



Dear friends and colleagues,

We are now in the fourth year of the project which marks the demonstration and documentation of scalable solutions for Sustainable Plus Energy Neighbourhoods (SPENs) in four climates in Europe.

This seventh edition brings news from the demo neighbourhoods in [Spain](#), [the Netherlands](#) and [Norway](#), but also a recap of the latest project meeting with a [site visit to our Austrian demo project](#) in Salzburg.

Are you interested in the drivers, potential business models and policy support measures driving the uptake of sustainable plus energy neighbourhoods? The latest release of our [four factsheets on the policy recommendations for SPENs](#) in the four demo locations is an insightful read!

By the end of the project, we expect to have a list of solid policy recommendations at EU level (comprising revised EPBD, REDII, EED and EMD) that will support the scale up of SPENs, a calculation tool that will enable the business case and decision-making of political, financial and built environment stakeholders to invest in SPENs, strategies to match energy plus measures with selected financing opportunities as well as suitable business models to support the market uptake of SPENs – stay tuned.

In the meantime, enjoy the prolonged summer sunsets and the bright sunny days - Happy holidays!

The syn.ikia Coordinator
Niki Gaitani, NTNU

HIGHLIGHTS

[Factsheets] Policy recommendations for sustainable plus energy neighbourhoods and buildings



What are the drivers, potential business models and policy support measures driving the uptake of Sustainable Plus Energy Neighbourhoods?

SPENs have real potential to contribute to decarbonising the building stock, while providing additional benefits for residents both at the building and neighbourhood level.

These [factsheets](#) provide an overview of existing gaps and barriers in the development and market uptake of SPENs, and provides policy recommendations for 4 countries: [Austria](#), [Spain](#), [Norway](#) and [The Netherlands](#).

[Read the factsheets](#)

News

Dutch partner TNO is testing a model predictive controller to optimise on-site solar energy



In March, TNO tested a first version of the model predictive controller (MPC) in one of the apartments in the [Dutch demo case](#). The aim of the MPC is to use the on-site solar energy as much as possible.

TNO defined a cost function and used a predictive model to optimize the consumption of solar energy during a prediction horizon of about 8 hours. TNO successfully tested this MPC feature for a week in a specific apartment in Uden. The first results show that we are able to increase the self-consumption of local solar energy. Further optimization is possible if we increase the prediction horizon from 8 hours to about

20 hours, so we can use the solar energy in the afternoon to prevent heating in the next morning. Based on this first testing experience, TNO is currently improving the MPC, so it can be implemented in about five apartments during the next winter.

Meet the Dutch demo

Partners visit the Spanish demo in Santa Coloma de Gramenet



Our pilot project in Catalunya is making great progress. Our team had the opportunity to visit the new public housing with [INCASÒL](#) in the multicultural neighbourhood of Fondo.

The new building is part of a broader regeneration plan to retrofit existing buildings, create new quality public spaces and improve the accessibility of streets.

Side by side with a housing cooperative, we can already see how INCASÒL is transforming the area with good and affordable housing and common spaces for people. The building is also set to exchange energy with a nearby health centre. Work is in progress and tenants are expected to move in next spring.

Meet the Spanish demo

News from the Norwegian demo in Verksbyen

Syn.ikia's Norwegian demo partner, [ARCA NOVA](#), made great progress over the last months and are excited on behalf of the new owners. The first residents will start moving in early August, and the rest will move in mid-September. With these two apartment buildings, the SPEN community in Verksbyen, Fredrikstad, will grow from 205 to 249 units. As Verksbyen is part of a larger urban development project, the SPEN community has a potential to expand over the coming years to more than 1500 residential units.



Learn about Verksbyen, the Norwegian syn.ikia demo project

Meet the Norwegian demo

Renovation for plus energy neighbourhoods meets social housing in Salzburg

On April 19-21, syn.ikia partners came together in Salzburg, home of the Austrian demo project. Reaching its 3-year mark, it was a perfect opportunity to reflect on the project's lessons learned and next steps. Partners also [visited two social housing projects](#) developed and managed by Heimat Österreich. When it comes to the application of sustainable plus-energy neighbourhoods in Europe, *'The experiences from Austria were particularly interesting for the project partners, since the framework conditions in Austria for the implementation of such concepts are relatively favourable'*, representatives from Salzburger Institut for Spatial Planning and Housing.



[Learn more](#)

When sustainability is not only about the green transition, but also about ensuring the well-being of residents

If you are not a researcher working on the topic of energy efficiency, Sustainable Plus Energy Neighbourhoods (SPEN) probably does not mean much to you, so let's break down its meaning. Syn.ikia aims to achieve predominantly social housing neighbourhoods that not only have a reduced energy use, but by using renewables and state-of-the-art technology, produce surplus energy.

But sustainability is also about social inclusion. [Area Wonen](#) launched a programme and appointed 'tenants-ambassadors', which are in charge of raising awareness about Plus Energy Neighbourhoods, as well as providing support for the residents with special needs to help them integrate more easily in their new environment. As for the [Austrian demo project](#), the people living there are involved in the project by participating to user surveys, attending information evenings and one-on-one talks, and being in direct contact with a liaison officer at SIR.

There are many other key areas where citizens should be at the center of the decision process when developing such neighbourhoods, and this include inclusive mobility and planning on-site facilities (such as health centers, libraries and kindergartens),



[Read the full article](#)

SPENs are catching students' eyes: syn.ikia's demos used as case studies in Master theses in Sustainable Architecture.

Bianca Chiusi and Galina Voitenko just graduated the Master's program in Sustainable Architecture at the Norwegian University of Science and Technology (NTNU). With a passion for sustainable neighbourhood planning, they chose to write about SPENs in their theses using two of syn.ikia's demos as case studies.



Bianca explored social and architectural performance indicators in SPENs. Using the demo project in Uden as a case study, she investigated how residents perceive the social and architectural values of their neighbourhood. *"I really believe in the importance of rapidly improving our built environment towards more environmentally sustainable solutions, but while working towards that we must not forget about the reason why we design buildings and neighbourhoods in the first place: to provide a place where people can thrive"*, says Bianca.

Galina's thesis focused on spatial modelling for sustainable architecture at the neighbourhood level using a case study in Verksbyen, Fredrikstad. She explored 3D city models based on the City GML standard, coming up with a methodology and recommendations for generating 3D models from open-source spatial data for urban simulation tools. *"Exploring sustainable neighborhood planning and finding effective assessment methods for this scale has been a captivating journey for me,"* says Galina. /

strongly believe that modern digital tools are essential for achieving the climate goals that our society has set for the near future."

If you want to know more about their theses, send an e-mail to bianca.chiusi@ntnu.no or galina.voitenko@ntnu.no.



News from our Austrian partner: Zero carbon refurbishment in Friedrich-Inhauser-Straße in Salzburg

Events

DTU Summer School, August 2023

Technical University of Denmark is organizing a Summer School in partnership with several projects (syn.ikia, ARV, EBC, FME ZEN) on the topic of Time Series Analysis, with a focus on Modelling and Forecasting in Energy Systems. This summer school will give a hands-on introduction to the statistical techniques, which are highly useful for modelling based on data observed from energy systems, as well as the use of these e.g. for control.

Date: August 14-18, 2023

For more information, contact Henrik Madsen (hmad@dtu.dk) or Peder Bacher (pbac@dtu.dk). See also this description [DTU course 02960](#).

Past events

Key takeaways from workshop on resident engagement practices during the International Social Housing Festival 2023

Involving residents in energy efficient social housing projects can be challenging. Lack of motivation, a general distrust towards institutions and miscommunication are issues that may arise when working with resident engagement. How do we meet these challenges, ensuring that people's needs are met when developing Sustainable Plus Energy Neighbourhoods (SPENs)?

The workshop took place on June 8th 2023 and was organized by syn.ikia's coordinating institution the Norwegian University of Science and Technology (NTNU) together with Housing Europe and INCASÒL. The aim was to facilitate the exchange of knowledge around resident engagement in energy efficient social housing projects. Slides are available [here](#).



[Learn more about the event](#)

Experts from four H2020 projects meet in Brussels to discuss emerging business models in SPENs and Plus Energy Communities

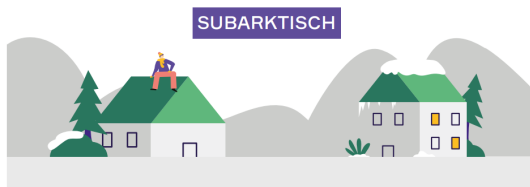
How do we develop good business models for SPENs and Plus Energy Communities? What are the latest trends in the field and what barriers can arise? These questions were discussed during the workshop "Emerging Business models in +Energy Neighbourhoods and Smart Energy Communities" held on March 13th at NTNU premises in Brussels. The event brought together experts from the four H2020 projects syn.ikia, [ARV](#), [oPEN Lab](#) and [BEYOND](#) to share knowledge, discuss and brainstorm new business models for sustainable neighbourhood development. The workshop was organized by Pedro Crespo Del Granado, Associate Researcher at NTNU.

Syn.ikia presented the business models being assessed in the project, which are: i) P2P and local energy markets, ii) Community Based Shared Assets, iii) SPEN as a Retailer/Aggregator, iv) Power Purchase Agreements (PPA) for SPEN, vi) Green Investors in SPENs, and vii) SPEN Grid-flexibility services.



[Learn more about the event](#)

Learn more about the syn.ikia demos



[Download the Norwegian flyer](#)



[Download the Dutch flyer](#)



[Download the German flyer](#)



[Download the Spanish flyer](#)





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