

Presentation of the ClimACT project to pilot schools in Madrid

With the purpose to present the ClimACT project, several small meetings were carried out by the CIEMAT team. In the follow table is presented the name of each pilot school, the date, duration and venue of each meeting and also the participants (Table 10).

Table 19 - Information about meeting between CIEMAT and pilot-schools in Madrid

Pilot-School	Date	Duration	Venue	Participants
EIS and CEIP Cardenal Cisneros	28/09/2016	2 hours	CEIP Cardenal Cisneros	SM/SC - Victor Manuel de Diego Rojas and María José Ovejero LCC - M ^a Pilar Martín Catalá, Carmelo Rojo & M ^a de la O Muñoz Teacher - M ^a Luisa Rodríguez Cuesta City hall collaborator - José Arjona Rojo
IES Gabriel García Márquez	30/09/2016	2 hours	IES Gabriel García Márquez	SM - Elia M ^a Añón Blasco SC - M ^a Paz López Pinchano LCC - Alicia Martínez Others teachers
IES Ortega y Gasset	05/10/2016	2 hours	IES Ortega y Gasset C/ Pintor El Greco s/n	SM - Carmen Reina SC - Francisco Benito Others teachers

Meeting about LCA data collection in pilot schools in Madrid

CIEMAT went to the premises of two pilot-school in order to discussed about the LCA data collection: IES Gabriel Garcia Márquez and IES Ortega y Gasset. Three meetings per pilot-school were carried out from December 2016 and January 2017 not only to better explain the pilot-schools' role in the ClimACT project but also to collect the LCA data. In Table 11 the detailed information about those meetings is presented.

Table 20 - Information about CIEMAT and Pilot-Schools meetings: LCA data collection

Pilot-School	Date	Duration	Venue	Participants
IES Ortega y Gasset	20/12/2016	2 hours	IES Ortega y Gasset (C/ Santa Fé)	María Paz López Pinchano
	11/01/2017	6 hours		LCC Alicia Martínez
	12/01/2017	6 hours		Others teachers
IES Gabriel García Márquez	01/12/2016	2 hours	IES Gabriel García Márquez	Carmen Reina
	13/12/2016	6 hours		Juan José García
	14/12/2016	6 hours		Others teachers

1 STAKEHOLDERS’ MEETING – IES ORTEGA Y GASSET

1 STAKEHOLDERS’ MEETING 1

1.1 Meetings in Region of Madrid, Spain. 2

1.1.1 Meeting with Low Carbon Coordinator of the IES Ortega y Gasset – Plan of Educational Activities. 2

1.1 Meetings in Region of Madrid, Spain.

1.1.1 Meeting with Low Carbon Coordinator of the IES Ortega y Gasset – Plan of Educational Activities.

Ana R: Gamarra from Ciemat met with Rosario de Lama, Low Carbon (LC) Coordinator of IES Ortega Y Gasset. The objective of the meeting is to make an overview of activities carried out in the school.

Table 1. List of participants in the meeting

Full Name	Affiliation
Rosario de Lama López	Ministry of Education, Culture and Sport
Ana Rosa Gamarra	Ciemat

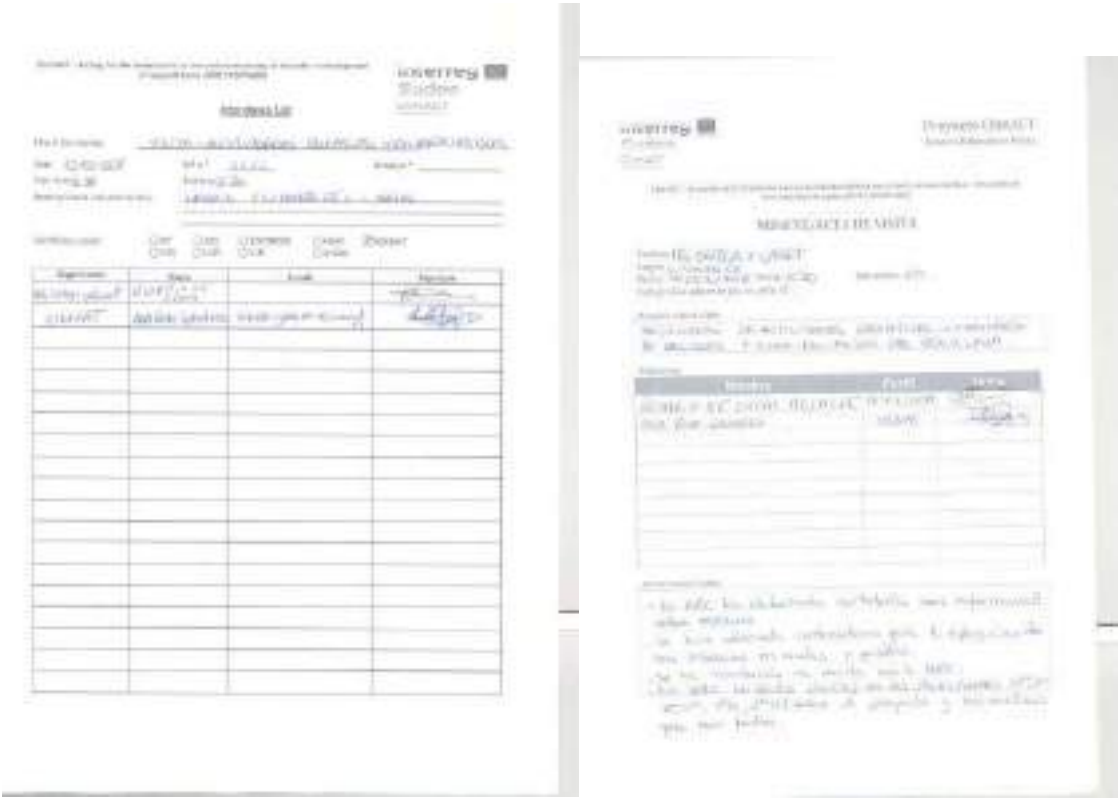


Figure 1. Attendance list

1.1.1.1.1 Agenda of the first meeting with LC coordinator of the IES Ortega y Gasset

ClimACT - Stakeholder Meeting in Alcalá de Henares		
Time	Session	Participants
10:30-10:45	Welcoming	Rosario de Lama Ana Rosa Gamarra
10:45 – 11:20	ClimACT actions reminder.	Rosario de Lama Ana Rosa Gamarra
11:20 - 12:30	Debate and answer to any doubts.	Rosario de Lama Ana Rosa Gamarra Students

Duration of the session: 120 minutes approximately.

1.1.1.1.2 Minute of the first meeting with LC Coordinator of the IES Ortega y Gasset

Welcome and opening

Rosario de Lama welcomed Ana R. Gamarra in the IES facilities. The object of visit and meeting is to see the developed actions, solve doubts and help the LC coordinator to drive the project in the school, as well as to evaluate the strategy to carried out the wastes campaign.

Overview of the discussion

Meeting started, Ana R. reminded the planned actions in the frame of the educational tasks of the Climact project, and remarks the role of the teachers and students in the development of the project. Rosario de Lama explained the actions developed up to now by students (LC Brigades). Actions are:

- Posters within of about waste segregation in the school, at home and info about special wastes collection.
- Presentation by the BRC (students) to the rest of students of the ClimACT Project. Students made a presentation to all the levels and classes.
- Creation of the Instagram account, called “@ortegarecicla” to disseminate the waste campaign awareness, managed by students.
- Waste campaign: installation of the container in classes to deposit the garbage in order to collect data for audits.

Rosario de Lama expressed the worry about the results since the Cleaning staff presented arguments to collaborate, so she has doubt about the results of the measurement. She also said that they are prepared the launching of the Ecocode Poster Constes. Regarding to the rest of contests (Solar Car Contest or Solar Oven Contest) she said that IES Ortega y Gasset are not

participating, at least for the present course, due to the involving of the other teachers and the required time to develop the action.

Both participants made a visit, by corridors and classes, to see the posters and the diffusion materials of the ClimACT project (see pictures).

After that, Ana R. Gamarra and Rosario de Lama went to a class where students which take part in the project as an active participants (LC Brigade). Student talked about the experience presenting the project to the rest of students, they explained the importance of the save energy and preserve the environment.

Conclusions

Some actions which involve students (LC Brigade) in the IES Ortega y Gasset are started, as well as the waste campaign awareness and data collection. In spite of some difficulties the waste campaign is being carried out.

[AOB linked the first meeting](#)

Picture of the visit.





2 STAKEHOLDERS’ MEETING

2 STAKEHOLDERS’ MEETING 1

2.1 Meetings in Region of Madrid, Spain. 2

2.1.1 Meeting with Low Carbon Coordinator of the IES Gabriel García Márquez – Plan
of Educational Activities. 2

2.1 Meetings in Region of Madrid, Spain.

2.1.1 Meeting with Low Carbon Coordinator of the IES Gabriel García Márquez – Plan of Educational Activities.

Ana R: Gamarra from Ciemat met with Alicia Martínez Burgos, Low Carbon (LC) Coordinator of IES Gabriel García Márquez. The objective of the meeting is to make an overview of activities carried out in the school and plan next tasks.

Table 1. List of participants in the meeting

Full Name	Affiliation
Alicia Martínez Burgos	LCCoordinator
Mª Paz López	SM/ Head of Secretary
Carmen Pérez	Teacher – 2 nd LCCoordinator
Ana Rosa Gamarra	Ciemat

CIEMACT - Acting for the transition to a low carbon economy in schools - development of support plans (action plans)

CIEMACT

Attestation

CIEMACT

Title of the meeting: Meeting between the LC and the Teacher

Date: 17/05/2017 17/05/2017 17/05/2017

Start time: 17:00 17:00 17:00

Meeting Place (city and country): Madrid, Spain

Handwritten / code: ☒ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO

Organization	Name	Initials	Signature
IES G. G. M.	Alicia Martínez Burgos		
"	Mª Paz López		
"	Carmen Pérez		
CIEMAT	Ana Rosa Gamarra		

CIEMACT - Acting for the transition to a low carbon economy in schools - development of support plans (action plans)

CIEMACT

Attestation

CIEMACT

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Date: 17/05/2017 17/05/2017 17/05/2017

Start time: 17:00 17:00 17:00

Meeting Place (city and country): Madrid, Spain

Handwritten / code: ☒ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO

Organization	Name	Initials	Signature
IES G. G. M.	Alicia Martínez Burgos		
"	Mª Paz López		
"	Carmen Pérez		
CIEMAT	Ana Rosa Gamarra		

Figure 1. Attendance list

2.1.1.1.1 Agenda of the first meeting with LC coordinator of the IES Gabriel García Márquez

ClimACT - Stakeholder Meeting in Alcalá de Henares		
Time	Session	Participants
10:45-11:00	Welcoming	Alicia Martínez Burgos Ana Rosa Gamarra
11:00 – 12:00	ClimACT actions reminder.	Alicia Martínez Burgos Ana Rosa Gamarra Carmen Pérez de Sevilla
12:00 - 13:00	Debate and answer to any doubts.	Alicia Martínez Burgos Ana Rosa Gamarra M ^o Paz López Pinchano

Duration of the session: 120 minutes approximately.

2.1.1.1.2 Minute of the first meeting with LC Coordinator of the IES Gabriel García Márquez

Welcome and opening

Alicia Martínez Burgos welcomed Ana R. Gamarra in the IES facilities. The object of visit and meeting is to see the developed actions, solve doubts and help the LC coordinator to drive the project in the school, as well as to evaluate the strategy to carry out the wastes campaign. In addition, the equipment installation has to be presented and planned.

Overview of the discussion

Meeting started, Ana R. reminded the planned actions in the frame of the educational tasks of the Climact project, and remarks the role of the teachers and students in the development of the project. Alicia Martínez Burgos explained the actions developed up to now by students (LC Brigades), and Carmen Perez talked about the status of ClimACT contest.

In the firsts part of the meeting the talk was focused on the behavioral actions. New behaviours actions are:

- Meeting provided by the City Hall about Organic wastes segregation in Madrid neighbors.
- Waste campaign: installation of the container in classes to deposit the garbage in order to collect data for audits and measure according with waste campaign table. School is also dealing with Ecomebes for the installation of containers/bin for segregation.

Regarding to the rest of contests (Solar Car Contest or Solar Oven Contest), Carmen said that IES Gabriel García Márquez has already built all solar cars (previously CIEMAT sent to school the kis of componenet to solar cars) and in a few days they will planned a race between students (pictures in AOB). They are not interested in participate in the rest of contest (Solar Oven or Poster). Ana R. Gamarra remarked the importance of take pictures and videos of the construction.

About materials, they are interesting in tshirts, but they think could not do any event this year because the time if the course (it is late to plan special events). Due to the School has a French language programme they showed interest in materials in french, so ana R. Gamrra will send to LCC (Alicia Martínez) the Rol material in French.

Ana R. Gamarra delivered the KPIs report with the info about the performance of the school and explained the structure and scores. At this time, M^º Paz joined the meeting, and she talked about other actions in developing:

- Bicycle parking was installed.
- Downlight of corridors were replaced by LED.
- It is propose the low emission glasses for windows of the south exposed facade.

Ana R. Gamarra asked M^º Paz about the technical info about the substitution and measures to include in the Action Plan of the school the info. M^º Paz will send to Ana R. Gamarra the related info. Ana R. Gamarra remarked the importance of take pictures and videos of the actions and measures.

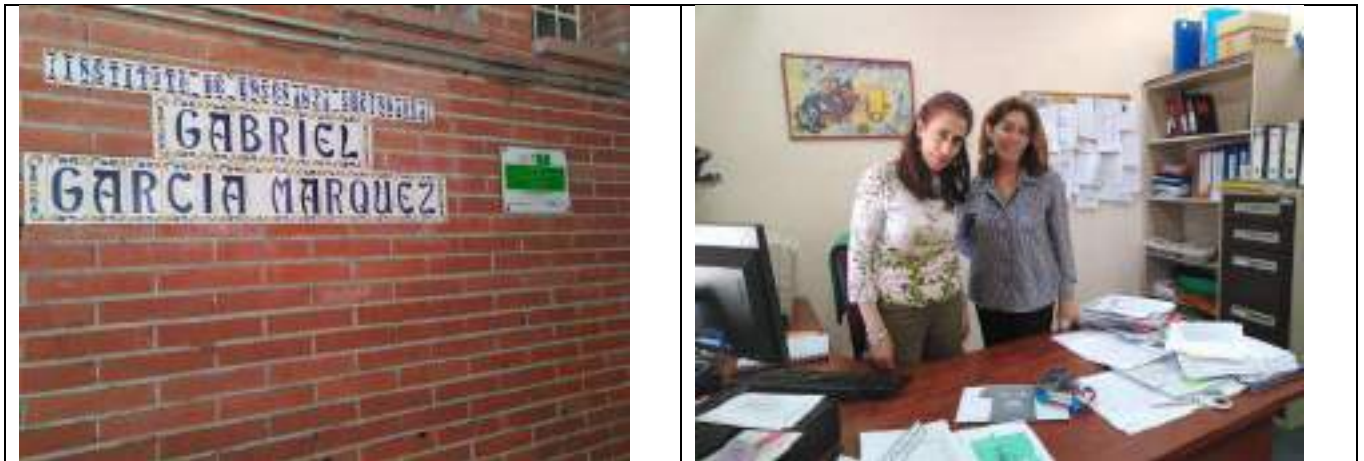
Finally, they talked about equipment and sensors to be installed in the school (to electricity consumption measures and CO2, and temperature remote monitoring). Paz showed Ana R. Gamarra the installation and Ana R. Gamarra took pictures (see AOB).

Conclusions

A lot of actions in the IES Gabriel García Márquez are been carried out, behavioural and infrastructural. They are willing to install equipment to remote measures. It is pending the exchange of info (data and measure information). It should be remarked the importance of take pictures and videos of the actions and measures, since school are not got used to do this activity and it is often forgotten.

2.1.1.1.3 AOB linked the first meeting

Pictures of the visit.





Spain: Focus group meeting

The focus group session entitled “Life Cycle Assessment as a tool to enhance sustainability in educational centres performance” was held in CIEMAT in 23rd February 2017. One of the main objectives was to evaluate what measures are applicable in schools to move towards a low carbon economy and whether the LCA can be a useful instrument in this context, considering that final idea is to create a tool which integrates different points of view, including building efficiency or cost-benefit analysis, among others. Also the session aimed to know, what are the current barriers which difficult the advance towards sustainability in the educational field. And finally the possible ways to overcome these barriers were investigated.

The participants have been selected covering a wide expertise including LCA research experts, administration sector (town hall representative), educational framework (teacher, staff of a secondary school, parent of teen-age scholar and teaching training centre) and non-governmental organization (NGO) focus on environmental protection. The session was joined by 9 people attending the meeting from 12 to 14 hours.

The information obtained in the focus group session has been very valuable to redirect the efforts to the best applicable solutions in this framework, according to the experience of school stakeholders, LCA experts and environmental community. However, some of the recommendations obtained from the focus group are outside of our field of study in the ClimACT project. To improve these recommendations is required more implication from institutional actors such as town halls, national government and the creation of sustainability school networks.

Some of the proposed “sustainable” measures are very easy to implement, which could be proposed first to start to define sustainability in the schools, but to fulfil the advance to low carbon economy, financial support is needed to equipment acquisition (Presence detectors to turn on the light at people's pace, led lights installation, solar PV panels, sanitary hot water solar panels, etc.).

Living-lab methodology is considered the adequate to improve in scholar community. Only participation of different stakeholders (students, teachers, parents, administrative staff, directors, secretariat, cleaner people, and caretaker) could provide correct implant of sustainability criteria in schools.

The list of participants is presented in [Table 3](#) and in attachment 6.4.

Table 17 - List of participants in focus group #2

Name	Institution
Javier Dufour Andía	Universidad Rey Juan Carlos
Luisa Igea Arisqueta	Centro Regional de Innovación y Formación -CRIF -EducaMadrid (Official training centre belongs to regional government of Madrid)
Javier Martín Chivelet	Universidad Complutense de Madrid and AMPA

Charo Morán Cuadrado	Ecologistas en Acción (NGO dedicated to environment protection)
Alejandra Moreiro Luna	Instituto Ortega y Gasset
José Antonio Olmeda	Ayuntamiento Alcalá de Henares
Javier Ramos Díaz	Asociación de madres y padres de alumnos - AMPA (Parents' Association)
Alejandro Romero Abelló	CRIF -EducaMadrid
Guillermo San Miguel	Universidad Politécnica de Madrid
Cristian Oltra	Moderator - CIEMAT-CISOT
Carmen Lago	Assistant moderator - CIEMAT

Agenda of the focus group meeting

- 1) Previous to the meeting a power point file about the ClimACT project has been sent by email to all participants of the focus group;
- 2) Welcome and opening;
- 3) Brief presentation of ground rules;
- 4) Debate between participants according to a question guide including 10 items to analyse;
- 5) Brief presentation focus on LCA methodology;
- 6) Resumption of debate;
- 7) Thanks to the participants and end of session.

Minute of the focus group meeting

i. Welcome and opening

The scheduled meeting timetable is from 12 to 14pm. Participants were gradually arriving from 11:40, they were offered coffee, sweets, juice and water and at 12:15 with the arrival of the last summoned, the photos of the event are taken and the session began.

ii. Overview of the discussion

Participants have been very active from the beginning of the session. All of them gave their opinions about the main topics of the discussion. The discussion has been very fluent. So that some of the questions prepared did not need to be formulated by the moderator because they had been spontaneously treated during the session.

The “engagement question” to start the meeting by the moderator was: “If you had to choose an area in which to carry out actions to improve the energy and environmental performance of an educational centre, what would it be and why?”. The debate was open highlighting the importance of students training on sustainability as the key factor to get a better world in the future. Gathering experience and knowledge during “student period” will provide those skills and awareness to acquire sustainability behaviours. It can forget that environmental training

must also be extended to overall staffs of educational community: students, teachers, administrative staff, doorman, cleaning personnel and parents. The experience show that personnel from some scholar centres are very involved and aware helping to improve sustainable solutions, but other the implication is very low and with it the achievements are also mediocre.

There has also been occasional fatigue on the part of educational staff as they have repeatedly participated in sustainability regional or municipal plans or programs in schools, failing to meet their objectives, and that the new plan proposed to them is a repetition of the previous unsuccessful plans.

Another problem found is the lack of involvement of certain profiles of people who wonder why I will collaborate to achieve a more sustainable school, if the school is not mine. Or teachers who are sceptical of climate change, for example. In these two situations it is believed that the way to change these non-collaborative attitudes is through students who will insists the teacher or school staff to turn off the lights, to recycle, to save on heating and so on. In short, students will help the staff to be more supportive.

Other sceptic position is related to why people must collaborate if the money saved goes to the town hall or regional government, but the school (which is the one that made the effort) do not receive any economic incentive. Thus, it is considered of great significance that scholar community receive the save money in its own school as a way to induce to a deep collaboration in low carbon economy development.

The second part of the discussion group "the exploration questions" was divided in three areas: monitoring of the energetic and environmental performance of the educational centre; the identification of sustainable solutions and finally the presentation of the LCA tool by the expert of Ciemat. The third part was based on the challenges of participation with the "living lab" approach, but this topic was spontaneously mentioned by the participants from the beginning of the session and during all the discussion, as one of the key questions, to achieve the sustainability of schools.

Provide reliable information about current status of the centre about energy consumption, materials used, residues recycling, water use, type of transportation used to get to school, is the first step to detect non sustainable habits. Once it has become aware that there are attitudes that can be improved, the first thing to do is to see which savings measures can be applied without monetary cost and start with them. When this first objective has been achieved, then the cost of the other sustainable measures that can be applied and the availability of sufficient money to carry them out will have to be defined.

The type of questions to be answered could be: How much is the cost of lighting? , how much the school spend on heating? How much the school could be saved whether blinds are lowered at night, on weekends and holiday?, How much energy can be saved if we lower the temperature of the classrooms even if we need to wear a sweater?.

It is also necessary to know the economic cost of the possible sustainable measures to implement, for instance how much is the cost of a new biomass boiler and how much money the school can save using a renewable energy such as biomass.

The third topic of the focus group was defined as challenges on participation. The project is based on the concept of “living-lab”, where success is considered dependent on participation of overall scholar community. The question planned was if participants considered applicable this methodology in educational centres to go forward a low carbon economy. This topic has been discussed along the focus group session from the first participant comment of the session.

Different types of barriers have been appearing throughout the overall session which prevent the increase of sustainability in schools. Some of them are budgetary, in these times of economic crisis there is no money available. Others refer to the structure of buildings: use of cheap materials, poor insulation, poor roofing, and façades without adequate enclosure among others.

The installation of renewable energies, which at first sight seems one of the best candidates, is not easy to implement: high cost (biomass boilers, solar panels) and no clear legislation - it seems that self-consumption and/or net metering is not allowed when building is connected to the grid. One of the participants even has a negative view of the installation of the solar panels, the necessary maintenance was not properly performed and finally panels became unusable and were eliminated. There were also thugs that spoil the panels.

The budgets of the schools are annual and the new sustainable equipment's need several years of amortization.

The Moderator Assistant explained the figure of the ESCO within the project ClimACT, but some participants are sceptical with the energy services companies, because sometimes they have provided energy solutions which suppose an expense for the school without get achieving real savings.

It is also considered interesting the sustainable joint procurement, in such a way that can be obtained price more advantageous for schools.

It has been mentioned the European project “Euronet 50-50”, as a good example to save energy and money at the same time in public buildings. The definition of the project website is “The basis of the 50/50 concept is that 50% of the total energy (and finally money) savings achieved from the energy efficiency measures implemented by the students are retained by the school, whereas the other 50% will be a net saving on the energy bills often paid for by a public authority (local or regional government). The result is that everyone wins; schools get additional financial resources and students learn about energy efficiency; managers of school buildings (often local or regional public authorities) have less energy costs and energy efficient schools contribute to local energy and climate change targets”.

iii. Major findings

LCA could be a useful tool to calculate environmental impacts and to evaluate emission savings in the educative scope. LCA provide reliable information about how the introduction of each

sustainable measure translates into emissions savings and how these savings are perfectly quantified.

LCA or Carbon Footprint (CF) must be applied, not only to account environmental burdens and emissions savings, but also as a powerful tool to training.

Advances on sustainability must be periodically reported to the scholar community. The experience of Rey Juan Carlos University, who has gotten a certified CF, has installed informative panels displaying kWh saved in the campus; money saved and trees equivalents to help community engagement. The knowledge about environmental advances increases community implication to support the needed implementing measures.

It must not forget that the current students will lead the country in the future. Preparing professionals aware of sustainability will be one of the best channels to conserve the planet.

One of the request from participants is that the money saved at school thanks to the introduction of more sustainable measures can be spent in the own school. This is the main idea of the "Energy Services Companies -ESCO" included into ClimACT project. ESCO collaborate with the school providing financing to the agreed measures and the money saved with the environmental emissions reduction serves to pay the company.

Educational community claims for regional or municipal plan of energy savings in the schools, while it must be accompanied by technical assistance so that the necessary changes are reasonable from energy, environmental and economic point of view. Nowadays, personnel of the educative centre are who develop its own sustainable plan in the school, in most of the cases without properly knowledge neither technical assistance.

Getting information about real situation on energy, water, recycling, and raw materials consumed, is essential to elaborate appropriate inventory of current situation. These data of "current scenario"

The introduction of renewable energy in schools as part of a strategy to combat climate change and reduce environmental impacts should include a series of changes in the legislative, funding and technical assistance areas.

To fulfil environmental objectives in schools, close collaboration between different actors is the key to get good results. Scholar community, regional and municipal governments, technical assistants must cooperate together.

iv. Conclusions

- Provide reliable information through LCA calculator tool is crucial to go ahead on sustainability in the schools. Objective information about environmental impacts joint to emission savings obtained from LCA o FP methodology could clearly help to success.
- The environmental information must be accompanied by information on the amount of money saved. The schools demand that these economic savings turn into visible actions in the school (for instance to the payment of children's excursions).

- Educational community is very wide and diverse. The key to success experience is to get involving overall sector of educational centre
- Some measures are very easy to implement as long as an environmental awareness is created in all groups of educational scope (switch off lights and heating when no needed, reuse paper, providing electronic files, and so on), but others require funding. The way to get this funding is not clear and in some cases the legislation is confusing or directly impedes the implementation of measures as in the case of renewable energy for self-consumption.
- Provide information and training to overall sectors of education (teachers, students, parents and administrative staff, but also to custodians and cleaning staff) related to sustainability, is one of the key points for advancing to the sustainability of schools.
- Promote sustainability schools network to facilitate the exchange of successful experiences and to assist in the implementation of life cycle analysis studies as a tool to calculate environmental burdens and how to proceed to reduce environmental impacts.
- Greater coordination among the different educational centres for public procurement would help to obtain better offers from suppliers and to lower the costs of equipment purchases necessary to reduce the environmental impact of the schools.
- Provide technical advice to the schools to properly define the changes towards low carbon economy according to the needs of the community.

v. Recommendations

- LCA calculation tool must provide information about emissions of different activities and actions.
- LCA tool must reflect emissions savings when sustainable measures are introduced in the common operation of the schools.
- It would be highly desirable to include economic savings from sustainable actions put into practice.
- Ciemat are requested to make a presentation of the calculator developed in the project ClimACT by the focus group participants from scholar community.
- Students training on sustainability affairs are considered crucial to the future of the society. Integrate “the sustainability side” in the professional background of young people will make the difference for a low carbon economy future.
- Promote active participation in LCA or FP of the school or university where the students are studying provide knowledge and experience to future developments while generating environmental awareness which apply both in his professional and personal life.
- One interesting suggestion is to provide “sustainability label” to the schools as incentive to attract new pupils in the future. Sustainability label would help parents and/or students as a new input when choosing educative centre.

AOB during focus group meeting

During the session, pictures were taken in all different moments of the event, from the registration of attendees, the session explanation and some others of groups of attendees.

Pictures of the Session



Figure 44 - Focus Group Meeting about Life Cycle Assessment (I)





Figure 45 - Focus Group Meeting about Life Cycle Assessment (II)



Figure 46 - Focus Group Meeting about Life Cycle Assessment (III)

Presentation on the Focus Group Meeting

<p>ClimACT – Acting for the transition economy in schools – development</p> <p>Focus Group</p> <p>Visão Geral do Projeto</p> <p>27 de Março de 2017 ISQ</p>  <p>  </p> <p>O Programa Interreg Sudoeste está cofinanciado pelo F</p>	<p>Objetivo</p> <p>O projeto ClimACT visa apoiar a transição carbono em escolas, assentando em 4 linhas:</p> <ol style="list-style-type: none"> 1. Desenvolvimento de ferramentas de apoio para que as escolas aumentem a sua eficiência energética; 2. Conceção de modelos de negócios e de energéticos; 3. Desenvolvimento de ferramentas educacionais para a educação ambiental e baixo carbono; 4. Criação de uma rede temática que permita a capacitação e facilitar a comunicação entre
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Desenvolvimento

O ClimACT está a ser desenvolvido:

- Em 35 escolas-piloto de Portugal, Espanha,
- Por 9 parceiros dos 4 países.

Após o projeto, as ferramentas desenvolvidas poderão ser transferidas para mais escolas e ambientes (p.ex. edifícios públicos, hospitais, etc.).

Interreg Sudoeste

Interreg Sudoeste

Promover a cooperação entre regiões para resolver problemas comuns da fronteira.



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Promover a cooperação entre regiões para resolver problemas comuns da fronteira.

Projeto ClimACT

Orçamento total: 1.374.000 Euros
Fundo FEDER: 993.000 Euros (cofinanciamento)
Contribuição Pública: 241.900 Euros
Contribuição Privada: 139.000 Euros

Data de início: 1/Julho/2016
Data de fim: 30/Junho/2019
Duração: 3 anos



Consórcio – Parceiros

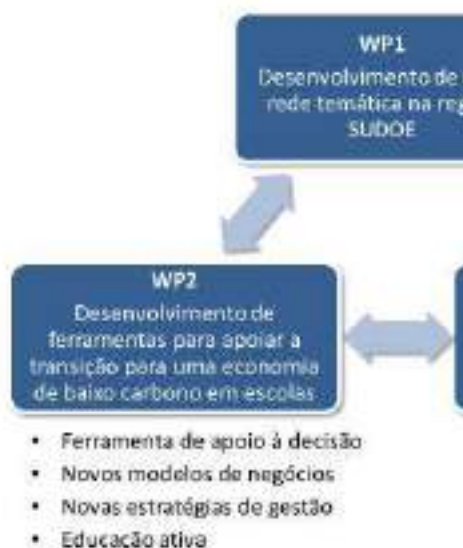
	Instituto Superior Técnico, Portugal
	Instituto de Soldadura e Qualidade, Portugal
	Edigreen, Portugal
	Associação Bandeira Azul de Portugal
	Centro de Investigaciones Medioambientales y Tecnológicas, Espanha
	Universidad de Sevilla, Espanha
	Université de La Rochelle, França
	Ville de La Rochelle, França
	University of Gibraltar, Reino Unido

Equipa – Conselho Consultivo



Estrutura

3 work packages (WP) desenvolvidas em simultâneo



ClimACT Reunião Focus Group

A reunião *Focus Group*, inserida no âmbito da reunião de trabalho, terá a participação de representantes de empresas de serviços de consultoria ambiental, partilharem as suas opiniões e experiências para desbloquear a implementação de projetos de e

ClimACT – Acting for the transition economy in schools – development

Muito obrigada pela vossa

Muito agradecemos a sua colaboração e com esta reunião terão a possibilidade de serem parceiros e desenvolverem projetos no âmbito do ClimACT.

Contactos ClimACT no ISQ: Cláudia Mafra - cmafra@isq.pt



1 STAKEHOLDERS’ MEETING

1 STAKEHOLDERS’ MEETING 1

1.1 Meetings in Region of Madrid, Spain. 2

1.1.1 Meeting with CSIC. 2

Figure 1. Attendance list

1.1.1.1.1 Agenda of the first meeting with Ministry Authority

ClimACT - Stakeholder Meeting in Alcalá de Henares		
Time	Session	Participants
10:00-10:20	Participants presentation	All
10:20 – 11:00	ClimACT Presentation	Yolanda Lechón Ana Rosa Gamarra Carmen Lago
11:00 - 12:00	Debate and answer	All

Duration of the session: 120 minutes approximately.

1.1.1.1.2 Minute of the first meeting with Ministry Authority

Welcome and opening

Yolanda Lechón and Ana R. Gamarra described the goal, scope and structure of the ClimACT project, and remark the different roles and actions carried out by participants in the development of the project. The object of the meeting is looking for the alternatives for the study and implementation of emrtgu and environmental solutions in schools buildings. Currently, Salustiano Torres works as technical manager and researcher focused on the field of NBS (Nature Based Solution) for buildings.

Overview of the discussion

Ana R. Gamarra presented an overview of the successful tasks and activities achieved in the Climact Project in order to share the experience. Those can be replicate in new initiatives or projects being aligned with the Climact proposal.

The barriers and drivers found for the work with schools and the development of the project were exposed. The main proposal is the debate related to the best way to implementation and monitoring of low cost and environmental measures. Using the renaturalization of educational spaces can be achieved the reduction of the students footprint through specific NBS in schools' buildings in countries such as Spain or Portugal. Those NBSs are energy efficiency and impact reduction measures based on the use of natural systems such as vertical gardens to isolate facades, the use of natural materials (wood, cork, ...), textiles, etc., as well as measures such as recycling of organics to recover material or energy in coordination with potential stakeholders (ESCOs, WMS, municipalities, etc.). According to our experience in ClimACT, apart from technical measures, the awareness and training activities, as well as the involving of the whole community, have been recognized as a pillar in the pathway of promotion of the LCE.

Conclusions

The participants kept an interesting discussion related to the NBS as a potential solution in schools building considering the double objective. In September/October, when the materials and platform course was finished, the participants will celebrate other meeting in order to develop the proposal in formal context.

1.1 Meeting of University of Seville, Spain

1.1.1 Stakeholder Session 1: “Acto Inaugural del Proyecto Europeo ClimACT”

The USE team organized a meeting with representatives of the Spanish Pilot Schools and all the associated partners to introduce and define the ClimACT project. This meeting took place on November 21, 2016 at the Higher Technical School of Engineering. This meeting was attended by 26 people (Table 1) who held an open discussion on the ClimACT project, the role of the partners and the Pilot Schools throughout the project time frame.

Table 1 - List of participants

Full Name	Affiliation
Angulo, Nieves	C.E.I.P. La Unión
Arteaga, Rafael	C.E.I.P. La Unión
Barrios Padura, Ángela	University of Sevilla
Barroso, José Luis	C.E.I.P. Lope de Rueda
Becerra Villanueva, José Antonio	University of Sevilla
Chacartegui, Ricardo	University of Sevilla
Clavijo Aumant, Carolina	I.E.S. Itaca
Cazorla, Natividad	I.E.S. Nervión
Fernández, M ^a Ángeles	I.E.S. Nervión
Garrido Paredes, José Francisco	I.E.S. Chaves Nogales
Gil, Maite	APAE (Andalusian Public Agency of Education)
Jiménez, Rafael	I.E.S. Chaves Nogales
Lázaro, Carmen	I.E.S. Itaca
Lizana, Francisco Jesús	University of Sevilla
Marín, Antonio	Municipality of La Rinconada
Martín Garrido, Felicidad	C.E.I.P. Lope de Rueda
Martínez, Antonio	I.E.S. Martín Rueda
Martínez Lara, Juan	C.E.I.P. Maestro Pepe González
Mohedo Pérez, M ^a Dolores	C.E.I.P. Maestro Pepe González
Molina Huelva, Marta	University of Sevilla
Rodríguez Barrera, José Antonio	C.E.I.P. Nuestra Señora del Patrocinio
Roldan, Carmen	APAE (Andalusian Public Agency of Education)
Romero, Eladio	Municipality of Sevilla
Serrano Jiménez, Antonio	University of Sevilla
Tarmo, Eloy	C.E.I.P. Nuestra Señora del Patrocinio

Attendance List

Stakeholder session 1: "Acto Inaugural del Proyecto Europeo ClimACT: Actuando en la transición a una economía baja en carbono en escuelas"

Title of the meeting:

Date: 21/11/2016

WP n.º

WP 1-2-3

Activity n.º

1

Start time: 18:00

End time: 19:30

Meeting Venue (city and country):

Salón de Grados de la Escuela Técnica Superior de Ingeniería de Sevilla (ETSI)
CAMINO DESCUBRIMIENTOS, S/N. - ISLA CARTUJA C.P: 41092 (SEVILLE)
SPAIN

Beneficiary Leader:

☐ IST

☐ ISQ

☐ EDIGREEN

☐ ABAE

☐ CIEMAT

☒ USE

☐ ULR

☐ VLR

☐ UniGib

Organization	Name	E-mail	Signature
CEIP Huelmo Pepe González	Juan Martínez Jana	pepe192@hotmail.com 41001101@edu.es	
IES CHABRINOSALES	José F. Garrido Garrido	pepe.garrido@ieschabrinosaes.es	
IES Itaca	Carolina Clavijo Aumont	carolina.clavijo@iesitaca.org	
CEIP LOPE DE RVEDA	JUAN LUIS BARROSO	juanluisbarroso@hotmail.com	
IES NERVION	MATILDE CARRERA	matildecarrera@gmail.com	
CEIP LA UNIÓN	Nieves Angulo	nievesangulo@ono.com	
CEIP LOPE DE RVEDA	Felipe Martín Garrido	41000920-edu@itakadualda.es	
Univ. Sevilla	Fco. Jesús LITERA	jlitera@us.es	
IES NERVION	Mariángela Fernández	mariangelafer@hotmail.es	
IES MARTIN ALONSO	ANTONIO MARTIN NIZ LÓPEZ	antonio.martin@univ-sevilla.es	
CEIP NTRA. SRA. PATRICIA	JOSÉ A. RODRÍGUEZ BARRERO	JOS. CARINCONSONA@GTX.ES	
ETSI	JOSÉ A. BARRERA VILLARVEVA	JABV@US.ES	
ETIAS	Manu Molin	Manu.molin@us.es	
CEIP Martín de Guzmán	Maria José Bello Pico	mariayj@gmail.com	
Univ. Sevilla	Ricardo Chacartegui	ricardoch@us.es	

Figure 1 - Attendance List signed (Part I)

Attendance List

Organization	Name	E-mail	Signature
APAE	Maite Gil	maite.gil@interregandalus.es	
APAE	ARTEMIO ROLDÁN	measman.rolدان.N@interregandalus.es	
IES CHAVES MAYATEC	RAFAEL JIMENEZ DE VILLAR	rafael.jimenez@ieschavesmayatec.es	
IES JUANCARDOSO	ALINA CAMELENA ALVAREZ	alinach@gmail.com	
CEIP LA UNION	RODRIGO ARTEAGA POLA	COLEGIO LA UNION 2014 @GMAIL.COM	
DTA. LA PINCÓN	ANTONIO MARIN LÓPEZ	ANTONIO.MARIN@DTA.LAUNION.ES	
Universidad Sevilla	Antonio Serrano Jiménez	aserrano5@us.es	
CEIP. M. Sr. Petrucio	Ely de Terno	ely.ternos@ceip.us.es	
IES ITACA	Carmina Lizana	carmina.lizana@iesitaca.us.es	
Univ Sevilla	Ángela Barrios	abarrios@us.es	

Figure 2 - Attendance List signed (Part II)

1.1.1.1 Agenda of the first meeting in Seville

ClimACT - Stakeholder Meeting in Seville		
Time	Session	Participants
17:30 - 18:00	Welcome, coffee, delivery of the documentation	-
18:00 - 18:30	Opening session: ClimACT Project - Task, deadlines y general objectives	Ricardo Chacartegui José Antonio Becerra Ángela Barrios Jesús Lizana
18:30 - 18:45	Signing of participation commitment Delivery of identification documents to those responsible for the pilot centers.	Ricardo Chacartegui José Antonio Becerra Ángela Barrios Jesús Lizana Participants Centers
18:45 - 19:15	Coordination of tasks between universities, schools and institutions. Approval of dates for pre-audits and audits in the centers.	Ricardo Chacartegui José Antonio Becerra Ángela Barrios Jesús Lizana Pilot centers (CEIP & IES) External advisors
19:15 - 19:30	Debate and resolution of doubts	

Duration of the session: 120 minutes approximately.

1.1.1.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a registration and a delivery of the documentation to all participants who attended representing to each educational centre or other institutions. The waiting time of registration was accompanied by a coffee and a snack.

The institutions and schools which attended to the session were the municipalities of Seville and La Rinconada, the Andalusian Public Agency of Education and Argos Educational Projects company along with nine Andalusian educational centres involved in the ClimACT project: CEIP La Unión (La Rinconada), CEIP Lope de Rueda (Seville), CEIP Nuestra Señora del Patrocinio (La Rinconada), IES Chaves Nogales (Seville), IES ITACA (Seville), IES Juan Ciudad Duarte (Bormujos), IES Nervión (Seville) and IES Martín Rivero (Ronda).

Overview of the discussion

Ricardo Chacartegui Ramírez and Ángela Barrios Padura, members of the research team from the University of Seville, started the session with a brief explanation of the project, defining the main objectives, methodology tools which are going to be needed and explaining what is the relationship expected between the research team of the university and each educational centre for the correct development of the project.

Then, José Antonio Becerra Villanueva and Francisco Jesús Lizana Moral, also members of the University of Seville team, presented the structure of the project, detailing the delivery dates and content of each phase. In addition, the surveys required to be completed by the educational community were explained and the schedule of the visits to carry out pre-audits in all pilot centres was shown.

During the last phase, collaboration agreements were signed and handed out with all educational centres and the documentation and personalized poster for each centre were officially delivered.

Finally, a time of debate was opened about different contributions of the attendees and the doubts that arose, as well as checking at the end the availability of each centre to receive members of the Climact team to carry out pre-audits.

Conclusions

The meeting served as a starting point to explain the research project and organize tasks with all the pilot schools. The main objective of the ClimACT project was shown, to promote the transition to a Low Carbon Economy in schools through the experience of the teaching community, researchers and management administrations.

The participating institutions and educational centres had a first contact with the research team of The University of Seville in the ClimACT project, and received initial information on objectives, necessary requirements, deadlines and phases of action to be able to inform their teaching community of their own centres.

In addition, it was possible to establish, in a short and medium term, the visiting schedule to each centre considering all the delivery dates.

1.1.1.3 AOB during the first meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of attendees, the session explanation, the official delivery of poster of each centre and some other of groups of attendees.

1.1.1.3.1 Pictures of the Session



Figure 3 – Group photo with people from all institutions and schools



Figure 4 - Members of the research group of the University of Sevilla



Figure 5 - Participants in Stakeholders Meeting in Seville (part I)



Figure 6 - Participants in Stakeholders Meeting in Seville (part II)



Figure 7 - Delivery of the official poster of participation to the "I.E.S. Itaca"



Figure 8 - Delivery of the official poster of participation to the “C.E.I.P. Maestro Pepe González”

1.1.2 Jóvenes con Investigadores. Session 1 (ETSI & ETSA).

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on November 30, 2016 at the Higher Technical School of Engineering. This meeting was attended by 17 people (Table 3) who held a basic presentation and open discussion on the ClimACT project, explaining the main concepts of energy and air quality for achieving the expected results.

Table 2 - List of participants

Full Name	Affiliation
Alonso, Tomás	I.E.S. Lauretum
Barrios Padura, Ángela	University of Sevilla
Becerra, José Antonio	University of Sevilla
Boceta Serrera, Marta	I.E.S. Portaceli
Clavijo, Carolina	I.E.S. Itaca
Del Pino, Juan	I.E.S. Martín Rivero
Díaz, Joaquín	I.E.S. Itaca
Domínguez Aguilera, Rafael	I.E.S. Martín Rivero
García González, Luis	I.E.S. Juan Ciudad Duarte
Lizana, Francisco Jesús	University of Sevilla
Marcos, A.	I.E.S. Martín Rivero
Martín Rodríguez, Pablo	I.E.S. Lauretum
Molina Huelva, Marta	University of Sevilla
Morales Berlanga, Carmen	I.E.S. Juan Ciudad Duarte
Ochoa Domínguez, Rais	I.E.S. Martín Rivero
Serrano Jiménez, Antonio	University of Sevilla

Attendance List

Title of the meeting: JÓVENES CON INVESTIGADORES HACIA UNA ECONOMÍA BAJA EN CARBONO
Date: 30/11/2016 WP n.º WP2-WP3 Activity n.º 3
Start time: 10:00 End time: 11:00
Meeting Venue (city and country): EXEDRA TÉCNICA SUPERIOR DE INGENIERÍA DE SEVILLA (ESI)
Campus de San Sebastián, s/n Isla de la Guita
41012 (SEVILLA)

Beneficiary Leader: ☐ IST ☐ ISO ☐ EDIGREEN ☐ ABAB ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

Organization	Name	E-mail	Signature
Univ. Sevilla	Fco. Jesús Lizana	fco.jliza@us.es	
IES MARTÍN RIVERO	JUAN DEL PINO	10.jinan@gmail.com	
IES MARTÍN RIVERO	Rosa J. Ochoa	rosa200072@gmail.com	
IES Juan Ciudad Duarte	Luis Jesús González	luisjesus2000@gmail.com	
IES Martín Rívero	Rafael Domínguez	RafaelDom@gmail.com	
IES Juan Ciudad Duarte	Carmen Mercedes Berlingieri	carmenmercedesk@gmail.com	
colegio Portaceu	Marta Barea Sordo	marta.barea.sordo@gmail.com	
IES LAURETUM	Tomas Alonso Cremonesi	tomas.alonso.house@gmail.com	
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IES LAURETUM	Pablo Martín Padilla	pabloomartin@gmail.com	
Univ. Sevilla	Antonio Serrano Jimeno	aserrano5@us.es	
IES MARTÍN RIVERO	R. MARCOS MOLINA	amarcosmz@gmail.com	
IES ITACA	Carolina Clavijo	carolina.clavijo@iacta.org	
U. Sevilla	Ángeles Barrios	abarrios@us.es	
V. SEVILLA	J. A. BECERRA	JABV@vib.es	

Figure 9 - Attendance List signed

1.1.2.1 Agenda of the youth students session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 10:30	Presentation of the research group of the university	
10:30 - 11:30	Presentation of the CLIMACT research project: justification, objectives, methodology, tools and basic concepts	
11:30 - 11:45	Break	Ángela Barrios José Antonio Becerra Jesús Lizana
11:45 - 13:00	Explanation of existing devices and equipment to measure comfort conditions useful for greater energy savings and a better quality of life	Marta Molina Antonio Serrano
13:00 - 14:00	Practical exercises to measure temperature, humidity, air quality and achieve energy savings	

Duration of the session: 240 minutes approximately.

1.1.2.2 Minute of the meeting in Seville

Welcome and opening

The session began with the registration and delivery of the documentation to all youth participants who attended representing to each centre. A presentation was made of the research group of the university and the advances that it is carrying out in diverse investigations

Climact presentation

Members of the research team from the University of Seville, started the session with a brief explanation of the project, defining the main objectives, methodology tools which are going to be needed and what is the relationship expected between the research team of the university and each educational centre and its students for the correct development of the project.

Concepts explanation and practical exercises

Some basic concepts were explained to achieve greater energy savings in their schools and in their homes. Technical measurement devices were shown to evaluate existing conditions and provided advice on energy savings and better energy management through various practical exercises.

1.1.2.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.

1.1.2.3.1 Pictures of the Session



Figure 10 – Research group introduction



Figure 11 – ClimACT research project explanation



Figure 12 – Participants from different school listening to the ClimACT explanation



Figure 13 – Technical explanation of main concepts on energy saving (I)



Figure 14 – Technical explanation of main concepts on energy saving (II)

1.1.3 Jóvenes con Investigadores. Session 2a (ETSI).

University of Seville team developed a second meeting with some secondary students from different schools. This meeting took place on February 1st, 2017 at the Higher Technical School of Engineering in Seville. This meeting was attended by 9 people (Table 12) who held a discussion on energy and CO2 reducing strategies in different fields, detailing the main concepts of energy wasting for achieving the expected results.

Table 3 - List of participants

Full Name	Affiliation
Jesus Lizana	Universidad de Sevilla
Jose Antonio Becerra	Universidad de Sevilla
Juan del Pino	IES Martin Rivero
Ángel Maresca	IES Lauretum
Tomás Alonso	IES Lauretum
Marta Boceta	Colegio Portaceli
Carmen Morales	IES Juan Ciudad Duarte
Teresa Cano	IES Itaca

ClimACT

Date: 01/2/2017

WP n.º WP2-WP3

Activity n° 12

Start time: 10:00

End time: 14 00

Meeting Venue (city and country):

Escuela Técnica Superior de Ingeniería (ETSI)
Campus de Arcovalencia, s/n. 46100 Burjassot, Valencia, Spain. 41092

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☐ ISO

☐ ULR

☐ EDIGREEN
☐ VLR

☐ ABAE
☐ UniGib

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1.1.3.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 11:00	Presentation of the work developed by the students	All
10:30 - 11:30	Resolution of doubts. Task organization	
11:30 - 12:00	Break	
12:00 - 13:00	Discussing methodology and new tasks for developing in the next season taking into account the final report of the students. Explanation of tools.	
13:00 - 13:30	Examples with the tools.	
13:30 - 14:00	Organizing deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.3.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of energy consumption in their schools and in their homes, considering useful the information that they received in the first session.

First results discussions and methodology explanation

A debate was developed on how to organize the report to be developed by the students in different environmental sectors: waste, water, green spaces, energy and acoustic. Members of the research team from the University of Seville tried to suggest to the students some fields where they can incorporate measurements to improve the environmental performance.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. Each student has a different field of application to incorporate measures. The main objectives are related to compare and evaluate the existing environmental performance for each defined sector.

1.1.3.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.

1.1.3.3.1 Pictures of the Session



Figure 16 – Research group introduction

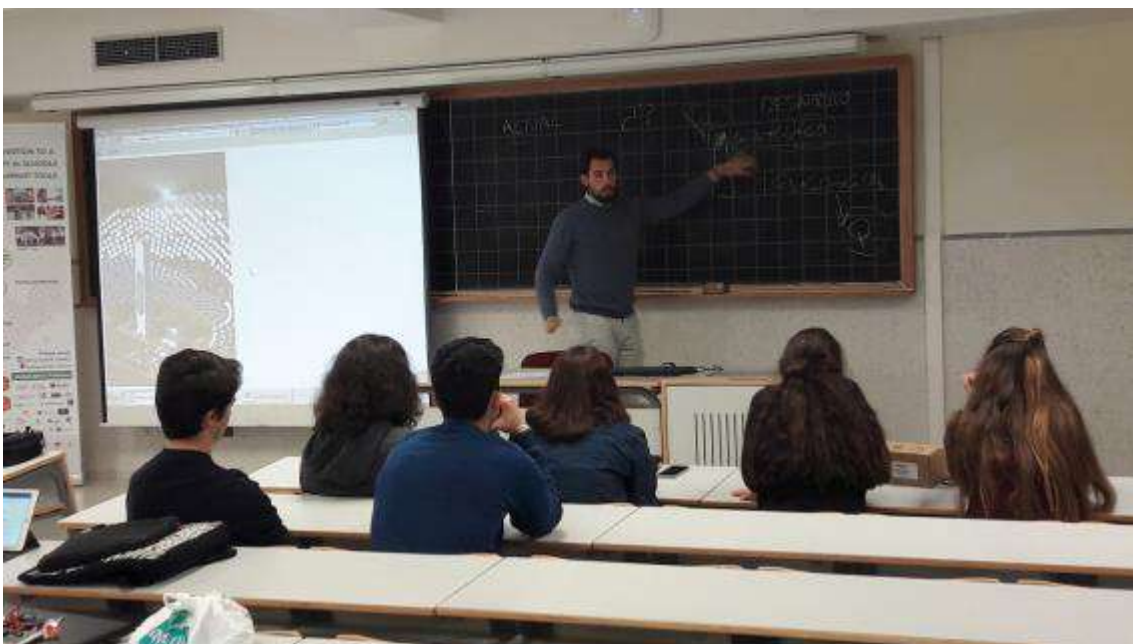


Figure 17 – Research group introduction

1.1.4 Jóvenes con Investigadores. Session 2b (ETSA).

University of Seville team developed a second meeting with some secondary students from different schools. This meeting took place on February 1st, 2017 at the Higher Technical School of Architecture in Seville. This meeting was attended by 9 people (Table 12) who held a discussion on energy and CO2 reducing strategies in different fields, detailing the main concepts of energy wasting for achieving the expected results.

Table 4 - List of participants

Full Name	Affiliation
Barrios Padura, Ángela	University of Sevilla
Bonilla, Julia	I.E.S. Lauretum (teacher)
Díaz, Joaquín	I.E.S. Itaca
Domínguez, Rafael	I.E.S. Martín Rivero
García González, Luis	I.E.S. Juan Ciudad Duarte
Martín Rodríguez, Pablo	I.E.S. Lauretum
Molina Huelva, Marta	University of Sevilla
Ochoa Domínguez, Raisa	I.E.S. Martín Rivero
Serrano Jiménez, Antonio	University of Sevilla

Attendance List

Title of the meeting:

Date: 1/2/2017

WP n.º WP2-WP3

Activity n.º 13

Start time: 10:00

End time: 14:00

Meeting Venue (city and country):

Higher Technical School of Architecture
Reina Mercedes Avenue, 12. 41012
SEVILLE (SPAIN)

Beneficiary Leader:

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAB ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

Organization	Name	E-mail	Signature
Univ. Sevilla	Antonio Serrano	aserrano5@us.es	
IES Juan Ciudad Puente	Luis Garcia Blas	lucagarcia20000@gmail.com	
IES Lauretum	Pablo Martín	pabmartin10@gmail.com	
IES Martín	Rafael Ochoa	rafael000192@gmail.com	
IES Martín	Rafael Ochoa	rafael000192@gmail.com	
IES Ilorca	Joaquín Díaz	diaz.joaquín@gmail.com	
IES LAURETUM	Julia Bonilla	jbonillacarmona@gmail.com	
U. de Sevilla	Ángeles Barrios	abarrios@us.es	
U. de Sevilla	Marta Molina	martamolina@us.es	

Figure 18 - Attendance List signed

1.1.4.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 11:00	Presentation of the work developed by the students	
10:30 - 11:30	Resolution of doubts. Task organization	
11:30 - 12:00	Break	
12:00 - 13:00	Discussing methodology and new tasks for developing in the next season taking into account the final report of the students. Explanation of carbon footprint calculator.	Ángela Barrios Marta Molina Antonio Serrano Julia Bonilla
13:00 - 13:30	Explanation of carbon footprint calculator.	
13:30 - 14:00	Organizing deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.4.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of energy consumption in their schools and in their homes, considering useful the information that they received in the first session.

First results discussions and methodology explanation

A debate was developed on how to organize the report to be developed by the students with measures of implementation of energy saving and reduction of CO2 emission. Members of the research team from the University of Seville tried to suggest to the students some fields where they can incorporate energy reduction measurements.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. Each student has a different field of application to incorporate energy reduction measures. The main objectives are related to compare and evaluate the existing excess of energy consumption.

1.1.4.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.4.3.1 Pictures of the Session



Figure 19 – Members of the USE research group with a school teacher



Figure 20 – ClimACT with students meeting (I)



Figure 21 – ClimACT with students meeting (II)



Figure 22 – Participants from different school and members of USE research team listening to an explanation (I)



Figure 23 – Participants from different school and members of USE research team listening to an explanation (II)

1.1.5 Jóvenes con Investigadores. Session 3a (ETSI).

University of Seville team developed a third meeting with some secondary students from different schools. This meeting took place on February 22rd, 2017 at the “Escuela Técnica Superior de Ingeniería” in Seville. This meeting was attended by 12 people (Table 14) who held a discussion on energy and CO2 reducing strategies in different fields, detailing the main concepts of energy wasting for achieving the expected results.

Table 5 - List of participants

Full Name	Affiliation
Jesus Lizana	Universidad de Sevilla
Jose Antonio Becerra	Universidad de Sevilla
Fco. Palomo	Universidad de Sevilla
Ricardo Chacartegui	Universidad de Sevilla
Carlos Ortiz	Universidad de Sevilla
Pilar Orihuela	Universidad de Sevilla
Juan del Pino	IES Martin Rivero
Ángel Maresca	IES Lauretum
Tomás Alonso	IES Lauretum
Marta Boceta	Colegio Portaceli
Carmen Morales	IES Juan Ciudad Duarte
Teresa Cano	IES Itaca

ClimACT

Activity n.° 14

End time: 17:00

Escuela Técnica Superior de Ingeniería (ETSI)
Carrera de B. Arquitecturas s/n 1301 de las UCLM
CP 46092 Segura

QIST

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 The logo for EdiGreen, featuring a stylized leaf icon to the left of the word "EDIGREEN" in a bold, sans-serif font.

QARAF

 SIEMENS

USE

☐ ULR☐ VLR☐ Unigib

Figure 24 - Attendance List signed

1.1.5.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 11:00	Presentation of the work developed by the students	All
10:30 - 11:30	Resolution of doubts. Task organization. Discussing methodology and new tasks for developing in the next session	
11:30 - 12:00	Break	
12:00 - 13:30	Case studies: audit in the classroom with the students. Indoor Air Quality measurement and Energy consumption measurement.	
13:30 - 14:00	Organizing deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.5.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of energy consumption in their schools and in their homes, considering useful the information that they received in the second session.

First results discussions, methodology explanation and deployment of case studies

A debate was developed on how to organize the report to be developed by the students with measures of implementation of energy saving and reduction of CO2 emission. Members of the research team from the University of Seville tried to suggest to the students some fields where they can incorporate energy reduction measurements.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

Finally, two case studies were described, in which students measured the energy consumption in the classroom and the indoor air quality.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. Each student has a different field of application to incorporate retrofitting measures. The main objectives are related to compare and evaluate the existing environmental performance with regard to energy, waste, water, green spaces and acoustic.

1.1.5.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.5.3.1 Pictures of the Session



Figure 25 – Picture of the meeting.



Figure 26 – Carlos explaining the audit process for indoor air quality measurement.



Figure 27 – Student measuring Outdoor Air Quality.



Figure 28 –Students using thermographic camera



Figure 29 – Thermography of youth students

1.1.6 Jóvenes con Investigadores. Session 3b (ETSA).

University of Seville team developed a third meeting with some secondary students from different schools. This meeting took place on February 22rd, 2017 at the “Escuela Técnica Superior de Arquitectura” in Seville. This meeting was attended by 7 people (Table 15) who held a discussion on energy and CO2 reducing strategies in different urban and housing fields, detailing the main concepts of energy wasting for achieving the expected results.

Table 6 - List of participants

Full Name	Affiliation
Antonio Serrano	Universidad de Sevilla
Marta Molina	Universidad de Sevilla
Julia Bonilla	IES Lauretum (Teacher)
Luis García González	IES Juan Ciudad Duarte
Raisa Ochoa Domínguez	IES Martín Rivero
Joaquín Díaz Cergueira	IES Itaca
Pablo Martín	IES Lauretum

Title of the meeting: Jóvenes con Investigadores Hacia una EBC en ambiente doméstico

Date: 22/2/2017 WP n.º WP2-WP3 Activity n.º 15

Start time: 10:00 End time: 14:00

Meeting Venue (city and country): Higher Technical School of Architecture
1 Reina Mercedes Avenue, 2. 41012 Sevilla (SPAIN)

☐ 1ST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

[illegible]

1.1.6.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 10:30	Presentation of the work developed by the students	All
10:30 - 11:30	Resolution of doubts. Task organization. Discussing methodology and new tasks for developing in the next session	
11:30 - 12:00	Break	
12:00 - 13:00	Visit to the FABLAB: Digital fabrication workshop	
13:00 - 14:00	Organizing deadlines and work packages of each student for the next session. Preparing the elements needed to the final delivery.	

Duration of the session: 240 minutes approximately.

1.1.6.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing to each school and explaining doubt of the research process. Each student has realised that there are many actions for reducing the energy consumption in different fields of their homes: Lighting, cooling, heating, water consumption, amount of waste... considering useful the guidelines that the researches have shown to them during the first and second sessions.

First results discussions, methodology explanation and deployment of case studies

A debate was developed on how to organize the report to be developed by the students with measures of implementation in 5 different fields: lighting & conditioning; Water; Waste; Appliances and Mobility for reducing energy consumption and CO2 emissions.

Members of the research team from the University of Seville tried to suggest to the students, new methodologies to measure the amount or percentage of reduce, to show tables and figures in the final report and presentation.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

They also visited a fabrication laboratory in which researchers develop their prototypes and can materialize their ideas. It was a good example to motivate them to research in the future and to achieve their objectives in different fields.

Organizing tasks and work packages

Finally, in the last part of the session, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. It was fixed a new virtual delivery to guarantee that the work is developing well, and it was named a

coordinator to take care that the organization is suitable of the 3 main documents of the delivery: Report, poster and presentation.

Each student has a different field of application to incorporate retrofitting measures, but it was explained that the idea is to reach to a final conclusion or schedule where they can show the percentage of reduction that they can achieve with different measures in different fields.

1.1.6.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.6.3.1 Pictures of the Session



Figure 31 – General picture of the members of the meeting.

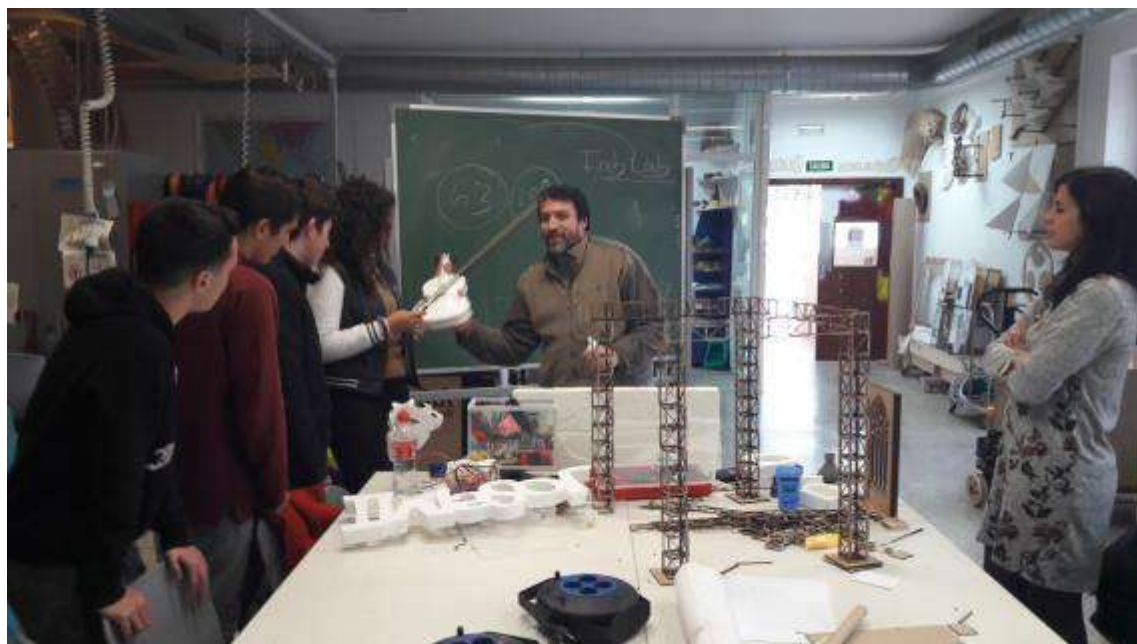


Figure 32 – Juan Carlos (Fablab) explaining the possibilities that people have to fabricate in “FABLAB Sevilla”.



Figure 33 –Students listening to explanation



Figure 34 – Students practising with new insulation materials.

1.1.7 Jóvenes con Investigadores. Session 4a (ETSI).

University of Seville team developed a fourth meeting with some secondary students from different schools, as the previous meeting before the young student congress. This meeting took place on March 21st, 2017 at the “Escuela Técnica Superior de Ingeniería” in Seville. This meeting was attended by 12 people (Table 14) who held a discussion on energy and CO2 reducing strategies in different fields, detailing the main concepts of energy wasting for achieving the expected results.

Table 7 - List of participants

Full Name	Affiliation
Jesus Lizana	Universidad de Sevilla
Carlos Ortiz	Universidad de Sevilla
Marta Boceta	Colegio Portaceli
Carmen Morales	IES Juan Ciudad Duarte
Teresa Cano	IES Itaca

Activity n.º 16

End time: 11:00

Escola Técnica Superior de Engenharia (ESTS)
 Campus de St. Amaro do Alto, s/n. 1600-000 Lisboa
 41098 Eufra

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

Figure 35 - Attendance List signed

1.1.7.1 Agenda of the session

ClimACT with youth students from different schools (Session 4)		
Time	Session	Participants
10:00 - 10:30	Presentation of the work developed by the students	All
10:30 - 11:30	Resolution of doubts. Final task organization. Discussing the format of the final documents	
11:30 - 12:00	Break	
12:00 - 13:00	Teamwork on the main tasks pending for the final date	
13:00 - 14:00	Organizing deadlines and work packages of each student or groups of them for the deadline and the congress.	

Duration of the session: 240 minutes approximately.

1.1.7.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation of the work done by each student. Each student has presented a set of actions to reduce the consumption of energy in domestic environments, in the next different fields: Lighting, cooling, heating, water consumption, mobility and quantity of waste.

Results discussions, final task organization and required documents

The pictures, figures and tables obtained have been considered very useful as results and advances. The members of the University of Seville and the teacher have advised how to improve or how to expand some interesting information.

Then, a debate was developed on how to carry out the final documents: Final report, presentation and poster.

Members of the research team from the University of Seville tried to suggest to the students new mechanism to be effective showing the results in the presentation and in the poster, in a direct and graphic way. In addition, some graphic tools were explained and it was shown a general schedule for delivering the final report and organizing the pending tasks.

Organizing deadlines and the congress requirements

Finally, in the last part of the session, the different tasks to be done were distributed to each student and the delivery dates necessary for the Congress were set. It was fixed a new virtual delivery to guarantee that the work is developing well. The organization of the students to explain the presentation at the congress was also discussed.

In this way, each student has a new role for finishing the whole work. There are two different groups responsible for the poster and the presentation respectively. Finally, there is one student who is in charge of organizing and joining the final report of the group.

1.1.7.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event and the work space.

1.1.7.3.1 Pictures of the Session



Figure 36 – Group discussion about the obtained results.

1.1.8 Jóvenes con Investigadores. Session 4b (ETSA).

University of Seville team developed the fourth meeting with some secondary students from different schools, as the previous meeting before the young student congress. This meeting took place on March 21st, 2017 at the “Red Building of the Reina Mercedes University Campus” in Seville. This meeting was attended by 6 people and a videoconference was held with two more students from the IES Martín Rivero (Table 16), who held a discussion about the main energy and CO₂ results and organized the main pending tasks.

Table 8 - List of participants

Full Name	Affiliation
Marta Molina	Universidad de Sevilla
Antonio Serrano	Universidad de Sevilla
Julia Bonilla	IES Lauretum (Teacher)
Luis García González	IES Juan Ciudad Duarte
Joaquín Díaz Cergueira	IES Itaca
Pablo Martín	IES Lauretum
Domínguez Aguilera, Rafael	IES Martín Rivero <i>*(Videoconference)</i>
Raisa Ochoa Domínguez	IES Martín Rivero <i>*(Videoconference)</i>

Title of the meeting:

Activity n.º 17

End time: 14:00

Red Building, Reina Mercedes Campus
Reina Mercedes Avenue, s/n Sevilla

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

[illegible]

Figure 37 - Attendance List signed

1.1.8.1 Agenda of the session

ClimACT with youth students from different schools (Session 4)		
Time	Session	Participants
10:00 - 10:30	Presentation of the work developed by the students	All
10:30 - 11:30	Resolution of doubts. Final task organization. Discussing the format of the final documents	
11:30 - 12:00	Break	
12:00 - 13:00	Teamwork on the main tasks pending for the final date	
13:00 - 14:00	Organizing deadlines and work packages of each student or groups of them for the deadline and the congress.	

Duration of the session: 240 minutes approximately.

1.1.8.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation of the work done by each student, including two of them who could not attend, who did so through videoconference. Each student has presented a set of actions to reduce the consumption of energy in domestic environments, in the next different fields: Lighting, cooling, heating, water consumption, mobility and quantity of waste.

Results discussions, final task organization and required documents

The pictures, figures and tables obtained have been considered very useful as results and advances. The members of the University of Seville and the teacher have advised how to improve or how to expand some interesting information.

Then, a debate was developed on how to carry out the final documents that have to be delivered in the next weeks: Final report, presentation and poster.

Members of the research team from the University of Seville tried to suggest to the students new mechanism to be effective showing the results in the presentation and in the poster, in a direct and graphic way. In addition, some graphic tools were explained and it was shown a general schedule for delivering the final report and organizing the pending tasks.

Organizing deadlines and the congress requirements

Finally, in the last part of the session, the different tasks to be done were distributed to each student and the delivery dates necessary for the Congress were set. It was fixed a new virtual delivery to guarantee that the work is developing well. The organization of the students to explain the presentation at the congress was also discussed.

In this way, each student has a new role for finishing the whole work. There are two different groups responsible for the poster and the presentation respectively. Finally, there is one student who is in charge of organizing and joining the final report of the group.

1.1.8.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event and the work space.

1.1.8.3.1 Pictures of the Session



Figure 38 – General view of the videoconference workspace.



Figure 39 – General picture of the assistants to the session 4.



Figure 40 – Group discussion about the obtained results.



Figure 41 – Members from the University of Seville and students from different schools

1.1.9 Congreso Jóvenes con Investigadores

The congress “Jóvenes con Investigadores” took place on April 18th, in the School of Communication of the University of Seville. This congress was the final stage of “Jovenes con Investigadores” sessions, where the secondary students, who collaborated with some professional researchers in different projects, could present the results of their research. The research groups of University of Seville involved in ClimACT, conformed by Ricardo Chacartegui, Jose Antonio Becerra, Jesús Lizana, Angela Barrios, Marta Molina and Antonio Serrano, collaborated with two students groups throughout the course, tutoring their projects and guiding them to the end of their research.

Table 28 - List of participants

Full Name	Affiliation
Francisco Palomo	Universidad de Sevilla
Jesus Lizana	Universidad de Sevilla
Carlos Ortiz	Universidad de Sevilla
Jose Antonio Becerra	Universidad de Sevilla
Antonio Castillo	Universidad de Sevilla
Elisa López	Universidad de Sevilla

Title of the meeting: Congreso Juvenor con Investigadores
 Date: 11.07.2017 WP n.º WPI-2-3 Act nº 29
 Start time: 9:30 End time: 12:00
 Meeting Venue (city and country): 4 Avenue Venecia s/n 41037 Sevilla
Parque de Ciencias y Tecnología, School of Agronomy

☐ ST ☐ ISA ☐ EDGREEN ☐ ARAL ☐ CPMAR
☒ USE ☐ ULR ☐ VLN ☐ UNGO

[illegible]

Figure 174 - Attendance List signed

1.1.28.1 Agenda of the visit

PROGRAMA DE ACTIVIDADES

SESIÓN DE MAÑANA (Lugar: Salón de Actos)

09:30 h Recepción, Entrega de acreditaciones y material.

10:00 h Apertura del acto por autoridades: Ricardo Chacartegui (Director del Departamento de Promoción de la Investigación y de la Cultura Científica), Carmen Lizaso (Directora del IES "Ibañeta" de Tolosa), Andrea Ruiz (alumna de 1º Bachillerato), Francisco Javier Pérez Cárdenas (Coordinador General Saleres IES), Carlos Asenjo y Antonio Marcos Naz Lucena (Profesores Coordinadores de "Jóvenes con Investigadores").

10:15 h Conferencia a cargo de Dr. Pedro Miguel Echepare: "Contribución de Etor de la Materia Condensada: Universidad del País Vasco UPV/EHU, PREMIO PRINCIPAL DE INVESTIGACIÓN CIENTÍFICA Y TECNOLÓGICA 1998. Título de Conferencia: "LA SUBÍMITE UTILIDAD DE LA CIENCIA (NOTA)".

10:55 h Conferencia a cargo de Dra. Olga Rodríguez Gutiérrez, Mundana de Planes de Estudios e Investigación de la Facultad de Geografía e Historia, Universidad de Sevilla. Título de Conferencia: "INVESTIGAR EN HUMANAIDADES: DE LA HIPERESPECIALIZACIÓN A LA CIENCIA ACCIÓN".

PRESENTACIÓN DE PROYECTOS DE INVESTIGACIÓN:

11:25 h MALDICIONES CON HISTORIA: HECHIZOS, IMPRECACIONES Y VENGANZAS SOBRE TABULA, Facultad de Geografía e Historia, Opus de Prehistoria y Arqueología e Historia Antigua, Universidad Sevilla.

11:40 h ESTUDIO DEL EFECTO DE LA SOMATOMEDINA C SOBRE CÉLULAS DE MANIFIRO EN CULTIVO, Centro Andaluz de Nanomedicina y Biotecnología, Universidad de Málaga.

11:55 h CONTROL OF ELECTRIC MOTORS WITH ARDUINO, Escuela Politécnica de Jaén.

12:10 h **DESCANSO: FOTO DE GRUPO DEL CONGRESO**
1ª presentación de Paneles a cargo de los jóvenes investigadores (Ver NOTA).

12:40 h ¿CÓMO SE DEPENDEN LAS PUNTAS DE LOS PATÓGENOS? Instituto de agricultura sostenible (ICIS, Córdoba).

13:05 h SELECCIÓN DE CONCHAS EN CANGREJOS ERANTANOS, Instituto de Ciencias Marinas de Andalucía (ICIM-UGR).

13:20 h CARACTERIZACIÓN QUÍMICA DE METALES EN PARTICULAS RESPIRABLES DE LA CIUDAD DE HUELVA, Centro de Investigación en Química Sostenible (CIQS-Huelva).

13:35 h HACIA UNA ECONOMÍA BAJA EN CARBONO EN EL IES, Escuela Técnica Superior de Ingeniería, Universidad de Sevilla.

13:50 h EVALUACIÓN DEL POTENCIAL SALUDABLE Y QUIMIOPREVENTIVO DE LA CERVEZA CON Y SIN ALCOHOL, Departamento Genética/Universidad de Córdoba.

14:05 h SYSTEMS BIOLOGY AS A USER APPROACH TO STUDY ENDOMETRIOSIS AND ITS COMORBIDITIES, Departamento de Biología Experimental/Universidad de Jaén.

14:20 h 2ª presentación de Paneles a cargo de los jóvenes investigadores (Ver NOTA).

14:20 h MESA REDONDA-Salón de actos: (20 minutos) (Sólo investigadores y profesores).

SESIÓN DE TARDE (Aulas habilitadas)

14:30 h **PAUSA PARA ALMUERZO** (Se recomienda mantener almorzado, a modo de snack, defendiendo los paneles durante toda la pausa del almuerzo).

15:15 h 3ª presentación de Paneles a cargo de los jóvenes investigadores (Ver NOTA).

15:45 h Comunicación oral simultánea del resto de Proyectos de investigación (sesiones de Bole para ponencia y 2 min para debate, entre cada comunicación se dejará un intervalo de 2 minutos para cambio de sala, si se desea, por parte de los visitantes. Ver listado adjunto con la correspondencia entre la numeración y cada uno de los Proyectos).

HORARIO Y UBICACIÓN DE CADA PROYECTO										
	15:45	16:00	16:13	16:26	16:39 a	16:52	17:05	17:18	17:31	17:45
Aula	a	a	a	a	16:49	a	a	a	a	a
	15:55	16:10	16:23	16:36		17:02	17:15	17:28	17:41	17:55
2.4	23	9	10	27	32	1	3	28	24	7
3.12	4	18	6	20	21	25	2	29	17	
3.5	41	40	39	8	34	26	37	46	14	47
3.7	15	33	12	42	19	22	36	44	5	

NOTA: Durante toda la jornada permanecerán expuestos los Paneles correspondientes a los proyectos en el Hall contiguo al Salón de Actos. Los estudiantes responsables de cada uno atenderán a los visitantes en los momentos que se indican en este programa.

18:00 h **ENTREGA DE CERTIFICADOS Y CLAUSURA.**
Lugar: A convenir.



Figure 175 – Programme of activities

1.1.28.2 Photos of the Congress “Jóvenes con Investigadores”

Some photos were taking during the presentations of the two groups that were tutored by the USE ClimACT research groups. The projects, called “Hacia una economía baja en carbón en el ámbito del instituto” and “Hacia una economía baja en carbono en el ámbito doméstico”, were widely related to the purpose of ClimACT Project.

1.1.28.2.1 Presentation of the project: “Hacia una economía baja en carbón en el ámbito del instituto”



Figure 176 – Presentation of the project (I)



Figure 177 – Presentation of the project (II)

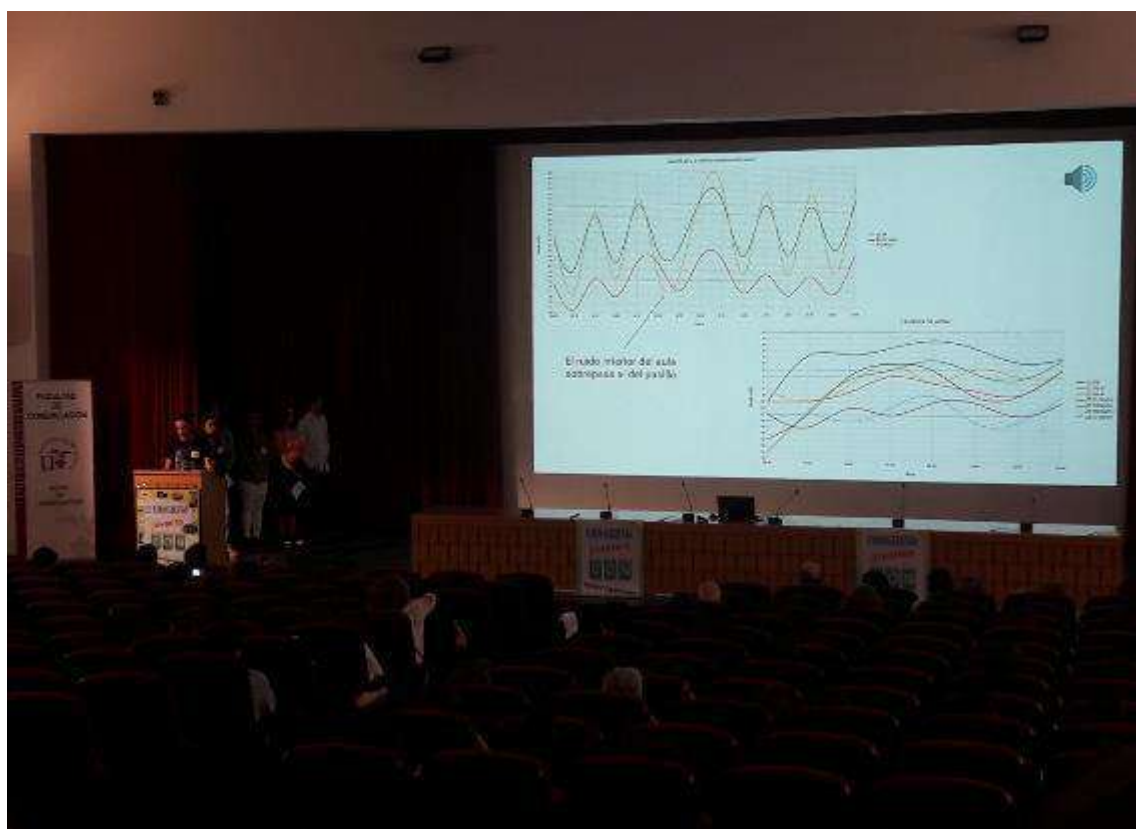


Figure 178 – Presentation of the project (III)

1.1.28.2.2 Presentation of the project: “Hacia una economía baja en carbón en el ámbito doméstico”



Figure 179 – Presentation of the project (I)



Figure 180 – Presentation of the project (II)



Figure 181 – Presentation of the project (III)

1.1.28.2.3 Random photos of the event



Figure 182 – Congress presentation by Ricardo Chacartegui

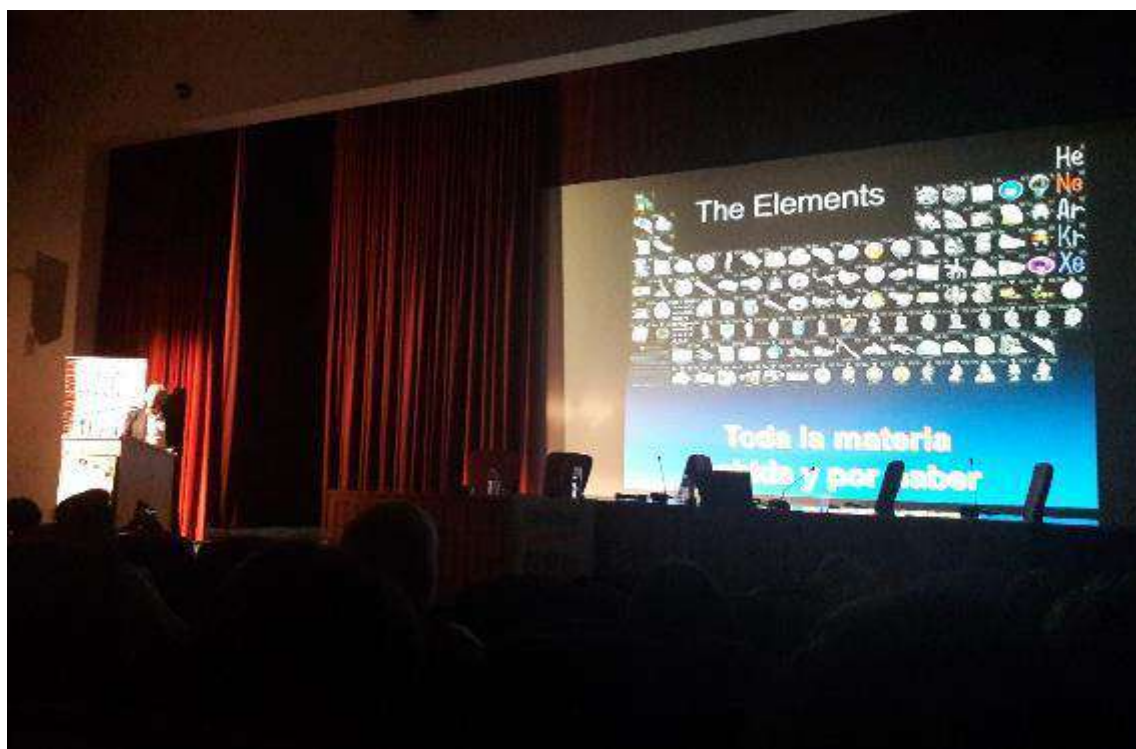


Figure 183 – Seminar: “La sublime utilidad de la ciencia útil” by Dr. Pedro Miguel Echenique



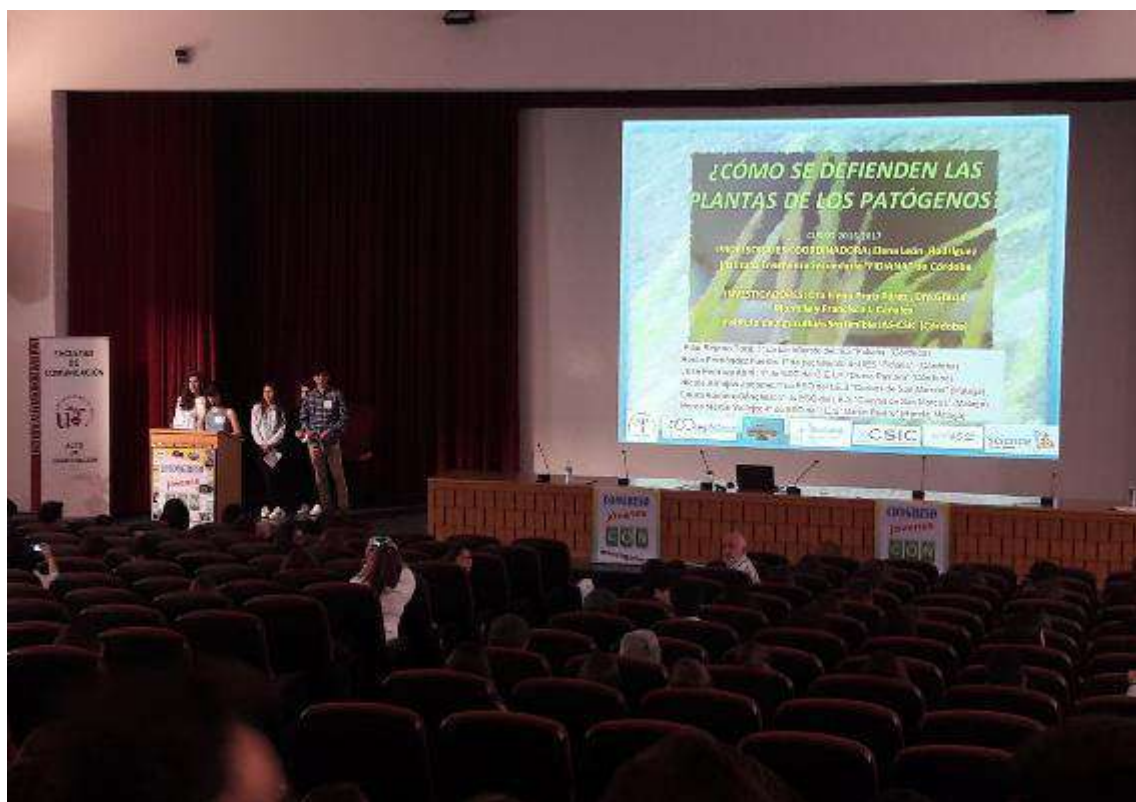
Figure 184 – Seminar: “Investigar en humanidades: de la hiperespecialización a la ciencia ficción” by Dra. Olivia Rodríguez



Figure 185 – Students presentations (I)



Figure 186 – Students presentations (II)



1.1.10 15ª Feria de la ciencia

The research team of the University of Seville participated in the 15th edition of the Spanish "Science Fair", which was held in Seville on May 11, 12 and 13, 2017. This event was attended by schools from all Andalusian regions participating in different innovative and research activities.

Table 9 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
Lopez, Elisa	University of Sevilla
Ortiz, Carlos	University of Sevilla
Serrano Jiménez, Antonio	University of Sevilla
Palomo, Fran	University of Sevilla
Gil, Maite	APAE (Andalusian Public Agency of Education)
Molina Huelva, Marta	University of Sevilla
Becerra, Jose Antonio	University of Sevilla

ClimACT - Acting for the transition to a low carbon economy in schools – development of support tools (SOL/PA/PKAS)

**interreg
Sudoe
ClimACT**

Attendance List

Title of the meeting:	<u>5ª Feria de la Ciencia</u>		
Date:	<u>11-12 / 05 / 2012</u>	WP n°:	<u>WPI, WP2 & WPI</u>
Start time:	<u>8:00</u>	End time:	<u>16:00</u>
Meeting Venue (city and country):	<u>TBTS : Palacio de Exposiciones y Congresos de Sevilla</u> <u>Avenida Luis Urquía s/n, 1, 41020 Sevilla</u>		

Beneficiary leader: ☐ ET ☒ ISO ☐ EDGREEN ☐ ARGE ☐ CENAT
 ☒ USE ☐ UGR ☐ WS ☐ USGS

Organisation	Name	E-mail	Sigature
UNA SEVILLA	JESÚS LIZANA	jizana@una.es	[Signature]
UNIV SEVILLE	Elisa Lopez	diazlopez@mat.ucm.es	[Signature]
UNIV SEVILA	Gustavo Galán	galan@us.es	[Signature]
UNIV SEVILLA	Fco Alvaro	falvaroa@us.es	[Signature]
Univ. Seville	Anabela Sáez	saezanab@us.es	[Signature]
APAE	Marta Gil	marte.gil@unibadajoz.es	[Signature]
Univ Seville	Marta Muñoz	martamunoz@us.es	[Signature]
VSE	SUSAN BERNARDI	sbernardi@vse.es	[Signature]

ClimACT project is co-financed by European Regional Development Fund

Figure 211 - Attendance List signed

The 15th edition of the Spanish "Science Fair" was divided into different stands, which were opened along May 11, 12 and 13, 2017. Next figures show the structure of stands and their topics. Stand number 48 was associated to the ClimACT proyect.

[illegible]

1.1.10.2 AOB during the 15th Science Fair

During the session, pictures were taken in all different moments of the event.

1.1.10.2.1 Pictures of the Visit



Figure 212 – Interreg Sudoe ClimACT Stand



Figure 213 – Students visiting the ClimACT Stand



Figure 213 – Students visiting the 15th Spanish Science Fair.

1.1.11 ClimACT Workshop: Low-carbon economy in schools

The research team of the University of Seville carried out a workshop about Low-carbon economy in schools, which was held in Seville on May 15, 2017. This event was attended by US group and members of the advisory boards.

Table 10 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
Lopez, Elisa	University of Sevilla
Ortiz, Carlos	University of Sevilla
Serrano Jiménez, Antonio	University of Sevilla
Palomo, Fran	University of Sevilla
Gil, Maite	APAE (Andalusian Public Agency of Education)
Molina Huelva, Marta	University of Sevilla
Becerra, Jose Antonio	University of Sevilla

[illegible]

Figure 214 - Attendance List signed

1.1.11.1 Agenda of the visit

The workshop about Low-carbon economy in schools was structure according to the following topics:

15 th January 2017		
Time	Topics	Speakers
11:30-12:00	Session I: Opening session	Ricardo Chacartegui
12:00-12:30	Session II: Evaluation of previous tasks. Current situation of main topics: -ClimACT methodology implementation -Pre-audits: check-lists -Audits: energy bills, energy monitoring, IAQ and others -Deliverables	Jesús Lizana
12:30-13:00	Coordination of future tasks and work packages: WP1: ClimACT network <u>Task 1.2. Focus group discussion – Focus group.</u> E1.2.1 Report of meetings (31/05/2019) ·Reports ·Definition of focus group: ·Stakeholder session 2: ·Science Fair (11st,12nd,13rd May) <hr/> WP2: ClimACT tool and courses <u>Task 2.4 Building Scenario Module</u> E2.4.1 BSM (30/06/2017) ·Report coordination ·Excel Tool (for BSM & action plans) <u>Task 2.8 E-learning module</u> ·Cursos de formación <hr/> WP3: ClimACT methodology, audits and action plans Task 3.1 Commitment to a policy conducting to LCE E 3.2.1 LCE commitment to a policy conducting to LCE (31/12/2016) ·ClimACT methodology implementation Task 3.2 Assessment baseline. Pre-audits and audits E 3.2.2 Report of baseline (30/06/2017) ·Energy monitoring with Satel ·Template for each school Task 3.3 Definition of target and development of action plans E 3.3.1 Short and long term target (31/12/2017) E 3.3.2 Best available actions and smart control strategies (31/12/2017)	All
13:00-13:30	Assessment of initial results	All
	Coffee break	

1.1.11.2 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event.

1.1.11.2.1 Pictures of the Visit



Figure 215 –ClimACT workshop 1



Figure 216 – ClimACT workshop 2

1.1.12 Focus group: “Energy Efficiency and Circular Economy in Schools”

The USE team organized a focus group meeting with representatives of the Spanish Pilot Schools and all the associated partners, related to the them: Energy Efficiency and Circular Economy in Schools. This meeting took place on December 19, 2017 at the Higher Technical School of Engineering. This meeting was attended by 24 people (Table 1) who held an open discussion on the ClimACT project, the role of the partners and the Pilot Schools throughout the project time frame.

Table 11 - List of participants

Full Name	Affiliation
Alonso, Thomas	I.E.S Lauretum
Arteaga, Rafael	C.E.I.P. La Unión
Barroso, Juan Luis	C.E.I.P. Lope de Rueda
Becerra Villanueva, José Antonio	University of Sevilla
Boceta Serrera, Marta	Colegio Portacoeli
Cano Varela, Teresa	I.E.S. Itaca
Chacartegui, Ricardo	University of Sevilla
Clavijo Aumant, Carolina	I.E.S. Itaca
Fernández, Reyes	University of Sevilla
García Sáez, Irene	University of Sevilla
Gil, Maite	APAE (Andalusian Public Agency of Education)
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Martínez Lara, Juan	C.E.I.P. Maestro Pepe González
Mohedo Pérez, M ^a Dolores	C.E.I.P. Maestro Pepe González
Molina Huelva, Marta	University of Sevilla
Moreno, Gema	CEP of Seville
Palomo, Francisco	University of Sevilla
Pino, Juan	I.E.S. Martín Rivero
Roldán, Carmen	APAE (Andalusian Public Agency of Education)
Romero, Eladio	Municipality of Sevilla
Ruiz, Rosa María	C.E.I.P. La Unión
Serrano Jiménez, Antonio	University of Sevilla
Villa, Jesús Miguel	C.E.I.P. Lope de Rueda

Attendance List

Title of the meeting: Focus group & Stakeholder session 2

Date: 19/12/2017

WP n.º WP 1-2-3

Activity n.º 36

Start time: 18:30

End time: 19:00

Meeting Venue (city and country):

Salón de Grados de la Escuela Técnica Superior de Ingeniería de Sevilla (ETSI)
CAMINO DESCUBRIMIENTOS, S/N - I.S.A. CARTUJA C.P. 41092 (SEVILLE)
SPAIN

Beneficiary Leader:

☐ IST

☐ ISO

☐ EDIGREEN

☐ ABAP

☐ CIEMAT

☒ USE

☐ ULR

☐ VLR

☐ Unigib

Organization	Name	E-mail	Signature
USE	JESUS LIZANA	jliana@use.es	
USE	Elisa Lopez	elopez223@use.es	
USE	Tiene Garcia S.	tiengarcia@gmail.com	
USE	Fco Palomo	fpalomat@us.es	
USE	Royes Felix	r.felix@us.es	
CEIP H. P.G.	Juan Harkner	jmharkner@harkner.com	
LISE	Antonio Serrano	aserrano5@us.es	
IES Martin Riv.	Juan P. Pinos	jpinos.4@guar.com	
APDE	Marta Gil	marta.gil@intadeandalucia.es	
IES Itaca	Carolina Clavijo	carolina.clavijo@iesitaca.org	
CEP de Sevilla	Gema Macho	gema.macho@cepsevilla.es	
CEIP LA UNION	Rosalia M. Ruiz	ROSAMR@GMAIL.COM	
CEIP UD UNION	RODRIGO BARRERO	COLEGIO UNION 2014	
CEIP Antonio Pérez Galdames	MARIA MORENO	maria.moreno@cepsevilla.es	
CEIP LA FORTALEZA	JUAN LUIS BARRERO	juanluisbarrero@fortaleza.es	
CEIP LOPE RUEDA	JOSE MIGUEL VILA	JMVTECNICO@GMAIL.COM	
AGENCIA EDUCACIÓN	CARMEN DEL ORO	cararmen.deloro@agenciaeducacion.es	
ATA SEVILLA	Eladio Romero	eromero.ases@sevilla.org	

Figure 225 - Attendance List signed

1.1.12.1 Agenda of the first meeting in Seville

- 1- Registration and delivery of documentation
- 2- ClimACT project: Initial explanation, general objectives, scope and expectations
- 3- Conference 1: Speaker from APAE (Advisory board)
- 4- Conference 2. Speakers from “Jovenes con Investigadores” programme
- 5- Conference 3: Speaker from CEP
- 6- Debate and resolution of doubts

ClimACT - Focus group Conferencia temática del Proyecto Europeo ClimACT Tema: “Eficiencia energética y Economía Circular en centros educativos” Theme: “Energy Efficiency and Circular Economy in Schools”		
Hora	Sesión	Intervienen
16:30 - 17:00	Café de bienvenida, registro y entrega de documentación	-
17:00 – 17:15	Sesión de apertura: Proyecto ClimACT Evaluación, avances y objetivos a corto y largo plazo	Ricardo Chacartegui (US), José Antonio Becerra (US)
17:15 - 17:30	Conferencia temática 1: “La Agencia Pública Andaluza de Educación en el proyecto ClimACT. Nuevas propuestas de gestión de la calidad del aire en centros educativos”	Maite Gil (APAE)
17:30 - 17:45	Conferencia temática 2: “Resultados del programa Jóvenes con Investigadores: Hacia una economía baja en Carbono en el ámbito del Instituto”	Grupo de trabajo del programa Jóvenes con Investigadores dentro del proyecto ClimACT (IES Itaca, IES Juan Ciudad Duarte, Colegio Portaceli, IES Lauretum, IES Martin Rivero)
17:45- 18:00	Conferencia temática 3: “Programa ALDEA, Modalidad A. Red Andaluza de Ecoescuelas”. Propuesta de incorporación de los centros piloto ClimACT a la Red Andaluza de Ecoescuelas.	Gema Moreno (CEP)

Minutes of the session: 90 minutes approximately.

1.1.12.2 Minute of the first meeting in Seville

1. Welcome and opening

The session began with the registration and delivery of the documentation to all participants who attended representing to each educational centre or other institutions. The waiting time of registration was accompanied by a coffee and a snack.

The institutions and schools which attended to the session were the municipalities of Seville and La Rinconada, the Andalusian Public Agency of Education and Argos Educational Projects company along with nine Andalusian educational centres involved in the ClimACT project: CEIP La Unión (La Rinconada), CEIP Lope de Rueda (Seville), CEIP Nuestra Señora del Patrocinio (La Rinconada), IES Chaves Nogales (Seville), IES ITACA (Seville), IES Juan Ciudad Duarte (Bormujos), IES Nervión (Seville) and IES Martín Rivero (Ronda).

2. Opening session. Presentation

Ricardo Chacartegui Ramírez and Jose Antonio Becerra, members of the research team from the University of Seville, started the session with a brief explanation of the project, defining the main objectives, methodology tools which are being developed and what is the relationship expected between the research team of the university and each educational centre for the correct development of the project.

Then, Ricardo opened the focus group, presenting each speaker and its communication.

3. Focus group sessions

Three communications, related to Energy Efficiency and Circular Economy in Schools, were presented by different members from ClimACT advisory boards and external collaborators.

4. AOB

During the session, pictures were taken in all different moments of the event, from the registration of attendees, the session explanation, the speakers and some other of groups of attendees.

Action Points

Item	Action	Lead
1	Registration and delivery of documentation	Francisco Jesús Lizana, Antonio Serrano, Irene García Sáez, Fran Palomo
2	ClimACT project: Initial explanation, general objectives, scope and expectations	Ricardo Chacartegui and Jose Antonio
3	Conference 1: Speaker from APAE (Advisory board)	Maite Gil (APAE)
4	Conference 2. Speakers from “Jovenes con Investigadores” programme	Grupo de trabajo del programa Jóvenes con Investigadores dentro del proyecto ClimACT (IES Itaca, IES Juan Ciudad Duarte, Colegio Portaceli, IES Lauretum, IES Martin Rivero)
5	Conference 3: Speaker from CEP	Gema Moreno (CEP)
6	Debate and resolution of doubts	Ricardo Chacartegui, José Antonio Becerra and Francisco Jesús Lizana

1.1.12.3 AOB during the first meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of attendees, the session explanation, the official delivery of certificates and some other of groups of attendees.

1.1.12.3.1 Pictures of the Session



Figure 226. Registration and delivery of documentation



Figure 227. Group photo with people from all institutions and schools



Figure 228. Opening session



Figure 229. Conference 1: Speaker from APAE (Advisory board)



Figure 230. Conference 2. Speakers from “Jovenes con Investigadores” programme



Figure 231. Delivery of certificates



Figure 232. Conference 3: Speaker from CEP



Figure 233. Debate and resolution of doubts



Figure 234. Debate and resolution of doubts

1.1.13 Stakeholder Session 2: “Acto Inaugural del Proyecto Europeo ClimACT”

The USE team organized a 2nd meeting with representatives of the Spanish Pilot Schools and all the associated partners to introduce and define the ClimACT project. This meeting took place on December 19, 2017 at the Higher Technical School of Engineering. This meeting was attended by 24 people (Table 1) who held an open discussion on the ClimACT project, the role of the partners and the Pilot Schools throughout the project time frame.

Table 12 - List of participants

Full Name	Affiliation
Alonso, Thomas	I.E.S Lauretum
Arteaga, Rafael	C.E.I.P. La Unión
Barroso, Juan Luis	C.E.I.P. Lope de Rueda
Becerra Villanueva, José Antonio	University of Sevilla
Boceta Serrera, Marta	Colegio Portacoeli
Cano Varela, Teresa	I.E.S. Itaca
Chacartegui, Ricardo	University of Sevilla
Clavijo Aumant, Carolina	I.E.S. Itaca
Fernández, Reyes	University of Sevilla
García Sáez, Irene	University of Sevilla
Gil, Maite	APAE (Andalusian Public Agency of Education)
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Martínez Lara, Juan	C.E.I.P. Maestro Pepe González
Mohedo Pérez, M ^a Dolores	C.E.I.P. Maestro Pepe González
Molina Huelva, Marta	University of Sevilla
Moreno, Gema	CEP of Seville
Palomo, Francisco	University of Sevilla
Pino, Juan	I.E.S. Martín Rivero
Roldán, Carmen	APAE (Andalusian Public Agency of Education)
Romero, Eladio	Municipality of Sevilla
Ruiz, Rosa María	C.E.I.P. La Unión
Serrano Jiménez, Antonio	University of Sevilla
Villa, Jesús Miguel	C.E.I.P. Lope de Rueda

Attendance List

Title of the meeting: Focus group & Stakeholder session 2

Date: 19/12/2017

WP n.º

WP 1-2-3

Activity n.º

36

Start time: 18:30

End time: 19:00

Meeting Venue (city and country):

Salón de Grados de la Escuela Técnica Superior de Ingeniería de Sevilla (ETSI)
CAMINO DESCUBRIMIENTOS, S/N - I.S.A. CARTUJA C.P. 41092 (SEVILLE)
SPAIN

Beneficiary Leader:

☐ IST

☐ ISO

☐ EDIGREEN

☐ ABAC

☐ CIEMAT

☒ USE

☐ ULR

☐ VLR

☐ Unigib

Organization	Name	E-mail	Signature
USE	JESUS LIZANA	jliana@use.es	
USE	Elisa Lopez	elopez23@use.es	
USE	Tiene Garcia S.	tiengarcia@gmail.com	
USE	Fco Palomo	fpalomo@us.es	
USE	Rafael Fdez	rfernandez@us.es	
CEIP H. P.G.	Juan Harkner	jmharkner@harkner.com	
LISE	Antonio Serrano	aserrano5@us.es	
IES Martin Riv.	Juan A. Pina	jpinac.4@guar.com	
APDE	Marta Gil	marte.gil@intadeandalucia.es	
IES Itaca	Carolina Clavijo	carolina.clavijo@iesitaca.org	
CEP de Sevilla	Gema Macho	gema.macho@cepsevilla.es	
CEIP LA UNION	Rosa M. Ruiz	ROSAMR@GMAIL.COM	
CEIP UD UNION	RODRIGO BARRERO	COLEGIO UNION 2014	
CEIP Antonio Pérez Galdames	MARIA MORENO	maria.moreno@cepsevilla.es	
CEIP LA FORTALEZA	JUAN LUIS BARRERO	juanluisbarrero@fortaleza.es	
CEIP LOPE RUEDA	JOSE MIGUEL VILA	JMVTECNICO@GMAIL.COM	
AGENCIA EDUCACIÓN	CARMEN DELGADO	cararmen.delgado@agenciaeducacion.es	
ATA. SEVILLA	Eladio Romero	eromero.ases@sevilla.org	

Figure 235 - Attendance List signed

1.1.13.1 Agenda of the meeting in Seville

ClimACT - Stakeholder session 2 Reunión de seguimiento del Proyecto Europeo ClimACT		
Hora	Sesión	Intervienen
18:00 - 18:15	<u>Evaluación de actividades desarrolladas.</u> Reconocimientos y entrega de material para el desarrollo y gestión del proyecto	Francisco Palomo (US)
18:15 - 18:30	<u>Reports de la evaluación inicial de las escuelas tras las auditorias.</u> Explicación, entrega de los resultados preliminares, valoración y datos pendientes	Jesús Lizana (US)
18:30 - 18:45	<u>Programación de actividades futuras: ClimACT methodology</u> <ul style="list-style-type: none"> - Actividades definidas: "Eco-código", "Horno solar", "Coche solar" y "Aprende a separar, aprende a reciclar" - Cursos de formación: programa desarrollado y certificación - Posibilidad de participación en Meeting Europeo de seguimiento Proyecto ClimACT en Madrid (10- 11 enero 2018) 	Irene Sáez (US) Ricardo Chacartegui (US)
18:45 – 19:00	<u>Plan de acción en los colegios</u> Coordinación de tareas entre Universidad, centros e instituciones. Debate y resolución de dudas	Universidad Centros piloto (CEIP e IES) Instituciones (Asesores externos)

Minutes of the session: 60 minutes approximately.

1.1.13.2 Minute of the meeting in Seville

1. Welcome and opening

The registration and delivery of the documentation to all participants who attended representing to each educational centre or other institutions took place an hour and a half earlier in as much as the “Focus Group” session was organised right former of the Stakeholder session.

The institutions and schools which attended to the session were the municipality of Seville, the APAE (Agencia Pública Andaluza de Educación) and CEP (Centro de Evaluación del Profesorado) along with four Andalusian educational centres involved in the ClimACT project: CEIP La Unión (La Rinconada), CEIP Lope de Rueda (Seville), CEIP Maestro Pepe González (La Rinconada) and IES Itaca (Seville). Also, four students involved in the project “Jóvenes con Investigadores” attended the Stakeholder, in representation of their centers: Portacoeli (Sevilla), IES Lauretum (Sevilla), IES Itaca (Sevilla), IES Martín Rivero (Ronda).

2. Overview of the discussion

Ricardo Chacartegui Ramírez, member of the research team from the University of Seville, started the session with the delivery of certificates of recognition and appreciation for the support and cooperation to those centers with the highest involvement attitude towards ClimACT Project.

Then, Francisco Palomo, member as well of the research team from the University of Seville, proceeded to talk about all the activities and work developed so far since the ClimACT Project started. A brief schedule with the tasks still to be done was shown in order to keep all in mind.

After that, Jesús Lizana, another member of the research team from the University of Seville, talked about the individual reports that had been submitted previously to the attendees. A complete explanation of the document was done: its structure, results, rating of different parameters analysed, missing data, etc. Also a brief description of the ClimACT tool was also given.

In the next phase, the ClimACT methodology was explained by Irene García Sáez, member of the research team from the University of Seville. Four different activities were proposed in terms of competitions: “eco-code”, “solar over”, “solar car”, “learning to classify, learning to recycle”. Objectives, strategies and submission criteria as well as deadlines were established in the session. However, more specific details will be revealed in upcoming meetings. All this information was delivered to the attendees in folders.

Finally, Jesús Lizana intervened again to mention relevant issues regarding the training courses, and announced the European meeting that will take place in Madrid the 10-11th of January 2018, in order to know who of the attendees were interesting in participating.

To close the session, Ricardo Chacartegui Ramírez, highlighted the importance of the task coordination among the University, schools and institutions, and led the debate and resolution of doubts before the end of the session.

3.Conclusions

The session served as a meeting point in the middle of the ClimACT to share the current situation of development of the project, explain to the centres the aim of the individual reports and its importance to establish a starting point to propose an action plan. Concerns about the methodology were clarified and a general agreement to go forward was reached.

The participating institutions and educational centres had contact again with the research team of the University of Seville in the ClimACT project, and received additional information on new objectives, necessary requirements, deadlines and phases of action to be able to inform their teaching community of their own centres.

In addition, members of the schools involved in the project were motivated thanks to the delivery of certificates of recognition and appreciation.

1.1.13.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event.

1.1.13.3.1 Pictures of the Session



Figure 236. Group photo with people from all institutions and schools



Figure 237. Development of stakeholder session



Figure 238. Certificate of recognition and appreciation for the support and cooperation in the ClimACT Project to "C.E.I.P. La Unión"



Figure 239. Certificate of recognition and appreciation for the support and cooperation in the ClimACT Project to
 “C.E.I.P. Maestro Pepe González”



Figure 240. Certificate of recognition and appreciation for the support and cooperation in the ClimACT Project to
 “C.E.I.P. Lope de Rueda”



Figure 241. Overview of all the work done during the academic year 2016/2017



Figure 242. Description of the ClimACT tool



Figure 243. Explanation of different activities-competitions proposed

1.1.14 Jóvenes con Investigadores (session 1)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on January 18th, 2018 at the Higher Technical School of Engineering. This meeting was attended by 10 people who held a basic presentation and open discussion on the ClimACT project, explaining the main concepts of energy, transport and air quality in order to start a common research project (school students-university) and achieve the expected results.

Table 13 - List of participants

Full Name	Affiliation
Fontalba Pradas, Juan Carlos	I.E.S Olivar de la Motilla
García Gómez, Alejandra	I.E.S. Martín Rivero
García Sáez, Irene	University of Sevilla
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Luque Núñez, Marta	I.E.S. Llanes
Morán Corbacho, Joé Javier	I.E.S. Galileo Galilei
Padial, Gabriel	I.E.S. Maestro Francisco Gallardo
Palomo, Francisco	University of Sevilla
Vázquez Bravo, Javier	I.E.S. Ítaca

Title of the meeting: JÓVENES CON INVESTIGADORES (SESIÓN 1)

Activity n.º **39**

End time: 17:00

CAMINO DE LOS DESCARMENTOS, 114
ESCUOLA DE INGENIEROS
JENIA

CIEMAT

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Figure 42 - Attendance List signed

1.1.14.1 Agenda of the youth students session

ClimACT with youth students from different schools (Session 1)			
Time	Session	Participants	
10:00 - 10:30	Presentation of the research group of the university	Francisco Palomo	
10:30 - 11:30	Presentation research projects: justification, objectives, methodology, tools and basic concepts	CLIMACT project	Jesús Lizana
		REMEDIOS project	Elisa López
11:30 – 12:00	Break		
12:00 - 14:00	Explanation of existing devices and equipment to measure comfort conditions useful for greater energy savings and a better quality of life	CO ₂ , temperature and humidity equipment	Francisco Palomo
		REMEDIOS tool	Elisa López
13:00 - 14:00	Presentation of the research project: how to face it. Explanation of methodology, objectives, different scenarios approach, hypothesis, measures, analysis and conclusions.	Irene García Sáez	

Duration of the session: 240 minutes approximately.

1.1.14.2 Minute of the meeting in Seville

Welcome and opening

The session began with the registration and delivery of the documentation to all youth participants who attended representing to each centre. A presentation was made of the research group of the university and the advances that it is carrying out in diverse investigations.

Climact and Remedios presentation

Members of the research team from the University of Seville, started the session with a brief explanation of the projects, defining the main objectives, methodology tools which are going to be needed and what is the relationship expected between the research team of the university and each educational centre and its students for the correct development of the project.

Concepts explanation and practical exercises

Some basic concepts were explained to achieve greater energy savings in their schools and in their homes. Technical measurement devices were shown to evaluate existing conditions and provided advice on decreasing the CO₂ concentration in the indoor air -improving its quality- and reducing the traffic near the students' schools -and consequently the CO₂ and other particles emitted by the transport- through various practical exercises.

1.1.14.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.

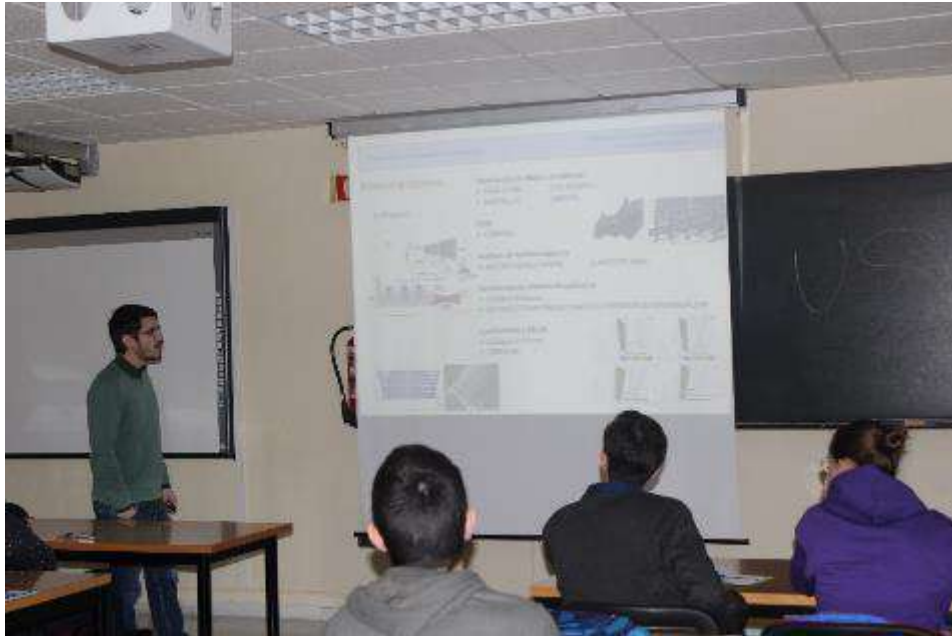


Figure 43 – Research group introduction



Figure 44 – ClimACT research project explanation



Figure 45 – Technical explanation of main concepts related to transport



Figure 46 – Group picture: all participants (researches and students)

1.1.15 Jóvenes con Investigadores (session 2)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on February 1st, 2018 at the Higher Technical School of Engineering in Seville. This meeting was attended by 10 people (Table 26) who held a discussion on CO₂ reducing strategies, explaining the main concepts of transport and air quality in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 14 - List of participants

Full Name	Affiliation
Fernández Navarro, Reyes	University of Sevilla
Fontalba Pradas, Juan Carlos	I.E.S. Olivar de la Motilla
García Gómez, Alejandra	I.E.S. Martín Rivero
García Sáez, Irene	University of Sevilla
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Luque Núñez, Marta	I.E.S. Llanes
Morán Corbacho, José Javier	I.E.S. Galileo Galilei
Nabil Mohamed	University of Sevilla
Padial, Gabriel	I.E.S. Maestro Francisco Gallardo
Palomo, Francisco	University of Sevilla
Vázquez Bravo, Javier	I.E.S. Ítaca

Title of the meeting: JÓVENES CON INVESTIGADORES (SESIÓN 2)

Date: 1/02/2023

WP n.º WP1-3

Activity n.º 44

Start time: 10:00

End time: 14:00

Meeting Venue (city and country):

ESCUELA DE INGENIEROS
CAMINO DE LOS DESCUBRIMIENTOS 5/4/2013, SUELA

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

[illegible]

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1.1.15.1 Agenda of the session

ClimACT with youth students from different schools (Session 2)		
Time	Session	Participants
10:00 - 11:30	Presentation of the work developed by the students. First approach and results. Each student exposes their proposals.	All
11:30 - 12:00	Break	
12:00 - 12:30	Discussion of the results among the students, teacher and researches in order to achieve an agreement to jump to the experimental stage.	
12:30 - 13:30	Definition of the experimental stage development: expected results, required data, (re)explanation of the tools, etc.	
13:30 - 14:00	Organizing tasks, deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.15.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of energy consumption in their schools and in their homes, considering useful the information that they received in the first session.

First results discussions and methodology explanation

A debate was developed on how to organize the report to be developed by the students in different environmental sectors: interior air quality (regarding CO₂) and transport. Members of the research team from the University of Seville tried to suggest to the students some fields where they can incorporate measurements to improve the environmental performance.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. Each student has a different field of application to incorporate measures. The main objectives are related to compare and evaluate the existing environmental performance for each defined sector.

1.1.15.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.15.3.1 Pictures of the Session



Figure 48 – Secondary students and teacher paying attention to the project exposition

1.1.16 Jóvenes con Investigadores (session 3)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on February 15th, 2018 at the Higher Technical School of Engineering in Seville. This meeting was attended by 10 people (Table 29) who held a discussion on CO₂ reducing strategies, explaining the main concepts of transport and air quality in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 15 - List of participants

Full Name	Affiliation
Fernández Navarro, Reyes	University of Sevilla
Fontalba Pradas, Juan Carlos	I.E.S Olivar de la Motilla
García Gómez, Alejandra	I.E.S. Martín Rivero
García Sáez, Irene	University of Sevilla
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Luque Núñez, Marta	I.E.S. Llanes
Morán Corbacho, José Javier	I.E.S. Galileo Galilei
Nabil Mohamed	University of Sevilla
Padial, Gabriel	I.E.S. Maestro Francisco Gallardo
Palomo, Francisco	University of Sevilla
Vázquez Bravo, Javier	I.E.S. Ítaca

Title of the meeting: JÓVENES CON INVESTIGADORES - SESIÓN 3

Activity n.º 44

End time: 44:00

ESI (SEVILLA)

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Figure 49 - Attendance List signed

1.1.16.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
10:00 - 10:30	Round table to share all the work developed regarding both topics –transport and IAQ– by each student till now. Resolution of doubts. Task organization for next stage.	
10:30 - 11:30	Time to work on the development of the research project. Analysis of the contour conditions, data, graphics, etc.	
11:30 - 12:00	Break	All
12:00 - 13:30	Time to work on the development of the research project. New scenarios proposal, hypothesis to be studies, etc.	
13:30 - 14:00	Organizing deadlines: next session and international congress. Explanation of all the material and documents required to be submitted: abstract, project report, board and presentation.	

Duration of the session: 240 minutes approximately.

1.1.16.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of CO₂ emissions in their schools and surroundings, considering useful the information that they received in the second session. They have shared all the collecting data worked they have developed and their conclusions focused on the established goal of reducing the CO₂.

First results discussions, methodology explanation and deployment of case studies

A debate was developed on how to organize the report to be developed by the students with measures of implementation of reduction of CO₂ emission. Members of the research team from the University of Seville helped the students to analyse the data they already had and how to proceed with the project, interpreting data.

The students worked during the session in separate teams, one related to interior air quality and the other to transport. Both groups continued developing the study, asking doubts and proposing hypothesis on which they will work on in the following weeks.

In addition, all the material that is required to be submitted for the deadline of the congress was explained and information about it was provided. The students will organise themselves to keep on working, always in an active way.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the next –and last– session and congress were set. There are two different teams related to the two fields of application to incorporate retrofitting measures. The main objectives are related to compare and evaluate the existing environmental performance with regard to the CO₂ emissions both in IAQ and transport.

1.1.16.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.16.3.1 Pictures of the Session



Figure 50 – Picture of the round table moment.



Figure 51 – Picture of the transport team.



Figure 52 – Picture of the IAQ team.



Figure 53 – Picture of the group.

1.1.17 Climact presentation in Architecture seminar “Taller de Arquitectura”

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on March 2nd, 2018 at the Higher Technical School of Architecture in Seville. This meeting was attended by 44 people (Table 31) who participated in the dissemination of ClimACT objectives, focussing mainly on the energy efficiency.

Table 16 - List of participants

Full Name	Affiliation
Portal Ramírez, María	USE student
Massaro Jiménez, Sandro	USE student
Colella, Francesco	USE student
Cuenca, Antonio	USE student
Assef, Jana	USE student
Aguilar Martín, Ramona	USE student
Núñez Rivera, Carmen	USE student
Ramos Arroyo, Pablo	USE student
Mohamed, Nabila	USE student
Baños, Ana Isabel	USE student
Leo Hurtado, Alba M ^a	USE student
Gil Benegasi, Cristina	USE student
Salado Cuello, Carmen	USE student
Ruiz Sánchez, Blanca	USE student
Medina Rivero, Pablo	USE student
Fuentes Alonso, Pablo	USE student
Del Lero, Khadija	USE student
Galiana Muñoz, Teresa	USE student
Hurtado Torres, José Luis	USE student
Cuesta Medina, Juan V.	USE student
Romero Ruiz, Álvaro	USE student
Ruciero Velo, José	USE student
Serrano Martín, Enrique	USE student
Alcaide Pérez, Carlos	USE student
Piña Morales, Fernando	USE student
Romero, Alejandro	USE student
Acosa Francos, José Luis	USE student
Domínguez, Alejandro	USE student
Casado, Manuel	USE student
Gilabert Moreno, Mario	USE student
Carrasco Ruiz, Gwendolyne	USE student
Morales Jiménez, Alfonso	USE student
Oliva Sigüenza, M ^a Medina Azahara	USE student
Fernández López, Emilio	USE student
Beltrame, Matteo	USE student
Valle Rodríguez, Carmen	USE student
Alba Dorado, José Antonio	University of Seville
De la Cova, Miguel Ángel	University of Seville
Molina Huelva, Marta	University of Seville
Serrano Jiménez, Antonio	University of Seville
García Sáez, Irene	University of Seville
Barrios Padura, Ángela	University of Seville
Añón, Rosa	University of Seville
Lizana, Francisco Jesús	University of Seville

Attendance List

Title of the meeting: PRESENTACIÓN PROYECTO CLIMACT EN CLASE TALLER DE ARQUITECTURA
Date: 04/03/2015 WP n.º Activity n.º 45
Start time: 12:15 End time: 14:00
Meeting Venue (city and country): ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA DE SEVILLA

Beneficiary Leader: ☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USC ☐ ULB ☐ VLR ☐ Un Gb

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	Jana Assef	assefj@gmail.com	
	Ramona Aguilar	ramonagun2@hotmail.com	
	CARMEN MÚÑEZ RIVERA	cmrmen.mr90@hotmail.com	
	Pablo Ruiz Pineda	pablo_r95@hotmail.com	
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	PAULO ROBERTO PÉREZ	pablo4_upper@hotmail.com	
	Khaouja Del Zuo	Khaouja.dellino@hotmail.com	
	Teresa Gálvez	teregalvez96@gmail.com	
	José Luis Hurtado	johurtado@hotmail.com	

ClimACT project is co-financed by European Regional Development Fund

Figure 54 - Attendance List signed (I)

Attendance List

Organization	Name	E-mail	Signature
	Juan V. Costa Medina		
	Alvaro Romero Ruiz	ALVARORROMERO@gmail.com	
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	Fernando Pérez Abadías	fernandop@hotmai.com	
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LISE	Antonio Serrano Jimenez	aserrano5@us.es	
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	ANGELA BARRIOS PARRA	abarrios@us.es	
	ROSA ARJON	rabajas@us.es	
USE	JESUS LIZANA	jliizana@us.es	

Figure 55 - Attendance List signed (II)

1.1.17.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Session	Participants
12:15 - 12:45	Presentation of the European project ClimACT: main objectives, partners and task development.	Ángela Barrios Padura Marta Molina Huelva
12:45 - 13:00	Relation of schools that take part in the project: year of construction, typology, envelope construction (facades, roofs and windows) and urban and building regulations.	Irene García Sáez
13:00 - 13:15	Tasks developed so far by ClimACT: pre-audits and technical audits. Experiences, first results, and our contribution as architects.	Antonio Serrano Jiménez
13:15 - 13:45	Intervention strategies when renovating an educational building in order to make it more energy efficient: different construction systems, methods and technics with their respective pros and cons.	Ángela Barrios Padura
13:45-14:00	Questions regarding the research project and/or construction techniques explained during the session	Ángela Barrios Padura

Duration of the session: 100 minutes approximately.

1.1.17.2 Minute of the session in the Architecture School in Seville

Welcome and opening

The session began with a brief introduction of the ClimACT team members and their roles within the research project. Right after, a presentation of the project, including a description of the different partners and objectives was done by Ángela Barrios Padura. As this session was part of a seminar for 4th-year-architecture students, and due to the topic of the seminar, the presentation was focussed mainly on the energy efficiency.

Climact presentation

Members of the research team from the University of Seville defined all the school participants in the project in the South region of Spain, explaining their main characteristics: year of construction, typology, envelope construction (facades, roofs and windows) and the current urban and building regulations in the moment of the construction. With this data, architecture students were explained which the next steps in the research are: pre-audits and technical audits. In the session, Antonio Serrano talked about experiences at this point, first results and how we can contribute as professional architects.

Intervention strategies

Some intervention strategies when renovating an educational building in order to make it more energy efficient were explained at the end of the session: different construction systems, methods and technics with their respective advantages and disadvantages. Eventually, Ángela Barrios Padura answered questions from the students and some professors.

1.1.17.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: explanation of the objectives of ClimACT project, tasks developed so far by the team and doubts related to it.

1.1.17.3.1 Pictures of the Session



Figure 56 – Presentation of the objectives of ClimACT project (I).



Figure 57 – Presentation of the objectives of ClimACT project (II)



Figure 58 – Tasks developed so far by ClimACT: audits.



Figure 59 – Picture of ClimACT team members and architecture professors collaboration

1.1.18 “Environmental education experiences” seminar in Seville

University of Seville was implied in a lecture day organised by the Asociación “Iniciativa Sevilla Abierta” (ISA), whose aim was to discuss about topics related to the environment, behaviours, education and how the cities respond to it socially, economically and politically. This meeting took place on March 12th, 2018 at the business incubator building CREA, in Seville. This seminar was attended by 6 lecturers (Table 33) who participated in the dissemination of different projects committed with the environment and education related to it.

Table 17 - List of lecturers

Full Name	Affiliation
Josechu Ferreras	Seville Science Fair
Ricardo Chacartegui	University of Seville
Ana Velázquez	CEIP Sor Ángela de la Cruz
Benigno López Villa	Emasesa
Salas Mendoza	Nomad Garden
Daniel Rodrigo	-

1.1.18.1 Agenda of the session

“Environmental education experiences” seminar		
Time	Session	Participants
19:30 - 19:45	Welcome and opening. Presentation of Argos Proyectos Educativos	Josechu Ferreras
19:45 - 20:00	Presentation of the European project ClimACT: main objectives, partners and task development.	Ricardo Chacartegui
20:00 - 20:15	Position of public schools in Seville regarding environmental awareness, dissemination and education.	Ana Velázquez
20:15 - 20:30	Environmental management in Emasesa, the metropolitan water supply and sewerage company of Seville	Benigno López Villa
20:30-20:45	Presentation of “Luces de Barrio” project, which takes places in 5 schools from Seville.	Salas Mendoza
20:45-21:00	Presentation of #EA26, environmental dissemination initiative that takes place every 26 th in social networks.	Daniel Rodrigo
21:00-21:30	Doubts and questions regarding the different projects and other topics related to environmental awareness.	All

Duration of the session: 120 minutes approximately.

1.1.18.2 AOB during the seminar in Seville

During the session, pictures were taken in all different moments of the event: explanation of the different projects regarding the topic of the seminar and the doubts and questions round table.

1.1.18.2.1 Pictures of the Session



Figure 60 – Presentation of the ClimACT project



Figure 61 – Doubts and questions round table

1.1.19 ClimACT event in IES Chaves Nogales, Sevilla: solar oven, solar car and geodesic structure with reused material

University of Seville team developed a collaborative session with some secondary students from the most involved school in ClimACT project in the area of Seville: IES Chaves Nogales. This event took place on March 20th, 2018 at the school mentioned before. Three different workshops were scheduled in parallel during the entire lective day (from 8:15 am to 2:45 pm): the construction of solar ovens, the construction of solar cars and the construction of a geodesic dome using reused blinds. The event was supervised by 14 people (Table 34) while the selected students took part in the workshops, after a brief explanation of the aims of the event.

Table 18 - List of participants

Full Name	Affiliation
Barrios Padura, Ángela	University of Sevilla
García Sáez, Irene	University of Sevilla
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Molina Huelva, Marta	University of Sevilla
Palomo, Francisco	University of Sevilla
Serrano Jiménez, Antonio	University of Sevilla
Chacartegui Ramírez, Ricardo	University of Sevilla
Becerra, José Antonio	University of Sevilla
Carrión, Esther	IES Chaves Nogales
Jiménez, Rafael	IES Chaves Nogales
Jiménez, Clara	IES Chaves Nogales
Monje, Lola	IES Chaves Nogales

Attendance List

Title of the meeting:

Date: 30/3/2018

WP n.º WP3

Activity n.º 47

Start time: 11:15

End time: 15:00

Meeting Venue (city and country):

IES Chaves Nogales
9/100, Avenida Rodríguez, 9/1000, Santa

Beneficiary Leader:

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAB ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UnGib

Organization	Name	E-mail	Signature
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USE	IRENE EMILIA SÁEZ	igarcia26@us.es	
USE	ELISA LOPEZ	elopez23@us.es	
USE	NABIL MOHAMED	nmohamad@us.es	
USE	Fra Polanco	frapolanco@us.es	
USE	ITAI GIANLUIGI	lucio@CTAC E. NET	
IES Chaves Nogales	Rafael Juárez	rafaeljuarez@ieschavesnogales.es	
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IES Chaves Nogales	Esther Carrón	esther.carron@ieschavesnogales.es	
USE	Antonio Serrano	ase.serrano@us.es	

Figure 62 - Attendance List signed

1.1.19.1 Agenda of the session

ClimACT with youth students from different schools (Session 3)		
Time	Geodesic structure workshop	Participants
08:15 - 08:30	Brief explanation of the workshop: aims, basic construction techniques and concepts related to recycling	Luca Stasi (USE) Ángela Barrios Padura (USE) Marta Molina Huelva (USE) Antonio Serrano Jiménez (USE)
08:30 - 11:15	Design and construction of the first part of the geodesic structure (8-10 children, working in pairs)	
11:15 – 11:45	Break	
11:45 - 12:00	Brief explanation of the workshop: aims, basic construction techniques and concepts related to recycling	
12:00 - 14:15	Design and construction of the second half of the geodesic structure (8-10 children, working in pairs)	
14:15 - 14:45	Assembly of both halves of the geodesic structure	

ClimACT with youth students from different schools (Session 3)		
Time	Solar oven workshop	Participants
08:15 - 08:30	Brief explanation of the workshop: aims, basic construction techniques and concepts related to solar energy	Irene García Sáez (USE) Elisa López (USE) Nabil Mohamed (USE)
08:30 - 11:15	Design and construction of 3 solar ovens by 11 years old students (3 groups of 4 children each)	
11:15 – 11:45	Break	
11:45 - 12:00	Brief explanation of the workshop: aims, basic construction techniques and concepts related to solar energy	
12:00 - 14:45	Design and construction of 2 solar ovens by 14 years old students (2 groups of 6 children each)	

ClimACT with youth students from different schools (Session 3)		
Time	Solar car workshop	Participants
08:15 - 08:30	Brief explanation of the workshop: aims, basic construction techniques and concepts related to solar energy	Jesús Lizana (USE) Francisco Palomo (USE)
08:30 - 11:15	Design and construction of 2 solar cars by 11 years old students (2 groups of 4 children each)	
11:15 – 11:45	Break	
11:45 - 12:00	Brief explanation of the workshop: aims, basic construction techniques and concepts related to solar energy	
12:00 - 14:45	Design and construction of 2 solar cars by 14 years old students (2 groups of 5 children each)	

Duration of the session: 360 minutes approximately.

1.1.19.2 Minute of the event in Seville

Three different workshops related to ClimACT project have been developed in parallel, all during the same day and at the same time in order to disseminate the project among the young school community.

Geodesic structure workshop

The construction of the geodesic structure took the whole day. The session started with a brief explanation of the aims, basic construction and security techniques and concepts related to recycling by Luca Stasi, the University of Seville team member in charge of all this. Right after it, Luca with a group of students started with the design and construction of the first half of the structure, which was finished by the break. Later, as the students changed and new ones arrived, another introduction was given, and the second part of the geodesic dome has built. Finally, both parts were assembled, so a perfect sphere was achieved.

Solar oven workshop

As the construction of a solar oven does not really take long, two workshops were scheduled – one before the break and the other after it –, in order to give the chance to a higher number of students to work on the construction of a prototype. Before each workshop, a brief explanation was given to the children by the University of Seville team member in charge. Aims of the session, basic construction techniques and concepts related to energy were explained to make the event more fruitful. Right after the introduction, the students were divided by working groups and started with the assembly of a solar oven. All the material was provided and they were supervised at all times. Once the ovens were done, they were tested outdoors heating some food.

Solar car workshop

As the construction of a solar car does not really take long, two workshops were scheduled –one before the break and the other after it –, in order to give the chance to a higher number of students to work on the construction of a prototype. Before each workshop, a brief explanation was given to the children by the University of Seville team member in charge. Aims of the session, basic construction techniques and concepts related to energy were explained to make the event more fruitful. Right after the introduction, the students were divided by working groups and started with the assembly of a solar car. All the material was provided and they were supervised at all times. Once the cars were done, they were tested outdoors with a solar racing competition.

1.1.19.3 AOB during the event in Seville

During the session, pictures were taken in all different moments of the workshops: solar oven, solar car and geodesic dome construction with reused blinds.

1.1.19.3.1 Pictures of the Session



Figure 63 – Solar oven workshop: prototype construction.



Figure 64 – Solar oven and solar car workshops: working process.



Figure 65 – Solar oven prototype.

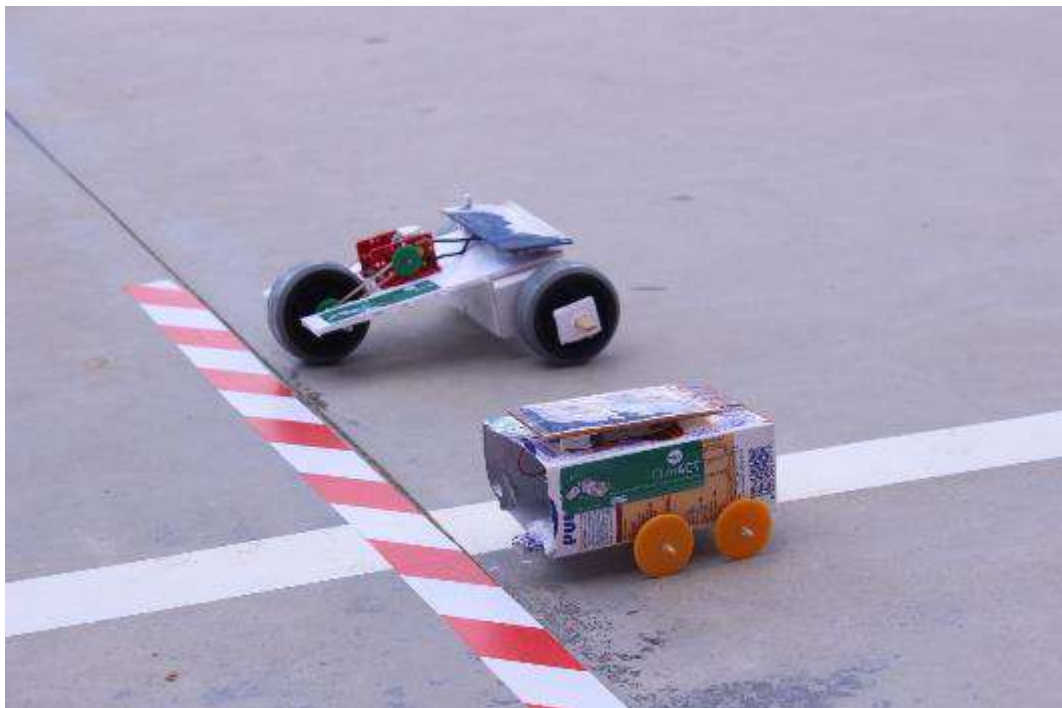


Figure 66 – Solar car prototypes.



Figure 67 – Solar car racing competition.



Figure 68 – Geodesic structure workshop: construction of the first half.



Figure 69 – Geodesic structure workshop: construction of the second half.



Figure 70 – Geodesic structure workshop: joints reinforcement.



Figure 71 – geodesic structure workshop: team involved in its construction.



Figure 72 – geodesic structure workshop: final result.

1.1.20 Jóvenes con Investigadores (session 4)

University of Seville team developed one last meeting with the secondary students who participates in the project from different schools. This meeting took place on April 5th, 2018 at the Higher Technical School of Engineering in Seville. This meeting was attended by 11 people (Table 35) who held a discussion on CO₂ reducing strategies, explaining the main concepts of transport and air quality in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 19 - List of participants

Full Name	Affiliation
Fernández Navarro, Reyes	University of Sevilla
Fontalba Pradas, Juan Carlos	I.E.S Olivar de la Motilla
García Gómez, Alejandra	I.E.S. Martín Rivero
García Sáez, Irene	University of Sevilla
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Morán Corbacho, José Javier	I.E.S. Galileo Galilei
Nabil Mohamed	University of Sevilla
Naz, Marcos	I.E.S. Martín Rivero
Palomo, Francisco	University of Sevilla
Vázquez Bravo, Javier	I.E.S. Ítaca

Attendance List

Title of the meeting: JÓVENES CON INVESTIGADORES - SESIÓN III

Date: 03/01/2018

WP n.º WP3

Activity n.º 49

Start time: 12:00

End time: 14:00

Meeting Venue (city and country):

ETSIS. ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA
C/ALFARO DE LOS DESCUBRIMENTOS 3/A
SEVILLA

Beneficiary Leader:

☐ IST ☐ ISQ ☐ EDIGREEN ☐ ABAE ☐ CIEMAT
☒ USE ☐ ULR ☐ VLR ☐ UniGib

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Figure 73 - Attendance List signed

1.1.20.1 Agenda of the session

ClimACT with youth students from different schools (Session 4)		
Time	Session	Participants
10:00 - 10:30	Round table to share all the work done so far to determine what is to be done yet. Task organization in order to finish the research project on time.	
10:30 - 11:30	Time to work on the development of the research project. Doubts and questions.	
11:30 - 12:00	Break	All
12:00 - 13:30	Time to work on the development of the research project. Doubts and questions.	
13:30 - 14:00	Organizing deadlines for the submission of the documents and material regarding the congress: project report, board and presentation.	

Duration of the session: 240 minutes approximately.

1.1.20.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a round table to share all the work done so far to determine what tasks are yet to be done. From this point, those tasks were organized and commissioned to all the participants implied in the activity in order to finish the research project on time. The students have shared all the information they have developed and their conclusions focused on the established goal of reducing the CO₂ and fuel emissions due to urban transport.

First results discussions, methodology explanation and deployment of case studies

This non-mandatory session was conceived to finish the project report, solve doubts regarding the research and future congress and help the students to conclude their work. In this way, the students worked during the session in separate teams, one related to interior air quality –which involves CO₂ concentration and thermal comfort- and the other to transport. Both groups continued developing the study, asking doubts and proposing hypothesis on which they will work on in the following weeks.

In addition, all the material that is required to be submitted for the deadline of the congress was explained and information about it was provided. The students will organise themselves to keep on working, always in an active way.

Organizing tasks and work packages

Finally, the different tasks to be done before the congress were distributed to each student and the delivery dates necessary were set. The main documents and material required for the event are: the project report, the board and the presentation. There are two different teams related to the two fields of application in charge of compiling all the information and create those documents.

1.1.20.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event: discussion and students' explanation.

1.1.20.3.1 Pictures of the Session



Figure 74 – Picture of the working session (transport).



Figure 75 – Picture of the working session (transport).



Figure 76 – Picture of the working session (IAQ).



Figure 77 – Picture of the working session (IAQ).

1.1.21 IV Congreso Jóvenes con Investigadores

The congress “Jóvenes con Investigadores” took place on April 24th2018, in the School of Chemistry of the University of Seville. This congress was the final stage of “Jóvenes con Investigadores” sessions, where the secondary students, who collaborated with some professional researchers in different projects, could present the results of their research. The research groups of University of Seville involved in ClimACT, conformed by Ricardo Chacartegui, Reyes Fernández, Irene García Sáez, Jesús Lizana, Francisco Palomo, Elisa López and Nabil Mohamed, collaborated with a student group throughout the course, tutoring their project and guiding them to the end of their research.

Table 20 – List of participants

Full Name	Affiliation
Ricardo Chacartegui	Universidad de Sevilla
Francisco Palomo	Universidad de Sevilla
Jesús Lizana	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Reyes Fernández	Universidad de Sevilla
Elisa López	Universidad de Sevilla

ClimACT

Beneficiary Leader: ☐ IST ☐ ISL ☐ EDIGHILL ☐ ADL ☐ CLIMATE
☒ USL ☐ OUB ☐ VLY ☐ JALGO

ClimateCT project is co-financed by European Regional Development Fund

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1.1.21.1 Agenda of the Congress

IV CONGRESO “JÓVENES CON INVESTIGADORES”

08:00h-09:00h
Recepción y entrega de material.

09:00h-09:20h APERTURA DEL ACTO:

9:20-10:00 CONFERENCIA INAUGURAL: **Patricia Aparicio, directora CITIUS**
“Mineralogía aplicada al secuestro de CO₂”

PRESENTACIÓN DE PROYECTOS

10:00h
1) Determinación de parásitos en muestras de cosméticos mediante cromatografía líquida de alta resolución (HPLC). Departamento de Química Analítica, Facultad de Química-US.

10:10h
2) El papel de la Estadística y la Cartografía en el desarrollo de las investigaciones geográficas. Dpto. Geografía Física y Geografía Humana. Facultad de Geografía e Historia-US.

10:20h
3) Low Tech Architecture: a research to empower citizens. Escuela Técnica Superior de Arquitectura (ETSA). US.

10:30h
4) Análisis del crecimiento de dos variedades peruanas de maíz en suelos sometidos a concentraciones elevadas de boro. Dpto. de Fisiología, Anatomía y Biología Celular. Facultad de Ciencias Experimentales-UPD.

10:40h
5) “Contar los setas”. La presentación de los restos arqueológicos de La Encarnación (Sevilla) al público juvenil. Dpto. de Prehistoria y Arqueología. Facultad de Geografía e Historia- US.

10:50h
6) Construcción de un detector de muones cósmicos.

11:00h DEFENSA DE PANELES y DESCANSO

11:40h
7) ¿Para qué sirve una emoción? Inteligencia emocional y gestión de las emociones a través de la empatía. Facultad de Filosofía-US.

11:40h
8) Genotipado de mutante de vertebrados acuáticos generados con la tecnología CRISPR/Cas9. CENTRO ANDALUZ DE BIOLOGÍA DEL DESARROLLO- CSIC-UPD-JA.

11:50h
9) Las dos caras del olor corporal: atracción sexual y atracción de parásitos en humanos. Estación Biológica de Doñana-CSIC.

12:00h
10) La huella histórica de las tres culturas en la Sevilla medieval y su proyección en la actualidad. Facultad de Geografía e Historia. Departamento de Historia Medieval y Ciencias y Técnicas Historiográficas-US.

12:10h
11) Construcción Sostenible mediante el aprovechamiento de residuos para la fabricación de hormigón estructural. Escuela Técnica Superior de Ingeniería-US.

12:20h
12) La grasa invisible de los alimentos que consumes. Instituto Grasa-CSIC.

12:30h
13) Preparación de compuestos orgánicos para la vida cotidiana (jabón natural, detergente y nylon). Departamento de Química Orgánica. Facultad de Química-US.

12:40h
14) Reconstruyendo el “puzzle” biográfico. Facultad de Geografía e Historia. Departamento de Historia Contemporánea-US.

IV CONGRESO “JÓVENES CON INVESTIGADORES”

12:50h
15) Distribución y actividad del topillo mediterráneo en un gradiente de intensificación agrícola. Estación Biológica de Doñana-CSIC. Departamento de Biología y Conservación.

13:00h DEFENSA DE PANELES y DESCANSO

13:20h
16) El papel de la Estadística y la Cartografía en el desarrollo de las investigaciones geográficas. Dpto. Geografía Física y Geografía Humana. Facultad de Geografía e Historia-US.

13:30h
17) Un gravoso trabajo: Lo que nos enseñan las gravas de los ríos. Facultad de Geografía e Historia-US.

13:40h
18) Simulación del proceso de síntesis de *glutina* y desarrollo de un método de separación mediante procedimientos físicos. Instituto Investigaciones Químicas-CSIC-US.

13:50h
19) Sostenibilidad en la escuela. Efecto de espacios verdes y transporte. Escuela Técnica Superior de Ingeniería-US.

14:00h
20) Los Colores de la Química-Colorimetría. Departamento de Química Analítica. Facultad de Química-US.

14:00h-14:15
CLAUSURA DEL CONGRESO

IV CONGRESO “JÓVENES CON INVESTIGADORES”

2018

24 de Abril de 2018
Salón de Actos de Facultad de Química
Universidad de Sevilla

Figure 79 – Program of activities and schedule of lectures

1.1.21.2 Photos of the IV Congress “Jóvenes con Investigadores”

Some photos were taken during the presentation of the group that was tutored by the USE ClimACT research group. The project, called “Sostenibilidad en la escuela”, was widely related to the purpose of ClimACT project in terms of interior air quality and transport issues.



Figure 80 – Congress presentation



Figure 81 – Panel discussion during the break (I)

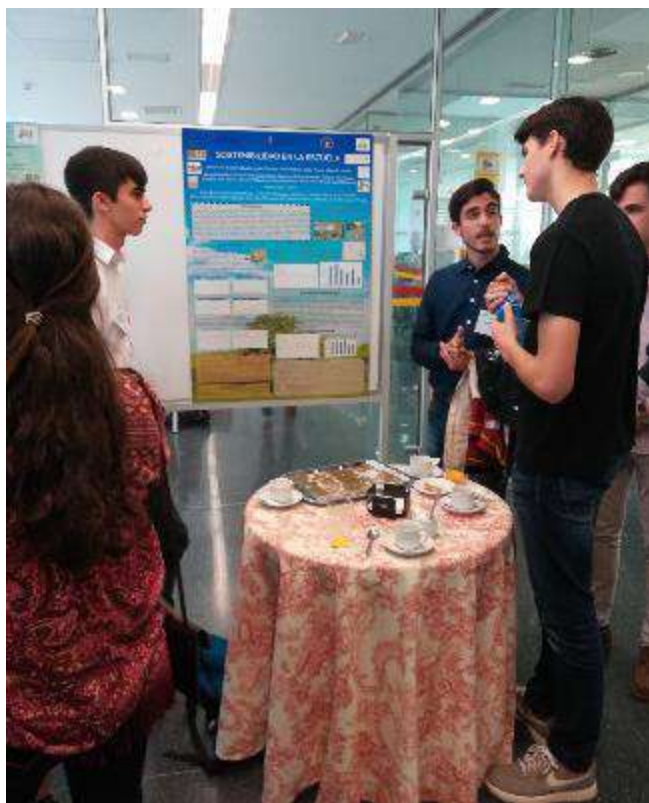


Figure 82 - Panel discussion during the break (II)



Figure 83 – Student group with teacher and researcher, team picture with panel



Figure 84 – Presentation of the project “Sostenibilidad en la escuela” (I)



Figure 85 – Presentation of the project “Sostenibilidad en la escuela” (II)

1.1.22 16ª Feria de la ciencia

The research team of the University of Seville participated in the 16th edition of the Spanish "Science Fair", which was held in Seville on May 3rd, 4th and 5th, 2018. This event was attended by schools from all Andalusian regions participating in different innovative and research activities.

Table 21 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Fernández, Reyes	University of Sevilla
Palomo, Francisco	University of Sevilla
García Sáez, Irene	University of Sevilla
Orihuela, Pilar	University of Sevilla
Chacartegui, Ricardo	University of Sevilla

ClimACT - Acting for the transition to a low carbon economy in schools - development of support tools (SOE1/P3/P0429)



Attendance List

Title of the meeting: FERIA DE LA CIENCIA (EDICIÓN XVI)

Date: 3/5/2018

WP n.º: WP3

Activity n.º: 54

Start time: 11:00

End time: 11:30

Meeting Venue (city and country):

PABLO DE OLIVERA 30

AVENIDA ALFONSO X el Magnífico, 1 - 41013 SEVILLA

Beneficiary Leader:

☐ IST

☐ ISC

☐ EDIGREEN

☐ ABAC

☐ CIEMAT

☒ USE

☐ ULR

☐ VLR

☐ UmGb

Organization	Name	E-mail	Signature
USE	José Lizana	lizana@us.es	[Signature]
USE	NABIL MOHAMED	nabilmohamed@us.es	[Signature]
USE	Elisa López	elopez23@us.es	[Signature]
USE	Reyes Fernández	reyesfernandez30@us.es	[Signature]
USE	Fco Palomo	fpalomo1@us.es	[Signature]
USE	IRENE GARCÍA SÁEZ	igarcia26@us.es	[Signature]

Figure 86 - Attendance List signed

The 16th edition of the Spanish "Science Fair" was divided into different stands, which were opened along May 3rd, 4th and 5th, 2018. Next figures show the structure of stands and their topics. Stand number 3 was associated to the ClimACT proyect.

Mapa de distribución de salas de la Unidad de Atención Integral de Salud (UAG) de la Universidad de Cienfuegos. El mapa muestra una planta de planta baja con salas numeradas y coloridas: naranja para consultas, verdes para diagnóstico, púrpura para procedimientos, y azules para diagnóstico por imagen. Se indican accesos por el lado izquierdo y un servicio médico en la parte superior izquierda. Áreas específicas como 'FUNDACIÓN DESCUBRE 2', 'FUNDACIÓN SABC 1', 'FUNDACIÓN FORT DE LA CIENCIA 123', 'ÁREA DE RESTAURACIÓN 79' y 'ZONA DE DESCANSO INFANTIL 89' están etiquetadas. Un círculo rojo resalta la sala 3.

[illegible]

1.1.22.2 AOB during the 16th Science Fair

During the session, pictures were taken in all different moments of the event.

1.1.22.2.1 Pictures of the event



Figure 89 – Inauguration of the 16th Spanish Science Fair



Figure 90 – Students learning how solar cars work



Figure 91 – Students learning about sustainability and the environment



Figure 92 – Students learning about ClimACT project



Figure 93 – Students participating in a quiz in the 16th Science Fair



Figure 94 – Students participating in a quiz in the 16th Science Fair

1.1.23 Final audits and stakeholder meeting 3 in CEIP Ntra Sra Patrocinio

University of Seville team lead the final audit for task 3.5 and meeting 3 with stakeholders of school: CEIP Nuestra Señora del Patrocinio. The IAQ Audit was carried out along two days. In these two days, some equipment was installed in two pre-selected classrooms and IAQ measurements were carried out. Energy audits were developed by energy bills. SATE device was installed for continuous monitoring. And additional data with regard to other environmental sectors, in cases where specific actions were addressed, were collected.

Table 25 - List of participants

Full Name	Affiliation
Francisco Palomo	Universidad de Sevilla
Francisco Jesus Lizana Moral	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Director	CEIP Nuestra Señora del Patrocinio

Figure 152 - Attendance List signed

1.1.23.1 Agenda of the visit

The final audit and meeting with school was carried out following the next schedule:

ClimACT – Final audit and stakeholder meeting 3		
Time	Session	Participants
DAY 1		
7:45	Welcome and registration of signatures	USE Research Group School director
7:45 – 8:00	Installation the measure equipment for IAQ Explanation to the students the purpose of the Audit	USE Research Group
8:00 – 10:00	Stakeholder meeting with school director and professors	USE Research Group Research Group -School director and low-carbon coordinator --Students and teachers
10:00 – 14:00	Installation the remaining equipment	USE Research Group
DAY 2		
7:45 – 15:00	Follow-up of installation (supervision)	USE Research Group
15:00 – 16:00	Uninstallation of equipment for IAQ	USE Research Group

1.1.23.2 Points discussed in the stakeholder meeting 3 with school

1. The participation and evolution of pilot school in ClimACT is discussed.
2. The preliminary environmental results of the school are analysed and discussed.
3. The Portfolio of action plan ideas is delivered to the school with the aim of improving the environmental performance.
4. USE group informs that the final ClimACT audit will be carried out along following days.
5. The rest of the project information, related to next year of the project and the final ClimACT Meeting in Lisbon on 9-10 May, are delivered.
6. A meeting with the ClimACT brigades is held, informing about the event and related ClimACT activities.
7. The ClimACT t-shirts are delivered to the students.

1.1.23.3 Pictures



Figure 95 – Installation of monitoring devices



Figure 96 – Stakeholder meeting 3 with school

1.1.24 Final audits and stakeholder meeting 3 in CEIP Mtro. Pepe Gonzalez

University of Seville team lead the final audit for task 3.5 and meeting 3 with stakeholders of school: CEIP Maestro Pepe González. The IAQ Audit was carried out along two days. In these two days, some equipment was installed in two pre-selected classrooms and IAQ measurements were carried out. Energy audits were developed by energy bills. SATE device was installed for continuous monitoring. And additional data with regard to other environmental sectors, in cases where specific actions were addressed, were collected.

Table 25 - List of participants

Full Name	Affiliation
Francisco Palomo	Universidad de Sevilla
Francisco Jesus Lizana Moral	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Director	CEIP Maestro Pepe González

Informe Final de la Inspección de Calidad Ambiental

Fecha: 05/12/2019 Hora: 10:00 Lugar: CEIP Maestro Pepe González

Participantes:

Nombre	Apellidos	Firma	Firma
Francisco Palomo			
Francisco Jesus Lizana Moral			
Nabil Mohamed			
Irene García Sáez			
Director			

Director: [Signature]

Figure 152 - Attendance List signed

1.1.24.1 Agenda of the visit

The final audit and meeting with school was carried out following the next schedule:

ClimACT – Final audit and stakeholder meeting 3		
Time	Session	Participants
DAY 1		
7:45	Welcome and registration of signatures	USE Research Group School director
7:45 – 8:00	Installation the measure equipment for IAQ Explanation to the students the purpose of the Audit	USE Research Group
8:00 – 10:00	Stakeholder meeting with school director and professors	USE Research Group Research Group -School director and low-carbon coordinator --Students and teachers
10:00 – 14:00	Installation the remaining equipment	USE Research Group
DAY 2		
7:45 – 15:00	Follow-up of installation (supervision)	USE Research Group
15:00 – 16:00	Uninstallation of equipment for IAQ	USE Research Group

1.1.24.2 Points discussed in the stakeholder meeting 3 with school

1. The participation and evolution of pilot school in ClimACT is discussed.
2. The preliminary environmental results of the school are analysed and discussed.
3. The Portfolio of action plan ideas is delivered to the school with the aim of improving the environmental performance.
4. USE group informs that the final ClimACT audit will be carried out along following days.
5. The rest of the project information, related to next year of the project and the final ClimACT Meeting in Lisbon on 9-10 May, are delivered.
6. A meeting with the ClimACT brigades is held, informing about the event and related ClimACT activities.
7. The ClimACT t-shirts are delivered to the students.

1.1.24.3 Pictures



Figure 97 – Installation of monitoring devices



Figure 98 – Stakeholder meeting 3 with school

1.1.25 Final audits and stakeholder meeting 3 in IES ITACA

University of Seville team lead the final audit for task 3.5 and meeting 3 with stakeholders of school: IES ITACA. The IAQ Audit was carried out along two days. In these two days, some equipment was installed in two pre-selected classrooms and IAQ measurements were carried out. Energy audits were developed by energy bills. SATE device was installed for continuous monitoring. And additional data with regard to other environmental sectors, in cases were specific actions were addressed, were collected.

Table 25 - List of participants

Full Name	Affiliation
Francisco Palomo	Universidad de Sevilla
Francisco Jesus Lizana Moral	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Director	IES ITACA

Atendances

Date: 2023-05-23 Time: 15:00 Location: IES ITACA Organized by: Francisco Palomo

Engagement	Name	Phone	Email
Director	Francisco Palomo	954 23 23 23	fpalomo@iesitaca.es
IAQ	Francisco Jesus Lizana Moral	954 23 23 23	flizana@iesitaca.es
Energy	Nabil Mohamed	954 23 23 23	nmohamed@iesitaca.es
SATE	Irene García Sáez	954 23 23 23	isaez@iesitaca.es

Handwritten signature: Francisco Palomo

Figure 152 - Attendance List signed

1.1.25.1 Agenda of the visit

The final audit and meeting with school was carried out following the next schedule:

ClimACT – Final audit and stakeholder meeting 3		
Time	Session	Participants
DAY 1		
7:45	Welcome and registration of signatures	USE Research Group School director
7:45 – 8:00	Installation the measure equipment for IAQ Explanation to the students the purpose of the Audit	USE Research Group
8:00 – 10:00	Stakeholder meeting with school director and professors	USE Research Group Research Group -School director and low-carbon coordinator --Students and teachers
10:00 – 14:00	Installation the remaining equipment	USE Research Group
DAY 2		
7:45 – 15:00	Follow-up of installation (supervision)	USE Research Group
15:00 – 16:00	Uninstallation of equipment for IAQ	USE Research Group

1.1.25.2 Points discussed in the stakeholder meeting 3 with school

8. The participation and evolution of pilot school in ClimACT is discussed.
9. The preliminary environmental results of the school are analysed and discussed.
10. The Portfolio of action plan ideas is delivered to the school with the aim of improving the environmental performance.
11. USE group informs that the final ClimACT audit will be carried out along following days.
12. The rest of the project information, related to next year of the project and the final ClimACT Meeting in Lisbon on 9-10 May, are delivered.
13. A meeting with the ClimACT brigades is held, informing about the event and related ClimACT activities.
14. The ClimACT t-shirts are delivered to the students.

1.1.25.3 Pictures



Figure 99 – Installation of monitoring devices



Figure 100 – Stakeholder meeting 3 with school

1.1.26 Final audits and stakeholder meeting 3 in IES Chaves Nogales

University of Seville team lead the final audit for task 3.5 and meeting 3 with stakeholders of school: IES Chaves Nogales. The IAQ Audit was carried out along two days. In these two days, some equipment was installed in two pre-selected classrooms and IAQ measurements were carried out. Energy audits were developed by energy bills. SATE device was installed for continuous monitoring. And additional data with regard to other environmental sectors, in cases where specific actions were addressed, were collected.

Table 25 - List of participants

Full Name	Affiliation
Francisco Palomo	Universidad de Sevilla
Francisco Jesus Lizana Moral	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Profesor	IES Chaves Nogales

The image shows a scanned document of an attendance list. At the top, there is a header with the text 'CURRICULUM FOR THE TRANSITION TO A SUSTAINABLE ECONOMY: INNOVATION - DEVELOPMENT OF PROJECTS' and 'CURRICULUM FOR THE TRANSITION TO A SUSTAINABLE ECONOMY: INNOVATION - DEVELOPMENT OF PROJECTS'. Below this, there is a section for 'Attendance List' with fields for 'Date of intervention', 'Time', 'Location', and 'Intervention'. The 'Date of intervention' is filled with '2023/03/03', 'Time' with '10:00', 'Location' with 'IES Chaves Nogales', and 'Intervention' with 'Final audit for task 3.5 and meeting 3'. Below this, there is a table with four columns: 'Signature', 'Name', 'Email', and 'Signature'. The table is filled with handwritten signatures and names. The first row has a signature, 'Francisco Palomo', 'fpalomo@us.es', and another signature. The second row has a signature, 'Francisco Jesus Lizana Moral', 'flizana@us.es', and another signature. The third row has a signature, 'Nabil Mohamed', 'nmohamed@us.es', and another signature. The table has 12 rows in total. At the bottom of the form, there is a footer with the text 'CURRICULUM FOR THE TRANSITION TO A SUSTAINABLE ECONOMY: INNOVATION - DEVELOPMENT OF PROJECTS'.

Figure 152 - Attendance List signed

1.1.26.1 Agenda of the visit

The final audit and meeting with school was carried out following the next schedule:

ClimACT – Final audit and stakeholder meeting 3		
Time	Session	Participants
DAY 1		
7:45	Welcome and registration of signatures	USE Research Group School director
7:45 – 8:00	Installation the measure equipment for IAQ Explanation to the students the purpose of the Audit	USE Research Group
8:00 – 10:00	Stakeholder meeting with school director and professors	USE Research Group Research Group -School director and low-carbon coordinator --Students and teachers
10:00 – 14:00	Installation the remaining equipment	USE Research Group
DAY 2		
7:45 – 15:00	Follow-up of installation (supervision)	USE Research Group
15:00 – 16:00	Uninstallation of equipment for IAQ	USE Research Group

1.1.26.2 Points discussed in the stakeholder meeting 3 with school

1. The participation and evolution of pilot school in ClimACT is discussed.
2. The preliminary environmental results of the school are analysed and discussed.
3. The Portfolio of action plan ideas is delivered to the school with the aim of improving the environmental performance.
4. USE group informs that the final ClimACT audit will be carried out along following days.
5. The rest of the project information, related to next year of the project and the final ClimACT Meeting in Lisbon on 9-10 May, are delivered.
6. A meeting with the ClimACT brigades is held, informing about the event and related ClimACT activities.
7. The ClimACT t-shirts are delivered to the students.

1.1.26.3 Pictures



Figure 101 – Installation of monitoring devices



Figure 102 – Stakeholder meeting 3 with school

1.1.27 Final audits and stakeholder meeting 3 in CEIP La Unión

University of Seville team lead the final audit for task 3.5 and meeting 3 with stakeholders of school: CEIP La Unión. The IAQ Audit was carried out along two days. In these two days, some equipment was installed in two pre-selected classrooms and IAQ measurements were carried out. Energy audits were developed by energy bills. SATE device was installed for continuous monitoring. And additional data with regard to other environmental sectors, in cases were specific actions were addressed, were collected.

Table 25 - List of participants

Full Name	Affiliation
Francisco Jesus Lizana Moral	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Director	CEIP La Unión

Figure 152 - Attendance List signed

1.1.27.1 Agenda of the visit

The final audit and meeting with school was carried out following the next schedule:

ClimACT – Final audit and stakeholder meeting 3		
Time	Session	Participants
DAY 1		
7:45	Welcome and registration of signatures	USE Research Group School director
7:45 – 8:00	Installation the measure equipment for IAQ Explanation to the students the purpose of the Audit	USE Research Group
8:00 – 10:00	Stakeholder meeting with school director and professors	USE Research Group Research Group -School director and low-carbon coordinator --Students and teachers
10:00 – 14:00	Installation the remaining equipment	USE Research Group
DAY 2		
7:45 – 15:00	Follow-up of installation (supervision)	USE Research Group
15:00 – 16:00	Uninstallation of equipment for IAQ	USE Research Group

1.1.27.2 Points discussed in the stakeholder meeting 3 with school

1. The participation and evolution of pilot school in ClimACT is discussed.
2. The preliminary environmental results of the school are analysed and discussed.
3. The Portfolio of action plan ideas is delivered to the school with the aim of improving the environmental performance.
4. USE group informs that the final ClimACT audit will be carried out along following days.
5. The rest of the project information, related to next year of the project and the final ClimACT Meeting in Lisbon on 9-10 May, are delivered.
6. A meeting with the ClimACT brigades is held, informing about the event and related ClimACT activities.
7. The ClimACT t-shirts are delivered to the students.

1.1.27.3 Pictures



Figure 103 – Installation of monitoring devices

1.1.28 Seminar about business models of ESCOs (Seville)

ESCO seminar held at Escuela Técnica Superior de Ingeniería de Sevilla at 30th of November (9h to 14h), organised by ISQ (Portuguese ESCO) and the University of Seville.

The idea for the seminar is to disseminate the potential of energy performance contracts and demonstrate some of success cases in Portugal. It would be very interesting to have somebody from current Spanish ESCO market with expertise in Spanish case studies to promote the exchange of experiences and knowledge.

Table 25 - List of participants

Full Name	Affiliation
Francisco Jesus Lizana Moral	Universidad de Sevilla
Elisa López	Universidad de Sevilla
Nabil Mohamed	Universidad de Sevilla
Fco. Palomo	Universidad de Sevilla
Carlos Ortiz	Universidad de Sevilla
Rubén González	Universidad de Sevilla
Irene García Sáez	Universidad de Sevilla
Maite Gil	APAE
Juan Martínez	CEIP Mtro Pepe González
Jose Antonio Becerra	Universidad de Sevilla
Francisco Cáceres	ANESE
Filipe Silva	ISQ
Ricardo Rato	ISQ

The image shows a handwritten attendance list for the seminar. The list is on a piece of paper with a header section containing logos and contact information. The main part of the list is a table with columns for 'COMPANIA', 'NOME', 'Pais', and 'Assinatura'. The table is filled with handwritten entries, including names like 'Jesu Lizana', 'Elisa Lopez', 'Nabil Mohamed', etc., and their respective affiliations and signatures.

Figure 152 - Attendance List signed

1.1.28.1 Agenda of the seminar

The agenda of the seminar has the following schedule:

Programa		
Hora	Sesión	Intervienen
9:00	Registro y entrega de documentación Sesión de apertura	Jesús Lizana, US José Antonio Becerra, US
9:05 -	Conferencia 1: What are ESCO business models?	Ricardo Rato, ISQ
10:00 -	Conferencia 2: Energy Performance Contracts – Case Studies	Ricardo Rato, ISQ
10:30 -	Turno de preguntas. Debate	
11:00 -	Descanso-café.	
11:30 -	Conferencia 3: Mercado ESCO en España	Francisco Cáceres, ANESE, Cactus 2e
12:00 -	Conferencia 4: ClimACT Resource Matching Platform	Filipe Silva, ISQ
12:30 -	Conferencia 5: Proyecto Interreg SUDOE ClimACT	Jesús Lizana, US
13:00-14:00	Turno de preguntas. Debate Mesa redonda y clausura	Ricardo Rato, ISQ Filipe Silva, ISQ Jesús Lizana, US José Antonio Becerra, US Francisco Cáceres, ANESE, Cactus 2e

1.1.28.2 Diffusion

The seminar was diffused through different media and platforms:

SEMINAR ABOUT BUSINESS MODELS OF ENERGY SERVICE COMPANIES (ESCO)

VIERNES 30 DE NOVIEMBRE
9:00 - 14:00, SALA DE JUNTAS
ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA, SEVILLA

PROGRAMME

9:00-10:00 - WHAT ARE ESCO BUSINESS MODELS? (RICARDO RATO, ISQ)
10:00-10:30 - ENERGY PERFORMANCE CONTRACTS - CASE STUDIES (RICARDO RATO, ISQ)
10:30-11:00 - OPEN DISCUSSION
11:00-11:30 - BREAK
11:30-12:00 - MERCADO ESCO EN ESPAÑA (FRANCISCO CÁCERES, ANESE - CACTUS 2e)
12:00-12:30 - CLIMACT RESOURCE MATCHING PLATFORM (FILIPE SILVA, ISQ)
12:30-13:00 - PROYECTO INTERREG SUDOE CLIMACT (JESÚS LIZANA, US)
13:00-14:00 - OPEN DISCUSSION

ORGANISED BY: ISQ, US

SUPPORTED BY: ClimACT

WITH THE PARTICIPATION OF: anese

FOLLOW US ON: Interreg SUDOE ClimACT, Interreg SUDOE ClimACT, ClimACT_SUDOE

#ESCO_SEVILLA

Figure 104 – Dissemination slide

Web pages:

<https://www.etsi.us.es/node/2268>

<https://investigacion.us.es/noticias/3511>

1.1.28.3 Pictures

Pictures of the seminar:



Figure 105 – ESCO seminar 1



Figure 106 – ESCO seminar 2

1.1.29 Jóvenes con Investigadores (session 1)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on January 17th, 2019 at the Higher Technical School of Engineering. This meeting was attended by 15 people who held a basic presentation and open discussion on the ClimACT project, explaining the main concepts of energy, transport and air quality in order to start a common research project (school students-university) and achieve the expected results.

Table 22 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Lucía Pozo Ayerbe	IES ITACA
María Luengo	IES ITACA
Hannah Sanden	IES ITACA
Antonio Almellones Molina	IES MARTIN RIVERO
Sandra Naranjo Madiedo	IES JUAN CIUDAD DUARTE
Marta Basilio Aguilar	IES JUAN CIUDAD DUARTE
Ana Lozano López	IES MTRO. FCO. GALLARDO
Carla Querino Torres	IES MTRO. FCO. GALLARDO
Antonio Santiago García	IES VIRGEN DE VALME
María Teresa Sánchez Perea	IES IBN JALDÚN
Inmaculada Pozo	IES MTRO. FCO. GALLARDO
Ángela Robles	IES MTRO. FCO. GALLARDO

Attendance List

Title of the meeting: JORNES CON INVESTIGADORES, SESIÓN 1.
 Date: 12/1/2022 WP n.º: WP3 Activity n.º: 65
 Start time: 9:00 End time: 1:00
 Meeting Venue (city and country): ESCUELA TECNICA JUSTINO DE MONTAÑES
LEONIA

Beneficiary Leader: ☒ IST ☐ ISO ☐ CEDIGREEN ☐ CABAE ☐ CEMAT
☒ IUSE ☐ OURA ☐ OVR ☐ CINGB

Organization	Name	E-mail	Signature
IES Virgen de Luján	Arturo Sotelo	arturo.sotelo@gmail.com	
IES JEN JUAN	Roberto Sotelo	roberto.sotelo@gmail.com	
IES MAESTRO FERNANDO GARCÍA	Carlos Sotelo	carlos.sotelo@gmail.com	
IES MAESTRO FERNANDO GARCÍA	Andrés Lorenzo López	andres.lopez@gmail.com	
IES Martín Ruiz	Arturo Montaña	arturo.montana@gmail.com	
IES San Andrés	Roberto Sotelo	roberto.sotelo@gmail.com	
IES San Andrés	Sebastián Montaña	sebastian.montana@gmail.com	
IES SAN	Roberto Sotelo	roberto.sotelo@gmail.com	
IES SAN	Roberto Sotelo	roberto.sotelo@gmail.com	
IUSE	Elisa López	elisa.lopez@gmail.com	
IUSE	Natalia Montaña	natalia.montana@gmail.com	
IES MAESTRO FERNANDO GARCÍA	Roberto Sotelo	roberto.sotelo@gmail.com	
IES MAESTRO FERNANDO GARCÍA	Roberto Sotelo	roberto.sotelo@gmail.com	

Figure 107 - Attendance List signed

1.1.29.1 Agenda of the youth students session

ClimACT with youth students from different schools (Session 1)			
Time	Session		Participants
10:00 - 10:30	Presentation of the research group of the university		Jesús Lizana Elisa López Nabil Mohamed
10:30 - 11:30	Presentation research projects: justification, objectives, methodology, tools and basic concepts	CLIMACT project	Jesús Lizana Elisa López Nabil Mohamed
		REMEDIOS project	Jesús Lizana Elisa López Nabil Mohamed
11:30 – 12:00	Break		
12:00 - 14:00	Explanation of research activities	Energy	Jesús Lizana
		Recycling	Jesús Lizana
13:00 - 14:00	Presentation of the research project: Explanation of methodology, objectives, different scenarios approach, hypothesis, measures, analysis and conclusions.		Jesús Lizana

Duration of the session: 240 minutes approximately.

1.1.29.2 Minute of the meeting in Seville

Welcome and opening

The session began with the registration and delivery of the documentation to all youth participants who attended representing to each centre. A presentation was made of the research group of the university and the advances that it is carrying out in diverse investigations.

Climact and Remedios presentation

Members of the research team from the University of Seville, started the session with a brief explanation of the projects, defining the main objectives, methodology tools which are going to be needed and what is the relationship expected between the research team of the university and each educational centre and its students for the correct development of the project.

Concepts explanation and practical exercises

Some basic concepts were explained to achieve greater energy savings in their schools and in their homes.

1.1.29.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.



Figure 108 – Group picture: all participants (researches and students)

1.1.30 Jóvenes con Investigadores (session 2)

















University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on February 21st, 2019 at the Higher Technical School of Engineering in Seville. This meeting was attended by 15 people who held a discussion on energy and recycling strategies, explaining the main concepts in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 23 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Lucía Pozo Ayerbe	IES ITACA
María Luengo	IES ITACA
Hannah Sanden	IES ITACA
Antonio Almellones Molina	IES MARTIN RIVERO
Sandra Naranjo Madiedo	IES JUAN CIUDAD DUARTE
Marta Basilio Aguilar	IES JUAN CIUDAD DUARTE
Ana Lozano López	IES MTRO. FCO. GALLARDO
Carla Querino Torres	IES MTRO. FCO. GALLARDO
Antonio Santiago García	IES VIRGEN DE VALME
María Teresa Sánchez Perea	IES IBN JALDÚN
Inmaculada Pozo	IES MTRO. FCO. GALLARDO
Ángela Robles	IES MTRO. FCO. GALLARDO

Title of the meeting: WORKING GROUP INVESTIGATIONS SESSION 2
 Date: 21/05/00 What: WPS Architect: 06
 Start time: 1:00 End time: 1:00
 Meeting location (city and country): EXPERIMENTAL SECTION OF INVESTIGATIONS
SEVEN

Beneficiary Location: ☐ IST ☐ IUL ☐ BOGORENM ☐ NDAE ☐ CEMAC
☒ USE ☐ UJR ☐ VLR ☐ URGZ

Organization	Name	Email	Signature
USE	Jesús López	plaza@us.es	
USE	NABEL MARCHETTI	nabielmarchetti@gmail.com	
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ElisaACT project is co-financed by European Regional Development Fund

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1.1.30.1 Agenda of the session

ClimACT with youth students from different schools (Session 2)		
Time	Session	Participants
10:00 - 11:30	Presentation of the work developed by the students. First approach and results. Each student exposes their proposals.	
11:30 - 12:00	Break	
12:00 - 12:30	Discussion of the results among the students, teacher and researches in order to achieve an agreement to jump to the experimental stage.	All
12:30 - 13:30	Definition of the experimental stage development: expected results, required data, (re)explanation of the tools, etc.	
13:30 - 14:00	Organizing tasks, deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.30.2 Minute of the first meeting in Seville

Welcome and opening

The session began with a brief explanation from each youth participant who attended to the session representing each school. Each student has noticed in the last months the excess of energy consumption in their schools and in their homes, considering useful the information that they received in the first session.

First results discussions and methodology explanation

A debate was developed on how to organize the report to be developed by the students in different environmental sectors: energy and recycling. Members of the research team from the University of Seville tried to suggest to the students some fields where they can incorporate measurements to improve the environmental performance.

In addition, some tools for measuring were explained and it was shown a general schedule for developing the final report.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set. Each student has a different field of application to incorporate measures. The main objectives are related to compare and evaluate the existing environmental performance for each defined sector.

1.1.30.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.



Figure 110 – Session 2. Picture 1



Figure 111 – Session 2. Picture 2



Figure 112 – Session 2. Picture 3



Figure 113 – Session 2. Picture 4

1.1.31 Jóvenes con Investigadores (session 3)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on March 3rd, 2019 at the Higher Technical School of Engineering in Seville. This meeting was attended by 15 people who held a discussion on energy and recycling strategies, explaining the main concepts in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 24 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Lucía Pozo Ayerbe	IES ITACA
María Luengo	IES ITACA
Hannah Sanden	IES ITACA
Antonio Almellones Molina	IES MARTIN RIVERO
Sandra Naranjo Madiedo	IES JUAN CIUDAD DUARTE
Marta Basilio Aguilar	IES JUAN CIUDAD DUARTE
Ana Lozano López	IES MTRO. FCO. GALLARDO
Carla Querino Torres	IES MTRO. FCO. GALLARDO
Antonio Santiago García	IES VIRGEN DE VALME
María Teresa Sánchez Perea	IES IBN JALDÚN
Inmaculada Pozo	IES MTRO. FCO. GALLARDO
Ángela Robles	IES MTRO. FCO. GALLARDO

Title of the meeting: _____

Date: 22/3/2019 WP n° WP3 Activity n° 67

Start time: 15 End time: 16:00

Meeting Venue (city and country): Skanska Tower, Skanska AB, LÖNNSTADEN, Sweden

Beneficiary Location: ☐ IST ☐ ISQ ☐ EDGREEN ☐ ABAC ☐ CEMAT
☒ USE ☐ ULR ☐ ULR ☐ ULR ☐ ULR

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1.1.31.1 Agenda of the session

ClimACT with youth students from different schools (Session 2)		
Time	Session	Participants
10:00 - 11:30	Presentation of the work developed by the students. Developing of research paper and poster	All
11:30 - 12:00	Break	
12:00 - 13:30	Discussion of the results among the students, teacher and researches in order to achieve an agreement.	
13:30 - 14:00	Organizing tasks, deadlines and work packages of each student for the next session	

Duration of the session: 240 minutes approximately.

1.1.31.2 Minute of the first meeting in Seville

Welcome and opening

The session began with the presentation of the tasks for developing the research work.

Working process

All students were involved in different tasks, discussing about the results and other paper sections.

Organizing tasks and work packages

Finally, the different tasks to be done for the next session were distributed to each student and the delivery dates necessary for the final report were set.

1.1.31.3 AOB during the meeting in Seville

During the session, pictures were taken in all different moments of the event, from the registration of students and the project explanation.



Figure 115 – Session 3. Picture 1

1.1.32 Jóvenes con Investigadores (session 4)

University of Seville team developed a meeting with some secondary students from different schools. This meeting took place on March 25st, 2019 at the Higher Technical School of Engineering in Seville. This meeting was attended by 15 people who held a discussion on energy and recycling strategies, explaining the main concepts in order to develop a collaborative research project among school students and university and achieve the expected results.

Table 25 - List of participants

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla
Lucía Pozo Ayerbe	IES ITACA
María Luengo	IES ITACA
Hannah Sanden	IES ITACA
Antonio Almellones Molina	IES MARTIN RIVERO
Sandra Naranjo Madiedo	IES JUAN CIUDAD DUARTE
Marta Basilio Aguilar	IES JUAN CIUDAD DUARTE
Ana Lozano López	IES MTRO. FCO. GALLARDO
Carla Querino Torres	IES MTRO. FCO. GALLARDO
Antonio Santiago García	IES VIRGEN DE VALME
María Teresa Sánchez Perea	IES IBN JALDÚN
Inmaculada Pozo	IES MTRO. FCO. GALLARDO
Ángela Robles	IES MTRO. FCO. GALLARDO

ClimACT

Activity n°

End time: 4:00

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☐ CENAT

Figure 116 – Attendance List signed

1.1.32.1 Agenda of the session

ClimACT with youth students from different schools (Session 2)		
Time	Session	Participants
10:00 - 11:30	Presentation of the work developed by the students. Development of research paper and poster	All
11:30 - 12:00	Break	
12:00 - 13:30	Discussion of the results among the students, teacher and researches in order to achieve an agreement.	
13:30 - 14:00	Organizing poster presentation	

Duration of the session: 240 minutes approximately.

1.1.32.2 Minute of the first meeting in Seville

Welcome and opening

The session began with the presentation of the tasks for developing the research work.

Working process

All students were involved in different tasks, discussing about the results and other paper sections.

Organizing tasks and work packages

Finally, the poster presentation was divided into each student.

1.1.32.3 AOB during the meeting in Seville

During the session, following poster was developed for presentation in a Congress.



Soluciones de gestión energética y medioambiental hacia una economía baja en carbonos

Lucía Pozo Ayerbe, María Luengo y Hannah Sanden (IES ITACA)

Antonio Almellones Molina (IES MARTÍN RIVERO)

Sandra Naranjo Madiedo y Marta Basilio Aguilar (IES JUAN CIUDAD DUARTE)

Ana Lozano López y Carla Querino Ibáñez (IES MTRO. FCO. GALLARDO)

Antonio Santiago García (IES VIRGEN DE VALME)

María Teresa Sánchez Perea (IES IBN JALDÚN)

1. Objetivos

Los objetivos de este proyecto son:

- Evaluación del potencial de centros escolares hacia una economía baja en carbono para un futuro sostenible.
- Concienciación e implicación de las comunidades hacia un cambio respetuoso con el medio ambiente.
- Valoración de soluciones de mejora en centros piloto relativas al consumo de energía y al reciclaje de papel.

2. Metodología

La metodología se desglosa a través de los siguientes puntos:

- Selección de un aula piloto por cada uno de los seis centros participantes.
- Medición de consumo energético así como de generación de residuos.
- Valoración de soluciones de mejora ambiental.
- Valoración de la repercusión ambiental al poner en marcha las soluciones en los 4.500 centros de Andalucía.

Consumo de energía

Valores evaluados:
kWh/mes, €/mes, KgCO₂/mes

Reciclaje de papel

Valores evaluados:
Kg de papel/mes



3. Resultados

COMPORTAMIENTO ENERGÉTICO DEL AULA:

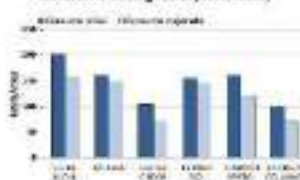
Consumo medio: 147,2 kWh/mes

Facturación económica asociada: 19,9 €/mes

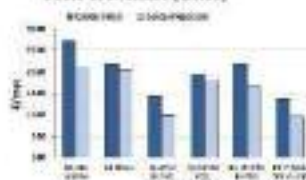
Impacto ambiental: 54,7 KgCO₂/mes.

Con las mejores propuestas se consigue una reducción energética media de 28,8 kWh/mes, con un ahorro económico de 4 €/mes y disminución de emisiones del 30%.

Consumo energético (kWh/mes)



Coste económico (€/mes)

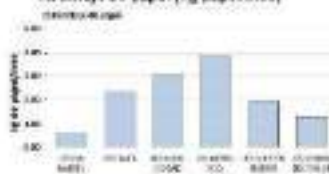


POTENCIAL DE REICLAJE DE LAS AULAS:

Reciclaje medio: 2,3kg de papel/mes

Con la instalación de papeleras y la concienciación del alumnado, se ha conseguido reciclar entre 0,5 y 3,9 kg de papel al mes.

Reciclaje de papel (kg papel/mes)



4. Conclusiones

Implementando medidas de mejora ambiental en todos los centros educativos de Andalucía conseguimos:

En energía, un ahorro de 700000€/mes, reduciendo las emisiones de kgCO₂ en 1700 toneladas mensuales.

En residuos, reciclar 314 toneladas de papel/mes, evitando la tala de 5348 árboles.

Figure 117 – Final poster of the research work.

1.1.33 17ª Feria de la ciencia

The research team of the University of Seville participated in the 17th edition of the Spanish "Science Fair", which was held in Seville on May 16rd, 17th and 18th, 2019. This event was attended by schools from all Andalusian regions participating in different innovative and research activities.

Table 26 - List of participants (only USE team)

Full Name	Affiliation
Lizana, Francisco Jesús	University of Sevilla
López, Elisa	University of Sevilla
Mohamed, Nabil	University of Sevilla

Title of the meeting: PARTICIPACIÓN DE EXPERTOS EN FARMACIA DE LA CIUDAD
 Date: 16/5/17 - 17/5/17 MFPA: 1613 Approved by: 69
 Start time: 1:00 End time: 2:00
 Meeting Venue (city and country): FIES PALACIO DE CONFERENCIAS Y EXPOSICIONES DE
LAOIS

Beneficiary location: ☐ ST ☐ SL ☐ EUSGREEN ☐ ASAE ☐ CEMAF
☒ UAE ☐ UBA ☐ ULI ☐ UNGE

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Figure 118 – Attendance List signed

The 17th edition of the Spanish "Science Fair" was divided into different stands, which were opened along May 16rd, 17th and 18th, 2019. Next figures show the structure of stands and their topics. Stand number 112 was associated to the ClimACT project.



Figure 119 – Distribution of all stands in the 16th Science Fair

1. Sociologia del Trabajo y el Productor en el Género. Seminario Teórico de	16. Mujeres y el Género. José María Rodríguez García	31. El Trabajo en el Hogar. J. María Rodríguez García
2. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	17. El Trabajo en el Hogar. J. María Rodríguez García	32. El Trabajo en el Hogar. J. María Rodríguez García
3. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	18. El Trabajo en el Hogar. J. María Rodríguez García	33. El Trabajo en el Hogar. J. María Rodríguez García
4. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	19. El Trabajo en el Hogar. J. María Rodríguez García	34. El Trabajo en el Hogar. J. María Rodríguez García
5. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	20. El Trabajo en el Hogar. J. María Rodríguez García	35. El Trabajo en el Hogar. J. María Rodríguez García
6. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	21. El Trabajo en el Hogar. J. María Rodríguez García	36. El Trabajo en el Hogar. J. María Rodríguez García
7. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	22. El Trabajo en el Hogar. J. María Rodríguez García	37. El Trabajo en el Hogar. J. María Rodríguez García
8. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	23. El Trabajo en el Hogar. J. María Rodríguez García	38. El Trabajo en el Hogar. J. María Rodríguez García
9. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	24. El Trabajo en el Hogar. J. María Rodríguez García	39. El Trabajo en el Hogar. J. María Rodríguez García
10. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	25. El Trabajo en el Hogar. J. María Rodríguez García	40. El Trabajo en el Hogar. J. María Rodríguez García
11. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	26. El Trabajo en el Hogar. J. María Rodríguez García	41. El Trabajo en el Hogar. J. María Rodríguez García
12. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	27. El Trabajo en el Hogar. J. María Rodríguez García	42. El Trabajo en el Hogar. J. María Rodríguez García
13. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	28. El Trabajo en el Hogar. J. María Rodríguez García	43. El Trabajo en el Hogar. J. María Rodríguez García
14. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	29. El Trabajo en el Hogar. J. María Rodríguez García	44. El Trabajo en el Hogar. J. María Rodríguez García
15. Sociología del Trabajo y el Productor en el Género. Seminario Teórico de	30. El Trabajo en el Hogar. J. María Rodríguez García	45. El Trabajo en el Hogar. J. María Rodríguez García

Figure 120 – Topic of all stands in the 16th Science Fair

1.1.33.2 AOB during the 16th Science Fair

During the session, pictures were taken in all different moments of the event.

1.1.33.2.1 Pictures of the event



Figure 121 – Stand of ClimACT pilot school