Puertollano (Spain)
29 January 2026

I E3TECH Networking Event

Participants in the Round Table:

Company	Representative	Resumé
Air Liquid	Ismael Aso Aguarta. SWE Medium Project Team/Project Manager	Ismael Aso Industrial Engineer from the University of Zaragoza, holder of a European Master's Degree in Renewable Energies, and a Diploma of Advanced Studies in the PhD program on Energy Savings and Efficiency at the University of Zaragoza. Professionally, I have spent 20 years in the hydrogen sector: the first half dedicated to Green Hydrogen, working in organizations such as the Aragon Hydrogen Foundation, the National Hydrogen Centre, and McPHY (an electrolyzer company); and the second half focused on Grey Hydrogen at Air Liquide, initially spending 4 years at the Puertollano plant and currently developing Industrial Improvement Projects across all factories in Iberia. In parallel, I continue to carry out teaching activities in collaboration with several universities (Burgos, Zaragoza, Bilbao, Algeciras), delivering lectures on Industrial Safety and Cryogenic Processes.
Matteco	Vicente Vert. Development Project Manager	Vicente Vert, Development Project Manager leading the upscaling process for electrodes manufacturing at Matteco, is a Chemical Engineer PhD with an extensive research background in Spain and Germany in technologies and materials for energy applications, hydrogen and decarbonisation. He worked at the National Hydrogen Centre in Spain before founding the spin-off Kerionics at the Polytechnic University of Valencia. He has contributed to the sustainability of the plastics sector at AIMPLAS and to decarbonisation at Neolith and the Institute of Molecular Sciences at the University of Valencia
Ariema	Enrique Girón Director General de Ariema Energía y Medioambiente S.L.	Enrique Girón is the General Director of Ariema Energía y Medioambiente S.L., a position he has held since June 2023. His professional trajectory includes previous roles within the company as Director of the Consulting and R&D+i Department, as well as over a decade of experience in the hydrogen and energy innovation sector. Before joining Ariema, he served as a Project Manager at the Fuel Cells and Hydrogen Joint

		Undertaking (FCH JU) from 2010 to 2021. A graduate of the Complutense University of Madrid, he is recognized for his involvement in international projects, his leadership in advancing hydrogen-related technological initiatives, and his active participation in sectoral forums and professional events on energy transition.
REPSOL	María Dolores Hernádez Alonso. H_2 & Synthetic senior Scientist del Repsol Technology Lab.	María Dolores Hernandez Alonso is Technical Advisor in the H2&Synthetics group of the Industrial Transformation Tech direction at Repsol Technology Lab. She is a chemist with a PhD, having completed my doctoral research in the field of catalysis at the Institute of Catalysis and Petrochemistry (CSIC). In addition to my work at CSIC, I have developed my scientific career in several national and international research centers, including the University of Madison-Wisconsin, Technical University of Delft, and CIEMAT. I joined Repsol in 2013, where I have worked on projects related to the energy transition, mainly focusing on renewable hydrogen production and CO_2 utilization. I am the co-author of more than 40 scientific publications and 5 patent families.
JCCM	Alipio García General Manager for Energy Transition at the Castilla-La Mancha Government (JCCM)	Alipio García Rodríguez is the General Manager (Director General) for Energy Transition in the Government of Castilla-La Mancha, where he leads the implementation of the region's Hydrogen Roadmap and various strategic initiatives to drive sustainable energy development. A graduate in Physics from the Complutense University of Madrid, he has played a key role in coordinating renewable hydrogen projects, overseeing the governance of the regional Action Plan, and promoting public-private collaboration in the energy sector. His work includes launching the Castilla-La Mancha Hydrogen Office and actively participating in national and European forums on energy transition, helping position the region as a benchmark in clean energy.
APRIA	Esther Santos Santa María	Dr. Esther Santos holds a PhD in Chemical and Process Engineering and is Director of Strategic Projects at APRIA Systems SL, as well as a Part-time Assistant Professor at the University of Cantabria, Spain. She has over 10 years of experience leading and contributing to numerous European projects in areas such as CO_2

		capture & valorization, green hydrogen or water treatment. Her work bridges academia and industry, offering innovative solutions based on cutting-edge technologies in the field of sustainable process engineering.

Moderators of the Round Table:

Company	**Representative**	**Resumé**
CNH2	Emilio Nieto	Emilio Nieto Gallego has been the Director of the National Hydrogen Centre (CNH2) since 2017, leading one of Spain's key public research institutions dedicated to hydrogen and fuel-cell technologies. He holds a PhD in Chemical Sciences from the Autonomous University of Madrid, a degree in Chemistry from the Complutense University of Madrid, and additional executive training including an MBA from IE & Técnicas Reunidas, along with specialized qualifications in integrated quality, environmental, and safety management. With more than 15 years of prior industrial R&D experience at companies such as Morgan Matroc, Tolsa S.A., and Técnicas Reunidas, he later worked as a senior R&D consultant before taking over CNH2's leadership. His career spans over two decades of innovation, technology management, and participation in national and international hydrogen initiatives, making him a central figure in Spain's hydrogen secto
UCLM	Manuel A. Rodrigo	Manuel Andrés Rodrigo Rodrigo is a Full Professor of Chemical Engineering and, since 2021, the Dean of the Faculty of Chemical Sciences and Technologies at the University of Castilla-La Mancha (UCLM). He joined UCLM in 1996 as an assistant lecturer, became Associate Professor in 2000, and achieved a full professorship in 2009. An internationally recognized expert in electrochemical engineering, his research spans environmental electrochemistry, PEM and microbial fuel cells, electrogenerated oxidants, electro-refinery, and advanced electrochemical reactor development, including 3-D printed cells. He has led numerous competitive research projects, supervised dozens of PhD theses, published hundreds of scientific articles, and collaborated extensively with industry. His

		scientific excellence has earned him major distinctions, such as being named Fellow of the International Society of Electrochemistry (ISE) in 2025 and being appointed Full Member of the Royal Academy of Exact, Physical and Natural Sciences of Spain.

Place: CRISTINA GARCÍA RODERO MUSEUM (PLAZA CONSTITUCIÓN, S/N, 13500)

10:40 Start. The moderators introduce the participants and explain the dynamics of the session.

11:00 The General Manager for Energy Transition at the Castilla-La Mancha Government (JCCM), Mr. Alipio García, makes a speech for 15 min. Afterwards, each of the participants gives a view on each of the 4 questions introduced by the moderators. The audience (about 100 people from different countries) makes questions at the end of each round, as well as at the end of the session.

The 4 selected questions are:

1. General Context:

How do you think the energy and/or environmental future of our society will look, and what importance do you foresee for energy regulation (storage) in that future? Which technologies do you believe will be the most widely used for energy storage (electrochemical, thermal, hydraulic, synthetic fuels…)? Is there still much development needed? How should Europe shape its strategy in energy and/or environmental matters? Should it follow the same approach as the USA or China?

2. Institutional/Corporate Context:

How is the energy and/or environmental challenge being addressed within your institution or company, and what do you expect will be your most relevant contribution over the next 10 years?

3. Local Technological Context:

What are your views on the development of battery technologies, redox-flow batteries, and electrolyzers/fuel cells? What should their impact be on stationary and mobility applications? And what about environmental electrochemical technology?

4. Future and Human-Capital Context:

What impact will AI have on the energy and environmental sectors? What types of professional profiles will be in demand in the near future in relation to energy and the environment? How can we improve training today and prepare ourselves for that future?

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Summary of the Round Table

Opening Statement for the Roundtable

Ladies and gentlemen, distinguished colleagues, and esteemed guests,

It is a great pleasure to welcome all of you to this roundtable, which brings together experts, practitioners, researchers, and industry leaders to reflect on some of the most pressing questions shaping the energy and environmental future of our society. Today's discussion is structured around four complementary perspectives—global, institutional, technological, and human—which together provide a comprehensive framework for understanding the challenges ahead and the opportunities we must seize.

Q1. The Global Context: Our Energy and Environmental Future

To begin, we must acknowledge that the world is entering a decisive decade in terms of energy, climate, and technological transformation. The future of our society will be defined by how effectively we can align economic development with environmental responsibility. This means building an energy system that is cleaner, more resilient, and more flexible than ever before.

Energy storage—and more broadly, energy regulation and balancing—will play a decisive role in this future. As renewable penetration continues to grow, the ability to accumulate, transform, and dispatch energy will become not simply advantageous, but essential. The diversity of storage solutions mirrors the complexity of the challenge: electrochemical batteries, thermal storage, pumped hydro, power-to-X systems, and synthetic fuels all offer unique capabilities that will be needed simultaneously across different scales and applications.

No single technology will dominate; rather, the future will rely on a carefully orchestrated combination of storage pathways, each contributing to the stability and adaptability of the system. And yet, much remains to be developed—efficiency, durability, circularity, and cost reduction continue to be active fronts of research. The innovation landscape is still wide open, and this uncertainty is not a limitation but an opportunity.

This brings us to an essential strategic question: *What should Europe's approach be?* Europe must clearly define its own energy identity—not a replica of the United States, nor a mirror of China. Europe must build on its strengths: scientific excellence, technological leadership, industrial competitiveness, and a regulatory framework built around sustainability, social responsibility, and long-term vision. The European energy transition should therefore be ambitious, integrated, and inclusive, emphasizing innovation, autonomy, and environmental stewardship.

Q2. The Institutional and Corporate Context: Facing the Challenge

From a more specific perspective, each institution and company represented here today plays a critical role in shaping this transition. Whether through research, industrial development, public policy, or technological implementation, our collective actions will define the pace and direction of change.

The energy and environmental challenge is not abstract for institutions—it is concrete, immediate, and strategic. It demands investment in research, integration of new technological capabilities, collaboration with industry, and the creation of environments where innovation can flourish. Over the next ten years, many institutions will be called upon to deliver what may become their most significant contributions: disruptive solutions in electrochemistry, hydrogen systems, advanced materials, digitalization, and sustainable processes; new industrial applications capable of decarbonizing sectors that have historically been difficult to transform; and public-private collaborations that turn scientific knowledge into economic and environmental value.

Each organization must ask itself not only *how* it will adapt, but *how it will lead*. The answers to this question will define our competitive positions in a rapidly changing global landscape.

Q3. The Local Technological Context: Batteries, Flow Cells, Electrolyzers, Fuel Cells, and Environmental Electrochemistry

Our event today also invites us to take a closer look at an ecosystem of technologies that are rapidly evolving and whose potential is extremely promising—particularly in our region.

The development of battery technologies continues to advance at astonishing speed. Lithium-ion systems are improving in energy density, safety, and circularity; meanwhile, sodium-ion, solid-state, and next-generation chemistries open new frontiers. Redox flow batteries, with their inherent scalability and long cycle life, are emerging as robust solutions for stationary storage, especially in applications requiring large capacities and stable long-duration performance.

Hydrogen technologies, including electrolyzers and fuel cells, are also accelerating. Electrolyzers are becoming more efficient and modular, while fuel cells are moving toward cost reduction and wider deployment in mobility, industry, and backup systems. Together, these technologies will shape both stationary applications—such as microgrids, industrial clusters, and renewable integration—and mobility applications, from heavy transport to maritime and aviation pathways.

And we should not overlook the transformative potential of environmental electrochemistry. This field is redefining how we treat water, soil, and waste streams, offering powerful tools to shift from pollutant removal to resource recovery. Electrochemical processes—once confined to specialized research—are now beginning to scale and show their capability to contribute directly to a circular, low-impact industrial paradigm.

The discussion today will allow us to explore these technologies with depth and clarity, examining their present maturity and their future trajectory.

Q4. The Human and Future-oriented Context: Skills, AI, and the Next Generation

Finally, we must look ahead to the human dimension, which may be the most transformative of all. Artificial Intelligence is already reshaping the energy and environmental sectors, enabling predictive modeling, optimization of industrial processes, advanced materials discovery, digital twins, and dynamic management of grids and storage systems. AI will not replace human expertise, but it will amplify it—requiring professionals who are skilled, adaptive, and comfortable working at the intersection of engineering, data, and environmental science.

The profiles in highest demand will combine technical depth with transversal skills: chemical engineers, electrochemists, environmental technologists, hydrogen specialists, materials scientists, data analysts, AI engineers, system integrators, and professionals capable of navigating multi-disciplinary environments.

This reality forces us to rethink training—not only through formal education, but through continuous learning, international exposure, hands-on research, and closer collaboration between universities and industry. Preparing for the future means building bridges between generations, disciplines, and institutions.

Conclusion

Today's roundtable is an opportunity to reflect, challenge assumptions, and contribute new ideas. The questions we address are complex, but the collective expertise gathered here gives us reason for optimism. I invite all participants to share their insights openly, to think boldly, and to contribute to a discussion that is not only technically rigorous but also visionary.

Thank you for being here, and let us begin our conversation.