



codema
Dublin's Energy Agency

CODEMA ANNUAL REPORT 2023



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01. CEO FOREWORD

2023 was the warmest year since global records began in 1850. Every year we do not take significant action, it increases the pressure on reducing emissions in an ever-smaller window of opportunity before we hit catastrophic global temperatures. 2030 is creeping ever closer, and Ireland is not on track to keep within our legally-binding carbon budget for the period 2021-2025.

Codema is prepared and ideally positioned to play a leading role in facing this national challenge; we are close to 30 years in operation, we are a well-known, experienced and trusted not-for-profit, working solely for the public good on behalf of the Dublin Local Authorities. This means that we can be fully focused on achieving strategic goals centred on a fair and inclusive energy transition, rather than increasing shareholder income.

With that in mind, in 2023, we focussed our attention on the some of the hardest-to-decarbonise sectors in Ireland - renewable heat and household energy - looking at the technical but also the very important institutional and socio-cultural solutions that are needed. With 94% of home heating in Ireland based on fossil fuels and household energy prices still well above average, the demand for our energy awareness services including our Home Energy Savings Kits continued to grow, with another 197 kits developed and distributed across the country. As part of our Zero Together initiative, we also carried out a significant piece of research with the Think-Tank for Action on Social Change (TASC), exploring the impact that the energy transition may have on Dublin's most vulnerable communities. The results uncovered barriers to taking action on climate change within these neighbourhoods, along with recommendations to better support marginalised communities in the future.

In the heating sector, Codema and South Dublin County Council hit a major milestone with the official launch of the Tallaght District Heating Scheme in April 2023 by Minister Eamon Ryan. The scheme, which supplies renewable and waste heat to local buildings, was also recognised at the 2023 Global District Energy Climate Awards, winning the 'Emerging District Energy Market' award. Codema and Fingal County Council also kicked off the Blanchardstown District Heating project, with Codema completing the initial feasibility study for the scheme. These district heating schemes take buildings off fossil fuel-based gas heating systems and utilise local waste heat and Irish renewable electricity instead, not only reducing emissions, but reducing Ireland's extremely high dependence on imported fossil fuels.

One of our main research outputs for the year examined the possibilities of sector coupling of heat, electricity and hydrogen; with Dublin set to have large amounts of off-shore

wind and large-scale district heating schemes, we partnered with Mullan Grid to investigate the co-benefits, with funding secured through the SEAI Research, Development and Demonstration programme. The results show there could be as much as 23% electricity curtailment by 2035, and district heat (with heat storage) can potentially reduce wasted (or curtailed) renewable electricity by up to 86% in 2030 if the national district heat target of 2.7 TWh is achieved.

2023 also required all Irish local authorities to prepare a Climate Action Plan, as mandated under the Climate Act 2021. This also included the creation of plans for specific 'Decarbonising Zones' within each local authority area. It was therefore a busy year for Codema in supporting our Dublin Local Authorities with these obligations and providing the energy and emissions-related evidence base for each of the local authorities' Decarbonising Zones. Within Dublin City Council's Ballymun and Ringsend/Poolbeg Decarbonising Zones, Codema was also tasked with developing and rolling out an extensive, best-practice local engagement process. We successfully engaged with and listened to large numbers of community members' views on the energy transition in their areas, in order to co-create the draft Decarbonising Zone plans.

In order to increase our impact and continue to provide high level services to our local authority clients, it was essential to increase our staff numbers. In 2023 Ireland reached record employment rates, and as a not-for-profit, in order to attract and retain talent in such a competitive market, we have also had to innovate internally. We were delighted to welcome an unprecedented number of new employees in 2023, with 14 new staff joining our team, bringing us to 31 full-time employees. With staff being our main asset, our internal business objectives very much focus on their wellbeing, growth and professional development. We are proud of the diversity of our team; we have an equal number of male and female identifying colleagues, from 11 different nationalities, with an age range spanning 25 years. Overall we are a young office, with 75% of our staff under 40, mirroring the increasing interest in careers in this sector for young people.

In 2023, we introduced our Family Leave policy, founded on the basis of improving equality in the workplace and in family life. All staff, regardless of gender, who become new parents are paid a full salary for an equal period of time off work to spend bonding with their new child and sharing household responsibilities. We are also still operating under a 4-day week policy, which allows staff to maximise their productivity, working 20% more efficiently in order to have an extra day off work per week. In recognition of this work, Codema was delighted to win the Employee Experience category in the 2023 Business and Finance ESG Awards.

"Codema is prepared and ideally positioned to play a leading role in facing this national challenge; we are close to 30 years in operation, we are a well-known, experienced and trusted not-for-profit, working solely for the public good on behalf of the Dublin Local Authorities."

As Chief Executive Officer, I couldn't be prouder to lead this exceptional group, and I hope this Annual Report gives an insight into the amazing work they continue to produce. I would also like to highlight the role our Board has played in our successes, and to thank our voluntary Board members for giving up their time and expertise to assist and support the Executive team throughout the year.

We look forward to the year ahead, and sharing more of our work with you, and ask you to mark the 14th of November 2024 in your calendars for our inaugural Decarbonising Dublin Summit, where we look forward to welcoming a range of inspiring speakers and collaboration partners to drive the energy transition of our capital, together.



Donna Gartland
Chief Executive Officer, Codema



02. ABOUT CODEMA



Vision, Mission and Values

Codema is Dublin's Energy Agency and is committed to leading Dublin's low-carbon transition towards 2030 and 2050. We act as the energy agency to the four local authorities in Dublin - Dublin City Council (DCC), Dún Laoghaire-Rathdown County Council (DLRCC), Fingal County Council (FCC) and South Dublin County Council (SDCC) - and support each Council in leading and influencing this low-carbon transition by improving their own energy efficiency, incorporating renewable energy technologies and reducing their greenhouse gas emissions, while also facilitating wider decarbonisation across the Dublin region.

We pride ourselves in being very successful in bringing innovative energy projects and methods to Ireland. For example, we are working with Dublin City Council, Fingal County Council and South Dublin County Council to develop Ireland's first large-scale district heating networks, which will supply homes, businesses and public sector buildings

in the Dublin area with low-carbon, renewable heat. Using our knowledge of European best practice, we are working with all four Dublin Local Authorities to implement Energy Performance Contracting (EPC), with four projects already ongoing in Dublin City Council, Dún Laoghaire-Rathdown County Council and Fingal County Council. An additional two EPC projects are also at the procurement stage, with a further five at initial project appraisal stage. Our Energy Planning team has developed the Dublin Region Energy Master Plan, which is the first of its kind in Ireland and provides spatially-led, evidenced-based solutions for reducing our capital's emissions towards 2030 and 2050. We are also using innovative methods to improve energy and climate awareness among citizens, such as our successful Home Energy Saving Kit scheme, extensive local engagement programmes within the Councils' Decarbonising Zones and the development of a collaborative roadmap for Dublin's energy transition, with citizens at the forefront, through the Zero Together initiative.



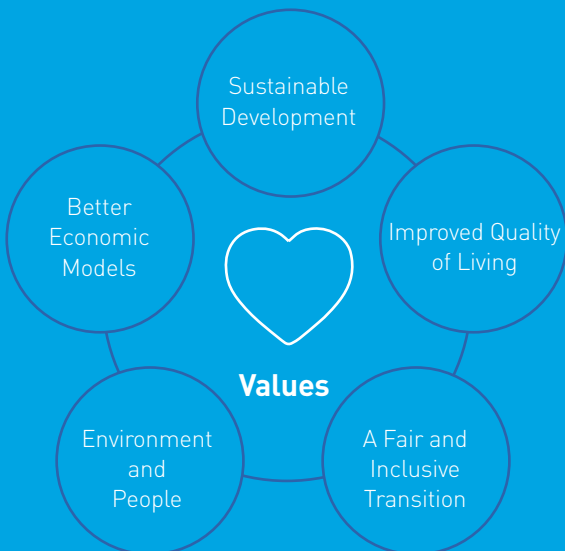
Vision

Codema's vision is for a better quality of life for all citizens through a fair and inclusive transition to a low-carbon society.



Mission

Our mission is to accelerate Dublin's low-carbon transition through innovative and inclusive local-level energy and climate change research, planning, engagement and project delivery, in order to mitigate the effects of climate change and improve the lives of citizens.



Our Approach



Working with the four Dublin Local Authorities in leading and influencing the low-carbon transition



Making innovative energy projects mainstream with wide-scale impact



Influencing national and European policy through our on-the-ground knowledge of best practice models in Europe



Supporting networks of communities in developing a low-carbon energy model



Identifying and championing best-practice, low-carbon transport and building solutions

The Codema Board of Directors

Codema's Board of Directors oversees the governance of the company and helps ensure that Codema's vision and mission are achieved. The board members consist of senior representatives from the Dublin Local Authorities, along with representatives from the energy, legal and financial sectors.



The Codema board meets on a bi-monthly basis and consists of the following members:

Frank Curran (Chair)

Board Chairperson and Non-Executive Director, Dún Laoghaire-Rathdown County Council

Chief Executive, Dún Laoghaire-Rathdown County Council

Gerry Wardell

Board Secretary and Non-Executive Director (Independent)

Donna Gartland

Executive Director
Chief Executive Officer, Codema

Derek Kelly

Non-Executive Director, Dublin City Council board nominee

Executive Manager, Environment and Transportation Department, Dublin City Council

David Storey

Non-Executive Director, Fingal County Council board nominee

Director of Services for Environment, Climate Action, Active Travel and Sport, Fingal County Council

Teresa Walsh

Non-Executive Director, South Dublin County Council board nominee

Director of Environment, Water and Climate Change, South Dublin County Council

PJ Rudden

Non-Executive Director
Managing Director, Aengus Consulting Limited

Mark Varian

Non-Executive Director
Partner, Eversheds Sutherland

Barry Gavin

Non-Executive Director
Chair of Audit and Risk Committee

02. ABOUT CODEMA

(CONTINUED)

The Codema Team

Codema currently employs 30 staff who have qualifications and experience in areas such as Engineering, Sustainable Development, Sustainable Infrastructure, Energy Planning and Policy, Public Engagement, Communications, Project Management and Financial Administration. This allows the team to deliver key services within areas such as Energy Management, Project Implementation, Awareness, Communications and Engagement, Research, Development and Innovation and Management Support.



Donna Gartland
Chief Executive Officer
MSc in Sustainable Energy Planning and Management
BEng in Energy and Environmental Engineering



Edel Giltenane
Executive Manager, HR Lead
Diploma in Human Resource Management
Certificate in SME Management
PMI Project Management Professional (PMP)
MSc in Environmental Resource Management
BSc in Earth Science



Claire Donoghue
Office Manager
Certificate in Administration and Digital Skills
Professional Diploma in Digital Marketing
GDPR Training
MA in Film & Television Studies
BA in Media Production and Management
HND Television Operations and Production



Kevin Craven
Project Finance Manager
Diploma in Financial Services
Certified Project Management Diploma
BA in English, Sociology and Politics



Dec McCormac
Executive Project Manager Project, Resource and Funding Lead
PMI Project Management Professional (PMP)
Certificate in Public Procurement
MSc in Sustainable Development
BA (Int'l) in Geography and Archaeology



Joe Hayden
Executive Manager, Project Implementation Lead
Certificate in Public Procurement
Certified Measurement and Verification Professional (CMVP)
MSc in Sustainable Development
BA/BAI in Mechanical and Manufacturing Engineering



Emily Clarke
Energy Engineer
BEng (Honours) in Environmental Engineering
Bachelor of Arts in French and International Studies
Certified Energy Manager in Training



Suzanne Fitzpatrick
Executive Manager, Awareness, Communications and Engagement
Executive Diploma in Digital Marketing
Certificate in Internal Communications
Diploma in PR and Event Management
BA in Journalism



Katie Harrington
Public Engagement Manager
MSc in Climate Change: Policy, Media and Society
Postgraduate Diploma in Digital Marketing
BSc in Marketing



Katia Tikhoniouk
Communications and Project Manager
Diploma in Graphic Design and Desktop Publishing
Certificate in Project Management
Diploma in Digital Marketing
MA in Architecture
BA in Architectural Science



Gobnait Ní Néill
Energy and Climate Awareness Officer
Postgraduate Certificate in Creativity, Innovation and Entrepreneurship
BDes Industrial Design



Sarah McEllistrem
Public Engagement and Stakeholder Coordinator
Higher Diploma in Sustainability in Enterprise
LL.B in Law and French



Hannah Byrne
Communications and Engagement Coordinator
MSc. in Climate Change: Policy, Media and Society
Professional Diploma in Project Management
Diploma in Digital Marketing
BA (Hons) in Politics and Sociology



Ciarán Murphy
Executive Manager, Research, Development and Innovation
Masters in Energy Systems Engineering
BE in Mechanical Engineering



John O'Shea
Senior Energy Systems Analyst, Heat and Electricity Lead
Post-Graduate Diploma in Sustainable Energy
CIBSE-certified Heat Networks Consultant
BEng in Civil Engineering



Rebecca Cachia
Senior Energy Engineer/
Emissions and Energy
Planning Lead

Masters in Sustainable
Infrastructure
B.E. and A. (Hons) in
Architecture and Civil
Engineering



Conor Leahy
Executive Manager,
Energy Management

MSc in Energy Management
BE in Biosystems Engineering
Certified Measurement and
Verification Professional
Certified Energy Manager



Eoin Ahern
Senior Energy Engineer/
Transport and Renewables
Lead

MEngSc in Sustainable Energy
Research MEngSc at UCC -
Renewable Natural Gas
BE in Mechanical Engineering
Certified Energy Manager (CEM)
Non-domestic BER Assessor
Registered DEC Assessor
Registered Energy Auditor



María Diaz
Energy Manager

Specialisation in Operations
Management
BEng in Energy Technologies



Adam Doyle
Energy Engineer

ME Energy Systems
Engineering
BSc Energy Systems
Engineering
BEng in Mechanical
Engineering
Domestic BER assessor
Non-domestic BER assessor
Registered Technical Advisor



Neil O'Leary
Senior Energy Engineer

MSc Energy Science
BEng Energy Engineering
CIBSE-certified Heat Networks
Consultant



Kieran Donohue
Energy Systems Graduate

ME Energy Systems
Engineering
BEng in Energy Systems
Engineering



Admir Shala
District Heating
Development Manager

MSc in Energy, Environmental
Technology and Economics
BSc in Electrical Services and
Energy Management
Diploma and Certificates from
CPD International Programmes



**Patricia Astorgano
Rodera**
Low Carbon Project
Manager

MSc in Sustainable Energetic
Engineering
BSc in Civil Engineering



Eli Babei
Project Coordinator

Certificate on Communicating
for Influence and Impact
Certification in Project
Management
MA in European Integration and
Civil Law
BA in Public Law



Arthur Trousseau
Energy System Engineer

Combined Bachelors/Masters
degree in Engineering from
the French Graduate School of
Engineering programme of IMT
Nord Europe



Grainne MacNamara
Energy Analyst Graduate

BSc in City Planning and
Environmental Policy
MSc in Regional and Urban
Planning



James Lawson
Energy Systems Graduate

MAI in Civil, Structural and
Environmental Engineering



Ruari Mulvenna
Low Carbon Project
Engineer

Post-Graduate Diploma in
Sustainable Energy
BEng (Hons) in Mechanical
Engineering
Domestic Energy Assessor
(Elmhurst)
Non-Domestic Energy Assessor
(Elmhurst)



Martin Eeson
Graduate Energy Engineer

MSc in Sustainable Energy
Engineering
BSc in Environmental
Engineering

02. ABOUT CODEMA

(CONTINUED)

CORE COMPETENCIES



ENERGY MANAGEMENT

Monitoring and Reporting
 Energy Databases
 Energy Audits
 Display Energy Certificates
 ISO 50001
 Energy Efficiency Upgrades
 Energy Management System Implementation



PROJECT IMPLEMENTATION

DeliveREE
 Measurement and Verification Support
 EPC Facilitator Training
 District Heating Contracting
 EV Charging



AWARENESS, COMMUNICATIONS AND ENGAGEMENT

Zero Together
 Local Engagement in Decarbonising Zones
 Think Energy Campaign
 Home Energy Saving Kits
 Energy and Climate Awareness Programmes
 Best-Practice Public Engagement
 Educational Workshops and Information Events
 Promotion of Local Authority Energy and Climate Change-Related Projects
 Promoting Sustainable Energy Communities



RESEARCH, DEVELOPMENT AND INNOVATION

EU, National and Local Energy and Climate Change Policy Analysis
 District Heating Research, Project Development and Policy Advice
 Energy Planning and Modelling across Electricity, Heat, Transport and Building Energy Efficiency
 Spatial Energy Master Planning and Decarbonising Zones
 Spatial Energy Demand Analysis
 GHG Emission Baselines and Modelling
 Energy and Carbon Assessments
 Techno-Economic Energy System Analysis and Energy System Financial Appraisals
 Advice on Development Plans
 Sustainability Reporting
 Climate Mitigation



MANAGEMENT SUPPORT

Financial Administration and Reporting
 Project Proposals
 Tender Development
 Local and EU Project Management
 National and EU Funding Applications
 Resource Planning
 Project Plan Development

03. WORK PROGRAMME 2023



ENERGY MANAGEMENT

Monitoring and Achieving Public Sector Energy Targets

Codema works with the Dublin Local Authorities (DLAs) to help them monitor and achieve their public sector targets. As set out in the Government's Climate Action Plan, targets of a 50% improvement in energy efficiency and a 51% reduction in CO₂ by 2030 have been set for the public sector.

As part of the Sustainable Energy Authority of Ireland (SEAI)'s new 2030 Monitoring and Reporting (M&R) system, a statutory greenhouse gas (GHG) emissions target must now be met in addition to the pre-existing energy efficiency target. The SEAI has decided to implement this as a 51% reduction in direct GHG emissions from transport and thermal fuels. Indirect GHG emissions related to electricity have been excluded from this target, as they are already expected to fall significantly, due to the high level of decarbonisation of the national grid supply by 2030. These new targets will demand continued and increased focus on the energy performance of the Councils' buildings and operations over the coming decade. Codema will continue to work with the relevant DLA Energy Performance Officers (EPOs) and Energy Teams to help them to identify and implement the best energy-saving opportunities in their organisations and develop a pathway towards achieving their new 2030 targets.

As set out in the Government's Climate Action Plan, new targets of a 50% improvement in energy efficiency and a 51% reduction in CO₂ by 2030 have been set for the public sector.



2030 Targets for the Public Sector

National Climate Action Plan

50% improvement in energy efficiency

National Climate Action Plan

51% reduction in direct emissions from transport and thermal fuels

Management of Public Sector Monitoring and Reporting

Under S.I. 426 of 2014, the DLAs have an obligation to report annually on their energy performance. In practice, this annual reporting involves compiling full data of their previous year's energy consumption. This is made up of MPRN data for all electricity accounts and GPRN data for all natural gas accounts, along with the annual consumption data for non-metered public lighting, heating oil, business travel and transport fuels.

In 2023, Codema supported all four DLAs with this statutory reporting to the national energy M&R system operated by the SEAI on behalf of the Department of the Environment, Climate and Communications (DECC). The M&R system is very useful for tracking the individual local authority's progress towards its 2030 energy efficiency and emission targets.

In 2021, SEAI published an updated Gap-to-Target tool, to assist local authorities in identifying the energy efficiency improvements and greenhouse gas emission reductions that each Council will be required to make by 2030. It has subsequently released a number of updated versions of the Gap-to-Target tool. Codema updated all versions of the Gap-to-Target tool as they have been released and inputted all the required data to model GHG emissions out to 2030.

Emission Target to 2030

Emissions baseline



2030 emissions reduction target: 51%



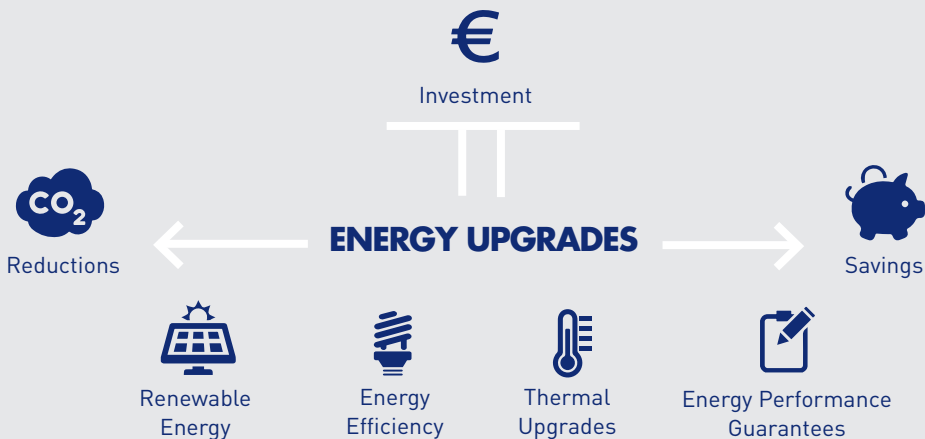
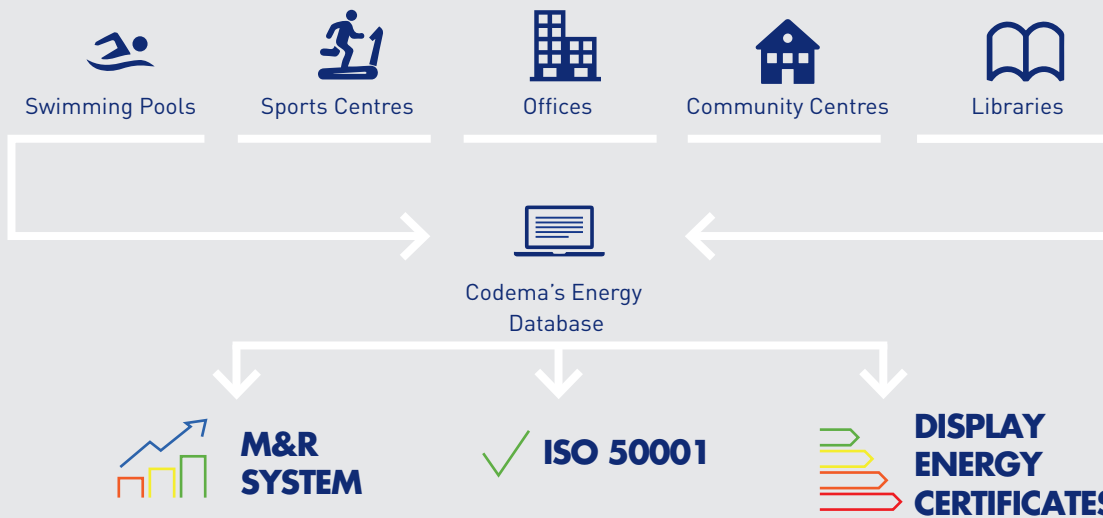
03. WORK PROGRAMME 2023

ENERGY MANAGEMENT (CONTINUED)

Codema can assist the DLAs with the following Energy Management Processes



ENERGY SURVEYS OF BUILDING GROUPS





Energy Reviews

For the past number of years, Codema has been producing annual Energy Review documents for each of the DLAs. The Energy Reviews highlighted the total amount of energy that the Councils consumed throughout the year, along with the total cost and carbon emissions associated with this energy use in the same year. This data allowed Codema to develop a specific list of energy-saving recommendations, guiding each DLA on how best to tackle their Significant Energy Users (SEUs) and continue to meet public sector targets.

In 2023, Energy Reviews were completed for South Dublin County Council (SDCC), Fingal County Council (FCC) and Dún Laoghaire-Rathdown County Council (DLRCC) as part of their energy management systems.

ISO 50001

In 2023, Codema worked regularly with the DLAs on the implementation and management of their energy management systems to coordinate all actions towards reaching and maintaining certification to ISO 50001 standard and meeting energy efficiency and carbon reduction targets. FCC completed SEAI's ISO 50001 masterclass in 2019, and received certification to the new 2018 standard in February 2020. In May 2023, FCC passed its surveillance audit.

DCC has begun the SEAI ISO 50001 Accelerator programme, which will run until the end of 2024. This Accelerator programme is aimed at guiding the local authorities towards achieving ISO 50001 accreditation.

SDCC signed up to SEAI's ISO 50001 masterclass and completed the course in 2019. Similarly to DCC, SDCC has also begun the ISO 50001 Accelerator programme.

Codema is currently aiding both DCC and SDCC in completing outputs from this programme and is helping the Councils to progress their energy management system to a stage where they can apply for certification in 2024.

Dún Laoghaire-Rathdown County Council achieved ISO 50001 accreditation in 2016 on the back of SEAI's initial ISO 50001 masterclass. Codema agreed a work programme to aid the local authority with its energy management system and throughout the recertification process. In December 2023, DLRCC successfully passed its surveillance audit.

Energy Team Meetings

In 2023, Codema helped to facilitate 16 energy team meetings across the four Dublin Local Authorities. These energy team meetings are part of the structured energy management system that the Councils have either achieved ISO 50001 certification for or are in the process of moving towards certification.

As mentioned previously in this section, DLRCC and FCC currently have ISO 50001 energy management systems in place. As part of these systems, both local authorities meet regularly with their team members, in order to keep track of energy performance, as well as the energy management system in its entirety. These energy teams also keep track of action plans and ensure SEUs are on target to achieve their energy efficiency and carbon reduction goals.

03. WORK PROGRAMME 2023

ENERGY MANAGEMENT (CONTINUED)



Photo courtesy of Meath County Council

These team meetings are a crucial part of the Councils' energy management system and Codema helps both local authorities to facilitate these meetings by helping to set agendas and work with each SEU area, all with the view to ensure they reach their targets and that the energy management system continues to improve.

Display Energy Certificates

The information from Codema's energy database and energy surveys is used to prepare Display Energy Certificates (DECs) for each publicly-accessible local authority building with a floor area greater than 250m², as required under the regulation S.I. 243 of 2012. DECs allow for a comparison of a particular building's energy performance against a standard benchmark, and are updated annually with the actual energy consumption over the previous 12 month period. This then allows for the building's energy performance to be tracked from one year to the next.

Codema assisted the four DLAs with the certification of 88 public buildings in total in 2023. This information was entered into the SEAI system for the local authorities, and Codema issued certificates to the managers of all of these buildings, along with information on how much energy would need to be saved in the following year to improve their energy rating. Each building manager also received a copy of Codema's 'Guide to Display Energy Certificates in Local Authority Buildings' to accompany these certificates and encourage direct action.

Mid-East Energy Unit

In January 2023, the Mid-East Energy Unit (MEEU) was initiated in partnership with Kildare, Meath and Wicklow County Councils. The core Energy Unit service is provided by Codema working in partnership with each of the local authorities. The short-term goal is to support the three local authorities in meeting their 2030 energy efficiency and emission targets through the identification and implementation of energy efficiency and low-carbon projects. The long-term goal is to establish and embed a structured energy management system within the local authorities to help them to fulfil their exemplary leadership role with respect to climate action.

Codema acts as the regional coordinator of the Mid-East Energy Unit and provides services as agreed in the three-year contract. Services provided in 2023 included:

- A thorough review of M&R reporting to date. A detailed report was produced outlining system improvements that could be implemented.
- Established a pipeline of projects and a pathway to meet mandatory public sector energy targets by 2030. This was informed by the gap-to-target tool set out in the M&R system.
- A review of Significant Energy User (SEU) energy use as well as the establishment of energy baselines and energy performance indicators across the local authorities.

ENERGY MANAGEMENT - KEY OUTPUTS FOR 2023



**M&R SYSTEM REVIEWS
FOR THE MID-EAST
ENERGY UNIT LOCAL
AUTHORITIES**



**ISO 50001
CERTIFICATION
RETAINED FOR DLR
AND FINGAL COUNTY
COUNCILS**



**ISO 50001 ENERGY
REVIEWS PRODUCED
FOR SDCC, DLRCC
AND FCC**

Energy Management - Actions and Outputs 2023

Date	Actions	Project support	Outputs
January	MPRN and GPRN M&R uploads for all DLAs	-	M&R system compliance deadline met
	FCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
	Individual MEEU kick-off meetings held for Kildare, Wicklow and Meath	MEEU	Presentations
February	FCC senior management review presentation	-	Presentation and report produced
	Significant Energy User identification and restructuring carried out for SDCC	-	Analysis report
	Kildare Climate Action SPC Meeting	MEEU	Presentation
	MEEU Steering Group meeting	MEEU	Presentation given on progress
	Energy Elephant training for KCC	MEEU	Presentation and training provided
March	Mansion House survey carried out for DCC	-	Audit conducted and report produced
	FCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
April	Fuel and staff travel uploads to M&R for all DLAs	-	M&R system compliance deadline met
	FCC Energy Review completion	-	Energy Review report produced

03. WORK PROGRAMME 2023

ENERGY MANAGEMENT (CONTINUED)

Date	Actions	Project support	Outputs
May	SEU database update for all 4 DLAs	–	Database updated with latest data
	Energy Team Meeting and Performance Monitoring Report	–	Presentation and report provided
	FCC Energy Team Meeting and Performance Monitoring Report	–	Presentation and report provided
	ISO 50001 Audit Preparation for FCC	–	ISO 50001 documents updated
	ISO 50001 Surveillance Audit for FCC	–	Assistance with audit
	SDCC Energy Management Team Meeting and Performance Monitoring Report	–	Presentation and report provided
June	DLRCC Energy Team Meeting and Performance Monitoring Report	–	Presentation and report provided
	MEEU Steering Group meeting	MEEU	Presentation given on progress
	HESK Demonstration in Maynooth	MEEU	Gave demonstrations of HESKs at Picnic in the Park event in Maynooth
	M&R Review MCC Report close out meeting	MEEU	Presentation and report provided
	DEC Generation for all 4 DLAs	–	All necessary DEC's generated
July	SDCC Energy Review Completion	–	Energy Review report produced
	MEEU Steering Group meeting	MEEU	Presentation given on progress
August	DCC Energy Oversight Committee Meeting	–	Presentation provided
	FCC Energy Team Meeting and Performance Monitoring report	–	Presentation and report provided
	ISO 50001 training provided	MEEU	Presentation and training provided
September	DLRCC Energy Review Completion	–	Energy Review report produced
	Preparation of DLRCC Senior Management Review Presentation	–	Presentation and report provided
	DLRCC Energy Team Meeting and Performance Monitoring Report	–	Presentation and report provided

Date	Actions	Project support	Outputs
	M&R Review KCC Report close out meeting	MEEU	Presentation and report provided
	Energy Elephant data review for DCC	-	Analysis report completed
October	EnPI Baseline update for DLRCC	-	Analysis report completed
	Quarterly libraries meeting for DLRCC	-	Presentation given
	DLRCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
	BACs compliance analysis for DLRCC	-	Analysis report completed
	Kildare Climate Action Day HESK demonstration	MEEU	Demonstrated the HESKs at Kildare Climate Action Day in Naas
	EnPI baseline update for FCC	-	Analysis report completed
	FCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
November	Building Registry for DCC	-	Building registry deadline met
	DCC Energy Oversight Committee Meeting and Performance Update	-	Presentation and report provided
	DLRCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
	ISO 50001 Audit Preparation for DLRCC	-	ISO 50001 documents updated
	ISO 50001 Surveillance Audit for DLRCC	-	Assisted with audit
	FCC Energy Team Meeting and Performance Monitoring Report	-	Presentation and report provided
	ISO 50001 Surveillance Audit for FCC	-	Assisted with audit
	Building Registry for SDCC	-	Building registry deadline met
	M&R Review WCC Report close out meeting	MEEU	Presentation and report provided
December	Building Register completion for DLRCC	-	Building registry deadline met

03. WORK PROGRAMME 2023



PROJECT IMPLEMENTATION

DeliveREE

In early 2021, Codema was awarded funding under the Horizon 2020 Project Development Assistance call for the DeliveREE project. DeliveREE aims to create an innovative project finance and delivery structure for energy efficiency and renewable energy projects in the Dublin region, across the four Dublin Local Authorities, using various performance-based contracting structures. By creating a structured approach, DeliveREE will accelerate the formation of large-scale projects by standardising the project development process, allowing projects of various types and sizes to be aggregated to create scale. This enables the use of energy performance and energy supply contracts whose performance guarantees are both critical for achieving value for money and for providing a mechanism for the involvement of private capital.

The main overall objectives of DeliveREE are to:

- Develop a Project Implementation Unit (PIU) that will be a 'one-stop-shop' for energy efficiency and renewable energy projects in Dublin, which will move projects forward from idea stage through to contracting quickly and efficiently, and have a major impact on Dublin's building stock.
- Deliver a project pipeline of energy efficiency measures across a range of buildings in the four Dublin Local Authorities

Underlying and supporting the main overall objectives, the other specific objectives of DeliveREE are to:

- Develop an innovative, structured assessment of projects, with standardised procedures/protocols at each step or stage-gate, for quick and efficient decision making, forming the heart of the PIU

- Bridge the viability gap caused by lack of project owner capital and attract private finance
- Aggregation of small and medium projects for scale
- Achieve large-scale energy efficiency and renewable energy projects
- Bring high-quality project offerings to the ESCo and private finance market
- Promote the PIU 'one-stop-shop' approach as the best-practice model for implementing energy efficiency and renewable energy projects and achieving national and EU GHG targets
- Disseminate results of the Dublin pilot in order to foster support of DeliveREE approach and stimulate new projects at a local, national and EU level and support the EU's Green Deal objectives

DeliveREE is currently in month 32 of a 48 month project. During this period, Codema has established a dedicated PIU team internally who are actively working on the development and testing of the PIU procedures and protocols and the implementation of projects. The first task of this team was to complete a review of all existing structures of a similar nature. Following this review, the team set about developing the first adaptation of the innovative structure for the assessment of projects, with standardised procedures/protocols. This PIU structure was then coded into an Airtable database which is continually reviewed and updated to fit the needs of the PIU. An interface was developed to draw on the information in the database and enable ease of use for the PIU members. The interface is also continually refined and updated, and has gone through at least five major revisions.



One of the main outputs of DeliveREE are signed contracts for at least nine project lots. The PIU team continues to work in cooperation with the four Dublin Local Authorities to further determine the pipeline of projects necessary for them to achieve their 2030 energy and CO₂ reduction targets. A 'Gap-to-Target Analysis' was completed to assess the current gaps to the government emission targets for each local authority, and outlined the projects required to make sure these targets are met, leading to an updated investment pipeline. This resulted in some project lots or groupings being redefined and new additional project lots being added. When the original lots were compiled, the focus was more on energy efficiency but this has now shifted to decarbonisation and as a result, deeper interventions in a smaller number of key buildings. This was a result of the gap-to-target analysis and associated decarbonisation pathways developed for each local authority, which showed that full decarbonisation of a small number of key buildings was critical and that many of the smaller buildings had minimal impact in terms of achieving 2030 targets but will become more important in terms of zero emission 2050 targets.

The DeliveREE Project Implementation Unit is currently developing and advising on the procurement of several EPCs, which involve holistic energy upgrades for large council buildings including county halls, leisure centres, theatres and large libraries. In 2023, the DLR EPC began procurement, and the contractor is currently developing a detailed design. Codema also developed appraisal and procurement documents for the SDCC EPC, which gained approval to proceed to procurement. Additionally, the PIU has been refining the pipeline of smaller buildings and is exploring the possibility of aggregating these buildings into large lots for procurement with framework agreements.

This DeliveREE project pipeline now contains three solar PV projects that the team is actively progressing with two local authorities. The first is for a 200kW system designed to provide electricity to an onsite landfill leachate treatment facility, which is now ready to advance to planning and procurement. The second project is for a 5 to 10 MW system located at the same landfill but designed for export to the electricity grid. A consultant was procured by the PIU and SDCC to complete a feasibility study report for this project, which is due in Summer 2024. The third solar project began development in September 2023. Codema prepared a project appraisal for the procurement of solar PV arrays on Grove Road Offices, Swords County Hall and Coolmine Depot within Fingal County Council. The project was approved for procurement in October 2023 and Codema began preparation of procurement documents.

As the projects identified are primarily focused on deep retrofit and zero carbon, achieving a project that is financially attractive for all over a reasonable contract period can be challenging. With this in mind, the PIU and local authorities continue to engage with SEAI for capital grant funding to support the roll out of the DeliveREE project pipeline. The initial engagement with SEAI began in December 2021 and we received a Letter of Intent in respect of the Pathfinder Programme in February setting out a maximum of €4,000,000 for the 2024 projects only, with more funding to be agreed for 2025 and 2026.

Table 1 sets out the current project lots and their current status. Project lots at the initial appraisal stage are subject to change, while those that have advanced to procurement are unlikely to alter.

03. WORK PROGRAMME 2023

PROJECT IMPLEMENTATION (CONTINUED)

Table 1: DeliveREE - 2024 Decarbonisation Projects

Lot no.	Project	Status
Lot 1	DLRCC Buildings EPC - County Hall, Lexicon, Pavilion Theatre	Detailed design
Lot 2	DLR Leisure EPC Decarbonisation - Loughlinstown Leisure Centre, Meadowbrook Leisure Centre, Monkstown Leisure Centre	Initial design
Lot 3	Harbour Master's Lodge	Tender documents issued
Lot 4	Libraries EPC - Draíocht and Blanchardstown Library, Rush Public Library, Malahide Library, (Balbriggan Library, Ballycoolin Business Park)	Tender documents for procurement of initial audits
Lot 5	Solar PV - Swords County Hall, Grove Road Offices, Coolmine Depot	Tender documents issued
Lot 6	SDCC Buildings EPC - County Hall and Tallaght Library, Civic Theatre, Rua Red, Clondalkin Offices, Clondalkin Leisure Centre, Tallaght Leisure Centre	Tender documents prepared and approval to proceed to procurement
Lot 7	Arthurstown Landfill small-scale solar PV	Tender documents prepared
Lot 8	Arthurstown Landfill large-scale solar PV	Detailed feasibility study underway
Lot 9	SDCC Small Building Upgrades - Fettercairn Community Centre, Ballyroan Library, Bawnogue Community Centre, Quarryvale Community Centre, Knockmitten Community Centre, Whitechurch Community and Youth Centre, Belgard Community Centre, Firhouse Community Centre, Glenview Lodge	Initial project development
Lot 10	Depot Heating Upgrades - Watery Lane and Coolmine Depot	Project appraisal, preparation for procurement

McGarry NíÉanaigh Architects and Richard Hatch Photography



Lot no.	Project	Status
Lot 11	FCC Small Building Upgrades - Blakestown Community Centre, Parslickstown House, St MacCullin's Community Centre, Corduff Sports Centre, Ardgillan Castle, Newbridge House (1&2), Fancourt Depot, North Lodge Malahide Castle, Castlefarm, 34 Coolmine Industrial Estate Mobile Libraries, Slaugh Hall, Naul Community Centre, Seamus Ennis Centre, Matt Lane, Shackleton Mills, Lucan, Swords Castle, Mountview Community Centre	Initial project development
Lot 12	Fire Stations EPC - Dolphins Barn, Phibsborough, Tallaght, Donnybrook Road, North Strand, Swords, Blanchardstown, Finglas, Stanley Street, Malahide Road O'Brien Institute, Rathfarnham, Kilbarrack	Initial project development and decarbonisation audits
Lot 16	Swan Leisure Rathmines	Initial project development and decarbonisation audits
Lot 17	DCC Leisure EPC I renewal - Ballymun Sports and Fitness, Finglas Sports and Fitness, (Markievicz Sports and Fitness, Clogher Road Community Sports Centre)	Initial project development and decarbonisation audits
Lot 19	DLRCC Small Buildings - Marlay House, Shanganagh Park House, Stepside Golf Course, Mounttown Community Centre, Cabinteely House, Cabinteely Tea Rooms Café, Marlay Golf Pavilion, Stonebridge Resource Centre, Library Road Dún Laoghaire - Offices, Loughlinstown Community Rooms, Lambs Cross Sandyford Community Centre, Ballybrack Community Centre	Initial project development
Lot 22	EPC II Decarbonisation - Ballyfermot Leisure Centre	Initial project development



03. WORK PROGRAMME 2023

PROJECT IMPLEMENTATION (CONTINUED)

Photo courtesy of dlr Leisure

Measurement and Verification Support

In 2023, Codema continued to assist the DLAs with ongoing Measurement and Verification (M&V) of four current Energy Performance Contract (EPC) projects; DLR Leisure EPC, FCC Offices EPC and DCC EPCs I and II.

DLR Leisure EPC

Codema assisted DLR Leisure with the delivery of its first EPC project for Meadowbrook, Loughlinstown and Monkstown Leisure Centres. The project was awarded to Noel Lawler Green Energy Solutions (NLGES) in January 2021 and works were completed in July 2022. The project included the installation of a new Combined Heat and Power (CHP) system, upgrades to existing external lighting, upgrades to the building management systems and upgrades to heating, ventilation and pumping systems across the three buildings. The contract, which is for eight years, will achieve energy savings of 1.3 GWh and emission savings of 338 tCO₂ per annum, which represents 24% of total energy consumption at present. The total cost savings are expected to be €98,179 per year, a reduction of 31%. Codema continued to assist DLR Leisure with the Measurement and Verification (M&V) throughout 2023 and the figures as of the end of the year indicate that the project to date has achieved energy savings of 24%, equating to 2,762,782 kWh, with a value of €196,233. This project focused on energy efficiency of the leisure centres, and with the updated 2030 emissions reduction targets, there will likely be additional investment in the decarbonisation of heat required within this contract. Codema has facilitated discussions to initiate decarbonisation pathway assessments for each of the leisure centres in the contract, which will be carried out by NLGES.

FCC Offices EPC

In 2022, Codema assisted FCC with the delivery of its first Energy Performance Contract (EPC) project. This project involved FCC's headquarters at County Hall in Swords and

the Civic Offices building in Blanchardstown. Works carried out included upgrades to the existing lighting, heating and ventilation systems in the two buildings. The contract, which is for nine years, will achieve energy savings of 1.3 GWh and emission savings of 330 tCO₂ per annum, which represents 32% of total energy consumption at present. The works are now completed and in 2023 the project entered the nine-year maintenance and service phase. The total cost savings are expected to be €139,828 per year. Codema is currently working with FCC to develop its second EPC project for the Draíocht Theatre and library building in Blanchardstown and energy efficiency works in a number of other buildings under the DeliveREE project. Codema assisted FCC with the Measurement and Verification (M&V) of the initial reconciliation period of the contract during 2023. The figures as of the end of this three-month period indicate the project has achieved energy savings of 22%, equating to 124,719 kWh, with a value of €19,796. Similar to the DLR Leisure EPC, this project focused on energy efficiency, and additional investment in decarbonisation within the contract will likely be required for these buildings for FCC to meet its 2030 targets.

DCC EPCs I and II

The first EPC project for DCC involved a number of energy efficiency upgrades to Ballymun, Finglas and Markievicz Sports and Fitness Centres. The contract is now in its final year of an eight-year contract and the latest M&V figures show that, based on the period between December 2016 and December 2023, the project is forecast to achieve total energy cost savings of €1,605,543 throughout the lifetime of the contract. The project has also saved 5,149 tonnes of CO₂ and average annual energy savings of 34%. Codema will continue to assist DCC with managing this M&V process until the contract ends in 2024. Codema is currently planning for the development of a follow-up EPC on the same buildings, which will focus on the remaining measures to decarbonise the buildings.

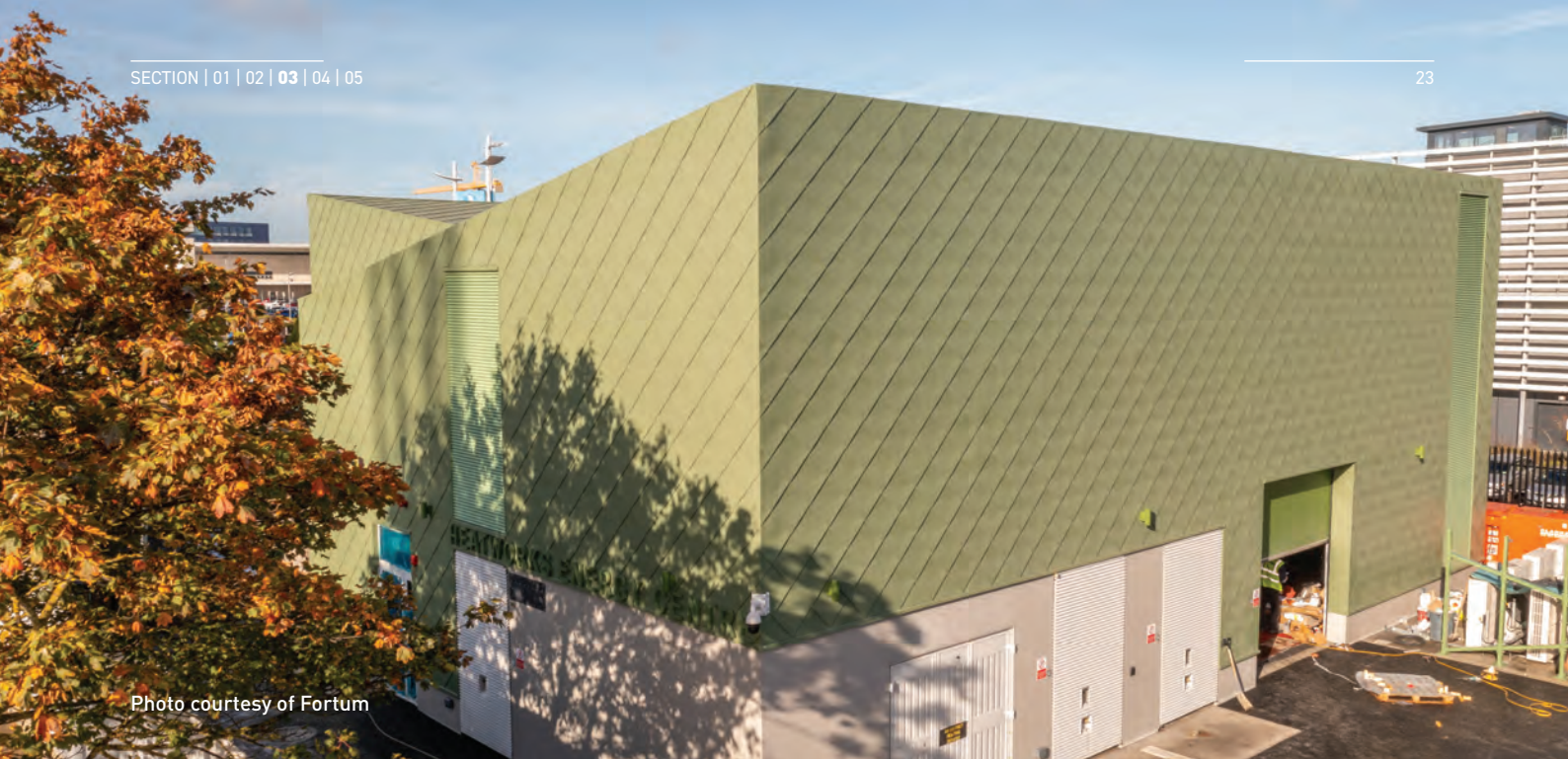


Photo courtesy of Fortum

DCC's second EPC project involved upgrading the existing lighting, heating and ventilation systems across seven sports and leisure buildings. The largest building is Ballyfermot Sports and Fitness Centre; the other six buildings are dry sports halls, namely St Catherine's Community Centre, Ballybough Community Centre, Cabra Parkside, Irishtown Sports and Fitness Centre, Bluebell Sports Centre, and Poppintree Community Sports Centre. The works were completed in February 2020 and the eight-year service period began in March that year. The latest M&V figures show that between March 2020 and December 2023, the project has achieved energy savings of 2.7 GWh, with a value of €435,091. The project has also saved 1,201 tonnes of CO₂ and average annual energy savings of 14%. Codema continued to assist DCC with managing this M&V process in 2023, and is facilitating discussions around further decarbonisation upgrades for these buildings, in line with 2030 targets.

EPC Facilitator Training

In 2021, Codema was contracted by SEAI to develop a training course for EPC Project Facilitators. The aim of the course is to provide other public and private organisations with the necessary information, tools and skills to facilitate the implementation of Energy Performance, Energy Supply or Energy Guarantee projects within their own organisation or on behalf of a client. The course focuses on the complete project development cycle, including initial project identification, technical analysis, financial analysis, risk analysis, contract selection, procurement and measurement and verification. The EPC facilitator training was successfully delivered on two occasions in September and November of 2023. The course was delivered over two days and consisted of seven modules addressing:

- 1) How to identify potential EPC project opportunities
- 2) How to present EPC projects to customers
- 3) How to discuss the added value of EPC compared to in-house solutions

- 4) Procurement of EPC: Tendering and awarding of contract
- 5) The content of an EPC contract
- 6) Financing of EPC projects
- 7) Overview of Measurement and Verification for EPCs

In addition to the training course, Codema prepared a specification for the update of the EPC existing financial analysis tool, and provided several hours of mentoring for people who had completed the EPC facilitator training course.

District Heating Contracting

Tallaght District Heating Scheme

In 2023, Codema continued to assist South Dublin County Council with the delivery of the innovative Tallaght District Heating Scheme. This district heating network uses excess heat from the recently-completed Amazon Web Services' (AWS) data centre to provide low-carbon heat to public sector, residential and commercial customers. As part of the project, SDCC has established Ireland's first publicly-owned, not-for-profit energy company to provide low-carbon heat to local homes and businesses. Trading as Heat Works, the district heating company has contracted Fortum, a large Finnish energy services company with extensive district heating experience throughout Scandinavia and Eastern Europe, to carry out the design, build, operation and maintenance of the Tallaght heating plant and primary heat network for a period of 10 years. The heat is provided through the energy centre using large-scale heat pumps and a backup electric boiler. The system began providing heat to SDCC's County Hall and Library and TU Dublin Tallaght buildings in January 2023, while the operation period commenced in July 2023. Further connections are due to be made in 2024, including TU Dublin's new CAET building and a new affordable housing scheme currently under development by SDCC. In 2023, over a dozen site tours were organised and led by Codema to various interested parties, including data centre operators, local authorities and other public sector organisations.

03. WORK PROGRAMME 2023

PROJECT IMPLEMENTATION (CONTINUED)



Electric Vehicle Charging

Dublin Local Authority EV Strategy

In June 2022, the four Dublin Local Authorities published their 2022-2030 Electric Vehicle (EV) Charging Strategy, the first of its kind in this country. The objective of this study was to assess what public infrastructure should be deployed and where, the number of charging points needed and the level of investment that will be required over this decade. The Strategy has identified the need for the installation of up to 3,800 public residential electric vehicle charge points (EVCPs) across the county by 2030, led by the local authorities. In September 2022, Codema was appointed by the four Dublin Local Authorities to develop a process which will enable the delivery and ongoing operation of the required quantity of EVCPs. In March 2023, Stage 1 tender documents were issued for the design, build and operation of fast/rapid destination charge points across the four DLA areas, under the Competitive Procedure with Negotiation (CPWN) process. A four-year single-party framework is to be set up, with an initial project consisting of 50 locations across the four DLAs, with up to four charging points in each location. The top three ranked tenderers were invited to submit tenders at Stage 2 of the process in August 2023. A significant number of clarifications were raised, resulting in a pause in the process and re-issuing of revised Stage 2 documents in December 2023. Following the evaluation of the submissions in early 2024, a further negotiation stage will commence in line with CPWN rules. Final negotiation meetings are to be held with the two remaining tenderers in April 2024, with the preferred tenderer to be identified shortly thereafter. It is expected that the works phase will commence before the end of Q2 2024.

In September 2022, Codema was appointed by the four Dublin Local Authorities to develop a process which will enable the delivery and ongoing operation of the required quantity of EVCPs.

PROJECT IMPLEMENTATION - KEY OUTPUTS FOR 2023



**PROCUREMENT OF
DLA DESTINATION EV
CHARGING FRAMEWORK
PROGRESSED TO STAGE 2**



**CONSULTANT APPOINTED
FOR LARGE-SCALE SOLAR
PV FEASIBILITY STUDY AT
ARTHURSTOWN LANDFILL**



**DELIVERY OF TWO
EPC FACILITATOR
TRAINING COURSES**

Project Implementation - Actions and Outputs 2023

Date	Actions	Project support	Outputs
January	Presentation to the large Energy Industry Network on Energy Performance Contracting	SEAI Facilitator Training	Presentation prepared
February	Organised/participated in a half-day workshop with Philip Lee, Resourceful Futures and SDCL to discuss a DeliveREE work plan for 2023	DeliveREE	Work plan developed for DeliveREE partners for 2023
	Procurement documents prepared for a small-scale solar PV project at Arthurstown Landfill	DeliveREE	Procurement documents developed
	Presentation on DeliveREE at the national Public Sector Conference	DeliveREE	Presentation prepared
March	DeliveREE project partner meeting hosted	DeliveREE	Updates, learnings and discussions from DeliveREE project partners
	Stage 1 tender documents issued for Destination EV Charging framework agreement under Competitive Procedure with Negotiation	DLA EV Strategy	Procurement documents developed
April	Launch of the Tallaght District Heating Scheme	-	TDHS launched by Minister Eamon Ryan
	Gathering and analysis of information from different work packages collated to prepare six-monthly performance monitoring report for DeliveREE	DeliveREE	Performance Monitoring Report for DeliveREE developed
	Significant technical updates carried out on the content management system of the DeliveREE hub to improve user experience	DeliveREE	Improved user experience for DeliveREE website hub, including addition of case studies, brochures and reports
	Online software interface for the DeliveREE PIU for tracking and recording project progress	DeliveREE	Updated online software for project development and communication tracking

03. WORK PROGRAMME 2023

PROJECT IMPLEMENTATION (CONTINUED)

Date	Actions	Project support	Outputs
April	Advised SDCC in the publishing of a Request-for-Tender for a consultant to carry out a feasibility study for a large-scale solar PV project at Arthurstown Landfill	DeliveREE	Request-for-Tender documents for a feasibility study of Arthurstown Landfill published by SDCC
May	Six-monthly performance monitoring report submitted on the SEDIA platform	DeliveREE	DeliveREE Six-Monthly Performance Monitoring Report submitted
	Presentation on DeliveREE to the local authority Energy Performance Officer meeting	DeliveREE	Presentation prepared
	Procurement documents prepared for DLRCC to publish the Pre-Qualification Questionnaire for three buildings (County Hall, LexIcon Library and Pavilion Theatre) for an EPC project	DeliveREE	Pre-Qualification Questionnaire developed for DLRCC Buildings EPC
May - Nov	Monthly meetings initiated to share project learnings from DeliveREE with all Dublin Local Authorities	DeliveREE	Monthly meetings held with all Dublin Local Authorities
June	Supported SDCC in appointing a consultant to carry out a feasibility study for a large-scale solar PV project at Arthurstown Landfill	DeliveREE	Consultant appointed
	Held first webinar for DeliveREE on the 'Benefits of Energy Performance Contracting in Ireland and its Role'	DeliveREE	Webinar and distribution of recording
July	Participated in the evaluation of responses from the DLRCC EPC Pre-Qualification Questionnaire	DeliveREE	Evaluation of Pre-Qualification Questionnaire for DLRCC Buildings EPC
August	Invitation issued to respondents of the Pre-Qualification Questionnaire for the DLRCC Buildings EPC to participate in Competitive Dialogue	DeliveREE	Initiation of competitive dialogue procedure for DLRCC Buildings EPC
	Stage 2 tender documents issued for Destination EV Charging framework agreement under Competitive Procedure with Negotiation	DLA EV Strategy	Procurement documents developed
September	Delivered a two-day Energy Performance Contracting facilitator training course for SEAI	SEAI Facilitator Training	Delivery of a two-day EPC Facilitator training course for 14 attendees
	Presentation on EPC experience in Ireland at the Concerted Action Joint Workshop, Madrid	-	Presentation developed
	Project development and appraisal initiated for Energy Supply Contract for solar PV on Fingal buildings at Grove Road Offices, Swords County Hall and Coolmine Depot	DeliveREE	Project appraisal for procurement approval
	Presentation on EPC to the SEAI Energy Auditors Webinar	SEAI Facilitator Training	Presentation prepared

Date	Actions	Project support	Outputs
October	Gathering and analysis of information from different work packages initiated to prepare the DeliveREE Six-Monthly Performance Monitoring Report	DeliveREE	DeliveREE Six-Monthly Performance Monitoring Report developed
	Procurement documents prepared for an Energy Supply Contract on three buildings in FCC (Grove Road Offices, Swords County Hall and Coolmine Depot)	DeliveREE	Procurement documents developed for solar PV Energy Supply Contract in FCC
	Presented on DeliveREE during the Covenant of Mayors Investment Forum Energy Efficiency Market Place	DeliveREE	Presentation delivered about DeliveREE to European colleagues
	Initial project development for an EPC for 10 fire station buildings across the four DLAs	DeliveREE	Work on audits of 10 buildings
	Gap-to-Target analysis and Decarbonisation Strategy Report prepared for all of the Mid-East Local Authorities	DeliveREE	Gap-to-Target analysis and Decarbonisation Strategy Reports developed
	Site visit to Finglas Fire Station to conduct an energy audit	DeliveREE	Site visit carried out
	Presentation on Dublin Leisure Centre decarbonisation plans to the local authority Energy Performance Officer meeting	DeliveREE	Presentation prepared
November	Facilitated a workshop on 'Understanding Decarbonisation Pathways for Public Buildings'	DeliveREE	Training workshop with EPC market stakeholders
	Project partner meeting held	DeliveREE	Updates, learnings and discussions from project partners
	Procurement documents prepared for DLRCC Harbour Lodge building for an Energy Performance Guarantee	DeliveREE	Procurement documents for DLRCC Harbour Lodge upgrades
	Project Appraisal Report prepared for an EPC for leisure centres in Meath (Navan Aura Leisure Link, Trim Aura and Kells Swimming Pool)	DeliveREE	Project Appraisal Report developed for EPC for three leisure centres in Meath
	Project Appraisal Report prepared for an EPC for leisure centres in Wicklow (Shoreline Sports Greystones and Shoreline Sports Bray)	DeliveREE	Project Appraisal Report developed for EPC for two leisure centres in Wicklow
	Project Appraisal Report prepared for an EPC for leisure centres in Kildare (Naas and Athy Leisure Centres)	DeliveREE	Project Appraisal Report developed for EPC for two leisure centres in Kildare
	Project discussions and technical analysis initiated for an energy supply contract for the Watery Lane Depot building in Fingal	DeliveREE	Discussion and analysis carried out of potential heating system upgrades at FCC depot
	Two-day EPC facilitator training course organised on behalf of SEAI	SEAI Facilitator Training	Delivery of a two-day EPC facilitator training course for 19 attendees
	Six-Monthly Performance Monitoring report submitted on the SEDIA platform	DeliveREE	DeliveREE Six-Monthly Performance Monitoring Report submitted

03. WORK PROGRAMME 2023

PROJECT IMPLEMENTATION (CONTINUED)



Date	Actions	Project support	Outputs
November	Meeting with consultants and SDCC to discuss progress report for grid connection route options for a large-scale solar PV project at Arthurstown Landfill	DeliveREE	Progress update from consultants on feasibility of large-scale solar PV
December	Individual fortnightly meetings with Dublin Local Authorities initiated	DeliveREE	Individual fortnightly meetings with Dublin Local Authorities held
	Audits prepared for an EPC for leisure centres in Kildare (Naas Swimming Pool and Athy Swimming Pool)	DeliveREE	Audit preparation initiated
	Site visit to Donnybrook Fire Station to conduct energy audit	DeliveREE	Energy audit site visit carried out
	Stage 2 tender documents reissued for Destination EV Charging Framework Agreement under Competitive Procedure with Negotiation	DLA EV Strategy	Procurement documents published
	Presentation to the CARO North West Leisure Centre Steering group on EPC	SEAI Facilitator Training	Presentation prepared

03. WORK PROGRAMME 2023



AWARENESS, COMMUNICATIONS AND ENGAGEMENT

Local Engagement of Local Authority Decarbonising Zones

In 2023, Codema's Awareness, Communications and Engagement (ACE) team supported Dublin City Council in carrying out a best-practice engagement process with communities in the Ballymun and the Ringsend and Poolbeg Decarbonising Zones (DZs). The aim of the DZs is to act as a test bed of innovation for locally-based climate solutions. The engagement process carried out by Codema with these communities was central to the development of a DZ plan which captured the essence of the communities and aimed to reflect and address their needs through SMART actions involving locally-based climate solutions. The engagement process ran from March 2023 and continued onto February 2024.

Best-Practice Engagement Techniques – Stakeholder Mapping: Forming a DZ Team

To begin the engagement process, extensive stakeholder mapping was carried out for the DZ areas. The mapping process involved desk-based research, phone and in-person interviews and attendance at multiple community events in each area. The purpose of mapping each of the communities was to 1) gain an understanding of the societal composition of the communities and 2) to ensure that each societal group within the community was represented on the DZ Team.

Following best-practice engagement techniques, Codema primarily worked with a group of key local stakeholders known as the "DZ Team". Members of the DZ team were selected during the stakeholder mapping process and invited to join the team. Codema grounded the recruitment of this team in the theory of Transition Management and the principles of the quintuple helix model. According to Transition

Management theory developed by the Dutch Research Institute for Transitions (DRIFT), the teams were selected based on their level of influence within the community and their ability to initiate change. By incorporating this method, team members also represented diverse backgrounds from within the community embodying industry, academia, environment, government and civil society. Affiliated organisations represented by members of the DZ teams are available in the table below:

Ballymun DZ Team	Ringsend/Poolbeg DZ Team
Ballymun TidyTowns	Ringsend Community Services Forum
Trinity Comprehensive School	Ringsend and Irishtown Community Centre
The Axis Centre	Google
Dublin City University	Fair Play Café
Ballymun 4 Business	Ringsend and Irishtown TidyTowns
Global Action Plan	Ringsend Historical Society
IKEA	Ringsend Library
Dublin Northwest Partnership	Pembroke Cottages Residents Association
City Farm Ballymun	Irish Nautical Trust
CDETB Ballymun	Sandymount Community Centre
Sláinte Healthcare	Dublin City Council
Ballymun Job Centre	
Dublin City Council	

03. WORK PROGRAMME 2023

AWARENESS, COMMUNICATIONS AND ENGAGEMENT (CONTINUED)

The purpose of forming a DZ team was to enable Codema to work with a group of influential individuals who could then act as the connection between the community and the DZ project. Codema and an external engagement specialist organisation, Connect the Dots, designed and facilitated three workshops for the Ballymun DZ team and two workshops for the Ringsend/Poolbeg DZ team. During these facilitated sessions, the DZ teams were asked to participate in discussions on their aspirations for their communities, the concerns they had and what barriers they faced in initiating change. This exercise led to the creation of a vision and a mission statement for each DZ, which was a requirement of the DZ plan according to the Local Authority Climate Action Plan Guidelines. These statements, which were harvested from discussions amongst the DZ team and the wider community, will act to guide and direct the DZs throughout the project in selecting actions and objectives that will help to achieve their visions. Additionally, the DZ teams were asked to participate in exercises to define objectives and community SMART actions for their local area. In order to further develop the DZ plan's vision, mission and objectives, Codema also engaged the wider community to participate in events organised in November and December of 2023.

Community Outreach, Engagement and Communication

To complete a meaningful engagement process, Codema carried out wider community outreach and engagement in both the Ballymun and the Ringsend/Poolbeg DZs.

Extensive stakeholder mapping of both communities was also used in this process to form an understanding of the societal compositions. As part of the wider community outreach and engagement, members of Codema's Awareness, Communications and Engagement team conducted on-the-ground and on-street engagement with community members. This involved attending community events and speaking with individuals in shops, in libraries during information sessions and on the street. To inform the wider community and to further promote the DZ project, Codema held four library information sessions in Ballymun and Ringsend.

One of the key successes in Codema's wider community engagement process in the Ballymun DZ was the Green Ballymun Community Conference, which was held in November 2023. The idea to run this community conference came to fruition during a workshop with the DZ team. The team highlighted that the community would value an event that would impart knowledge and, at the same time, allow them to participate in the process. As such, the event was split into two sections. The first half of the event hosted six expert speakers covering topics such as active travel, home energy improvements and grants, climate action and community climate action. The second-half of the event was a facilitated, exercise-led session, which allowed the community to share their visions and objectives for Ballymun. All event details were co-created with the DZ team during two lunchtime sessions held online in August and October.



Codema made tickets available via an online link, a QR code, a mobile number to call, and through in-person signups. Additionally, the event was made publicly open for walk-ins to attend on the evening so as to encourage as many community members as possible to participate. A total of 57 community members attended the Green Ballymun Community Conference on November 29th.

The final DZ community event held in 2023 was the Ringsend Community Climate Action Chats, which took place on December 13th. This event was also free to attend, and similar engagement and promotional techniques were applied. The Ringsend/Poolbeg community were invited to attend a short presentation given by Codema to learn about the work done with their DZ so far. Following this, attendees were then guided through visioning and objectives explorations exercises. A total of 12 community members attended the one-hour event.

Zero Together

In 2023, Codema's Awareness, Communications and Engagement team continued to work on the Zero Together initiative. The aim of this initiative is to create and deliver on a shared vision and roadmap for the whole of Dublin to ensure we meet our emission reduction targets by 2030 and 2050. Zero Together directly addresses the fact that the public sector is only responsible for 5% of greenhouse gas emissions in Dublin, recognising that consistent and meaningful collaboration across all sectors is required to effectively address the remaining 95% of emissions and accelerate Dublin's move away from fossil fuels. No single organisation, individual or sector can fully transform Dublin into a clean, healthy and low-carbon region. Zero Together is the catalyst to create a space for the necessary groups to come together and build consensus on the best pathways to move Dublin away from fossil fuels and to create a vision and strategy for Dublin that is ambitious, and more importantly, inclusive.

The Zero Together initiative was supported through the Horizon 2020 TOMORROW project until the end of 2022 and has now been integrated into Codema's strategy for 2023-2026.

Zero Together: Public and Stakeholder Engagement

A key goal for Zero Together in 2023 was to connect and align with relevant stakeholders across Dublin to secure buy-in and ensure the successful implementation of the Zero Together roadmap. A strategic stakeholder outreach plan was developed and implemented, resulting in successful presentations to senior management of organisations such as

EirGrid, the SEAI and ESB Networks. Additionally, members of the Codema team were invited to present on Zero Together to Minister Eamon Ryan and his team in June of last year. Collaboration is at the heart of Zero Together and these conversations provided valuable insight and feedback to allow us to build on and improve our work going forward.

Another goal for Zero Together in 2023 was to continue to engage those living, working and studying in Dublin. This was achieved through three key activities: 1) Launching the Zero Together website, 2) Publishing and launching research in collaboration with the Think Tank for Action on Social Change (TASC) and 3) Upskilling Codema staff in best-practice public engagement.

The core objective of the website was to provide an accessible and beautifully-designed resource for people to understand how best to move Dublin away from fossil fuels as soon as possible. The website was successfully launched in October of last year. Secondly, as part of the Zero Together initiative, research was commissioned with TASC to explore the ways that vulnerable communities in Dublin may be affected by the energy transition and how they can be supported to take action going forward. The report, which gained significant media attention, outlined key policy and engagement recommendations such as addressing the cost of transitioning away from fossil fuels on vulnerable communities, the need for localised, accessible information relating to the energy transition, the importance of improving active travel infrastructure and leveraging trusted key intermediaries to engage local communities. Finally, members of Codema's ACE team attended training on how to design and implement Citizens' Assemblies. These training courses were provided by expert practitioners in the field of deliberative democracy; the Federation for Innovation in Democracy Europe (FIDE), the Knowledge Network on Citizens' Assemblies (KNOCA) and the Centre for Blue Democracy.

The goals for Zero Together for the next year are:

- To develop a brand and digital marketing strategy
- To develop partnerships/collaborations through our engagement work with stakeholders in the area of research, advocacy and community
- To apply for at least two funding streams to support Zero Together
- To build awareness and understanding of the Zero Together initiative with Codema and local authority staff to enhance collaborative and engagement opportunities

03. WORK PROGRAMME 2023

AWARENESS, COMMUNICATIONS AND ENGAGEMENT (CONTINUED)



Think Energy

Home Energy Saving Kit

The Home Energy Saving Kit contains five practical tools to help you save energy and identify possible problem areas in your home that may need to be addressed. The scheme has been running very successfully since it was first piloted in Dublin City Council's Public Libraries in 2016. The Home Energy Saving Kit scheme expanded even further in 2023, with an additional 197 kits developed and distributed to libraries and communities across Ireland.

The majority of these (128) were added to the public libraries network, including to Longford library service for the first time. Building on the success of 2022, 69 kits were also delivered to other organisations including community groups, Sustainable Energy Communities and private employers.

A new suite of support materials was also developed for librarians and others managing kit loan programmes. These included tailored handbooks for each group type, promotional posters and sample social media graphics. These were all made available through the Codema website.

As in previous years, four lively and informative training sessions were provided for kit managers. These were tailored and offered separately to Dublin Local Authority librarians, all other Local Authority librarians and business and community groups. These were very positively received and resulted in lively question and answer sessions at the end of each webinar.

Energy Awareness Events and Activities

In-person events in 2023 were varied in their scope, audience, and location. Large-scale events included a Think Energy/ Home Energy Saving Kit presence at the Self Build Live show at the National Indoor Arena in Blanchardstown, and the DLR Age Well Expo at Leopardstown Racecourse. The team also took part in eight Dublin Local Authority Climate Action Plan public consultation events, alongside other community and sustainability themed exhibitors.

More localised events included home energy workshops and presentations to community groups including Eco Congregation Ireland's Eco Event at Dundrum Methodist Church, Hill Street Family Resource Centre in Dublin's north inner city and Walkinstown Seniors' Group at Walkinstown Library.

A real highlight for 2023 was in collaborating and engaging directly with communities. This was perhaps best captured at the Ballymun and Ringsend/Poolbeg Decarbonising Zone events, as well as through contributing to the upcoming RTÉ children's radio docu-series 'The Sustainable Village'. For this, a new initiative was developed encouraging children to employ co-creation and deliberative collaboration processes in addressing their school's energy use. Taking the form of a self-paced workbook called 'School Energy Detectives', children are prompted to undertake not only energy audit exercises using the Home Energy Saving Kit, but also to complete a full stakeholder mapping and engagement process in the guise of assembling their School Energy Squad. Results of this pilot, run across two neighbouring primary schools in Cabra on Dublin's northside, are expected in early summer 2024.



District Heating Communication

Organisation of the Irish District Energy Association Annual Conference 2023

In October 2023, Codema organised a very successful national district heating conference, on behalf of the Irish District Energy Association. The event was held in the Camden Court Hotel and was extremely well-attended, with over 170 people in attendance, ranging from government representatives and policy makers, local authority staff and public bodies, industry representatives, elected members and environmental organisations.

The conference explored the latest developments in district heating in Ireland and abroad, in terms of policy, finance, technology and ongoing case studies. The Minister for the Environment, Climate and Communications, Eamon Ryan TD, gave the keynote address at the event, and other speakers on the day included representatives from the SEAI, the Commission for Regulation of Utilities (CRU), Indaver Ireland and UK and the Department for Energy Security and Net Zero in the UK. Overall, the conference was very successful in providing a platform among key stakeholders to discuss the challenges and opportunities to drive district heating development in Ireland.

Sustainable Energy Communities

In 2023, Codema continued its work as the regional coordinator for the Dublin and Mid-East Region of SEAI's Sustainable Energy Communities (SEC) programme. The region includes SECs in Dublin City, Dún Laoghaire-Rathdown, Fingal, South Dublin, Wicklow, Kildare and Meath, with a dedicated County Mentor assigned to each local authority area.

In 2023, Codema and its County Mentors facilitated the recruitment of 27 communities to the SEC network in the Dublin and Mid-East Region, bringing the total number of SECs in our region to 196 by the end of the year.

As in previous years, Codema's Awareness, Communications and Engagement team highlighted new SECs that joined the network and continued to promote the work of SECs within the region, as well as promoting the national Sustainable Energy Communities programme in general.

SEC Events

Throughout the year, Codema supported individual SECs with the organisation of their events, with SEC mentors facilitating such events as:

- Wicklow Energy Awareness Day (June)
- Arklow Energy Awareness Day (September)
- Skerries Eco Festival (September)
- Donabate Peninsula Sustainable Community Public Meeting (November)
- Regional event for SECs in Dublin: Sustainable Energy Communities Working Together (November)

In addition to the events described above, Codema facilitated SEC mentor attendance at a range of events, including the launch of SECs' Energy Master Plans and SEC mentor presentations during the Kildare County Council Climate Action and Energy Day in October and the Green Ballymun Community Conference in November.

03. WORK PROGRAMME 2023

AWARENESS, COMMUNICATIONS AND ENGAGEMENT (CONTINUED)

AWARENESS, COMMUNICATIONS AND ENGAGEMENT - KEY OUTPUTS FOR 2023



**BEST-PRACTICE LOCAL
ENGAGEMENT IN 2
DECARBONISING ZONES**



**197 HOME ENERGY SAVING
KITS DEVELOPED**



**LAUNCH OF RESEARCH
REPORT ON ENGAGING
COMMUNITIES IN DUBLIN'S
ENERGY TRANSITION**

Awareness, Communications and Engagement - Actions and Outputs 2023

Date	Actions	Project support	Outputs
February	Codema appointed as event organisers for the Irish District Energy Association Annual Conference 2023	IrDEA	Event plan and agenda drafted
	Energy Awareness/HESK workshop held in Ballyroan Library	-	10 workshop participants informed on and engaged in energy awareness
	Presentation on Zero Together to Dublin Town's Sustainability Committee	-	Approx 15 members of Dublin Town's Sustainability Committee engaged in Zero Together
March- June	Stakeholder outreach plan developed and implemented for Zero Together	-	Approx six key strategic stakeholders engaged in Zero Together Roadmap development
March - May	Creation of Local Engagement Plans for Ballymun and Ringsend/Poolbeg Decarbonising Zones (DZs)	DCC DZ	1 Local Engagement Plan for the Ballymun DZ and 1 Local Engagement Plan for the Ringsend/Poolbeg DZ developed
March	Energy Saving Kit Instagram Account Launched	-	Instagram added to Think Energy social media roster alongside X (Twitter) and Facebook
	UCD Green Week guest lecture	-	Guest lecture delivered on local-level community climate action
	Energy Saving Kit Instagram Account Launched	-	Instagram added to Think Energy social media roster alongside X (Twitter) and Facebook
	UCD Green Week guest lecture	-	Guest lecture delivered on local-level community climate action

Date	Actions	Project support	Outputs
April	Submission to the Open Government National Action Plan 2023-2025 consultation	–	Consultation response document. Invitation to and attendance at follow-up consultation workshop
	Launch of the Heat Works website	SDCC special project	Heat Works website live to coincide with the launch of the Tallaght District Heating Scheme
April - July	Formation of Ballymun and Ringsend/Poolbeg DZ Teams	DCC DZ	Engagement with approx 40 stakeholders across Ballymun and Ringsend/Poolbeg for recruitment to the DZ Teams
May	Think Energy promotional suite redesigned and updated	–	All public facing materials updated with a clearer 'plain English' copywriting style
	HESK and SECs showcased at Selfbuild Live exhibition	–	Engagement with approximately 50 exhibition attendees
June	Support for coordinating and facilitating Wicklow Energy Awareness Day	SEC	Support for event coordination and facilitation; the event was attended by approximately 800 people
	Developed 197 Home Energy Saving Kits for communities and libraries around Ireland	–	197 kits distributed to libraries, communities and organisations across Ireland
	Think Energy/HESK exhibition stand at DLR Age Well Expo at Leopardstown Racecourse	–	Showcased services and products available to older people in Dún Laoghaire-Rathdown area
July	Ballymun DZ Workshop 1	DCC DZ	7 stakeholders engaged in further stakeholder mapping and the development of the Ballymun DZ vision
	Ballymun and Ringsend/Poolbeg DZ library information sessions	DCC DZ	Engaging the wider public on the DZ work and energy saving
	Stakeholder mapping for SDCC's Clondalkin DZ	SDCC DZ	Summary Local Engagement Plan and local stakeholder contact database
	Stakeholder mapping for FCC's Balbriggan DZ	FCC DZ	Summary Local Engagement Plan and local stakeholder contact database
	Stakeholder mapping for DLRCC's Dún Laoghaire/Blackrock DZ	DLRCC DZ	Summary Local Engagement Plan and local stakeholder contact database
August	Ballymun DZ Team Lunchtime Session (Online)	DCC DZ	1 hour long kick-off planning session with the DZ Team for the Green Ballymun Community Conference
September	Support for facilitating and coordinating Arklow Energy Awareness Day	SEC	Support for event coordination and facilitation
	Support for facilitating and coordinating the Skerries Eco Festival	SEC	Support for event coordination and facilitation
	Ringsend/Poolbeg DZ Workshop 1	DCC DZ	6 stakeholders engaged in further stakeholder mapping and the development of the Ringsend/Poolbeg DZ vision

03. WORK PROGRAMME 2023

AWARENESS, COMMUNICATIONS AND ENGAGEMENT (CONTINUED)

Date	Actions	Project support	Outputs
	Ballymun DZ Workshop 2	DCC DZ	9 stakeholders further clarified the vision and mission for the DZ plan and identified objectives within the DZ
	Updating of Dublin Climate Action Week website	–	Website updated on behalf of DLAs to promote public consultation of their Climate Action Plans
	Seniors Group Energy Saving Event	–	1 hour HESK presentation followed by Q&A at Walkinstown Library
October	Development and launch of Zero Together website	TOMORROW	Dedicated website for Zero Together
	Ballymun DZ Team Lunchtime Session (Online)	DCC DZ	1 hour long meeting to review and confirm details of the Green Ballymun Community Conference with the DZ Team
	Radio interview for the Ringsend/Poolbeg DZ	DCC DZ	Awareness raising for the Ringsend/Poolbeg DZ and the promotion of a library information session
	Ringsend Library DZ information session and DCC LA CAP consultation	DCC DZ	Promotion of the Ringsend/Poolbeg DZ, engagement with the wider public and support given to DCC CAP consultation
	Online Training Session on HESKs for Dublin Librarians	–	Approximately 50 attendees over two sessions
	Staff Energy Awareness Webinar for Wells Fargo	–	1 hour lunchtime webinar for 85 attendees across EMEA operations
	Think Energy HESK presence at DLA CAP Public Consultation Events	–	Think Energy/HESK display stand at CAP consultation events in Tallaght, Clondalkin, Lucan, Sutton, Swords, Dublin's Mansion House, Dún Laoghaire and Dundrum
	DLR Open House Event: How to be Energy Smart at Home	–	15 minute presentation delivered alongside ESB Networks, the CRU and the SEAI
	Participated in RTÉ children's radio docu-series The Sustainable Village	–	Think Energy HESKs to be featured in upcoming children's community climate action series
	Organised the national District Heating Conference on behalf of IrDEA	IrDEA	Conference held with over 170 attendees
November	Secondary School Workshop organised in Ballymun	DCC DZ	Workshop held with 17 TY students in Trinity Comprehensive School Ballymun to engage and educate on energy awareness
	Ringsend/Poolbeg Workshop 2	DCC DZ	Vision and mission clarified for the DZ plan and objectives identified within the DZ
	Online Training Sessions on HESKs for Librarians and Community Groups	–	Two trainings session tailored to their respective attendee groups

Date	Actions	Project support	Outputs
	Support for facilitating and coordinating the Donabate Peninsula Sustainable Community Public Meeting	SEC	Support for event coordination and facilitation, with over 40 attendees
	Support for facilitating and coordinating the regional SEC event "Sustainable Energy Communities Working Together"	SEC	Event coordination and facilitation; 23 attendees from SECs across Dublin City, Dún Laoghaire-Rathdown and South Dublin
	Ballymun DZ Library Information Session	DCC DZ	Promotion of the Ballymun DZ and the Green Ballymun Community Conference
	Green Ballymun Community Conference	DCC DZ	57 participants engaged in a community-led conference in Trinity Comprehensive school in Ballymun as part of the wider community engagement in the DZ
	Energy awareness presentation at Hill Street Family Resource Centre	-	HESK presentation and Q&A
	TE/HESK presentation at Dundrum Methodist Church as part of the Eco Congregation Ireland	-	Presentation and Q&A held as part of two day multi-denominational eco event
	Commissioning, development and launch of research report in collaboration with TASC	TOMORROW	Research Report: Understanding the impact of a transition to net-zero on communities in Dublin
December	Ballymun Workshop 3	DCC DZ	Workshop to develop actions for the Decarbonising Zone Plan
	Ringsend/Poolbeg Workshop 3	DCC DZ	Workshop to develop actions for the Decarbonising Zone Plan
	Presentation of HESK to the Community Workers Network - Dublin Northwest Partnership	-	HESK Presentation followed by Q&A at Cabra Library
	School Energy Detectives	-	New collaborative energy saving initiative developed for a pilot in two north Dublin primary schools

03. WORK PROGRAMME 2023



RESEARCH, DEVELOPMENT AND INNOVATION

The Research, Development and Innovation (RDI) cell works to develop and understand the 'evidence base' for the current and future needs of the energy and climate transition for Dublin. Codema's RDI cell explores and learns in the areas of EU and national policy, and best practice examples from other European cities and energy agencies, to find out what works and what doesn't work for Dublin, through lots of conversations and collaborations. Within Codema, the RDI cell leads on areas such as spatial energy planning, energy and emissions modelling, feasibility and research projects on the topics of heat and flexibility, along with policy and knowledge development. The RDI cell is also a key supporter of project development and innovation in Codema.

Energy Planning and Modelling

Decarbonising Zones

As part of the Climate Action and Low Carbon Development (Amendment) Act 2021, local authorities across Ireland must identify and develop plans for a Decarbonising Zone within their boundary. A Decarbonising Zone (DZ) is considered a test bed of innovation and a demonstration site of what is possible in relation to decarbonisation and climate action at a local level. The DZ emission-reduction targets must align with the national climate targets of a 51% reduction in greenhouse gas emissions by 2030 and net-zero emissions no later than 2050.

In 2023, Codema assisted the Dublin Local Authorities in meeting the DZ requirements. Five decarbonising zone plans were developed by Codema for the DLAs; these plans follow the guidance as developed by SEAI and as set out in the DZ Technical Annex D in the Local Authority Climate Action Plan guidelines.

The decarbonising zone plans map and analyse the energy demand across the decarbonising zone. In 2023, the work that Codema carried out on behalf of the DLAs included a full evidence base of spatially mapped out emission sources and low-carbon resources in the DZs, along with the potential increase/decreases in emissions projected to 2030, costs associated with reducing emissions and a gap-to-target analysis, based on the 51% emissions reduction target. The plans also included a register of opportunities to help define a portfolio and pipeline of decarbonisation projects for delivery and outline potential funding opportunities.

Energy Statements

Under current City and County Development Plans, the Dublin Local Authorities plan to implement 'Energy Statements' as part of the planning process. 'Energy Statements' are additional information gathered from applicants to the planning process relating to energy considerations within their planning application, and a supporting energy statement process that ensures compliance of planning applications with the energy and emissions policies, objectives, standards, and requirements of each DLA's CDP, and additionally, with national policy requirements.

In 2023, Codema supported DCC with developing district heating feasibility guidelines as part of an Energy Statements process, ahead of a wider scope of works to develop the energy statement process further. Energy Statements can support the following objectives and activities for local authorities:



- Carbon and energy assessment of planning applications
- Integrated energy master-planning
- Development of district heating
- Contribute to emission reductions
- Data and information to support energy planning activities
- Preparation of County/City Development Plans
- Identification of Strategic Energy Zones
- Preparation of Local Area Plans
- Assessment of Decarbonising Zones
- Preparation of climate mitigation plans
- Roll-out of low-carbon infrastructure (district heating, electric vehicle (EV) charging, etc.)

Ongoing Support for Local Authority Planning Teams

Codema provides ongoing support to the four Dublin Local Authority planning teams for planning applications, at their request, where energy or climate mitigation is a key consideration. Codema provides analysis, information and support, tailored to the application, to ensure that planners have the information needed to assess the energy aspects of planning applications.

Dublin Region Energy Master Plan

The Dublin Region Energy Master Plan (DREM) is the first regional energy master plan in Ireland. The master plan provides realistic, costed pathways for the Dublin region to achieve its carbon emission reduction targets to 2030 and

2050. These pathways have been based on detailed local-level, spatially-driven energy scenario modelling and identify low-carbon technologies specific to the energy characteristics of a particular area at a local level, which has not been carried out before for any county in Ireland.

To do this, the master plan brings together and amalgamates, for the first time, all the relevant government and various energy-related departments' plans and policies together to show their impact at a county/local level. The master plan addresses all energy sectors of electricity, heat and transport, and crucially has been modelled from a spatial perspective, technology perspective and also from a socio-economic perspective. This project also identifies and supports the use of low-carbon sources indigenous to Dublin, develops and harnesses new, local-level energy policy practices, and strengthens Ireland's integrated energy system modelling capabilities. Two baseline scenarios have been established; the first being the current situation and the future 'business-as-usual' situation, which models the effects of current national level policy implementation to 2030 and 2050.

From these, Codema then established the gap-to-targets, and evaluated the possible local level low-carbon pathways to meet these targets. The low-carbon potential of Dublin has been based on its unique spatial energy characteristics, which are often overlooked when examining low-carbon pathways at a national level. This project is the first of its kind in Ireland, and aligns with the objectives outlined in national level energy and climate change policy.

03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION (CONTINUED)



During 2023, Codema continued to carry out stakeholder engagement on the DREM findings, including presentations and workshops with Dublin Local Authorities, and many additional presentations across the public, private and energy sectors.

The DREM has been a key reference for work carried out in the Research, Development and Innovation cell. Local authorities have to meet a number of legal climate action obligations and targets, and in 2023, the results of this work have continued to help support the DLAs to meet these obligations. Notably, the DREM has supported:

- The Dublin Decarbonising Zones (5 zones in total)
- The 'Evidence-Based Climate Action' chapter in the Dublin Local Authorities' Climate Change Action Plan 2024-2029 (climate mitigation baselines)
- The City Edge Project for Dublin City Council and South Dublin County Council
- The roll-out of low-carbon infrastructure (district heating, EV charging, etc.)
- Carbon and energy assessment of planning applications
- Numerous public consultations
- Multiple project proposals for EU and local funding streams, with the aim of bringing in more investment in climate action to the Dublin Region

REGEN

In 2023, Codema was awarded funding for the REGEN (REGENeration of neighbourhoods towards a low-carbon, inclusive and affordable built environment) project. This EU project will commence in 2024, and will pave innovative pathways for the decarbonisation of European neighbourhoods and cities, tackling urgent socio-economic, climate and built environment challenges by designing a multifunctional toolbox, leveraging cutting-edge digital technologies and life-cycle sustainability assessments, while engaging citizens and influencing behavioural change.

REGEN will implement its solutions in four demonstration sites (Dublin, Milan, Laredo and Beckerich), continuously monitoring the energy, mobility and circularity of individual buildings, streets and districts. The project will upscale its findings to the city level, informing key policy directions and contributing to the broader transition towards sustainable urban development.

Codema, as the energy agency for Dublin City Council (DCC), will lead the REGEN demonstration site interventions, supported by DCC staff and the local Sustainable Energy Community, represented by founding member Arden Energy. Codema, as the demonstration site leader, will make sure that urban regeneration interventions prioritised for the Dublin demonstration site are executed following best practice, ensuring a more sustainable, low-emission and inclusive Dublin.



Photo courtesy of Ben Ryan

Heat and Flexibility

Dublin District Heating Project

Codema supports the Dublin District Heating Project (DDHP) team through advice on policy, energy planning, technical aspects, demand risk, quality assurance and assessing extension opportunities.

Tallaght District Heating Scheme

In 2023, the Tallaght District Heating Scheme (TDHS) was officially launched. It is now supplying low-carbon heat to South Dublin County Council's County Hall building and library complex, along with buildings in the TU Dublin Tallaght campus. In its first phase, the scheme will also supply heat to the upcoming Innovation Centre and a nearby affordable apartment scheme, before connecting other customers in the Tallaght area to the network in subsequent phases. The TDHS will make a significant contribution to reducing carbon emissions in the area, initially saving almost 1,500 tonnes of CO₂ each year and establishing Tallaght as a leader in innovation in the area of climate change.

Trading as Heat Works, the scheme is fully-owned and operated by South Dublin County Council as the first not-for-profit heat utility in Ireland. Heat Works intends to be an exemplar heat network business in Ireland, delivering economic, environmental, and social benefits for residents and businesses.

As the energy agency to South Dublin County Council, Codema provides technical, policy, funding, procurement and project management assistance to the TDHS. In 2023, Codema provided support for tours and technical site visits, new connection assessment, stakeholder engagement support, and network modelling support, among other activities, as the project transitioned into its operational stage.

Codema also supported SDCC in the Climate Action Fund grant drawdown process by assisting in preparing the financial documentation required for successful payment of grants. In 2023 Codema also secured SEAI Research, Development and Demonstration (RD&D) funding to use the Tallaght project as a case study for thermal storage and flexibility opportunities. This will explore the business case for the Tallaght network (and similar networks) to provide services to the electricity grid.

Notably in 2023, the TDHS won the prestigious 'Emerging District Energy Market' award at the Global District Energy Climate Awards in Brussels. The award recognises the successful implementation of a district energy system in a country where district heating is currently being established. The Global District Energy Climate Awards celebrate success and collective attainment in the district heating and cooling sector.

03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION (CONTINUED)

Blanchardstown District Heating Scheme

In February 2023, Codema submitted an Outline Business Case on the feasibility of a district heating scheme in Blanchardstown to Fingal County Council (FCC). The results of the report showed that the scheme was both technically and financially viable. The proposed scheme aims to take waste heat from a nearby data centre and deliver it to nearby homes and businesses including the Sports Ireland Campus, Technological University of Dublin, Connolly Hospital and nearby industrial facilities. It is also anticipated that if the proposed scheme is implemented, it will expand over time and deliver low-carbon heat to nearby housing developments.

In June 2023, Codema, on behalf of FCC, presented the Blanchardstown District Heating Scheme (BDHS) to Minister Eamon Ryan and Minister Roderic O’Gorman. In the same month, Codema also presented the results of the feasibility study at an FCC Strategic Policy Committee (SPC) meeting on Climate Action, Biodiversity and Environment. In August 2023, Codema then held a meeting with the key stakeholders of the scheme to present the results of the feasibility study and to outline the next steps for the project. In the same month, Codema held a preliminary business model workshop with FCC and the National Development Finance Agency (NDFA).

The BDHS is now being actively progressed by FCC. Codema and the NDFA are on board to assist FCC in developing the project, and a Project Board is to be established. The project is at the business case development stage, and a case must be made for public sector funding and/or grant support.

Decarb City Pipes 2050

In 2023, Codema completed our work on the Decarb City Pipes 2050 project. This three-year project focused on the decarbonisation of heat through capacity building in cities. This included creating local working groups (made up of key local stakeholders) to outline gaps in knowledge (planning methodologies, tools, policy instruments, effective governance structures, etc.) and then go about addressing these gaps through deep peer-to-peer learning with input from an experienced advisory board.

Codema was part of the project’s management team. In this role in 2023, Codema attended seven management team meetings to develop the overall direction of the project in conjunction with the other management team members. Codema attended two in-person multi-day project meetings/ events in March and October 2023. The project meetings were held to learn about the heating and cooling transition progress in partner cities, hold workshops to develop project



deliverables, engage with the project advisory board and discuss key aspects of the partner cities' heat transition. The final event of the Decarb City Pipes 2050 project was held in Rotterdam and Brussels in October. This event provided an opportunity to share outputs and learnings from the project with sister cities, representatives from the European Commission, the project advisory board, and others. In 2023, Codema brought together key local stakeholders of the Dublin Local Working Group to agree the final outputs from Dublin's Transition Roadmap.

As part of this project in 2023, Codema presented at an online session on empowering citizens, capacity building and co-creation of heating and cooling solutions, as well as supporting the delivery of the guidance for cities developing governance structures, recommendations on conducting heating and cooling plans, developing policy at different levels (EU and national), among others.

Codema lead the Transition Roadmap Work Package (WP4), supporting each partner city to develop robust, actionable, time-scheduled transition roadmaps, which have local buy-in and clearly-identified responsible parties. The City Transition Roadmaps were submitted in August 2023.

Grangegorman Emissions and Heat Analysis

The Grangegorman Urban Quarter is undergoing substantial expansion, which can be summarised as the social and urban renewal of the 30 hectares of the former St Brendan's Hospital site and its surrounding areas, driven by the relocation of TU Dublin and the provision of modern primary and residential healthcare facilities. Grangegorman will be a new piece of Dublin City with a vibrant, sustainable community based largely around new, world-class, third-level educational facilities and other community-focused services.

Codema was appointed by the Grangegorman Development Agency (GDA) to establish viable, low-no-carbon heating solutions, including, but not limited to, the potential use of geothermal energy. To determine the most viable solution, the first step in this process was to develop an 'Energy and Emissions Baseline Report'. This report establishes the baseline energy demand and emissions for the period 2016 - 2018, as mandated by the Climate Action Plan. It also provides projections for current and future energy and emissions, including transport demand relating to commuting to and from the campus.



03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION (CONTINUED)



The second step, a 'Decarbonised Heat Outline Business Case', involves a thorough assessment of transitioning the existing district heating network on campus to a low-carbon energy source. This includes examining national and local policies, analysing business needs, benefits and risks, and assessing the suitability of the existing network. The scope also covers anticipating future heating needs, evaluating potential systems and heat sources, and assessing risks related to district heat options. A techno-economic analysis of supply options, considering factors like temperature, network sizes, plant size, and CO₂ emissions, is conducted. Financial aspects, including costs, revenues and funding, are scrutinised following public spending code compliance. Different procurement routes are explored, a preferred option is identified, and a high-level project execution plan is outlined. Finally, a sensitivity analysis is performed to gauge the project's resilience to varying factors, ensuring a well-informed approach to project implementation.

Codema will deliver the 'Energy and Emissions Baseline Report' and 'Decarbonised Heat Outline Business Case' in early 2024. A stakeholder communication plan and a procurement plan will also be delivered in 2024 to enable the transition of the district heating system.

SEAI How-to-Guide for District Heating Feasibility Studies

The Sustainable Energy Authority of Ireland (SEAI) has been designated as a lead organisation for district heating development support, to underpin the national district heating targets outlined in the national Climate Action Plan. Codema is supporting SEAI in the development of a template and how-to-guide for carrying out district heating feasibility studies. This is a key document that outlines how potential district heating

schemes are evaluated for feasibility and further development. It will facilitate a wide range of organisations to assess district heating project feasibility, and will support the district heating industry in Ireland to scale and move towards both project delivery and delivery on Ireland's national district heating targets, in combination with the range of other national supports that will be available. This will be a key resource for the Dublin region, as Dublin is anticipated to be a leader in district heating development in Ireland. In 2023, drafts of the district heat feasibility study template, and the how-to-guide were completed and submitted to SEAI, for finalisation in 2024.

Galway District Heating Feasibility Study

As part of the project to develop a how-to-guide for district heating feasibility studies, Codema carried out a feasibility study in 2023 for a section of Galway City, as chosen by SEAI. The Galway Feasibility Study, led by Codema in partnership with SEAI, evaluated the potential for a district heating network in Galway City and the surrounding area and is used as a pilot study for the SEAI District Heating Feasibility Study Guide. The project involved analysing thermal demand and supply, and assessing the viability of a heat network within the chosen area, the Westside Decarbonising Zone. Key steps included:

- Gathering heat demand data and stakeholder information
- Assessing energy demand and renewable energy supply options for the network
- Evaluating the district heating network's technical viability
- Appraising different project options and conducting economic analyses
- Exploring funding opportunities and assessing the project's financial viability



- Considering procurement and business models, and the project's environmental and social impacts
- Managing risks and engaging stakeholders
- Concluding with recommendations based on the study's findings

Codema submitted the first draft of the Galway feasibility study in November 2023 and it is anticipated that the final report will be issued in early 2024.

Poolbeg Sector Integration

Codema completed the 'Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg' research project in 2023. Funded by SEAI through the Research, Development and Demonstration (RD&D) programme, this project explored how to use existing and planned infrastructure in the Poolbeg area in the most efficient way by examining the potential for coupling and integrating separate aspects of the electricity, heat and transport sectors.

The overarching objective was to investigate how the sector coupling of the electricity and heat sectors can facilitate our national net-zero objective. One of the key problems the project examined was how to make use of curtailed or wasted renewable energy from offshore wind. The project explored how district heat with thermal storage, and a separate hydrogen electrolyser, along with curtailed renewable electricity and hydrogen end-use applications, can provide an efficient, holistic and integrated energy system solution. The project utilised modelling and analysis carried out by Codema and MullanGrid, while collaborating with Dublin City Council and Dublin Waste-to-Energy.

This project provided insights and guidance to local and national policy makers and public bodies on sector integration applications.

Development Plans

Local Authority Climate Action Plans

In 2023, the Dublin Local Authorities prepared their Climate Action Plans for 2024-2029. These plans are aligned to the Government's overall national climate objective, which seeks to achieve a climate-neutral Ireland by 2050, as set out in the Climate Action and Low Carbon Development (Amendment) Act 2021.

Codema supported the DLAs with their Climate Action Plans and provided the evidence-base for the climate mitigation. The 'Evidence-Based Climate Action' chapter in the Climate Action Plans included a baseline emissions inventory, which contains a review of the four DLAs' own energy use, emissions, gap-to-target and also highlights priority areas for further reduction of emissions for Councils' activities. Furthermore, Codema also provided the DLAs with an analysis of total emissions (including a breakdown of emissions by sector) within each local authority's own administrative boundary. This then informed the development of pathways for energy and emission reductions in line with 2030 and 2050 targets.

The DLA Climate Action Plans also included a chapter on Decarbonising Zones (described earlier in this section). Codema developed the decarbonising zone plans that spatially map out and analyse the energy demand across the decarbonising zones, along with the potential increase/decrease in emissions projected to 2030 and a gap-to-target analysis.

03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION [CONTINUED]

Codema also assisted the DLAs with their Climate Action Plans' public consultation submissions; the energy-related submissions were reviewed and responses to these submissions were provided to the DLAs to be shared with the relevant stakeholders.

City Edge

South Dublin County Council (SDCC) and Dublin City Council (DCC) have come together to work on a joint urban regeneration effort, the City Edge Project. This project is in response to national strategies to regenerate Ireland's cities and large towns, while also focussing on new housing and employment in existing urban areas. City Edge is unique in Ireland and is a transformative initiative, creating a new urban quarter and re-imagining the Naas Road, Ballymount and Park West areas at the west of Dublin City. This project has the potential to create 40,000 new homes and 75,000 jobs, making it one of the largest regeneration schemes in Europe.

In 2023, Codema assisted DCC and SDCC in carrying out an energy planning analysis and report to support the City Edge Project, and upcoming variations of the City and County Development Plans for SDCC and DCC. Draft reports of this Sustainability Energy Management and Energy Provision Feasibility Study have been submitted for review.

The work carried out includes a review of existing climate policy as well as energy and heat demand analysis, projection of future energy and heat demand for City Edge and, using such as an evidence base, outlines principle-based zero-carbon pathways for City Edge. Most importantly, the draft report sets out a series of policy based recommendations on:

- Low-carbon heating and heat networks, including potential for district heating and waste heat sources
- Low-carbon transport
- Renewable electricity

- Building energy efficiency and embodied carbon in buildings
- Socio-economic impacts.

Policy

Public Consultations

In 2023, Codema made several submissions to public consultations that support our work and the work of the DLAs in the area of energy and climate change. These submissions are listed below:

- Consultation on Developing an Electricity Storage Policy Framework for Ireland (DECC)
- Consultation on Ireland's fourth Open Government National Action Plan 2023-2025 (DPER)
- Consultation on Private Wires Consultation (DECC)

Policy Analysis and Decarbonised Energy Fora

During 2023, Codema participated in the following policy analysis and decarbonised energy fora:

- DECC National District Heating Steering Group
- DECC Heat and Built Environment Task Force
- ESB Networks National Networks Local Connections Advisory Group
- ESB Networks Stakeholder Innovation Panel
- Decarb City Pipes 2050 Project Steering Group and Local Working Group
- DECC Geothermal Advisory Group
- Dublin City Geothermal Working Group
- Irish Building Stock Observatory
- SEAI Local Authority Renewable Energy Strategy (LARES) Methodology and Guidance
- Grangegorman Development Agency Energy Steering Group

RESEARCH, DEVELOPMENT AND INNOVATION - KEY OUTPUTS FOR 2023



**ENERGY AND EMISSIONS
EVIDENCE BASE FOR THE
DLA CAPS AND DZ PLANS**



**POOLBEG SECTOR
INTEGRATION PROJECT
COMPLETION**



**LAUNCH OF THE
TALLAGHT DISTRICT
HEATING SCHEME**

Research, Development and Innovation - Actions and Outputs 2023

Date	Actions	Project support	Outputs
Throughout year	Workshops supporting the development of Climate Action Plans and Decarbonising Zones for the Dublin Local Authorities	LA CAPs and DZs	Workshops
	Supported stakeholder engagement related to evidence base for climate action for Zero Together	-	Workshops and presentations
	Provided technical advice for the Dublin District Heating Project	-	Advisory services
	Provided technical advice for the Tallaght District Heating Scheme	-	Advisory services
January	Dublin Region Energy Master Plan workshop with DCC planning teams	-	Workshop and presentation
	Attended National Geothermal Advisory Group meeting	-	Meeting
	Consultation submission on "Electricity Storage Policy Framework for Ireland"	-	Consultation Response
February	Completion of the techno-economic feasibility study on the Blanchardstown District Heating Scheme	FCC	Feasibility Study Report
	Final workshop with the Dublin Local Working Group (LWG) for the Decarb City Pipes 2050 project	Decarb City Pipes 2050	Workshop and presentation

03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION (CONTINUED)

Research, Development and Innovation - Actions and Outputs 2023

Date	Actions	Project support	Outputs
March	City Edge Energy and Emissions Analysis study kick-off	SDCC, DCC	Kick-off project
	SEAI District Heating Feasibility Study stakeholder workshops	SEAI District Heating Feasibility Study Project	Workshops
	Decarb City Pipes 2050 project meeting in Bilbao	Decarb City Pipes 2050	Workshops and presentations
	Project Start - GDA Energy and Emissions Baseline and Decarbonised Heat Outline Business Case	GDA Energy and Emissions Analysis Project	Project kick-off
	SEAI District Heating Feasibility Study Template Workshop	SEAI District Heating Feasibility Study Project	Workshop and presentation
April	Presented the BDHS to FCC Executive Management	Blanchardstown District Heating Scheme	Presentation delivered
	Consultation submission developed on "Open Government Action Plan"	-	Consultation response submitted
	Official Launch of the Tallaght District Heating Scheme	Tallaght District Heating Scheme	Participation at launch event
May	Poolbeg Sector Integration "Project Results" workshop with SEAI	Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg	Workshop and presentation
	Codema and Dublin CARO attended an international workshop on local authority climate action plans hosted by the Covenant of Mayors	-	Workshop
	Attended a workshop of the Heat and Built Environment Task Force hosted by DECC	-	Workshop
	Presented on district heating to the University and Healthcare Estates and Innovation Conference	-	Presentation delivered
	Submissions entered into annual SEAI RD&D Funding Call	-	Research proposals submitted
June	Presented the BDHS to Minister Eamon Ryan and Minister Roderic O'Gorman	Blanchardstown District Heating Scheme	Presentation
	Attended a workshop of the Heat and Built Environment Task Force hosted by DECC	-	Workshop
	Attended a meeting with Galway City Council to begin a district heat feasibility study	SEAI District Heating Feasibility Study Project	Project kick-off
	Presented the BDHS at the FCC SPC Meeting on Climate Action, Biodiversity and Environment	Blanchardstown District Heating Scheme	Presentation

Date	Actions	Project support	Outputs
	Submitted an Energy and Emissions Baseline report to the GDA and its stakeholders, draft for finalisation at project close in 2024	GDA Energy and Emissions Analysis Project	Report
July	Attended Renewable Energy Ireland and Irish District Energy Association's District Heat Forum	–	Workshop
	Energy and Emissions Evidence Base prepared for all four DLA Climate Action Plans	DLA Climate Action Plans	Report
	Report prepared on 'Cross-City Synthesis of Work on Heating and Cooling Plans' in the participating cities of the Decarb City Pipes 2050 Project	Decarb City Pipes 2050	Report delivered
August	Stakeholder engagement for BDHS	Blanchardstown District Heat Scheme	Meeting held with stakeholders
	Clondalkin DZ Report for SDCC CAP	Clondalkin DZ	Report drafted
	Balbriggan Decarbonising Zone Report for FCC CAP	Balbriggan DZ	Report drafted
	Dún Laoghaire/Blackrock Decarbonising Zone Report for DLRCC CAP	Dún Laoghaire/Blackrock DZ	Report drafted
	District heat presentation at the Galway Energy Summit	–	Presentation delivered
	Codema appointed to support SEAI on the IEA's Technology Collaboration Programme for District Heating and Cooling (IEA TCP DHC)	SEAI	Appointed as representative
	Business Model Workshop on BDHS with FCC	Blanchardstown District Heat Scheme	Workshop held
	Development of 'Climate Action and Energy Statements – Guidance Note' for DCC - supporting the DCC City Development Plan	–	Report
September	Ballymun DZ Report for DCC	Ballymun DZ	Report drafted
	Ringsend DZ Report for DCC	Ringsend DZ	Report drafted
	Hosted Bilbao City Council and Tecnalia on a study visit to Dublin to support district heating knowledge exchange	Decarb City Pipes 2050	Workshops, presentations and site visits
	Ballymun DZ Workshop	Ballymun DZ	Workshop and Presentation
	Presented on the Poolbeg sector integration project at the Energy Transition Summit	Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg	Presentation delivered

03. WORK PROGRAMME 2023

RESEARCH, DEVELOPMENT AND INNOVATION (CONTINUED)

Date	Actions	Project support	Outputs
October	Hosted stakeholder workshop for feedback on the 'How-To' guide for carrying out district heating feasibility studies	SEAI District Heating Feasibility Study Project	Workshop held
	Presented at Decarb City Pipes 2050 final conference in Brussels, also supporting attendance of DCC, CCC	Decarb City Pipes 2050	Presentation delivered
	Hosted final stakeholder workshop for the SEAI funded Poolbeg sector integration project	Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg	Presentation and workshop
	Consultation submission to DECC on Private Wires	-	Consultation response submitted
	Presented a district heating project update on the Poolbeg Sector Integration Project at the Irish District Energy Association's Annual Conference	Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg	Presentation delivered to 170+ attendees
	Support for multiple public engagement events for the public consultation period of the DLA CAPs	LA CAPs and DZs	Codema stand at the CAP public consultation events
	Ringsend and Poolbeg DZ Workshop	Ringsend and Poolbeg DZ	Workshop and presentation
November	SEAI 'How-to Guide for District Heating Feasibility Studies' - drafts of all deliverables submitted	SEAI	Report submitted
	DLA CAPs - Submission Responses	DLAs	Response document developed
	Climate Change Advisory Council - Research on the assessment of specific barriers to district heating deployment in Ireland (supporting partner)	Climate Change Advisory Council	Project kick-off
	Attended FEDARENE In-Plan Training - international best practice for energy planning	-	Training delivered
December	Deliverable 6.2. City Planning Agenda Report for Dublin as part of the Decarb City Pipes 2050 project	Decarb City Pipes 2050	Section in Report on Dublin
	Organised a webinar on "Removing Barriers to the Heat Transition in Ireland" as part of the dissemination requirements of the Decarb City Pipes 2050 project	Decarb City Pipes 2050	Webinar delivered and circulated to attendees



MANAGEMENT SUPPORT

EU Project Management

Codema initiates and manages projects that can access EU funding in areas that are beneficial to the Dublin region. These EU projects help Codema and the Dublin Local Authorities (DLAs) to stay up-to-date on the latest energy and policy developments in Europe, test methods and technologies in Ireland that are already widely-used in other countries, and gain further knowledge and expertise on improved energy efficiency and renewable energy technologies. Management of these projects involves overseeing the delivery of activities and outputs, stakeholder management of EU partners, acting as a point of contact for the European Commission, as well as project administration and financial management.

DeliveREE

In early 2021, Codema was awarded funding for the Horizon 2020 project DeliveREE. The project budget is €1.2m and has eight partners - Codema, the four Dublin Local Authorities, Philip Lee Solicitors, Resourceful Futures Ltd and Sustainable Development Capital LLP. The project will enable Codema to develop internal protocols and systems to streamline the project development and implementation process, through upskilling staff, the creation of project documentation templates and defined processes for similar project types. There is a pipeline of over €20m capital projects, ranging from solar PV, retrofitting and EV fleets. Codema is the lead partner with responsibility for the overall delivery of the project goals and also the management of both the project consortium and project budget. This will be achieved through a series of reporting, meetings and action tracking.

In 2023, two major project partner meetings were held, one in March and the second in November. In addition, two separate six-monthly performance monitoring updates were submitted to the European Commission in May and November. These updates were submitted on time and were approved on both occasions.

REGEN

In August 2023, the European Commission approved the Horizon Europe project REGEN (REGENeration of neighbourhoods towards a low-carbon, inclusive and affordable built environment), in which Codema has a relevant role as coordinator of the Dublin pilot. The project, which will run for four years, will officially begin in January 2024 with a kick-off meeting involving all 23 partner organisations in Luxembourg.

Regarding the project objectives, REGEN brings together a multi-level and committed consortium of entities across Europe to pave innovative pathways for the decarbonisation of European neighbourhoods and cities, addressing urgent socio-economic, climate and built environment challenges by designing a multifunctional toolbox, leveraging cutting-edge digital technologies and life-cycle sustainability assessments, while engaging citizens and influencing behavioural change. REGEN will implement its solutions in four demonstration sites (Dublin, Milan, Laredo and Beckerich), continuously monitoring the energy, mobility, and circularity of individual buildings, streets and districts.

03. WORK PROGRAMME 2023

MANAGEMENT SUPPORT (CONTINUED)



The Dublin demonstration site is located in the Poolbeg and Ringsend area, which is also designated as a Decarbonising Zone (DZ) within Dublin City Council. Within the pilot, the local partnership, which is composed of Codema (as project coordinator), Dublin City Council and the Ringsend Sustainable Energy Community, represented by founding member Arden Energy, will test different energy and urban regeneration solutions closely engaging with the local community and stakeholders.

New EU Funding Streams

Codema regularly scopes all EU funding streams in order to assess their suitability to support local projects for the DLAs. Once a suitable project is identified, Codema can then assist the DLAs in the preparation of project applications, and will submit the applications to the programme's administrators on their behalf.

In 2023, Codema continued to apply for EU funding to increase innovation and learning in the Dublin region. Codema has submitted an application as the lead partner of the GEMINI project, a PEACEPLUS-funded initiative focused on building collaboration between Northern Ireland and the Republic of Ireland. The project, which has a budget of €20m and 14 partners, aims to develop the market for geothermal energy on the island of Ireland through actions with industry, academia, skills bodies and communities. It also involves four pilots, one of which could take place on the TU Dublin campus in Grangegorman, involving a 2.5km bore to ascertain the heat availability to decarbonise the district heating system on site. The application was submitted in September and the winner of the bid will be announced in April 2024. We will also play a small role in the LEGID-DH project looking at heat possibilities of underground infrastructure for DH networks.

Local Project Management

Sustainable Energy Communities

Codema is the regional coordinator for the Dublin and Mid-East region of SEAI's Sustainable Energy Community (SEC) programme. Codema's responsibilities focus on the coordination of the County Mentors assigned to the seven local authority areas in the region. This includes overseeing monthly reporting, tracking recruitment figures and overall programme progress, liaising with SEAI, providing mentors with training and/or ad-hoc advice regarding programme matters such as recruitment, Energy Master Plan applications and rollout, and assisting with communication activities.

Codema is also actively working to streamline the delivery of the programme in the region, and to try to address or reduce barriers that may arise during the programme's 'Learn, Plan and Do' stages for SECs. For example, to assist SECs with their Energy Master Plans (EMPs) in the 'Plan' stage, Codema set up a partnership with all seven local authorities in the Dublin and Mid-East region to enable each Council to act as the lead partner applicant on the EMP applications of their area's SECs. At the end of 2021, Codema set up a framework for EMP consultants within Dublin City Council, from which all seven local authorities can draw consultants for their SECs' Energy Master Plans. Since January 2023, there have been eight EMPs undertaken in the Dublin and Mid-East Region, with six of these being carried out via this EMP Framework. During 2023, four of the five consultants on the Framework were offered an Energy Master Plan. A total of €115,000 worth of EMP grants were issued in the Dublin and Mid-East region in 2023. This Framework has been very well received among the local authorities, reducing administrative time and streamlining the process for all stakeholders involved (i.e. the local authorities, SECs, SEAI and consultants).



At Codema's suggestion, the 'Triple SEC', involving three energy communities in Dublin City, applied for and secured funding for technical assistance under the EU pilot Citizen-Led Renovation.

Energy Research, Development and Demonstration Projects

Codema was involved in three applications to the SEAI Research, Development and Demonstration (RD&D) call in 2023. Codema led the application for one of these projects. The first project focused on investigating the potential for district heating for domestic users with a focus on Phibsborough in Dublin. The second looked at ways to accelerate the development of energy communities but unfortunately neither of these applications were selected for funding. However, we were successful in the application for the HEATNEWS project, which Codema will lead. This project will focus on heat storage potentials for district heating systems and includes the Tallaght District Heating Scheme as a pilot.

Development and Delivery of EPC Facilitator Training and Register of EPC Facilitators

In April 2023, Codema was awarded the tender for delivery and support services for Energy Performance Contracting (EPC) facilitator training after a successful application under SEAI's Public Sector Framework.

These training sessions were delivered over a two-day period by Codema in September and November 2023. A total of 33 people attended the training including building energy consultants, energy agencies and public bodies.

The training course consisted of seven specific training modules:

- Identifying EPC Project Opportunities
- Selling the Added Value of EPC and Presenting the Business Case to EPC Clients
- Evaluation and Managing Risk
- Project Financing and Financial Evaluation
- Legal and Contractual Requirements for EPC and Guaranteed Savings
- Procurement of EPC
- Measurement and Verification

The overall aim of the training course was to give potential facilitators a solid foundation in EPC facilitation and enable them to go out and initiate EPC projects. The course demonstrated how EPC is supported at EU level in both the Energy Performance of Buildings Directive and the Energy Service Directive and at a national level in the Climate Action Plan. EPC can play a significant role in helping to meet energy efficiency targets (such as the 'BER to B' objective) by both encouraging more holistic projects of scale and enabling private finance to invest in these projects.

In addition to the training delivery, Codema is continuing to develop training material and is in the process of developing a shorter version of the training course aimed at managers. Codema is also providing a peer-to-peer support service for any of the trainees wishing to facilitate their first EPC project.

03. WORK PROGRAMME 2023

MANAGEMENT SUPPORT (CONTINUED)

Project Funding

European Funding in 2023

In 2023, Codema drew down funding from the following EU projects:

Funding Programme	Project	Aim	Project Timeline	Net Grant Drawdown 2023 (€)
Interreg North-West Europe	HeatNet NWE	To promote the roll-out of 4th Generation District Heating and Cooling (4DHC) across North-West Europe.	September 2016 - August 2021	€30,301
Horizon 2020	TOMORROW	To empower local authorities to lead the transition towards low-carbon cities by engaging citizens and stakeholders in the development of 2050 transition roadmaps.	September 2019 - November 2022	€31,521
Horizon 2020	DeliveREE	To test and develop a one-stop-shop project implementation unit for energy efficient and renewable energy projects in Dublin.	June 2021 - June 2025	€130,440
Total EU Funding				€192,262



National Funding in 2023

Funding Programme	Project	Aim	Project Timeline	Net Grant Drawdown 2023 (€)
SEAI	Sustainable Energy Communities	The Sustainable Energy Communities (SEC) initiative is a funding and support programme, which helps communities to work together to become energy-smart and more sustainable.	February 2020 - May 2024	€313,711
SEAI RD&D	Integration of Heat, Electricity and Transport: Use of Curtailed Renewable Energy in Poolbeg	To explore how to use existing and planned infrastructure in the Poolbeg area in the most efficient way by examining the potential for coupling and integrating separate aspects of the electricity, heat and transport sectors.		€90,834
Total National Funding				€404,545



03. WORK PROGRAMME 2023

MANAGEMENT SUPPORT (CONTINUED)

MANAGEMENT SUPPORT - KEY OUTPUTS FOR 2023



5 APPLICATIONS FOR EU AND NATIONAL PROJECTS SUBMITTED



27 NEW SUSTAINABLE ENERGY COMMUNITIES JOINING THE NETWORK



2 DELIVEREE PROJECT PROGRESS REPORTS SUBMITTED

Management Support - Actions and Outputs 2023

Date	Actions	Project Support	Outputs
January	34th claim for SEC and report submitted	SEC	Report and grant drawn down
February	35th claim for SEC and report submitted	SEC	Report and grant drawn down
March	36th claim for SEC and report submitted	SEC	Report and grant drawn down
	Award application submitted to ESG Awards in the Employee Experience category	-	Codema shortlisted in the Employee Experience category
	DeliveREE project partner meeting	DeliveREE	Updating project partners on work related to project management (Work Package 1)
April	Attendance at the ESG Awards Lunch in the Mansion House	-	Codema wins Employee Experience award for 4-day week and flexible working approach for our team
	37th claim for SEC and report submitted	SEC	Report and grant drawn down
May	Three RD&D applications submitted, one as lead partner	RD&D	Applications submitted
	38th claim for SEC and report submitted	SEC	Report and grant drawn down
	Final Poolbeg RD&D report and grant claim	RD&D	Report and grant draw down
	DeliveREE progress report	DeliveREE	6-monthly project progress report compiled and submitted



Date	Actions	Project Support	Outputs
June	39th claim for SEC and report submitted	SEC	Report and grant drawn down
	Bi-annual review conducted with Dublin and Mid-East Region mentors	SEC	Bi-annual mentor review completed
	Continued the work of Doing Together and mapped resources and submitted proposal to SEAI for a Solar Communities pilot project	SEC	Pilot project proposal submitted
July	40th claim for SEC and report submitted	SEC	Report and grant drawn down
August	41st claim for SEC and report submitted	SEC	Report and grant drawn down
September	42nd claim for SEC and report submitted	SEC	Expecting grant
	GEMINI application submitted	-	Application submitted
October	43rd claim for SEC and report submitted	SEC	Expecting grant
November	DeliveREE project partner meeting	DeliveREE	Updating project partners on work related to project management (Work Package 1)
	DeliveREE progress report	DeliveREE	6-monthly project progress report compiled and submitted
December	Final Decarb City Pipes 2050 report and claim submitted to close out the project	Decarb	Grant drawdown 2024

04. FINANCIAL REPORT

Income and Expenditure Account 2023

Codema

INCOME AND EXPENDITURE ACCOUNT

For the year ended 31st December 2023

2023

€

Income	2,401,554
Expenditure	-2,249,694
Surplus before Interest	151,860
Interest receivable and similar income	0
Interest payable and similar expenses	0
Loss/Profit before Tax	151,860
Tax on surplus/(deficit)	33,319
Surplus (Deficit) for the Financial Year	185,179
Total Comprehensive Income	185,179

Balance Sheet 2023

Codema

BALANCE SHEET

For the year ended 31st December 2023

2023

€

Fixed Assets	
Tangible Assets	41,485
Current Assets	
Debtors	768,932
Cash and cash equivalents	340,858
	1,109,790
Creditors: Amount falling due within one year	-377,566
Net Current Assets	732,224
Total Assets less Current Liabilities	773,709
Reserves	
Family Leave Reserve	381,611
Income and expenditure account	357,408
Equity attributable to owners of the company	739,019

05. APPENDICES

Abbreviations

4DHC	4th Generation District Heating and Cooling	GHG	Greenhouse Gas
ACE	Awareness, Communications and Engagement	GPRN	Gas Point Reference Number
AWS	Amazon Web Services	HESK	Home Energy Saving Kit
BAC	Building Automated Control	IEA	International Energy Agency
BDHS	Blanchardstown District Heating Scheme	IEA TCP	International Energy Agency Technology
CAET	Culinary, Arts, Engineering and Teaching	DHC	Collaboration Programme for District Heating and Cooling
CAP	Climate Action Plan	IrDEA	Irish District Energy Association
CARO	Climate Action Regional Office	KCC	Kildare County Council
CCC	Cork City Council	KNOCA	Knowledge Network on Citizens' Assemblies
CEM	Certified Energy Manager	LA	Local Authority
CHP	Combined Heat and Power	LARES	Local Authority Renewable Energy Strategy
CMVP	Certified Measurement and Verification Professional	LED	Light Emitting Diode
CO ₂	Carbon Dioxide	LWG	Local Working Group
CoM	Covenant of Mayors	M&R	Monitoring and Reporting
CPWN	Competitive Procedure with Negotiation	M&V	Measurement and Verification
CRU	Commission for Regulation of Utilities	MCC	Meath County Council
DCC	Dublin City Council	MEEU	Mid-East Energy Unit
DDHP	Dublin District Heating Project	MPRN	Meter Point Reference Number
DEC	Display Energy Certificate	NDFA	National Development Finance Agency
DECC	Department of the Environment, Climate and Communications	NLGES	Noel Lawler Green Energy Solutions
DLAs	Dublin Local Authorities	NWE	North West Europe
DLRCC	Dún Laoghaire-Rathdown County Council	PIU	Project Implementation Unit
DPER	Department of Public Expenditure, NDP Delivery and Reform	PMP	Project Management Professional
DREM	Dublin Region Energy Master Plan	PV	Photovoltaic
DRIFT	The Dutch Research Institute for Transitions	RD&D	Research, Development and Demonstration
DZ	Decarbonising Zone	RDI	Research, Development and Innovation
EMP	Energy Master Plan	REGEN	REGENeration of Neighbourhoods towards a Low-Carbon, Inclusive and Affordable Built Environment
EnPI	Energy Performance Indicator	SDCC	South Dublin County Council
EPC	Energy Performance Contracting	SEAI	Sustainable Energy Authority of Ireland
EPO	Energy Performance Officer	SEC	Sustainable Energy Communities
ESCo	Energy Service Company	SEDA	Spatial Energy Demand Analysis
EU	European Union	SEU	Significant Energy User
EV	Electric Vehicle	SPC	Strategic Policy Committee
EVCP	Electric Vehicle Charge Point	TASC	Think-Tank for Action on Social Change
FCC	Fingal County Council	TDHS	Tallaght District Heating Scheme
FIDE	Federation for Innovation in Democracy Europe	WCC	Wicklow County Council
GDA	Grangegorman Development Agency		





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South Dublin County Council