EUSOLARIS
ERIC

2024
Annual Report

Foreword

Dr. Diego Martínez Plaza
Managing Director
EU-SOLARIS ERIC

This has been a very special year for EU-SOLARIS ERIC, as we celebrate our second year of operation—a dream come true after many years of preparation and collaborative effort by the consortium. We are delighted to see how our governing bodies have begun to operate smoothly and routinely, establishing a solid foundation for future advancements.

During this period, our research project activities have gained greater prominence, notably our flagship project, 'SOLARIZE,' which we coordinate for the European CST R&D community. This project has enabled us to involve all countries that have participated in the EU-SOLARIS initiative at some point, even those not yet part of the consortium, thereby strengthening our collaborative network.

The year 2024 has also been one of growth, marked by Greece's accession as a new Observer—an exciting development that fills us with enthusiasm and optimism for the future.

In line with our plans, we have begun to resume networking activities that were previously developed in projects such as SFERA III. Our goal is to maintain and expand these initiatives in the long term. As a first step, we successfully sponsored the 'Doctoral Colloquium' of this new phase, which took place at the PROMES-CNRS laboratory in Odeillo (France), in July. We hope to continue strengthening this valuable collaboration among the institutes within the CST community.

Dissemination activities have also gained momentum this year, thanks to the collaboration of the institutes associated with our ERIC. An important milestone was the presentation of EU-SOLARIS at SolarPACES 2024, the leading our ERIC conference of the CST R&D community worldwide, held in Rome. Such actions allow us to showcase our work and expand our presence within the international community.

We are still in the early stages and recognize that much more can be achieved by developing activities with an even greater impact on the CST community. While this requires time, I am very proud of what has been accomplished so far and eager to continue progressing.

In 2024, we continued promoting our 'Internal Project,' initiative, funded with our own resources, which aims to advance research activities and improvement of our facilities. Additionally, we are working to enhance access to testing facilities for the entire scientific community, with the vision that open access will become a fundamental part of our identity as an ERIC.

We have also placed great emphasis on developing national nodes. EU-SOLARIS is an initiative involving multiple countries, and the R&D communities of each must actively participate in our activities. Although progress is slow, we have already reached a high level of implementation in some countries, and we will continue working enthusiastically in the coming year.

I hope that next year I can share new projects, achievements, and, most importantly, a more cohesive and stronger CST R&D community with all of you.

I would like to conclude by deeply thanking all my collaborators for their effort and enthusiasm in achieving these objectives. I also want to express my gratitude to the associated R&D institutes, whose support and contributions enrich our activities in many ways.

Thank you all for being part of this journey and for making this dream possible!

EU-SOLARIS ERIC – 2024 Status Report

Organisational Status

In 2024, EU-SOLARIS ERIC continued to consolidate its role as a European reference entity for Concentrated Solar Thermal (CST) and Solar Chemistry research infrastructures. With active participation from key member countries and leading institutions, the ERIC maintained its strategic alignment with European energy and climate objectives.

Key Activities and Achievements (2024)

Scientific & Technical Collaboration

EU-SOLARIS ERIC supported several high-impact R&D activities across solar tower systems, heliostat fields, and solar thermochemical processes. Notably, it launched an internal international collaboration project focused on:

- Heliostat field performance analysis
- Beam characterization systems for commercial solar towers
- Strategies to enhance solar tower performance
- This project, jointly led by CENER and international partners, was awarded €40,000 and spans 18 months (2022–2023, final results reported in early 2024).

Funding and Project Support

EU-SOLARIS ERIC facilitated the 2024 internal funding call, awarding €45,000 to CENER for a competitive proposal aiming to optimize heliostat calibration methods and improve measurement reliability in CST systems.

Access & Services

The ERIC continued to provide transnational access (TNA) to research infrastructures across member countries, promoting collaborative experimentation and data sharing in solar thermal energy.

Governance & Operations

The General Assembly met regularly throughout the year to guide strategic decisions, assess infrastructure performance, and refine access protocols. Updates to the internal rules of operation and user access policy were also initiated to enhance efficiency and transparency.

What We Do

EU-SOLARIS ERIC provides a comprehensive suite of services designed to support the development and deployment of CST technologies. This includes access to world-class research infrastructure, coordination of joint research projects, facilitation of data sharing and knowledge exchange, and outreach and dissemination activities.

Key activities include:

Access to Research Infrastructures: Offering access to state-of-the-art facilities and laboratories across Europe for CSP and STE research and testing.

Joint Research Projects: Coordinating and participating in collaborative research projects that address key challenges in CSP/STE technologies.

Data Sharing and Knowledge Exchange: Facilitating the sharing of data, research findings, and best practices among members and stakeholders.

Standardization and Certification: Support to the development of standards, testing procedures, and certification schemes to ensure high-quality and reliable CSP/STE systems.

Outreach and Dissemination: Engaging with the broader scientific community, industry, and the public to raise awareness of CSP/STE technologies and their benefits.

Our history

EU-SOLARIS ERIC was established as a European Research Infrastructure Consortium in response to the growing need for a coordinated, pan-European approach to advancing solar energy technologies, particularly CSP/STE. The idea for EU-SOLARIS emerged from the realization that despite significant investments in solar energy research across Europe, there was a lack of integration and collaboration among research institutions, which hindered the pace of technological development.

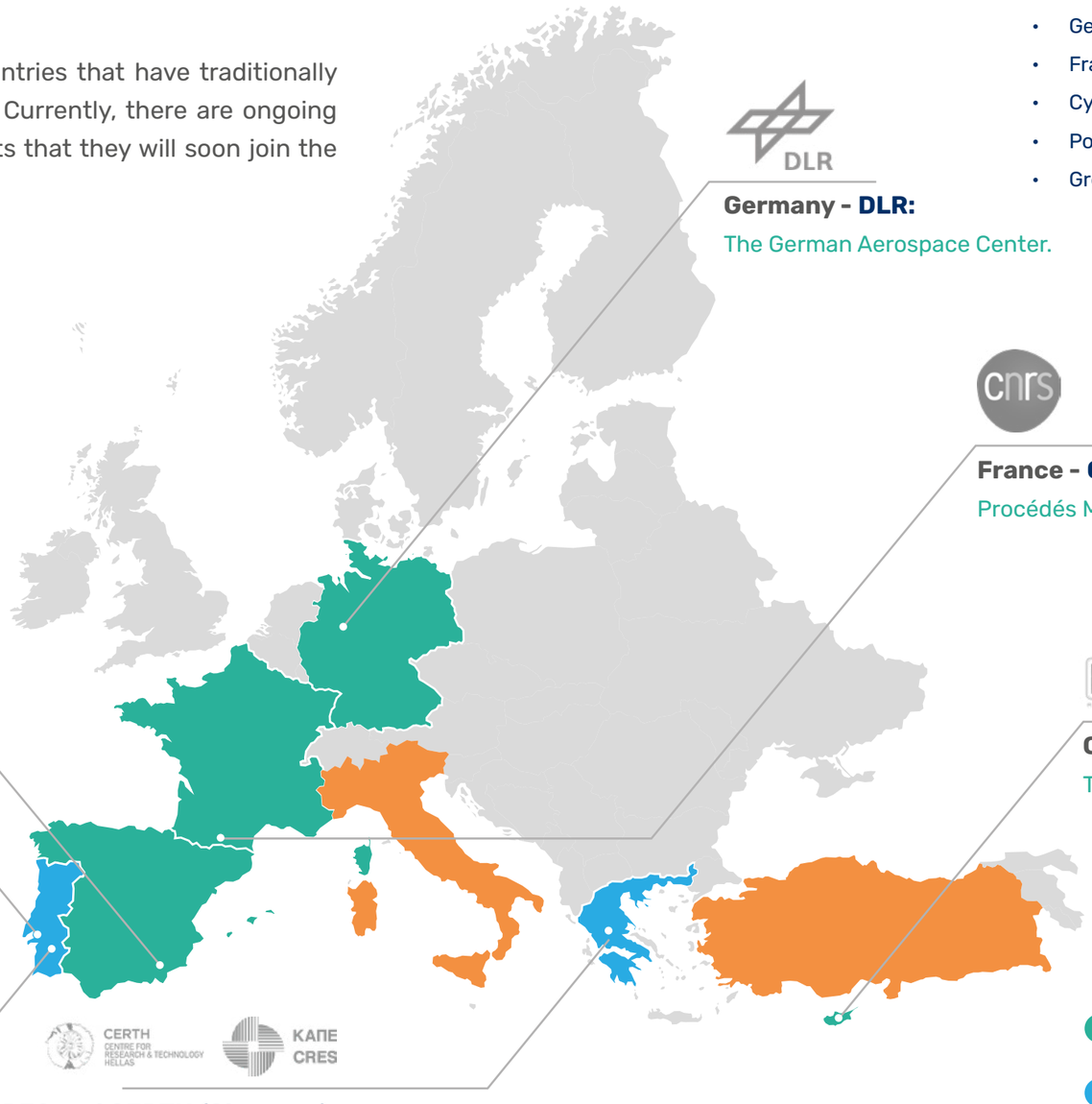
The foundation for EU-SOLARIS ERIC was laid through the EU-SOLARIS Preparatory Phase Project, which ran from 2012 to 2016 and was co-funded by the European Commission under the 7th Framework Programme (FP7). The preparatory phase brought together leading European research institutions and industry stakeholders to define the strategic direction, governance structure, and operational model for EU-SOLARIS ERIC.

EU-SOLARIS ERIC marked the beginning of its operation as a legal entity in January 2023, following years of preparation and collaboration among European research institutions. The consortium was established to address the need for a coordinated approach to CST research across Europe, bringing together leading research institutions and industry partners to create a unified and powerful research infrastructure.

Our Members

The EU-SOLARIS ERIC consortium was established with the following members: Spain (Statutory Seat), France, Cyprus, and Germany, all of which have committed to contributing an annual fee for a four-year period. Portugal and Greece are participating as Observer for a maximum period of two years. Each country is represented by key research institutions in the CST field; as shown in the map below.

One of the consortium's objectives is to attract other countries that have traditionally participated in EU-SOLARIS's activities for over a decade. Currently, there are ongoing discussions with Italy, and Turkey, with promising prospects that they will soon join the consortium.



Spain - CIEMAT-PSA:
The Plataforma Solar de Almería.

Germany - DLR:
The German Aerospace Center.

France - CNRS-PROMES:
Procédés Matériaux et Energie Solaire.

Portugal - LNEG (Observer):
The National Laboratory for Energy and Geology.

Cyprus - CYI:
The Cyprus Institute.

Portugal - UEVORA (Observer):
University of Évora.

- **Greece – CRES and CERTH (Observer):**
The Centre for Renewable Energy Sources and Saving
Centre for Research and Technology Hellas

Founding members:
Spain, Germany, France, Cyprus

Observer:
Portugal, Greece

Other countries involved into the process:
(and likely to join): Italy, Türkiye

Entities at the national nodes

At the time of writing this report:

- **Spain:** CIEMAT-PSA, CENER, IMDEA, UdL, UPC, CIC ENERGIGUNE, FUNDACION TEKNIKER, UNED, UAL, UC3.
- **Germany:** DLR - ISR.
- **France:** CNRS-PROMES.
- **Cyprus:** CYI.
- **Portugal:** LNEG and UEVORA.
- **Greece:** CRES and CERTH.

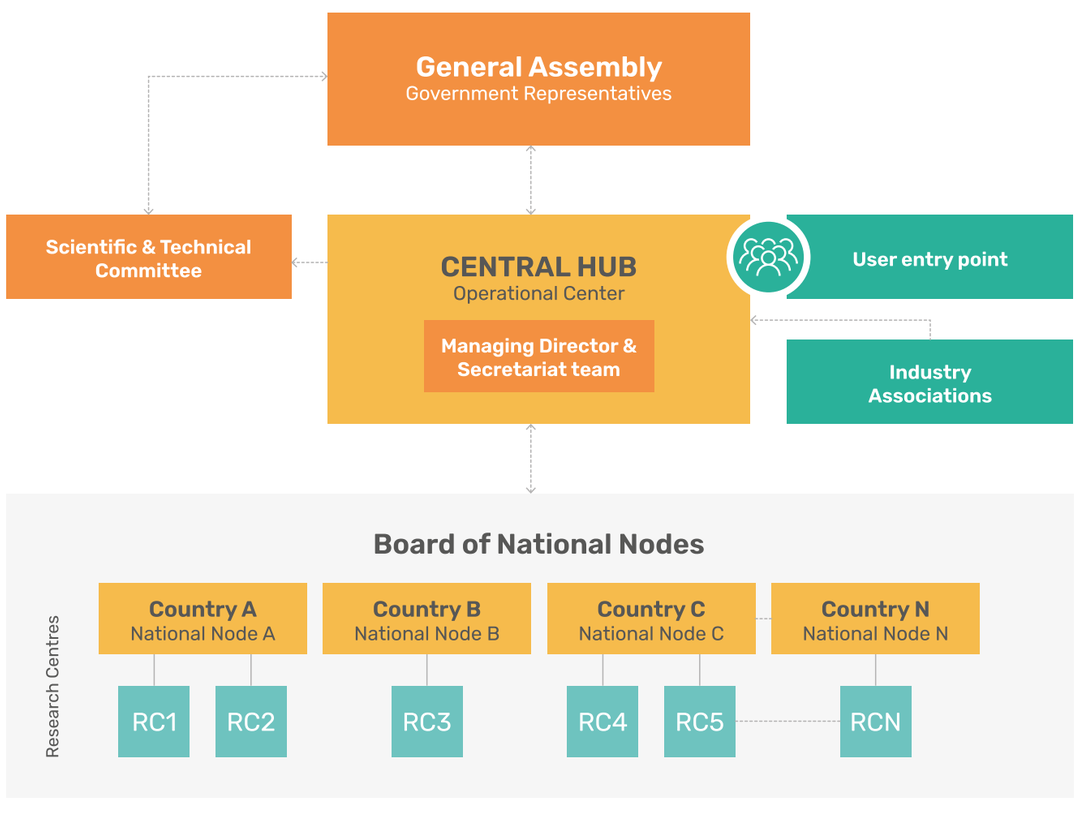
Governance Structure

The General Assembly is the highest decision-making body within EU-SOLARIS ERIC, consisting of representatives from the member countries: Spain, Germany, France, Cyprus, and the two Observers Portugal and Greece. The General Assembly is responsible for discussing and approving strategic decisions and policies, with each member country represented by both a political and a scientific delegate.

National Nodes within the consortium act as the primary contacts between EU-SOLARIS ERIC and the national scientific communities of each member country. They facilitate coordination, manage resources, and promote collaboration and funding opportunities nationally.

The representatives of the national nodes for 2024 were:

- Spain - CIEMAT-PSA
- Germany - DLR
- France - CNRS-PROMES
- Cyprus - CYI
- Portugal – UEVORA and LNEG
- Greece – CRES and CERTH



General Assembly of EU-SOLARIS ERIC

Current delegates by country

Spain

- ***Ana María Aricha Yanguas*** (Chair)
  Ministry of Science, Innovation and Universities
- ***Julián Blanco Gálvez***
  CIEMAT - Plataforma Solar de Almería

Germany

- ***Tarik Schwarzer***
  Federal Ministry for Economic Affairs and Climate Action
- ***Manuel Blanco Muriel*** (Vice Chair)
  Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)

France

- ***Xavier Montagne***
  Ministry of Higher Education, Research and Innovation
- ***Gilles Flamant***
  PROMES-CNRS

Cyprus

- ***Charalambos Papatryfonos***
  Ministry of Research, Innovation and Digital Policy
- ***Marios Georgiou***
  The Cyprus Institute - PROTEAS

Portugal

- ***João Cardoso***
  Laboratório Nacional de Energia e Geologia, I.P. (LNEG)
- ***Diogo Canavarro***
  Universidade de Évora

Greece

- ***Vassiliki Drosou***
  Centre for Renewable Energy Sources and Saving
- ***George Karagiannakis***
  Centre for Research & Technology Hellas

Team Leadership in 2024

In 2024, the leadership of EU-SOLARIS ERIC was characterized by experienced professionals dedicated to advancing CST technologies:

This year has seen the consolidation of the 'in kind' contribution from CIEMAT of the services of Dr. Diego Martínez Plaza to fulfill the role of Managing Director. This contribution is expected to cover the period of 2024-2025.

Diego Martínez Plaza
////// Managing Director

Diego Martínez is serving as the Managing Director of EU-SOLARIS ERIC since January 2023, bringing a wealth of knowledge and experience in the field of solar energy. With a PhD in Mechanical Engineering from the University of Seville, his academic and professional career has been closely tied to the development of CST technologies. Prior to his leadership role at EU-SOLARIS ERIC, Martínez was heavily involved with the Plataforma Solar de Almería (PSA), where he was director in the period 2003-2012 and led numerous projects that significantly advanced solar energy research and infrastructure.

As Managing Director, Martínez was responsible for overseeing the strategic direction of EU-SOLARIS ERIC, ensuring that the consortium's activities aligned with its mission to enhance European leadership in CSP/STE research. His leadership was characterized by a strong focus on fostering international collaboration and improving the accessibility of research infrastructures across Europe.

Additionally, the first employee of the ERIC, engineer José Martín Martínez comes from the wind energy sector and brings extensive experience in project management on an international scale.

José Martín Martínez
////// Project Manager

José Martín played a crucial role as the Project Manager at EU-SOLARIS ERIC during the time he spent with us. He holds a Master's degree in Industrial Mechanics from the University Carlos III of Madrid and is currently a PhD candidate in Mechanical Engineering and Industrial Organization, with a focus on CSP/STE, at the same university. His academic pursuits are complemented by extensive international experience, having worked in the UK, Germany, France, Sweden, Finland, and China.

José's engineering background is diverse, with significant experience in the aeronautics and wind energy sectors, which has provided him with a broad understanding of various renewable energy technologies. At EU-SOLARIS ERIC, he is responsible for managing key projects that aim to advance the development and deployment of CSP/STE technologies. His role involved coordinating with international partners, ensuring the smooth execution of projects, and contributing to the technical and strategic objectives of the consortium.

José Martín Martínez concluded his tenure with EU-SOLARIS ERIC in September 2024. We thank him for his valuable contributions and wish him continued success in his future endeavours.

Sarah Essam Taha
////// **Junior Project Manager**

Sarah Essam contributed significantly to EU-SOLARIS ERIC in 2024 as a Junior Project Manager. She holds a Master's degree in Renewable Energy Engineering from the University of Jaén and a postgraduate diploma in Solar Cell Technology from Beni-Suef University, Egypt, alongside a Bachelor's in Physics from Minya University, Egypt. Sarah brings over three years of experience in project management across the renewable energy and solar technology sectors.

Her previous roles span academia, industry, and international collaboration, including positions at Valeo, the Tiba Solar Factory, and as an adjunct professor at Zewail City of Science and Technology. Sarah has led and supported projects in solar cell manufacturing, R&D, and renewable energy deployment, with a strong emphasis on coordination, documentation, and cross-functional team leadership.

At EU-SOLARIS ERIC, she plays a vital role in managing EU-funded solar energy initiatives, aligning project execution with strategic objectives and engaging with diverse stakeholders. Her multilingual abilities and technical expertise enhance her effectiveness in fostering collaboration across the consortium.

THE STRATEGIC PLAN 2023-2026

As specified at the Statutes (Art. 28.3-e) of EU-SOLARIS ERIC, the Managing Director is charged with the preparation of a Strategic Plan for the ERIC. A preliminary version of it was approved by the General Assembly on November 2023 but an update was adopted in March 2024.

Taking into account that EU-SOLARIS ERIC was formally approved by the European Commission on October 2022 and that its governing bodies were established just on January 2023, the list of strategic objectives should begin with a modest approach in this very first Strategic Plan, focusing on the consolidation of the institutional framework and on the acquisition of further resources to expand the portfolio of activities in a consistent and sustained manner.

This is the list of strategic objectives for the first half term, covering years 2023-2024:

1. **Achieve full development** of the ERIC institutional framework, which includes all governance and advisory bodies and the National Nodes. Develop all necessary policies and related operational procedures.

2. **Establish and consolidate** an annual call for internally funded projects focused on topics of common interest for the partnering research infrastructures, according to the list of topics described in the section 'Tasks and Activities'.

3. **Adopt the celebration** of the annual 'Doctoral Colloquium' and 'Summer School' events, established at the former SFERA projects, to keep going with them in year 2024 and beyond.

4. **Review and update** the catalogue of solar facilities available at the Member & Observer countries plus the portfolio of related technical services which are offered by all R&D institutes affiliated to the National Nodes.

5. **Implement an e-infrastructure following the design established under the SFERA-III project,** aiming to get the necessary external funding to set up its Central Node at the Central Hub and, at least, one of its Secondary Nodes in one of the leading Research Centres.

6. **Establish and consolidate** a regular participation of the ERIC in EU-funded calls in order to achieve external funding necessary to expand the range of activities and services offered to the users, in particular, free access to the test facilities according to scientific merit criteria.

7. **Strengthen the interaction** with industrial stakeholders with the aim to steer the progress on the RI level to the requirements of the industry, thus enabling a sustainable innovation ecosystem and a closer collaboration to assist European industry to lead the CST sector.

8. **Promote the enlargement** of the membership. Some European countries have participated in former stages of the EU-SOLARIS creation process, though they have not joined at last for different reasons.

At the time of writing this report, this reference document has been updated now according to the results achieved in the 2023-2024 period. A new version setting the goals for the period 2025-2026 has been released and its downloadable from the EU-SOLARIS ERIC's web site[2].

[1] - SFERA-III (https://sfera3.sollab.eu/)

[2] - https://eu-solaris.eu/wp-content/uploads/2025/02/G0-06-Strategic-Plan-2023-2026-Update-December-2024.pdf

R&D ACTIVITIES

EXTERNALLY FUNDED PROJECTS

EU-SOLARIS has been highly active in participating in proposals for acquiring externally funded projects throughout 2024. Three of the four proposals we participated in under Horizon Europe have been successful, providing us with an initial set of projects to support our activities.

I would like to emphasize that we always strive to involve the R&D institutes associated with the ERIC in these projects, whether as partners, affiliated entities, or even later during the project's execution as collaborators in its tasks.

A summary of these projects, as well as EU-SOLARIS's contribution to them, can be found below.

Two projects have been achieved under the destination:

> *Developing, Consolidating and Optimising the European Research Infrastructures Landscape, Maintaining Global Leadership (INFRADEV): Strengthen the bilateral cooperation on research infrastructures with Latin America (projects CACTUS & ENERGYTRAN).*

Plus, EU-SOLARIS participates in a third funded project under the destination:

> *Research Infrastructure Services to Support Health Research, Accelerate the Green and Digital Transformation, and Advance Frontier Knowledge (INFRASERV): Research infrastructure services to enable R&I addressing main challenges and EU priorities (project RISEnergy).*

Below, a short description of these projects can be found, including a brief summary of EU-SOLARIS' role in them.

CACTUS

Enhanced Solar PV performance through improved research infrastructure for adapted climate conditions

CACTUS is a 24-month project which started on 1 December, 2023 coordinated by CEA-LITEN (FR).

CACTUS proposes to improve the research infrastructure (RI) and its portfolio of services for an enhanced solar PV performance, particularly adapted for various climate conditions (such as tropical, desert, temperate), considering the whole lifetime of PV projects, from design, installation, operations, decommissioning and End of Life. This will be achieved by linking outdoor and indoor measurements with physical parameters based on material analysis, improving algorithms for O&M, developing common data treatment procedures, assessing sustainability related aspects, while enhancing bi-regional scientific cooperation (EULATAM) in the renewable energy sector.

Finally, yet importantly, and for the whole solar technologies, an increasing focus will be needed on sustainability, circular economy aspects, and to socio-economic effects associated with the massive and the terawatt-scale deployment.

The main role of EU-SOLARIS ERIC at CACTUS is the leadership of the work package entitled ‘Enhancing Research Infrastructures’, with a specific deliverable on ‘Best practice guidelines for climate-specific data quality collection for operation and maintenance of PV plants’.

More information at the web site: ***https://cactus-pv.eu***

CACTUS Project – 2024 Summary

Launched in late 2023, CACTUS aims to enhance solar PV research infrastructures for various climate conditions across Europe and Latin America. In 2024, the project focused on developing shared testing protocols, improving measurement tools, and laying the groundwork for infrastructure upgrades in tropical, desert, and temperate environments.

Key 2024 Achievements:

- Strengthened EU–LAC collaboration, with active participation from institutions in Chile and Colombia.
- Established common standards for data processing, reliability testing, and sustainability assessments.
- Advanced preparations for researcher exchanges and cross-continental facility improvements.

By the end of 2024, CACTUS had established a strong foundation for bi-regional solar PV innovation, positioning itself for full-scale implementation in 2025.

EULAC ENERGYTRAN

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

ENERGYTRAN is coordinated by the 'Organización de Estados Iberoamericanos' (OEI) and it is a 24-month project, with official starting date on 1 January, 2024.

The general objective of ENERGYTRAN is to address the energy transition, as a common challenge, through the exchange, generation, and transfer of knowledge among EU and LAC research infrastructures from a multidisciplinary approach (technological, environmental, social) and to support the development of public policies and regulatory frameworks promoting a clean, sustainable and just transition of the energy sector to advance to a resilient society.

More specifically, this can be split into the following goals:

- The modernization of the technologies developed by the energy research infrastructures to supply solutions for a progressive electrification, integrating decarbonized and low emission energy carriers such as renewable hydrogen and lithium technologies.
- Fostering the scientific cooperation between the EU and LAC energy research infrastructures transferring the results to make energy transition a key perspective for the main stakeholders involved on the sector while ensuring it effectively takes place with an ethical and quality approach.
- Standing out the environmental dimension on the energy transition to make it compatible, to assure new energy sources are sustainable and environmentally friendly. making research and promotion of social methods and public policies to make the energy transition highly beneficial for societies – considering both territorial and international economic justice – by approaching it from an integral perspective.

EU-SOLARIS ERIC plays a very relevant role in this project, leading the two work packages related to energy technology:

- Work Package 1-Mobilities for Technology
- Work Package 2: Research and innovation actions for technology

More information at the web site: ***https://energytran.oei.int/***

ENERGYTRAN Project – 2024 Summary

In 2024, ENERGYTRAN officially launched as a collaborative initiative under Horizon Europe, strengthening EU-Latin America-Caribbean (EU-LAC) cooperation on energy transition. The project held its kick-off meeting in Madrid on March 6–7, uniting 11 partner institutions to align goals across four key pillars: technological, sustainability, social, and public affairs.

Key 2024 Achievements:

- The first virtual thematic event was held on June 26–27, focusing on energy technologies and transition strategies.
- The project website and dissemination framework (D3.1) were finalized, boosting outreach and stakeholder engagement.

By the end of 2024, ENERGYTRAN had laid a solid foundation for enhancing EU-LAC collaboration on energy transition, setting the stage for impactful progress in 2025.

RISEnergy

Research Infrastructure Services for Renewable Energy

RISEnergy is a 54 month-long project, with official starting date on 1 March, 2024. It is coordinated by the German Karlsruher Institut fuer Technologie (KIT).

The main objectives of RISEnergy are:

- To enable research and innovation to increase energy efficiency and reduce the cost of energy technologies, to foster wider use of renewables into energy systems through proactive innovation management. Provision of a single entry point with tailor-made access roads for academics, industry, and SMEs, and advising RI providers, all access Users, and policy makers on LCA, ICT development and networking issues.
- To provide efficient transnational access (TNA) to facilities to support renewable energy technologies and systems and to provide more than 2,500 days of access to major 87 European and international world-leading analytical facilities.
- To reach out to all stakeholders performing research along the value chain, from materials and technology development to applications in the eight most relevant fields of PV, CSP/STE, hydrogen, biofuels, offshore wind, ocean energy, integrated grids, and energy storage, research infrastructure providers and policy makers;
- To provide comprehensive services of unprecedented quality, like new cross-RI services, a single entry point, tailor-made access roads for academia, industry, and SMEs with a particular focus on scientists from research fields in which the use of research infrastructures is not yet established.

EU-SOLARIS ERIC is a full partner in RISEnergy, with a strong implication in the delivery of trans-national access to CST-related research infrastructures. The access is to be provided by several of the R&D institutes involved in the EU-SOLARIS partnership namely: CNRS, DLR, CyI, UEVORA, LNEG, IMDEA and CENER participate as affiliated entities in this project.

More information at the web site: ***https://eera-energystorage.eu/risenergy-proposal.html***

RISEnergy Project – 2024 Summary

RISEnergy officially launched in March 2024 as a Horizon Europe initiative, designed to enhance access to top-tier renewable energy research infrastructures across Europe and beyond. Coordinated by KIT and involving 69 partners from 22 countries, the project connects 84 facilities across diverse fields, including photovoltaics, solar thermal, hydrogen, wind, ocean energy, storage, and grids.

Key 2024 Achievements:

- The opening of the first Transnational Access (TA) call, which approved 33 research projects across 16 countries.
- The launch of the first cascade funding call, aimed at supporting SMEs and researchers in scaling up renewable energy innovations.

By the end of 2024, RISEnergy had established a broad international research network that will accelerate the development of clean energy solutions and support industrial transition. Momentum is building toward more extensive implementation in 2025.

SOLARIZE

Bringing EU-SOLARIS to its Zenith

SOLARIZE is coordinated by EU-SOLARIS ERIC and is a 42-month Horizon Europe project, officially launched on 1 July 2024. The project brings together 12 partners from 8 countries and is funded by the European Union under the Horizon Europe framework programme.

The general objective of SOLARIZE is to strengthen the long-term sustainability and impact of EU-SOLARIS ERIC by expanding its network, improving internal capabilities, and fostering stronger engagement with the scientific, industrial, and policy-making communities working with Concentrated Solar Thermal (CST) technologies.

More specifically, this can be split into the following goals:

- The enlargement of EU-SOLARIS ERIC through the integration of new national research infrastructures and funding bodies, reinforcing its distributed pan-European structure.
- The creation and education of a CST-focused scientific community by training new researchers in the effective use of CST research infrastructures.
- The strengthening of international research collaboration and science diplomacy to position CST as a key technology in the global energy transition.
- The improvement of managerial, administrative, and governance skills within EU-SOLARIS ERIC to ensure efficient and sustainable operations.
- The promotion of collaboration between CST researchers and industrial stakeholders, especially in areas such as industrial process heat and solar fuels.
- The development of new testing protocols and standards, and the implementation of the first e-infrastructure to offer remote or virtual access to CST R&D facilities.
- The advancement of cross-sector innovation by exploring synergies between CST and other renewable energy sources, and by promoting the greening of technologies and methodologies used by CST infrastructures.

EU-SOLARIS ERIC plays a central role in this project, coordinating all activities and ensuring alignment with the strategic vision of building a world-leading European infrastructure for CST research and innovation.

SOLARIZE project-2024 summary:

Although the official start date was July 1st, the SOLARIZE project consortium held its ‘kickoff meeting’ on July 23rd in Almería, at the headquarters of the ‘Plataforma Solar de Almería’, located in Tabernas. Attending the meeting were representatives from the twelve participating partners, as well as our ‘Project Officer’ at the ‘Research Executive Agency’ of the European Commission, Mr. Antonio Ventura.

The project activities began immediately after the meeting, with a particular focus on those strengthening the cohesion of the CST R&D community. Specifically, actions related to the creation of ‘National Nodes’ have been initiated, including planning the workshops designed to encourage R&D entities working in the CST field to join these national nodes.

Additionally, planning has started for the first ‘Summer School’ and the second ‘Doctoral Colloquium,’ both scheduled to take place in Almería in 2025. The design of the ‘EU-SOLARIS Annual Award,’ which will be awarded for the first time that year, has also been completed. Furthermore, a mobilities campaign has been launched for ‘Early Stage Researchers’ affiliated with the participating entities.

On the technical side, activities to identify new scientific services and facilities through a survey have been initiated to address the emerging needs of the CST R&D community. Lastly, significant efforts have been made to prepare essential documentation for the proper functioning of the ERIC, such as the ‘Data Management Plan’ and the ‘Quality Assurance Plan.’

This project is scheduled to last 42 months, and by 2024, we have already completed half a year, with the first Steering Committee meeting held in January 2025. It is clear that there is still much work ahead, but we are supported by a strong consortium, and we are confident that the results will be highly promising.

More information at the website: ***https://solarize-project.eu***

INTERNALLY FUNDED PROJECTS

With full support from the General Assembly, it was decided to fund a RI-focused project for the first time in 2023 with EU-SOLARIS' own resources. A second project has been selected for funding also within year 2024.

The aim of this call for project proposals was to fund one project able to deliver innovative scientific instrumentation, tools, methods or solutions contributing to advance the state-of-art of CST-related Research Infrastructures (RIs). The project outcomes, which underpin the provision of improved and advanced services, should enable research infrastructures to support new areas of research and/or a wider community of users, including industrial users. The 'Internal Project' is expected to improve the interoperability of RIs and the quality of the services offered to users of CST RIs.

2023 Call: Project FLARES

A proposal led by the Spanish IMDEA Energy and with the participation of the German Fraunhofer ISE and the Cyprus Institute was selected for funding after a thorough evaluation process carried out by the ERIC' Scientific & Technical Committee.

The name of the winning project is FLARES - Fast Laser Assessment for near Real-time Evaluation of Soiling and it has been awarded with 45 000 € for an 18-month execution time.

The goal of the project is the development of new techniques needed to automatize and generalize soiling assessment for all CST technologies, while simultaneously making it faster and able to measure a greater number of units.

In this project, a novel technique using a 3D laser scanner is to be developed and tested at real solar fields, such as the one at IMDEA Energy and at the Cyprus Institute.

Measurements will be compared with reflectometer data aiming to establish a model with an absolute reflectance error lower than 2%. Some preliminary tests have been already performed at IMDEA showing promising results.

2024 Call: Project Heliostat Field Analysis

In 2024, CENER won a highly competitive funding opportunity from EU-SOLARIS ERIC, securing €45,000 for a project aimed at enhancing heliostat field performance, beam characterization systems, and solar tower optimization.

The title of the project is 'Analyze Heliostat Field phase II: BCS as a calibration reference system' and is led by CENER, with the participation of other top notch R&D institutes like DLR, IMDEA, the Cyprus Institute and CIEMAT.

The call for project proposals sought to fund innovative projects that would contribute to the advancement of solar energy technologies and improve the efficiency and reliability of commercial solar fields. The selected project was required to focus on state-of-the-art methodologies and provide solutions that benefit a wide user base, including both industrial and academic stakeholders.

After a thorough evaluation process conducted by the EU-SOLARIS ERIC Scientific & Technical Committee, CENER's project was selected for funding. The project aims to develop innovative on-site measurement tools and performance optimization methodologies for heliostat fields and solar tower systems, contributing to the overall efficiency and cost reduction in concentrated solar power (CST) systems.

The project will focus on three key areas:

1. Heliostat Field Performance Testing: Standardizing testing methodologies to improve heliostat field efficiency and ensure reliable performance across different environments.

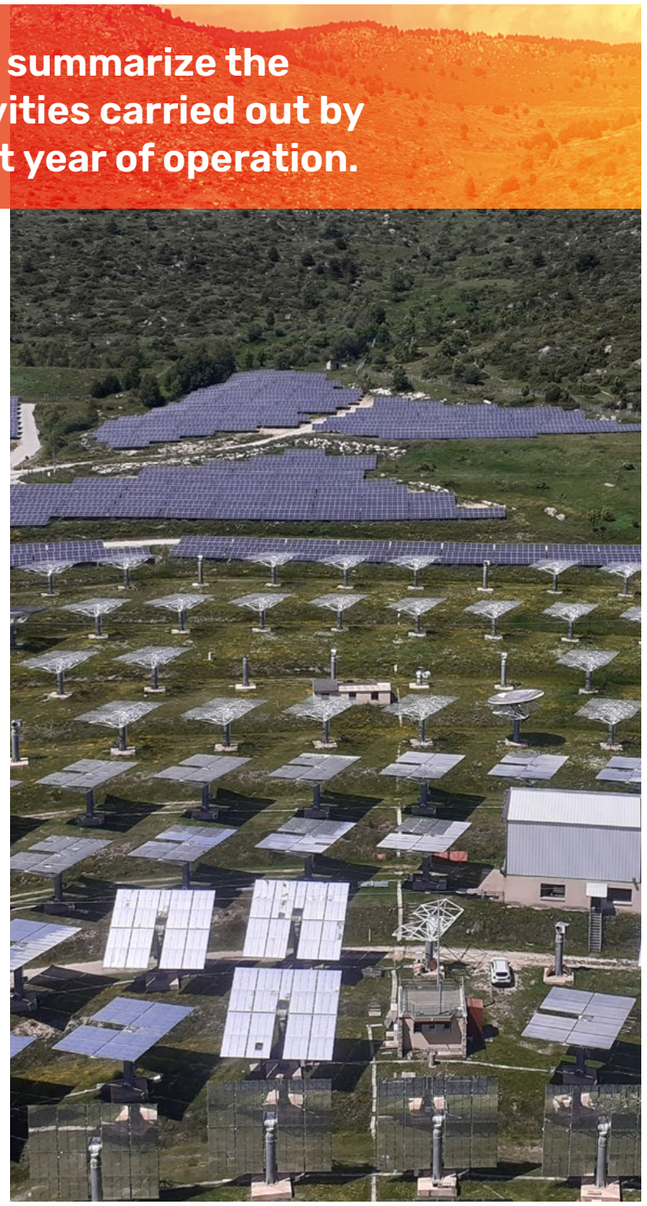
2. Beam Characterization Systems: Developing advanced beam characterization systems for more accurate monitoring and optimization of commercial solar fields.

3. Solar Tower Performance Enhancement: Implementing cutting-edge measurement and characterization tools to optimize solar tower performance and reduce operational costs.

The project's official starting date is 1st January, 2025 and is set to be completed within 18 months. It and is expected to provide tangible results in terms of enhanced solar field performance and cost-effective innovations. Preliminary work on beam characterization and heliostat testing methodologies has already shown positive outcomes, with continued testing and refinement scheduled for the next phase.

A SUMMARY FROM THE MANAGEMENT POINT OF VIEW

The following lines summarize the evolution and activities carried out by ERIC during its first year of operation.



Institutional Development

The year 2024 marks the second year of operational activity for EU-SOLARIS ERIC since its official establishment on January 12th, 2023, by the General Assembly. Several meetings of the governing bodies have been held, during which strategic decisions regarding upcoming activities and organizational matters have been made.

The main one, the General Assembly hold two meetings in this year. The first one in May, the second one in November, both in remote mode. At these meeting, the status of the different agreements is reviewed, very specially the 'Service Level Agreements' (SLA) to be signed with every single partner of the ERIC.

At the November meeting, the Managing Director (MD) reported about a formal letter to join as an Observer received from the Greek Ministry of Science. The proposal was voted and unanimously accepted, so Greece is a new Observer at EU-SOLARIS ERIC since last November.

At the same meeting, there was a unanimous vote to allow for a one-year extension of Portugal as an Observer, so this condition is extended to the end of year 2025.

On the other hand from the very beginning, efforts have been made to promote the creation of the National Nodes, where all R&D institutes with CST capabilities and infrastructures that wish to participate in EU-SOLARIS ERIC initiatives can join by signing a SLA Agreement with the ERIC.

Within year 2024, the German CST community has started the arrangement of informative meetings in order to come to the formal establishment of the German Node.

These National Nodes will be organized and will interact with the ERIC through the Board of National Nodes once they are formally established.

Finally, the members of the Scientific & Technical Committee have been formally designated, and this governing body began its work within during 2024 by holding its first annual meeting on 16th April, 2024.

At its first meeting, Professor Nesrin Ozalp from Illinois State University was elected as first Chair of the STC.

The main deliverable of this meeting was the elaboration of a list of priority topics for the upcoming calls for proposals of 'EU-SOLARIS ERIC' Internal Projects.

Human Resources

In terms of Human Resources, the 'in kind' contribution from CIEMAT of the services of Dr. Diego Martínez Plaza to fulfill the role of Managing Director has kept going with an explicit approval of his performance by the General Assembly. In principle, this contribution is expected to cover the period of 2024-2025.

Additionally, the second employee of the ERIC, master of physics Sarah Essam Taha, has been hired.

Projects

EU-SOLARIS has been highly active in participating in proposals for acquiring externally funded projects throughout 2024.

It is worth emphasizing that EU-SOLARIS' team strive to involve the R&D institutes associated with the ERIC in these projects, whether as partners, affiliated entities, or even later during the project's execution as collaborators in its tasks.

A summary of these projects, as well as EU-SOLARIS's contribution to them, can be found in section R&D ACTIVITIES of this report.

It is also important to mention that EU-SOLARIS aims to stimulate joint activities within the consortium directly related to our primary areas of interest, namely the technologies and procedures associated with CST research infrastructures, which are the 'leitmotiv' of this consortium. For this reason, we launched the calls for our 'Internal Projects' in both years 2023 and 2024. These are projects funded by EU-SOLARIS's own resources, which can be applied for by R&D consortia from member countries. Although these projects are modest in scale, they aim to return value to member countries for their contributions to the ERIC while focusing research on topics of greatest interest to us. The impartiality of the selection process is ensured through an independent evaluation of proposals conducted by the Scientific & Technical Committee, composed of internationally recognized experts external to EU-SOLARIS. The plan is to continue funding this scheme in the coming years, increasing the funds as the financial situation allows.

Consortium

The EU-SOLARIS ERIC consortium was established with the following members: Spain (Statutory Seat), France, Cyprus, and Germany, all of which have committed to contributing the annual fee for a four-year period. Portugal and Greece are also participating as Observers for a maximum period of two years.

One of the consortium's objectives is to attract other countries that have traditionally participated in EU-SOLARIS's activities for over a decade. Currently, there are ongoing discussions with Italy and Turkey, with promising prospects that they will soon join the consortium.

Policies

EU-SOLARIS is required to have a series of policies in place, as mandated by its statutes and its legal status as an ERIC. These policies must be approved by the General Assembly and then made public, typically by posting them on the public section of the website.

Throughout 2023, the following policies were developed, approved, and published:

- **Gender Equality Plan**
- **Access Policy**

On the other hand the following documents were approved in June 2024 and are available now at our web site:

- **Strategic Plan 2023-2026**
- **Human Resources Policy**
- **Procurement & Tendering Policy**

At the time of writing this report, other documents that are necessary for the proper functioning of an ERIC are being defined:

- **Plan for Dissemination, Exploitation and Communication (PDEC)**
- **Quality Assurance Plan**

Particularly for the control of documents & records. Complements all policies.

- **List of Key Performance Indicators (KPIs)**
- **Ethical Code of Conduct**

As an umbrella of all policies and activities

- **Performance Management and Development System (PMDS)**

To assess employees' performance at work, as written at the HR Policy.

Dissemination

A fundamental tool for achieving the objectives of EU-SOLARIS ERIC is the systematic and dedicated dissemination of information about our existence and achievements.

In 2024, a modest but energetic effort was made by all partners to participate in various international events, summarized in the following table:

Event	Date	Venue	Speaker
SOLARPACES	8-11 October 2024	Rome (Italy)	Diego Martínez (EU-SOLARIS)
1st Doctoral Colloquium	3-5 July 2024	Odeillo (France)	José Martín (EU-SOLARIS)
Energytran Virtual Thematic Event	26-27 June 2024	Online	José Martín (EU-SOLARIS)
JNPV 2024	December 2024	France	Emmanuel Guillot (CNRS)

Budget

The available funds primarily consisted of the annual contributions from the Members, totalling €80,000 but this year the receipts from the externally funded projects have been substantial as they are the pre-financing payment which, in most cases, is even higher than half the budget for the whole project.

This has significantly increased the budget in this 2024 fiscal year. The annual accounts were prepared by the Managing Director, audited by an external specialized firm, and finally approved by the General Assembly.

An Abbreviated Annual Accounts document for the year 2024 is presented in Annex I of this document.

ANNEX

Abbreviated Balance Sheet as of December 31, 2024

Financial Year 2024

NET ASSETS AND LIABILITIES	2024
A) Net assets	**475.005,33**
A1) EQUITY	**475.005,33**
V. Reserves from previous years	**70.400,87**
129000000 - Result from previous years	70.400,87
VII. Result for the current year	**404.604,46**
129 - Result for the current year	404.604,46
B) NON-CURRENT LIABILITIES	**169.284,54**
II. Long-term debts	**169.284,54**
171000001 - Funds to be coordinated - Solarize Project	156.411,87
171000002 - RECEIVED FUNDS (PARTNER AND AFFILIATED) - RISEnergy	12.872,67
C) CURRENT LIABILITIES	**6.823,65**
III. Short-term debts	**2.933,54**
520000001 - Credit card	3.052,26
521000000 - Short-term debts	-118,72
V. Trade creditors and other accounts payable	**3.890,11**
400000008 - Vacations eDreams S.L.U.	136,75
400000019 - Zone D Activite	619,20
400000036 - Google Cloud Emea Limited	82,80
410000000 - Accounts payable for services rendered (euros)	151,69
475100000 - HP, creditor for withholding taxes	2.899,67
TOTAL NET ASSETS AND LIABILITIES	**651.113,52**

ASSETS	2024
B) Current assets	651.113,52
VII. Cash and other liquid assets	**651.113,52**
572000000 - Banks and credit institutions checking accounts, euros	651.113,52
TOTAL ASSETS	**651.113,52**

Profit and Loss Statement EU-SOLARIS ERIC as of December 2024

Period: December 2024

Description	2024
Other operating income	**617.320,99**
740000002 - Funds Allocated to Eu-Solaris (Cactus Project)	71.943,75
740000003 - Spain Contribution (Ciemat)	20.000,00
740000004 - France Contribution (Cnrs)	20.000,00
740000005 - Cyprus Contribution (Ministry)	20.000,00
740000006 - Germany Contribution (DLR)	20.000,00
740000007 - Solarize Project Allocation to Eu-Solaris	322.050,00
740000008 - RISEnergy Project Allocation to EU-SOLARIS	63.427,24
740000009 -Funds Received for Energytran Project	79.900,00
Personnel expenses	**-77.291,45**
640000000 - Salaries and Wages	-57.517,18
640000001 - Severance Expenses	-372,96
642000000 - Social Security Paid by the Company	-18.331,57
649000000 - Other Social Expenses	-728,42
649000001 - Employee Service Commission	-341,32
Other operating expenses	**-77.735,40**
622000000 - Repairs and Maintenance	-387,20
623000000 - Services of Independent Professionals	-22.537,52
625000000 - Insurance Premiums	-66,11
626000000 - Banking and Similar Services	-5,86
629000001 - Travel Expenses	-9.891,16
629000003 - Google Expenses	-460,31
629000004 - IT Expenses	-457,59
629000005 - Travel Reimbursement Expenses [José Martín Martínez]	-3.568,29
629000006 - Office Expenses	-1.293,50
629000007 - Expenses Charged to Cactus Project	-37.875,00
629000009 - Non-Deductible Expenses	-1.192,86
Other results	**-57.689,68**
778000000 - Exceptional Income	810,32
678000001 - Funding Awarded to IMDEA Energy Project	-36.000,00
678000002 - Funding Awarded to CENER Project	-22.500,00
A) Operating result	404.604,46
B) FINANCIAL RESULT	0,00
C) RESULT BEFORE TAXES	404.604,46
D) NET RESULT OF THE PERIOD	**404.604,46**

The European Research Infrastructure for Concentrated Solar Power / Solar Thermal Energy

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ERIC

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