

Welcome to the second CITyFiED Newsletter!



Future Efficient Districts and cities

Welcome to this second edition of the CITyFiED newsletter which comes as our project has been gathering significant momentum. The City Cluster is up and running, and since October we have been reaching out to other towns and cities across Europe in order to form a wider Community of Interest. The latter already has 12 cities signed up and is well on the way to incorporating three times more. It is designed to enable interested cities to identify the most efficient solutions, partnerships, results and experiences for achieving nearly zero energy districts unlocked by CITyFiED.

As part of this set up, a Board of Representatives has been put together so that all members, whatever their category – citizens, policy makers, technology developers, from the various cities and associate cities – can have their say and benefit from the replication potential of the project. To this effect, the 2nd periodic meeting that convened in Soma, Turkey, at the end of March, welcomed the 10 City Cluster cities along with representatives of the Community of Interest, thus marking the first time all the project partners and associated cities have come together. The watchword in CITyFiED being replication, the meeting in Soma led the Board of Representatives through a workshop on replication potential and covered the project's methodology. This included a briefing on how the City Cluster will virtually test the model based on the demonstration sites.

With the City Cluster and now the Community of Interest, as well as the core project partners, we already have the makings of a credible, high-impact group able to listen and to be listened to that will allow maximize the replication potential of CITyFiED results.

Over the coming weeks and months, emphasis will be on capitalising on the all important face-to-face links made at the Soma meeting and on making sure the community has all latest tools to ensure the project's targets are met in terms of smart solutions and replicability.

Ali Vasallo Belver CITyFiED coordinator



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Towards a systemic approach for smart cities: major works ahead as CITyFiED changes gear

A lively and productive working environment was the signature for the second CITyFiED project meeting held in Izmir and Soma, Turkey, 24-26 March.

The project consortium went straight to business, with a first day dedicated to key project issues and progress – but not before some words of welcome from our generous hosts. Muzaffer Tunçağ of İzmir Metropolitan Municipality and Yılmaz Gençoğlu from Manisa Metropolitan Municipality outlined how the project mirrors and enhances their respective strong drive towards smarter, healthier cities for all – from traffic management to energy efficiency. They also underlined the historical and topical significance of the venue – a gas works that brought light to the homes and streets of Izmir and an innovation hub of its time, when built in the 1860s. Today, it was our turn to reinvent the energy of our homes and cities.

Definitely of our time was the consortium discussion on smart monitoring and management systems, led by Felix Larrinaga of Mondragon. The team was able to draw on fresh insight generated by tests on early prototypes or mock-ups that recently served as testing elements at Laguna de Duero (Spain) in late February – essential to the deployment of a methodology in the rest of the demonstration sites in Sweden and Turkey. Several residents and CITyFiED consortium members participated in the test to measure user acceptance of the technological and non-technological solutions devised as tools to reduce energy consumption. The Work Package 4 team also took the opportunity to discuss in detail the broader monitoring of environmental, technological, economical and social indicators that makes CITyFiED a truly holistic endeavour as well as finding the right cloud-based solutions to aggregate real-time data sets from multiple locations.

Further break out session topics gave some precious face-toface time to exchange on the replication model and methodology at the very heart of the project. Jeanette Green and the team at <u>IVL Swedish Environmental</u> <u>Research Institute</u> had been working hard along with Work Package 1 partners in advance of the meeting to define the replication model. This represents a framework for assessing and putting into motion the process of district renovation. The model examines technical and non-technical barriers and an energy analysis before examining a range of appropriate business models in order to define the most effective path to replicating CITyFiED <u>energy impacts and results</u>.

If the replication model represents the starting point for feasible success, <u>Elena Mendéz Bértolo of Acciona</u> and the consortium team are working on a <u>strategic and integrated</u> <u>methodology</u> on how to arrive at the final goal. Development of innovative and cost effective methodology and procedures for planning, deploying and replicating energy efficient district retrofitting actions are being structured around key themes and steps. These include the environment and resources; governance; social well-being; economy and innovation; and the built environment.

The development of the replication model and methodology are pillars of the project and the initial work was shared with a group of 19 city representatives at a special workshop held the next day for members of the <u>City Cluster</u> and the <u>Community</u> <u>of Interest</u>.





Relevant, pertinent, applicable – a pathway to replication and exploitation for CITyFiED

With such a wide range of expertise and activities generated by the project, exploitation leader, Aude Pelison-Scheker and Valerie Bahr of <u>Steinbeis</u> <u>Europa-Zentrum</u> have been busy from day one. Beginning with a hands-on exploitation workshop at the first project meeting, the process of identifying and refining CITyFiED assets has been non-stop.

A toolkit of expertise was presented to the consortium, consisting of three pillars: innovative technologies, design and strategies; and models. As project results mature and accumulate, a range of toolkits to support delivery on each of these areas will be made available – in particular to the community of cities involved in the project. Also outlined at the meeting was further information and tools to help project members. This included an ongoing 'tech watch' service, advice on navigating intellectual property issues, market access and outreach.

Project coordinator Ali Vasallo expressed his satisfaction

at the progress and collaboration on-hand in advance and during the meeting – and especially that this gathering could take place around the Turkish demo-site. "This is a large-scale, multi-country demonstration project; including the largest residential renovation site in Europe at **140,000m²**. These are real world scenarios, delivery real world solutions to complex energy and environment problems. I am pleased to see the project gaining real momentum now".

Concerning the projects ambition to replicate initiatives as widely as possible he continued, "Vitally, our results are proven solutions. Our objective is to now continue the good work and make these available to cities around Europe. CITyFiED outputs must be a cost-saver and time-saver to local authorities and partnerships looking to become smarter cities... and I think we are well on track to do that at scale."







Policy-makers, decision-makers and technical experts working together to support CITyFiED ambitions to make Europe smarter, faster

Moving activities to SOMA Electricity Generation & Trading Joint Stock Company (SEAŞ) premises and the demonstration site for day two, the CITyFiED consortium were delighted to be joined by Mr. Mario Dionisio of the European Commission and 19 city representatives from 15 cities and one region.

In order to better target content and exchanges, the group split into two, with technical partners delving in to project issues and renovation works in detail, while the Board of Representatives from cities were privy to discovering each other and the CITyFiED work for the first time.

Kicking off the municipalities' session, participants were invited to share their needs and expectations. At first glance, testimonies revealed a range of climatic, political, technical and personal variety before revealing a common and powerful need – that of a methodology, a strategy to facilitate delivering renovation and smart city initiatives more coherently and at scale.

From the start, it seemed the project and participants make a good fit. For Alessandra Barbieri from <u>Florence, Italy</u>, CITyFiED could be the trigger for 'internal replication' across the city. Bo Karlsson from <u>Botkyrka, Sweden</u> and Özlem Tugac of <u>Izmir Municipality</u> expressed a desire for the project to help joint the dots between good initiatives and available technology to create a more systematic route to success. Project partners, IVL, Steinbeis, Acciona, Cartif, Tecnalia, Veolia, Lund and youris.com were more than happy to elaborate and discuss how the project could respond – covering a range of replication, methodological, exploitation and dissemination issues in formal sessions and coffee break discussions.

Peer-to-peer exchange within the group was clearly highly valued, and an afternoon session led by Linda Birkedal of Lund

<u>Municipality</u> gave an opportunity to do so. Splitting into 'semistructured' discussion groups, each was mandated to explore a non-technical barrier to successful deployment. Based on Lund's experiences, it was paramount to identify non-technical issues as early in the process as possible. From legal and organization to financial and even emotional, large-scale works can stumble if not addressed by proper consultation and discussion Ms Birkedal shared. Hopefully this session was the first of many take-aways and the beginning of a productive and fruitful relationship with the CITyFiED team for the municipalities.

To round off the theory, participants conducted an accompanied study tour of the Soma demonstration site and works. A mix of technical partners including <u>Mir Unique</u> <u>Solutions</u>, <u>TUBITAK</u> and <u>Reengen</u> gave insights to supplement a detailed walking commentary from <u>Demir Enerji</u>.

Finally, as rare and energizing face-to-face meetings are, they are also rare. Work package leader, Jeanette Green and communications specialist at youris.com, Alec Walker-Love were pleased to outline a number of opportunities for online learning, resources and communications tools to carry the momentum to the next city cluster and community of interest workshop and study tour. The project team certainly signed-off more motivated than ever to bring practical, performing solutions to meet the municipalities' high expectations and energy ambitions.





Virtual models to make cities greener

Retrofitting districts with sustainable energy systems can be a success if enough data is available to analyse the suitability of each chosen energy-saving solution

Making a city or district energy smart is, first and foremost, an **exercise in good planning**. However, such green planning tools are still in their infancy. The trouble is that every city is different, every district unique. To replicate best practices for use in other context, **it is important to develop models that can help better assess the actual source of energy savings**. Scientists in **Sweden** have just started compiling such a virtual model, designed to calculate the energy saving potential of a district.

The model was initiated by the team of **Anna Jarnehammar**, director for business &market development at IVL, the **Swedish Environmental Research Institute** in Stockholm, Sweden. It has already been applied to a neighbourhood in **Lund**, **Sweden**. Now, IVL is also bringing its model to contribute to **CITyFiED**. "On a general level we can show how much carbon dioxide a district can avoid by implementing certain kinds of measures," Jarnehammar tells CITyFiED.

In addition, the model gives an indication of how it might be possible to replicate the energy saving improvements, from one city to another. As input for the model, Jarnehammar's group uses data gathered from the three showcase districts of the project, located in Lund, Sweden, Laguna de Duero near Valladolid, Spain, and Soma, Western Turkey. This data, for example, includes construction details of houses, budget and development plans of the city councils and citizens' opinions. "Besides the technical part, we do interviews in order to really find out what the cities plan for the future in general.[This means checking] if they have enough money allocated for energy efficient measures or how mature they are with regard to new technological renovation options," says Jarnehammar. This information is necessary to assess whether retrofitting efforts are likely to become a success.

Jarnehammar's counterpart in the project is **Elena Méndez Bértolo**, geographer and researcher at the construction company Acciona in Madrid, Spain. She is leading the development of a methodology for **turning city districts into energy efficient neighbourhoods**. Jarnehammar's model will be used to analyse if a district is suitable for retrofitting. As a complement, **CITyFiED** methodology comes into play involving stakeholders in the decision process with the proposal of optimal and adapted to each site retrofitting scenarios. "Our approach is to **provide tools and techniques developing a technical support for the decision making process**," she tells CITyFiED and continues: "The methodology we are developing tries to analyse the current situation of a city and relates it with its energy efficiency objectives in terms of energy efficiency. It is not an automatic work as it needs real contacts with the industry, the authorities and the citizens of a district." A similar approach has already been realised by the project <u>Morgenstadt</u> – which means city of tomorrow – supported by the largest German research organisation, the <u>Fraunhofer Society</u>. Whereas CITyFiED will demonstrate its models through showcases in actual cities, the Morgenstadt project focuses on doing research on scientific and technological developments. Indeed, unlike CITyFiED, Morgenstadt has developed an analytical framework to assess the sustainability profile of cities across eight urban sectors and with reference to their complex interactions, including energy, traffic, water, and others. However, "When trying to compare cities, it does indeed not make sense to refer to the entire city system with its complex interactions. Instead it is necessary to find benchmarks for single sectors, for example the energy sector," explains Alanus von Radecki, the Morgenstadt project leader, based at the Fraunhofer-Institute for Industrial Engineering IAO in Stuttgart, Germany.

In the next phase of the research, the Morgenstadt partners will concentrate on demand-oriented solutions for cities. "We have seen a gap between supply and demand in technological solutions. City retrofitting requires technologies which integrate with other city sectors, while most products do not address the complex city interdependencies," von Radecki says. CITyFiED methodology will help to bridge this gap. Meanwhile, Jarnehammar's model will show if a city – in cooperation with research and industry – is open for new ideas and able to nurture innovative solutions.

Hanns-J. Neubert





Cities join forces to retrofit districts

All over Europe cities and towns strive to become climate smart. They revamp their energy districts, step-by-step, while looking across borders to learn from best practices.

Cities have started to join forces to become more energy efficient. This trends stems from the findings of the first climate assessment report of the Intergovernmental Panel on Climate Change (IPCC), published in 1990, which was quite alarming. It led to the creation of <u>Energy Cities</u>, the European association of local authorities in energy transition. Today, it counts more than 1,000 cities from 30 countries.

"Energy Cities represents the interests of the cities on European level and try to influence European legislation in the way that cities can implement the energy transition on site," explains **Eckard Würzner**, who is the president of Energy Cities and the mayor of Heidelberg, Germany. He adds: "The association helps to understand the sometimes quite complex European legislation, supports funding of measures and programmes and encourages the member cities to participate in European-wide projects."

Many cities in Europe have already shown that energy transition and reduction in carbon dioxide emission are possible. Such successes are to be emulated by copycats. However, "to promote their achievements, better European and national frameworks are required," Würzner tells youris.com. "Unfortunately European policies do not always coincide with local requirements, challenges and capabilities," he notes. His own home town, Heidelberg, was the first German city to adopt a communal concept for climate protection in 1992. And it has currently one of the largest passive house districts in the World, expanding constantly in an area of 115 hectares, near the city centre.

The trouble is that legislation is behind, when it comes to supporting such initiatives. This is particularly the case in Eastern European countries. There, municipalities are confined to State or commercial monopolies. Yet, rather large showcase projects are now flourishing everywhere in Europe. One of them is the EU-funded project, <u>CITyFiED</u>, which started in April 2014. As part of the project, with optimised energy and heating systems. The three showcase districts have been selected to cover three climate regions, being based in Lund, Sweden, Laguna de Duero-Valladolid, Spain, and Soma, Western Turkey. The project objective is to achieve a saving of 50% of energy requirement after retrofitting all the 2,328 dwellings; thus it is estimated to affect 7,250 citizens.

"We are implementing innovative systems in order to cover all energy demands of the buildings with biomass, solar or thermal energy, in parallel with a drastic reduction of the thermal demand installing high performance insulation solutions in the buildings," explains **Sergio Sanz**, who is the project coordinator and energy division deputy manager at the **CARTIF** <u>Technology Centre</u> in Valladolid, Spain. "For electricity, we have interventions with photovoltaics and combined heat and power production. In Sweden, thermal heat will be exploited," he adds.

He believes that it is also important to cooperate with the local industry. Not only do they develop the solutions, but they can also deliver recovered heat. This way, even new business models can come up locally over time. However, citizens participation is only limited. "They are involved because we need their opinion about the projected benefits, and they should, of course, agree with this intervention," says Sanz.

Hanns-J. Neubert

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District heating: Sweden is leading the way out of fossil fuels

By relying on district heating combined with heat and power production, municipalities in Sweden power their cities from renewable energy sources.

Nordic countries have achieved a great independence from fossils because of their widespread district heating systems. District heating is a smart way to avoid using fossil fuels to heat buildings. It is typically based on wood, peat and other biofuels, or household waste. But other non-fossil fuel sources, such as deep thermal heat—sourced from between 100 to 500 meters below the ground—or recycled heat from industries can be used as well.

Two Swedish experts talk to youris.com about ways of removing carbon-based fuels from the heating equation, and what other municipalities can learn from their experience. One of them is Karin Ericsson, a senior lecturer at the **Department of Environmental and Energy Systems of Lund's University**. Her <u>research</u> field is energy system analysis and bioenergy in Europe. The other is Mats Didriksson, who is director for the business area energy of <u>Kraftringen</u>, an energy company owned by four municipalities in Southern Sweden near the city of Lund.

What is the history of the development of district heating in Sweden?

Karin Ericsson: Overall, district heating represent about 60% of heating in Sweden. In fact, 85% of all multi-dwelling houses and all public buildings are connected to district heating. Today all towns in Sweden have district heating networks.

It started in the 1950s, when the municipalities saw an opportunity to reduce air pollution in the towns. They wanted, at the same time, to produce electricity efficiently, as the demand was rapidly growing. Efficiency was very important. They opted for combined heat and power production, which is much more efficient than condensed power production.

In Sweden, there is generally a very high acceptance for collective infrastructure solutions; especially in the 1950s, 1960s and 1970s. From the beginning, district heating was organised within the municipalities, which took the initiative to build the systems. Later, they were transformed into municipality-owned companies. During the late 1990s, some of them were sold to national or international companies.

What can cities in other countries learn from Sweden's experiences?

Karin Ericsson: District heating has enabled the Swedish heating sector to become almost completely fossil-free. We use mainly biofuels like wood and peat, but we also burn household waste. When the industrial context in a given town allows it, we can use waste heat from industry.

In the case of Sweden, the policy pressure on the building and heating sector has been quite strong. It is quite easy to operate district heating. This is because you do not have to take the international context into account, as is the case with electricity for example. But building such infrastructures is difficult and expensive. However, municipalities are the most important actors even in other countries, as they are the ones who have to take up the initiative.



How has a municipality owned company like Kraftringen sourced sufficient renewable energy for district heating?

Mats Didriksson: Sustainability is high on our agenda. In terms of renewable energies, wind and solar power is just one side of the equation. Of course, we also use such power sources, but we also look at the regional perspective of renewables. In Sweden, we talk a lot about biofuels as replacements for coal-fuelled power plants; and thus built bio-fuelled power and heating plants. This shift has been going on in the past 20 to 30 years.

When we planned our new combined heat and power production plant—north of Lund—we assumed that we would buy wood from the middle region of Sweden. But then, we witnessed the development of a local biofuel market in an area of about 60 kilometres in diameter around the plant. It offered very competitive wood prices, and started as early as during the building phase.

What about competition?

Mats Didriksson: There is no competition from other district heating companies. But we have a tough competition from heat pumps. Electricity is expected to remain at relatively low price in the next five or ten years. However, there will be a pressure from the customers, who may switch to these systems.

What can other European cities learn from Kraftringen's experiences?

Mats Didriksson: District heating is not very common in continental Europe. Except in Eastern Europe, where district heating is still broadly based on coal burning. The combined heat and electrical power production method in our plants is today a very economically and financially sound way of producing energy.

The way we are optimising the production and distribution system is something that, I know, other countries could learn from. With our holistic system approach to district heating, we look at the whole environment, not just the production plants nor just the distribution networks. For example, if the system network is efficient, temperature in the plants can be reduced.

Hanns-J. Neubert



Demir Enerji

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<u>Demir Energy Consulting</u> provides high quality project management and consultancy services in a wide set of innovation areas.

The team members are involved in pioneering and innovative local and international projects. Demir Energy consultants are experts in different areas and have a holistic approach to their projects from technical, legal, project management and financial point of view. Based on their extensive knowledge, it offers solutions on sustainable energy, energy efficiency and climate change to multinational corporations, industrial organizations, building companies, private investors, service providers, local authorities, NGO's and energy consumers.

Demir has been a pioneer in strategic studies, road-mapping, action plans and a host of associated actions. CITyFiED has given us a great opportunity to do it for real – and within a stimulating multinational environment

Baha Kuban, Demir Enerji

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Contact

Esra Demir edemir@demirenerji.com



Istanbul Technical University

The <u>Energy Institute</u> at <u>Istanbul Technical University</u> is a university-based research and development organization in the broad area of energy science and engineering.

It provides education, research and collaborative opportunities with other research institutions (like the Energy Institute of TUBİTAK, and UNIDO-Ichet) and with state agencies on studies aimed at solutions of energy problems. The institute was formed by the reshaping of the Nuclear Energy Institute, which had been founded in 1961. In 2003, the institute was renamed as the Energy Institute to carry out advanced teaching and research activities on energy in a wider scope.



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Contact

Hatice Sözer sozerh@itu.edu.tr



Mir

<u>Mir Unique Solutions</u> is a company of <u>Mir Holding Group</u> located in İstanbul (Turkey). The group develops and licenses technologies in various disciplines.

The main principle of the company consists of a project-based execution of all their activities thanks to their expertise in technology and information management. Mir collaborates with various universities and academics primarily in order to enhance the opportunities at each project.

All R&D studies of the company are defined and performed as individual projects. Specialists from various disciplines (Mechanical Eng., Chemical Eng., Chemistry, Physics, Materials Science Eng., Agricultural Eng., Electronics Eng., Food Engineering etc.) take part in these studies. This working habit brings synergism and leads to genuine ideas.

We're delighted to be bringing our extensive research work up to a full-scale implementation within the CITyFiED project. Notably, some game-changing composite district heating system pipes with significantly more longevity, chemical strength and pressure resistance, along with a novel heating and cooling system to be worked with district heating more efficiently

Aliihsan Koca Department Leader, Thermo-Fluid and Energy Research

mic unique solutions

Contact

Aliihsan Koca IHSANKOCA@mirholding.com.tr





Reengen is a smart grid company that develops solutions for smarter buildings and smarter grid.

The power of the Reengen comes from its invaluable merits; complementary core competencies of team members, belief in success, creating inspiration and the vision on disruptive clean energy technologies. **Reengen** is the developer of **Provolta Energy Operating System** which is the core technology for the smart grid, the future of energy sector. The solution is being applied to make tangible energy efficiency gains at the demonstration site in Soma, Turkey. It will provide residents with actionable intelligence, real-time energy and condition monitoring and improving asset performance by optimization and predictive maintenance of HVAC equipment.

Reengen uses data science centric technology employing machine learning algorithms and a physics-based modeling of connected equipment and buildings to make this a truly state of the art solution being deployed within the project. Provolta is also scalable and cloud-based making it a suitable asset for replication.

Combining technological developments with existing problems on energy sector increases the significance of a big energy transformation called Smart Grid. Buildings and grid have to get ready for such a revolution on energy sector.

Burak Sefer

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Contact

Burak Sefer burak.sefer@reengen.com





Multiplying options, reducing risk, increasing impact

Accelerating delivery of smarter cities and districts to achieve our energy goals

Making substantial reductions in energy demand, green house gas emissions and incorporating renewable technologies at district and city level is a tricky task. A new community of cities is discovering real solutions with real impact as part of the <u>CITyFiED project</u>.

What does a city with strong scientific skills, plans for a multi-fuel CHP plant and new sustainable housing districts; a future European Capital of Culture developing a powerful energy master plan; and district pioneering citizen and public engagement in redesigning its energy future have in common?

They are all part of a growing '<u>Community of Interest</u>' navigating the complex systems, partnerships and financing formulas to find the most efficient route to achieving near zero energy districts as part of the CITyFiED project.

The project knowledge and experience is anchored in large-scale works at <u>three demonstration sites incorporating technologies</u> <u>and approaches to achieving innovative and efficient districts</u>. These sites are located across a range of climatic conditions in the cities of Lund, Sweden, Laguna de Duero, Spain and Soma, Turkey. Between them, they will achieve more than70 kWh/m²yr of energy savings, a reduction of at least 13,000 tons in CO₂ emissions will be achieved through the retrofitting of 2,300 dwellings and change the lives of over 7,000 citizens.

"Our approach has been engineered to be as accessible as possible – based on a sound and feasible replication plan, which will be virtually tested in a <u>City Cluster of 11 representative European cities</u>" explains Markus Paulsson of the city of Lund and coordinator of the three central demonstration sites. "But the largest 'return on investment' if you like, is saved for a group of 40 cities and districts – as they will discover first hand the smartest and fastest routes to success, based on a sound methodology and proven experience".

Project coordinator Ali Vasallo of research center **CARTIF** outlines the thinking - "we know time and resources are precious, so from the start, we wanted to create <u>a low investment</u>, <u>high-impact formula</u> designed to help facilitate a city or districts' energy goals". Knowledge and technology transfer is delivered by a series of webinars and accompanying resources available live, as part of a group, or to consult at anytime in a dedicated "CITy Smart" portal reserved for Community of Interest (COI) members.

The approach of COI members has been just as pragmatic and constructive. <u>San Sebastian general manager Euken Sesé</u> is keen to have exchanges with the group on business models, the second sec

systems and district heating whilst sharing their systems approach to energy efficiency developed in the <u>STEEP project</u>.

In Estonia, Tartu's <u>Smart City Lab</u> is a lively hub for improving public services and business processes. For executive board member Rene Tonnisson, "Smart City development is a high priority for Tartu in coming years and we are looking for suitable networks dealing with related issues in order to learn from other cities having similar ambitions and challenges". Tartu has plenty to offer in exchange, "With a strong set of experiences in district heating and cooling - that reach up to 90% penetration in some cases – and a range of electric mobility solutions already deployed, I am looking forward to a mutual transfer of knowledge and experience sharing between the CITyFIED partners".

For Zabrze, Poland, joining the CITyFiED Community of Interest is an ideal support to their plans not only for wider European collaboration, but for a new energy-efficient district using renewable energy sources such as small-scale photovoltaics integrated into building designs and enhancing development of a biogas plant.

In Belgium, COI member Brussels are looking to CITyFiED to help on both the strategic and operational levels. <u>Mohamed Ouriaghli</u>, <u>Deputy Mayor for Housing, Equal Opportunities and ICT</u> outlines a couple of reasons for joining the project: "Brussels is very busy organizing our smart cities projects and looking to the future. We are familiar with the concepts and have strong foundations; but in the past lacked a unified strategic plan" he outlined. "In addition, with responsibility for around 3,000 housing units, we always need to be on the look out for new solutions. CITyFiED is exactly the kind of laboratory that will develop our know-how on these topics".

Ali Vasallo is enthusiastic about the ability of the community to inspire each other and the project's ability to support these leaders in European energy transition: "We aim to provide the technical knowhow and a framework for local leaders to make more confident, costeffective and time sensitive decisions for reaching their stated ambitions". "This applies to cities and districts of all sizes and maturities with COI members ranging from 15,000 inhabitants to 1.5 million and above."

The CITyFiED Community of Interest is open to towns, cities, districts and relevant municipal housing and energy agencies from across the EU. Interested parties in joining the community should contact <u>alec.walker-love@cityfied.eu</u> to benefit from one of the limited places available.



Life at the coalface: CITyFiED consortium & cities visit to Soma demonstration site in Turkey

Nothing can replace the value and insight gained by a hands-on visit. And so it was the case when combining a recent project meeting with technical visits to the <u>Soma</u> <u>demonstration site</u> by members of the project consortium and cluster cities.

The retrofitting interventions in the district of Manisa Province cover an area of 41,158 m² across 346 dwellings on a site owned by SOMA Electricity Generation & Trading Joint Stock Company (SEAŞ) and used to house its personnel.

Two different retrofitting strategies have been proposed at the site and shared with the visiting groups. The first consists of application of **passive design** strategies on the building envelope adding defined building elements such as insulation. The second strategy consists of integration of **active design** strategies such as building integrated PV and solar collectors as a renewable technology and innovative integration of monitoring systems from partner **REENGEN** for providing best indoor comfort conditions and energy savings. Delegates were able to visit an example of 'before' and a series of apartments currently undergoing the significant works.

Demir Enerji is overseeing the on-site interventions at the demo site and developing 'green certification' for the renovated buildings. Cofounder Caner Demir was on-hand throughout the visits to give expert testimony on the works. During the visit he elaborated on the push for BREEAM certification. "The certification is in line with EU standards and helps give some extra direction and recognition to the renovation works being done. It's an important message to send out, that we can achieve certification in this type of existing building."

Impressive as these works are, the integration of a district heating system using a powerful neighbouring asset – SEAŞ's own lignite fired thermal power plant - also generated plenty of interest. Research work on system by **Istanbul Technical University** (ITU) Energy Institute and The Scientific and Technological Research Council of Turkey, **Marmara Research Center** (TUBİTAK MAM) has been modeling the energy demand and designing the district heating system -before and after- to achieve the expected energy saving goals. Estimations are such that thermal power plant has the potential to provide heating for nearly **28,000 homes** using its waste heat. **With 14 such power plants across Turkey, this represents a huge**

potential not only for energy savings; but CITyFiED's watchword – replication.

During the district heating overview, delegates were given first-hand introduction to another of the CITyFiED project's innovative products, this one from partner <u>Mir Unique Solutions</u>. Within the project, the company is bringing their research know-how to life and taking inspiration from the oil and gas sectors to develop a new type of pipe for the district heating system. Their composite pipes will have significantly more longevity, chemical strength and pressure resistance than existing solutions and represent a first in Europe.

This is one of five study tours planned during the course of the CITyFiED project. For the project consortium and city community, each will be an important springboard for developing tangible experience and launching replication initiatives. The project team and everyone in attendance would like to extend their thanks for setting the bar so high in the first visit. Çok teşekkür ederim!



Representatives of European cities and members of the project consortium take in the Soma site, guided by Caner Demir of Demir Enerji.



Technical experts from the project consortium visiting the nearby thermal power plant – where previously wasted heat is being used to fuel the district heating system.





Information about the demo sites now available in local languages

Local language mini-sites signify new high-value features on the project's website

Local language mini-sites signify new high-value features on the project's website. Language specific spaces for the each of the demonstration sites (in **Spanish, Turkish** and **Swedish**) have been recently made available in our online public space. The mini-sites target local stakeholders and citizens from Laguna de Duero, Soma and Lund and contribute to overcome the language barriers among the three locations. The idea is to increase the reach, awareness and understanding of the project by displaying transparent and up-to-date information of the demonstration sites. This way, our partners and local people can keep informed and get communications about CITyFiED on a regular-basis and in their own language.



CITyFiED visualisation solutions user test– Valladolid

Continuing with the development of ICT solutions oriented to support residents on energy consumption reduction, a series of user tests were conducted on February, 27th to validate the visualization solutions proposed during the design phase

These solutions are early prototypes or mock-ups that serve as testing elements before the final users (residents). The solutions are the result of several weeks of work and started with a workshop in November.

One of the main objectives of the tests, lead by <u>Mondragon</u>, was to measure user acceptance of the technological and non-technological solutions devised as tools to reduce energy consumption by means of awareness measures and the commitment from the users. The usability, the value of the content and accessibility of information were other testing attributes measured. **Several residents and people from CITyFiED took the tests.**

The testers had not previous knowledge about the solutions to be tested. Time was assigned to each tester to examine the solutions before answering questions to measure testing attributes. In some cases the tests were interactive asking users to look for information in the solution. The tests ended with a survey that will be used to evaluate user acceptance of the solutions with the main goal in mind (consumption reduction).

The information extracted from these tests will be **extremely useful to define the ICT platform, in particular issues related to monitoring and visualization**. Although these tests were related to the Spanish Demo-site, the information will be shared with the rest of the demos, and both Turkish and Swedish partners will have the opportunity of deploying this step of the methodology in the rest of the demo-sites. Conclusions to those tests will be also transferred to the rest of the consortium.



Stakeholder meeting at the Soma demo site

A personal report from an organizer

We arrived early at the Soma conference centre, demosite in CITyFiED lingo. The stakeholder meeting was to commence at 17:30 after working hours, so that a maximum number of people could attend, just before dinner time. The meeting had been postponed for quite a while, on advice from our Soma partners, as they had judged that the tense circumstances prevailing there, needed a cautious approach.

People living in the lodgings are overwhelmingly employees of the power plant, which has been privatized. Anxiety about unemployment and dislodgement is very extremely high among the tenants here, which naturally explains the delicate situation regarding any sort of meeting on the grounds.

We presented our Project to around 40 people,

including participants from Manisa Municipality who now have the responsibility for the district heating system. We explained the various technical interventions, the benefits for the home energy economy and comfort aspects.

How participation meant playing a pioneering role, active engagement in self- management of energy matters and sharing common visions with people from other parts of Europe, visions of a more ecological, more climatefriendly, more participative planet. **Interventions in demosites from Valladolid and Lund were explained.**

People did not ask many questions at the beginning but especially the discussion on district heating sparked many questions. Inevitably, discussion shifted somewhat towards things that were in peoples' minds, their worries, anxieties and grievances.



So the stakeholder meeting at Soma put in relief, one of the more important aspects of the aspired for "smart city". It made us think once again that smart cities are also made by people, real people who have a much wider scope of interests and demands than the technical measures, gadgetry and solutions we offer for the spaces that they live and work.

The imperative to find a "language", a suitable means of communication to understand each other presents itself vividly. It is a challenge that needs to be confronted head on, with caution and care. The "language" may not present us with much cross-culturality, but gives us the possibilities and means of communicating as well learning from those whose lives we believe are going to be improving.

www.cityfied.eu

Baha Kuban, Demir Enerji



MySmartCityDistrict: Torrelago and Linero open their doors

<u>MySmartCityDistrict</u> is a collaboration among **seven smart** cities projects (R2CITIES, EU-GUGLE, ZenN, CITyFiED, SINFONIA, City-Zen and READY) involving 22 districts belonging to 21 cities from 12 different countries.

The MSCD Cluster project joined the **EUSEW 2015 Energy Days** by organizing Open Houses at their demo sites throughout Europe. The aim of the EU Sustainable Energy Week is to disseminate best practices, inspire new ideas and build alliances to help meet the EU's energy and climate goals by displaying activities on energy efficiency and renewable energy solutions.

The Open House events will include a range of activities to engage with residents, citizens, local communities, public authorities and other stakeholders about key milestones of the project to come and the intended final benefits.

Two-fold benefits can also be raising awareness about tangibl e benefits of energy efficiency measures being deployed, connecting with the entire supply-chain and support stakeholders, from local politicians and financing bodies to sub-suppliers and construction teams.

CITyFiED Torrelago and Linero districts will propose activities during the week 15th-19th of June 2015 at their demo sites.

In the framework of the Open House, the **Linero** team will organise guided tours in the district for the citizens, the municipal staff and other interested parties. The **Torrelago** district will focus on energy and kids by inviting schools to visit the biomass boiler room and the building and by preparing an 'energy game' together with the school teachers. Torrelago will also organise guided tours for citizens. Check the CITyFiED website where you will to find more information about the Open Houses in the coming weeks or contact the D&C Secretariat on **secretariat@cityfied.eu**

Real cities, real solutions, real impact – CITyFiED and fellow projects cluster together to extend their reach and impact in South & Eastern Europe

Four complementary projects chose to join forces during the <u>Smart Cities</u> <u>Exhibition and Conference for South East Europe</u>, 11-13 March 2015, in Sofia, Bulgaria where **CITyFiED**, **RemoUrban**, **Direction and R2CITIES** hosted a common exhibition stand and shared their knowledge in the accompanying professional conference.

Between them, the projects represent **12 demonstration sites** and **17 follower cities** delivering tangible partnerships and achievements in large-scale renovation and replicable smart cities initiatives. **This rich experience helped to present a** range of expertise to exhibition visitors and congress attendees - from cost-effective innovations creating the latest near zero-energy new buildings and retrofits to replicable strategies for smarter cities and citizen-driven urban regeneration.

CITyFIED was particularly well received thanks to its holistic, district approach and the possibility for municipalities and their appropriate agencies to become part of the 'Community of Interest'.

In a panel session chaired by **Krisztina Dely** of the Covenant of Mayors, **Ruben García** gave a presentation profiling nine case studies in financing from across the EU; while **Miguel García** spoke about the methodology to evaluate residential districts renovation towards nearly **Zero Energy Districts** (nZED). We were pleased to welcome **Ms Dely** on the stand afterwards to discuss CITyFiED, fellow projects, energy transition in South East Europe and more.

Amongst the many discussions, the exhibition was a valuable opportunity to discover the region's initiatives in energy efficiency and smart cities. All four projects came away with a greater understanding of the key stakeholders and their requirements – hopefully a solid basis for further replication and future partnerships.



What's new on the social web?

Since its launch in August 2014 CITyFiED Twitter account **@cityfied_eu** has brought the latest news and developments of the project to a wide range of stakeholders and audiences. Using the social web to raise awareness and increase the projects sphere of influence is a powerful asset in achieving replication.

So far, the high-activity of our account within the Twitter sphere has allowed for live interactions with other EU-smart city projects and important stakeholders (the EU-institutions, Covenant of Mayors, Energy Cities, Eurocities, Climate Alliance, ICLEI and individual personalities on the energy field). The content displayed on @cityfied_eu receives notable contributions from these actors.

The recent announcements of our interviews with the new members of our Community of Interest, San Sebastián, Värmdö and Tartu represent a good example of this interaction with multilevel stakeholders both in English and local languages.



Impact of the interview with San Sebastián.

In February 2015, a new "City Smart Space" was launched on the project website. This section provides valuable and exclusive content for our city members. Registration is needed to access this space and we invite those who have not registered yet to sign up to be able to navigate the new content displayed. Some of the benefits for the cities brought by the space include privileged knowledge and learning opportunities from each of our cities, as well as access to information from our partners for future EU projects and communication materials for the project.



CITyFiED is also present in other social media, like Facebook and LinkedIn. CITyFiED's private group on LinkedIn is beginning and will be fully deployed soon. We invite all our project members to join our LinkedIn group and we kindly remind you to contribute to the dissemination of its our social media content with your colleagues, friends and surroundings.









Recommended events – Meet us at events



Euroheat & Power Congress

27 – 28 April 2015 Tallinn, Estonia The 37th edition of the Euroheat & Power Congress will round up professionals on the District Heating and Cooling (DHC) disciplines in Tallinn. DHC is a building block for improved energy efficiency within the CITyFiED project and across Europe. It is a topic gathering more attention and growing strategic importance in recent Energy Union initiatives of the European Commission. With the slogan "District Energy in a Connected World", the conference provides a forum for knowledge-sharing among experts, organisations, policymakers and other relevant players in the field. In 2013, when the last edition took place, more than 250 stakeholders attended a set of meetings, panel debates, sessions and side events.

<u>Alec Walker-Love</u> is attending the conference and will be the moderator of one of the project sessions ("<u>DHC worldwide connections</u>").

Event website

Smart City Event 2015

2-5 June 2015 Amsterdam, the Netherlands "Be inspired and get connected" is the slogan of the 5th edition of the Smart City Event that will take place in Amsterdam from the 2nd until the 5th of June. This annual conference attracts stakeholders from across Europe with the organisers registering 500 delegates and 30 participating countries last year. <u>Miguel Arias Cañete</u> (Euro Commissioner for Climate Action and Energy) and <u>Anna Lisa Boni</u> (Secretary General of <u>Eurocities</u>) will speak during the event. The focus is on learning from the most successful European projects on smart cities.

CITyFiED 's Coordinator, <u>Ali Vasallo Belver</u>, will guide a roundtable session and talk about bringing stakeholders together to create efficient solutions for smarter cities. Our consortium member <u>Veolia</u> is a partner of the event.

Event website





Recommended events – Meet us at events



European Sustainable Energy Week (EUSEW)

15-19 June 2015 Brussels, Belgium The The 10th edition of the European Sustainable Energy Week will take place from the 15th until the 19th of June in Brussels. Since its launch in 2006 by the European Commission, the EUSEW has become a key annual event on supporting the EU's energy goals. Relevant stakeholders in the energy field will get together to debate energy efficiency solutions and renewables.

During the month of June, in parallel with the EUSEW, hundreds of associations, companies, NGOs, public authorities and regions across Europe will be organising an Energy Day. Energy Days are not-for-profit events aimed at the public and stakeholders that promote sustainable energy.

For CITyFiED, Torrelago and Linero will propose Open House activities during the week 15th-19th of June 2015 at their demo sites. For more information about the Open Houses, check the CITyFiED website where you will to find more information about the Open Houses in the coming weeks or contact the D&C Secretariat on <u>secretariat@cityfied.eu</u>.

Event website





Contact

More information on this Newsletter and related dissemination and communication activities of the project available at:

CITyFiED D&C Secretariat e-mail: <u>secretariat@cityfied.eu</u>

Project Coordinator Centro Tecnológico CARTIF Parque Tecnológico de Boecillo 205. C.P. 47151 Boecillo, Valladolid - España Tel. 0034 983 54 65 04 Fax 0034 983 54 65 21

Coordinator Ali Vasallo Energy & ICT Divisions Fundación CARTIF e-mail: <u>cityfied@cityfied.eu</u>

City Secretariat e-mail: cities-cityfied@ivl.se

Community of Interest: E-mail: <u>alec.walker-love@cityfied.eu</u>

Register on **<u>our website</u>** or get access with your LinkedIn, Facebook, Google or Twitter accounts to receive the CITyFiED newsletter via e-mail.

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