

#1/2022

Newsletter



Dear cross-border colleagues,

Dear friends of sustainability research in the Upper Rhine region,

In this seventh newsletter, we would like to present to you the main results of our work packages. In addition, we would share with you some recent policy changes that are relevant to our project and community.

We wish you happy reading!

The RES-TMO Coordination Team in Freiburg



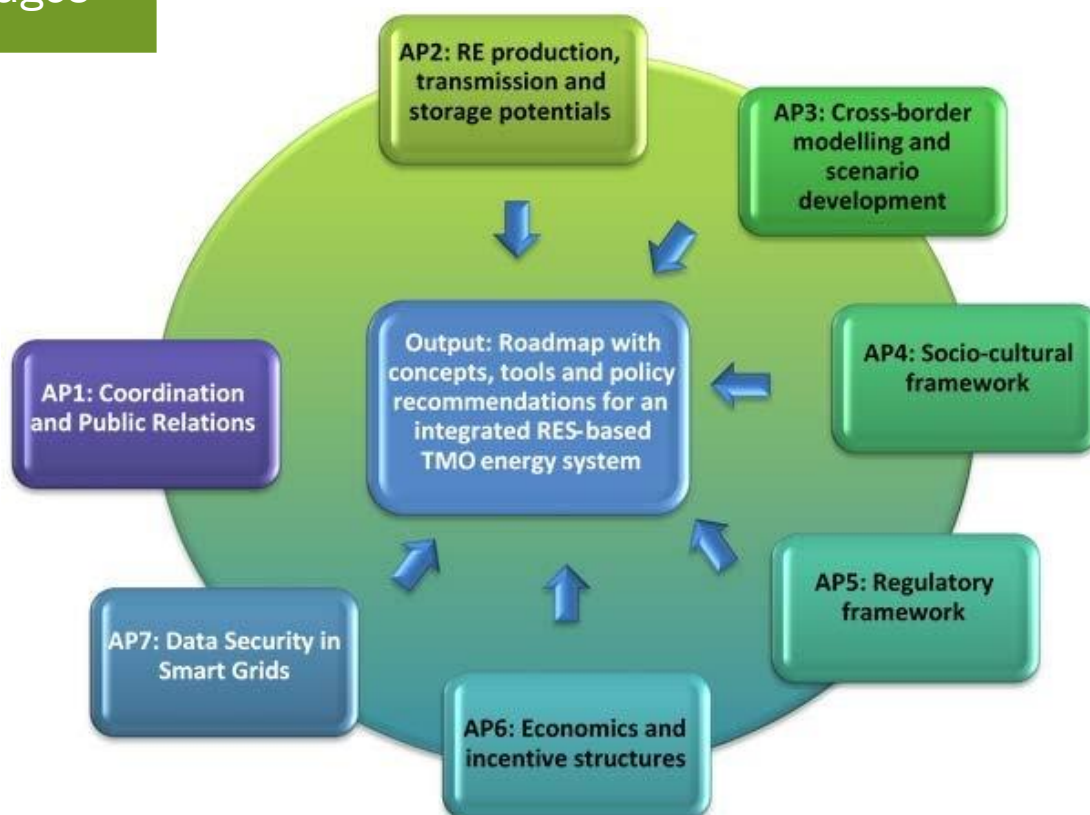
RES-TMO is a three-year project funded by Interreg V Upper Rhine, and it was developed in the framework of the Upper Rhine Cluster for Sustainability Research (URCforSR). The project aims to accelerate the energy transition by uncovering synergies from complementary generation, demand and storage capacities, as well as cross-border energy initiatives in the trinational Upper Rhine Metropolitan region.

The work of the RES-TMO project is organized around seven work packages, or WPs in short. In this issue, we will give a brief update on the work of WP5, WP6 and WP7. Detailed information on the project can be found on [our website](#), where you can also find our [previous newsletters](#).

Our project has been granted an extension and will run until 31.07.2022.

The final project colloquium took place on 10 May 2022 in a hybrid format in the Aula of the University of Freiburg and on Zoom. The project partners from France and Germany presented their key results to around 150 participants (in-person and online) from industry, politics and science under the moderation of Vulla Parasote (TRION-climate) and Ines Gavrilut (University of Freiburg, FeLis). For more details, please consult our [website](#).

Work packages



3. Updates on the work in different workstreams of the project

WP5 ([Analysis of the Regulatory Framework](#))

collaborated with the WP4 team in the preparation process of the chapters on “Renewable energy and cross-border cooperation in Europe: regulations, actors and territories in the Upper Rhine Region” (2021):

- “Franco-German partnerships for the production of photovoltaic energy: laboratory of an integrated market or modest cooperation?” (Élisabeth Lambert and Laurie Nogues);
- Regulatory issues and integrated cross-border geothermal projects (Sophie Gambardella and Lou-Anne Bedaride);
- “Franco-German Cross-Border Cooperation on Hydropower: Regulatory Issues and Future Challenges” (Melis Aras and Vincent Dubarle);
- Reading and analyzing materials, preparing papers on “Storage” (Sophie Henck);
- “Public participation and the Regulation of Renewable Energy Communities” (Melis Aras).

WP6 ([Economic Framework and Incentive Structures](#))

worked on two scientific publications:

- The first publication is called "Regulatory incentive structures in a trilateral market for renewable and sustainable energy" and deals with the potential development of an energy market for renewable and sustainable energy within the Trilateral Metropolitan Region Upper Rhine between Germany, France and Switzerland. The regulatory incentive structures that theoretically enable an interaction of the respective parties within the energy market are elaborated in terms of the "new ordoliberalism" and compared to the existing incentive structures for renewable energy cooperation within the European Union as well as Germany, France and Switzerland. In summary, it can be stated that a partial feasibility of the theoretically elaborated rules such as a cost-benefit analysis as well as the differentiated support instruments for renewable energies is present in the existing incentive structures. In contrast, however, currently there is a lack of concrete incentives as well as a convergent adaptation of national and European-national energy policies in order to realise regional energy alliances.

- The second publication is called "Incentives for a trilateral energy alliance in the Upper Rhine region - a game-theoretical approach". It shows that transnational cooperation through a common policy can contribute to meeting climate policy goals. In principle, the conditions for an energy alliance in the Upper Rhine Trilateral Metropolitan Region are good. All three states have similar starting positions. All of them - Germany, France and Switzerland - are pursuing the goal of achieving climate neutrality by the year 2050. Despite the assumption that an energy alliance is fundamentally beneficial for all participating states in the long-term, each state tries to follow the rational behaviour of deriving the greatest possible benefit and thus the lowest possible cost. There is a risk that reform measures will not be implemented, because each state tactics to be able to apply the free-rider behaviour.



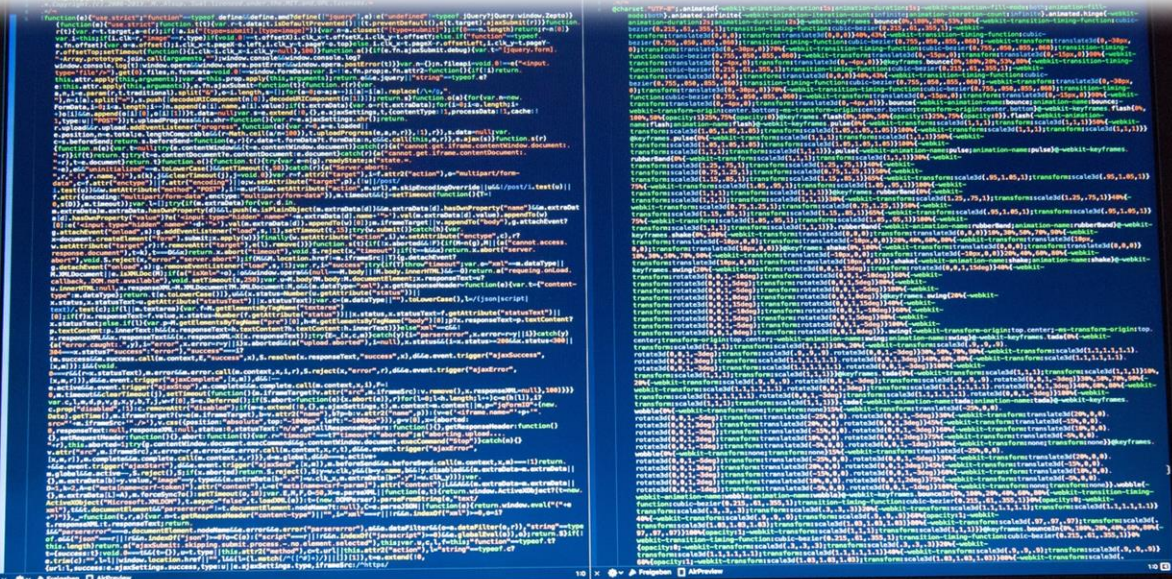
WP7 ([Data Security in Smart Grids](#)) took part in two events in September 2021:

- The scientific conference Sustainable Places in Rome, Italy (29.09. – 1.10.21), at which doctoral candidate Bushra Canaan presented the work package and the importance of ensuring cybersecurity in the increasingly decentralised, digitalised and thus complex energy systems of the future.
- The Opal-RT event (Innovative together) held in Paris on 16-17 September, which represented a great opportunity for the WP7-researchers to collect information and exchange with experts on the technical challenges that they are encountering within their modelling approach.

In addition, WP7 published a conference paper titled "Detecting Cyber-physical-attacks in AC microgrids using artificial neural networks" that was presented at the ISIE2021-Kyoto scientific conference (the 30th international symposium on industrial Electronics) on 20-23 June 2021. Cyber-physical systems (CPSs) are vulnerable to cyber-attacks. Nowadays, the detection of cyber-attacks in microgrids as examples of CPS has become an important topic due to their wide use in various practical applications, from renewable energy plants to power distribution and electric transportation. In this paper, they propose a new artificial intelligence (AI)-based method for the detection of cyber-attacks in an Alternative Current (AC) based on connected microgrids.

4. Publications

- Aras, M., Territorial Governance of EU Cross-Border Renewable Energy Cooperation: A Soluble or Turbulent Model in the Current Framework?, Global Energy Law and Sustainability, February 2021, Vol. 2, Issue 1, pp. 79-97 <https://doi.org/10.3366/gels.2021.0048>
- Aras, M., Énergies renouvelables et coopération transfrontalière : la gouvernance multi-niveaux du processus de planification énergétique, <https://doi.org/10.4000/vertigo.31269>
- Aras, M., “Les énergies renouvelables et la coopération transfrontalière dans le Clean Energy Package : cadrage, outils et perspectives », Online publication, in partnership with LexisNexis, July 2020. <https://energie-en-lumiere.fr/wp-content/uploads/2020/07/Clean-Energy-Package.pdf>
- Two chapters in Schneider/Theobald (Hrsg.), Recht der Energiewirtschaft, 5. Auflage 2021: <https://www.beck-shop.de/schneider-theobald-recht-energiewirtschaft/product/27664830>
- Brochure (FR) on "Comparative views on the regulation of RE in the trinational Upper Rhine region" (with the aim of providing a synthetic vision of the regulation of RE in the Upper Rhine region) (Melis Aras, Léa Malfrat, Theresa Hüsich and trainees): Regards comparés sur la réglementation des énergies renouvelables dans la région trinationale du Rhin Supérieur : clés de lecture pour une coopération régionale renforcée (July 2021).





5. Policy update

One of the most important recent policy changes for the RES-TMO project is the revision of the European Union's Renewable Energy Directive in July 2021. It has the goal of reducing greenhouse gas (GHG) emissions by 55% by 2030 and the EU becoming climate neutral by 2050. Since there are currently only 8 years left to halve emissions, it means that our work on renewable energy becomes even more important.

The importance of hydrogen technologies for the energy transition was once more highlighted, especially in sectors such as transport and industry. In this regard, it would be crucial not just to use the resource, but also make it transparent and traceable by changing the certification rules. It was also proposed to make the system more flexible with the help of real-time information. The work of WP7 is very important in this regard, since for the digital systems to work properly, they need to be well protected from cyber-attacks.

Talking about the revision we cannot leave out the fact that the cross-border factor was identified as an important one, since there is now an obligation to create cross-border pilot projects that would have a focus on regional cooperation in the next three years, as well as a strong incentive for cross-border cooperation on offshore wind projects by 2050.

This shows a high value of cross-border projects like ours. Of course, this type of approach creates additional complexity, especially on the regulatory level, and the specific contexts of each country need to be taken into the account. However, we believe that this work will bring fruitful results, since the environmental crises that we are currently facing urgently need to be addressed and are not limited to a single territory.¹



Concepts for an Integrated, Efficient and Sustainable Energy Supply and Storage in the Upper Rhine Region

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¹ https://ec.europa.eu/info/news/commission-presents-renewable-energy-directive-revision-2021-jul-14_en