



# ZenN

Nearly Zero Energy Neighborhoods

Summary of the final conference



**Publisher** ZenN – Nearly Zero Energy Neighbourhoods

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**Date** 2017 – 10 - 26

**Further information**

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**Disclaimer** The research leading to these results has received funding from the Seventh Framework Programme (FP7/2007-2013) under grant agreement n° [314363].

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## Final conference summary

The Final conference was performed in two sessions, both at Euskalduna Conference Center (Bilbao). The first part was focused on presenting an overview of the project, including presentations of all demonstrators. After a short break, the second part depicted main results extracted from demonstrators' experiences, leading to a discussion with the Experts Round Table. In the afternoon, representatives of DEBEGESA and the City of Eibar programmed an on-site visit to Mogel demonstrator, showing all participants of the Conference the main results of the district, after hard work performed during last 4 years.

Ignacio de la Puerta, Director of Urban Planning and Urban Regeneration at Basque Government, opened the session giving an insight of energy retrofitting of buildings and neighbourhoods in the Basque Country during last decades, highlighting the importance of projects like ZenN, which is facing the challenges the district scale represents for this upgrade of Basque building stock, as many other European communities.

After that, ZenN project coordinator Francisco Rodríguez (Tecnalia) gave an overview of the project, explaining main lines of the project, as the members of ZenN consortium, all countries involved, demonstrators, main project activities, lessons learnt and results. In line with these results, Isabel Rodríguez-Maribona (Tecnalia) presented an introduction to the Building Efficiency Accelerator, a worldwide UNEP initiative, where Tecnalia is part of the Retrofit Working Group, explaining the role energy efficiency of buildings and districts can have at achieving "UN Sustainable Energy for All by 2030" goals: ensuring universal access to modern energy services; doubling the global rate of improvement in energy efficiency; doubling the share of renewable energy in the global energy mix.

Before the break, the four demonstrator leaders took the stage to present the actions performed in each demonstrator: John Hallbeck (Malmö stad) for Malmö demonstrator, Esther Zarrabeitia (DEBEGESA) for Eibar demonstrator, Flemming Idsøe (Omsorgsbygg) for Oslo demonstrator, and Francisco Rodríguez (Tecnalia) on behalf of Grenoble representatives. All they gave main facts and figures of all measures implemented at district scale, which included new facades, windows exchange, new installations and on-site renewable generation, among other interventions.

After a brief break, the second section of the Final Conference started with Ketil Tunheim (Sintef) and Amaia Uriarte (Tecnalia), who showed the validation process of NZEB retrofitting actions, delving on Nearly Zero Energy Buildings and Neighbourhoods concepts, contrasting initial targets and monitoring results in the demonstrators. Here, the load-matching concept was explained, as well as the comparison between energy consumption of demonstrators and the renewable energy generated on-site, setting interesting conclusions for further replication of the project. The speakers also stressed the importance of an appropriate commissioning of solutions and maintenance, where building maintenance staff and user behavior become crucial for the right performance of interventions.

Finally, the last two slots of the Conference were appointed to Jonas Henriksson (IVL), who presented the main dissemination activities of the project including a Guidelines report (and magazine), and Carmel Lindkvist (NTNU), who explained the development of training material and the relevance of non-technical drivers considered in energy retrofitting projects like ZenN: architectural and cultural heritage; stakeholder awareness and behavior; economic and ownership structures; legislation, governance and policy.

During an informal lunch, all participants had the opportunity to network and exchange views with the speakers at the hall and terrace of the Conference Center, before taking the bus to Mogel demonstrator, in Eibar. Once there, representatives of DEBEGESA, the City of Eibar, and the architecture firm who developed the retrofitting project presented the interventions performed at Mogel demonstrator, having the opportunity to walk around the totally renovated district. Besides the retrofitting of buildings, main purpose of the project, the effort of the public administration made possible to improve the accessibility of the area through the installation of mechanical ramps and public space conditioning actions, as well as the replacement of public lighting with LED luminaires.

After an intense day of events and more than 4 years of effort, consortium members and experts were invited to share a closing dinner in Bilbao, where overall reflections of the project had place in an informal environment.

## Round table of experts

Palacio Euskalduna, Bilbao, October 20<sup>th</sup> 2017

### Participants:

- Francisco (FRANCISCO; chairman)
- Carlos Hevia (C)
- Vladimir Gumilar (V)
- Maciej Czajka (M)
- Agnieszka Lukaszewska (A)
- Paul Mittermeier (P)
- Etienne Wurtz (E)

### Interventions:

**FRANCISCO:** *What is the main takeaway based on today's presentation?*

**(A):** Demonstrators are very large; it is not common. All of them have been able to combine very different sources of funding; it is very impressive. Even if the technologies are not innovative, the combined process it is extremely challenging, with a nice approach. Very challenging decision-making process; coping with low-income communities.

**(C):** Congratulations to the consortium. Some overall reflections:

1. It is very important to bring new technologies into the project;
2. Owners, what do they want to have in their homes? Very different opinions, challenging communication between stakeholders, it has to be effective
3. Financing it is very challenging. Important to incorporate public and private funds, it is hard to handle. The public investments do not always come at once, but spaced in the time (different years).
4. The scale of the project is key; we are not dealing with just one building. We have to bear in mind the scale of the project.

All these good and bad experiences could be gathered in a website (Francisco clarifies that EU funded projects will publish all relevant information in the SCIS –Smart Cities Information System- under improvement)

**(M):** Interesting variety of demosites in the project, catching different teasers of climates; through the monitoring process we have obtained a really interesting database for future investments.

**(V):** Not just focusing on the building, but on district planning. If we want to effectively get closer to the nZEB we have to act at a district level (planning, political, etc.). Also, spreading the experience of the end users is highly relevant, as it works as a great input for further replication. I also like the incorporation of new technologies, as sometimes innovation is rejected in daily projects.

**FRANCISCO:** *Thank you very much for your comments*

**(P):** Going from a building scale to a district scale entails high complexity, not just in energy terms but in other fields. I liked a lot the holistic approach of the project, looking beyond the energy field: accessibility, thermal comfort, etc. Sharing energy between buildings, District heating, will become much more important in the future, and we have to exploit that. This will be combined with cheaper storage systems, electric mobility, etc. Furthermore, gentrification is something that must prevail over energy issues in the project, and this is a clear success of the project.

**(E):** District renovation is not just a simple aggregation of single building renovations, as we can see. The most important aspect of the project is that you have put the people in the center of the project. The owners seemed to be happy at the end of works, and they will be happier with the operation of those improvements during time. Concerning renewable energy, it is a good idea to diversify the input, combining PVs, biomass, etc.

**FRANCISCO:** *Hard process to handle, but can be seen as an opportunity. What's next after this? What are the main outcomes to capitalize for city administrations from now on?*

**(A):** It is a good opportunity to increased comfort and real state value through energy efficiency retrofitting; benefits are greater in terms other than energy. The same happens jumping from building to district scale; the benefits are greater, also for increasing the value of properties. Other aspects than the cost of actions must be considered, and public administration can be a leader in this kind of vision/thinking.

**(C):** I agree, and also communication to the citizenship and owners it is crucial. A good communication plan from public administration must help a lot for future actions.

**(V):** People living in apartments are changing, families, etc. And processes have to change with it. Social sciences must be more involved in these kind of projects. Accommodation of owners during retrofit works it is a relevant issue.

**(E):** At the moment we are not able to do Zero energy districts, at that must be the next step: achieving the zero energy balance.

**(P):** The impact is higher when you make small improvements for many buildings (district) than a huge improvement for just one building, and this must be considered by public authorities, social companies, etc., so private investors can follow that trend.

**FRANCISCO:** *It is curious that technical experts make stress on financial, social aspects. About technology: what can we do to reduce the perception of risk regarding new technology? How can we push new technology?*

**(M):** We have to make technology friendlier. Many people don't care about energy, and we should show more to the people the benefits obtained. The key is the money; if they feel that they are spending too much on energy, they will change their mind. Then, monitoring works and showing that data to the people it is highly relevant. If we send the feedback to the users about how they behave regarding energy use, they can change their behavior to reduce their energy bill. Furthermore, it is very important the individual device to control the temperature in each apartment, so owners can adapt their behavior. The technology is already there, but we have to help the people to behave properly. It would be nice to offer the users some comments based on their behavior (switch off the lights! If we are using too much electricity, for instance)

**(E):** It is important to obtain the best technology at the best price.

**(V):** If we want to sell these solutions, we must show that it is working in a good way. That's why it is so important to show the performance of the already built examples through the monitoring data; this way investors will be much more open to the idea of new investments. It is also important to consider that owners are afraid of investing in something that they didn't already experience...

**FRANCISCO:** *Thank you for being here today, we are running out of time. Thank you for these very interesting reflections, hopefully we will put this into practice in the future projects. After lunch we will visit the demonstrator of Mogel, where Esther (Debegesa) will explain the demonstration actions in detail.*