

Higher Education Institution Sustainable Energy Communities Workshop Report

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Introduction

Sustainable Energy Communities (SECs) are an initiative of the Sustainable Energy Authority of Ireland (SEAI¹) to engage and enable energy citizens to work together to achieve their energy goals. Over 800 communities have been established with a diverse range of objectives and ambition.

The UCD SEC hosted a workshop of SECs in the Higher Education Sector on 31st May 2024, in the Quinn School of Business, University College Dublin and Online. The workshop was attended by some 26 representatives from the SEAI and its mentor network, and Higher Education Institutions (HEIs) including Atlantic Technological University (ATU - Galway, Mayo and Sligo), Technological University of Dublin (TU Dublin), University of Galway (UG), and University College Dublin (UCD) .

In this workshop we focus on SECs in HEIs, aiming to explore the objectives of the HEI SECs; to identify common opportunities and challenges; to decide if an SEAI Community of Common Interest could be beneficial.

The next sections provide an overview of the HEI related SECs and their objectives.

ATU (Galway, Mayo, Sligo)

1. Overview (provided by Mel Gavin): The ATU SEC was founded by an informal consortium of local public and private stakeholders, including IT Sligo (now ATU), Sligo CoCo, HSE, Abbot, Abbvie, Sligo Chamber. IT Sligo, with John Bartlett as the main contact, are the registered SEC on the network for this group, ([see report](#)). Rather than a HEI SEC, the focus has been looking outward to promote regional sustainable energy use. Sligo SEC completed an EMP for Sligo town in 2020. From that a key action was to form a legal entity to manage regional projects. This culminated in the formation of Sligo Leitrim Energy Agency CLG in 2022. Sligo Leitrim Energy Agency (SLEA) is currently involved in the following:
 - a. Sligo Green Gas Network: Development of a local renewable gas supply based to offset oil, LPG and diesel in industry and heavy transport
 - b. Sligo Community Solar PV: Community owned grid connected Solar PV generator
 - c. [LEAP](#) Project: Delivering integrated home retrofitting services.
 - d. [Renewable Engine](#): engaged in research and innovation activities to achieve sustainability in renewable energy.

¹ <https://www.seai.ie/community-energy/sustainable-energy-communities/>

- e. Solar park in Sligo (High level feasibility and close to 38kV substation)
- 2. SEC Objectives:
 - a. Provide a leading role in the region
 - b. Share learnings from exemplar projects
 - c. Develop innovative multidisciplinary research programmes
 - d. Promote green energy solutions
 - e. Advance decarbonisation in transportation systems and cities through energy innovations
- 3. Who are the SEC members?
 - a. ATU staff and students
- 4. What events/activities has the SEC led/participated in?
 - a. SEC of Sligo is more EU alliance of researchers and outward focus sharing energy efficiency and decarbonisation works
- 5. Anything else you'd like to share about your SEC?
 - a. Some of the energy projects are [FEED GNI](#) funded (eg. Biogas Feedstock)
 - b. Mel Gavin is the SEC Regional Coordinator and Lead Coordinator for the LEAP Project
- 6. Where can we get more info:
 - a. [Mel Gavin](#) – ATU Sligo, mel.gavin@atu.ie

DCU

1. Overview (provided by Gerard Doherty (SEC mentor)): DCU SEC focuses on its staff and DCU local community rather than the campus. They identify opportunities to improve transportation and energy consumption of their staff in a sustainable way in engagement with three nearby communities (Cabra, Stoneybatter, and Phibsborough).
2. SEC Objectives:
 - a. Seek opportunities to make transport and energy consumption of staff more sustainable
 - b. Support DCU community to make energy upgrades,
 - c. Provide technological solutions for a suitable home energy usages and needs
3. Who are the SEC members?
 - a. DCU staff
4. What events/activities has the SEC led/participated in?
 - a. Support homeowners to apply for [Warmer Home Scheme](#)
 - b. Support homeowners to apply for [Home Energy Grants](#)
 - c. Distributing home energy savings kit to assess energy consumption
5. Where can we get more info:
 - a. <https://www.dcu.ie/sustainability/welcome-dcu-sustainable-energy-community>
 - b. Gerard Doherty (SEC mentor) or Samantha Fahy (DCU)

TU Dublin

1. Overview (provided by Rosie Webb): No SEC yet, but does a lot of work that feeds the SEC objectives in their three different campuses.

2. SEC Objectives:
 - a. Create a positive energy consumer campus. Self sufficiency is primary for the energy consumption in TU Dublin.
3. What events/activities has the SEC led/participated in?
 - a. Piloting for district heating in their three campuses
4. Where can we get more info:
 - a. Rosie Webb, Head of Decarbonisation & Energy Efficiency, TU Dublin

Maynooth University (SEC no longer active)

Trinity College Dublin (SEC Walton Club no longer active)

UCD

1. Overview (provided by Paula Carroll, input from Mel Devine on NexSys): UCD has several large energy and sustainability research projects and initiatives. The Estates team operate the campuses. The Earth and Energy Institutes support research and collaboration in sustainability and energy themes. An example of energy research in UCD is the [NexSys project](#). The SEC was founded in 2018 by Energy Institute postdocs Fabiano Pallonetto and Mohammad Saffari. The SEC prepared an energy masterplan in conjunction with UCD Estates and hosted the UCD Sustainable Smart Cities & Communities Symposium 4th December 2019. Now chaired by Assoc Prof Paula Carroll (academic), the UCD SEC supports student projects across all disciplines on sustainable energy themes in collaboration with the UCD Estates team, and develops sustainable energy related research proposals.
2. SEC Objectives:
 - a. Develop skills and capacity in energy efficiency at a UCD community level;
 - b. Promote the adoption of lower carbon options for transport and heating;
 - c. Promote investment, research and education in smart and renewable energy technologies in UCD;
 - d. Create opportunities for successful collaborations in sustainable energy community initiatives.
 - e. Establish a self-sufficient campus
 - f. Learning and planning to guide UCD society for efficient campus
3. Who are the SEC members?
 - a. UCD students and staff: Academics, professional staff, student representatives
4. What events/activities has the SEC led/participated in?
 - a. Student projects
 - i. Example 1 <MSc Business Analytics Bike eBike Facility Location>
 - ii. Example 2 <MSc Business Analytics PV analysis>
 - iii. Example 3 <BMech Heat Pump Performance analysis>
 - b. Research proposals
 - i. ERASMUS Forward Looking Project

- c. Local engagement
 - i. UCD SEC and Dun Laoghaire Rathdown SECs - Energy in Transition – Powering Tomorrow, travelling exhibition organised by the German Embassy in Ireland, 1st March 2022
- d. Other?
 - i. UCD Sustainable and Smart Energy Symposium 2019
- 5. Anything else you'd like to share about your SEC?
 - a. UCD is led by academics with a focus on sustainable energy research and teaching. We aim to foster better understanding of energy behaviours, and to collaborate with the UCD Estates team.
- 6. Where can we get more info:
 - a. <https://www.ucd.ie/sec/>
 - b. Chair: paula.carroll@ucd.ie (2024/2025 chair is Jeremy Auerbach)

University of Galway

1. Overview: In June 2016, the University of Galway became the first university to join the SEC Network. At the same time, the University launched the Community University Sustainability Partnership (CUSP), a multi-disciplinary, voluntary team of students and staff from across the campus and community partners all working together with the common aim of establishing the university as a leading institutional model for sustainability. The SEC forms part of the Energy & GHG emissions work package of CUSP.
2. SEC Objectives:
 - a. Reduce GHG emissions by 51% by 2030 (baseline: 2016-2018 average)
 - b. Improve energy efficiency by 50% by 2030 (baseline: 2006)
 - c. 20% of electricity to come from renewable sources by 2025
 - d. Applying Learn Live Lead Model to sustainability
3. Who are the SEC members?
 - a. The SEC forms part of CUSP, a multi-disciplinary, voluntary team of students and staff from across the campus and community partners. One work package is dedicated to Energy & GHG Emissions.
4. What events/activities has the SEC led/participated in?
 - a. Achieved 50% improvement in energy efficiency and 35% reduction in GHG emissions through a programme of building retrofits, renewable technologies, control systems, behaviour change and other initiatives
 - b. Using the campus as a living lab for research and teaching, e.g. [GEOFIT project](#) uses innovative ground-source heat pump system to heat the swimming pool
 - c. Participated in the SEAI/HEA Pathfinders project with the Áras De Brún upgrade, which won the Energy in Buildings award at the SEAI Energy Awards in 2023 as [SDG Champion](#).
 - d. In Nov 2021 University of Galway was recognised with a [STARS Gold](#) rating for sustainability achievements.
 - e. Built a very strong Energy Team in the Buildings & Estates Office, which won Energy Team of the Year at the SEAI Energy Awards in 2019

- f. Through CUSP, participate in a wide range of sustainability partnerships, certification schemes and reporting initiatives.
 - g. Solar PV on campus roof tops, led lights, EV car charging points, refurbishment of no 9 distillery road as an exemplar building
5. Proposed projects
 - a. North Campus district heating
 - b. Dangan solar farm
 - c. Next Sustainability Strategy funding
 - d. Collaboration, e.g., Environmental Science and Civil Eng., Galway City Council (NetZero cities, Decarbonization Zone)
 6. Where can we get more info:
 - a. <https://www.universityofgalway.ie/sustainability/>
 - b. [Dr Richard Manton](#)

European projects: Horizon 2020 AURORA

Overview (provided by Martin Brocklehurst): The EU-funded AURORA project, see <https://www.aurora-h2020.eu/>, empowers several thousand citizens across five locations in Denmark, England, Portugal, Slovenia, and Spain to make more informed energy decisions. They monitor their individual energy behavior in a mobile app, and receive automated recommendations in return.

Objectives:

1. Support collaboration among universities for sharing the optimal usage of energy
2. Providing leadership to the community (Denmark as an example),
3. Influence next generation
4. Develop a business model and legal support

Where can we get more info:

<https://cordis.europa.eu/project/id/101036418>

Links provided by Martin in Zoom chat:

- AURORA project website: <https://www.aurora-h2020.eu>
- Project article on experience of universities setting up energy communities: <https://www.aurora-h2020.eu/aurora/policy-and-legal-issues/>
- Project's Energy Tracker app: <https://www.aurora-h2020.eu/aurora/ourapp/>
- Call for "ambassadors": <https://www.aurora-h2020.eu/ambassadors-call/>
- Dashboard for Energy Tracker app: <https://dashboard.aurora-h2020.eu/en-GB>
- LinkedIn group MB suggested joining: <https://www.linkedin.com/groups/12942018/>
- Climate Pact group MB suggested joining: https://climate-pact.europa.eu/index_en

Highlights of the Discussion

An overview of the SEAI SEC programme was followed by presentations from HEI SECs. The presentations showed the diversity of approaches and objectives of the SECs. Common objectives among the HEI SECs are to lead the energy transition in their locality, either by example (UCD) or by taking an active leadership role in the locality (ATU).

UCD mentioned the challenge of refining the SEC remit to areas where it has agency, and not overlapping with other sustainability initiatives in the HEI. UoG explained their approach to mapping the role of the SEC within the broader University sustainability agenda.

Issues around the definition of what “community” is in HEIs terms were discussed. HEIs’ remit spans research and education. The campus operation is supported by professional operational capabilities and expertise in energy efficiency. There are opportunities to raise awareness of the clean energy transition among the “captive” student body, use the campuses as living labs, as well as connecting to the campus neighbourhood and HEI innovation units to support local enterprise.

The presentations highlighted the progress that has been made in the HEIs, but that this is often not visible to students. For example solar panels, and heat pumps are largely invisible to students. Dashboards or other visibility mechanisms could be useful to highlight the significant achievements by the HEIs.

A more detailed mapping exercise of the HEI SECs could be helpful and assist in understanding how HEI SECs can be effective without duplicating efforts. In particular, the importance of distinguishing between SECs and Local Energy Communities was highlighted. Given the size and location of the HEI campuses, each will have their own opportunities and challenges. For instance, some HEIs may find it easier to secure grid connections. There is also a need to explore governance issues, and to understand which groups/divisions within the HEIs are best positioned to implement identified projects, and to understand obstacles for the HEIs to implement their energy plans.

Conclusions and recommendations

The workshop explored the objectives of the HEI SECs and discussed common opportunities and challenges. Given the reach of the HEIs across their student bodies, staff and geographical neighbourhoods, there is a significant opportunity to mix research and education for energy sustainability. The diversity of models adopted by the HEIs show the range of opportunities to go beyond meeting the public sector obligations on the campuses, and lead their neighbourhoods in energy efficiency and emission reduction. There is an opportunity to learn from each other’s experiences as the challenges faced by HEI SECs are different from other communities. Given the diversity of approaches taken by the HEIs further thought is needed on whether a Community of Common Interest could be beneficial, or if a looser network of HEI SECs would be more useful. The SEAI are interested in the role of the HEI SECs within their communities. Another workshop to map communalities, and share progress would be beneficial.