

# PANTERA Workshop

## Boosting the R&I activity on Smart Grid Technologies

**Empowering Energy Citizens and Communities towards the Decarbonisation of  
“Energy Island”  
Country: Cyprus**

### Workshop report

PANTERA was present at the ***IEEE Smart Cities Conference 2022 – 27<sup>th</sup> of September 2022 hosted in Paphos Cyprus, bringing the stakeholders together to enlighten the conference on the activities pursued in strengthening the energy transition process.***

Cyprus is an active member of the EU since 1<sup>st</sup> May 2004 and actively works in the success of the energy transition objectives to achieve the declared policies for achieving a low carbon economy. However, the following areas are still a concern in achieving carbon neutrality and we have addressed them during the workshop that brought together stakeholders in the field of smart grids, storage and local energy systems:

- R&I activities in the field are weak calling for more national and European support to raise opportunities, bring closer to the wealth of EU knowledge and offer the means to address local needs with the support of the industry and broader communities.
- Enabling technologies like digitalisation, storage, smart grids, e-Mobility and reliable communications are not adequately addressed to facilitate the much-wanted transition for the effective use of emerging technologies that include distributed RES, e-mobility with smart charging and V2G attributes and demand flexibility.
- End users and citizens are not adequately empowered through codes, appropriate regulation and market instruments to build and operate effective energy management systems utilizing the emerging technologies that can grow into efficient energy communities with appropriate technologies in place to facilitate optimal use of local resources for the benefit of the citizens.

**The workshop has managed to bring the stakeholders of Cyprus actively participating addressing all the above issues and together we have tried to shed some light to identify the way forward. Our prime objective of helping the country to move faster toward the much-wanted energy transition to the low carbon economy was well covered and the stakeholders have noted this with satisfaction.**

### PANTERA Workshop

#### Boosting the R&I activity on Smart Grid Technologies

Topic: Empowering Energy Citizens and Communities towards the Decarbonisation of “Energy Island”  
Country: Cyprus



at the IEEE Smart Cities Conference 2022

27 September 2022  
14:00- 17:30 EEST



## Agenda of the workshop

Time (CEST)	Topics	Description	Presenter
14:00 14:20	The PANTERA project and the regional approach	Opening the workshop and setting the scene for open dialogue on the role of the PANTERA process in helping Cyprus to grow stronger in sustainable energy R&I	Dr. Venizelos Efthymiou(FOSS)
14:20 14:40	Cyprus: Energy and R&I landscape	Cyprus' Integrated National Energy and Climate Plan for the period 2021-2030 and beyond: Opportunities.	Mr Charalambos Rousos Director of Department of Energy of the Ministry of Energy, Commerce and Industry,
14:40 15:00	R&I in support of the Green Deal	R&I is critical in getting out of the energy crisis in Europe: The importance of leaving no one behind..	Mrs Natalie Samovich, ETIP SNET
15:00 15:30	EIRIE at your service	EIRIE, The multifunctional platform that can make the difference: Step-by-step introduction to its capabilities that serve your needs	Mr. Tasos Tsitsanis (Suite5), Dr Shafi Khadem (IERC) and Dr Kyriaki Psara (FOSS)
15:30 16:00	Coffee Break		
16:00 17:20	Panel Discussion and Q&A session	How to accelerate the R&I activities of Cyprus in support of the energy transition? <ul style="list-style-type: none"> <li>• Research Collaboration</li> <li>• National regulations</li> <li>• Policy issues</li> <li>• Financing opportunities</li> <li>• good practice</li> </ul>	<b>Moderators:</b> Venizelos Efthymiou and Andrei Morch (FOSS, SINTEF) <b>Panelists:</b> Venizelos Venizelou (CERA) Alexandros Nikolaides (TSOC) Natalie Samovich (ETIP SNET) Phivos Therapontos (DSO)
17:20 17:30	Closing Remarks	Wrap up giving emphasis to the outcomes of the workshop	Dr Rad Stanev (TUS)

## Opening of the workshop: The PANTERA project and the regional approach

**Dr Venizelos Efthymiou** (PANTERA project coordinator -FOSS - Cyprus) opened the workshop welcoming all the participants. After having briefly introduced the PANTERA projects, its main objectives and the approach he presented the developed EIRIE platform<sup>1</sup>.

PANTERA aims to substantially contribute to the needs of the R&I community in Europe delivering the EIRIE platform that facilitates EU wide connectivity and access to state of the art data, information and knowledge to support on a level playing field the R&I endeavours of member states.



<sup>1</sup> [www.eirie.eu](http://www.eirie.eu)

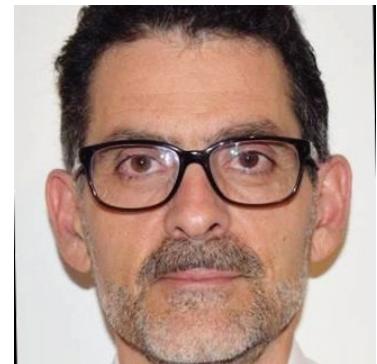
Before the end of his introductory speech Venizelos highlighted the importance that PANTERA gives in tackling the climate and biodiversity crises. The green transition has to be fair and just. All Europeans need to be able to benefit from this transition as fairly and as quickly as possible. This principle of our social market economy is also guiding our fight against climate change. R&I is more pronounced if all are given a chance – the possibility and the means to contribute! PANTERA is central in this process! That is why the PANTERA process is developed through the project for enhancing the possibilities for the R&I community irrespective of the country as long as activity takes off through the built-up services of EIRIE.



## Cyprus' Integrated National Energy and Climate Plan for the period 2021-2030 and beyond: Opportunities.

**Charalambos Rousos, Director of Energy Service of Cyprus,** has taken the floor to underline the importance of aligning with the EU policy in achieving the energy transition in line with the Green Deal objectives.

He stressed that the current National Energy and Climate Plan (NECP) of Cyprus for the years 2021 - 2030 elaborates on the five dimensions of the Energy Union and sets the national targets as well as policies and measures necessary for reaching the national energy and climate obligations for 2030. The country has set a target for achieving cumulative energy saving of 243,04 ktoe during 2021-2030 and a target of 23% renewables in the energy mix by 2030.



In order to achieve these, a mixture of policies and measures is being implemented. These include the promotion of:

- net metering and net billing and virtual net-metering,
- the role of prosumers and energy communities,
- the simplification of the administrative procedures for RES projects by developing a “one-stop-shop” and
- energy storage systems.

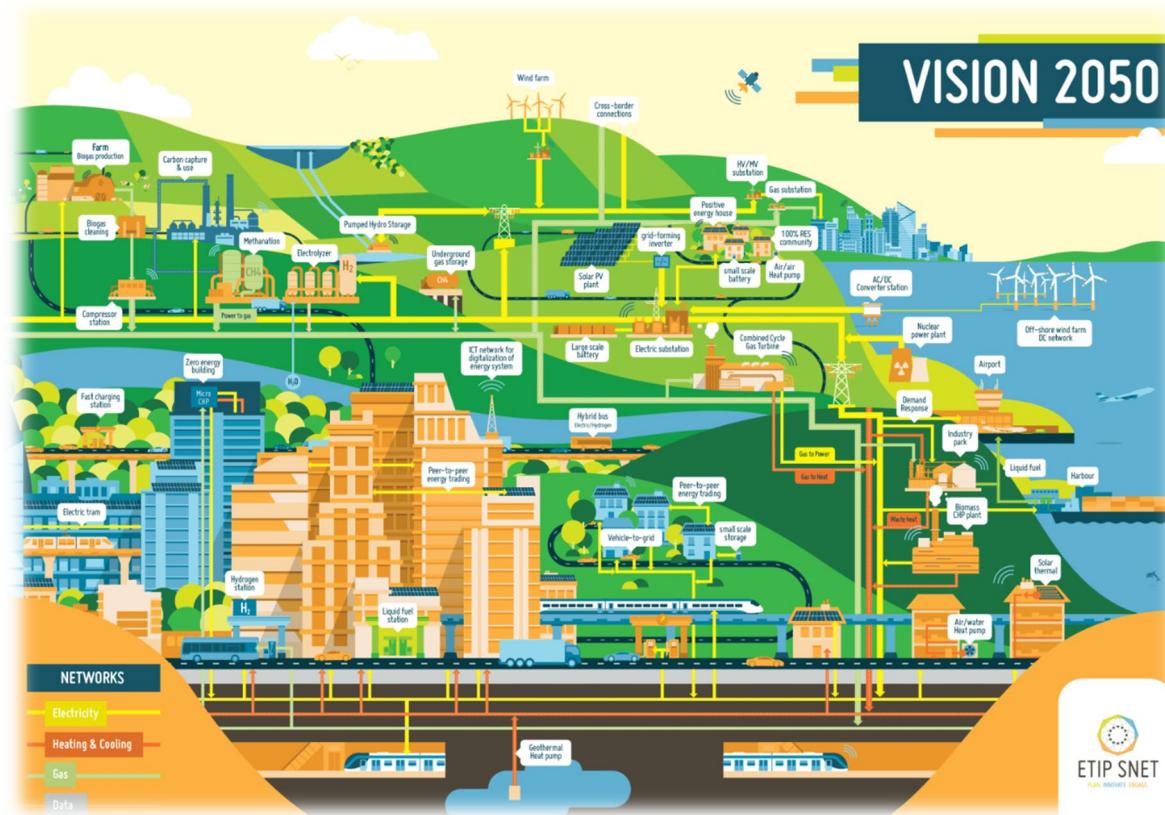
With technical assistance provided by the European Commission, the National Energy and Climate Plan is being revised, with the aim of incorporating additional measures and policies that will lead to the green transition and the achievement of new and higher national RES and EE targets by 2030 and 2050, as expected to result from the upcoming revision of the relevant European Directives. The cost of the green transition for public finances and consumers, the need for new infrastructure and regulatory changes, the implementation of the energy efficiency first principle, technological progress, alternative fuels such as hydrogen, the national specificities for the optimal implementation of the requirements and obligations set out in the European acquis and in particular in the context of the new "fit for 55" and "REPowerEU" packages, are just some of the parameters that will be taken into account in the future.

What was highly welcomed by the participants, was the references made by Mr Charalambos Rousos to the steps taken for the evolution of the energy communities and how these will be promoted through the revised version of the NECP of Cyprus. The model for how we should think about our energy systems is provided by citizen and renewable energy communities. The focus is on systems and communities because, with the aid of technology, we as citizens should be able to self-produce enough electricity for our transportation and household needs, share any surplus with the community we live in, and sell the excess on the electricity market. We are aware of the necessity to digitally transform the energy backbone infrastructure in order to meet the challenge and we are working with the Regulator in collaboration with

Trinomics and Enercon, in order to identify the ICT requirements necessary to support the novel market and consumer participation clauses of the Electricity Market Directive.

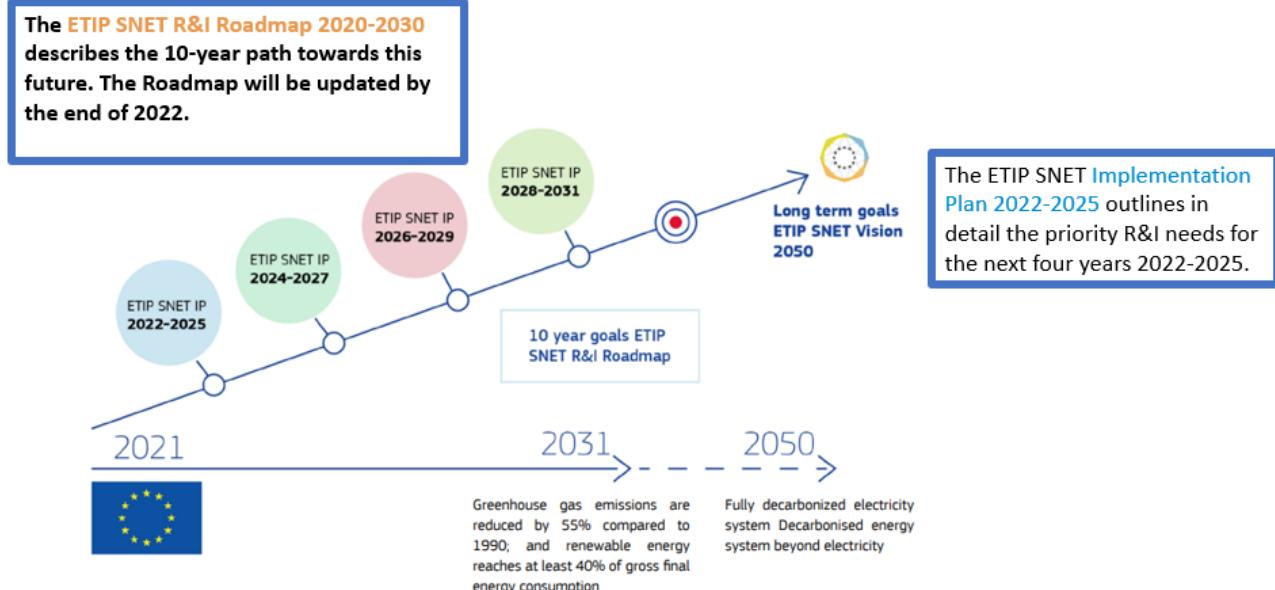
## R&I is critical in getting out of the energy crisis in Europe: The importance of leaving no one behind.

Mrs Natalie Samovich the chairperson fo Working Group 1 of ETIP SNET, dwelling on the vision of ETIP SNET has brought into the focus the need for optimal use of all sustainable sources through appropriate sector coupling, use of responding smart grids, fully digitalised with effective bi-directional flow of energy and data.



ETIP SNET is working closely with industry, academia, research centres and all associations active in Europe to achieve coherence and smooth transition safeguarding security of supply and resilience of the interconnected grid. Fully supportive to activities at national level, specific emphasis is given to collaborate with national endeavours through sharing of results and together building the way forward fulfilling the high-level objective of leaving no one behind.

To this effect, ETIP SNET is working in the revision of the ten-year plan to bring in progress made, results achieved and build the way forward on sound ground. Processes are put in place to reflect on achievements and correctly identify gaps and needs to formulate the way forward with priorities quantified and clear. R&I is clustered in high level use cases to bring in more homogeneity and more clarity in targeted objectives. This is in line with the requirement of being inclusive and diverse to cater for all needs in driving change for all Europeans and leaving no one behind.



## EIRIE platform at your service

Mr. Tasos Tsitsanis (Suite5) presented in detail the EIRIE platform functionalities starting from the EIRIE “mission statement”:

*A reference platform and one-stop shop for information sharing, collaboration and knowledge creation aiming at evidently supporting the advancement of R&I activities in Smart Grids at national, regional and pan-European level and, subsequently, facilitating the energy transition.*



He then went on to identify the value propositions for having a fully functional platform accessible to all R&I community:

### To researchers

- Access to a pan-European data base with analytical and exploitable information on smart grid projects
- Information about best practices in R&D sector
- First-hand insights into interesting smart grid projects, results, ideas, initiatives
- Access to SotA Training Material and Education Programmes

### R&I Organizations

- Cross-promotion opportunities, encouraging synergies with projects and initiatives through information sharing and promotion opportunities through highlighting key achievements as best practices
- Making feasible for the low spending, in R&I, countries to be engaged in a more active manner in EU R&I activities

### Policy makers

- Define inefficiencies of R&I activities at national, regional and EU level and prioritization of policy actions towards advancing R&I in low-performing thematics
- Pooling together different available instruments into one platform, in such a way that it will effectively contribute to the increase of knowledge, coordination of R&I activities and networking

**Dr Shafi Khadem** took the floor continuing from where Tasos left, to give insides to the designed PANTERA process indicating how the valuation of project results gives valuable inside for progress made in all corners of Europe, identifying gaps and filling in future needs.

This was further elaborated with the national strategic objectives identifying the R&I priorities through the country NECPs (2020 – 2030):



### Decarbonisation

- Utilization of wind parks in operation
- Utilization of photovoltaic parks in operation
- Electric Vehicles

### Energy Security

- Optimization and control of the distribution system
- Load and generation forecasting
- Supervisory Control and Data Acquisition of PV systems

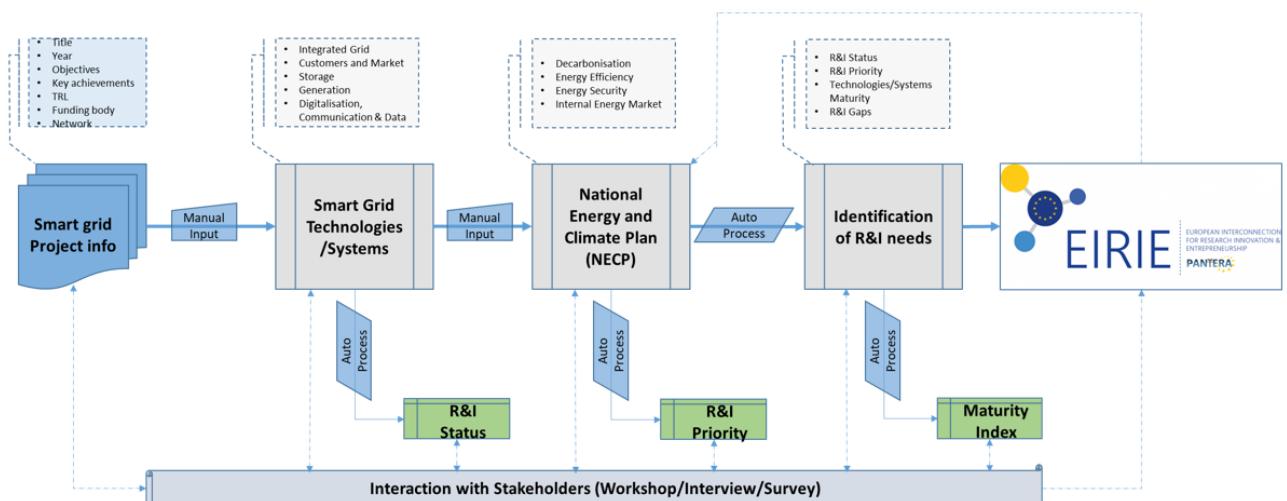
### Energy Efficiency

- Deployment of photovoltaic panels
- Deployment of heat pumps for heating
- Utilization of biomass boilers
- Promotion and utilization of high-efficiency air conditioning units
- Street lighting
- Pumped hydro, Electric storage

### Internal Energy Market

- Load profile management through demand response
- Direct participation of customers in all market stages, through aggregation
- Increased distribution system observability

## Identification of gaps in national Smart Grid R&I activities



**Dr Kyriaki Psara**, took over from Shafi and continued the EIRIE coverage with its vision to create, through the planned multi-functional collaborative platform, this reference operational point to:

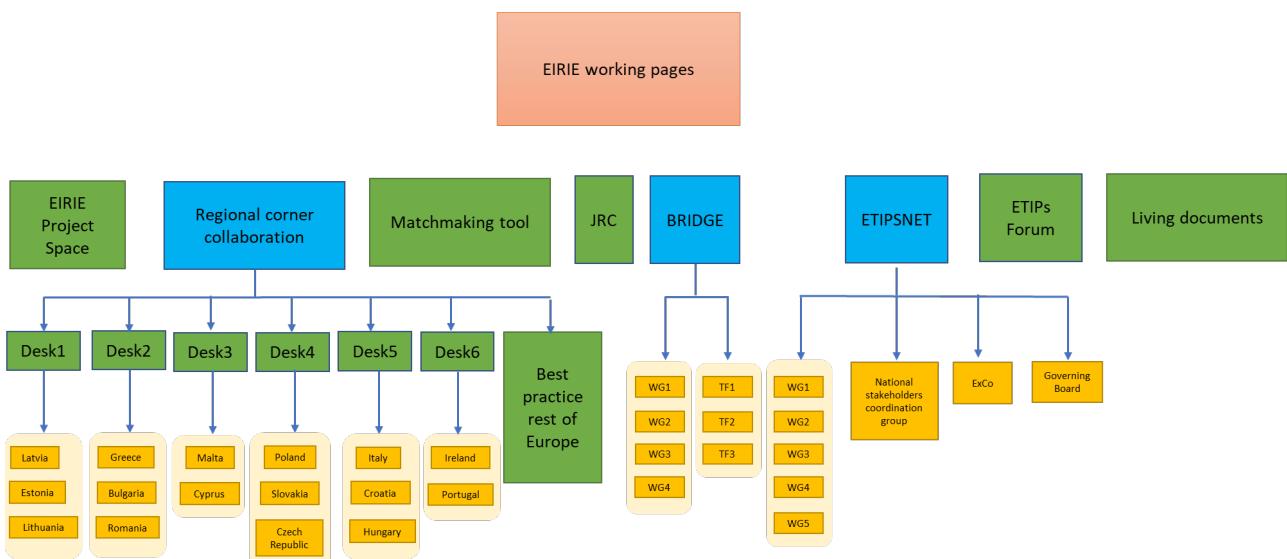
- Unify European activity
- Incentivize further investments in smart grids
- Support access to exploitable results
- Spark further work and cooperation capable of bridging the existing gaps.

Building on the wide benefits that EIRIE is offering to its users, has given further insights on the wealth that the current design of the regional corner offers, allowing all countries in Europe to create and nurture successful collaborations that strengthen the R&I activities throughout the EU.



Particular emphasis was given to the versatility given by the CONFLUENCE platform generated for further enhancing the collaboration work on EIRIE:

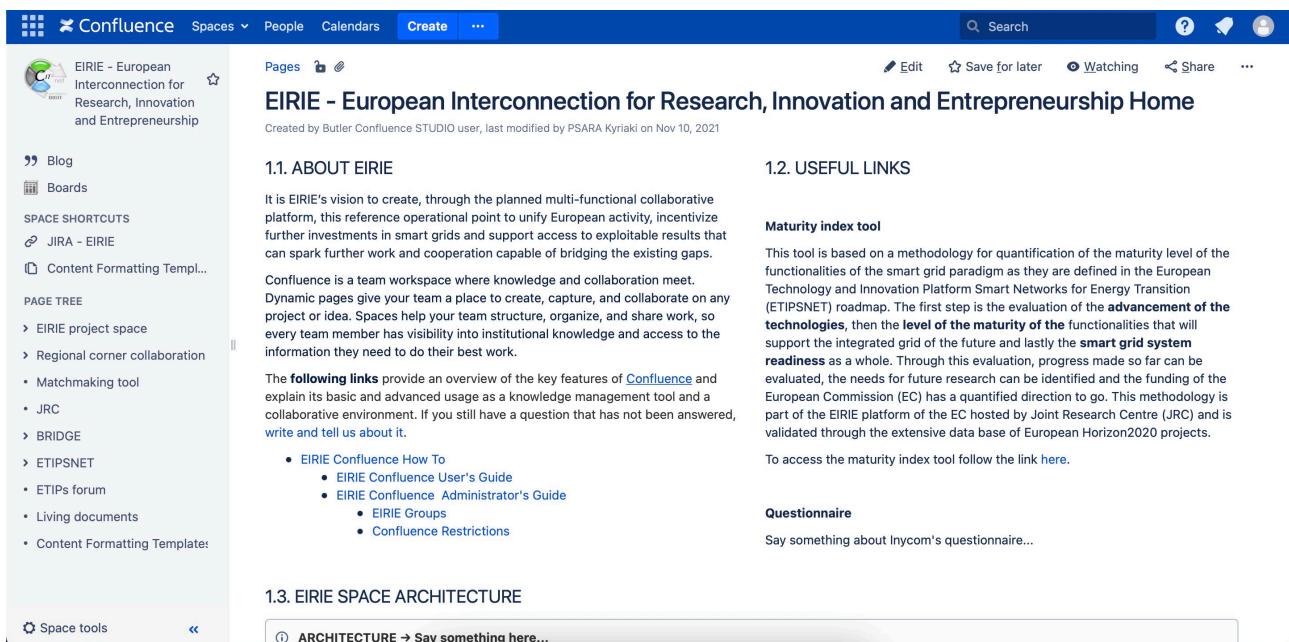
- Confluence is a collaboration wiki tool used to **help teams to collaborate and share knowledge efficiently**.
- Confluence is a **team workspace** where knowledge and collaboration meet by creating, collaborating, and organising all the work done within EIRIE in one place.
- Confluence is for teams of **any size and type**, from those with mission-critical, high-stakes projects that need rigor behind their practices, to those that are looking for a space to build team culture and engage with one another in a more open and authentic way.



Kyriaki has analysed the developed architecture on EIRIE / CONFLUENCE giving evidence that all are welcome to strengthen their widening possibilities for enriched R&I work in Europe:

The EIRIE space in CONFLUENCE has been designed and it is ready for all to use for enhanced collaboration. Building on well designed CONFLUENCE pages this is achievable with universal benefits:

- All content lives in **pages** – living documents created on EIRIE Confluence site.
- Various different **types of pages** can be created such as project plans, meeting notes, troubleshooting guides, policies, and more.
- Confluence comes bundled with **templates** that can be used as a basis for almost any kind of content.
- In case none of the existing templates can be used for a specific type of content you want to create, a **blank page** can be used and adjusted accordingly.



The screenshot shows a Confluence page titled "EIRIE - European Interconnection for Research, Innovation and Entrepreneurship Home". The left sidebar contains a navigation menu with links to "Blog", "Boards", "SPACE SHORTCUTS", "JIRA - EIRIE", "Content Formatting Templ...", "PAGE TREE", "EIRIE project space", "Regional corner collaboration", "Matchmaking tool", "JRC", "BRIDGE", "ETIPSNET", "ETIPS forum", "Living documents", and "Content Formatting Templates". The main content area includes sections for "1.1. ABOUT EIRIE", "1.2. USEFUL LINKS", and "1.3. EIRIE SPACE ARCHITECTURE". The "1.2. USEFUL LINKS" section features a "Maturity index tool" which is described as a methodology for quantification of the maturity level of smart grid paradigms. It mentions the ETIPSNET roadmap and the advancement of technologies. The "1.3. EIRIE SPACE ARCHITECTURE" section includes a comment input field: "ARCHITECTURE → Say something here...".

## Panel Discussion and Q&A session

**How to accelerate the R&I activities of Cyprus in support of the energy transition?**

- Research Collaboration
- National regulations
- Policy issues
- Financing opportunities
- good practice



The planned panel had very good representation coming from the following critically important stakeholders:

- Venizelos Venizelou representing CERA, the Cyprus Regulator
- Alexandros Nikolaides representing the TSO of Cyprus
- Natalie Samovich representing the association of EU ETIP SNET
- Phivos Therapontos representing the DSO of Cyprus



The panel was coordinated by Venizelos Efthymiou of FOSS and Andrei Mørch from SINTEF taking care of introducing the themes to be addressed to help the participants in following and contributing.

In order to help the participation of the participants in the discussion, we have facilitated the services of the online tool SLIDO through which the response is imminent of posed questions and thus useful for the conducted discussion.

As a warm up question to the participants to learn to use the SLIDO online tool the question of **"Which is your country of residence?"** was asked. The interesting results are the following:



As a follow up question, the participants were asked the question: **Which sector describes best your affiliation?** The results were interesting, and they are as follows:

## Which sector describes best your affiliation? (1/3)

University



Research centre



DSO



TSO



Government / policy sector



Energy utility



Generation company



Consumer / prosumer / end user



Consultant / advisor



Other



At this stage the participants were asked the following question that was highly relevant to the panel discussion and the results will be used by the panellists in their positioning:



**What barriers do you see in being actively involved in R&I in your country? Please choose 3 out of the following (2 min):**

(1/3)

Lack of coordination between private and public investments in R&I:



No access to research infrastructure:



Low country budget in R&I



Universities do not relate their R&I work to the needs of local industry



Our country is not active in the Clean Energy Transition Public Private Partnership



Public authorities do not include R&I in their scope of work / needs



Universities don't equally value local achievements Vs international



No easy access to R&I results, data, information & knowledge



No adequate public support / guidance to R&I work / needs



Other



The responses generated high interest among the panellists and in general they were aligned with the participants to the workshop, meaning that they agree on the importance given to the indicated barriers of

- lack of coordination between private and public entities,
- Public authorities do not consider R&I as inherent to their daily activities
- Universities do not relate their R&I work to the needs of the local industry and communities

More, specifically the representative of the TSOC Dr Alexandros Nicolaides in addition to agreeing to the above priority list, has underlined the following important R&I needs that should be tackled with local contribution:

- tested and validated solutions are needed on the evolving technologies since we need to safeguard the security of supply
- exploitation of system flexibility
- clear division of responsibilities regarding the energy communities
- TSO role is changing
- blueprint is needed for the establishment and operation of energy communities

More specifically the representative of CERA Dr Venizelos Venizelou was asked the following: Energy transition has inherent difficulties calling for careful consideration of choices to be made that should be based on scientific evidence. Can you elaborate on the approach that CERA adapts and to what degree R&I plays a role? He responded by saying that we are experiencing huge changes in the energy sector and prudent decisions and policies should depend on the evidence brought forward by R&I. CERA is well aware of this need and is active in various projects following closely the ones that CERA considers the most appropriate ones. Scientific evidence should guide us in our policies and for this reason tracking progress is equally important in adapting policies to actual results.

Extending the question to the representative of the DSO of Cyprus Phivos Therapontos was asked: Europe has taken the strategic decision that Communities, Districts and Cities could be smart in approach and to a high degree energy sufficient and sustainable. Do you have technological answers to this ambition and if not or where you do not have, how do you see R&I helping? His answer has indicated the following important guiding principles that are of crucial importance to the DSO to develop and facilitate accessibility for energy communities to build on:

- Smart meter availability together with Advance Metering Infrastructure
- Decentralised controls
- SCADA connecting evolving smart substations
- The huge interest in small rooftop PV in Cyprus, and means should be available for controlled participation in the daily energy mix,
- R&I with universities should be more targeted for daily grid and system problems,
- Grow in the understanding of being an effective facilitator to the functioning of the Energy communities

Moreover, Phivos Therapontos has stressed that Academia seeks for something novel while industry is leaving with real problems, and these should somehow merge. Universities in general are not focused on practical topics and we as the industry, the DSO, TSOC etc face daily problems that need targeted R&I to address our own local specificities in Cyprus.

The other panellists Alexandros, Venizelos and Natalie have stressed also the need to bridge the distance that currently exists between universities and local country problems building strong collaboration as supported by EIRIE and PANTERA using gradual baby steps to bridge the gap and deliver.

Venizelos Venizelou of CERA has further stressed the importance of incentivised regulation calling for more targeted participation in projects utilizing sandboxes principles where required.

Finally, Natalie has posed the question: How the technology can help us? We are evolving fast. We need to raise awareness, develop digital skills, capitalise on edge computing (towards self- regulation) introducing more simplicity and moving away from centralisation since it is no longer an answer.

#### **Outcomes of the workshop and concluding remarks**

The responsibility of closing the workshop was on the shoulders of Dr Rad Stanev of TUS Bulgaria and a partner in the project PANTERA. He has underlined the importance of the current status of the EIRIE platform and how it has helped to bring the R&I closer together with tangible benefits that were identified by PANTERA colleagues during the workshop. It is inviting for all to connect and benefit from the functionalities offered and build the rewarding collaboration space for interested stakeholders.



Rad has thanked all the distinguished stakeholders that took the time to be with us in this useful workshop and share their wealth of knowledge on issues that are highly relevant in this challenging period that we are in with the energy transition process. Moreover, he has thanked all the participants to the conference and their active contribution to the proceedings that have helped tremendously.

Rad has given time, to underline the main take aways from the workshop that are in the above paragraphs and encouraged all to connect to the EIRIE platform and PANTERA website for more and get the benefit of constant updates on progress made and achievements reached.