



**Monitoring report for
technologies mobilities II
(D 1. 3)**

Energytran

Research infrastructures cooperation for energy transition between European and Latin American and the Caribbean countries.



Content

1. Executive summary.....	3
2. Introduction	3
3. Interest in carrying out the mobility.....	3
4. Number of the final mobilities for technology.....	4
5. Institutional sending mobilities: a narrative account.....	6
6. Integrated reflections: quantitative and qualitative insights from the technology mobilities of the Energytran project.....	12
7. Policy-oriented implications from technology mobilities	13
8. Conclusion on the technology mobilities of the Energytran project.....	13
9. Annexes.....	¡Error! Marcador no definido.

D.1.3 Monitoring report on technology mobilities II

Settings	Value
Document Title:	Monitoring report for technologies mobilities II
Project Title:	EULAC Energytran: Research infrastructures cooperation for energy transition between Europe and Latin-American and the Caribbean countries
Project Coordinator:	OEI
Deliverable leader:	OEI
Number and type of deliverable:	Document, report
Work Package number:	WP1
Doc. Version:	Version 1
Description:	Document describing the mobilities carried out related to Technology
Dissemination level:	Public
Date:	30/11/2025

Document Approver(s) and Reviewer(s):

NOTE: All Approvers are required. Records of each approver must be maintained. All Reviewers in the list are considered required unless explicitly listed as Optional.

Name	Role	Action	Date
OEI	Coordinator	Elaboration	14/10/2025
General Assembly of the project	Decision-making body of the consortium	Review	30/11/2025

Document history:

The Document Author is authorized to make the following types of changes to the document without requiring that the document be re-approved:

- Editorial, formatting, and spelling
- Clarification

To request a change to this document, contact the Document Author or Owner.

Changes to this document are summarized in the following table in reverse chronological order (latest version first).

Revision	Date	Created by	Short Description of Changes
Draft 1	14/10/2025	OEI	Starting of drafting version 1
Final version	30/11/2025	OEI	Includes all the modifications of the consortium

Configuration Management: Document Location

The latest version of this controlled document is stored in EULAC Energytran intranet.

As part of the project, a website has been developed at <https://energytran.oei.int/> containing all the relevant information, including this document.

Narrative report on technology mobilities: advancing renewable energy, hydrogen technologies, and environmental innovation within the EU–LAC Energytran framework project.

1. Executive summary

This report provides a comprehensive overview of technology mobility activities carried out by Latin American and European institutions in the fields of solar energy, hydrogen technologies, membrane distillation, photocatalytic hydrogen production, and renewable energy applications, within the framework of the EnergyTRAN project. This overview specifically relates to Work Package 1: Monitoring Report for Technology Mobilities.

In total, **22 technology mobilities were implemented across 6 countries, involving 15 participating institutions from both regions.** These exchanges reflect the project's commitment to fostering scientific collaboration, strengthening research capacities, and promoting knowledge transfer between the EU and LAC in strategic areas of the energy transition.

The mobilities generated both measurable outcomes and strategic impacts, including operation of advanced solar and hydrogen systems, participation in workshops and roundtables, execution of experimental studies, and collection of technical data. Qualitative achievements included consolidation of long-term research partnerships, strengthened scientific expertise, and identification of joint research opportunities. This integrated report synthesizes the contributions of all mobilities, highlighting their impact on renewable energy research and EU–LAC collaboration frameworks.

2. Introduction

The project Energytran aims to tackle the shared challenge of the energy transition by facilitating the exchange, generation, and transfer of knowledge among EU and LAC research infrastructures from a multidisciplinary perspective (technological, environmental, social). The project supports the development of public policies and regulatory frameworks that promote climate neutrality and a clean, sustainable, and just energy sector transition to advance toward a resilient society.

Between October 2024 and July 2025, series of scientific mobility programs were carried out by leading Latin American institutions in collaboration with European partners. These initiatives were framed within the broader context of the EU–LAC Energy Transition and Innovation agenda, addressing critical global challenges such as decarbonization, sustainable water management, and the deployment of renewable energy technologies.

The mobilities, involving the partners EU-SOLARIS ERIC, Pontificia Universidad Católica de Chile (PUC), Tecnológico Nacional de México (TecNM), Universidad Nacional del Nordeste (UNNE), and Universidad Nacional de San Martín (UNSAM), were designed to integrate experimental research, advanced laboratory techniques, policy-oriented discussions, and technical field visits. Through these exchanges, participating institutions strengthened cross-regional collaboration, enhanced technical capacities, and contributed to the co-creation of knowledge that bridges technological innovation and societal needs. As part of WP1, this deliverable supports the continuous monitoring and evaluation of scientific exchanges under the EnergyTRAN framework.

This context is part of a broader effort to respond to the challenges of the global energy transition, promoting the development of sustainable technologies and fostering cooperation between European and Latin American institutions leading the advancement of renewable energies.

3. Interest in carrying out the mobility

For both the sending and receiving institutions, mobility represents a valuable opportunity to strengthen specific skills and areas of knowledge in the field of solar technology, as well as other types of energy.

From the point of view of the sending institution, this mobility facilitates its researchers' access to experiences and the possibility of first-hand learning about technological innovations and applied research methodologies. For hosting researchers and organizing mobilities for other European institutions, allows it to enrich its own research ecosystem, while generating opportunities for future collaboration with highly qualified professionals

D.1.3 Monitoring report on technology mobilities II

from institutions in Latin America and the Caribbean, expanding its network of knowledge and strategic alliances.

- **Promoting Collaboration and Strengthening Skills**

The Energytran project seeks to foster international collaboration by strengthening scientific cooperation between Ibero-American and European research communities in concentrated solar energy and other sustainable technologies. This mobility not only facilitates the exchange of technical and scientific knowledge but also creates a platform for sharing ideas and fostering joint innovation. Participating researchers benefit from the opportunity to enhance their technical skills, gain in-depth knowledge of new techniques and specialized equipment, and build professional expertise. At the same time, the mobility strengthens institutional ties, establishing trust-based relationships that can lead to long-term collaborative projects, joint technology development, and capacity building on both sides of the Atlantic. These networks also open avenues for future research initiatives, supporting the shared goal of advancing renewable energies and contributing to a faster and more effective energy transition.

- **Need for exchange of knowledge and good practices**

Mobility facilitates an enriching exchange of knowledge and good practices in the management of research and development in sustainable energies. This interaction is crucial to establish common standards and for Ibero-American and European researchers to share successful approaches, both in the use of advanced technology and in the implementation of research methodologies that have proven to be effective. In addition, it allows for the identification of synergies in terms of innovation and sustainability approaches that are priorities on both continents. These exchanges contribute directly to the EU–LAC Common Research Area by reinforcing human capital and aligning R&I priorities

4. Number of the final mobilities for technology

After a call within the Eu-Solaris ERIC, the total number of mobilities proposed for technology was 38. Finally, the mobilities carried out were 21 from LAC to Europe and 1 from Europe to LAC.

It is important to take into account that the forecast was 15 mobilities from LAC to Europe so that the demand from European Research Infrastructures has been better than the expectation. The Energytran consortium could increase the number of final mobilities. However it is necessary to still foster the mobility from LAC to Europe in order to cover the interest of European R&I activities in cooperating with Latin-America.

D.1.3 Monitoring report on technology mobilities II

Institutions receiving mobilities in Europe	Number of mobilities proposed	Mobilities carried out
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT) - Plataforma Solar de Almería (PSA)	8	UNNE (2) TECNM (2) PUC (1)
▪ Topics of the mobility:		
-CSP / STE	5	
-Lithium	1	
-Hydrogen Valorization	2	
Laboratoire Procédés, Matériaux et Energie Solaire (CNRS PROMES)	2	CENAT (1)
▪ Topics of the mobility:		
-CSP / STE	1	
- Others	1	
German Aerospace Center (DLR)	2	UNNE (1)
▪ Topics of the mobility:		
-CSP / STE	2	
Institute for Systems and Computer Engineering, Technology and Science (INESC TEC)	3	CENAT (1)
▪ Topics of the mobility:		
- Hydrogen Valorization	2	
- Others	1	
Instituto Politécnico de Setúbal (IPS)	4	TECNM (1) PUC (1)
▪ Topics of the mobility:		
-Lithium	2	
-Hydrogen Valorization	2	
Laboratório Nacional de Energia e Geologia (LNEG)	5	TECNM (1) PUC (2)
▪ Topics of the mobility:		
-CSP / STE	3	
-Hydrogen Valorization	1	
-Others	1	
The Cyprus Institute	2	TECNM (1)
▪ Topics of the mobility:		
-CSP / STE	2	
Universidade de Évora (UEVORA)	12	-
▪ Topics of the mobility:		
-CSP / STE	4	
-Lithium	4	
-Hydrogen Valorization	4	
LIFEWATCH ERIC	6	UNSAM (6)
▪ Topics of the mobility:		
-Open data	6	
CSIC	1	UNNE (1)
▪ Topics of the mobility:		
-Policy	1	
Total general	38	21

5. Institutional sending mobilities: a narrative account

Sending institutions	
CENAT	2
UNSAM	6
UNNE	4
TECNM	5
PUC	4
EU SOLARIS (from Europe to Latin-America)	1
Total general	22

EU-SOLARIS ERIC in Latin America: exploring solar energy across contexts (1)

In March 2025, EU-SOLARIS ERIC embarked on a journey across Latin America, beginning in Santiago, Chile. At the Pontificia Universidad Católica de Chile (PUC), the delegation immersed itself in the vibrant ecosystem of solar research. Visits to the Thermal Laboratories, PECIab, and DICTUC facilities revealed the advanced state of experimental solar energy applications, ranging from smart grids and electromobility systems to thermal pools and high-precision solar irradiance forecasting. Seminars and guided tours were not merely descriptive; they fostered active scientific dialogue, enabling the exchange of technical knowledge and methodological approaches that will shape future collaborative projects.

In Buenos Aires, Argentina, the mobility continued at UNSAM and UNQ, where discussions centered on national and international renewable energy projects, academic integration of solar technologies, and community-oriented energy solutions. These engagements highlighted the strategic importance of aligning research with local socio-environmental needs, while simultaneously exploring cross-regional research opportunities in solar energy deployment.

The journey concluded in Mexico, with field visits under the Energytran project. At SMEs like DANGO Brewery and Carzoo, the delegation observed first-hand how solar panels enhanced operational efficiency and sustainability outcomes. Visits to Nutribuenas and the Central de Abastos illustrated large-scale solar integration in industrial and urban infrastructures, emphasizing both technological and social dimensions. Participation in the TeCNM International Workshop in Aguascalientes provided a platform to exchange insights on policy, regulatory frameworks, and capacity-building strategies, reinforcing the role of science as a driver for regional energy transitions.

Through this mobility, EU-SOLARIS ERIC not only documented technological applications but also deepened cross-continental scientific collaboration, weaving a narrative of shared learning between Latin American and European institutions.

Pontificia Universidad Católica de Chile (PUC) to PSA – Spain (1)

The mobility took place between **DICTUC – Pontificia Universidad Católica de Chile (PUC)**, as the sending institution, and the **Plataforma Solar de Almería (PSA)** in Spain, as the host institution. Over a two-week period, the visit aimed to strengthen scientific collaboration in the field of solar-driven brine concentration and to explore technological solutions that could support both lithium extraction processes and potable water production in water-scarce regions of Chile.

D.1.3 Monitoring report on technology mobilities II

The researcher from PUC specializes in the purification of brines from salt flats for lithium carbonate (Li_2CO_3) production, while the host institution's research line focuses on the integration of solar thermal energy into small-scale desalination systems, particularly through **membrane distillation (MD)**. This complementarity provided a strong foundation for technical exchange and joint experimentation.

The general objective of the mobility was to become familiar with PSA's facilities, engage with its director and research teams, and explore opportunities for future collaboration in the field of solar-powered brine concentration. More specifically, the visit sought to study the operation of membrane distillation technologies using the **MDLab AGMD Solar Spring system**, with the aim of evaluating its performance in both brine concentration and pure water production.

During the stay, the researcher conducted an in-depth tour of PSA's infrastructure and solar energy research areas. This included a detailed review of different desalination systems and their integration with solar collectors. Practical work was carried out using a membrane distillation device, which made it possible to gain hands-on experience with its operating parameters, evaluate its efficiency, and identify potential improvements in system performance.

The experimental data collected during the laboratory sessions provided valuable insights into the capabilities of MD systems for concentrating brines relevant to the lithium industry, as well as their potential for producing drinking water in arid regions. The experience also helped clarify how solar-thermal-driven desalination could be adapted to Chilean conditions, particularly in areas with high solar irradiance and limited freshwater availability.

In addition to the technical activities, several working meetings were held to discuss future collaboration between DICTUC-PUC and PSA. These discussions focused on the possibility of joint research projects, knowledge exchange, and the development of new applications of solar energy for brine treatment and water production.

Overall, the mobility significantly strengthened the relationship between the two institutions, enhanced the researcher's understanding of membrane distillation and solar-thermal desalination technologies, and laid a solid foundation for future scientific cooperation in areas of strategic importance for both lithium production and water security.

Pontificia Universidad Católica de Chile (PUC) to Polytechnic Institute of Setúbal (IPS) and the National Laboratory of Energy and Geology (LNEG) in Portugal: green hydrogen and regulatory insights (1)

In February 2025, a researcher from PUC traveled to Portugal to engage with the Polytechnic Institute of Setúbal (IPS) and the National Laboratory of Energy and Geology (LNEG). The focus on green hydrogen encompassed both operational safety and regulatory frameworks, reflecting the broader policy-oriented objectives of sustainable energy development.

At IPS, the researcher explored pioneering projects such as Floene's pilot facility, where a controlled blend of natural gas and hydrogen was supplied to residential and industrial zones. Laboratory visits at Hylab and the Higher Technical Institute of Lisbon exposed researchers to hydrogen detection systems, flame measurement protocols, and simulation-based risk assessments. Industrial experiences at HyChem demonstrated the practical integration of low-cost electrolyzers and synthetic hydrogen carriers.

Subsequent engagement at LNEG focused on comparative analyses of regulatory frameworks, technical feasibility studies, and economic evaluations of hydrogen projects. The narrative emerging from these visits was one of mutual learning, where Chilean researchers gained deep insight into European practices, and European counterparts understood the challenges and opportunities within the Latin American context. This mobility reinforced the notion that advancing green hydrogen requires not only technical expertise but also policy alignment and risk-informed strategies.

Pontificia Universidad Católica de Chile (PUC) to Laboratório Nacional de Energia e Geologia, I.P. – LNEG (Portugal) (1)

In September 2025, an academic and research mobility took place at an European institution specialized in energy and geology, with a focus on Solar Heat for Industrial Processes (SHIP) and Thermal Energy Storage (TES) as key technologies to advance the decarbonization of industrial facilities.

The mobility pursued several objectives: to identify technological alternatives for decarbonizing industrial heat supply; to develop a methodological framework for rigorous technology assessment; to review and refine studies on the technical potential of solar thermal energy; and to strengthen institutional cooperation by building a platform for long-term collaboration between the participating entities.

Throughout the mobility, a wide range of technical and institutional activities were undertaken. These included visits to solar collectors, TES, and cogeneration laboratories, where experimental setups and testing procedures were reviewed, and integration strategies between TES and combined heat and power (CHP) systems were analyzed. An institutional review was also carried out to map experimental assets, identify research synergies, and explore potential joint projects.

As key outcomes, both institutions agreed to launch a comparative study on thermosiphon simulation, with the possibility of co-developing a new computational model if required. They also planned joint initiatives on SHIP/TES component testing, corrosion and materials research, and knowledge-exchange workshops on TES integration and advanced materials, including innovative microwave-based methods. Additionally, further cooperation was envisaged in cogeneration for historical buildings and in the harmonization of standards for packed-bed and solid TES systems, thereby laying the foundations for a long-term partnership in energy decarbonization research.

Pontificia Universidad Católica de Chile (PUC) to Escola Superior de Tecnologia do Barreiro- ESTBarreiro of the Polytechnic Institute of Setúbal (IPS) in Portugal (1)

In October 2025, a mobility from PUC (Chile) to Portugal was carried out to enhance the understanding of lithium resource development and processing technologies by analyzing how mineral composition, extraction methods, and material behavior influence process efficiency, environmental performance, and long-term sustainability. The specific objectives of the mobility were: To identify and study the main materials and process stages involved in lithium extraction from pegmatite deposits, including mining operations and chemical processing routes; to analyze and compare alternative extraction technologies under development in Portugal with conventional methods applied in other lithium-producing regions; and to evaluate the environmental and operational aspects of lithium projects, emphasizing water management, energy efficiency, and emission reduction strategies.

The activities carried out during the mobility were mainly focused on the Barroso Project, initially a feldspar and ceramics mine that has transitioned toward lithium production due to the growing strategic demand and high market price of lithium carbonate.

The mobility provided a valuable opportunity for technical exchange and collaboration between the host institutions and the visiting researcher. Throughout the stay, meaningful progress was achieved in understanding the development of lithium projects in Portugal and their connection with sustainability and material performance. Meetings allowed a detailed discussion about the Barroso Lithium Project, its mining plan, environmental management, and production strategy, offering important insights into how the Portuguese lithium industry approaches sustainable resource development. Likewise, visits enabled discussions on innovative extraction methods for pegmatite ores, including hydrometallurgical leaching as a cleaner alternative to conventional acid roasting. Additionally, a presentation was given on the advances and challenges of lithium extraction in South America, encouraging academic dialogue about shared issues such as water use, carbon footprint, and community relations. Overall, the mobility experience contributed to

D.1.3 Monitoring report on technology mobilities II

strengthening research links between institutions, enhancing technical knowledge in lithium resource processing, and fostering future collaboration in sustainability assessment and material performance studies.

Tecnológico Nacional de México (TecNM) to Spain, Cyprus and Portugal (5)

The mobility programs conducted by TecNM spanned multiple locations in Europe, including CIEMAT–Plataforma Solar de Almería (PSA), IPS Portugal, the Cyprus Institute and LNEG, and addressed complementary aspects of renewable energy and environmental engineering.

At PSA, researchers engaged with solar thermal applications and membrane distillation systems. Over several weeks, they conducted hands-on experiments with synthetic saline solutions, calibrating temperature, pressure, and flow parameters to optimize desalination efficiency. The narrative here is one of applied science meeting social impact, as the researchers explored sustainable solutions for water treatment in vulnerable communities.

Subsequently, TecNM researchers traveled to IPS Portugal to work on mathematical modeling of green hydrogen production. Using Energytran software, they simulated future energy scenarios for Mexico, integrating photovoltaic and wind generation with potential hydrogen storage solutions. Visits to hydrogen laboratories and hydroelectric infrastructures deepened their understanding of energy systems, while fostering discussions on policy implications, safety protocols, and industrial feasibility.

Collectively, TecNM's mobilities exemplify a multi-dimensional scientific narrative, connecting experimental science, modeling, and socio-environmental application, while strengthening long-term international collaborations.

At the Cyprus Institute, the mobility focused on strengthening scientific cooperation in renewable energy and exploring opportunities for joint research. Researchers met with Cypriots teams, visiting solar and clean energy facilities and advanced facilities under the Energytran project, including an inventory of research infrastructure for green and lithium valorization, as well as the drafting of a monograph on green hydrogen and lithium value chains. This mobility established the first institutional link between both institutions and laid the groundwork for future collaboration.

CeNAT (Costa Rica) to the PROMES-CNRS laboratory, France (1)

During February 2025, a scientific mobility took place between the National Center of High Technology (CeNAT) and the PROMES-CNRS laboratory, focused on the study and application of concentrated solar energy for thermochemical processes.

The main objective of the mobility was to strengthen technical skills in the use of solar reactors and their application in material production and transformation. Throughout the stay, the visiting researcher received specialized training on the operation of high-flux solar reactors, including optical alignment, thermal control, gas flow management, and data acquisition.

An experimental research plan was developed in collaboration with the host team to conduct solar-driven thermochemical experiments. The participant carried out optimization of experimental conditions, performed reaction experiments, and recorded process data.

As a result, an experimental protocol was established for future joint research, and the preparation of a peer-reviewed scientific paper was initiated, focusing on reactor performance and material characterization. The researcher also visited PROMES-CNRS laboratories and participated in advanced facility demonstrations, including emissivity measurements of high-temperature materials using an FTIR spectrometer equipped with an integrated hemispherical reflectance module.

This experience significantly contributed to strengthening technical and experimental capacities in the field of solar thermal applications and laid the groundwork for future scientific collaboration between the two institutions.

*D.1.3 Monitoring report on technology mobilities II***CeNAT (Costa Rica) to the Institute for Systems and Computer Engineering, Technology and Science (INESCTEC) - Portugal (1)**

Between May 5th and 30th, 2025, a research mobility was carried out between the National Center of High Technology (CeNAT) in Costa Rica and the Institute for Systems and Computer Engineering, Technology and Science (INESCTEC) in Porto, Portugal. The exchange aimed to strengthen collaboration in renewable energy, hydrogen valorization, and sustainable technology planning.

The mobility focused on supporting the techno-economic planning of hybrid renewable energy systems in Costa Rica, particularly through the utilization of landfill biogas for clean energy generation. The researcher worked on defining a project proposal to compare different biogas use scenarios, selecting Homer Pro as the main modeling tool to simulate systems integrating biogas, hydrogen, and electricity.

Throughout the stay, the researcher engaged in technical exchanges with Portuguese experts in bioenergy modeling, decarbonization pathways, and hybrid system optimization. These interactions enriched the project design and opened possibilities for future cooperation. The main outcome was the preparation of a techno-economic study proposal analyzing various landfill biogas utilization scenarios in Costa Rica, incorporating real operational data. Portuguese researchers expressed interest in collaborating, offering expertise in hybrid system modeling and hydrogen integration.

Discussions also revealed regulatory and market challenges in Costa Rica, particularly regarding energy commercialization, emphasizing the need to prioritize internal energy use and alternative fuels. Several national stakeholders, including private companies and financial institutions, showed willingness to participate, ensuring a broad and practical foundation for the initiative.

Overall, the mobility was a highly productive experience, strengthening institutional cooperation, advancing knowledge on hydrogen technologies, and setting the stage for future joint projects that promote clean energy and circular economy practices between Costa Rica and Portugal.

Universidad Nacional de San Martín (UNSAM) -Argentina- to LifeWatch ERIC (6)

In May 2025, six UNSAM researchers traveled to Seville, Spain, to engage with two European institutions: LifeWatch ERIC and the Joint Research Centre (JRC). Over four days of technical sessions, the researchers focused on open science, environmental monitoring, data management, and policy-oriented research, highlighting the increasingly central role of data infrastructures in supporting global energy transitions.

Through workshops, technical demonstrations, and collaborative discussions, participants explored automated data management systems, FAIR-compliant environments, and analytical workflows, as well as Smart Specialization Strategies and sustainable innovation policies. This mobility narrative emphasizes the integration of digital tools, policy analysis, and collaborative research as essential components for addressing complex environmental and energy-related challenges.

This UNSAM mobility coincided with the workshop “Strengthening Europe–Latin America Cooperation in the Energy Transition,” organized by the Science, Technology, and Society Observatory of the Organization of Ibero-American States (OEI), in which UNSAM actively participated.

The workshop was part of the Energytran project, which brought together eleven partners from Latin America, Spain, and Portugal to promote a just and sustainable energy transition. Its main objective was to foster international dialogue and collaboration around the challenges of the energy transition, with a particular focus on the Ibero-American context.

The workshop included key scientific mobilities, such as that of CENIT (UNSAM, Argentina), which took place simultaneously with visits by the OEI Observatory of Science, Technology, and Society and the Ibero-American Network of Science and Technology Indicators (RICYT) to Spanish institutions. The shared agenda for both mobilities aimed to promote exchanges between Latin American and European partners, including the Spanish National Institute of Statistics (INE), Fundación Renovables, IPS, and INESCCTEC. This mobility, conducted within the framework of the workshop, highlighted the importance of dialogue and international cooperation in addressing the global challenge of the energy transition.

Universidad Nacional del Nordeste (UNNE) – Argentina to the Plataforma Solar de Almería (PSA) -Spain (2)

From October to November 2024, UNNE researcher engaged with PSA in Spain to deepen knowledge in solar thermal desalination and industrial-scale applications. The mobility integrated technical visits, experimental operation, and joint research planning.

Researchers operated an industrial-scale solar desalination system, analyzing parameters such as flow, pressure, and temperature, and linking these measurements to real-world water treatment challenges. Guided tours exposed participants to photovoltaics, solar concentrators, and hybrid energy systems. Interactions with PSA researchers catalyzed the co-design of research proposals, merging experimental insight with policy-relevant objectives.

This narrative illustrates how UNNE leveraged applied research to inform regional innovation, combining technical mastery with sustainable development goals.

Between July 1 and 15, 2025, a scientific mobility took place at the Plataforma Solar de Almería (PSA), part of the Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT). The purpose of this stay was to acquire knowledge on the application of line-focus concentrated solar thermal systems for industrial processes, to exchange research perspectives, and to lay the groundwork for a joint research project between CIEMAT and INENCO.

Throughout the stay, several meetings were held with PSA research staff to explore areas of collaboration, resulting in the decision to formalize a cooperation agreement between CIEMAT and CONICET to facilitate joint projects and mobility of researchers. Additional visits were made to facilities dedicated to solar concentration technologies, adaptive Fresnel collectors, and control systems managing real-time experimental data.

The researcher also engaged with teams working on energy efficiency in buildings, membrane distillation technologies, and solar irradiance measurement. This led to the initiation of a validation study using solar irradiance data from PSA to test the GEOSOL software developed at INENCO. The results of this study are planned to be presented at the 2026 Iberian and Ibero-American Congress of Solar Energy.

The mobility concluded with the establishment of professional links with multiple PSA research units, agreement on future collaborative projects, and the start of joint scientific work on solar radiation modelling and experimental validation.

Universidad Nacional del Nordeste (UNNE) at the German Aerospace Center (DLR) (1)

During the research stay at the German Aerospace Center (DLR), the participant gained theoretical and practical knowledge of Concentrated Solar Thermal Power (CST) technology at the Solar Tower Jülich. The mobility focused on understanding the operation of large-scale solar facilities, exploring possible technological adaptations to regional contexts, and identifying opportunities for future institutional cooperation.

The program included an introductory meeting and orientation, guided technical visits to the solar tower and related facilities, and participation in specialized seminars that presented the latest DLR research. These activities provided a clear overview of CST system operation and potential areas for collaboration.

The participant also presented the GIESMA research group's work from the Universidad Nacional del Nordeste, highlighting its contributions to the Energy Transition project and fostering dialogue with DLR researchers. The stay concluded with a visit to DLR's Cologne facilities, where laboratories dedicated to optical, mechanical, and thermal testing of solar concentrators, as well as research on green hydrogen and solar furnaces, were observed.

Overall, the experience deepened technical understanding of solar tower technologies—currently unavailable in Argentina—and strengthened prospects for joint research in solar thermal energy and industrial thermochemical applications.

D.1.3 Monitoring report on technology mobilities II

Universidad Nacional del Nordeste (UNNE) to Consejo Superior de Investigaciones Científicas (CSIC) - Spain (1)

Between 3 and 17 June 2025, a social impact mobility was conducted under the framework of the Energytran project, with the Universidad Nacional del Nordeste as the sending institution and the CSIC – Center for Human and Social Sciences (CCHS) as the host. This mobility focused on research lines including climate anthropology, climate change, political ecology, energy humanities, and energy transition. Its overarching objective was to foster horizontal cooperation between both institutions, generating knowledge on the social impact of the energy transition, particularly regarding the application of solar energy as a solution to socio-environmental energy challenges affecting vulnerable communities.

The mobility began with coordination meetings at the host institution to plan the activities to be undertaken. Throughout the two-week period, a rich exchange of knowledge and experiences took place, addressing social, political, and cultural dimensions of renewable energy. Comparative analyses were carried out on socio-territorial and social justice aspects of the energy transition in isolated regions of Argentina and Spain, providing a cross-regional perspective on the challenges faced by communities in accessing sustainable energy solutions. In parallel, presentations and discussions highlighted socio-environmental and legal conflicts surrounding contamination of vital natural resources, with a particular focus on water in Argentina.

An important part of the mobility involved the compilation and analysis of socio-environmental indicators that could support comparative studies of conflictive legal situations in Latin America and Europe. These efforts are aimed at producing a high-impact scientific article, focused on the social implications of using solar thermal energy to heat water in indigenous communities. Additionally, a seminar titled “**Energy Transition and Freshwater Conservation as a Social Right**” was organized and delivered, providing a platform to share research findings and foster dialogue on the intersections of energy transition, social equity, and environmental justice.

The outcomes of the mobility include the effective exchange of knowledge and experiences between the participating institutions, the preparation of a collaborative scientific article, and the dissemination of key insights through the seminar. Overall, this mobility contributed significantly to strengthening research capacities, promoting cross-regional collaboration, and advancing understanding of the social dimensions of the energy transition.

6. Integrated reflections: quantitative and qualitative insights from the technology mobilities of the Energytran project

Across all mobilities, outcomes reflect both breadth and depth of scientific and technological engagement.

- **Quantitative highlights:**

- Participation in 15 institutions across 6 countries.
- Engagement in over 50 structured experimental and analytical activities, including hands-on work in 4 solar laboratories, 3 hydrogen research facilities, and 2 pilot plants (solar desalination and membrane distillation systems).
- Participation in 2 international workshops with more than 40 experts, complemented by technical visits and specialized seminars at DLR.

- **Qualitative highlights:**

The qualitative impacts of mobility were significant, reflecting both scientific and institutional progress. The experience strengthened international research networks and cooperation between Latin American and European centers, fostering an environment of sustained collaboration. Participants developed advanced technical competencies and actively engaged in policy-oriented dialogues on renewable energy and hydrogen technologies, contributing to strategic planning for the energy transition.

D.1.3 Monitoring report on technology mobilities II

Throughout the stay, methodologies were exchanged, pilot projects documented, and joint research initiatives launched, consolidating a shared framework for future cooperation. This process not only enhanced the technical and scientific dimension of the collaboration but also aligned it closely with societal needs and policy priorities, creating a coherent narrative of innovation and partnership in the field of solar thermal energy and industrial thermochemical applications.

These technological mobilities reinforced knowledge transfer, promoted sustainable solutions, and expanded international research networks within the EU–LAC context, enhancing both scientific and technological capacity and cross-regional cooperation.

7. Policy-oriented implications from technology mobilities

The mobilities collectively highlight three key insights:

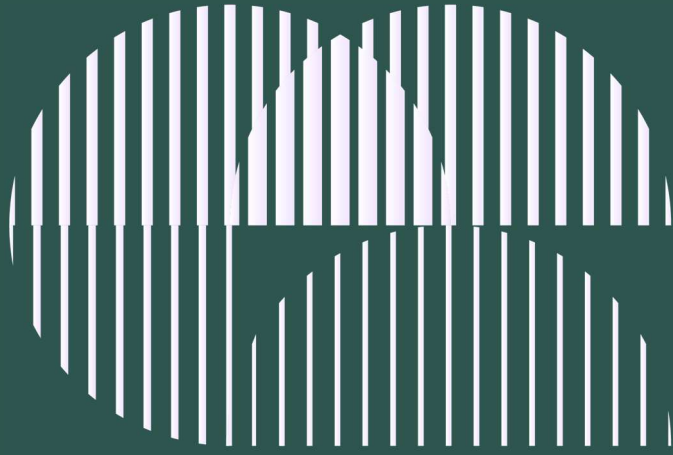
1. Technological and policy integration: advancing renewable energy and hydrogen solutions requires aligning experimental research with regulatory and policy contexts.
2. Capacity building and skill transfer: hands-on training, modeling, and collaborative experimentation enhance regional and international expertise, supporting sustainable energy transitions.
3. EU–LAC collaboration as a catalyst: cross-continental exchanges create long-term networks, enabling the co-creation of knowledge that is both scientifically robust and socially relevant.

These narratives demonstrate that scientific mobility is more than academic exercise; it is a strategic mechanism to inform policy, strengthen institutions, and advance global sustainability objectives.

8. Conclusion on the technology mobilities of the Energytran project

The technology mobilities carried out between October 2024 and July 2025 underscore the pivotal role of international collaboration in advancing research and innovation in renewable energy. By combining technical experimentation, policy-oriented dialogue, and institutional partnerships, these mobilities enhanced scientific and technical capacities, facilitated knowledge transfer, and generated strategic insights for energy transition and sustainable development. Collectively, they established a solid foundation for long-term EU–LAC cooperation in solar energy, hydrogen technologies, environmental engineering, and open science infrastructures.

These mobilities weave a rich and interconnected narrative of research and collaboration. They demonstrate how integrated, international scientific exchanges can simultaneously advance knowledge, strengthen technical expertise, and inform strategic policy, thereby shaping a sustainable, equitable, and innovative energy future.



Energytran

www.energytran.oei.int
energytran@oei.int



**Funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

