cartuja and CTA.

### 2.4 SMEs engagement and recruitment strategy of SPEEDIER experts

The engagement of SMEs in the pilots was based on the consent mechanisms.



SMEs' engagement and the experts recruitment strategy was tailored to the economic and business environment of each of the countries:

- Ireland
  - Consent mechanisms: During the Irish pilot activities, LIT staff fulfilled the role of SPEEDIER Expert in all cases. A document was prepared to explain the objectives of the SPEEDIER project and what would be expected from the participating SMEs. Agreement was obtained from all SMEs both in written and verbal format.
  - Strategy for recruiting SPEEDIER Experts: The key aspect of the strategy was the idea that the expert would be paid a small fee for a quick initial assessment funded by savings made following the assessment in line with the ring-fencing mechanism. Further work would then be based on the possibilities identified in that initial assessment. For example, if no-cost measures could be identified in the initial assessment, an agreement could be reached on using some or all of these savings to fund the SPEEDIER Expert's time in follow-on activities. In Ireland, the Irish pilot leader LIT took over the role of SPEEDIER Expert. LIT conducted all the activities of SPEEDIER Service implementation right from engagement, energy assessment and ECM implementation.
- Spain
  - Consent mechanisms: PCT Cartuja staff fulfilled the role of SPEEDIER energy expert in all cases, shadowed by energy audit experts interested in the SPEEDIER model. A document was prepared to explain the objectives of the SPEEDIER concept and document the energy audit results and the ECMs implemented for each company. The agreement was obtained from all SMEs both in written and verbal format.
  - Strategy for recruiting experts: The energy audits of the buildings were implemented by PCT Cartuja/CTA, and overseen by SPEEDIER Experts (Valdemar Ingenieros and Irradia Energía). These SPEEDIER Experts were selected from certified energy audit companies by the Andalusian Energy Agency (Regional Government official entity). Both companies have shared the SPEEDIER approach with PCT Cartuja and CTA during the auditing process and they have given feedback about the role of the energy experts in the implementation of SPEEDIER.
- Italy
  - Consent mechanisms: The interlocutor in Italy is the ESCO and rather than the SMEs themselves, who already frequently engage with ESCO. So the SPEEDIER project engagement was primarily with the ESCOs who are supporting the SMEs in the process of energy efficiency audit and improvements. This approach is appropriate as the ESCO market in Italy is significantly more developed than the other jurisdictions which were part of the pilot.
  - Strategy for recruiting SPEEDIER Experts: The strategy focussed on utilisation of the network of Politecnico Milano coupled with additional



dissemination activities. In the Italian case, an arrangement has been set up with ESCOs to act as experts.

- Romania
  - Consent mechanisms: SPEEDIER Experts agree and confirm the mechanism implementation (SPEEDIER ring-fencing) with each SME's ownership representative by signing the ECMs summary sheet. The implementation process starts with no-cost ECMs and moves to costlier ECMs through the SPEEDIER process.
  - Strategy for recruiting SPEEDIER Experts: SPEEDIER Experts and trainers have been selected from their energy agencies partners (5 persons) and leaders of two National Energy Auditors Associations (Order of Energy Auditors in Romania and Romanian Association of Energy Auditors for Buildings), (1+1). Due to the COVID-19 situation, the process was started with the AEEPM in-house experts and their close partners. The selection was expanded with the energy expert members of the both National Energy Auditors Associations, but also with the hospitality consultants and the hotel owners willing to extend their area of expertise and apply the SPEEDIER tools and methodology for the future business. All categories of trainers and experts participated in SPEEDIER centralized training, in both 1<sup>st</sup> and the 2<sup>nd</sup> centralized training sessions.

### 2.5 Pilot targets

SPEEDIER has been severely impacted by the Covid-19 pandemic. As a result of the pandemic, it was not possible to visit SME sites; some sites closed down, other businesses were struggling financially so they were not willing to engage with the SPEEDIER Expert. The consortium considered the achievement of the grant agreement targets to be unrealistic in this context remaining time available and a revised set of targets were agreed as shown in *Table 1*.

Impact	Target	Revised
Number of participating businesses:		
Ireland	15	10
Spain	40	30
Romania	35	35
Italy	20	10
Number of staff taking part in capacity building		
activities:		
Ireland	150	65
Spain	200	150
Romania	200	40
Italy	100	50
Number of people receiving SPEEDIER Expert	50	50
Training	50	50
Number of people receiving SPEEDIER Trainer	40	40
Training	40	40
Number of SMEs supported to have an energy audit	110	85

#### Table 1: Targets and revised targets



# **3 Pilot implementation**

## 3.1 SPEEDIER Services Pilot Implementation - Ireland

#### 3.1.1 Overview

List of SMEs (and their products) involved in SPEEDIER Service pilot implantation:

- Alltech Animal Feeders
- Carlow Brewing Beers
- P.B Machinetech Hydraulic cylinder
- Modular Auto Robotics
- Novostrat Polyethylene foam
- St Tola Goats Cheese products
- Taylormade framed glass windshield
- Tipperary Glass Glass Partitions
- Torc Brew beers and whiskey
- Valentia Slate Slate quarry
- Walsh Packaging Paper bags
- Laois Brewery Beer

Ireland Pilot Indicator	Revised Target	Actual
Triggered energy saving (MWh/yr)	720	2,739
Triggered Investment (€000s)	1-15	624
No. of participating SMEs	10	12
No. of SME Staff Trained	65	67

Table 2: Overview of Irish Pilot

#### 3.1.2 Activities sample: Tipperary Glass Ltd<sup>1</sup>

#### Overview

Tipperary Glass is a leading independent glass processor and wholesaler based in Templemore, Ireland for over fifty years. There are two main arms of the business: processing and wholesale. The wholesale business consists of the import and distribution throughout Ireland of raw glass and mirror sheets. These are sourced worldwide and arrive at Tipperary glass on float liners on racks, or in freight containers in endcaps.

The processing division manufactures these sheets into individual glass pieces by cutting them down and carrying out further processing, depending on the customer's requirements such as polishing, drilling, toughening, laminating, or painting.

<sup>&</sup>lt;sup>1</sup> See D7.1 Best Practices Guidelines for more details of the Irish pilot activities



This business is a medium sized company (49<employees/partners<250 & Annual Turnover≤ 43M€) from the industrial/manufacturing sector, located in Templemore, Ireland.

#### Issue/initial situation

To start the SPEEDIER process, the first step is to identify the issue or some initial conditions conducive to carrying out an energy improvement process. Below are the issues and initial conditions for this particular business, as identified by SPEEDIER Expert:

- Out-dated electric heating system (20-year-old storage heater with no time scheduling capabilities).
- Heavy Goods Vehicles fleet of 7 have no telematics or fleet management capabilities, and drivers do not have any training in safe and efficient driving.

#### Solution and SPEEDIER role

SPEEDIER's role has been to propose the most appropriate solutions to these issues and to advise for the correct application of the following measures:

- Replace the existing electric heating system with electric radiant heaters with better controllability and schedule.
- Implement Fleet Management and HGV driver training programme, SPEEDIER with Greener HGV programme and use ECM sheets to show savings.
- SPEEDIER looked for quotes from electric heater suppliers to find the best fit for the site, keeping the SPEEDIER Expert up to date at all times.

#### Impact

Tipperary Glass assumes to implement suggested ECMs by signing out the ECMs Sheet. The measures applied and their impact is described in the **Annex 1** *ECMs table* 

## 3.2 SPEEDIER Services Pilot Italy

#### 3.2.1 Overview

As engagement with the SPEEDER programme was via an ESCO due to commercial issues the names of the SMEs involved have not been released.

Italy Pilot Indicator	Revised Target	Actual
Triggered energy saving (MWh/yr)	650	1215
Triggered Investment (€000s)	8-28	47
No. of participating SMEs	10	10
No. of SME Staff Trained	50	45

Table 3: Overview of Italian Pilot

- Engagement of **10 SMEs** through the collaboration with ESCO, Vesta
- In this pilot the ESCO took the role of SPEEDIER Expert and experts within the ESCO became SPEEDIER Experts.



- The ESCO supported the SMEs in the implementation process of energy conservation measures, promoting the **ring-fencing mechanism**, and exploiting SPEEDIER concepts, tools, and knowledge.
- Dissemination of SPEEDIER Service to the SMEs staff to enlarge the awareness on the project and the **importance of energy efficiency**.

#### **3.2.2 Conclusions**

- **Implementation** of the service (and ECMs) is still **ongoing**: The Covid-19 contingency impacts on the priorities of SMEs and some ECMs require significant structural changes of facilities.
- The SMEs did not necessarily proceed with the implementation of ECMs as per recommended by the SPEEDIER expert and instead **prioritised ECMs that had the quickest payback time**.
- All the revised target parameters have been reached, except for trained staff which is slightly under the target.
- The commitment of SMEs goes beyond the end of the project.

## 3.3 SPEEDIER Services Pilot Romania

#### 3.3.1 Overview

Romania Pilot Indicator	Revised Target	Actual
Triggered energy saving (MWh/yr)	4,645	4,723
Triggered Investment (€000s)	4-15	745
No. of participating SMEs	35	41
No. of SME Staff Trained	40	266*

\*training sessions only with 27 SMEs up to 15<sup>th</sup> of November 2021, trainings will continue

Table 4: Overview of Romanian Pilot

#### **3.3.2 Activities Sample: Pensiunea Carol Hotel**<sup>2</sup>

#### Overview

Pensiunea Carol is a small family hotel with 12 rooms and a small restaurant, with 3 staff, including the owner. It is open all year round, 7 days a week.

It is a micro company (<10 employees/partners) with an annual turnover of ≤ 2M€ in the Hospitality sector, located in Floresti-Cluj, Romania.

<sup>&</sup>lt;sup>2</sup> See D7.1 Best Practices Guidelines for more detailed sample of Romania Pilot activities

#### Issue/initial situation

Industry	Hospitality
mustry	поэрнанту
Floor space m <sup>2</sup>	870
Rooms	12
Staff	2
Climate zone	3
Final Energy total (kWh/y)	131,753
Electric	5,571
Gas – Space heating	59,091
Gas - Hot water	67,091
Primary Energy Consumption total: (kWh/y)	154,400
Electric	15,600
Gas – Space heating	65,000
Gas - Hot water	73,800

Table 5 Summary of Pensiunea Carol Hotel

#### Solution and SPEEDIER role

SPEEDIER's role was to review the existing energy performance, identify energy efficiency issues and propose the most appropriate solutions to these issues and to advise for the correct application of the following measures:

- SPEEDIER Energy Experts supported the SME with an energy assessment and advised on ECMs that could potentially improve energy performance.
- During the process, the hotel owner expressed his/her interest to become a SPEEDIER energy expert and to help other SMEs in the region.
- SPEEDIER helped also with staff training.
- The hotel's ambition is to become *carbon neutral by 2050* and take the engagement to implement all suggested ECMs and to **use the ring-fencing** mechanism to enable this transition.
- ECM Summary:
  - Energy Consumption monitoring: energy consumption is regularly monitored to assess energy savings and to identify abnormal changes in energy consumption
  - Information to guests: leaflets in the guest's rooms.
  - Staff training.



- ➢ Windows insulation: energy saving double glazing was installed during the extension (+40%) of the hotel.
- > **Building insulation:** high-level insulation has been installed.
- > Hot water-saving: low-flow devices have been installed in the hotel rooms.
- Integration of renewable energies: domestic hot water from solar has been installed.
- > Integration of renewable energies: electricity from PV solar sources.
- During the SPEEDIER project programme, the hotel carried out a small extension and implemented most of the suggested Energy Conservation Measures.
- For the costliest ECMs, the hotel applied for energy solar solution investment subsidies.

#### Impact

The hotel owner agreed to implement the suggested ECMs as per the SPEEDIER methodology using the ring-fencing mechanism. The measures applied and their impact is described in Annex 1.

## 3.4 SPEEDIER Services Pilot Spain

#### 3.4.1 Overview

Spain Pilot Indicator	Revised Target	Actual
Triggered energy saving (MWh/yr)	486	1,203
Triggered Investment (€000s)	1-5	33
No. of participating SMEs	30	34
No. of SME Staff Trained	150	98+346

Table 6: Overview of Spanish Pilot

#### 3.4.2 Activities Sample: BP8 alGenio<sup>3</sup>

#### Overview

This company, along with 23 others currently, is part of the **PCT Cartuja** complex in the Italian Pavilion building. The Cartuja PCT is the main space for innovation in Seville, a Scientific and Technological Park that brings together 536 companies and start-ups, training and research centres, and with an extensive cultural and leisure offer. alGenio is a data-driven agency that designs a marketing strategy tailored to the client. They are a micro company (<10 employees/partners & Annual Turnover  $\leq 2M \in$ ) from the digital marketing sector, located in Seville, Spain.

<sup>&</sup>lt;sup>3</sup> See D7.1 Best Practices Guidelines for more detailed sample of Spain Pilot activities



#### Issue/initial situation

To commence the SPEEDIER process, the first step was to identify to establish the existing baseline performance of the SME by monitoring energy consumption in detail. This enable identification of appropriate ECMs for implementation. These are summarised below:

- The company relocated in July 2020, to the Technoincubator Marie Curie (TMC). The company is hosted in an 87.68 m<sup>2</sup> office on the first floor of this building.
- The energy consumption of the company consists only of electricity consumption of the office. They do not have other facilities or a fleet of vehicles.
- Electricity is provided by the property owner, PCT Cartuja, S.A as part of the rental agreement up to a maximum of 8 kWh/m<sup>2</sup> per month equating to 96kWh/m<sup>2</sup> per annum. alGenio has never exceeded this threshold.
- The average electricity consumption per month was 471.60 kWh/month. Thus, considering the surface of the office (87.68 m<sup>2</sup>), the annual electricity consumption per square meter is 67.48 kWh/m<sup>2</sup>.

#### Solution and SPEEDIER role

SPEEDIER's role was to propose the most appropriate solutions to these issues and to advise for the correct application of the following measures:

- An energy report was produced for the company, alGenio, based on the historical energy baseline data of the years 2019 and 2020. The year 2019 and 2020 was chosen because of the impact of the pandemic on consumption.
- The data was collected by the management team of the building, PCT Cartuja, S.A. The energy audit report proposes a series of improvements, advice or measures, to promote responsible and sustainable consumption of energy that contributes to a decrease in energy consumption, the cost of said energy, and CO<sub>2</sub> emissions, without reducing the comfort of people.

#### Impact

The SME assumed to implement suggested ECMs by signing off the ECMs Sheet. The measures applied and their impact is described in Annex 1.

Spain Pilot 1 Objective	Status
24 SMEs engaged in PCT Cartuja	24 SMEs
Energy audit	Energy audit of the TMC and 24 energy audits of each SME.
Deliver training & capacity building for staff	98 people.
Memorandum of Understanding	24 MOUs signed.
ECMs implemented	Upgrading to more energy efficient lighting equipment (LED) <ul> <li>Investment: €33,162</li> <li>Savings kWh: 293,779 kWh/year</li> <li>tCO<sub>2</sub> saved: 72t/year</li> <li>Costs savings: €6,684/year</li> </ul>



Payback period of the	6 – 14 years.
savings:	

Table 7: Spain Pilot 1

Spain Pilot 2 Objective	Status				
6 SMEs engaged in <b>Pabellon de</b> Italia PCT	10 business engaged				
Energy audit	Energy audit of CEPI and 10 energy audits of each SME.				
Deliver training & capacity building for staff	346 people.				
Memorandum of Understanding	10 MOU in process of signing.				
ECM implemented	Upgrading to more energy efficient lighting equipment (LED) Estimated investments: € 859,737				
	tCO <sub>2</sub> saved: 289.62/year Costs savings: €84,076/year				
Payback period of the savings	Owner: 6 – 14 years. SMEs: 5 – 25 years.				

Table 8: Spain Pilot 2





## **4 Conclusions & Lessons learned**

As part of the SPEEDIER project programme, several innovative approaches and concepts were developed and piloted.

A number of these were as envisaged at the proposal stage but throughout the individual pilots, across the four regions, several additional innovations were developed, which were demonstrated and have also supported the implementation of the SPEEDIER concept in these regions.

This section provides an overview of key pilot innovations, process and tools, which have been demonstrated within the project, and summarises some of the key learnings from their implementations.

### 4.1 Energy Conservation Measure (ECM) Sheets

Throughout the pilot of the SPEEDIER Service, the importance of systematically collecting data on energy savings and cost savings was apparent from each SME.

The ECM sheets ensure that all data and key performance indicators on each ECM implemented by the ECMs could be robustly and quickly evaluated by SMEs. This addresses some of the key issues that surveys had identified e.g. a lack of time and expertise on the side of the SMEs.

The ECM sheets were demonstrated to enable decision-makers to quickly understand the calculation steps, the source of information, and the year-on-year savings with cost savings being subjected to net present value (NPV) calculations to properly assess each ECM.

They were also demonstrated to enable tracking and evaluating ECM effectiveness by facilitating and tracking multiple revisions of the same ECM.

Starting with the high-level energy assessment Revision 1 and updating as continuous updates from the site were received i.e., monitored data, different quotes, and new information.

The ECM sheets also supported replication amongst other sites, with savings documented on ECM sheets on one site, informing saving estimates on newer sites.

The Energy Conservation Measure (ECM) sheet approach was based on the energy assessment for each site and upgraded to align with the requirements of the SPEEDIER Service. It can be used as a paper trail and is a neat format to showcase the source of all information regarding the ECM, the calculations involved in the ECM and the energy, as well as the carbon and cost savings from the ECM.

The SPEEDIER Pilots developed and ECM sheets were deployed in **97** sites and continue to be used as part of the SPEEDIER Service.





## 4.2 Monitor First Approach

None of the SMEs who engaged in the 4 pilots had any form of energy monitoring other than monthly energy billing (gas or electricity) and Meter Registration System Operator (MRSO)<sup>4</sup> data, even with some SMEs that had already had previous audits. This makes baselining existing energy consumption patterns and behaviour, difficult and makes robust identification of appropriate ECMs difficult. Furthermore, baselining the existing energy consumption patterns is key to enabling the ring-fencing mechanism and thus, the implementation of no-cost measures. Therefore, it can be seen that energy monitoring is central to the SPEEDIER Service and the first step for any SME joining it.

Therefore, in the Irish pilot sites, St Tola Irish Goats Cheese, Tipperary Glass, Walsh Packaging, and Modular Automation, energy monitoring systems were made the priority ECMs on their commitment list, to determine savings from no-cost measures and identify what other ECMs should be implemented. The same approach was adopted for the Romanian Pilot.

### 4.3 Enabling new sustainability concepts: DigiECO

In addition, to the ECMs that were part of the original SPEEDIER programme the opportunity for the SPEEDIER concept and SPEEDIER Experts to enable new sustainability concepts to be piloted and implemented during the project. During the Irish pilot, DigiECO, was developed to help small and micro businesses on their sustainability journey with training on digital skills, climate awareness, and energy efficiency. The concept was first trailed in December 2020 in conjunction with SPEEDIER. The undertaking is a collaborative upskilling initiative between the regional skills coordinator, LCETB and LIT, and the Local Enterprise Offices.

DigiECO consists of a single-day digital, climate, and energy training, followed by a project for a month, where SMEs undertake their energy assessment with the newly obtained skills.

After one month, each SME will present to the group what they found in their energy assessment and what plans for the future they are considering followed by a Q&A session. DigiECO has been demonstrated to be hugely successful with 4 cohorts of 8 SMEs having received training and 1 cohort of 10 SMEs.

### 4.4 Energy Efficiency in Transport

The traditional scope of energy consumption or carbon saving within an SME would be to simply consider the savings associated with the energy consumption or carbon savings that could be achieved on site of the SME. This was the concept that the SPEEDIER considered appropriate at the beginning of the project programme also. However, the Covid-19 pandemic, the rise of home working and the electrification of heat and transport has challenged some of these assumptions.

<sup>&</sup>lt;sup>4</sup> MRSO data is electricity meter data supplied by the MRSO, ESB Networks in Ireland. For larger electricity users in this jurisdiction, this is at a quarter-hourly rate. The availability of interval metering e.g. quarter hourly, is expected to be available to more business users in the coming years as smart metering becomes commonplace for all business and domestic electricity users in Ireland.





As the project progressed SPEEDIER experts recognized that transport is a significant part of SME's energy consumption and carbon production and should be considered to be an integral part of an SME's energy consumption and carbon production.

This additional component of SME energy consumption is likely to be more apparent in the future as potentially electrical energy for EV charging may also become a significant part of SME's energy consumption.

To reflect this, energy efficiency for transport training was added to the training modules, and also included in the energy assessment because the types of SMEs in Ireland that were targeted were manufacturing and either outsourcing their transport and logistics or had their fleet of HGVs/ or delivery vans.

Feedback from the pilots has indicated that this additional training has been useful to SMEs to more comprehensively assess their energy consumption and carbon production.

## 4.5 Integrating ESCOs into the SPEEDIER Service

Due to the nature of the part of the Italian pilot, an alternative and innovative approach; engaging with SMEs via ESCOs.

ESCOs are very important players and actors in the value chain of energy efficiency and energy management. They are typically highly proficient at performing energy audits and know in detail the benefits and the issues related to the energy management process. Therefore, they can give even more detailed suggestions and advice thanks to their expertise.

The approach of ESCOs in the implementation followed the innovative staged approach (Engage – Identify – Implement – Review – Repeat) presented by SPEEDIER. Furthermore, particular attention was paid to support the adoption of the ring-fencing mechanism to allow small companies to have the opportunity to invest their savings (coming from no-cost measures) into higher-cost measures.

As a result of this approach, the Italian pilot had more opportunities to robustly evaluate and support the development of the Energy Expert tool. This enabled the provision of technical feedback to the SMEs and also to the rest of the consortium partner of the project enabling the optimisation of the Energy Expert tool.

### 4.6 The One-Stop-Shop approach in SPEEDIER

The Spanish pilot was implemented in 34 SMEs, hosted in 2 multi-tenant buildings. The pilot implementation of the SPEEDIER concept provided companies with information, advice, energy tools, capacity building, training, and monitoring of impacts.

The concept was implemented in Spain using the one-stop-shop SPEEDIER Service solution approach to mitigate the main barriers the SMEs find for doing energy audits. The ECMs implemented have been monitored to enable the savings to be ring-fenced and invest them in follow-up, higher value ECMs.

The participating SMEs, hosted in Tecnoincubadora Marie Curie, do not have a contract with an energy supplier nor pay for the service. The ECMs in this case were implemented by the owner, who has a contract with an energy supplier and in contrast to other implementations of





the SPEEDIER service, the SME does not make the financial savings. Instead the investment in the ECM and the financial savings are to the owner of the building occupied by the SME. However, it should be noted that the SMEs carbon production is reduced eventhough they do not make financial savings from the implementation of these ECMs.

In contrast the SMEs in the other building, do not have an energy contract but they do pay a charge based on energy consumption and they were responsible for the ECMs to be implemented.

The pilot implementation of the SPEEDIER Service has included monitoring of impacts, financial forecast, payback, and funding sources for financing the investments. In this way, the self-financing mechanism is being implemented.

Feedback from the trial of the SPEEDIER Service in Spain indicates that SMEs have developed an increased awareness of energy savings thanks to the combination of individualized audits.

With the second type of audit, companies renting offices in a shared building were able to monitor their consumption and were able to implement measures to improve their energy consumption according to their needs.

### 4.7 Ring-Fencing Approach

The ECMs implemented in all pilot sites are evaluated in the context of 3 - year or 5 - year implementation and investment plans to support the implementation of the ring-fencing saving approach. Each ECM is assessed in a way to calculate cost saving for investing in the following ECMs. The pilot implementation of the SPEEDIER Service included monitoring of impacts, financial forecast, calculation of payback period, providing this information to the SME in an accessible way and advising funding sources for financing the investments. In this way, the self-financing mechanism is being implemented.

This approach was verified in the Romanian pilot (already by 41 hotels involved in the project) out of all the 41 hotels, Pensiunea Carol Hotel is in the most advanced stage of implementation. The pilot with the small hotels in Romania demonstrated that starting with monitoring and staff training was the first step for building SMEs energy culture. Small hotels in Romania previously never monitored the energy use and carried out periodical revisions of installations used and thus had very limited awareness of energy efficiency and sustainable energy culture.

In Ireland, Modular Auto and St Tola adopted 5-year plans for implementing ring-fencing saving mechanism, as cost savings to be achieved during the pilot implementation of the SPEEDIER Service were not at a sufficient level to finance costlier interventions.

The Spanish pilot demonstrated the initial stages of the implementation of the ring-fencing mechanism with the building owner on one of their pilots and with SMEs on the other pilots. The feedback from the pilot indicated that the ring-fencing works with the lighting systems the offices. However, the pilot also demonstrated in that in some SME tenanted buildings the successful implementation of the SPEEDIER service needs to be different and requires parallel engagement with a building owner and may require the support of different energy supply models.





## 4.8 Other Lessons Learned

**More lessons learned** are evidenced by a qualitative analysis of the interviews with the SMEs participating in the pilot and the SPEEDIER experts in WP7 - *Lessons learned summarised here:* 

#### 1. The SPEEDIER Expert helps the SME with a new vision regarding their energy use.

The SPEEDIER Expert, as an outsider, typically does not know every detail about the equipment and the building, how it is used and maintained, and also, which are the behaviours of the workforce in the company. Feedback from the pilots indicated that the fresh perspective was shown to be an advantage in reviewing the energy activity within an SME.

SPEEDIER Experts, who are energy experts, have considerable expertise in the identification and analysis of energy consuming equipment and their energy consumption pattern. Therefore, they can provide detailed energy use analysis with more sophisticated ideas to improvise SMEs energy usage pattern.

# 2. SPEEDIER experts approach helps SMEs to reconsider their past effort to become energy efficient

Many of the SMEs within the pilot are not beginners when it comes to the evaluation and implementation of ECMs in their equipment and their buildings. Energy efficiency influences costs and therefore it makes financial sense that companies undertake any activity that impacts their bottom lines. The SPEEDIER tool has been shown to enable the identification of additional opportunities that usually went unnoticed by the traditional energy audits.

#### 3. SMEs don't have an in-house energy efficiency expert

Many SMEs do not have an in-house energy efficiency expert and therefore the support of a SPEEDIER Expert can provide capacity and support to develop this expertise in-house and enable additional ECMs in the future. Additionally, pieces of training offered for staff members and decision-makers contribute to SME's capacity building and building energy culture.

# 4. Staff training contribute to energy culture build up and so everybody can contribute to ECMs implementation

SPEEDIER Experts, invest time and energy into explaining to everyone in the company the motivations of the changes introduced and support the integration of these changes within the SME culture. Everybody in the company needs to get involved.

SPEEDIER Experts provided capacity building training to SME employees to enhance their energy awareness. Through the training, SPEEDIER experts can enable SME employees understand the importance of energy management & energy efficiency, and the benefits of energy efficient buildings. The training was found to motivate many of the employees to join and contribute in the energy efficiency journey of their organisation.

#### 5. Long-term support for a long-term process

Organisations are looking for long term support for implementation of suggested ECMs with the multi-year ring-fencing-saving plans as recommended by SPEEDIER Experts. SMEs





proposed that SPEEDIER Experts should remain in contact with them to ensure that SMEs remain interested and invigorated in implementing the suggested the ECMs, and in this process support them in their journey towards their environmental contribution ambitions.





## Annex 1 Pilot Data

SMEs engaged and ECMs recommended and assumed for implementation by signing ECMs sheets

## **Ireland pilot**

Indicator	Revised Target	Actual *
Primary Energy Savings (MWh/yr)	720	2,739
Investment Target (€)	1-15k	624k
Cost Savings (€/year)	-	209k
tCO <sub>2</sub> Saved / year	99	496
SMEs Participating	10	12
Trained Staff Target	65	67

\* Figures as of revision date, November 11<sup>th</sup>, 2021 (Deliverable 9.4)

SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.83 PECF)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investment (€)	Simple Payback Period
St Tola Goats Cheese	Change Boiler from Kerosene to LPG	Y March 2021	Kerosene/LPG	27,597	30,357	8.0	2,007	4,800	2.4
St Tola Goats Cheese	Thermostat replacements	Ongoing	LPG	3,064	3,371	0.7	343	400	1.2
St Tola Goats Cheese	Insulate Piping to and from the ice bank	N	Electricity	2,315	4,236	0.8	413	600	1.5
St Tola Goats Cheese	Walk in Fridge: Evaporator & Condenser Cleaning	Ongoing	Electricity	1,600	2,928	0.5	285	100	0.4
St Tola Goats Cheese	Walk in Fridges Seal replacement	Ongoing	Electricity	5,440	9,955	1.8	969	500	0.5
St Tola Goats Cheese	Wash Hand Basin Optimisation	Ongoing	LPG	3,054	3,360	0.7	342	25	0.1
St Tola Goats Cheese	Ice Bank Energy Reduction	Y September 2021	Electricity	466	853	0.2	83	0	0.0





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.83 PECF)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investment (€)	Simple Payback Period
Tipperary Glass	Fleet Management System	Y September 2021	Diesel	95,318	104,850	24.8	9,472	16,800	1.8
Tipperary Glass	Clean & maintain Air conditioning units	Ongoing	Electricity	4,032	7,379	1.3	466	440	0.9
Tipperary Glass	Clean Skylights for more natural light	Ongoing	Electricity	3,710	6,789	1.2	429	500	1.2
Tipperary Glass	Monitoring and Verification System	Ν	Electricity, NGas	25,777	45,315	8.0	2,960	10,000	3.4
Tipperary Glass	Replace Storage Heaters with EVRAD Electric heaters	Y September 2021	Electricity	14,640	26,791	4.7	1,692	3,672	2.2
Valentia Slate	Replace 25-year- old saw with more modern saw, with horizontal cut capabilities	Ongoing	Diesel	66,050	38,978	16.5	1,010	300,000	-

SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.83 PECF)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investment (€)	Simple Payback Period
Modular Automation	Building management system upgrade and energy monitoring	Ongoing	Electricity, NGas	37,740	56,619	8.8	2,777	6,050	2.2
Modular Automation	Reduce Building 1 heating systems thermostat Setpoint by 1 degree	Ongoing	NGas	11,423	12,565	2.3	674	0	0.0
Modular Automation	Reduce Time schedule of heating systems in Building 1	Ongoing	Electricity	57,119	107,955	11.7	3,370	0	0.0
Modular Automation	LED Lighting Upgrade	Ongoing	Electricity	103,784	196,151	33.7	12,350	47,520	3.8
Modular Automation	Reduce building 1 boiler setpoint by 5 degrees	N	NGas	51,927	57,119	10.6	3,064	0	0.0
Modular Automation	Reduce AHU Fan Speed	N	Electricity	2,767	5,230	0.9	329	700	2.1
Modular Automation	Change Filters in AHU	Ongoing	Electricity	986	1,863	0.3	117	70	0.6





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.83 PECF)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investment (€)	Simple Payback Period
Alltech	LED Lighting Upgrade	Ongoing	Electricity	385,500	705,465	125.0	57,825	125,000	2.2
Alltech	Compressor Leak test	Ongoing	Electricity	48,809	89,320	15.8	7,321	11,000	1.5
Alltech	Variable speed drive for Compressor	Ongoing	Electricity	599,362	1,096,832	194.5	89,904	61,672	0.7
Total				1,632,253	2,739,060	496	209,301	623,626	3.0





## **Spain pilot**

Indicator	Revised Target	Actual *
Primary Energy Savings (MWh/yr)	486	1,203
Investment Target (€)	1-5k	33k
Cost Savings (€/year)	-	6.7k
tCO <sub>2</sub> Saved / year	84	363
SMEs Participating	30	34
Trained Staff Target	150	98

\* Figures as of revision date, November 11<sup>th</sup>, 2021 (Deliverable 9.4)





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
PCT CARTUJA - TECNOINCUBADORA	LED Lighting Replacement	1/2/2021	Electricity	93,531	17.70	6,684	33,162	4.96
PCT CARTUJA - TECNOINCUBADORA	Improvements in thermal installations: heat pump replacement	NO	Electricity	49,360	11.46	5,183	120,000	23.2
PCT CARTUJA - TECNOINCUBADORA	Improvements in thermal installations: pumps replacement	NO	Electricity	30,900	3.11	3,245	67,500	20.8
PCT CARTUJA - TECNOINCUBADORA	Improvements in the epidermis. Replacement of carpentry with others with better thermal qualities	NO	Electricity	64,636	18.05	6,787	161,680	23.8
PCT CARTUJA - TECNOINCUBADORA	Photovoltaic solar installation	NO	Electricity	39,593	17.86	6,129	60,000	9.79
TEAMBIMCIVIL	Behavioural change related to Lighting, computer equipment, air conditioning, and ways of work	6/7/2021	Electricity	533	0.18	-	-	



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847034



SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
HG Control	Behavioural change related to Lighting, computer equipment, air conditioning, and ways of work	2/7/2021	Electricity	556	0.18	-	-	
alGenio	Behavioural change related to Lighting, computer equipment, air conditioning, and ways of work	1/7/2021	Electricity	1,288	0.43	-	-	
Nextu Formación	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	5/7/2021	Electricity	136	0.04	-	-	
Ennde 3d	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	6/7/2021	Electricity	489	0.16	-	-	
Saergy	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	24/06/2021	Electricity	867	0.29	-	-	





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
Arqueología y Gestión	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	30/06/2021	Electricity	188	0.06	-	-	
Digital Jurado	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	15/07/2021	Electricity	412	0.14	-	-	
EASY PVF	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	24/06/2021	Electricity	809	0.27	-	-	
Extravaganza Communication	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	13/09/2021	Electricity	581	0.19	-	-	-
Civile	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	1,582	0.52	-	-	





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
Castaño y Asociados	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	1,054	0.23	-	-	
Ingeniería y Sistemas de Auditoria e Inspección, S. COOP. AND. (INSAI)	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	7/7/2021	Electricity	909	0.30	-	-	
Arquitectos del Sur	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	188	0.06	-	-	-
Crear página e-web	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	759	0.25	-	-	-
AYC Sinergia	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	650	0.21	-	-	



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SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
E2K2	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	30/08/2021	Electricity	499	0.17	-	-	-
Ingelectus	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	867	0.29	-	-	
Biogold Network	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	578	0.19	-	-	-
Cenit	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	1/7/2021	Electricity	732	0.24	-	-	-
Eman Ingeniería	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	1,179	0.39	-	-	




SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon savings (tCO2/annum)	Cost savings (€/year)	Investment (€)	Simple Payback Period
Amarna Therapeutics	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	254	0.08	-	-	-
Ariddad Therapeutics	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity			-	-	-
Woodswallows, S.L.	Behavioural change related to Lighting, computer equipment, air conditioning and ways of work	YES	Electricity	649	0.21	-	-	
TOTAL TMC PILOT 1				293,779	73.27			





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity	Primary Energy Savings	Carbon savings (tCO2/annum)	Cost <b>savings</b> <b>(€/year)</b>	Investment (€)	Simple Payback Period
CENTRO DE EMPRESAS PABELLÓN DE ITALIA	LED Lighting Replacement & presence sensor	NO	Electricity	(kwn/annum) 202,621	67.10	20,262	145,355	7.17
CENTRO DE EMPRESAS PABELLÓN DE ITALIA	Installation of aero- coolers (option A)	NO	Electricity	136,389	45.10	13,639	145,355	10.7
CENTRO DE EMPRESAS PABELLÓN DE ITALIA	Replacement of heat pumps (option B)	NO	Electricity	261,102	86.40	26,110	354,025	13.6
CENTRO DE EMPRESAS PABELLÓN DE ITALIA	Photovoltaic solar energy installation	NO	Electricity	228,805	75.70	22,880	123,696	5.41
CENTRO DE EMPRESAS PABELLÓN DE ITALIA	Optimization of power in electricity bill	NO	Electricity	-	-	1,185	-	0
CELGENE	LED Lighting Replacement & presence sensor	Ongoing	Electricity	19,219	3.65	work in progress	22,088	7
TELEDYNE ANAFOCUS	LED Lighting Replacement & presence sensor	Ongoing	Electricity	33,971	6.45	work in progress	21,014	6
SCALPERS	LED Lighting Replacement & presence sensor	Ongoing	Electricity	3,627	0.69	work in progress	18,452	21





ACSA	LED Lighting Replacement & presence sensor	Ongoing	Electricity	8,970	1.70	work in progress	12,852	15
UNYQ	LED Lighting Replacement & presence sensor	Ongoing	Electricity	9,969	1.89	work in progress	7,325	7
NUNSYS	LED Lighting Replacement & presence sensor	Ongoing	Electricity	2,028	0.39	work in progress	2,184	11
PLEXUS	LED Lighting Replacement & presence sensor	Ongoing	Electricity	1,185	0.23	work in progress	2,604	>15
MAGTEL	LED Lighting Replacement & presence sensor	Ongoing	Electricity	1,137	0.22	work in progress	2,394	>15
FUNDACIÓN MAGTEL	LED Lighting Replacement & presence sensor	Ongoing	Electricity	420	0.08	work in progress	1,680	>15
BITMAKERS	LED Lighting Replacement & presence sensor	Ongoing	Electricity	84	0.02	work in progress	714	>15
TOTAL CEPI PILOT 2				909,527	289.62	112,104	1,302,080	





## **Italy pilot**

Indicator	Revised Target	Actual *
Primary Energy Savings (MWh/yr)	650	1,215
Investment Target (€)	8-28k	47k
Cost Savings (€/year)	-	74k
tCO <sub>2</sub> Saved / year	110	301
SMEs Participating	10	10
Trained Staff Target	50	45

\* Figures as of revision date, November 11<sup>th</sup>, 2021 (Deliverable 9.4)





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon Savings (tCO2/annum)	Cost Savings (€/annum)
1	Facility Management Changes Regularly clean air filters during peak cooling or heating season Install Task Lights and upgrade to dimmable LED. Replace boiler and insulate tubes	Ongoing	Electricity and heat	196,000	49	12250
2	Adjust thermostats for seasonal changes and Keep exterior doors closed while running HVAC. Efficient use of lighting Change Air-filters and install better insulation solutions Consider the use of photovoltaic panels	Ongoing	Electricity and heat	120,000	30	7500
3	Enable sleep settings and energy management function on all multifunction devices Keep engines clean, minimize lighting in non- working areas and install better insulation solutions Facility Management Changes	Y	Electricity and heat	57600	14.4	3600



Horizon 2020 European Union Funding for Research & Innovation



SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon Savings (tCO2/annum)	Cost Savings (€/annum)
	Ensure team members in each department are trained on the importance of energy management and basic energy conservation practices.					
4	Enable sleep settings and energy management function on all multifunction devices Regularly clean lights and air filters and use of task lighting Repair leaks and adjust the pressure in compressed air systems. Use heat-insulating materials for doors and windows	Ongoing	Electricity and heat	55000	13.750	3437.5
5	Transformer load reduction/change and other structural changes Use of bright colors for walls to reflect light and efficient use of lighting Change Air-filters	Y	Electricity and heat	19600	4.900	1225
6	Regularly clean lights, air filters, and assets Maximize the use of daylight and optimized the use of lights	Ongoing	Electricity and heat	120000	30	7500





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas,	Primary Energy Savings	Carbon Savings (tCO2/annum)	Cost Savings
			electricity etc)	(kWh/annum)		(€/annum)
	Calibrate the thermostats and use smart meters Enable sleep settings and energy management function on all multifunction devices					
7	Transformer load reduction/change (in the case of more than one transformer). Adjust thermostats for seasonal changes and use modern electronic thermostats Installing or substituting fans Replace windows with more energy-efficient options (double/triple glazing).	Ongoing	Electricity and heat	250000	62.500	15625
8	Efficient use of lighting Keep engines clean Calibrate the thermostats and use smart meters install better insulation solutions	Ongoing	Electricity and heat	168000	42	10500
9	Use task lighting when feasible Facility Management Changes	N	Electricity and heat	87500	21.875	5468.75





SME name	ECM description	Implemented Y/N, provide date if yes	Energy type (gas, electricity etc)	Primary Energy Savings (kWh/annum)	Carbon Savings (tCO2/annum)	Cost Savings (€/annum)
	Ensure team members in each department are trained on the importance of energy management and basic energy conservation practices. Repair leaks and adjust the pressure in compressed air systems.					
10	Enable sleep settings and energy management function on all machinery and distribute lighting switches Install occupancy markers and insulation solutions Consider the use of photovoltaic panels	Ongoing	Electricity and heat	130000	32.500	8125





## Romania pilot

Indicator	Revised Target	Actual *
Primary Energy Savings (MWh/yr)	4,645	4,723
Investment Target (€)	4-15k	745k
Cost Savings (€/year)	-	306k
tCO <sub>2</sub> Saved / year	648	1,143
SMEs Participating	35	41
Trained Staff Target	40	266

\* Figures as of revision date, November 11<sup>th</sup>, 2021 (Deliverable 9.4)





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E01-01	Le Boutique Hotel Moxa	Energy Consumption monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/01.09.2021	8,693	10,181	2.0	656	100	0.2
E01-02	Le Boutique Hotel Moxa	Information to guests: leaflets in the guests rooms	Y/01.09.2021	8,693	10,182	2.0	656	400	0.6
E01-03	Le Boutique Hotel Moxa	Staff trainings	Y/01.09.2021	22,603	26,470	5.1	1,705	1,000	0.6
E01-04	Le Boutique Hotel Moxa	Hot water saving: low- flow devices have been installed in the hotel rooms	N	37,381	41,119	8.4	2,617	1,500	0.6
E01-05	Le Boutique Hotel Moxa	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,182	6,108	0.5	436	1,500	3.4
E02-01	Capital Plaza Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify	Y/01.09.2021	10,503	12,500	6.6	802	100	0.1





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			date if yes		(1.1 for gas and 2.8 for electricity Romanian PE Conversion)		(€/annum)		Period
		abnormal changes in energy consumtion							
E02-02	Capital Plaza Hotel	Information to guests: leaflets in the guests rooms	Y/01.09.2021	10,503	12,500	6.6	802	500	0.6
E02-03	Capital Plaza Hotel	Staff trainings	Y/15.10.2021	27,308	29,754	16.2	2,085	1,000	0.48
E02-04	Capital Plaza Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	N	45,163	53,440	11.0	3,161	1,250	0.40
E02-05	Capital Plaza Hotel	Electricity consumtion monitoring: AC consumtion	Ν	2,573	7,205	0.6	515	1,250	2.43
E03-01	Hotel Carmen Predeal	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/01.09.2021	33,328	41,158	21.8	2,677	100	0.04
E03-02	Hotel Carmen Predeal	Information to guests: leaflets in the guests rooms	Y/01.09.2021	33,328	41,158	21.8	2,677	500	0.19
E03-03	Hotel Carmen Predeal	Staff trainings	Y/15.10.2021	86,652	71,500	38.9	6,960	1,000	0.14
E03-04	Hotel Carmen Predeal	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	81,352	89,487	18.3	5,695	3,000	0.53



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47



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E03-05	Hotel Carmen Predeal	Windows shadow system:	Ν	6,615	18,521	1.7	1,323	1,852	1.40
E04-01	Vila Alpin	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/01.09.2021	4,536	5,602	3.2	364	100	0.27
E04-02	Vila Alpin	Information to guests: leaflets in the guests rooms	Y/01.09.2021	4,536	5,602	3.2	364	500	1.37
E04-03	Vila Alpin	Staff trainings	Y/15.10.2021	11,795	14,566	29.7	947	1,000	1.06
E04-04	Vila Alpin	Hot water saving: low- flow devices installed in the hotel rooms	N	19,507	18,656	3.8	813	700	0.86
E04-05	Vila Alpin	Efficient lighting new bulbs	Ν	1,441	4,034	0.4	288	1,130	3.92
E05-01	Pensiune a Carol Floresti	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/01.02.2021	2,635	3,088	1.6	199	100	0.50
E05-02	Pensiune a Carol Floresti	Information to guests: leaflets in the guests rooms	y/01.08.2021	2,635	3,088	1.6	199	500	2.51
E05-03	Pensiune a Carol Floresti	Staff trainings	Y/01.09.2021	6,851	8,030	4.2	517	1,000	1.93





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E05-04	Pensiune a Carol Floresti	Windows insulation: energy saving duble glazing was instaled during extension (+40%) of the hotel	Y/01.09.2021	8,300	9,750	2.0	581	5,000	8.61
E05-05	Pensiune a Carol Floresti	Building insulation: high level insulation	Y/01.09.2021	8,696	10,300	2.1	609	7,500	12.32
E05-06	Pensiune a Carol Floresti	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/01.09.2021	5,770	6,347	1.3	813	600	0.74
E05-07	Pensiune a Carol Floresti	Integration of renewable energies: - domestic hot water from solar	N	16,773	18,450	3.8	780	923	1.18
E05-08	Pensiune a Carol Floresti	Integration of renewable energies: - electricity from PV solar sources 27kwh	N	1,393	3,900	0.4	279	1,950	7.00
E06-01	Casa Lazaroiu Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	2,700	3,268	1.7	212	100	0.47
E06-02	Casa Lazaroiu Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2021	2,700	3,268	1.7	212	500	2.36
E06-03	Casa Lazaroiu Hotel	Staff trainings	Y/15.10.2021	7,021	8,497	4.4	551	1,000	1.82





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E06-04	Casa Lazaroiu Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	11,611	14,052	2.9	813	500	0.62
E06-05	Casa Lazaroiu Hotel	Integration of renewable energies: - domestic hot water from solar	Ν	11,141	12,255	2.5	780	613	0.79
E06-06	Casa Lazaroiu Hotel	Integration of renewable energies: - electricity from PV solar sources	N	2,188	6,128	0.6	438	3,064	7.00
E06-07	Casa Lazaroiu Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	1,050	2,941	0.3	210	500	2.38
E06-08	Casa Lazaroiu Hotel	Electricity consumtion monitoring: AC consumtion	Ν	876	2,451	1.4	175	500	2.85
E06-09	Casa Lazaroiu Hotel	Windows shadow system:	Ν	438	1,225	0.1	88	123	1.40
E07-01	Hotel Caro's	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2022	3,517	4,825	2.5	319	100	0.31
E07-02	Hotel Caro's	Information to guests: leaflets in the guests rooms	Y/15.10.2022	3,517	4,825	2.5	319	500	1.57





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E07-03	Hotel Caro's	Staff trainings	Y/15.10.2022	9,144	12,545	6.5	830	1,000	1.20
E07-04	Hotel Caro's	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	15,122	20,748	4.3	813	700	0.86
E07-05	Hotel Caro's	Integration of renewable energies: - domestic hot water from solar	N	13,188	14,507	3.0	923	725	0.79
E07-06	Hotel Caro's	Integration of renewable energies: - electricity from PV solar sources	N	7,034	19,694	1.8	1,407	9,847	7.00
E07-07	Hotel Caro's	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	3,376	9,453	0.9	675	700	1.04
E07-08	Hotel Caro's	Electricity consumtion monitoring: AC consumtion	N	2,814	7,879	0.7	563	700	1.24
E07-09	Hotel Caro's	Windows shadow system:	N	1,407	3,939	0.4	281	394	1.40
E08-01	Hotel Hello	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2023	4,032	5,669	2.9	377	100	0.27
E08-02	Hotel Hello	Information to guests: leaflets in the guests rooms	Y/15.10.2023	4,032	5,669	2.9	377	500	1.33





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E08-03	Hotel Hello	Staff trainings	Y/15.10.2021	10,483	14,739	7.7	979	1,000	1.02
E08-04	Hotel Hello	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	17,338	24,377	5.0	813	550	0.68
E08-05	Hotel Hello	Integration of renewable energies: - domestic hot water from solar	N	24,192	26,611	5.5	1,693	1,331	0.79
E08-06	Hotel Hello	Integration of renewable energies: - electricity from PV solar sources	N	9,072	25,402	2.3	1,814	12,701	7.00
E08-07	Hotel Hello	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	4,355	12,193	1.1	871	550	0.63
E08-08	Hotel Hello	Electricity consumtion monitoring: AC consumtion	N	3,630	10,163	0.9	726	550	0.76
E08-09	Hotel Hello	Windows shadow system:	Ν	1,814	5,080	0.5	363	508	1.40
E09-01	Hotel Confort	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	3,618	4,779	2.5	314	100	0.32
E09-02	Hotel Confort	Information to guests: leaflets in the guests rooms	Y/15.10.2021	3,618	4,779	2.5	314	500	1.59





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E09-03	Hotel Confort	Staff trainings	Y/15.10.2021	9,406	12,425	6.5	817	1,000	1.22
E09-04	Hotel Confort	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	6,222	6,844	1.4	813	500	0.62
E09-05	Hotel Confort	Integration of renewable energies: - domestic hot water from solar	N	18,088	19,897	4.1	780	995	1.28
E09-06	Hotel Confort	Integration of renewable energies: - electricity from PV solar sources	N	5,879	16,460	1.5	438	8,230	18.81
E09-07	Hotel Confort	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,822	7,901	0.7	210	500	2.38
E09-08	Hotel Confort	Electricity consumtion monitoring: AC consumtion	Ν	2,352	6,585	0.6	470	500	1.06
E09-09	Hotel Confort	Windows shadow system:	N	1,176	3,292	0.3	235	329	1.40
E10-01	Hotel Orion	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2025	5,384	7,295	3.8	482	100	0.21
E10-02	Hotel Orion	Information to guests: leaflets in the guests rooms	Y/15.10.2025	5,384	7,295	3.8	482	500	1.04





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E10-03	Hotel Orion	Staff trainings	Y/15.10.2021	13,997	18,966	9.9	1,253	1,000	0.80
E10-04	Hotel Orion	Windows insulation: energy saving duble glazing	N	10,198	11,217	2.3	714	2,500	3.50
E10-05	Hotel Orion	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	5,787	6,366	1.3	813	750	0.92
E10-06	Hotel Orion	Integration of renewable energies: - domestic hot water from solar	N	16,824	18,506	3.8	1,178	925	0.79
E10-07	Hotel Orion	Integration of renewable energies: - electricity from PV solar sources	N	10,094	28,264	2.5	2,019	14,132	7.00
E10-08	Hotel Orion	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	4,845	13,567	1.2	969	750	0.77
E10-09	Hotel Orion	Electricity consumtion monitoring: AC consumtion	N	4,038	11,308	1.0	808	750	0.93
E10-10	Hotel Orion	Windows shadow system:	N	2,019	5,653	0.5	404	565	1.40
E11-01	Hotel B- Dorin	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2026	5,520	7,855	4.1	523	100	0.19





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E11-02	Hotel B- Dorin	Information to guests: leaflets in the guests rooms	Y/15.10.2026	5,520	7,855	4.1	523	500	0.96
E11-03	Hotel B- Dorin	Staff trainings	Y/15.10.2021	14,352	20,423	10.6	1,359	1,000	0.74
E11-04	Hotel B- Dorin	Windows insulation: energy saving duble glazing	Ν	17,427	24,798	5.1	12,199	3,400	0.28
E11-05	Hotel B- Dorin	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	23,736	33,776	6.9	1,662	600	0.36
E11-06	Hotel B- Dorin	Integration of renewable energies: - domestic hot water from solar	Ν	20,700	22,770	4.7	1,449	1,139	0.79
E11-07	Hotel B- Dorin	Integration of renewable energies: - electricity from PV solar sources	N	13,110	36,708	3.3	2,622	18,354	7.00
E11-08	Hotel B- Dorin	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	6,293	17,620	1.6	1,259	600	0.48
E11-09	Hotel B- Dorin	Electricity consumtion monitoring: AC consumtion	N	5,245	14,686	1.3	1,049	600	0.57
E11-10	Hotel B- Dorin	Windows shadow system:	Ν	2,622	7,342	0.7	524	734	1.40
E12-01	Continent al Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings	Y/15.10.2027	7,584	10,405	5.4	689	100	0.15





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		and to identify abnormal changes in energy consumtion							
E12-02	Continent al Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2027	7,584	10,405	5.4	689	500	0.73
E12-03	Continent al Hotel	Staff trainings	Y/15.10.2021	19,718	27,054	14.1	1,790	1,000	0.56
E12-04	Continent al Hotel	Windows insulation: energy saving duble glazing	N	23,943	32,849	6.7	1,676	5,600	3.34
E12-05	Continent al Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	32,611	44,743	9.2	813	1,250	1.54
E12-06	Continent al Hotel	Integration of renewable energies: - domestic hot water from solar	N	28,440	31,284	6.4	1,991	1,564	0.79
E12-07	Continent al Hotel	Integration of renewable energies: - electricity from PV solar sources	N	15,168	42,470	3.8	3,034	21,235	7.00
E12-08	Continent al Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	7,281	20,386	1.8	1,456	1,250	0.86
E12-09	Continent al Hotel	Electricity consumtion monitoring: AC consumtion	N	6,068	16,991	1.5	1,214	1,250	1.03
E12-10	Continent al Hotel	Windows shadow system:	N	3,034	8,494	0.8	607	849	1.40



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E13-01	Hotel Turist	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2028	7,950	10,772	5.6	712	100	0.14
E13-02	Hotel Turist	Information to guests: leaflets in the guests rooms	Y/15.10.2028	7,950	10,772	5.6	712	500	0.70
E13-03	Hotel Turist	Staff trainings	Y/15.10.2021	20,670	28,008	14.6	1,850	1,000	0.54
E13-04	Hotel Turist	Windows insulation: energy saving duble glazing	Ν	25,098	34,008	7.0	1,757	5,000	2.85
E13-05	Hotel Turist	Hot water saving: low- flow installed in the hotel rooms	Y/15.10.2021	34,185	46,321	9.5	813	1,000	1.23
E13-06	Hotel Turist	Integration of renewable energies: - domestic hot water from solar	N	24,844	27,328	5.6	1,739	1,366	0.79
E13-07	Hotel Turist	Integration of renewable energies: - electricity from PV solar sources	N	14,906	41,738	3.8	2,981	20,869	7.00
E13-08	Hotel Turist	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	7,155	20,034	1.8	1,431	1,000	0.70
E13-09	Hotel Turist	Electricity consumtion monitoring: AC consumtion	Ν	5,964	16,698	1.5	1,193	1,000	0.84





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E13-10	Hotel Turist	Windows shadow system:	Ν	2,981	8,347	0.8	596	835	1.40
E14-01	Articus Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2029	9,095	12,323	6.4	814	100	0.12
E14-02	Articus Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2029	9,095	12,323	6.4	814	500	0.61
E14-03	Articus Hotel	Staff trainings	Y/15.10.2021	23,646	32,041	16.7	2,116	1,000	0.47
E14-04	Articus Hotel	Windows insulation: energy saving duble glazing	N	28,712	38,905	8.0	2,010	6,800	3.38
E14-05	Articus Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	39,108	52,991	10.9	813	1,250	1.54
E14-06	Articus Hotel	Integration of renewable energies: - domestic hot water from solar	Ν	28,421	31,263	6.4	1,989	1,563	0.79
E14-07	Articus Hotel	Integration of renewable energies: - electricity from PV solar sources	Ν	17,053	47,748	4.3	3,411	23,874	7.00
E14-08	Articus Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	8,185	22,919	2.1	1,637	1,250	0.76





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E14-09	Articus Hotel	Electricity consumtion monitoring: AC consumtion	Ν	6,822	19,103	1.7	1,364	1,250	0.92
E14-10	Articus Hotel	Windows shadow system:	Ν	3,411	9,549	0.9	682	955	1.40
E15-01	Casa Odeon	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	2,033	2,893	1.5	193	100	0.52
E15-02	Casa Odeon	Information to guests: leaflets in the guests rooms	Y/15.10.2021	2,033	2,893	1.5	193	500	2.60
E15-03	Casa Odeon	Staff trainings	Y/15.10.2021	5,286	7,522	3.9	501	1,000	2.00
E15-04	Casa Odeon	Windows insulation: energy saving duble glazing	Ν	6,418	9,133	1.9	449	2,500	5.56
E15-05	Casa Odeon	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	8,742	12,440	2.6	813	500	0.62
E15-06	Casa Odeon	Integration of renewable energies: - domestic hot water from solar	Ν	7,624	8,386	1.7	534	419	0.79
E15-07	Casa Odeon	Integration of renewable energies: - electricity from PV solar sources	N	4,828	13,519	1.2	966	6,760	7.00





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E15-08	Casa Odeon	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,318	6,489	0.6	464	500	1.08
E15-09	Casa Odeon	Electricity consumtion monitoring: AC consumtion	Ν	1,932	5,409	0.5	386	500	1.29
E15-10	Casa Odeon	Windows shadow system:	Ν	966	2,704	0.2	193	270	1.40
E16-01	Pensiune a Mea	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	2,280	3,206	1.7	213	100	0.47
E16-02	Pensiune a Mea	Information to guests: leaflets in the guests rooms	Y/15.10.2021	2,280	3,206	1.7	213	500	2.35
E16-03	Pensiune a Mea	Staff trainings	Y/15.10.2021	5,928	8,335	4.3	554	1,000	1.81
E16-04	Pensiune a Mea	Windows insulation: energy saving duble glazing	Ν	7,198	10,120	2.1	504	2,500	4.96
E16-05	Pensiune a Mea	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	9,804	13,784	2.8	813	500	0.62
E16-06	Pensiune a Mea	Integration of renewable energies: - domestic hot water from solar	Ν	13,680	15,048	3.1	958	752	0.79





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E16-07	Pensiune a Mea	Integration of renewable energies: - electricity from PV solar sources	N	5,130	14,364	1.3	1,026	7,182	7.00
E16-08	Pensiune a Mea	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,462	6,895	0.6	492	500	1.02
E16-09	Pensiune a Mea	Electricity consumtion monitoring: AC consumtion	N	2,052	5,747	0.5	410	500	1.22
E16-10	Pensiune a Mea	Windows shadow system:	N	1,026	2,873	0.3	205	287	1.40
E17-01	Villa Silvia	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	3,680	4,986	2.6	329	100	0.30
E17-02	Villa Silvia	Information to guests: leaflets in the guests rooms	Y/15.10.2021	3,680	4,986	2.6	329	500	1.52
E17-03	Villa Silvia	Staff trainings	Y/15.10.2021	9,568	12,965	6.7	856	1,000	1.17
E17-04	Villa Silvia	Windows insulation: energy saving duble glazing	Ν	11,618	15,742	3.2	813	8,600	10.57
E17-05	Villa Silvia	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	15,824	21,442	4.4	813	600	0.74





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E17-06	Villa Silvia	Integration of renewable energies: - domestic hot water from solar	Ν	11,500	12,650	2.6	805	633	0.79
E17-07	Villa Silvia	Integration of renewable energies: - electricity from PV solar sources	Ν	6,900	19,320	1.7	1,380	9,660	7.00
E17-08	Villa Silvia	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	3,312	9,274	0.8	662	600	0.91
E17-09	Villa Silvia	Electricity consumtion monitoring: AC consumtion	Ν	552	600	0.7	552	600	1.09
E17-10	Villa Silvia	Windows shadow system:	Ν	1,380	3,864	0.3	276	386	1.40
E18-01	Bradu Pension	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	3,929	5,191	2.7	341	100	0.29
E18-02	Bradu Pension	Information to guests: leaflets in the guests rooms	Y/15.10.2021	3,929	5,191	2.7	341	500	1.46
E18-03	Bradu Pension	Staff trainings	Y/15.10.2021	10,216	13,496	7.0	888	1,000	1.13
E18-04	Bradu Pension	Windows insulation: energy saving duble glazing	Ν	12,405	16,387	3.4	868	8,000	9.21





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E18-05	Bradu Pension	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	16,896	22,320	4.6	813	700	0.86
E18-06	Bradu Pension	Integration of renewable energies: - domestic hot water from solar	Ν	19,647	21,612	4.4	1,375	4,430	3.22
E18-07	Bradu Pension	Integration of renewable energies: - electricity from PV solar sources	Ν	6,385	17,879	1.6	1,277	8,939	7.00
E18-08	Bradu Pension	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	3,065	8,582	0.8	613	700	1.14
E18-09	Bradu Pension	Electricity consumtion monitoring: AC consumtion	Ν	2,555	7,153	0.6	511	700	1.37
E18-10	Bradu Pension	Windows shadow system:	N	1,277	3,576	0.3	255	358	1.40
E19-01	Hotel Belvedere 1	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	6,174	8,786	4.6	585	100	0.17
E19-02	Hotel Belvedere 1	Information to guests: leaflets in the guests rooms	Y/15.10.2021	6,174	8,786	4.6	585	500	0.86





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E19-03	Hotel Belvedere 1	Staff trainings	Y/15.10.2021	16,052	22,843	11.9	1,520	1,000	0.66
E19-04	Hotel Belvedere 1	Windows insulation: energy saving duble glazing	N	19,491	27,736	5.7	1,364	12,000	8.80
E19-05	Hotel Belvedere 1	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	26,548	37,778	7.7	813	1,000	1.23
E19-06	Hotel Belvedere 1	Integration of renewable energies: - domestic hot water from solar	N	23,153	25,468	5.2	1,621	1,273	0.79
E19-07	Hotel Belvedere 1	Integration of renewable energies: - electricity from PV solar sources	N	14,663	41,057	3.7	2,933	20,529	7.00
E19-08	Hotel Belvedere 1	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	7,038	19,707	1.8	1,408	1,000	0.71
E19-09	Hotel Belvedere 1	Electricity consumtion monitoring: AC consumtion	Ν	5,866	16,426	1.5	1,173	1,000	0.85
E19-10	Hotel Belvedere 1	Windows shadow system:	Ν	2,933	8,211	0.7	587	821	1.40
E20-01	Stubeanu Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify	Y/15.10.2021	5,365	7,087	3.7	466	100	0.21





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		abnormal changes in energy consumtion							
E20-02	Stubeanu Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2021	5,365	7,087	3.7	466	500	1.07
E20-03	Stubeanu Hotel	Staff trainings	Y/15.10.2021	13,949	18,427	9.6	1,212	1,000	0.82
E20-04	Stubeanu Hotel	Windows insulation: energy saving duble glazing	N	16,937	22,374	4.6	1,186	14,500	12.23
E20-05	Stubeanu Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	23,070	30,475	6.2	813	950	1.17
E20-06	Stubeanu Hotel	Integration of renewable energies: - domestic hot water from solar	N	26,825	29,508	6.0	1,878	1,475	0.79
E20-07	Stubeanu Hotel	Integration of renewable energies: - electricity from PV solar sources	N	8,718	24,411	2.2	1,744	12,205	7.00
E20-08	Stubeanu Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	4,185	11,717	1.1	837	950	1.14
E20-09	Stubeanu Hotel	Electricity consumtion monitoring: AC consumtion	N	3,488	9,766	0.9	698	950	1.36
E20-10	Stubeanu Hotel	Windows shadow system:	Ν	1,744	4,882	0.4	349	488	1.40



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65



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E21-01	Bertha House	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	4,966	6,982	3.6	464	100	0.22
E21-02	Bertha House	Information to guests: leaflets in the guests rooms	Y/15.10.2021	4,966	6,982	3.6	464	500	1.08
E21-03	Bertha House	Staff trainings	Y/15.10.2021	12,912	18,154	9.4	1,206	1,000	0.83
E21-04	Bertha House	Windows insulation: energy saving duble glazing	Ν	15,678	22,044	4.5	1,097	12,000	10.93
E21-05	Bertha House	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	21,355	30,025	6.2	813	1,050	1.29
E21-06	Bertha House	Integration of renewable energies: - domestic hot water from solar	Ν	29,797	32,777	6.7	2,086	1,639	0.79
E21-07	Bertha House	Integration of renewable energies: - electricity from PV solar sources	N	11,174	31,287	2.8	2,235	15,644	7.00
E21-08	Bertha House	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	5,363	15,018	1.4	1,073	1,050	0.98





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E21-09	Bertha House	Electricity consumtion monitoring: AC consumtion	Ν	4,470	12,517	1.1	894	1,050	1.17
E21-10	Bertha House	Windows shadow system:	Ν	2,235	6,257	0.6	447	626	1.40
E22-01	Katalin Pension	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	1,669	2,205	1.1	145	100	0.69
E22-02	Katalin Pension	Information to guests: leaflets in the guests rooms	Y/15.10.2021	1,669	2,205	1.1	145	500	3.45
E22-03	Katalin Pension	Staff trainings	Y/15.10.2021	4,340	5,733	3.0	377	1,000	2.65
E22-04	Katalin Pension	Windows insulation: energy saving duble glazing	Ν	5,270	6,961	1.4	369	2,400	6.51
E22-05	Katalin Pension	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	7,178	9,482	1.9	813	500	0.62
E22-06	Katalin Pension	Integration of renewable energies: - domestic hot water from solar	Ν	8,346	9,181	1.9	584	459	0.79
E22-07	Katalin Pension	Integration of renewable energies: - electricity from PV solar sources	N	2,712	7,595	0.7	542	3,797	7.00





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E22-08	Katalin Pension	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	1,302	3,646	0.3	260	500	1.92
E22-09	Katalin Pension	Electricity consumtion monitoring: AC consumtion	Ν	1,085	3,039	0.3	217	500	2.30
E22-10	Katalin Pension	Windows shadow system:	Ν	542	1,519	0.1	108	152	1.40
E23-01	S'Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	2,935	4,176	2.2	278	100	0.36
E23-02	S'Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2021	2,935	4,176	2.2	278	500	1.80
E23-03	S'Hotel	Staff trainings	Y/15.10.2021	7,630	10,858	5.6	723	1,000	1.38
E23-04	S'Hotel	Windows insulation: energy saving duble glazing	Ν	9,265	13,184	2.7	649	7,800	12.03
E23-05	S'Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	12,620	17,958	3.7	813	500	0.62
E23-06	S'Hotel	Integration of renewable energies: - domestic hot water from solar	N	11,006	12,106	2.5	770	605	0.79





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E23-07	S'Hotel	Integration of renewable energies: - electricity from PV solar sources	Ν	6,970	19,516	1.8	1,394	9,758	7.00
E23-08	S'Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	3,346	9,368	0.8	669	500	0.75
E23-09	S'Hotel	Electricity consumtion monitoring: AC consumtion	Ν	2,789	7,808	0.7	558	500	0.90
E23-10	S'Hotel	Windows shadow system:	Ν	1,394	3,903	0.4	279	390	1.40
E24-01	Pensiune a Pui de Urs	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	3,254	4,410	2.3	291	100	0.34
E24-02	Pensiune a Pui de Urs	Information to guests: leaflets in the guests rooms	Y/15.10.2021	3,254	4,410	2.3	291	500	1.72
E24-03	Pensiune a Pui de Urs	Staff trainings	Y/15.10.2021	8,461	11,465	6.0	757	1,000	1.32
E24-04	Pensiune a Pui de Urs	Windows insulation: energy saving duble glazing	Ν	10,274	13,921	2.9	719	7,000	9.73
E24-05	Pensiune a Pui de Urs	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	13,994	18,962	3.9	813	500	0.62





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E24-06	Pensiune a Pui de Urs	Integration of renewable energies: - domestic hot water from solar	N	10,170	11,187	2.3	712	559	0.79
E24-07	Pensiune a Pui de Urs	Integration of renewable energies: - electricity from PV solar sources	N	6,102	17,086	1.5	1,220	8,543	7.00
E24-08	Pensiune a Pui de Urs	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,929	8,201	0.7	586	500	0.85
E24-09	Pensiune a Pui de Urs	Electricity consumtion monitoring: AC consumtion	Ν	2,441	6,836	0.6	488	500	1.02
E24-10	Pensiune a Pui de Urs	Windows shadow system:	N	1,220	3,417	0.3	244	342	1.40
E25-01	BB 16 Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	6,200	8,717	4.5	579	100	0.17
E25-02	BB 16 Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2021	6,200	8,717	4.5	579	500	0.86
E25-03	BB 16 Hotel	Staff trainings	Y/15.10.2021	16,120	22,665	11.8	1,506	1,000	0.66
E25-04	BB 16 Hotel	Windows insulation: energy saving duble glazing	N	19,573	27,520	5.6	1,370	14,500	10.58





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E25-05	BB 16 Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	26,660	37,484	7.7	813	900	1.11
E25-06	BB 16 Hotel	Integration of renewable energies: - domestic hot water from solar	N	37,200	40,920	8.4	2,604	2,046	0.79
E25-07	BB 16 Hotel	Integration of renewable energies: - electricity from PV solar sources	N	13,950	39,060	3.5	2,790	19,530	7.00
E25-08	BB 16 Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	6,696	18,749	1.7	1,339	900	0.67
E25-09	BB 16 Hotel	Electricity consumtion monitoring: AC consumtion	N	5,581	15,627	1.4	1,116	900	0.81
E25-10	BB 16 Hotel	Windows shadow system:	N	2,790	7,812	0.7	558	781	1.40
E26-01	I. Birtha Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2021	5,879	8,066	4.2	534	100	0.19
E26-02	I. Birtha Hotel	Information to guests: leaflets in the guests rooms	Y/15.10.2021	5,879	8,066	4.2	534	500	0.94
E26-03	I. Birtha Hotel	Staff trainings	Y/15.10.2021	15,285	20,971	10.9	1,388	1,000	0.72





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E26-04	I. Birtha Hotel	Windows insulation: energy saving duble glazing	N	18,559	25,463	5.2	1,299	14,000	10.78
E26-05	I. Birtha Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Y/15.10.2021	25,279	34,683	7.1	1,770	850	0.48
E26-06	I. Birtha Hotel	Integration of renewable energies: - domestic hot water from solar	N	22,046	24,250	5.0	1,543	1,213	0.79
E26-07	I. Birtha Hotel	Integration of renewable energies: - electricity from PV solar sources	N	11,758	32,921	3.0	2,352	16,461	7.00
E26-08	I. Birtha Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	5,644	15,802	1.4	1,129	850	0.75
E26-09	I. Birtha Hotel	Electricity consumtion monitoring: AC consumtion	Ν	4,704	13,171	1.2	941	850	0.90
E26-10	I. Birtha Hotel	Windows shadow system:	N	2,351	6,584	0.6	470	658	1.40
E27-01	Small Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,520	3,457	1.8	229	100	0.44




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E27-02	Small Hotel	Information to guests: leaflets in the guests rooms	On going	2,520	3,457	1.8	229	500	2.19
E27-03	Small Hotel	Staff trainings	Ν	6,552	8,989	4.7	595	1,000	1.68
E27-04	Small Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	10,836	14,867	3.0	813	750	0.92
E27-05	Small Hotel	Integration of renewable energies: - domestic hot water from solar	N	9,450	10,395	2.1	662	520	0.79
E27-06	Small Hotel	Integration of renewable energies: - electricity from PV solar sources	N	5,040	14,112	1.3	1,008	7,056	7.00
E27-07	Small Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,419	6,774	0.6	484	750	1.55
E27-08	Small Hotel	Electricity consumtion monitoring: AC consumtion	Ν	2,016	5,646	0.5	403	750	1.86
E27-09	Small Hotel	Windows shadow system:	Ν	1,008	2,822	0.3	202	282	1.40
E28-01	Casa din Deal Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,883	3,956	2.1	262	100	0.38





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E28-02	Casa din Deal Hotel	Information to guests: leaflets in the guests rooms	On going	2,883	3,956	2.1	262	500	1.91
E28-03	Casa din Deal Hotel	Staff trainings	N	7,496	10,285	5.3	681	1,000	1.47
E28-04	Casa din Deal Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	N	12,398	17,010	3.5	813	1,100	1.35
E28-05	Casa din Deal Hotel	Integration of renewable energies: - domestic hot water from solar	N	10,812	11,893	2.4	757	595	0.79
E28-06	Casa din Deal Hotel	Integration of renewable energies: - electricity from PV solar sources	N	5,766	16,146	1.5	1,153	8,073	7.00
E28-07	Casa din Deal Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,768	7,750	0.7	554	1,100	1.99
E28-08	Casa din Deal Hotel	Electricity consumtion monitoring: AC consumtion	Ν	2,307	6,460	0.6	461	1,100	2.38
E28-09	Casa din Deal Hotel	Windows shadow system:	Ν	1,153	3,229	0.3	231	323	1.40
E29-01	Casa Monica Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify	On going	2,438	3,344	1.7	221	100	0.45





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
		abnormal changes in energy consumtion							
E29-02	Casa Monica Hotel	Information to guests: leaflets in the guests rooms	On going	2,438	3,344	1.7	221	500	2.26
E29-03	Casa Monica Hotel	Staff trainings	Ν	6,338	8,695	4.5	575	1,000	1.74
E29-04	Casa Monica Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	N	10,481	14,380	2.9	813	800	0.98
E29-05	Casa Monica Hotel	Integration of renewable energies: - domestic hot water from solar	Ν	9,141	10,055	2.1	640	503	0.79
E29-06	Casa Monica Hotel	Integration of renewable energies: - electricity from PV solar sources	Ν	4,875	13,650	1.2	975	6,825	7.00
E29-07	Casa Monica Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,340	6,552	0.6	468	800	1.71
E29-08	Casa Monica Hotel	Electricity consumtion monitoring: AC consumtion	Ν	1,950	5,461	0.5	390	800	2.05
E29-09	Casa Monica Hotel	Windows shadow system:	N	975	2,730	0.2	195	273	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E30-01	Zori de Zi Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,400	3,293	1.7	218	100	0.46
E30-02	Zori de Zi Hotel	Information to guests: leaflets in the guests rooms	On going	2,400	3,293	1.7	218	500	2.29
E30-03	Zori de Zi Hotel	Staff trainings	Ν	6,240	8,561	4.5	567	1,000	1.76
E30-04	Zori de Zi Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	10,320	14,159	2.9	813	900	1.11
E30-05	Zori de Zi Hotel	Integration of renewable energies: - domestic hot water from solar	N	9,000	9,900	2.0	630	495	0.79
E30-06	Zori de Zi Hotel	Integration of renewable energies: - electricity from PV solar sources	N	4,800	13,440	1.2	960	6,720	7.00
E30-07	Zori de Zi Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,304	6,451	0.6	461	900	1.95
E30-08	Zori de Zi Hotel	Electricity consumtion monitoring: AC consumtion	Ν	1,920	5,377	0.5	384	900	2.34
E30-09	Zori de Zi Hotel	Windows shadow system:	Ν	960	2,688	0.2	192	269	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E31-01	Casa Roua	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,987	4,098	2.1	271	100	0.37
E31-02	Casa Roua	Information to guests: leaflets in the guests rooms	On going	2,987	4,098	2.1	271	500	1.84
E31-03	Casa Roua	Staff trainings	N	7,766	10,655	5.5	705	1,000	1.42
E31-04	Casa Roua	Hot water saving: low- flow devices have been installed in the hotel rooms	N	12,844	17,622	3.6	813	1,250	1.54
E31-05	Casa Roua	Integration of renewable energies: - domestic hot water from solar	N	11,201	12,321	2.5	784	616	0.79
E31-06	Casa Roua	Integration of renewable energies: - electricity from PV solar sources	N	5,974	16,727	1.5	1,195	8,364	7.00
E31-07	Casa Roua	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,868	8,029	0.7	574	1,250	2.18
E31-08	Casa Roua	Electricity consumtion monitoring: AC consumtion	N	2,390	6,692	0.6	478	1,250	2.61
E31-09	Casa Roua	Windows shadow system:	N	1,195	3,345	0.3	239	335	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E32-01	Hotel Art	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,654	3,641	1.9	241	100	0.42
E32-02	Hotel Art	Information to guests: leaflets in the guests rooms	On going	2,654	3,641	1.9	241	500	2.08
E32-03	Hotel Art	Staff trainings	N	6,899	9,466	4.9	626	1,000	1.60
E32-04	Hotel Art	Hot water saving: low- flow devices have been installed in the hotel rooms	N	11,410	15,655	3.2	813	1,500	1.85
E32-05	Hotel Art	Integration of renewable energies: - domestic hot water from solar	N	9,951	10,946	2.2	697	547	0.79
E32-06	Hotel Art	Integration of renewable energies: - electricity from PV solar sources	N	5,307	14,860	1.3	1,061	7,430	7.00
E32-07	Hotel Art	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,547	7,133	0.6	509	1,500	2.94
E32-08	Hotel Art	Electricity consumtion monitoring: AC consumtion	N	2,123	5,945	0.5	425	1,500	3.53
E32-09	Hotel Art	Windows shadow system:	N	1,061	2,972	0.3	212	297	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E33-01	Hotel Timea	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,100	2,881	1.5	191	100	0.52
E33-02	Hotel Timea	Information to guests: leaflets in the guests rooms	On going	2,100	2,881	1.5	191	500	2.62
E33-03	Hotel Timea	Staff trainings	Ν	5,460	7,491	3.9	496	1,000	2.02
E33-04	Hotel Timea	Hot water saving: low- flow devices have been installed in the hotel rooms	N	9,030	12,389	2.5	813	1,550	1.91
E33-05	Hotel Timea	Integration of renewable energies: - domestic hot water from solar	N	7,875	8,663	1.8	551	433	0.79
E33-06	Hotel Timea	Integration of renewable energies: - electricity from PV solar sources	N	4,200	11,760	1.1	840	5,880	7.00
E33-07	Hotel Timea	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,016	5,645	0.5	403	1,550	3.84
E33-08	Hotel Timea	Electricity consumtion monitoring: AC consumtion	N	1,680	4,705	0.4	336	1,550	4.61
E33-09	Hotel Timea	Windows shadow system:	N	840	2,352	0.2	168	235	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E34-01	Casa Verde	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	1,932	2,651	1.4	175	100	0.57
E34-02	Casa Verde	Information to guests: leaflets in the guests rooms	On going	1,932	2,651	1.4	175	500	2.85
E34-03	Casa Verde	Staff trainings	Ν	5,023	6,892	3.6	456	1,000	2.19
E34-04	Casa Verde	Hot water saving: low- flow devices have been installed in the hotel rooms	N	8,308	11,398	2.3	813	900	1.11
E34-05	Casa Verde	Integration of renewable energies: - domestic hot water from solar	N	7,245	7,970	1.6	507	398	0.79
E34-06	Casa Verde	Integration of renewable energies: - electricity from PV solar sources	Ν	3,864	10,819	1.0	773	5,410	7.00
E34-07	Casa Verde	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	1,855	5,193	0.5	371	900	2.43
E34-08	Casa Verde	Electricity consumtion monitoring: AC consumtion	N	1,546	4,329	0.4	309	900	2.91
E34-09	Casa Verde	Windows shadow system:	Ν	773	2,164	0.2	155	216	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E35-01	Pensiune a Dora	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,424	3,326	1.7	220	100	0.45
E35-02	Pensiune a Dora	Information to guests: leaflets in the guests rooms	On going	2,424	3,326	1.7	220	500	2.27
E35-03	Pensiune a Dora	Staff trainings	N	6,303	8,648	4.5	572	1,000	1.75
E35-04	Pensiune a Dora	Hot water saving: low- flow devices have been installed in the hotel rooms	N	10,425	14,303	2.9	813	950	1.17
E35-05	Pensiune a Dora	Integration of renewable energies: - domestic hot water from solar	N	9,092	10,001	2.1	636	500	0.79
E35-06	Pensiune a Dora	Integration of renewable energies: - electricity from PV solar sources	N	4,849	13,577	1.2	970	6,788	7.00
E35-07	Pensiune a Dora	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,327	6,517	0.6	465	950	2.04
E35-08	Pensiune a Dora	Electricity consumtion monitoring: AC consumtion	Ν	1,940	5,432	0.5	388	950	2.45
E35-09	Pensiune a Dora	Windows shadow system:	N	970	2,715	0.2	194	272	1.40





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E36-01	Pensiune a La Bunica	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,016	2,766	1.4	183	100	0.55
E36-02	Pensiune a La Bunica	Information to guests: leaflets in the guests rooms	On going	2,016	2,766	1.4	183	500	2.73
E36-03	Pensiune a La Bunica	Staff trainings	N	5,242	7,191	3.7	476	1,000	2.10
E36-04	Pensiune a La Bunica	Hot water saving: low- flow devices have been installed in the hotel rooms	N	8,669	11,894	2.4	813	1,100	1.35
E36-05	Pensiune a La Bunica	Integration of renewable energies: - domestic hot water from solar	N	7,560	8,316	1.7	529	416	0.79
E36-06	Pensiune a La Bunica	Integration of renewable energies: - electricity from PV solar sources	Ν	4,032	11,290	1.0	806	5,645	7.00
E36-07	Pensiune a La Bunica	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	1,935	5,419	0.5	387	1,100	2.84
E36-08	Pensiune a La Bunica	Electricity consumtion monitoring: AC consumtion	Ν	1,613	4,517	0.4	323	1,100	3.41





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E36-09	Pensiune a La Bunica	Windows shadow system:	N	806	2,258	0.2	161	226	1.40
E37-01	Colt de Rai Hotel	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,490	3,417	1.8	226	100	0.44
E37-02	Colt de Rai Hotel	Information to guests: leaflets in the guests rooms	On going	2,490	3,417	1.8	226	500	2.21
E37-03	Colt de Rai Hotel	Staff trainings	N	6,475	8,884	4.6	588	1,000	1.70
E37-04	Colt de Rai Hotel	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	10,709	14,692	3.0	813	1,250	1.54
E37-05	Colt de Rai Hotel	Integration of renewable energies: - domestic hot water from solar	Ν	9,339	10,273	2.1	654	514	0.79
E37-06	Colt de Rai Hotel	Integration of renewable energies: - electricity from PV solar sources	Ν	4,981	13,946	1.3	996	6,973	7.00
E37-07	Colt de Rai Hotel	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	N	2,391	6,694	0.6	478	1,250	2.61





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E37-08	Colt de Rai Hotel	Electricity consumtion monitoring: AC consumtion	Ν	1,993	5,580	0.5	399	1,250	3.14
E37-09	Colt de Rai Hotel	Windows shadow system:	Ν	996	2,789	0.3	199	279	1.40
E38-01	Pensiune a 2 Margaret e	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,390	3,279	1.7	217	100	0.46
E38-02	Pensiune a 2 Margaret e	Information to guests: leaflets in the guests rooms	On going	2,390	3,279	1.7	217	500	2.30
E38-03	Pensiune a 2 Margaret e	Staff trainings	Ν	6,213	8,524	4.4	564	1,000	1.77
E38-04	Pensiune a 2 Margaret e	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	10,275	14,098	2.9	813	1,200	1.48
E38-05	Pensiune a 2 Margaret e	Integration of renewable energies: - domestic hot water from solar	Ν	8,961	9,857	2.0	627	493	0.79
E38-06	Pensiune a 2 Margaret e	Integration of renewable energies: - electricity from PV solar sources	Ν	4,779	13,382	1.2	956	6,691	7.00





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E38-07	Pensiune a 2 Margaret e	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,294	6,423	0.6	459	1,200	2.62
E38-08	Pensiune a 2 Margaret e	Electricity consumtion monitoring: AC consumtion	N	1,912	5,354	0.5	382	1,200	3.14
E38-09	Pensiune a 2 Margaret e	Windows shadow system:	N	956	2,676	0.2	191	268	1.40
E39-01	Hotel Escalade 2	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	1,700	2,332	1.2	154	100	0.65
E39-02	Hotel Escalade 2	Information to guests: leaflets in the guests rooms	On going	1,700	2,332	1.2	154	500	3.24
E39-03	Hotel Escalade 2	Staff trainings	N	4,420	6,064	3.2	401	1,000	2.49
E39-04	Hotel Escalade 2	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	7,310	10,029	2.1	813	1,600	1.97
E39-05	Hotel Escalade 2	Integration of renewable energies: - domestic hot water from solar	N	6,375	7,013	1.4	446	351	0.79





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
E39-06	Hotel Escalade 2	Integration of renewable energies: - electricity from PV solar sources	Ν	3,400	9,520	0.9	680	4,760	7.00
E39-07	Hotel Escalade 2	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	1,632	4,570	0.4	326	1,600	4.90
E39-08	Hotel Escalade 2	Electricity consumtion monitoring: AC consumtion	Ν	1,360	3,809	0.3	272	1,600	5.88
E39-09	Hotel Escalade 2	Windows shadow system:	Ν	680	1,904	0.2	136	190	1.40
E40-01	Hotel Aosta	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	On going	2,672	3,666	1.9	243	100	0.41
E40-02	Hotel Aosta	Information to guests: leaflets in the guests rooms	On going	2,672	3,666	1.9	243	500	2.06
E40-03	Hotel Aosta	Staff trainings	Ν	6,947	9,532	5.0	631	1,000	1.59
E40-04	Hotel Aosta	Hot water saving: low- flow devices have been installed in the hotel rooms	Ν	11,490	15,764	3.2	813	1,500	1.85
E40-05	Hotel Aosta	Integration of renewable energies: -	Ν	10,020	11,022	2.3	701	551	0.79





ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
		domestic hot water from solar							
E40-06	Hotel Aosta	Integration of renewable energies: - electricity from PV solar sources	Ν	5,344	14,963	0.6	513	1,500	2.92
E40-07	Hotel Aosta	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	2,565	7,182	0.6	513	1,500	2.92
E40-08	Hotel Aosta	Electricity consumtion monitoring: AC consumtion	Ν	2,138	5,986	0.5	428	1,500	3.51
E40-09	Hotel Aosta	Windows shadow system:	Ν	1,069	2,993	0.3	214	299	1.40
E41-01	Hotel Hermes	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion	Y/15.10.2025	5,258	7,125	1.0	471	100	0.21
E41-02	Hotel Hermes	Information to guests: leaflets in the guests rooms	Y/15.10.2025	5,258	7,125	1.0	471	500	1.06
E41-03	Hotel Hermes	Staff trainings	Y/15.10.2021	13,672	18,525	2.6	1,224	1,000	0.82
E41-04	Hotel Hermes	Windows insulation: energy saving duble glazing	Ν	9,960	10,957	2.2	697	2,500	3.59
E41-05	Hotel Hermes	Hot water saving: low- flow devices have been	Y/15.10.2021	5,653	6,218	1.2	813	700	0.86



Horizon 2020 European Union Funding for Research & Innovation

This project has received funding from

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innovation programme under grant agreement No 847034



ECMs Ref.	SME name	ECM description	Implemented Y/N, provide date if yes	Final Energy (kWh/annum)	Primary Energy (kWh/annum) (1.1 for gas and 2.8 for electricity Romanian PE Conversion)	Carbon (tCO2/annum)	Cost Savings (€/annum)	Investmen t (€)	Simple Payback Period
		installed in the hotel rooms							
E41-06	Hotel Hermes	Integration of renewable energies: - domestic hot water from solar	N	16,433	18,076	3.7	1,150	904	0.79
E41-07	Hotel Hermes	Integration of renewable energies: - electricity from PV solar sources	N	9,860	27,607	0.9	1,972	13,803	7.00
E41-08	Hotel Hermes	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms	Ν	4,733	13,251	0.4	947	700	0.74
E41-09	Hotel Hermes	Electricity consumtion monitoring: AC consumtion	N	3,945	11,045	0.4	789	700	0.89
E41-10	Hotel Hermes	Windows shadow system:	N	1,972	5,521	0.2	394	552	1.40









# Annex 2 Sample ECM Sheets and Expert Agreements

Samples of ECMs sheets signed off and expert agreements

# **Ireland pilot**

## Declaration of SPEDIER Project Impact

I, <u>Brian McEntee</u> of <u>St Tola Goats Cheese</u> hereby acknowledge the support from the SPEEDIER service as a deciding factor for the consideration of the Energy Conservation Measures (ECMs) listed below:

ECM Name	ECM Ref No.	ECM Spend (€)	Energy Savings (kWh)	Carbon Savings (Tco2)	Cost Savings / year (€)	5 NPV (€)
Change Boiler from Kerosene to LPG	ECM Sheet- 07-01	€4,800	7,820	7.96	€2,007	€3,213
Thermostat replacements	ECM Sheet- 07-02	€52	3,064	0.70	€343	€1,318
Insulate Heat Exchanger, Piping to and from the ice bank	ECM Sheet- 07-03	¢600	2,315	0.75	€413	€1,047
Walk in Fridge: Evaporator & Condenser Cleaning	ECM Sheet- 07-04	€100	1,600	0.52	€1,038	€1,038
Walk in Fridges Seal replacement	ECM Sheet- 07-05	€500	5,440	1.77	€969	€3,371
Wash Hand Basin Optimisation	ECM Sheet- 07-06	¢25	3,054	0.70	€342	€1,341
ice Bank Energy Reduction	ECM Sheet- 07-07	€0	466	0.15	€83	€332
Total		€6,077	43,537	13	€5,196	€11,660

With adequate time and resources all above would be implemented, the support from the SPEEDIER service has also been proven helpful with better understanding of site systems and processes, raising awareness of climate challenges, and improved energy efficiency for <u>St Tola</u> <u>Goats Cheese</u>.

SME Signature:

Date: 15/9/2/





# Commitment for Staff Training

I, <u>Nicholas Ryan</u> of <u>Tipperary Glass Ltd</u> hereby acknowledge the support from the SPEEDIER service and intend to provide training to the number of staff outlined below:

No. of staff intended for training		
3		
13		

Nicholic Pyr\_Date: 10/11/2021 SME Signature:





## Italy pilot

©vesta



### Ancona, 29th september 2021

Hereby, the undersigned Simone Francesco Fedeli, C.E.O. at Ve.S.T.A. srl, a company currently operating on the Italian market in the field of energy services, confirms that he has collaborated with the research activities of Energy & Strategy of Politecnico di Milano in the field of energy efficiency, which are the subject of the SPEEDIER project.

In particular, thanks to the collaboration with Energy & Strategy research group of Politecnico di Milano, we became aware of the tools for the evaluation of energy efficiency projects and methods for conducting energy audits that also include ring-fencing and zero-budget mechanisms, such as those at the basis of the SPEEDIER project.

These tools have helped to strengthen the approach to the audit process, adopted by the company to several SMEs in the Italian context.

As part of the collaboration mentioned above, I also confirm that we have shared with Energy & Strategy research group of Politecnico di Milano, and in compliance with the regulations on the processing of sensitive data, information and aggregate data relating to the results obtained and expected by the companies involved (in terms, for example, of investments made, economic and energy savings, etc.).

Sincerely,

Simone Francesco Fedeli ,

Ve.s.t.a. S.r.I. P. .... Sede Leg: Burago, 6- 20060 Omago (MB) R.I. - C.F. e Part. IVA 05770780962 Iscritta al REA. di Monza nº 1847070





# Romania pilot

### Declaration of SPEEDIER Project Impact

I, Oana UNGUREANU manager of Le Boutique Hotel Moxa hereby acknowledge the support from the SPEEDIER service as a deciding factor for the consideration of the Energy Conservation Measures (ECMs) listed below:

SME,	La Routique Hotal Mova
SIMES	haserality
Building Surface	1 680
Booms	4,000
Staff	30
Stan	1
climate zone	2
Final Energy total	434,000
electric	18,180
gas/heating	191,584
gas/hot water	224,903
Consum final energy/sqm	259
Consum Primary Energy total	509,039
electric	50,904
gas/heating	210,742
gas/hot water	247,393
ECMs	ECMs
E01-01	Energy Consumtion monitoring: energy consumtion is regularly monitored in order to assess energy savings and to identify abnormal changes in energy consumtion
Implemented Y/N, provide date if yes	Y/01.09.2021
Energy type (gas, electricity etc)	el.&gas
kWh/annum	10,181
kg CO2/annum	1,970
Investment costs	100
E01-02	information to guests: leaflets in the guests rooms
Implemented V/N provide date if yes	Y/01.09.2021
Energy type (pas electricity etc)	el &east
kWh/annum	10.182
ka CO2/annum	1970
Investment costs	500
E01 03	Chaff training
E01-03	Start wannings
Energy type (application)	1/13.10.2021
chergy type (gas, electricity etc)	tr.ogas 26 470
kwnyannum	20,412
kg CO2/annum	5/122
Investment costs	1,000
E01-04	Hot water saving: low-now devices have been installed in the noter rooms
implemented Y/N, provide date if yes	N
Energy type (gas, electricity etc)	885
kWh/annum	41,119
kg CO2/annum	8,429
Investment costs	1,500
E01-05	Automatic control of electricity in guest rooms: "economy box" to shut down the electricity when guests leave their rooms
Implemented Y/N, provide date if yes	N
Energy type (gas, electricity etc)	el.
kWb/annum	6,108
kg CO2/annum	550
Investment costs	1,500
Total: Savings	the second s
kWh/annum	94,061
kg CO2/annum	18,041
investment costs	4,600
CONTRACTOR OF A DESCRIPTION OF A DESCRIP	
94,061	KWD/annum
18,041	kg CO2/annum
4,600	investment costs
43	jstaff and decision makers trained by expert factor conversie energie finola vs energie primara
1.1	gaz
2.8	electric
0.205 kg/kwh	Co2gas
0.09 kg/kWh	Co2electric

With adequate time and resources, all the above would be implemented using the SPEEDIER **ring-fencing mechanism**. The support from the SPEEDIER service has also been proven helpful with a better understanding of site system and processes, raising awareness of climate challenges **through the 41 staff training**, and improved energy efficiency for **Le Boutique Hotel Moxa**.

15/10/2021 Date: SME signature





## **Spain pilot**

### 3. alGenio Marketing Online, S.L. contribution:

- The company assumes to participate in SPEEDIER training session with one person.
- The company understands to implement as much as possible from recommended ECMs starting with "no-cost measures" and to use the savings only for the implementation on more advanced ECMs.
- The company assumes to inform PCT Cartuja on the stage of the ECMs implementation.

### 4. Liability and Privacy

- Nothing in this Memorandum is deemed to create a legally enforceable agreement and consequently, no liability shall attach to either party in the event of its failure to carry out any activity outlined.
- Nothing in this Memorandum shall be construed as giving the right to any party to represent the other towards third parties, including the press and media.
- Each Party is responsible to comply with EU and national rules, regulations, and laws that may be relevant to the activities outlined in this Memorandum.
- Each Party shall take all reasonable precautions and put in place all necessary measures to
  prevent the disclosure of personal or sensitive data or information received under this
  Memorandum except from the legal obligations of reporting to the EC.

#### 5. Effective date and Termination

his Memorandum shall be in force from the date of signature.

arties may terminate this Memorandum of Understanding at any time.





