



Welcome to Sim4Blocks



Sim4Blocks is a four-year, EC-funded project that focuses on the development of innovative demand response services for residential and commercial applications. The project combines decentralised energy management technology at the blocks-of-buildings-scale to enable demand response.

In this newsletter, we hear about the first project podcast hosted by Malcolm Yadack alongside a panellist of five experts who discuss the ins and outs of flexible energy. Malcolm also talks to us about taking a small team to the Annex 67 meeting in March which is an exciting new collaboration. We then take a look at the first of many Sim4Blocks factsheets and infographics before hearing about the project's attendance at Smart Cities Week 2017 in Washington, DC.

LINKS TO THE STORIES

1. First Sim4Blocks podcast released
2. Energy flexibility in buildings – Annex 67 meeting
3. New factsheet on energy flexibility
4. Smart Cities Week 2017

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FIRST SIM4BLOCKS PODCAST RELEASED

Malcolm Yadack, member of the Sim4Blocks coordinating team, hosted the first project podcast, speaking to some of the experts involved with Sim4Blocks on what the project is hoping to achieve and for what purpose.



Sim4Blocks recently released its first project podcast, hosted by member of the project coordinating team Malcolm Yadack. Five representatives working on the complex engineering aspects of buildings or optimisation systems, shed some light on how flexible energy use can contribute to a new renewable energy system in Europe.

The five panellists were:

- Professor Ursula Eicker, head of research at HFT Stuttgart, who works on sustainable energy technologies;
- Professor Jessen Page of the University of Applied Science Western Switzerland, responsible for demand response optimisation algorithms;
- Jordi Cipriano, director of the Building Energy and Efficiency Group at the public research centre in Catalonia, who studies energy efficiency in buildings;
- Peter Fröhlich, senior scientist at AIT Austrian Institute of Technology, who has been looking at user perspectives;
- Bert Claessens, head of research at Restore, who has been investigating future technology development.

“For users to accept flexible energy and use different types of energy, they have to understand it and understand what the motivations are,” began Yadack. Sim4Blocks has the challenge of understanding the expectations that society holds and what both the customers and the project want from Sim4Blocks.

Demand response will ultimately have an impact on both the older and younger generation’s lifestyle, with a transition away from using energy when we want. Eicker points out that “it will be much more complicated

in a renewable [energy] future”. However, by teaching society how to manage energy and why it is necessary, Sim4Blocks has a better chance of meeting its targets of reducing CO₂ emissions with its flexible energy services.

But Sim4Blocks is not just focused on changing how people use electricity. “Heating systems are also an integral component to demand response,” said Yadack. Eicker added: “Users need to be aware that gas and oil won’t be available forever – but that the electricity sector can provide an alternative to heat homes”. There are already many ways to harness renewable energy for electricity use such as wind and solar power, and this electricity can be used to power heat pumps too, but “this strain to the electricity system needs to be balanced,” said Eicker.

The project is testing as many heat pump options as possible at the different pilot sites to see which is more effective. For example, at one pilot site they are using a low temperature thermal network to distribute water in low temperatures to the different buildings using heat pumps, therefore using low temperature water as the source of heating.

The project faces many challenges, but to achieve the best demand response adoption rates a balance needs to be struck between using the right technology and attending to the needs of the customer. There is, on the one hand, the difficulty of testing the influx of new technologies and devices in real environments, and on the other, paying attention to what customers want and need.

Sim4Blocks is researching easy-to-use systems in which that customers regularly and committedly record their energy usage. However, for this to be successful it needs to be decided whose challenge it is to make users and companies see the value in demand response services both locally and nationally.

The podcast discusses this issue further by drawing upon the EU patchwork of national regulations and customer, policy maker and stakeholder duties within Sim4Blocks and how they fit into providing solutions that are applicable and sustainable EU-wide for the benefit of scalability.

[Listen to the completed podcast here.](#)

ENERGY FLEXIBILITY IN BUILDINGS – ANNEX 67 MEETING

A small team from Sim4Blocks attended the next Annex 67 meeting in March after the success of collaborating with the project.

Malcolm Yadack, Ursula Eicker and Donal Finn from partner group HFT Stuttgart attended the Annex 67 expert meeting in Barcelona on 26th – 28th March 2018 and gave a presentation on the Sim4Blocks project.

Annex 67, coordinated by the International Energy Agency, aims to increase awareness of the energy flexibility of buildings, or the ability to manage energy demand and generation according to various user, climate and grid conditions, and demonstrate how they can provide for the energy grids.

The project holds biannual meetings with other leading projects from around the world in the field of renewable energy technologies, to collaborate and exchange information and in-depth knowledge of the flexibility potential of buildings for the design of future smart energy systems and buildings.

Yadack, Eicker and Finn will look to make an important contribution to the meeting with regards to the progress and research of the Sim4Blocks project, which focuses on the development of innovative demand response services for residential and commercial buildings.

The Annex 67 and Sim4Blocks projects' goals are aligned in that they aim to raise awareness of how energy flexibility in buildings through demand response is the way towards smart energy systems and cities of the future for utilities, smart energy businesses, policy makers and government entities.

This is a great opportunity for Sim4Blocks, and so we look forward to catching up with the team soon.

To find out more about Annex 67 visit their [website](#).



NEW FACTSHEET ON ENERGY FLEXIBILITY

Sim4Blocks has published an informative and fun factsheet to highlight some of the progress that is currently being made, results that have been found and what lies ahead for Sim4Blocks.

The factsheet, the first of a number of factsheets that will explain the current progress of the project, is titled, "Adding flexibility to our energy markets".

A picture of the current status of demand response in Europe is presented, as well as the barriers and challenges that Sim4Blocks has identified when looking at the feasibility of integrating flexible energy services in six countries: France, Belgium, UK, Germany, Spain, and Switzerland.

The factsheet also highlights the next stage of the project based on these results, which will involve

finding suitable business models to help implement demand response in the right markets.

There will be more factsheets coming your way, so keep your eyes peeled on the website!

Take a look at the factsheet [here](#).





SMART CITIES WEEK 2017

The third annual Smart Cities Week D.C took place in October 2017 and attracted 1,300 delegates from around the world, including Malcolm Yadack from the Sim4Blocks project.



Smart Cities Week D.C is a two-day conference and exhibition that encourages the innovation of cities, and this year's theme focused on smart infrastructure. Creative leaders and thinkers from all levels of government attend the conference to meet and listen to real-world examples of smart infrastructure solving growing urban challenges. The conference was made up of keynote addresses, workshops, start-up presentations, innovative infrastructure solutions, roundtable discussions and panel sessions on various topics, including: Infrastructure innovation; City showcase; Climate resilience; Compassionate cities; Investing for Change; Built environment.

A member of the Sim4Blocks coordinating team, Malcolm Yadack attended the event in Washington D.C. The German Federal Ministry of Education and Research (BMBF) sponsored a delegation of researchers from Germany, Yadack included, to be a part of the Smart Cities Week D.C conference. It also gave Yadack the chance to present Sim4Blocks.

Along with HFT, the Helmholtz-Centre for Environmental Research and Brandenburg University of Technology Cottbus-Senftenberg showcased their research and development projects that focused on the study of developing cities in a sustainable and efficient manner, making them safer and more liveable.

“Our programme during the week in D.C included being invited to the German Reunification Day celebrations at

the German Embassy on the first day, 3rd October. We then participated in two days of exhibiting at the Smart Cities Week D.C conference followed by attending appointments with officials from both the Northern Virginia Regional Commission and the United States National Institute of Standards and Technology,” said Yadack.

The various projects of the delegation made for a large exhibition stand to enable the various projects space to present their research. For Sim4Blocks, Malcolm presented the overall project from a community level, looking at the three pilot sites as case studies for testing the flexibility of demand response services for businesses and home owners.

“The feedback I received was really interesting, and I was fascinated by how the motivation and perspectives are different in the United States compared to Germany and Europe. In Germany, policy and to some extent also prices, are being driven by large initiatives for the deployment of renewable energy generation, which in turn leads to interest in the possibilities for demand response as a way to balance the grid,” said Yadack.

“In the US, for example New York City, ageing grid infrastructure is a significant factor underlying demand response programmes. Just as in Europe, however, the policy and regulatory landscape in the US also varies widely from region to region.

“Speaking to many of the locals gave me valuable insight into how the local communities in America view smart cities and smart energy, and where they see it going,” said Yadack.