



# SUSTAINABLE REGIONS IN ACTION 2022

A unique collection of projects and activities  
implemented by the FEDARENE office and its  
Member Regions and Energy Agencies.

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## WORD OF THE PRESIDENT

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**JULIJE DOMAC**



**T**his year again was a challenging one for Europe and the world. Concerning the FEDARENE network, we were not able to meet as much as we'd want to, nor celebrate the thirty years of existence of the organisation in Brussels with all our members and friends.

Yet, our *Sustainable Regions in Action* publication is cause for celebration each year. It reminds us of all the great things that we have accomplished, and there were many again this year.

In 2021, our partnership with the European Institutions was as strong as ever. The regions and energy agencies of FEDARENE served once again as a sounding board for multiple key legislations part of the "Fit for 55" package.

For the first time, the European Commission proposed to include local and regional energy agencies in the revision of the Energy Efficiency Directive, recognising their role as delivery agents of this legislation.

As you will discover in the next pages, energy agencies and regions are accelerators of the energy transition. With their knowledge of the ground and their technical and business skills, they are renovating the EU's building stock through innovative one-stop-shop services; supporting the development of energy communities across Europe; implementing RES-based heating and cooling; fighting energy poverty; supporting local authorities...

Although a lot has been achieved in 2021, we are always aiming higher. Our ambition for 2022? A strengthened collaboration with and recognition from market actors in order to transform the Renovation Wave into a Recovery Wave.

I wish you a pleasant read.

A handwritten signature in blue ink, appearing to be 'JD'.

**Julije Domac**

FEDARENE President & Managing Director  
of North-West Croatia Regional Energy Agency

Picture: Andrea Belussi - Unsplash

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## ABOUT FEDARENE

**FEDARENE (the European Federation of Agencies and Regions for Energy and the Environment) is the collective voice on the energy transition for regions and regional energy agencies. FEDARENE members drive the energy transition and climate action in their territories through ambitious policy development and strategic facilitation actions.**

### A thriving network rich of a 30-year long history...

FEDARENE was created on 8th June 1990 by 6 regional authorities – Rhône-Alpes, Provence-Alpes-Côte-d’Azur, Wallonia, País Vasco, Aquitaine and Nord-Pas-de-Calais. These authorities wanted to make the voice of the regions heard in the debate on energy and environment policies at the European level. The Brussels office opened its doors in November 1991. The six pioneers quickly attracted followers and the network already reached 40 members in 1995. Today, FEDARENE is the premier European network of regional and local organisations which facilitate or implement sustainable energy policies and measures at the regional and local levels. With more than 80 members, the association represents 23 European countries, drawing on the advice of 800 experts throughout the Union.

### Our Missions



**Building capacity and partnerships** by participating in EU programmes and sharing good practices.



**Sharing Knowledge** by promoting the exchange of experience and the development of transnational projects



**Shaping EU Policy** by providing a forum of discussion for stakeholders of the energy sector and promoting the regional dimension in energy debates.

### Building capacity and partnerships

FEDARENE is facilitating the development of interregional partnerships and is helping regions develop their capacity to take action. The organisation also participates in EU projects developed by its members by raising the visibility of good practices.

### Sharing Knowledge

FEDARENE acts as a centre for the dissemination of information towards its own members, but also towards European Institutions and other stakeholders of the EU sustainable energy field. The organisation is a highly visible showcase of creativity and innovation of its members’ special information tools and strives to keep them constantly informed about EU updates. FEDARENE is also actively promoting the activity of its network on social media and beyond.

### Shaping EU Policy

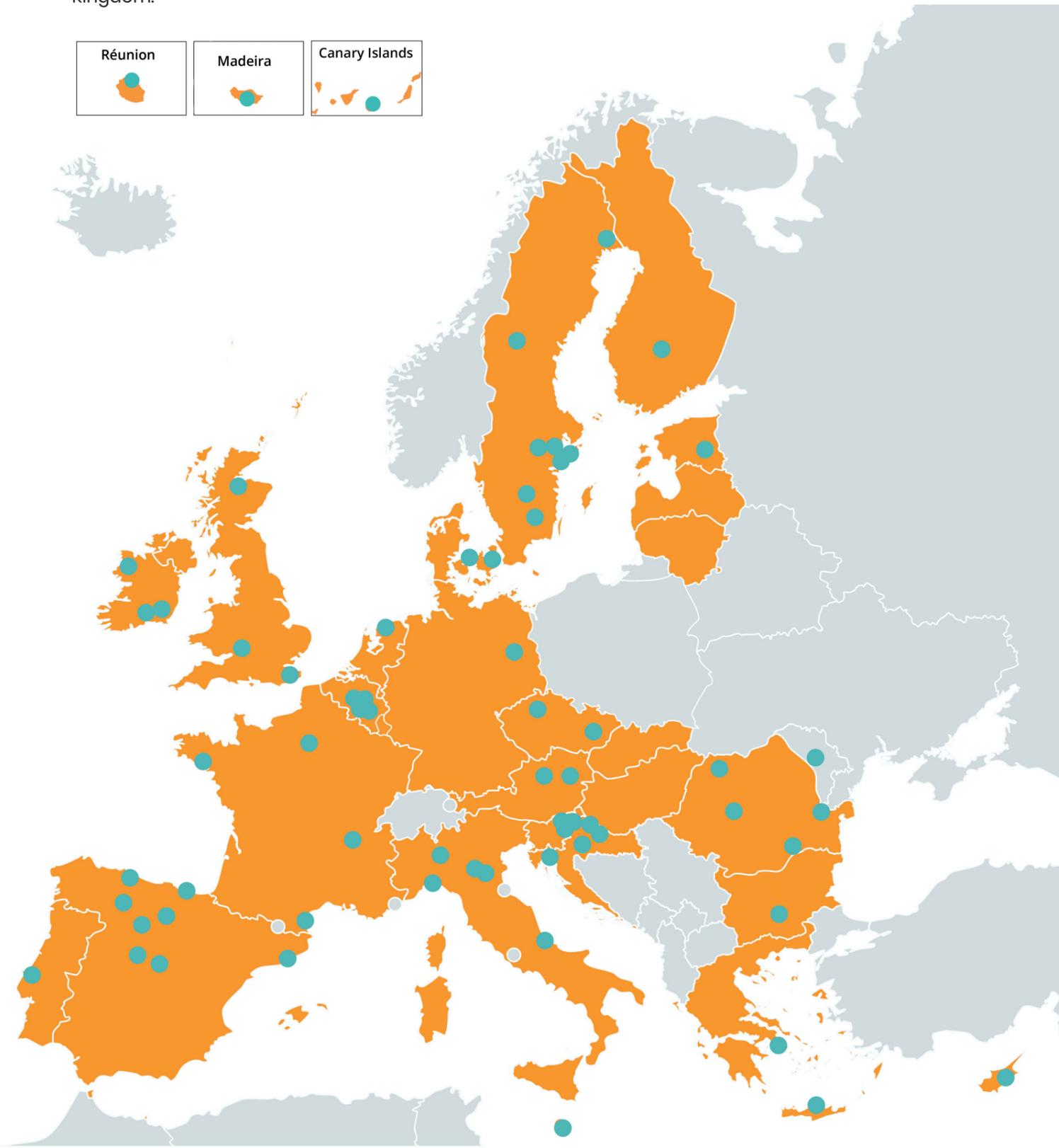
FEDARENE has become a critical force with specific lobbying influence by promoting the regional dimension in debates concerning sustainable energy and energy efficiency. Particular emphasis is placed on local demand and supply in order to contribute to sustainable development.

### Our Members

FEDARENE has over 80 members across 23 countries, namely: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Malta, Portugal, Republic of Moldova, Romania, Slovenia, Spain, Sweden, The Netherlands, United Kingdom.



Discover the complete list of our members and their profile on our website at [fedarene.org/members](https://fedarene.org/members).



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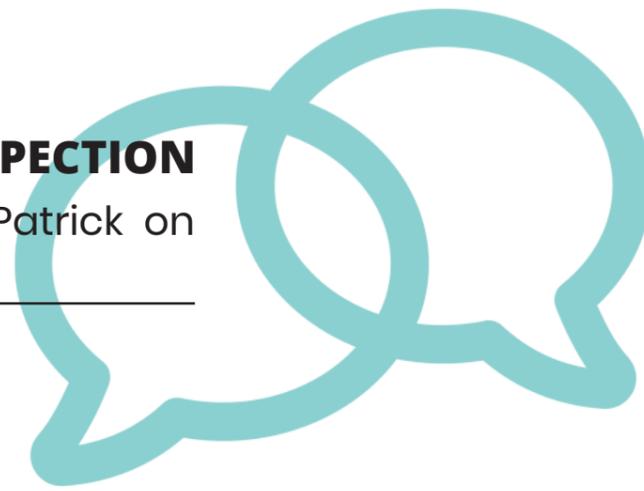


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## FROM RETROSPECTION TO PROSPECTION

A conversation with Seamus and Patrick on Energy Efficiency Priorities in 2022



We invited our Secretary General Seamus Hoyne and Deputy Secretary General Patrick Biard for a thought-provoking exchange on FEDARENE's policy priorities for 2022. It was the opportunity to take stock of the progress made so far and to review the legislative files that will be key for EU regions and energy agencies in the upcoming months.



Patrick Biard

2021 was an extremely busy year for the European Commission as we witnessed the launch of the much awaited "Fit for 55" package. What hopes and fears do you as regions and energy agencies have regarding the announced reforms?

**Seamus:** A colleague of mine often says about us that "the people working in energy agencies wake up in the morning, and worry about energy efficiency". On this point, the Commission's announcements and ambition were reassuring for local/regional energy agencies who, as non-profit independent facilitators, have long been delivery agents of EU's energy transition related directives. We were glad to see this recognition among the EED revision proposals. Energy Agencies across Europe have a wealth of experiences and expertise on transforming EU policy objectives into actual projects on the ground<sup>1</sup>. Drawing from their experience, I would say the greatest worries are seeing the legislative negotiations failing on 2 points: ambition and enabling frameworks.

**Patrick:** I couldn't agree more. We have to realise collectively that this is the "make or break" decade for climate mitigation, and there's no other way to achieve the 2030 goals but through acceleration and upscaling. Regarding Seamus' point on enabling frameworks, the new objectives and policy instruments announced such as Minimum Energy Performance Standards will only succeed if accompanied by tailored funding programmes as well as technical assistance.

<sup>1</sup> [Open Letter: Regional and Local Energy Agencies Europe's Enablers of the Renovation Wave](#)

Since you are already mentioning one of the instruments announced, let's dive right into some of the policy revisions announced. The commission strengthened the provisions fostering the exemplary role of public authorities on energy efficiency, notably by widening the renovation obligation as well as setting a new target on total final energy consumption. Do you welcome these modifications? What role do you see for regions, cities and their energy agencies in upholding this leadership objective?

**Patrick:** as FEDARENE we were very much in favour of extending the renovation obligation to include the public buildings owned or occupied by local and regional authorities. All local/regional energy agencies have developed facilitation services specialised on the renovation of public buildings.

As an example, the [BAPAURA](#) regional one-stop shop was created in the AURA region within the framework of the H2020 program of assistance to project set-up and is coordinated by ADEME. This regional platform coordinates 9 local one-stop shops focusing on the renovation of public buildings of small and mid-size municipalities from the region who are the ones having most difficulties in renovating their building stocks. Given the expected upscaling in terms of renovations in the region, we also prepare the regional companies to be able to respond to the demand.

We find this regional coordination role is essential as it embeds the renovation programme in a territorial and economic development strategy. New territories in the region are already asking to join the BAPAURA initiative, which enables us as regional coordinators to advocate for more support from regional and national level. We believe upscaling and replicating such initiatives will enhance the enforcement of the new articles 5-6 of the EED.

**Seamus:** Integrated renovation services such as the ones developed in Patrick's region are what gives us hope when looking at the huge gap to target on renovations. But as mentioned in our recommendations<sup>2</sup>, in order for public authorities

<sup>2</sup> [FEDARENE's recommendations on the EED revision proposals](#)

to be truly leading on energy efficiency, they must ensure other sectors follow their lead in the reduction of their final energy consumption, specifically the residential sector representing the greatest share of EU's buildings energy consumption. To this end, Member States should support regional and local authorities and their energy agencies in developing renovation programmes aimed at residential buildings, following successful examples of one-stop-shops such as [Superhomes](#) in Tipperary, [Opengela](#) in Basque Country or [Rénov'Occitanie](#) in Occitanie. EU's technical assistance programmes were instrumental in developing these services, and Member States should replicate such programmes at national and regional levels.



Seamus Hoyne

You're highlighting an important point raised by the energy efficiency community: the need to plan strategically the renovation of all segments of EU's building stock. On this issue, 2021 finished a bit on a cliff-hanger, with the EPBD revision announcements requiring Member States to establish Minimum Energy Performance Standards (MEPS) for existing buildings. How relevant are these elements for you to build a bigger pipeline of retrofit projects?

**Seamus:** Binding renovation calendars such as the ones provided by MEPS are essential to build predictability for companies and investors in the energy efficiency sector, as well as mobilise the building owners. But as mentioned earlier, the successful roll-out of MEPS will rely on enabling frameworks that stimulate the energy efficiency market<sup>3</sup>. To this end, the facilitation activities provided by energy agencies through their regional one-stop shops will be instrumental. They focus on upscaling demand through tailored direct advice to public authorities, companies and citizens ensuring they benefit from deep renovation. But they also prepare regional supply chains to match the demand, thus locally anchoring the economic benefits of the renovation programme.

**Patrick:** Let me provide an example of what Seamus is talking about. In France the "Eco Energie Tertiaire" decree schedules the renovation of public buildings in steps by 2030, 2040 and 2050. However, while this decree is a definite step forward, its embedded flexibility allows for many loopholes. Some public authorities are tempted to implement only the strictly minimal measures ensuring compliance with the closest deadline, while others choose the most convenient baselines that allow for the least efforts in terms of energy savings.

<sup>3</sup> [Reaching maximum impact of the EPBD Recommendations from Regions and their Energy Agencies](#)

This is where territorial one-stop shops such as BAPAURA step in and ensure the building owners choose immediate deep renovation avoiding the necessity of subsequent renovations, avoiding the risk of lock-in of suboptimal renovations and tapping into the multiple benefits of such comprehensive renovation.

**Seamus:** I would just add that MEPS should not miss to include the residential sector, and not only the worst performing buildings, where regional/local integrated renovation services such as the ones we mentioned so far have been demonstrating that there's a will and a way to perform deep renovation. On this point, certain categories such as the low-income, energy-poor or vulnerable citizens, will require specific safeguards in the

MEPS as well as tailored support services. Here again regional energy agencies may share a wealth of expertise from across Europe.

**What about renewable-based heating and cooling, are you foreseeing any step-change on this issue in light of the "Fit for 55" package?**

**Seamus:** We rejoiced in seeing the Commission pressing the

accelerator on this aspect as well, across the energy efficiency, energy performance of buildings and renewables directives in fact. And if we remain in the "energy efficiency" scope, FEDARENE welcomes that Member States would be required to encourage regional and local authorities to prepare local heating and cooling plans. However, the development of such plans should be encouraged also for municipalities having a total population below 50.000, corresponding to the majority of Europe's municipalities. Also, these plans must be implementation oriented, going beyond the mapping of RES-based heating potential step, and focus on a roadmap of concrete actions as well as strategy to implement them. Enforcement and monitoring will be essential here.

**Patrick:** In fact local/regional energy agencies in many areas of Europe are already supporting public authorities to develop and implement such heating & cooling plans. Through their energy & GHG observatories specialized on buildings performance (e.g. the [Ile-de-France Observatory for multi-apartment buildings](#)), they centralize data from multiple sources and enable regions to have a reliable picture of their building stocks, RES potentials and identify the renovation needs and potential.

With this type of data as well as market analysis, regional energy agencies are able to develop tailored heating fuel switch programmes and one-stop shop models. In Seamus' own region in fact the [Superhomes](#) one-stop shop performs energy retrofitting including switching to RES heat pumps. The Upper Austrian Energy Agency's "[AdieuÖl](#)" campaign is replacing thousands of old oil boilers across the region. These approaches must be accelerated and replicated across EU's regions.



In addition to their roles within FEDARENE, Seamus is Chair of Tipperary Energy Agency, Dean of Flexible and Work Place Learning at the Technological University of the Shannon. Patrick Head of International Affairs at Auvergne-Rhône-Alpes Energy Agency (AURA-EE). They both have over 30 years of experience in the energy sector.

To kick-off the year on a positive note, we'd like to come back on our initial question: what are your hopes for energy efficiency in 2022?

**Seamus:** When it comes to accelerating our energy transition, regions and energy agencies across Europe would have a long wish list to provide in answer to this question. However, there's one wish to which, as energy agencies, we can also commit to making reality: to transform EU's Renovation Wave into a Recovery Wave. Energy efficiency and the energy transition in general, must be seen as drivers for economic recovery and competitiveness.

I recommend checking the work done in the EU/H2020 funded project EEW4 notably by our colleagues from the Upper Austria Energy Agency. They demonstrated clearly that we need to work on our narratives around the energy transition and pay more attention to its positive economic impacts in terms of jobs, industry and competitiveness<sup>4</sup>.

**Patrick:** to accompany this crucial change of paradigm that Seamus is referring to, I would add that independent market facilitation should be recognized as a powerful tool in the service of the energy transition. Facilitation services refer to the proactive technical support provided by independent local/regional facilitators who are not only providing the technical assistance, but creating the demand for it by advocating the energy efficiency opportunities and value within a territory, embedding it in the broader policy agenda as well as stimulating the energy services market. Regional and local energy agencies are some of the more common organisations in Europe who play this role of facilitators, and they are ready to drive the energy transition in their regions this decade.

<sup>4</sup> [The missing "Why" for energy efficiency](#)

## OUR PROJECTS

FEDARENE participates in European projects and initiatives alongside its members and other European organisations. These projects focus on capacity-building, market facilitation, policy implementation and replication of best practices amongst others. We are currently involved in twelve EU projects:



### COVENANT OF MAYORS - EUROPE

The Covenant of Mayors for Climate and Energy - Europe brings together local and regional authorities voluntarily committing to implementing the EU's climate and energy objectives on their territory.

Website: [eumayors.eu](http://eumayors.eu)



### ENERGY EFFICIENCY WATCH 4

EEW4's goal is to support policy makers in EU Member States in improving the degree of successful implementation of policy instruments for energy efficiency, and thus contribute to reaching the target of the Energy Efficiency Directive.

Website: [energy-efficiency-watch.org](http://energy-efficiency-watch.org)



### EPLANET

ePLANET aims to improve the coordination between local authorities and regional governments by fostering the digitalisation of energy data available in dispersed data sources.

Website: [fedarene.org/project/eplanet](http://fedarene.org/project/eplanet)

### ENERGEE-WATCH



The overall aim of ENERGee Watch is to enable peer-to-peer learning for regional and local authorities in order to precisely define, monitor and verify their sustainable energy and climate actions.

Website: [energee-watch.eu](http://energee-watch.eu)

### EUROPEAN CITY FACILITY



The European City Facility (EUCF) supports municipalities and their groupings in developing Investment Concepts related to climate and energy action plans. A lump sum of €60,000 is given to successful applicants.

Website: [eucityfacility.eu](http://eucityfacility.eu)



### OPENGELA

Opengela consists in the creation of neighbourhood offices which provide advice and support to the community through the whole process of renovation of their apartment buildings.

Website: [opengela.eus](http://opengela.eus)



### QUALDEEPC

The project QualDeEPC attempts to achieve a high-quality Energy Performance Assessment and Certification in Europe accelerating deep energy renovation.

Website: [qualdeepc.eu](http://qualdeepc.eu)



### RELATED

RELaTED provides a demonstrated concept of ultra-low temperature network solution for new district heating systems and the progressive conversion of currently running district heating systems in order to de-carbonize energy supplies in urban environments.

Website: [relatedproject.eu](http://relatedproject.eu)

### GREEN HYSLAND



Green Hysland aims to create the first green hydrogen ecosystem in the Balearic Islands. It will generate, distribute and use at least 300 tonnes of renewable hydrogen per year, thanks to solar energy on the island of Mallorca.

Website: [greenhysland.eu](http://greenhysland.eu)



### PROSPECT+

PROSPECT+ enables capacity building in regional and local authorities in order to finance and implement effective and efficient sustainable energy plans, including their proper monitoring and verification and ensuring synergies with other local plans.

Website: [h2020prospect.eu](http://h2020prospect.eu)

### REGIANCE



REGIANCE aims to foster the adoption and wide dissemination of regional climate resilience pathways, following a demand-driven approach and bearing in mind the expertise and knowledge acquired.

Website: [fedarene.org/project/regiance](http://fedarene.org/project/regiance)

### REMARKABLE



REMARKABLE will build a Climate Leadership Programme through a people-centred approach in order to support leaders of public authorities and communities in implementing transformational roadmaps and innovative solutions to achieve climate neutrality by 2050.

Website: [remarkabl.eu](http://remarkabl.eu)

## HIGHLIGHT ON...

The Covenant of Mayors for Climate and Energy – Europe, from the eyes of our President Julije Domac

Mr Domac is also a member of the board of this EU Initiative for many years now, so we decided to ask him 3 key questions.

In 2021, The Covenant of Mayors – Europe (CoM – Europe) stepped up its climate ambition for 2050. What do these renewed ambitions entail exactly?

The Covenant of Mayors – Europe’s vision for 2050 entails all EU citizens living in decarbonised and resilient cities with access to affordable, secure and sustainable energy. In addition, all CoM – Europe signatories commit to reaching climate neutrality by setting mid and long-term targets which are consistent with the EU objectives and at least as ambitious as national targets. These ambitious objectives should be reached by including all citizens in order to ensure a just and fair energy transition for everyone. These are essential issues for our future and the future of our children which should be reaffirmed constantly, both in political debates and public discussions at all levels.

FEDARENE has been involved in the CoM – Europe since the start of the initiative, and has seen it grow into the significant movement it is today. What will be the main challenges ahead, for you as member of the political board, but also for the Covenant Community in general?

The energy transition with its decarbonization and climate resilience agenda is in itself very ambitious and challenging – the main challenge will be to actually implement it, as it became very obvious during the last COP in Glasgow. The CoM – Europe has succeeded in mobilizing a very large number of local authorities all around the EU which have all pledged to reduce their GHG emissions and decarbonize their territories. However, following their activities and results through the years, many of them are lagging behind the planned timeframe. We need to speed things up and we need new solutions – innovative ways to finance projects by blending private and public capital,



introducing smart technology in all aspects of our energy system, new ways to store and transport energy, etc. and we need to decarbonize not just the energy sector but also others like agriculture. It is also important to remember that the CoM Community is not just a network of local authorities but also a vibrant community of national and (sub-)regional authorities and non-profit organisations who are supporting local authorities on a daily basis in developing these new solutions and achieving their targets.

**Do you think energy agencies and regions are aware of the opportunities offered by the initiative and do you see their involvement grow in the near future?**

Looking from the perspective of an energy agency director who has been involved in the sector for almost 25 years now, I can say that most of our inspiration and innovation came from the exchange with other energy agencies and regions in the EU and beyond. So, initiatives like the CoM – Europe are definitely crucial to create more networking opportunities around sustainable energy. I am convinced that other energy agencies and regions think the same, as this is confirmed through our interaction – we tend to see each other as one big team playing for the energy transition. The CoM – Europe is a very important framework and its role will most likely keep evolving and growing in the future.

## Better Narratives: Better Energy Transition

### What can we, as Energy Agencies, do?

by Christiane Egger, FEDARENE Vice-President for Energy Efficiency

The ambition of sustainable energy policies often fluctuates with changes in political leadership, such as following elections. Within the Energy Efficiency Watch (EEW) project, we analysed exceptions from such developments and found that policy ambition remains more stable in countries and regions where a society-wide acceptance is reached on ‘why’ they want the energy transition to take place.

These ‘whys’ – the so-called narratives – are messages, embedded in a wider framework, that impact our understanding of reality. They allow us to put topics into a context and provide meaning that resonates with people and helps achieve buy-in from larger societal groups.

As energy agencies, we have an important role to play in our regions in building strong, positive narratives for the energy transition. The extensive EEW4 survey of 1,270 experts in all EU countries offers valuable insight for improving our messaging and the actor groups we work with. It clearly shows the importance of jobs, competitiveness and investments in the public debate.



### Leaving our comfort zone

Using energy savings and climate protection as main arguments for the energy transition has often brought good results. However, there are many individuals and groups that do not consider these sufficient for changing their behaviour or investment patterns.

How can we speed things up? We know that the energy transition has many benefits both for individuals and society. But do we talk about them enough? Is our messaging clear enough about the positive impacts on jobs, competitiveness and investments – in short, the wider economic benefits? Equipping ourselves with a greater portfolio of positive arguments, facts and figures can be an important element in boosting the acceptance of the energy transition.

In this context, I invite you to reflect on how we might reach out to a broader range of stakeholders in our regions, especially from business and industry. Do we have the data, skills, and programme framework to work with them? Can we find champions for the energy transition there?

Together, we have shown time and again that energy agencies are agile and pro-active in driving the implementation of new technologies and ambitious policies. Let’s also innovate by broadening our narratives and partnerships!

### Unprecedented opportunities

If we, as energy agencies, get this right – if we succeed in creating strong, multifaceted narratives for the energy transition – we can help achieve more stable ambition for energy policies in our regions and countries despite future political changes.

Let’s dare to step out of our comfort zone, review and improve our messaging and find ways to work with a larger range of actor groups, so that we can help every person find their ‘why’ for the energy transition.

## WORKING GROUPS

FEDARENE has established working groups in order to encourage exchange of experience and transfer of know-how in a series of important fields. These working groups are brought to life through the work carried out by our members and FEDARENE Vice-Presidents. Visit them on [fedarene.org/working-groups](https://fedarene.org/working-groups)

### CLIMATE ADAPTATION



In 2021, we managed to organise three interesting online events dealing with Climate Adaptation, bringing together like-minded initiatives and partners.

-  [Joint SECAP Final Conference – Technical Session](#)
-  [Joint SECAP Final Conference – Political Session](#)
-  [GET READY FOR 2050: How to successfully plan for the Future](#)

### DATA MONITORING



One of the main challenges to achieve the EU climate and energy targets is the lack of standardised energy and climate information at European level. This is something FEDARENE is able to address through its [Energee Watch](#) EU Project and peer-to-peer learning programme.

-  [GET READY FOR 2050: How to Build Effective Collaboration Processes](#)

### CIRCULAR ECONOMY



In 2020, we have launched a Circular Economy Webinar Series with the Regional Council of Central Finland. These seminars touch upon the many different aspects of circular economy, from biogas production to public procurement, waste management and recycling.

-  [Introduction to Circular Economy](#)
-  [The Energy Dimension of Circular Economy](#)
-  [Circular Economy beyond Energy: Recycling and Reducing Waste](#)

### ENERGY EFFICIENCY



Energy efficiency is a core issue for FEDARENE. Our work on the topic is thus wide-ranging. We have selected three online events that were organised in 2021 and address different aspects of efficiency:

-  [Next-generation Energy Performance Certificates and Deep Renovation](#)
-  [Solar energy solutions for decarbonizing ULT DHC](#)
-  [Deep Retrofit Community of Practice: Highly ambitious regions and projects across Europe](#)

### ENERGY SUFFICIENCY



Energy efficiency is no longer enough to counteract the increasing energy demand. Energy Sufficiency is the third pillar of the Energy Transition, with Energy Efficiency and Renewable Energy Sources. This is why we have launched an Energy Sufficiency Webinar Series in partnership with our expert member AREC Île-de-France.

-  [Energy sufficiency: how to shape sustainable behaviours](#)
-  [Cycle E-Sufficiency webinar #1: consumers and buildings](#)
-  [Cycle E-Sufficiency webinar #2: mobility and public space](#)
-  [Cycle E-Sufficiency webinar #3: digital sufficiency](#)

### ISLANDS & RURAL COMMUNITIES



Thanks to the start of the Green Hysland project, 2021 was a pivotal year for FEDARENE in order to support its Island College to unlock islands' potential and turn them into lighthouses of Europe's decarbonisation.

-  [Åland Islands' Energy Story](#)
-  [Green Hydrogen: What's in it for islands?](#)

### RENEWABLE ENERGY SOURCES



Renewable energy sources play a fundamental role in enabling technology and innovation leadership while providing environmental, social and health benefits. Just like Energy Efficiency, RES will be key to achieve the Energy Transition. In the webinar below, this was illustrated perfectly, in a crucial sector – heating and cooling.

-  [Solar energy solutions for decarbonizing ULT DHC](#)

### FINANCING



Energy agencies and regions are in a unique position to boost sustainable energy investments in Europe. This is something often discussed at FEDARENE – whether during public or private webinars.

-  [GET READY FOR 2050: How to Finance Climate and Energy Plans](#)

### MOBILITY



FEDARENE members are setting the example by developing sustainable transport in their cities and regions. This was demonstrated during several webinars in 2019 and 2020. In 2021, a connexion has been established between the concept of Energy Sufficiency and Sustainable Mobility, thanks to our member Energikontor Sydost.

-  [Cycle E-Sufficiency webinar #2: mobility and public space](#)

## **MEMBERS' PROJECTS**

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FEDARENE's best successes are those accomplished by its members on the ground everyday. We want to shed light on these projects which are so diverse in their actions, goals, needs and challenges. In the following pages, you will discover some of the latest and most impressive achievements our members have carried out within their cities and regions across Europe.



# 11 CATEGORIES



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Accelerated Building Renovation  
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Rapid Renewable Energy Sources Uptake  
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Energy Communities: Citizens' Action for Cleaner Energy  
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Enhancing Energy Sufficiency  
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## Energy Efficiency First

EDITORIAL

by Florin Andronescu, FEDARENE Vice-President for Energy Efficiency



In fact, more coherency and consistency for a comprehensive change in our lives is needed to come so as to be in accordance with the necessary sustainable development and environmental protection.

We all need to understand that we cannot continue with unscrupulous consumerism and that we must assume a rational use of natural resources and in particular of energy.

In this context, the "energy efficiency first" principle must be integrated in all our activities and our new investment projects: it must be understood that one Euro invested today in raising energy efficiency of our products and services will produce in the future not only an economical profit but it will also determine a reduction in environmental impact and an improvement in the quality of our lives.

It is up to us, the energy agencies and regions, to be close to our citizens in our territories and to promote the application of this principle together with comprehensive actions to increase the understanding and acceptance of the rational use of energy and resources.

At the same time, we need to assume the role of forerunners and to determine our decision makers starting from local / regional up to national / European level to become more coherent and ambitious in energy policies and legislation; more energy efficiency is a must, indestructibly linked with more innovation and smartness, which leads to the sustainable future of our regions.

The second pandemic year has been the year when in Glasgow the main political decision makers of the world are summoned to strengthen and intensify the global commitment for climate change mitigation, to limit the global temperature rise to maximum 1,5 degrees until 2100.

If they fail to understand the urgency and dimension of a global and consistent action for decarbonisation, humanity is more than certain to face a climate disaster in the next decades, far more dangerous as the current pandemic crisis.

A vast array of European actions and initiatives were launched in the last years such as Energy Union, Climate Pact, Green Deal, etc., all these expressing the EU's ambition to lead the battle for climate change mitigation at global level.



## Innovative Solutions for Public Lighting in Smart Cities

AGIRE – Province of Mantua, Italy



Street lighting is a key service provided by public authorities at a local level. However, it represents a substantial share of energy consumption of about 50% in most European Municipalities.

LIFE-DIADEME project experimented an innovative smart system dedicated to public street lighting in urban environment for real time adaptive regulation of light flow, based on the surrounding brightness, traffic flows and weather conditions.

The consortium installed 1,000 DIADEME devices along the Test Sites in Rome, Piacenza and Rimini. The system collected information about traffic, luminance, weather conditions, temperature, air pressure and environmental noise. Moreover, specific devices were able to detect gas level concentration (NOX, NO, NO<sub>2</sub>, O<sub>3</sub> and CO). Information was used by Municipalities to promote eco-friendly actions on their own territories through the creation of Dashboards, both for internal and external use, enabling innovative services for the community, targeting a Smart Cities scenario.

The main outcome of the LIFE-DIADEME system can be summarised in a reduction of energy consumptions and CO<sub>2</sub> emissions of 40.6%, compared with Pre-Programmed LED installations and 55% compared with Full Light LED installations, reconciling the safety needs with the benefits of energy-saving and the reduction of CO<sub>2</sub> emissions and maintenance costs.

LIFE-DIADEME System demonstrated, in the field, how Adaptive Lighting technology is a great opportunity in the direction of climate change mitigation.

Assuming that LIFE-DIADEME is installed in a medium city with 100,000 inhabitants and 12,500 lighting points, with the installation of 3,750 DIADEME devices, if we consider the average life of lighting fixtures, in 10 years we will have savings for 6,644 tonnes of CO<sub>2</sub>e compared with Full Light LED installations, or savings for 3,740 tonnes of CO<sub>2</sub>e compared with Pre-Programmed LED Systems.

A second example can show the impact of the LIFE-DIADEME system if installed in a big city with more than 200,000 lighting points as, for example, Rome City Capital (2.9 million inhabitants). In such a scenario, environmental savings would result in 40,000 tonnes of CO<sub>2</sub>e, 8 tonnes of PM<sub>2.5</sub>, 48,000 kg equivalent of Ozone and lower acidification, estimated near 95,000 MLC H+ equivalent. In both cases, the return on investment can be calculated in not more than 2,5 years.

LIFE-DIADEME was awarded with the prestigious «EU Sustainable Energy Award 2021» in the «Innovation» category.

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## Conceptual approach to Energy Efficiency in large hospital area in the Zlín Region

EAZK – Zlín, Czech Republic

The hospital in Uherské Hradiště is one of four hospitals belonging to the Zlín Region. The Uherské Hradiště Hospital provides outpatient and inpatient care in basic and specialised fields at 8 workplaces of surgical specialties, 12 workplaces of internal medicine and at 7 workplaces of laboratory complement. The individual pavilions of the hospital were in a very poor condition from the energy point of view: high heat consumption, overheating in summer etc. The heat and hot water sources in the central boiler room were old and inefficient and all this led to large heat losses.

Between 2012 and 2020, Energy Agency of the Zlín Region initiated, developed, and administered a set of several consequent investment projects on renewable energy sources and energy efficiency leading to a considerable decrease of the energy demand in a large hospital area in Uherské Hradiště with the support from OP Environment 2007-2013 and OP Environment 2014-2020. Among measures implemented in this period belong:

- reconstruction of the central boiler room and area heat distribution, including the installation of 2 pieces of solar panels for the preparation of hot water;
- complex insulation of 6 hospital pavilions;
- complex heat insulation of 2 hostels for hospital staff;
- 3 PV power plants on the 3 central buildings roofs with combined installed power 219 kWp.

Annual total heat savings for all implemented measures combined are 44,828.59 GJ and annual CO<sub>2</sub> reductions achieved are 2,999.44 tonnes.

Total implementation costs combined were €5.486 million with the contribution from the OP Environment in amount €1.878 million.

Although some difficulties and barriers were encountered, such as public opposition to the waste combustion, high financial investment demands, insufficient knowledge of designers in the field of low energy standards or some obstacles on investors' side in the willingness to build beyond the minimum standards set by legislation, all of them were successfully overcome.

Investments undertaken significantly reduced both heating and operational costs of the hospital and thus saved public funds spent on operations in health care. The installation of PV panels increased the hospital's self-sufficiency and reduced electricity consumption from non-renewable sources. Thanks to the insulation and installation of air conditioning with recuperation, the internal microclimate of the building was improved.

Methodical management of energy management is provided by the Energy Agency of the Zlín Region since only a proper implementation of energy management ensures all measures being fully operational.

The Czech Republic OP Environment subsidy program enables the implementation of such diverse projects which in addition to quantifiable financial and energy savings and reduction of greenhouse gas emissions bring another significant element. A pleasant environment is created in the hospital contributing to the well-being of all users, which is so important in their treatment process.



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## Energy Saving Smart Street Lighting Set for Thurles, Drangan and Clonoulty

Tipperary Energy Agency – Tipperary, Ireland



Public street lighting is accountable for 35% of Tipperary County Council’s energy consumption. Upgrading an old streetlight to a standard LED can reduce energy costs by up to 50%. Currently, 28% of Tipperary’s total public street lighting is LED. Going a step further and installing Smart Lighting can result in even more energy savings and reduce CO2 emissions. Tipperary County Council is piloting smart lighting systems in Thurles, Drangan and Clonoulty. A smart lighting system uses technology such as motion detectors to monitor movement and adjust the lighting accordingly.

600 Smart LED lights are being installed across the 3 pilot sites. Tipperary County Council has been working with Tipperary Energy Agency on this smart LED lighting pilot initiative which will be one of the largest installations of smart lights of any county council in Ireland. SSE Airtricity Utility Solutions were awarded the contract following the tender process and they have commenced the installation of the Smart Lights.

Liam Brett, Tipperary County Council, Roads Senior Engineer, said “The lighting will be monitored closely after installation and if the evidence proves to be reliable then an informed decision can be made by the council to invest in further smart lighting for

the remaining 17,400 streetlights in the county. This would further assist us with achieving our target CO2 reduction in Tipperary.”

“Cathaoirleach” of Tipperary County Council, Cllr. Marie Murphy said “This pilot scheme, in cooperation with our European partners, shows what can be achieved when we work together for the good of our communities. It has never been so important to reduce energy consumption as it is now in the context of climate change. Tipperary County Council can be a leader and show the way in this important endeavour.”

Siona Daly, Assistant CEO of Tipperary Energy Agency said “We expect to see annual energy savings of approximately 150,000 kWh, which is the equivalent electricity required to power nineteen homes in a year. Furthermore, if this SMART-SPACE lighting project proves to be a success in Tipperary, it could impact national policy and decision making on public lighting which could be invaluable as the National Public Lighting Retrofit Project starts to gain traction.”

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## Promoting Deep Renovation Buildings across the EU EDITORIAL

by Maria Fabianelli, FEDARENE Vice-President for Energy Efficiency and Investments



“The green recovery starts at home” – said Commissioner for Energy Kadri Simson introducing the “Renovation Wave”, the strategy for improving the energy efficiency of buildings published by the EC in the wider framework of the Green Deal.

The European building stock is both unique and heterogeneous, expression of the rich cultural and historic heritage of our Continent. It is also old and inefficient, responsible for 40% of the EU’s energy consumption and 36% of emissions from energy. At the same time, energy poverty remains a challenge for nearly 34 million of Europeans, who are unable to afford keeping their home adequately warm. Despite this, energy renovation is still a rarity (only 1% of buildings every year), so effective action is crucial to bridge the gap between the current situation and Europe’s climate ambitions.

The need to promote the retrofitting of the EU building stock appears even more urgent in view of the recent pandemic, which has highlighted the importance of buildings as well as their fragilities. Never before has the “home” been so much the focal point of our daily lives, not just the place where we eat and sleep but also the place where we study and work. Never before public buildings (hospitals and schools) and private buildings (commercial and residential) have been under such severe strain, having to adapt to multiple challenges and changes.

Building renovation can play a driving role for the sustainable recovery of the next decade, with positive impacts at the environmental, social and economic levels. However, energy renovation is still struggling to spread, hindered by multiple barriers related to complexity, costs and slowness. How can we promote interventions to improve the energy efficiency of buildings, especially deep

renovations and on the massive scale needed? Of course, finding finance for implementing renovation actions is key. The experience of the Energy Agency of Liguria shows that using innovative financing tools such as EPC (in our case, through investment programmes such as EIB- ELENA and H2020 PDA) is worthy, but usually focus on replacing heating plants and light insulations, and almost never reach the deep renovation level. This is mostly due to the mild climate conditions of Med countries, which lengthen the payback time of the investment, making it difficult for an ESCO to opt for deeper interventions.

Recently, Italy has been experimenting with new financing instruments for energy such as the so-called “Superbonus”. This tool allows private citizens, social housing and non-profit organizations to carry out renovations even when they do not have the funds thanks to a discount (on the invoice) from the suppliers of the goods or services, or even request the transfer of the credit corresponding to the deduction.

A further opportunity could consist in an increased integration between energy efficiency and renewables for building renovation, especially in those buildings where it is impossible to act on the envelope, and resorting whenever possible to innovative forms of collective self-consumption.

What is certain is that IRE Liguria will keep exploring and implementing financing solutions to increase the deep renovation of buildings, together with our colleagues from energy agencies and regions across Europe. One of them, which is highlighted in the next pages through several best practices, is technical assistance or one-stop-shops.

“Operationalising renovation strategies remains an important challenge that Regions and Energy Agencies are eager to solve.

Jean Van Pamel – FEDARENE Treasurer



## Supporting Liguria Municipalities in renovating their building stock

IRE Liguria – Liguria, Italy

As part of the “Pays Ecoetiques” project, IRE has given its technical support to Municipalities that are situated in the Province of Imperia in Liguria. The project was financed by the European cross-border cooperation programme between Italy and France Interreg Alcotra 2014–2020.



The objective of “Pays Ecoetiques” was to improve the energy efficiency of buildings in the 168 Public Administrations that were part of the “PITER Pays Sages” project. As part of the project, the Municipalities were guided throughout the entire process of energy renovation starting from the choice of buildings to the application for funding and the actual realisation of the interventions of energy efficiency.

As part of the actions carried out by IRE, there were a series of meetings that were organised with the intent of increasing awareness and training the 42 Municipalities in the Province of Imperia that saw the participation of both local politicians (mayors) as well as technicians and consultants.

Five of these Municipalities who expressed an interest in increasing the energy efficiency of their public buildings, took part in a pilot project that involved technical assistance offered by qualified personnel of IRE which helped them face the difficulties during the renovation process. The main obstacles we were faced with included the retrieval of energy consumption data, drawing up the necessary technical/administrative documentation that is required to apply for

funding, and the lack of qualified personnel with sufficient qualifications and experience to carry out the actions required.

The meetings that were held in the Municipalities proved to be particularly effective and helped motivate those involved to take up the process of requalification of the buildings on their territory. Three of the Municipalities that were supported by IRE are now in the process of carrying out a diagnosis of their energy consumption. This will help them pinpoint the interventions required and the actions that are necessary to prepare the request for funding available at a national level, under the so-called “Conto Termico”. With this scheme, the incentives are handed out for increasing energy efficiency with particular emphasis on energy produced from renewable sources with financial incentives being given primarily to Public Administrations. The fundamental requirements for access to funding are both the presentation of the technical/administrative documentation as well as compliance with the deadlines. Another Municipality is currently defining an Energy Service contract to manage and promote energy efficiency of all their public buildings.

IRE is guiding the Municipalities throughout the entire process and is offering its expertise to verify the interventions that are being proposed, to present the funding applications on behalf of the Public Administrations as well as supervising the Energy Service contract from a technical-administrative perspective.

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## Governance in the Strategy for Energy Building Renovation in Asturias

FAEN – Asturias, Spain



Managed by the Regional Government of Asturias, Asturias Energy Agency (FAEN) is organizing the implementation of a Regional Strategy for the Energy Renovation of Buildings, which involves stakeholders from both the public and private sector. The energy building renovation is an opportunity for the Asturias region and must be seen under a broad vision, where there is room for planning, management and financing opportunities. All of them are interrelated and define different action areas to achieve the regional objectives set.

Public agents are responsible for the design, development and execution of the Strategy for the housing, energy and commercial sectors. The local administration and other key public institutions in the fields of construction and energy are also engaged in the implementation of the Strategy. With regards to the private sector, companies with technicians and professionals are involved in the energy rehabilitation process. In addition, there are professional associations and organizations with broad experience in reducing demand and improving energy consumption systems. The participation of energy trading companies and energy service companies is also essential.

For an effective public-private collaboration and an adequate governance and operability of the

Strategy, it is imperative to define two instruments: roundtables and working groups, and the Regional Consultation Office. These are formed and organized in a coordinated manner according to the topics to be analysed. The roundtables serve as a forum for the participation of the main public and private agents related to the Strategy, with a fixed structure to work together in its definition and implementation, while the working groups are also collaborative fora but participants may vary depending on the topics at hand. The participants' actions focus on very specific content defined by the working group, mainly based on financing and communication.

As intended, this strategy and the associated governance were successful. Initially, Asturias received just over €7.6 million from the central government to enable a line of aid for rehabilitation. As a result of the joint work and the high demand received, the region managed to obtain an additional €40 million to be used for the development of new projects.

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## Conference about Sustainable Homes and Buildings becomes increasingly Popular

Energikontoret i Mälardalen – Mälardalen, Sweden

It started five years ago – The Mälardalen Energy Agency arranged a small conference on the topic of how to make buildings, such as homes, stores and warehouses, more energy efficient. Energitinget has since then seen a steadily increasing number of visitors. In October of 2021, the fifth consecutive conference was live streamed from a recording studio to accommodate restrictions put in place due to the pandemic. It received more than 500 views.

The target audience of the energy conference is primarily industry professionals – the builders, buyers, and owners of various types of buildings, as well as politicians and municipality employees tasked with community planning and procurement. But Energitinget is open for anyone with an interest in energy efficiency and has in the past also attracted, for example, members of private housing cooperatives.



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“We are lucky to have industry and energy experts from all over Sweden participate and share their best practices and good examples”, says Helena Ek, event manager at The Mälardalen Energy Agency.

### Big contributor to Sweden’s greenhouse gas emissions

According to Boverket, the Swedish National Board of Housing, Building and Planning, a fifth of the emissions in Sweden can, one way or another, be traced back to houses and buildings, and the emissions are increasing, when they should be decreasing. However, there are many actions and technologies already on the market that can help turn this development around.

“There is unrealised potential in a lot of buildings, and installing solar panels, various climate adaptations and introducing energy management are just some examples that can increase their sustainability. It is important to spread that kind of knowledge and minimise the climate impact of construction as well as of buildings already in place”, says Mathias Söderholm, project leader at The Mälardalen Energy Agency.

### About Energitinget

The energy conference focuses on a new topic every year. Examples from previous years are “The smart home” and “Sustainable buildings”. In 2021, Energitinget focused on the subject of “Sustainable renovations”. The conference is financed in part by The European Regional Development Fund (ERDF) and Eskilstuna Municipality.

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## Facilitating and Supporting Renewable Energy Sources

by Ricardo Gonzalez Mantero, FEDARENE Vice-President for Renewable Energy Sources

We all in FEDARENE agree in the essential role of energy agencies and regions in facilitating and supporting renewable energy sources. Local and regional energy agencies remain an important force in the adoption of some of the most ambitious regional renewable energy policies and programmes in Europe.

Reaching the 2030 climate goals requires a policy step change recognizing the drivers and failures of the previous approaches. In line with the new 55% emissions reduction target by 2030 and with the support of continuously decreasing costs of renewable energy technologies, there is now a golden opportunity to accelerate the uptake of renewables at all levels of governance.

This is where the energy agencies enter the discussion with their vast knowledge on and first-hand experience of their region. The best way to verify this statement is with a real example: how EREN and Castilla y León have facilitated and supported the installation of 6.300 MW of wind power in this 94.226 km2 region.

The regional Decree regulating windfarm installations in Castilla y León has been in force since 1997, with no modifications during these 25 years. The Regional Wind Plan, developed by EREN with ALTENER support in 1999–2000, established a land classification according to its potential for hosting windfarms, considering the environmental and cultural constraints. This tool gives an indication of what to expect from the environmental impact assessment of each windfarm and is involved in the connection of windfarms to the electricity grid, planning the adaptation to the capacity of different nodes in the grid, and trying to reduce the number of lines to a minimum, thus reducing environmental impact as much as possible.

At this stage, the ongoing dialogue with the Operator of the Spanish Electricity System to plan the necessary investments enabling the future windfarms to be connected to the grid, the adjustment of the windfarm authorizations to the grid capacities, and put in place requirements to provide security of power supply recommended by the System Operator is a crucial part of this



project. During this period, the establishment and maintenance of a relationship of trust between the regional environmental and energy administration officials is something unusual but very necessary. To this end, Castilla y León Wind Energy Promoters Association serves as a means of maintaining an ongoing dialogue with the wind developers and industry.

As this example shows, benefiting from the experience of energy agencies, a successful and stable regulation over time and a clear planning from an environmental and territorial point of view has produced successful results. Energy agencies play a big role in supporting local and regional authorities, using their knowledge of the local value chains and building their capacity to develop and finance projects, but much more technical assistance is needed to fill in the knowledge gap. With their initiatives, I am sure that most of these good practices are replicable in all regions of Europe, in order to achieve an orderly development of renewable energy sources, and obtaining the greatest possible economic activity and employment from it.



## Biomass heating network for two High Schools and an Arts School in Avila

EREN – Castilla y León, Spain

For more than twenty years, the Regional Energy Agency of Castilla y León, EREN, has been investing in renewable energy projects, both to demonstrate their technological or economic feasibility, and to acquire business and technical knowledge of the sector “from within”.



These projects include many different types, like large wind farms or biomass power plants, medium-sized hydroelectric plants, solar installations in hospitals or small PV installations in administrative buildings.

Among these projects, we want to highlight the biomass district heating system created in Ávila to supply two High Schools, Jorge Santayana and

Alonso Madrigal, and the Arts and Cultural Property Conservation and Restoration Superior School.

This installation was finally configured with two well differentiated parts. On one hand, adjacent to Alonso Madrigal High School, a 1.8 MW thermal power plant with two 800 and 1,000 kW boilers that consumes 90 tonnes of wood chips per year, two water tanks of 10,000 L each, 30 tonnes of silo for a minimum autonomy of 20 days, control systems and a series of pumps, valves and pipes.

On the other hand, the network of pre-insulated hot water pipes with two branches of 475 m each, together with the necessary heat exchangers to transfer the heat to the buildings, leaving the existing boilers operational for safety.

The installation was finished in May 2021 with an investment above €700,000, while 50% was financed by the ERDF Operational program 2014 - 20. Regarding environmental impact, the project is expected to save slightly more than 650 tonnes CO2 per year.

The project initiative arises from a December 2018 Agreement between the General Administration of the Region and EREN.

This installation is part of the Castilla y León Regional Government current effort in the development of thermal networks, much more efficient than individual systems, supplied by biomass, a fully renewable fuel.

Other good examples are the biomass heating networks for the University of Valladolid, for different Regional Government buildings, and for the Regional Presidency headquarters complex.

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## Production and Distribution of Thermal Energy in the Municipality of Maribor

Energap – Energy Agency of Podravje, Maribor, Slovenia

The main activity of the company Energetika Maribor is the production and distribution of thermal energy in the Municipality of Maribor. They can boast of more than 40 years of tradition, knowledge and experience in the production and distribution of thermal energy. They supply heat to approximately 13,000 residential units and 360 other consumption points with a total length of 38 km.



The total capacity of all production facilities in the Energetika Maribor Group is 107 MW of heat and 18 MW of electricity. In total they produce approx. 115,500 MWh of heat and 89,500 MWh of electricity per year. About 60% of the energy generated is obtained from highly efficient heat and electricity cogeneration plants. In 2019, they installed five heat storage systems with a total capacity of 1,000 m3 thus achieving approx. 14,500 MWh of primary energy savings per year.

The city of Maribor wants to be as energy self-sufficient as possible in the future. In the field of district heating, it will achieve more than 60% energy self-sufficiency by planning the expansion of the hot water network and connecting facilities in densely populated areas by 2030 with the introduction of renewable energy sources and the sensible use of energy from waste.

In order to ensure the greatest possible energy self-sufficiency and independence from global energy markets, Energetika Maribor has developed a strategy for the transition of heat production to renewables and for as much self-sufficiency as possible. In 2019, they installed solar collectors on the office building of the Energetika Maribor and in 2021, they installed solar power plants on the remaining free areas. The project with a high-temperature heat pump with an output of 2.4 MW, which will exploit the energy potential of the Drava River, is also in the start-up phase.

One of the key projects that would have an extremely strong impact on the city's energy self-sufficiency and the lowering of heat prices is certainly the installation of a waste energy system with a total capacity of about 26 MW of heat and 15 MW of electricity and would focus on the energetic use of 40,000 tonnes of waste from northeastern Slovenia per year.

They will follow national and European directives with all measures and strategic orientations. With all measures they will achieve a reduction of CO2 emissions, ensure price competitiveness and make a major contribution to eradicating energy poverty.

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## Optimising Solar Carbon Efficiency through Public Procurement

Energikontoret Storsthlm – Greater Stockholm, Sweden

Most of us consider solar energy to be a green technology, something that can help us reduce carbon emissions from our energy system, since there are no direct emissions from photovoltaic (PV) modules in operation. However, considering the life cycle of the modules, some of the various manufacturing steps of making mono- or multi-crystalline silicon solar cells and fitting them in a PV module require quite a lot of energy. The energy use in the manufacturing process is the main factor contributing to the climate impact of PV modules, and depending on the electricity mix used, there is a substantial difference in the carbon efficiency of solar modules. PV modules with materials sourced from low carbon production facilities can have a much lower carbon footprint than the industry average. There are also significant differences between different technologies where multi-crystalline solar cells are less energy-intensive to produce than monocrystalline, and thin film solar cells are less energy-intensive than both types of silicon-based solar cells.

**In short: not all PV modules are created equal when it comes to carbon footprint. And by promoting the most carbon efficient PV modules, we can make a green technology even more green.**

So, how to choose the most climate efficient option as a building owner looking to invest in PV? It is not easy to find information on the climate impact of the PV modules and the local PV supplier usually cannot account for the whole supply chain of their products. Even though the products are “made in” an EU country, this only refers to the final assembly. China is dominating many of the early manufacturing steps, especially the ultra-thin silicon wafers, a necessary building block of PV modules.

**Climate Efficient Solar Energy, a project run by the Greater Stockholm Energy Agency, aims to address these issues.**



Together with RISE (Research Institute of Sweden) and HBV (a central purchasing body of public housing companies), the project partnership has developed a procurement criterion to be used in public and private tenders of PV installations which will make the green technology of PV even greener by valuing climate impact in public procurement.

By developing and testing the criterion and putting together a guide for climate-optimised management of PV systems, we want to increase the knowledge of market players about the environmental impact of the overall system. This helps the players see the whole picture with a life cycle perspective which also takes into account the production and management of obsolete solar cells.

Partnering with real estate and housing companies, the project will try out a new way of tender evaluation where the climate impact of PV modules is calculated and weighed into the price. The first tenders with this new way of accounting for climate impact of PV modules will be tested and evaluated in the spring of 2022.

### Energikontoret Storsthlm

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## Security of Supply through Energy Transition

Energikontor Sydost – Southeast Sweden



Climate change entails increased electrification in society, industry and in the transportation sector. The electricity production in Sweden is almost completely fossil-free. As the electricity demand in Sweden is expected to double by 2045, an increase in production will be needed, as well as a great expansion of electricity grids and tools for storage and control.

**As a regional energy agency, we have built competence in the energy and electricity supply areas over the years. We can proudly state that as a result of our pre-study, the Regional County of Blekinge has initiated a collaboration to ensure a robust electricity supply in the county.**

### Electricity supply in Blekinge county

The electrical grid in Blekinge county is integrated with the rest of the Swedish grid but is also connected to the grid of surrounding countries. The county needs to import almost 70% of the required electricity, which means high dependence on external electricity production.

The purpose of the pre-study was to map the current situation in the county and connect it to; the growth forecasts, the expansion and electrification of the industry and plans for the charging infrastructure and digitalisation.

The goal was to increase the knowledge about electricity and the awareness about potential grid

bottlenecks in the region. We also gathered all relevant actors to help us identify problems and discuss how to work proactively with preventive measures. To do this we interviewed actors working with the electricity supply in the county and studied possible forms of collaboration between these actors.

### Results

To maintain a robust electricity system, more actors need to assess future needs in organised form. Public actors in the county also need improvements in competence on matters related to electricity.

Beyond providing renewable energy, an expansion of the county’s electricity production will also create jobs and increase the level of skills. Wind power (on- and offshore) has the greatest potential for rapidly producing more electricity. There is also a need for more plannable electricity production and possibilities to store electricity.

Following our recommendations, Blekinge county and its municipalities have created a working group tasked with planning and leading further work to ensure a robust electricity supply.

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## Self-consumption Observatory in Catalonia

ICAEN - Catalonia, Spain

From 2019 to the present, the PV self-consumption sector in Catalonia has grown very significantly, because of the significant reduction in costs of PV installations and the approval of a more favourable regulation for this technology.

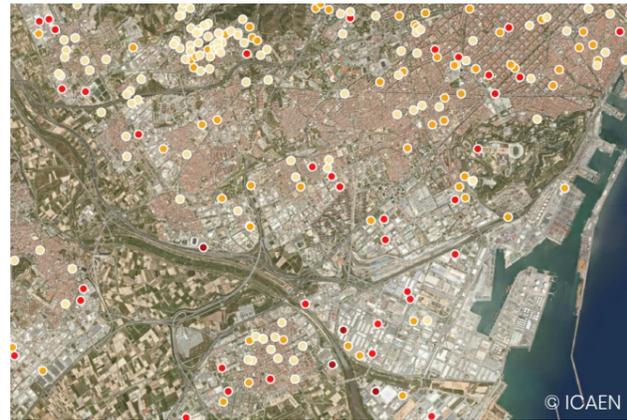
ICAEN carries out a detailed follow-up of the evolution of this sector in Catalonia through the self-consumption Observatory.

The data from the Observatory are accessible from ICAEN's website and are grouped in different ways in order to analyse the evolution of the number of installations from different viewpoints:

- Temporary evolution of PV self-consumption in Catalonia: new annual and quarterly installations.
- Temporary evolution of shared PV self-consumption in Catalonia: new annual and quarterly installations.
- Distribution of the number of installations and the power of PV self-consumption in Catalonia, according to the power range.
- Municipalities and regions with the most self-consumption PV, by number of installations and power installed.
- Territorial distribution of the number of installations and power installed of PV self-consumption in Catalonia.
- Location on an interactive map of PV self-consumption installations in Catalonia.

The Observatory also prepares a quarterly report on the evolution of PV self-consumption in Catalonia.

According to the data of the last report in June 2021, in Catalonia there were 13,296 PV self-consumption installations in service, distributed throughout the territory, with a total installed capacity of 122,53 MW.



The report shows that each quarter, more installations are deployed in comparison with the previous quarter. This fact is very significant from the first quarter of 2019, with an average quarterly increase of 41.7% until the second quarter of 2021. In the first two quarters of 2021, 5,071 new installations were deployed, with a total capacity of 37,11 MW.

The report also shows the trend of smaller and smaller PV self-consumption installations, showing a greater weight of domestic self-consumption installation.

The Observatory is a very useful and freely accessible tool that allows to see in detail the evolution of self-consumption in Catalonia and allows to monitor the number of facilities and the new power installed each quarter and evaluate meeting the objectives in this area.

### ICAEN - Institut Català d'Energia

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## Upper Austria: Solar Champions – proud of PV!

OÖ Energiesparverband - Upper Austria



In its new PV strategy, the region of Upper Austria set itself the goal of achieving 200,000 rooftop PV systems by 2030, thereby increasing solar capacity tenfold! To drive this ambition, the regional government and OÖ Energiesparverband (ESV) launched a large-scale solar campaign "Solar.Sonnenklar".

There are already 35,000 PV systems in Upper Austria. Together, they supply 15% of the annual residential electricity demand and save annually 100,000 tonnes of CO2. Also, already 85% of new single-family houses are built with a PV system. Despite these positive developments, there are still way too many empty roofs!

The campaign "Solar.Sonnenklar" targets buildings in all sectors and reaches out to a range of stakeholder groups. Key messages are:

- PV helps you become energy independent. Future increases in electricity prices will not affect you.
- A PV system will reliably supply your building with clean energy for at least 20 years.
- By purchasing a PV system, you support the local economy. Half of the added value stays in Austria, where the PV sector already offers more than 3,000 jobs.

A first activity of the campaign was a competition to find the region's «Solar Champions». Individuals, companies, municipalities and organisations were invited to submit their PV projects and share why they are proud of solar energy. There was great response – over 300 submissions were received! These are some of Solar Champions:

- "Power from above": The catholic church of Upper Austria shows its responsibility for creation

through its own PV strategy. 120 PV systems were installed on rectories, educational centres and even cemetery walls. Also, awareness-raising actions are carried out in the parish communities.

- "Please replicate": The Fischerleitner vehicle machine shop covers its annual electricity demand with a 100 kW PV system. The company contributes to increasing awareness and interest in e-mobility by providing electric curtesy vehicles – charged with its own solar electricity.
- "PV as roofing": Endorado developed a PV module in laminated glass that replaces conventional roofing materials as well as provides clean electricity. The product offers optimal ecological footprint and reduces overall construction costs.
- "Step-by-step to energy independence": From 1999 onwards, the Steininger family gradually transformed its home to be largely energy independent. First steps included pellet heating, thermal renovation and a 42 m2 solar thermal system. Later, an electric car, 21 kW PV and 16.6 kW energy storage system rounded off their exemplary project.

With this new PV strategy and campaign – combined with the development of renewable energy communities – Upper Austria and the ESV aim to make full use of rooftop PV potential and become a leader region in PV energy.

### OÖ Energiesparverband

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## Solar and Precautionary Requirements in different Built Environments

Örebro Region County Energy Agency – Örebro, Sweden

In August 2018, a general exemption from the requirement for a building permit for solar panels was introduced, meaning that you are allowed to install solar panels without having to apply for permission. However, there are a number of exceptions to take into consideration, for example, if the building or the area is particularly valuable.

In Örebro County, the installed capacity of solar power has increased by almost 70% per year, and together with the overall increased interest for solar power, it's most likely that we will see more and more creative solar installations in different built environments. Therefore, it's important to look over the conditions for which solar installations can be permitted, to avoid unnecessary conflicts in the future and to make way for more solar installations that are suitable for their location/building.

It's also important to bear in mind the fact that we'll be seeing a lot more new innovations in solar technology that blend into the aesthetics of the buildings, and these are not yet covered by this general exemption mentioned above.



With funding from the Swedish Energy Agency, we are now implementing a project that aims to better manage coexistence between solar power and precautionary requirements in different built

environments. Today there is an obvious goal conflict between solar power and conservation values as well as a lack of consensus in the assessment of the values.

The project implements initiatives to increase knowledge and collaboration with solar power suppliers and energy companies, with those who handle construction matters in the municipality and with politics and management. This will be done in four sub-goals:

1. Increased knowledge of different solar solutions in relation to prudential requirements and legal aspects regarding solar power and conservation values in different built environments.
2. Developed materials and established routines to promote more adapted solar power installations in construction matters.
3. Established network for better collaboration and increased knowledge internally in the municipality and with relevant actors in Örebro County, as well as a better consensus on the assessment of building permit matters.
4. Increased knowledge and strengthened agenda for solar installations with regard to prudential requirements in different built environments in politics and management.

Through this, we hope to contribute to a well-adapted establishment of solar production in Örebro County, and perhaps it can be useful elsewhere too.

### Region Örebro County

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## Solar Roofs – City of Zagreb Program for Integrated Photovoltaic Installations

REGEA – Zagreb, Croatia



In October 2021, the City of Zagreb has started the Solar Roofs Program with the aim to significantly increase its share of renewable energy production through building integrated PV installations. The Mayor of the City of Zagreb, Mr Tomislav Tomašević, indicated the following main goals to be achieved in three years:

- Installation of at least 50 MW of building integrated PV systems;
- Investment of at least 300 million kn (app. €40 million);
- Production of electricity of 50,000 MWh;
- Decrease of CO2 emissions of 100,000 tonnes per year.

The Program has been officially adopted by the Zagreb City Assembly and the North-West Croatia Regional Energy Agency – REGEA has been nominated as the implementing coordinator of all activities.

REGEA will provide technical and expert support to the implementation of the Zagreb Solar Roofs Program through its [ELENA PVMaX](#) project which started on 1 July 2021 and has the main objective to implement over €80 million investments in building integrated PV systems in Croatia. The PVMaX project has already been recognised as an important contribution to the overall Croatian energy policy at the national level by Mr Tomislav Čorić, Minister of Economy and Sustainable Development, who in a joint press conference with REGEA Managing Director Mr Julije Domac, expressed his support and welcomed the activities and results to be achieved.

Through the PVMaX project REGEA is also providing support to a large number of building integrated PV projects in all of Croatia through an open call for applications open to all public and private entities lasting until December 2022.

### REGEA

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## Energy Communities: Citizens' Action for Cleaner Energy

by Vlasta Krmelj, FEDARENE Vice-President for Financing and Investments



whole energy system. It is much easier and more beneficial to cooperate and share the possible risks. Together, they will be competitive players in the energy market, counting not only on profits but also on the common benefits for society as a whole.

Many people understand the logic of the sustainable energy system - the production of energy from renewable energy sources at the local level with energy efficiency as an integral element. This would greatly benefit individuals and the community as a whole by creating opportunities for:

- Potential new jobs as an efficient energy system would need additional workforce to maintain its continuity;
- Reducing the vulnerability to price shocks as it is more apparent than ever, increasing energy prices are a threat to energy security;
- Better nature protection and conservation resulting from reduced and efficient energy consumption.

To make this into a reality, major investments are needed and should be made in a cost-effective manner.

So, what are the next steps? Local and regional authorities, together with energy agencies, are the closest links to citizens and they have the capacity to play an essential role in informing and involving them, as well as setting good examples. Therefore, we invite all stakeholders to come together and discuss their views and explain these potential benefits to their communities.

Many questions will arise regarding the "how", but with the help of pilot projects and lessons learnt from pioneer communities, we will be able to develop further. Let's work together - time is more than right - energy prices are rising and climate change is still the greatest threat to our lives on Earth. Together, in the form of an energy community, we have the strong will, knowledge and instruments to steer it towards a better and greener future.

Although COP 26 reached an agreement to limit coal consumption and increase financial assistance to developing countries, it actually ended without a clear action plan to maintain the achievable 1.5 C target. The COVID crisis will hopefully soon be behind us and economic development will somehow resume, but the climate crisis is far from over and will not be solved without real actions. Natural disasters such as storms and floods are putting millions of people at risk due to rising sea levels and extreme weather conditions. There is no easy solution to this, no equipment to stop climate change. Therefore, society and citizens should take action and try to prevent the cycle of climate change from going too fast.

In this context, energy communities present both a great opportunity and a challenge. They are the best workforce for implementing a sustainable energy transition. The legal background is here; it may not be complete everywhere, but it is still a good start. Global and EU-based environmental experts have proven that with the active participation of citizens, energy communities are capable of restructuring our

## Local Energy Communities: «Centrales Villageoises»: a Local Citizen-owned Energy Communities' Success Story



AURA-EE - Auvergne Rhône-Alpes Region, France

In 2010, Auvergne-Rhône-Alpes Energie Environnement (AURA-EE) together with 5 natural regional Parks initiated an experimental project named "Centrales Villageoises" whose model is now spreading throughout France.



Inauguration of the Centrale Villageoise of 4 Montagnes (Vercors). © Centrales Villageoises

The Centrales Villageoises are local citizen-owned energy communities, defined as local entities whose shareholders are mainly citizens, local authorities as well as local companies. They aim to develop renewable energy and energy efficiency projects, at a territorial scale, taking into consideration the local stakes such as integration into landscape, economic local development and social link.

The objective of this experimental project was to put renewable energy production projects at the service of the development of rural territories. From 2010 to 2014, the experimentation was piloted on 8 pilot sites and progressively led to the elaboration of local citizen-owned companies which developed and financed some first PV plants. The entire technical, legal and financial framework was then consolidated and enabled

the concept to be replicated on other sites. In 2018, with the support of AURA-EE, the Association of Centrales Villageoises was created in order to further expand and support the model in France. The association provides one-stop shop services to the communities through framework agreements established with various companies (insurances, banks, engineering companies, DSO,...). AURA-EE works in close cooperation with the association in order to develop additional services.

The Centrales Villageoises local companies all abide by a charter. First, their governance is mainly driven by citizens who forge links with local municipalities. Their activities have to be consistent with the local public policies. In addition, they generate local benefits and contribute to the development of their territory. They also use a shared approach with common tools and services and share their experience to improve collectively the network's technical resources. Last but not least, they behave in a supportive way and bring assistance to each other.

“

The objective of this experimental project was to put renewable energy production projects at the service of the development of rural territories.

Results speak for themselves: In August 2021, 57 territories are currently involved and there are more than 350 PV installations in operation, operated by 32 Centrales Villageoises companies and €11 million already been invested. The 350 installations represent an installed capacity of 4.8 MWp and an annual production of 5.4 GWh.

### AURA-EE

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## The local Production and Consumption of Electricity: Renewable Energy Communities Make it Possible

eNu - Lower Austria

The municipality Kapelln joined the state program “e5” in 2017 and was awarded the “European Energy Award” in 2019. The power supply of its municipal buildings is already renewable thanks to PV modules on all roofs of the communal buildings. As one of the first municipalities in Lower Austria, Kapelln decided to set up a renewable energy community.

In a renewable energy community, electricity in the village is shared among companies, private households and municipal buildings.

### How does it work?

If a producer generates more electricity than consumed, the excess is distributed among the other participants in the renewable energy community. That means the renewably produced energy remains in the village. For example, if the energy produced in the elementary school is not being fully consumed, it is used to supply private households and vice versa. The process is automated using intelligent meters (smart meters).



### Citizens can easily participate

Citizens can register to become members of renewable energy communities online. They fill out their contact information and describe their electricity consumption and/or generation.

After the registration a membership contract is set up, containing the statutes and electricity prices for consumption and production within the renewable energy community - that's it.

The Energy and Environment Agency of Lower Austria helps citizens and municipalities set up renewable energy communities

The Energy and Environment Agency of Lower Austria (eNu) is an independent consultation agency on energy communities in the region of Lower Austria. Within an Austria-wide network, eNu offers independent advice and information on the establishment and operation of energy communities. Furthermore, eNu supports pilot projects within the framework of the Austria-wide platform and collects valuable experience.

### eNu - Energy and Environment Agency of Lower Austria

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## EKIOLA: Prosumer PV Cooperatives in the Basque Country

EVE - Basque Country, Spain



EKIOLA is a public-private initiative promoted by the Company KREAN and the Basque Energy Agency (EVE) that is leading the creation of prosumer power cooperatives in the Basque Country through agreements with municipalities and citizens.

EKIOLA has started in 2021 and will finish in 2024. During this period, 30 to 50 non-profit cooperative energy communities will be established, which will have a live period of, at least, 25 years. The development of this initiative means the recognition of the important role of citizens in driving the energy transition and so aims to put consumers at the heart of the energy transition by converting them into Prosumers that will participate in the generation and management PV power stations between 1 and 5 MW. Each power cooperative will build and operate PV parks that will produce energy according to the demand required by the cooperative members.

The new solar PV plants will be installed in urban areas, producing Km0 renewable electricity. These plants will have a size of 1 MW to 5 MW. This means an investment between €800,000 and €4 million in each of the energy communities, depending on the land price.

Interested municipalities will be responsible of selecting the appropriate site for the PV plant, implementing the building projects, managing all the administrative requirements and supporting the citizens that wish to take part in the project. The participation of local private stakeholders such as financial institutions and banks to finance the projects is also expected.

The citizens will be prioritised as members of the energy community that will be also open to the participation of local administration and business. Each member of the energy community will cover 100% of the electricity demand from a local PV plant. Thus each participant will purchase only the PV panels required to meet the demand. The minimum required participants to develop an energy community under the EKIOLA initiative is 400 citizens. This represents the involvement of 12,000 to 20,000 families by 2024.

### EVE - Basque Energy Agency

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## Sustainable Communities Wales

Severn Wye Energy Agency – Wales, United Kingdom



2,000 solar panels are installed on the Geraint Thomas National Velodrome in Newport – © Mike Harrison

Between 2018 and 2021, Severn Wye was the lead partner on the Sustainable Communities Wales programme, providing free resource efficiency advice and specialist support to community organisations across Wales.

Aiming to support 150 community organisations across the nation, Severn Wye opted to deliver via a consortium of five energy efficiency experts and business support services located strategically across the country to provide local support, promote local solutions and exemplify partnership working. As part of the contract, Severn Wye also established an installer network for Wales, in order to promote local work going to local contractors – again benefiting the Welsh economy, investing in the local ‘green’ economy and ensuring that community organisations’ projects contribute towards community wealth building.

Participants received a site survey looking at energy supply and consumption and water usage, and receive a detailed report on their buildings. This report included recommendations for how the organisation could improve their resource efficiency with behaviour change, simple low-cost improvements and investment in new or replacement features. Community organisations could benefit further from fully-funded feasibility

studies for complex projects, such as on-site renewable energy generation, significant redevelopment works or highly technical improvements.

Learning from a similar project run previously, Severn Wye brought a community finance firm onto the consortium for Sustainable Communities Wales. Offering an exclusive zero percent loan to project participants meant that there was a financial mechanism to get projects off the ground where otherwise community organisations struggle to raise the investment capital.

As the contract progressed, Severn Wye partnered with community organisation support project Renew Wales and Wales’ National Lottery Community Fund, using Sustainable Communities Wales as a conduit for climate action funding, with 65 community organisations receiving advice on renewable energy options to attract between £10,000 and £15,000 to install. This collaboration led to significant installations that may not otherwise have gone ahead.

Sustainable Communities Wales led to over £1 million of carbon-saving installation contracts to Welsh businesses, facilitating the installation of 117 measures and saving 421 tonnes of CO2e in the process.

### Severn Wye Energy Agency

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## Adaptation and Integrated Planning for Climate Change

by Thekla Heinel, FEDARENE Vice-President for Climate Protection in Municipalities and Regions

**A**lmost all of us are confronted with the effects of climate change, whether in the form of direct experience of heat waves or heavy rainfall events or in the context of reporting on disastrous events such as the flood catastrophe in Germany 2021, in which many people lost their lives and their existences. We currently have the last chance for a transformation of climate policy to limit climate change according to the targets of the Paris Agreement.

Climate protection and adaptation are two sides of the same important challenge. They must be implemented in an integrated, structured and targeted way, in order to stop global warming without further delay and at the same time protect people from the life- and existence-threatening consequences of climate change.

Municipalities and regions are the most important actors in this context.

As it is the main obligation of municipalities and regions to provide services of general interest and protect citizens and the local economy from damage, they are looking for ways to reduce the impacts of such extreme weather events.

Regarding adaptation to climate change, they are the interface between political decisions, possible existing threats to the population and the identification and implementation of appropriate measures at the local level, together with the citizens and the various stakeholder groups and in order to enable sustainable and resilient communities.

Such measures cannot be implemented as a package of isolated measures to achieve resilience, but must be developed in a participatory process and implemented and reviewed in a process-oriented manner, integrated with other measures, e.g. in the area of climate protection. Only in this

way risks can be clearly identified and continuously minimised. Initiatives like the Covenant of Mayors, the European Energy Award or other initiatives in the EU member states like the European Climate Adaptation Award in Germany guide the way to such a process oriented proceeding.



Energy agencies and consultancies can accompany and support municipalities and regions in the initialisation and implementation of this implementation-oriented process, in order to complement the capacities of the municipalities and regions.

It is now important to consistently tackle transformation processes and to drive them forward together with all groups involved in order to use the last chance to save the climate and to limit the negative and dangerous consequences of climate change.



## European Climate Adaptation Award: Systematic Support for German Municipalities on their way to adapt to Climate Change

Beratungs- und Service-Gesellschaft Umwelt mbH – Berlin, Germany

Climate adaptation became an important challenge for municipalities and regions, as the consequences of climate change are increasingly evident. The flood disaster in the summer of 2021, with devastating damage in various parts of Germany underlines the life-threatening danger caused by extreme weather events and the need for comprehensive adaptation to climatic change.

B.&S.U. developed the European Climate Adaptation Award, which is a quality management process and certification system and enables municipalities to integrate climate adaptation into their communal processes and their daily work. The eca defines four essential process steps, which have to be regularly repeated in order to create sustainable results and a continuous process of improvement:



### 1. Analysis of climate impact and current state:

The extent to which individual municipalities are affected by the changing climate and the possibilities to counteract climate-related extreme weather events vary from region to region. For this reason, an analysis of the type and intensity of climate change (exposure) as well as the sensitivity to this change (sensitivity) is carried out at the beginning of the eca process in order to make the need for action visible. The participating municipality receives information on past and projected climatic changes. Based on that, the eca provides a profile of strengths and weaknesses that shows in which sectors further adaptation measures would be most

reasonable and necessary. A catalogue of measures gives guidance and suggestions for new measures. It includes measures from all relevant fields of actions ranging from regional and urban development planning to buildings, social infrastructure, energy and water supply, transport and civil protection up to industry and commerce, tourism, agriculture, forestry, nature conservation and human health.

**2. Planning of activities:** By means of the provided catalogue suitable measures are discussed with the responsible stakeholders on-site and combined in a climate change programme of activities.

**3. Implementation of activities:** The structured eca process guarantees a systematic and target-oriented implementation of measures as well as a steady improvement of the inter-divisionally cooperation. An accredited eca advisor supports the municipality throughout the entire process.

**4. Auditing, certification and awarding:** After usually four years the municipality can undergo an external audit concerning its climate adaptation efforts. It is conducted by an independent eca auditor and ensures an objective comparability between different municipalities. The more comprehensive the adaptation successes are, the better the certification.

The eca has been successfully tested with financial support of the Ministries of the Environment of the Federal State of North Rhine-Westphalia and the Free State of Saxony and is currently implemented by a growing number of municipalities in Germany.

### B.&S.U.

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## Abruzzo Region Network of Education Centre for Environment: a unique reference for education on environment and sustainable development

Regione Abruzzo – Italy

In Abruzzo Region, a dense network of more than 40 Education Centres for Environment (CEA, in Italian) has been developed. Spread throughout the region, CEAs constitute a unique reference to environmental education and sustainable development for citizens, schools, local authorities and enterprises.

With their own territorial vocation due to their geographical feature, CEAs represent the heterogeneity of the regional territory and implement projects and initiatives such as educational courses, didactical stay, training, realisation of communication and dissemination documents and tools, all of them with particular reference to the territorial contest where they operate.

As part of INFEA Abruzzo, the regional system for environmental information, training and education, these centres are legally recognised as of regional interest and all together constitute the network of Environmental Education Centres of the Abruzzo Region. The latter has a role in the support, stimulators and facilitators of the participatory and educational process.

Since the centres are spread throughout the regional territory, they are able to better connect with all stakeholders and citizens.

They have been involved in several activities in coordination with Abruzzo Region, in particular in the realisation of the guidelines for the regional plan of adaptation to climate change and in the education and awareness campaigns in the field of sustainable development and adaptation to climate change performed in the framework of the ongoing regional strategy and inside the Joint\_SECAP project (Interreg Italy-Croatia programme). These activities are monitored by the bodies of the Regional System for a continuous quality action.



The network of CEAs and their activities have been recognised as a good practice by the Interreg Europe programme: [www.interregeurope.eu/policylearning/good-practices/item/1985/environmental-education-sustainability-through-education-centres-for-environment/](http://www.interregeurope.eu/policylearning/good-practices/item/1985/environmental-education-sustainability-through-education-centres-for-environment/)

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## Successful Steps in SECAP Implementation of Alba Iulia Municipality

ALEA – Alba Iulia, Romania

In line with ALEA's main objective to support local authorities in the region, the association has been supporting the Alba Iulia Municipality since its establishment. In the last period, the Municipality has had remarkable achievement in sustainable development. The SECAP of the municipality, which is currently under implementation, led to several successful initiatives, proving that Alba Iulia is engaged in attaining the Covenant of Mayors objectives.

A large number of projects has been implemented or are under implementation:

- Modernisation of a large part of the public lighting system;
- Thermal rehabilitation of several important blocks of flats that presented really low energy efficiency;
- Energy efficiency works on several public buildings, especially educational ones;
- Acquisition of electric buses for the public transportation fleet (an important ongoing project).

Based on these initiatives and other notable results, the city was awarded «Sustainable Community – European Energy Award» for Romania in 2021. This is an official acknowledgement the Alba Iulia has had outstanding results in its continuous efforts made for the development of a smart city and sustainable community.



For the future, the plans of the city are also ambitious having in perspective the implementation of several larger scale projects. Within the initiatives that have been started this year at municipality level are:

- The implementation of a RES project – solar energy to supply the needs of the Municipal Olympic Pool;
- The installation of PV panels on the roofs of 6 public educational buildings to reduce the municipality carbon emissions;
- The installation of heat pumps to supply an important elderly home with green thermal energy;

- The implementation of a research project having as scope to identify the energy poverty levels in the social housing area and to find innovative solutions to tackle it;
- The transformation of the building of most important college in the city (HCC National College) into an nZEB one;
- The upgrade of the adaptation plan for climate change of the municipality.

The commitment of the city in attaining its targets for sustainable development is also visible in the city's public investment policy, where the share of financing for "green" projects implementation will reach almost 50% from entire investment sum in the next period. This makes us feel confident that the city is on its correct path to reach carbon neutrality set for the year 2050.



### ALEA – Alba Local Energy Agency

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## Competitive through Sustainability 2030

Energikontor Norr – North Sweden



“Competitive Through Sustainability 2030” (Konkurrenskraft 2030), an EU-funded project owned by the North Sweden Energy Agency, places the issues of energy, climate, and sustainability in the main focus of small companies in the region, targeting their core business and competitiveness. Experienced business developers and energy experts meet the companies at their current level of sustainable development, helping them find their own motivation to take one or a few steps to increase sustainability through support and a business-oriented dialogue. The project recruited 35 smaller companies, all in different line of business, for example local brewery, car painting company, hotel, restaurant, construction company and an architect office.

Through collaboration with Företagarna Norrbotten, Almi Företagspartner Nord AB and Luleå university of technology – Entrepreneurship and Innovation, Accounting and Control, the project team mainly performs sustainable, energy and climate analyses, which result in suggestions for an action plan, along with setting goals connected to the Sustainable Development Goals (Agenda 2030) as well as coaching and follow-up. These tools and the business-oriented dialogue model have been well received so far.

Running through the period of January 2019 – October 2022, the project is funded by European regional funds, the Swedish Energy Agency, Region Norrbotten, Almi Företagspartner Nord, Sparbanken Nord and North Sweden Energy Agency



Project team visiting one of the companies in the project, Piteå Handel och Trädgård, a garden center. © Energikontor Norr



### Voices from participants

“All increased knowledge allows us to make better decisions”

“The project has also given us confirmation that we are already taking good action”

“If your business is to remain in the future, you need to work on sustainability”

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## Oeste Sustentável: a Leader in Sustainable Energy Projects and Investments

Oeste Sustentável – Portugal



© OesteSustentável

Created in 2010 by 12 municipalities, the OesteSustentável – Agência Regional de Energia e Ambiente do Oeste (OST), has been representing a commitment towards sustainability for the Portuguese Oeste Region with a mission to actively contribute to the European and national goals within the energy and climate strategy. The OST's activity has been characterised by a diversified intervention covering the several stages of sustainable energy projects in areas of buildings, traffic and street lighting, renewables, urbanism, green public procurement, sustainable mobility, energy strategy and planning, capacity building and creative education for sustainability.

With more than 100 projects and activities, the Agency has been playing an important role of establishing bridges between different actors and stakeholders, supporting institutions and their members, while identifying environmental issues, energy efficiency and renewable energy opportunities, as well as designing solutions and finding financial mechanisms for implementing them. The Agency implemented more than €31 million in sustainable energy projects through different financing models, attaining around €5

million per year in energy savings and an annual CO2 reduction of around 15,000 tonnes.

Among the various other projects implemented, streetlight OesteLED IP was brought to improve efficiency in public lighting (IP). It was one of the largest IP LED projects in the world, and a pioneer in the inter-municipal financing model, reducing the electricity bill

by more than €3 million a year. The replacement of around 68,500 light points with LED technology, reduced electricity consumption by 26.4 GWh per year (around 7,500 homes), and avoided annual emissions of around 10,000 tonnes of CO2.

The Agency, member of FEDARENE since 2020, has been receiving a critical support from this membership particularly through the permanent networking and engagement activities promoted by FEDARENE. PROSPECT and ManagEnergy mentoring programmes, are a few examples, as well as the process of being selected as one of the first Ambassadors for the European Climate Pact in Portugal. All this also triggered the participation of the OST Agency, as a Country Expert in Portugal, in pillar projects such as the European City Facility (EUCF), one of the main European instruments to support the financing of action plans for energy and climate, or other participation for instance in project Living Streets, led by a consortium coordinated by Energy Cities, and financed by EUKI.

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## Joint Strategies for Climate Change Adaptation in Primorje Gorski Kotar County

REA Kvarner – County of Primorje–Gorski Kotar, Croatia

The first Joint Sustainable Energy and Climate Action Plan (Joint SECAP) in the Primorje Gorski Kotar County, covering the geographic area of the City of Kastav, City of Opatija, Municipality of Cavle, Municipality of Matulji, and Municipality of Viskovo, was prepared by the Regional Energy Agency Kvarner (REAK), under the scope of Interreg Italy–Croatia project Joint SECAP.

The vulnerability and risk assessment for the target area was focused on the three main sectors: Water supply, Health, and Tourism. The results indicated moderate risks for all sectors. Should the current circumstances, i.e. “business as usual” scenario continue, all sectors could face adverse consequences of climate change, which can be either direct damage to the environment, properties, infrastructure, and livelihoods (e.g., lack of water) and/or decrease in incomes followed by a decrease in employment.

Given this, adaptation measures are necessary, which was encompassed in the final (optimal) scenario developed in collaboration with relevant stakeholders. The focus group workshop gathered diverse attendees: local and County level experts, city/municipality representatives, different associations, utilities, etc., providing their expertise and advice on possible actions to alleviate expected consequences of climate change. These actions were evaluated using six criteria – how significant, urgent, cost-effective, and feasible the action is and whether it benefits other sectors (synergistic effect) and brings welfare regardless of climate change (multiple usefulness).

Finally, an integrated climate plan addressing mitigation and adaptation was developed, consisting of 24 measures, with water management having the highest number of adaptation actions considered necessary. The municipalities involved are committed to successfully implementing the set measures and motivating the local population



Mayors of involved municipalities signing the cooperation agreement with the Primorje Gorski Kotar County Prefect, defining (among other) that REAK will produce a Joint SECAP plan. © Primorje Gorski Kotar County Prefect (PGKC)

to support the Plan execution. REAK hopes that other Croatian regions will also follow this example and tackle the preparation of further Joint Sustainable Energy and Climate Action Plans, which can be a good solution for smaller municipalities that do not have the capacity to engage with individual SECAPs.

### Regional Energy Agency Kvarner

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## Supporting Walloon local authorities in their work for Energy Transition

Wallonia Region, Belgium



Local authorities play a key role in the energy transition and the fight against climate change, especially in the «post-covid» era. Because of their local nature and potential added value for all stakeholders in a territory, energy projects can no longer be dissociated from the policies of local authorities.

From 2012 to 2017, Wallonia has supported the commitment of municipalities to the Covenant of Mayors for Climate & Energy – Europe through the Climate and Energy Policy Programme (POLLEC). In 2017, it officially formalised this supporting role by committing itself as regional coordinator of the Covenant initiative. This role implies a number of missions including financial support to the municipalities but also the development and implementation of their Sustainable Energy and Climate Action Plans (SECAPs).

Municipalities that commit to the Covenant of Mayors must submit the SECAP within 2 years of signing the convention. To date, 201 Walloon municipalities have signed it and 171 have submitted their SECAP. 11 supramunicipal (provinces, conferences of elected representatives, etc.) coordinators have also committed themselves by setting up a support service for the communes in the elaboration and implementation of the SECAPs.

A survey carried out in March 2020 pointed out 3 priority needs for the implementation and management of SECAPs: 1. Financial support for the implementation of the SECAP; 2. Commitment

of a SECAP coordinator; 3. Articulation between the SECAP and the other municipal plans. To meet these needs, the Walloon Region launched 2 calls for municipalities in 2020 and 2021 to hire a coordinator for their Energy and Climate Action Plans and to make investments for these plans. These steps must be part of a short, medium and long-term working perspective, as achieving the climate objectives requires an ambitious approach, which should be translated into concrete projects as quickly as possible. Those calls are addressed to Walloon municipalities as well as supra-municipal structures who already offer or are going to offer a support service.

For the human resources component, the regional subsidy varies between €22,400 and €134,400 depending on the number of inhabitants and whether the applicant is a municipality or a supramunicipal structure.

In the 2020 call, investment support varies between €50,000 and €200,000 according to the same criteria and covers 75% of the total eligible costs. This support starts at the beginning of 2021 while in the 2021 call, investment support varies between €40,000 and €800,000, covers 80% of the total eligible costs and does not depend on the size of the municipality. This support starts at the beginning of 2022.

### Wallonia Region

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## Accelerating Islands' energy transition

EDITORIAL 

by Kostas Komninos, FEDARENE Vice-President for Smart and Sustainable Islands

The Islands of FEDARENE have been working in pursuit of a common goal for the past 30 years: embarking on a sustainable development paradigm. These efforts are beginning to bear fruit, notably through Europe's firm decision to fight climate change.

The issue of islands' energy transition is clearly emerging as a separate area of intervention at European level, both through the "Clean Energy for EU Islands" Initiative and the «Split Memorandum». Moreover, Directive 2018/2001 stipulates that, to increase RES penetration in the Outermost Regions and small islands, Member States may adapt financial support schemes for projects located in those regions, to reflect the increased energy production cost.

This favorable political framework is backed up with an unprecedented amount of resources. A significant part of EU investment programs, namely the Structural Funds but also the novel Recovery and Resilience Facility, has been reserved for climate targets, while a dedicated tool, the Just Transition Mechanism (JTM), has been set up to support these policies.

Against this backdrop, a concerted multi-level action among European, national, regional and local authorities is now urgently needed. Energy agencies, with their significant technical knowledge and deep understanding of the island-specific conditions, are crucial actors to transform the political momentum into tangible actions. Their work can enable the islands' clean energy transition in the framework of an overall sustainable development.

It should, first, be acknowledged that islands require a dedicated regulatory framework, depending on their specific conditions. This approach would facilitate the preparation of financially, socially and environmentally feasible projects, which will activate investments while ensuring the interests of all stakeholders. Such projects are suitable for replication in other geographical areas, enabling the capitalization of the islands' experience for the benefit of whole Europe.



My experience while working side by side with island communities has shown that any transition agenda should be part of an integrated strategy with measurable benefits for the local economy. The development of such strategies should be promoted by Member States, making use of territorial development tools such as the Integrated Territorial Investments (ITIs). The recent "GReco islands" initiative focusing on the design and implementation of ITIs in small Greek islands in the fields of energy, water and waste management, transport, sustainable mobility and circular economy, is an eloquent example thereof. By adopting an integrated approach to the planning and management of natural resources and infrastructures, islands can overcome structural problems of insularity, all while offering higher quality of life to local communities and their visitors but also significant know-how to the European academia and industry.

The activation of combined technological, financial and social innovation in the islands through integrated approaches can accelerate their shift towards a circular and climate-neutral economy, signaling –the smart and green transitions at the local, national and European levels. It is a unique opportunity that the current momentum does not allow to be missed.



## Promotion of Electromobility through Planning and Installation of EV Charging Networks in Greek Islands

Aegean Energy Agency – Greek Islands

In the EU, more than 25% of GHG emissions come from the transport sector, making it a key target for achieving carbon reduction goals. In the summer of 2020, the Greek government announced its National Plan for E-mobility, in line with the EU Green Deal strategy. As a first step, the law on Promotion of E-mobility introduced a subsidy scheme for electric vehicle acquisition and the obligation for all Municipalities to develop Electric Vehicle Charging Plans (EVCPs).

Although these initiatives seem to effectively support the uptake of e-mobility in urban context, the adoption of e-mobility in islands faces challenges, mostly deriving from their topography, remoteness, and seasonality. On the other hand, these characteristics represent great opportunities for islands to function as testbeds for the technical, social, and financial innovation needed to promote e-mobility.

To that end, AEGEA in collaboration with DAFNI developed the following services, offered to its members:

- **Pilot publicly accessible Electric Vehicle Charging Stations (EVCS) network development**
  - Technical and legal support in resolving legality and ownership issues of municipal buildings and parking lots and licensing the EVC
  - On-site inspections, in cooperation with HEDNO, to assess grid availability and potential risks for the EVCS (danger of flooding, exposure to sea etc.)
  - Technical studies to identify the optimal way to install the EVCS in terms of cost, visual impact and ease of construction
  - Identification of necessary technical requirements for the EVCS (resilience to weather, protection from voltage variations, compatibility with traditional architecture)
  - Training and support of technical staff
- **Elaboration of EV charging plans**
  - Development of an island-specific methodology:
    - ◊ to estimate the required number of publicly accessible EVCS. To address seasonality,

the methodology is applied for August, assuming peak transport demand

- ◊ for optimal spatial allocation of the EVCS, considering local mobility patterns, points of interest, permanent and seasonal population distribution.
- Support in citizen engagement activities, to ensure effective and inclusive planning
- Support in the electrification of municipal fleets.

### What we achieved

This support and collaboration with the island municipalities, members of DAFNI, was fruitful and already resulted to the implementation of the 2 first insular public charging networks:

- In Kythnos, 4 double chargers were installed in the framework of “Kythnos Smart Island” project
- In Astypalea, 6 double chargers were installed in the framework of “Astypalea Smart and Sustainable Island” project. Thanks to the pilot charging network, Astypalea has become the municipality with the highest chargers per citizens ratio in Europe.

The enhanced visibility of the EV charging stations, also due to accompanying works (beautification and cleaning of surroundings, industrial flooring, special signage), had a positive impact to the visitors, resulting to an increased demand for EV rentals.



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## Crete’s Clean Energy Transition Roadmap

Crete Regional Energy Agency – Crete, Greece



The Regional Development Fund of Crete/ Energy Agency implements a systematic procedure of multi-stakeholder participatory dialogue and working plan for the establishment of a roadmap and an Action Plan for the Clean Energy Transition of the island of Crete. This procedure is based on the EU Green Deal and subsequent new EU targets as well as:

- the existing study for the regional energy planning, the existing municipal SEAPs and the ongoing ones and the new national priorities specified for the island of Crete;
- The Regional Climate Adaptation Action Plan;
- The RIS3 regional Smart Innovation strategies for sustainable energy, climate change and circular economy;
- Regional Operational – Community Support Framework;
- The new priorities for the programming period 2021-2027;
- Scenarios for the new electricity and gas interconnections to the mainland;
- The research and innovation sectoral and regional capabilities and priorities;
- The interests of the investors and the re-skilling of the engineers/technicians;
- The energy cooperatives and the energy-climate democracy;
- The social interests and the energy poverty.

The Regional Energy Agency of Crete is the regional coordinator of the Covenant of Mayors (CoM) and the Covenant of Islands for the whole island of Crete and member of the Regional Innovation Council, capitalising its long experience in energy and climate planning.

The island of Crete is the biggest one among the 26 pilot islands chosen in 2019 by the EU Secretariat for Clean Energy for EU islands. Therefore, the exercise for the Clean Energy transition of such a big island is much more complex and time-consuming and the results will be of a particular interest. The structured and strategic dialogue, led by the Regional Energy Agency of Crete during 2020-21 with all relevant stakeholders, is



also combined with horizontal assessment for sectoral works and implementation for renewable energy sources, energy efficiency in public and private buildings, bioclimatic public places, energy cooperatives, public lighting, virtual net metering in municipalities, sustainable energy education in schools, and projects related to circular economy.

The main ongoing and expected outcomes include:

- Build-up of a common strategic vision and consensus for a fair energy transition;
- Combine the island SECAP (SECAP-I) with the 24 municipal SEAPs/ SECAPS; Prioritising energy efficiency and energy savings in all activity sectors;
- Maximise the RES penetration in the insular energy system;
- Establish an efficient electricity management system, combining electricity interconnections and the local RES electricity production;
- Attract and support sustainable energy and energy efficiency investments;
- Combine the Smart Regional Specialisation of the Crete Region with pilot and innovative energy projects and the regional re-skilling;
- Mainstream and coordinate the projects and the different financial sources;
- Promote the social economy and the energy democracy;
- Design and implement a continuous and multi-faced communication – dissemination – promotion plan for the regional energy transition.

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## ESIN's CARING Project is aimed at Helping Small Islands across Europe Advance their Energy Potential

European Small Islands Network (ESIN) & Ponant Isles Association, France

ESIN is a not-for-profit organisation registered in Sweden, serving as the voice of islanders and small islands with the objective to help small island communities remain alive. To this end, ESIN acts at two levels: at local level, ESIN aims to strengthen islands' identity and facilitate the circulation of information between its members to support them through knowledge sharing; at the EU level, it aims to increase awareness and understanding of small islands issues.

In support of this objective, ESIN has secured an EU grant through the Horizon 2020 NESOI project ([nesoi.eu](https://nesoi.eu)), to help mobilise the island communities on six small islands within the ESIN membership to advance their clean energy transition. One of 29 projects selected in NESOI's first call, Project "CARING" (Clean energy initiatives targeted to small islands) is a collective initiative to enable 6 small islands to work in parallel but also together on innovative solutions for their local contexts: Île aux Moines (France), Inishbofin (Ireland), Nagu (Finland), Fur and Venø (Denmark), and Ulva (United Kingdom).

The project supports these islands in developing their Clean Energy Transition Agenda (CETA), a strategic roadmap for the transition process towards clean energy that was initiated by the Clean Energy for EU Islands Secretariat ([euislands.eu](https://euislands.eu)). (A template is available in several languages at [euislands.eu/energy-transition-agenda](https://euislands.eu/energy-transition-agenda).) The resulting CETAs will cover a variety of options as each island has chosen to focus on a different technology, appropriate for their own circumstances. Fur and Venø will investigate the possibilities for wind turbines, Nagu for utilising waste, and Ulva for heating and mobility. The Inish Boffin in the north of Ireland will be carrying out studies of specific projects such as marine energy, while Ile aux Moines in the bay of Vannes in Brittany will explore opportunities to extend electric mobility



The Carricolo Ilois and Jacques Bathiat from Ile aux Moines municipality. © ESIN/AIP

to the whole island. As a part of Iles du Ponant's decarbonisation efforts, Ile aux Moines has already put in place an initiative called the "Carricolo Ilois", which is an electric transportation service offered free of charge to seniors aged 75 and over by the island municipality.

To procure external advisors on site for these studies, a financial Support of €60,000 was provided as direct funding to ESIN by the NESOI Facility. Under the supervision of the project Coordinator, Alexis Chaptzimpiros who also works for the Samsø Energy Academy, these external advisors will be working in close cooperation with the NESOI consortium who will also provide technical support. The project will end in July 2022, and the results will be shared amongst the whole ESIN network for maximum benefits.

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## 100 % Sustainable La Gomera: Decarbonisation through Distributed Generation and Renewable Energy Microgrids

Instituto Tecnológico de Canarias – Canary Islands, Spain



La Gomera is the third smallest island of the Canary Archipelago (Spain). It has 64 dispersed populational nuclei, a 21 MW thermal power station (diesel) and a 20 kV distribution network. Instead of proposing a centralised (renewable) electricity generation model for the decarbonisation of the island, like it has been done on El Hierro with its successful Wind – Pumped Hydro Storage Power Station, the roadmap for La Gomera's transition to 100% renewable energy is based on a distributed generation approach.

Besides ongoing private sector initiatives, the current plan ("100% sustainable La Gomera") promoted by the public authorities and the technological partner ITC consists in a combination of intelligent self-consumption, innovative hybrid systems and microgrids (that are to be integrated as "energy communities"), which are being located at emblematic sites for further replication.

The challenge of integrating distributed renewable energies, especially in island systems, must be overcome by trying to generate new business models, encouraging the participation of citizens and, on the other hand, providing the distributed generation systems of capacities that allow support in the operation of the electrical networks to which they are connected.

6 pilot projects are being carried out by ITC. Two of them are almost completed:

- Intelligent PV self-consumption system with battery storage at Cabildo's main building (no grid injection; 80 kW / 68 kWh), with the ability to receive operation and control instructions from the network operator, which allows dispatch of active and reactive power and voltage at the connection point. The system also allows optimising the energy cost of the building, through an energy management system based on predictions of energy generation, demand

and grid prices, with the aim of optimising battery charging and discharging times. Furthermore, a demand management system is foreseen to charge the Cabildo's electric vehicles in the most economically efficient way.

- PV system with battery storage and intelligent energy management in Alojera (generation system for grid injection or stand-alone operation; 250 kW / 600 kWh). The technology incorporated in this plant allows different control modes (e.g. increasing the percentage of solar self-consumption or prioritising the sale of energy to the market) and provides complementary services to the distribution network operator. This generation system will be the heart of the future energy community of Alojera.



First upper picture: Cabildo of La Gomera intelligent PV system. Second picture: La Gomera – Alojera PV plan. © ITC

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## Samsø: A Leader recognised by the UN Global Climate Action Award

Samsø Energy Academy – Samsø, Denmark



The island of Samsø has been selected as a Climate Leader in UN Global Climate Action Award due to its success in becoming the world's first renewable energy island. It has completely transformed its energy system from fossil fuels to renewable energy, through a series of renewable energy investments, namely 11 on-shore and 10 off-shore wind turbines, 4 local biomass-fuelled district-heating plants, solar panels and electric vehicles, which enabled Samsø to reach 100% net annual balance of renewable energy.

In 1997, Samsø Municipality took the political decision of becoming Denmark's renewable energy island in 10-year time. At the time, the island's main energy source for electricity was coal, while oil was the primary energy source for heating and virtually all transportation on the island. Along with the foreseen renewable energy investments, the financing model was based on the participation of citizens and stakeholders as well as local ownership of the renewable energy investments at its core, leading to significant benefits for the island community and economy, new jobs and local growth. By 2007, Samsø was producing enough renewable electricity and decreased its fossil fuel consumption so much that the net annual balance of renewable energy in the local energy mix became more than 100%.

Very early in the process, Samsø realised that it was not alone in this transition and that many

islands and others would be interested in learning from its experience. To reach out and inspire like-minded communities to follow its example, the Samsø Energy Academy, with a mandate from Samsø municipality, has started putting resources into capacity building at regional and national level, as well as into international cooperation in Europe and beyond. It participates in cooperation and knowledge exchange programmes, provides advice on sustainable community development and organises study visits, workshops and leadership programmes. The Samsø Energy Academy aims to inspire more local leaders, stakeholders, governments and policy makers around the world to act locally to address climate change in a way that improves the perspectives and chances for sustainable living of their people and their communities.

This approach brought tremendous benefits to the island and improved the community's perspectives and sustainability in the long term. There was additional income for the Municipality and the citizens from the renewable energy projects and this had a positive impact on employment. Samsø has managed to build a brand name for what a successful community-driven energy transition can look like, demonstrating how renewable energy can be a catalyst for improving the prospects of a community for the future, good business and effective climate action at the same time.

To tackle its remaining GHG emissions, Samsø will use renewable electricity to cover heating and transport needs and will explore the option of locally produced biogas and renewable electricity as fuels for the ferries. Through these new investments, Samsø will become completely carbon-free by 2030.

### Samsø Energy Academy

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## We need new Mobility Behaviour and Planning

EDITORIAL

by Christel LILJEGREN, FEDARENE Vice-President for Mobility and Transport



If we are to reach the vision of the EU's climate neutrality goal by 2050, we, need to change, and it should be fast. Yet, the transition of transport modes remains a big puzzle to solve.

Mobility has an integral role in our everyday life. If we look at local, regional, or national travel patterns, it's comprised of thousands or millions of individual decisions, of which a large portion are made from habits or routine. Adding to that the individual choices of vehicle, transport services, public transportation, infrastructure, strategies, policies, and decision-makers, we start to see the complexity of the system and how much there is that we need to consider when starting this transition.

Energy agencies across Europe have an important role as facilitators in this crucial work. We need to raise awareness about the urgency, the complexity but also how to start to make changes. If we, together, educate municipalities, citizens and businesses about Ecomobility and key aspects like "door-to-door" mobility, they will gain a wider perspective to consider the full journey and sustainable options when planning everything from day-to-day travel to the whole transport systems.

One of the biggest environmental challenges we face today is the emissions resulting from our current modes of mobility, and a transition to a sustainable transport system is essential. In order to achieve this, there are challenges to be address such as reducing greenhouse gases, improved air quality, optimizing spaces, and reducing automobile traffic to create a better quality of life for residents.

A major part of this transition focuses on CO2 emissions, as well as fossil fuel dependency. According to the International Energy Agency (IEA), the transport sector contributes 24% of the total global emissions. When we focus solely on the transportation sector, the road transport of passengers and goods represents over 70% of the sector's emissions. The average emissions per capita differ between the European countries with a range from 4-10 tons of carbon dioxide equivalents per person and year, but all countries are far above the level of 1-2 tonnes regarded as sustainable.

### Learn more

**What is EcoMobility?** It gives priority to walking, cycling, public transport, and shared light electric vehicles. It promotes travel through integrated, socially inclusive, and environmentally friendly options without depending on privately-owned vehicles. (Source: [sustainablemobility.iclei.org](http://sustainablemobility.iclei.org))

**What is door-to-door mobility?** It concerns how the whole journey is carried out of more than one mode of transport, how each part of it connects, and how we can better integrate the different modes. Door-to-door planning takes into account that people do not move in a straight line; they stop at schools, supermarkets, work meetings, etc.



## A new Smart Tech Programme aims to reduce Transport Emissions for 1,000 Irish Heavy Goods Vehicles

3 Counties Energy Agency – South East of Ireland and beyond



© 3CEA

reduction in the carbon footprints and fuel costs of participating businesses.

Smart telematics technology is key to this programme. This includes tracking, fuel monitoring, remote tachograph downloads and compliance software, live footage cameras and driver awareness panels. “We use the hardware to gather real-time data, which allows us to record baseline driver and vehicle information” said Robert Steele from Corcra.

A case study carried out by Corcra using similar conditions to the Greener HGV Project between January 2017 and September 2020 revealed the following results:

- MPG (Miles per Gallon) – Improved from 7.75MPG to 8.95MPG
- A 15.4pc increase in performance/ MPG
- Saving of 658,365 L of road diesel across 60 vehicles
- Emissions saving of 1,766.79 tonnes of CO<sub>2</sub> – The equivalent of removing 866 cars from our roads for a year.

“Every fleet vehicle in the country will benefit from this cost and emissions saving exercise. We have funding for 1,000 vehicles and have already fitted 100 HGVs with telematic equipment. Any fleet company that is interested in saving fuel and reducing their CO<sub>2</sub> emissions needs to act now as we anticipate this scheme will be extremely popular.” Concluded Paddy Phelan of 3CEA.

### 3CEA – 3 Counties Energy Agency

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 Eligible companies can apply via [www.greenerhgv.ie](http://www.greenerhgv.ie) to avail of a 30% technology software and hardware grant.

A new initiative launched jointly by 3 Counties Energy Agency (3CEA) and Corcra Ltd will see 1,000 heavy good vehicles (HGVs) in Ireland fitted with smart technology in a bid to help drivers reduce carbon emissions by 10% and save up to 10% on their fuel costs.

The Greener HGV Programme project received €1.4 million in funding from the Climate Action Fund, which is a Project Ireland 2040 investment fund intended to improve infrastructure in the country and support projects working to reduce carbon emissions.

In a pilot study conducted by Kilkenny-based 3CEA, we calculated a potential savings of €17,000 per vehicle across a five-year period. This could be achieved through reducing certain habits, such as over-revving, harsh braking and engine idling. The amount of CO<sub>2</sub> saved by this process was also calculated to be equivalent to removing 866 cars from Irish roads for one year.

The Greener HGV Programme will run for two years, during which time 3CEA will handle the coordination of the subsidy grants available for Irish fleet companies to install the necessary technology. It will also be responsible for providing training.

By using data collected from the programme’s technology alongside improving driving culture, the initiative hopes to see a considerable

## Harnessing the Power of the Energy Agencies to address Energy Poverty in a ‘Net Zero’ World

by Simone Lowthe-Thomas, FEDARENE Vice-President for Citizen Energy Communities



When Severn Wye was established in 1999 as a SAVE energy agency, it was – at least in part – with the aim of bringing into reality a future free from energy poverty in our

corner of the United Kingdom. Twenty-two years on, our commitment to this goal remains steadfast – but energy poverty stubbornly remains a very real problem. A decade following the end of the SAVE programme, here’s why I’m convinced that the energy agency model remains as relevant as ever in tackling energy poverty.

### Energy poverty in England, and how the landscape has changed over the last year

In February 2021, the UK Government released a new strategy for addressing energy poverty in England, the Sustainable Warmth Strategy. Some of the highlights of the strategy include the updated Fuel Poverty metric, the removal of various state-provided benefits from residual income and a move away from using first-time fossil fuel central heating as a way of addressing energy poverty.

For residents, renovation process with having to navigate a complex range of schemes can be a minefield. However, this is also where local energy agencies like Severn Wye come in to support consumers. We deliver home energy advice, staffed by experienced and knowledgeable telephone advisors who are able to instruct and educate householders about how to use energy more efficiently, signposting to grant support where available. But in recent years, we have strengthened this further by developing a unique and innovative ‘energy advocacy’ service. Energy Advocates work as ‘case workers’ with energy poor households, taking time to understand their personal circumstances, the challenges they face and the obstacles they need to address to

overcome. They have negotiated with energy providers on behalf of residents, agreed debt reductions and repayment plans, and spent long hours helping householders restore confidence in their home energy and overcome energy poverty.

### The impact of net zero ambitions on energy poverty

Strengthened with the new Net-Zero Strategy, recent years have seen something of a revolution in the retrofit sector as new standards have been established. These have significantly changed the way domestic retrofit is approached in the UK. The ‘PAS’ (Publicly Accessible Standards) introduces a medium-to-long term plan, a whole-house approach and net-zero-by-2050 requirement to all compliant retrofit projects and goes beyond existing domestic energy assessments such as EPCs, supporting elements crucial for serving those in energy poverty.

This is where energy agencies are perfectly placed to intervene. In order to affect rapid, complex change across all industries, sectors and communities, we act as trusted intermediaries that are already deeply connected to each of these. We understand our local housing stock, the type of retrofit that works, the contributing factors to energy poverty in our area and the local network of support services that address this. The close links energy agencies have with local supply chains, industry and contractors improves the sustainability of local economies and encourages the growth of local green infrastructure. There is no substitute for local if you want to ensure lasting, equitable, sustainable change.

I am as convinced as ever that the energy agency model remains the most powerful way to tackle enduring energy poverty in a lasting, holistic, sustainable way. At the end of 2021, there is a lot about the future of energy poverty that I am uncertain about. But one thing I am sure of is that energy agencies are needed now, and for the future.

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## Tackling Energy Poverty in Households with Disabled People and Supporting Social Integration

Cyprus Energy Agency - Cyprus



© Marcus Aurelius

Tackling energy poverty has now become a central policy priority for the EU and is addressed through the Clean Energy for all Europeans package that features numerous policies and measures to monitor and address energy poverty. Within this framework, the Union of Cyprus Communities and the Cyprus Energy Agency participate in the project "Tackle Energy Poverty in Households with Disabled People and Support Social Integration", aiming to fight energy poverty at national level with a particular focus in households with disabled people, contribute to the green transition, and empower just transition.

There is a clear need for developing tailored activities and measures that target households that are concurrently disabled and energy poor. Disabled people have a greater demand for energy because of the longer periods of time spent at home, the use of assistive technologies, and their increased needs for cooling and heating due to specific health conditions. They are also at a higher risk of poverty and social exclusion as they face significant barriers to quality education and accessing the labour market.

Counting on their expertise, knowledge, networks and with a budget of €1.2 million co-funded by the Recovery and Resilience Fund (RRF), the two partners aim to set-up a financial scheme to subsidise the implementation of small-scale energy renovations, such as thermal insulation in 240-300 energy poor and disabled households in Cyprus; set a taskforce with stakeholders to identify tailored interventions and solutions, such as energy efficient equipment/appliances. Other than these, the two partners will offer personalised counselling services

for energy guidance, that will actively alleviate the incidence of energy poverty in disabled households and tackle social exclusion.

The project will have a significant impact on the amelioration of energy poverty in these households, as it will increase their thermal comfort and enhance their energy efficiency, which will in turn, reduce dramatically energy consumption over the long-term. More precisely, energy consumption is expected to fall by at least 35% per year until 2026 - equivalent to 1,193 tonnes CO2.

The biggest challenges according to the two partners, are the fact that people with disability are not a single homogeneous group, but have highly varied needs that require unique approach, and the co-funding (20%) of the actions by the households with disabled people.

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## Tackling Energy Poverty in Rural Areas

MENEA - Medjimurje county, Croatia

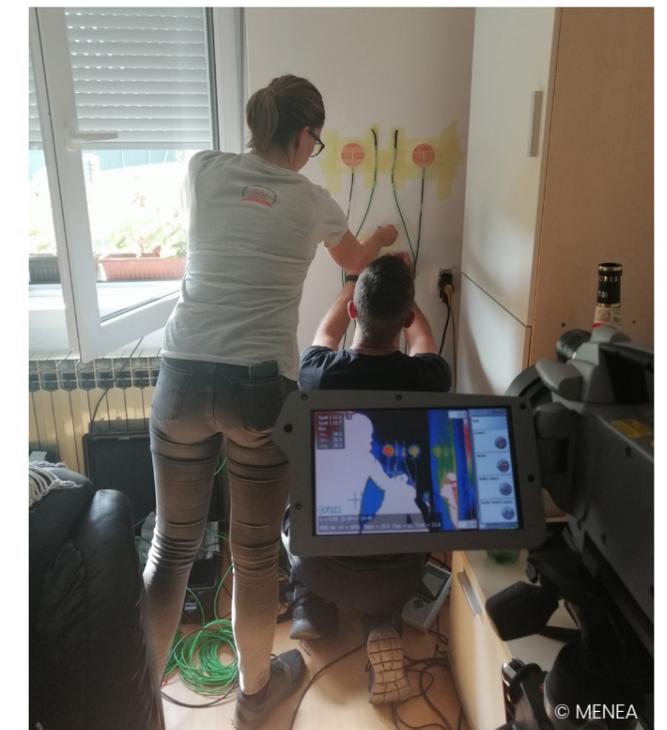
Due to high energy prices in the last years, many households are facing the problem of energy poverty. Although many regions in Croatia acknowledge this socio-economic situation and its negative impact on health and social isolation, a small number of initiatives dealing with alleviation of energy poverty were launched. The energy poverty as a problem received special attention in Medjimurje region and the Medjimurje Energy Agency Ltd. (MENEA) has been implementing project CO-EMEP which is particularly oriented towards this phenomenon

The main goal of this initiative is to raise awareness of all interested stakeholders and general public about the problem of energy poverty as well as its negative consequences. This especially goes for vulnerable groups of citizens and tackling this problem on local and regional governmental level, since they should be the front runners in alleviating energy poverty.

During the implementation of the project, the partners realised that the term "energy poverty" needs to be separated from general poverty. Thus, in the very definition, in addition to the criterion of household income and energy costs, the energy characteristics of buildings was also included. One of the most effective measures to help those households is to increase energy efficiency of their homes.

In order to promote this important measure, partners implemented energy audits and energy certification of 10 family houses - 5 in Medjimurje county, Croatia and 5 in Zala county, Hungary. Energy certification ensures collection of transparent data on energy consumption and recognises energy efficiency as a sign of quality, encourages new innovative concepts and technologies and the use of alternative energy supply systems in buildings which ultimately results in reduction of energy consumption.

In addition to energy certification, this initiative includes implementation of measurements of general building characteristics (blower door, thermography and U-value test) of family houses. Based on the results of implemented energy certification and general building characteristics and measurements, each household will receive detailed plans with proposed technical solutions and financial possibilities on how to increase their energy efficiency and thus, reduce their energy poverty or the risk of becoming energy poor.



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## Data Sharing and Monitoring for Climate Action

EDITORIAL 

by Serge Nocodie, FEDARENE Vice-President for Climate Action

The effects of climate change are now largely visible in all European regions: floods, droughts, fires, heatwaves, etc. Often, the consequences increase at a faster pace compared to what was originally planned thus creating more uncertainties at local level. Public authorities answer risks incurred by citizens in emergency situations with immediate security measures. Understanding the implications of climate change and prioritizing the measures that need to be taken becomes a priority but complex exercise for these authorities.

The monitoring of undertaken actions and the modelling of climate impacts require an access to reliable local data. As resource centre for public authorities and communities, regional and local agencies can play a crucial role in developing climate services focusing on local data sharing and supporting the planning and decision-making processes.

The method of data acquisition, processing and dissemination requires know-how in terms of setting partnerships, data modelling and visualization. In the case of adaptation, the data used to measure the impacts of climate change is very diverse, coming from multiple sectors such as agriculture, forestry, water management or tourism. For each sector, it is important to focus on the appropriate indicators by initially identifying the vulnerabilities of territories.

As these indicators can be very specific, it is necessary to form win-win data-sharing partnerships. These exchanges build on bottom-up (e.g. field study or local observation) or top-down (data disaggregation from various sources) processes. The EU ENERGeE-Watch network of regional energy and climate data hubs coordinated by FEDARENE and supported by



the H2020 ENERGeE-Watch project provides key capacity building tools and support to regional and local climate agencies willing to develop new climate data services aimed at supporting local action.

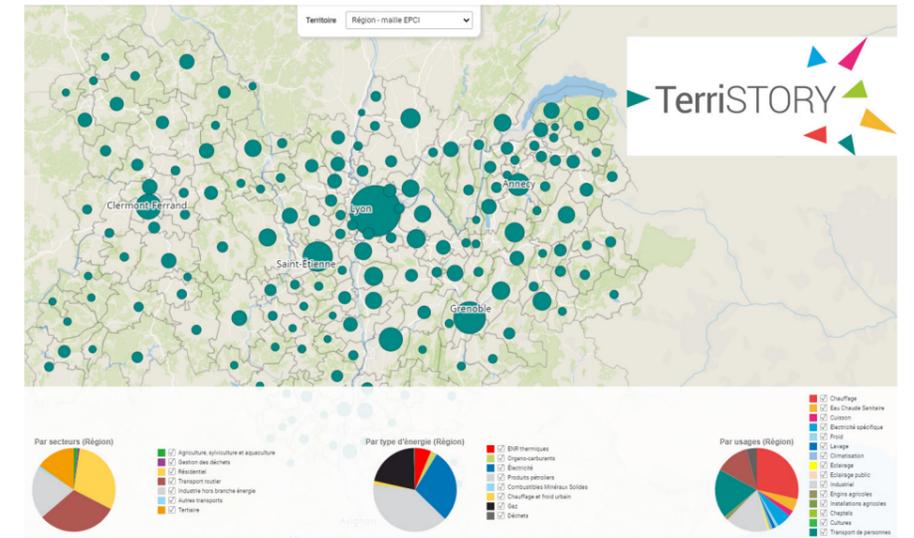
As reliable data is one of the most important tools in the fight against climate change, proper data sharing and monitoring can bring significant improvements in how we, as cities and regions, take climate action. With the help of such initiatives, local and regional energy agencies can contribute to the successful implementation of adaptation and mitigation measures by exchanging experience and know-how.

## TerriSTORY®: Enabling a Better Understanding of Local Energy and Climate Issues



AURA-EE – Auvergne Rhône-Alpes Region, France

With increasing energy and climate ambitions on global, national, and local scales, a growing need for communities to plan and track their environmental transitions led to the development and deployment of TerriSTORY®, originating in Auvergne Rhône-Alpes.



TerriSTORY®, a free-to-use, online tool with a visual interface enables local communities to check in on their current energy and climate developments and to visualise future plans and projects.

Since being launched in 2018, TerriSTORY® has seen an array of developments in the functions it provides and its areas of coverage. The tool provides the user with a clear and interactive view of current and historic energy, climate and newly added mobility-related indicators, as well as the capability to identify, plan and visualise the results of different scenarios into the future. These include simple indicators such as energy consumption and greenhouse gas emissions, more complex topics like social mobility and access to services, to modelling employment impacts of renewable energy projects.

The central foundation of TerriSTORY®'s success is the continued development of a consortium of partner organisations which has allowed TerriSTORY® to play a key role in territorial planning. Thanks to this increasing base of partners and the platform for clear dialogue, new functionalities, and indicators in TerriSTORY® ensure that primary needs are met, notably a clear understanding of progress towards set objectives.

TerriSTORY® is a fundamental tool to an increasing number of communities across France, with a growing presence in 6 regions and a vision to expand its utility to other regions both nationally and across Europe.

TerriSTORY® is soon to be “open-source” which will contribute to its usage, where the original source development code is freely available to the public and may be redistributed and modified to suit the user's needs. This will enable a much simpler uptake of TerriSTORY® across other French and European regions.

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## From Linear to Circular

by Central Finland, FEDARENE Vice-Presidency for Circular Economy



**O**ur economy is in major transition. Global challenges, climate change and biodiversity loss, forces us to find new, sustainable solutions. Circular economy is one solution to solve these wicked problems.

The aim in circular economy is to minimize the use of pristine raw materials, to reduce dependency in critical raw materials, to minimize the waste, and to circulate the valuable raw materials in use as long as possible. These all are also highlighted in various European commission's proposals under the Green deal initiative.

Circular economy has significant benefits for climate change mitigation. Carbon footprint of products from recycled materials is drastically lower, and simultaneously the other benefits to the environment are significant. Circular economy is not only recycling the wastes, but it is more industrial symbiosis and the utilization of the side streams to more added value products to replace fossil-based materials. These practices are already in place, all over the EU and globally. To boost this development, EU has a wide range of instruments for municipalities, RDI and business.

Avoiding and minimizing the waste is top priority in waste hierarchy. This principle should be implemented in business, public sector and in private households.

Europe's industry, especially electrical and electronic equipment's, is dependent on import from outside EU. Critical raw materials are rare, and mining causes significant environmental impacts. Recycling of electronic wastes and the technologies enabling urban mining are crucial to achieve independency in critical raw materials.

For smart recycling and reuse, we still need information and initiatives. The potential in sharing economy is underutilized – in the future we don't have to privately own all the equipment's, but we can also share and borrow them. These together with other innovations also can create new business and boost regional economies.

Regions have a significant role to boost circular economy. It is not only strategic level regional roadmaps, but also projects, campaigns, and support to RDI that boost this work. EU-wide cooperation via projects is essential for mutual learning – what works in Finland can work in Spain and vice versa.

We have a lot to learn from each other!

## YmpyräKS: Towards Sustainable and Circular Business

Central Finland Regional Council – Central Finland



In recent years, the awareness of customers has increased, and simultaneously new opportunities for SMEs to make their business even more sustainable are available. Sustainability, circular economy, carbon neutrality, compensations, zero emissions – all these require business to critically evaluate and improve their operations. To support SMEs in their transition, the Regional Council of Central Finland, together with the City of Jyväskylä, the Chamber of Commerce in Central Finland and Entrepreneurs in Central Finland have created a platform for business about mutual learning in sustainability.

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This peer learning enables SMEs to find the most effective means for sustainability in their business.

YmpyräKS – environmental sustainability for business in Central Finland is open for all business to discuss their achievements and challenges in environmental sustainability. The core of the work are Friday morning coffee sessions online, where companies can share their experience with the attendees. Seminars arranged under the umbrella of YmpyräKS have specific themes, that is covered more in depth with several expert key-note lectures.

This peer learning enables SMEs to find the most effective means for sustainability in their business. For SMEs, this external support is required since in majority, they lack the knowledge on environmental sustainability.

Until now, we have learnt in these monthly Friday mornings coffee sessions about solar energy, outdoor lightning, energy efficiency, sustainable tourism etc. In each session, we gather 20-60 attendees, mainly from SMEs. Network brings together currently almost 200 people from business and business support organisations.

In 2022 YmpyräKS will develop their operation by the support of the Ministry of Environment, with the further focus on enabling SMEs transition in environmental sustainability. The focus is to expand the network, to develop new activities together with SMEs and to include SMEs also from rural areas.



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## Biomass Criteria for Sustainable Energy Development in the Central and Eastern EU Member States

Energy Agency of Plovdiv – Bulgaria



The Central and Eastern Europe (CEE) countries are notorious for the highest share of residential heat mostly of raw firewood and rarely of biomass-based district heating. They are vulnerable to the threat posed by an expansion in commercial-scale biomass use for heat and power, as a result of coal phase out.

The Energy Agency of Plovdiv (EAP) has been leading a national policy-making process for improved utilisation of biomass for heating and advocating the sustainable energy development of the local communities with high biomass-dependency. EAP has been investigating the national and EU policy documents relating to the biomass utilisation until 2030 and 2050, incl. REDII and Fuel Quality Directive, to propose improved criteria and mechanisms for achieving climate targets on local and national level. These recommendations will include alternatives for pilot local municipalities with firewood dependency and are advocated towards national policy-makers in a series of working meetings and roundtable sessions.

EAP seeks to have an impact on enhancing the implementation of the EU climate and energy framework mainly through the national transposition and implementation of REDII and the implementation of the National Energy and Climate Plans.

To support the local authorities in defining better pathways towards sustainable energy development, EAP has started developing a specialised tool to estimate the alternative energy scenarios if local biomass use is replaced by other energy sustainable sources. Additionally, EAP has continually expanded its R&D facilities for biomass utilisation – the Laboratory for testing and research of biomass, compost, and biodegradable materials, by becoming a testing body of three EU certification schemes – ENPlus, GoodChips®, BIOMasud® which expand its capabilities to investigate the biomass potential and propose evidence-based solutions to the increased biomass utilisation for energy.

Through intensive advocacy, EAP is aiming to orchestrate all policy-makers and biomass stakeholders in a coherent partnership that will agree on improved biomass sustainability criteria and mechanisms in the national and local policy documents. Without concerted support, Bulgaria and other CEE countries will witness a dramatic increase in the ineffective biomass utilisation, with serious implications not only on the energy and climate targets, but also on the environment, forests and vulnerable local communities.



**EAP has continually expanded its R&D facilities for biomass utilisation.**

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## Enhancing Energy Sufficiency

EDITORIAL

by AREC Île-de-France, FEDARENE Vice-Presidency for the Energy Transition

Energy sufficiency is an approach that aims to reduce energy consumption through changes in behaviour, lifestyle and collective organisation (i.e. less car use, more local and better quality food, etc.). Energy sufficiency is therefore defined by what is a matter of lifestyle choices and thus behavioural choices, differentiating from energy efficiency which concerns the use of technologies that reduce energy consumption at the scale of a given object or system.

This has consequences on the energy transition, as we have realised at AREC IDF. Indeed, Energy sufficiency can be seen as the first pillar of the transition besides energy efficiency and the development of renewable energy sources. Moreover, energy sufficiency is at the core of public policies dealing with mitigation and adaptation which will support the world climate objectives.

The word now exists in several languages, such as “sobriété énergétique” in French and “Energie Suffizienz” in German. The launch in 2018 of an international expert network on sufficiency (ENOUGH), and the website [www.energysufficiency.org](http://www.energysufficiency.org) are two illustrations of the increasing interest for the topic.

In FEDARENE, sufficiency was highlighted by the organisation of three webinars organised in 2020 and 2021 and through the creation of a dedicated working group. These have allowed to share FEDARENE’s members expertise on the topic and to develop new skills within the network.

Many sufficiency solutions exist to consume less and better and several solutions have been implemented by FEDARENE members in the framework of local or European projects.

Among shining examples, Swedish members promote energy sufficiency in mobility: eco-driving training, citizen challenges, and equitable access to transport. The COBIUM project in particular aimed to develop a range of electric cargo bikes made available free of charge by municipalities to citizens, city services and goods deliveries.

In the Energy Neighbourhood European project, B&SU (Germany) has set up house-to-house challenges to encourage people to reduce their energy needs through competitions between households.

All over Europe, members are encouraging local authorities, economic stakeholders and citizens by the means of educational tools, capacity building, project development to teach and implement sufficiency.





## Energy sufficiency in the Ile-de-France Region

AREC IDF - Île-de-France, France



Following the organisation of a series of workshops on energy sufficiency since 2019, AREC Île-de-France, the energy and climate department of the Paris Region Institute, reinforced its commitment on this topic through several initiatives:

- Organisation of the first regional conference on energy sufficiency in December 2021: this event allowed to present the activities of the working group engaged in the workshops organised since 2019. Indeed, workshops participants (experts, local authorities, enterprises, energy & environmental associations and AREC) developed an analysis of a fair, sustainable, desirable sufficiency for the region. Best practices and scenarios of sufficiency were presented by the national energy agency ADEME, AREC and energy agencies, but also universities, architects and sociologists who have highlighted the societal dimension of energy sufficiency.
- Launching of a regional think tank called the Paris Region Sufficiency Factory: by bringing together AREC and local actors, the think tank aims at supporting local authorities and enterprises to initiate and implement energy

sufficiency strategies. To that end, capacity building sessions targeted electing people will be developed.

- Creation of the regional energy sufficiency observatory named La Coupole (the dome): the observatory will collect the regional, national, European and global initiatives and highlight the best practices on cartographies and in videos. An assessment will be carried out on the indicators of success, levers and barriers, pilot, cost, targets and specific objectives of such projects.
- Launch of a study on the images related to energy sufficiency
  - To build images of energy sufficiency in the Ile-de-France region that make it appealing, based on the sociology and behaviour of individuals and organisations.
  - To formulate recommendations for a regional energy sufficiency approach that will enable Ile-de-France local authorities to get on board by examining the levers to be activated and the barriers to be removed and help local authorities commit to a long-term approach and build their own narrative.
- Follow-up of an experimentation in a local authority after a call for expression of interest: the objective here is to test the assumptions and results of the study, and thus, the overall success of the sufficiency strategies

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## Cargo Bikes are an Energy Sufficient Solution to Urban Transport Needs

Energikontor Sydost - Southeast Sweden



Energy sufficiency is energy efficiency risen to another level. It's about having enough, but not using too much. It's about making other choices, so we all can live within the limits of our planet's resources.

In urban communities, around 80% of the car trips are shorter than 3-4 km. Where a normal bike or taking the bus might not be a convenient alternative, an electric cargo bike could very well do the job.

We all know that a sustainable transport system does not happen overnight, but where do we start? There is not just ONE solution for us to achieve a sustainable transport system. The first step can be to ask yourself – is this trip really necessary? If it is – what are your choices?



### Our mission

As an energy agency, our mission is to support the public sector, businesses, and the citizens to make other choices, leading to an energy sufficient society. We know how important cities are in the transition and that they often act as forerunners.

In the CoBiUM project, cities have been creating awareness of cargo bikes and showing how they can work in everyday life through lending schemes aimed at residents, businesses, and municipal services. The purpose was to give potential users a chance to try riding a cargo bike for a period, providing the personal experience needed before deciding to buy one, as a cargo bike is a substantial investment.

### So, what did we learn?

- Between 20-40% of lenders tend to buy a bike within two years, according to Swedish experiences with bike libraries;
- Benefits for the city are reduced emissions, reduced noise, and less traffic congestion;
- The estimation made by Swedish traffic researchers show that a cargo bike saves 5 tonnes a year compared to a small truck;
- Early adopters are important as they provide feedback to an approach, and they will also be positive ambassadors within the organisation;
- There are many types of cargo bikes. They can have 2, 3 or even 4 wheels; have cargo on the front or in the back; design to carry people, cargo or to provide services. The type of the bike depends on the needs;
- Infrastructure plans for bikes need to address the size of cargo bikes, for bike lanes, parking, and such.

Having an energy sufficient approach to travel means choosing to use a sustainable mean of transport such as a cargo bike instead of a car, even if the car is affordable or more convenient, hence, making an active choice to be energy sufficient.

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