

RISEnergy Innovation Workshop

Roskilde 6 November 2025

The workshop was addressed by Lena Kitzing of DTU Denmark (as seen from the attached agenda) welcoming the participants and indicating the importance of sharing experiences in the quest for Energy Transition and the technologies that are supporting the process.

Following the opening remarks of the hosts, Peter Holtappels of KIT, the coordinator of the RISEnergy project, presented a high-level overview of the RISEnergy project and the road to the first reporting period covering the first 18 months of the project.

The workshop, moved on to the opening presentations of Venizelos Efthymiou and Kourosh Malek setting the scene of the day in Accelerating the transition to more RES through innovation.

Venizelos Efthymiou in his presentation entitled **“Accelerating tomorrow: How innovation drives tech evolution to market, speeding adoption without sacrificing quality”** underlined the importance of innovation in achieving the climate and market objectives for 2030 and beyond. At the same time, he identified the challenges in pursuing the innovative route, calling for a more agile route enhanced by policy decisions including public procurement policies. Knowing that innovation acts as a catalyst, shortening development cycles and enabling rapid market entry while ensuring that the products are reliable, safe and high quality, steps ought to be taken since innovation can be a game changer. He then underlined the importance of regulatory and business environment changing entrusting venture capital for faster evolution, requiring effective solution to the regulatory and administrative obstacles that currently exist. It is essential that the required strategy ensuing legislative, policy and financial support for overcoming effectively the two valleys of death for European startups should take priority with adequate courage to pursue the changes required. He concluded his presentation with encouraging messages related to the cross-fertilization model for speeding up the process through effective utilization of best practices and collaboration principles and the important policy decision for introducing the 28th Regime to enable firms that wish to do so to operate under a new business law codified at the European level, that is highly suitable for SMEs and innovative companies, to operate without friction across all EU Member States.

Kourosh Malek, followed addressing the theme **“Artificial intelligence for Renewable Energy Technologies: Challenges and opportunities”**. In his opening remark he underlined the high expectations in RES deployment in Europe that will not be adequately covered by digital systems through the grid connected systems, calling for speeding up the processes that will surpass current deliverables. In this process the digitalized world will play a speeding up role with AI being the game changer in delivering the required technologies. Going through the current maturity level of AI-driven concepts and solutions, he brought into the right perspective current useful outcomes dictating the way forward.

Identifying the biggest AI pain points in achieving energy innovation the current complexities and shortcomings were presented, identifying the questions in the minds of leaders in the field and the possible steps forward. Pursuing such an approach will bring high benefits to the energy industry, underlining that it is a real opportunity through effective handling of DATA and AI (IEA 2023). To substantiate these encouraging deductions, he presented the outcomes from more mature applications through Horizon projects that are revealing promising results (SPRINT and DECODE). He then addressed the importance of using AI in grids, and how positive effects can be experienced showing real cases in real time operation, asset operation, maintenance and grid development. Through the presentation of Kourosh Malek, it was evident that effective management of DATA through well-established ontology and metadata practices, will constantly grow and serve emerging systems but if not well addressed, DATA will not survive and promising benefits will be lost. He underlined the importance of achieving and effective shift from digital to physical intelligence, achieving positive results on the way.

Panel Discussion: Accelerating Innovation for renewable Energy Technologies

After the “Setting the Scene” session, the workshop included a panel discussion chaired by Adel El Gammal (Secretary General of EERA). Participants in the Panel discussion were:

- Wolfram Sparber – President of EUREC
- Rafael Mayo – Senior scientist (CIEMAT)
- Thomas Garabetian – R&I Manager (Solar Power Europe)
- Ignacio Marti – Head of Division “Wind Energy Materials and Components Division” (DTU)

Adel El Gammal opened the Panel Discussion session, by noting the **EU RES objectives until 2030 and the current speeding up process through policy decisions for achieving the 42.5% target in the total energy final use.** He shortly informed the meeting of the important deliberations of the SET PLAN conference hosted in Odense the two previous days, noting the two important words he has taken away from the important deliberations of the SET Plan conference. The two words are: Defragmentation and Value Chain for research and industry both geographical and technology related.

Picking up fragmentation as a serious issue in Europe, the coordinator of the session set out the question: **How can we benefit from notable advances of one technology to others that are also critical in the energy transition?**

Rafael Mayo: Cross-fertilization between technologies is highly welcomed and this is seen in the field of digitalization which is cross cutting and Artificial Intelligence (AI) making a notable contribution in one technology and easily can be transferred to others building an agnostic approach in implementation phase. This will foster fast growth in all sectors

including cyber security options that are critical to system solutions of wider use and give an upper hand to EU based on the current leadership in the field. Building this cross-fertilization approach forward, collaboration between technology stakeholders can flourish with multiple benefits in all directions.

Wolfram Sparber: Continuing the theme of cross-fertilization, he brought in the discussion the issue of resilience of systems. Complementarity between various technologies is vital in the overall mix to deliver resilient solutions providing quality to end users. The implied cost varies and it depends on the angle seen and the services delivered.

The cross-cutting issue of DATA sharing was raised in the discussion, since the development of systems, technologies and solutions highly depend on reliable data. There is currently reluctance to share valuable operational DATA relating it to being a competitive advantage. In the absence of reliable data, AI slows down and hence RISEnergy can help by building a suitable sharing platform, capable of hosting FAIR (**F**indable, **A**ccessible, **I**nteroperable, and **R**eusable) data openly accessible.

Kourosch Malek took the floor to underline the importance of maintaining FAIR data as suggested, but address in parallel the longevity of data being used or further enriched and not lost or made non usable due to lack of standards that dictate proper metadata and ontology principles that can extend life in the future and allow enrichment on the way. In this approach, we are well as regards materials and devices, but we are lacking in energy, and we need to improve and adapt.

Adel El Gammal: The notion of **collaborative programs in research based on a common roadmap among all related stakeholders** is becoming a promising approach in transforming research activities into meaningful work for all stakeholders involved and avoid duplications and lost time and money. How do we react to this policy approach?

Ignacio Marti: Indeed, collaborative programs are becoming the norm as we move forward building on lessons learned from past research work. This is the conscious change that we are adopting, moving away from fragmented efforts of the past, through which research calls were appearing in various European and National financial programs that were similar missing purpose and direction. Moreover, this approach was generating duplicated facilities serving the same purpose, hence duplication in capital use and lack of collaboration between similar thinking research teams, that disjoins outcome and slowing down the evolution process. Learning from the past, the wind industry together with academia and related associations, has brought forward with the support of the commission, the co-programmed partnership for wind, for building a common roadmap and research agenda forward. This approach will generate a purpose well defined that is commonly understood and accepted achieving defragmentation in the field and building collaborative principles forward.

Thomas Garabetian: A similar diagnosis was concluded within the PV industry leading to the establishment of the co-program partnership of PV representing all stakeholders in the field. This avoids duplication and lost effort and money.

Wolfram Sparber: Extending the common understanding achieved through the co-program partnerships, he underlined the importance of ETIPs (European Technology and Innovation Platforms) in making the partnerships representative with all stakeholders on board, giving a sound basis for developing coherent SRIAs (Strategic Research and Innovation Agendas) for the technology that they represent. Secretarial support for their functioning is vital and passed on this message for the ears of the Commission.

Adel El Gammal: In relation to the evolution of the market in EU, we are facing **slow evolution where innovation is not speeding up the process due to hindrance coming from regulation practices**. How can this improve?

Wolfram Sparber: There is a definite need for innovation to be pursued by all, including regulators and policy makers. One approach that can help the process is to include a 5% innovation target in all public investments, calling all investors to include in their procurement processes a mandatory investment using 5% innovative technologies and not 100% price related. Although this has been adapted in the EU legislation as a requirement, it is not seen yet in the NECPs (National Energy and Climate Plans) of Member States. However, we are very hopeful for high TRL technologies. A second issue that we need to take concrete steps forward is the legal issue of how we can achieve technology objectives such as V2G (Vehicle to Grid). It is a technological objective but with a strong legal dimension. In the implementation phase we have 27 different approaches that hinder real exploitation of the wealth that technology brings. Other countries are much more proactive in all respects hence faster in seeing the real benefits.

Thomas Garabetian: We are aligned with the above thinking, and we see it also happening in the PV industry. We are seeing high fragments in policies and 27 different versions with varied effectiveness. We need to improve and be more coherent.

Adel El Gammal: The Commission will propose a **28th legal regime in 2026, to make it possible for innovative companies to benefit from a single, harmonized set of EU-wide rules** wherever they invest and operate in the Single Market, instead of facing 27 distinct legal regimes. The legal / regulatory environment will seek to align with innovation principles to be indicated in the Innovation Act of the Commission which sounds very promising. Is this promising in support of startups etc?

Thomas Garabetian: Yes, since fragmentation is hampering innovation and installation approaches. Manufacturing will benefit including digital flexibility.

Rafael Mayo: We are failing in many respects and common approach is vital for faster growth and real innovation pick up speed to assist change.

Adel El Gammal: The IEA estimates that technologies that are not commercially available will contribute to 35% of the emission reductions needed to reach net-zero by 2050. How can we move away from silos and generate a development / research agenda that builds on collaboration and avoids loss of resources and time?

Wolfram Sparber: The percentage indicated might be correct, but this will mostly come from evolutionary achievements of already existing technologies but complemented with breakthroughs that need collaborative R&I supported with regulatory sandboxes for speeding up the process. We should not forget that promising lab results, very often fail to reach the market for various reasons.

Ignacio Marti: Evolution will be the main driver forward, but strong R&I through well thought roadmap on identified breakthroughs will complement the technologies needed for achieving the 2050 targets.

Rafael Mayo: We will definitely see in the coming years, breakthrough technologies such as those that are quantum technology based, that will cover a good proportion of what is needed.

Kouros Malek: Opportunity cost is not well explained since every scientist is a silo by himself. Let us all try to make connections and be motivated by it. The challenge is there with promising benefits for all that can transform change into common challenges. Driving innovation forward that will be much faster!