



# ANNUAL REPORT 2017



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## 01. DIRECTOR'S FOREWORD

"Our core role, as always, lies in supporting the energy and climate change objectives of the four local authorities in the Dublin region... and, more recently, in helping them to develop their Climate Change Action Plans."

In 2017, Codema proudly celebrated its 20-year anniversary and this marked a big milestone in the history of our operations as the energy agency for the Dublin region. Over these past 20 years, Codema has matured and grown into a 13-strong team of engineers, energy planners, communicators and project managers.

Throughout these years and through networking with peers and research centres, our team has developed expertise and best practice, along with day-to-day practical experiences, in implementing innovative, local energy projects. This was recognised in 2017 with nominations for six national and international awards, of which we were successful in winning four of these.

Our core role, as always, lies in supporting the energy and climate change objectives of the four local authorities in the Dublin region: Dublin City Council, Dún Laoghaire-Rathdown, Fingal and South Dublin County Councils. Central to this role is working with the councils' own staff to help them meet, or exceed, their 33% energy efficiency target for 2020 and, more recently, in helping them to develop their Climate Change Action Plans.

Local authority Energy Reviews were produced by Codema for the first time in 2017. These Energy Reviews firstly analysed the historical energy consumption data for the councils' public buildings, housing, street lighting and fleet, in order to identify the most significant energy users. Then, focusing on these users, Codema developed recommendations for the most effective measures to reduce the councils' energy consumption. Leisure centres are among the largest energy consumers, and in May last year, Codema received the European Energy Service Award for 'Best Energy Service Promoter', for introducing and promoting the first Energy Performance Contract for an Irish local authority. This related to the energy upgrade of three Dublin City Council sports and fitness centres at Ballymun, Finglas and Markievicz, and following on from this, we are now looking to roll out a second Energy Performance Contract project in Dublin City Council, and initiate similar schemes with Dún Laoghaire-Rathdown, Fingal and South Dublin County Councils.

Codema's Home Energy Saving Kits progressed hugely throughout 2017, with the kits expanded to all of Dublin City Council's public libraries, and a roll-out initiated to not only the other Dublin local authority areas, but also other library networks across the country. This is a testament to the success of the scheme, which won two separate awards in 2017: the LAMA Award in the 'Best Energy Smart Initiative' category in January, and the EU Sustainable Energy Award for the 'Consumers' category in Brussels in June.

District heating schemes have progressed significantly during the year on two fronts. For the Dublin Docklands area,

Codema developed two key documents for Dublin City Council – a Detailed Financial Appraisal and a Market Research Report and Communications Strategy for the Dublin District Heating Scheme. For the South Dublin District Heating Scheme in Tallaght, Codema has been analysing the heat supply and route options for the pipework, which is supported by the HeatNet NWE Interreg project. In recognition of the pioneering nature of this work in overcoming the challenges of building the city's first district energy network, Codema received the CELSIUS Award on behalf of Dublin City Council for the 'Getting Started' category, in Gothenburg in November.

The central task for Codema in 2017 has undoubtedly been working with the four councils in addressing the increasingly important challenge of climate change. 'A Strategy Towards Climate Change Action Plans for the Dublin Local Authorities' was finalised in January, and was followed through with four individual Climate Change Action Plans – one for each council – which are being developed collaboratively through Codema. The plans will set out how the Dublin region is responding to the impacts of climate change and how the local authorities will achieve their target of a 40% reduction in greenhouse gas emissions by 2030. It also lays out the role that the four local authorities have in responding to the present and future climate change risks that Dublin is facing, and the actions that are being taken to achieve climate resilience.

An extensive process that involved meetings and workshops with council staff, comprehensive analysis of greenhouse gas emissions within the Dublin region, and evaluation of national and international best practice was undertaken, and forms the basis of the actions that are being developed by council staff to respond to these challenges. Significant progress on a first draft has been achieved by the year end, and further work is ongoing by Codema in defining and quantifying these climate change actions.

I would like to conclude by expressing my appreciation for the continued support that Codema has received from the Dublin Local Authorities over the past 20 years. This has allowed Codema to develop in a form that remains truly relevant to the local energy and climate challenges of the Dublin region. I would further like to acknowledge the financial support that Codema received from the European Union and the Sustainable Energy Authority of Ireland through their energy and climate programmes.

Finally, I would like to take this opportunity to thank the very many staff across the different departments within the four councils, with whom we have had the pleasure to work with in 2017. Most importantly, I would like to thank all the staff at Codema for their dedication and hard work in delivering all of the outputs described in this report. In reflecting over the years, I am very proud of the Codema team and its achievements on our 20th anniversary.



*Gerry Wardell*

**Gerry Wardell**  
Director, Codema

## 02. ABOUT CODEMA



### Vision, Mission & Values

Codema was set up as a not-for-profit limited company by Dublin City Council in 1997 under the SAVE II Programme of the EU. It was one of 14 local energy agencies set up around Ireland to help local authorities meet their energy performance targets through professional development and implementation of best practice. In 2009, Codema also became energy adviser to Dún Laoghaire-Rathdown, Fingal and South Dublin County Councils.

Our role is defined around the core function of supporting the local authorities in their own sustainable energy use. A second role is engaging with EU and nationally-funded energy programmes to bring innovation to the Dublin region. A third and increasingly important role is to increase energy and climate awareness among citizens and energy stakeholders in Dublin. Over the years, these three strands have become increasingly intertwined and integrated into a comprehensive, local and regional service for energy and climate change.



#### Vision

Codema's vision for Dublin is of a city and county region powered by clean energy, with zero polluting emissions and strong resilience to flooding and other impacts of climate change. There will be affordable heat for all citizens in their homes, through excellent insulation and efficient energy from renewable sources. Good mobility will be provided by a public transport infrastructure that is independent of fossil fuels. Electricity will be fully decarbonised, and any waste heat from industrial processes will be recycled for heating and cooling commercial and residential buildings.



#### Mission

Codema is committed to working with the Dublin Local Authorities (DLAs) to improve the energy efficiency of Dublin in order to reduce the region's CO<sub>2</sub> emissions and achieve the ambitious climate and energy targets known as "20-20-20" targets. These are:



**A 20% reduction in EU greenhouse gas emissions from 1990 levels**



**Raising the share of EU energy consumption produced from renewable resources to 20%**



**A 20% improvement in the EU's energy efficiency**



**In line with the NEEAP, we are also committed to achieving a 33% reduction in the local authorities' energy use for their own operations**



#### BEYOND 2020

**A 40% reduction in GHGs by 2030 in line with the EU Covenant of Mayors for Climate & Energy**



## The Steering Committee

Codema reports to a Steering Committee whose members are appointed by the Chief Executives of Dublin City Council (DCC), Dún Laoghaire-Rathdown County Council (DLRCC), Fingal County Council (FCC) and South Dublin County Council (SDCC). This Steering Committee meets on a quarterly basis to draw up and review the annual work programme. At these meetings, Codema reports on the progress of actions, responds to any requests for specific work at departmental level, and keeps the DLAs abreast of the latest developments on energy and climate change policies in Ireland and abroad.



In 2017, the Steering Committee was made up of the following members from the Dublin Local Authorities and Codema:

 <p>Comhairle Cathrach Bhaile Átha Cliath Dublin City Council</p> <p><b>Dick Brady</b> Assistant Chief Executive Environment &amp; Transportation</p> <p><b>John Ryan</b> Senior Executive Officer Corporate Services</p>	 <p>Comhairle Contae dlr County Council</p> <p><b>Frank Austin</b> Director of Infrastructure &amp; Climate Change</p> <p><b>Austin Baines</b> Senior Executive Officer Infrastructure &amp; Climate Change</p>	 <p>Comhairle Contae Fhine Gall Fingal County Council</p> <p><b>Gilbert Power</b> Director Water Services &amp; Environment Department</p> <p><b>James Walls</b> Senior Executive Engineer Environment Division</p>	 <p>Comhairle Contae Átha Cliath Theas South Dublin County Council</p> <p><b>Eddie Conroy</b> County Architect</p> <p><b>Máire O'Sullivan</b> Senior Executive Architect</p> <p><b>Galen Doran</b> Facilities Manager</p>	 <p><b>Gerry Wardell</b> Director</p> <p><b>Edel Giltenane</b> Executive Manager</p> <p><b>Joe Hayden</b> Senior Executive Engineer</p>
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## 02. ABOUT CODEMA

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### The Codema Team

Codema currently employs 13 staff who have qualifications and experience in the areas of Engineering, Sustainable Development, Sustainable Infrastructure, Architecture, Communications, Marketing, Project Management and Financial Administration. This allows the team to deliver its key services of Energy Monitoring & Management, Energy Awareness, Energy Policy & Planning, Project Management and Match Funding.





**Gerry Wardell - Director**  
 Certificate in Advanced Negotiation  
 Certificate in SME Management  
 PhD in Experimental Physics



**Edel Giltenane - Executive Manager**  
 Certificate in SME Management  
 PMI Project Management Professional (PMP)  
 MSc in Environmental Resource Management  
 BSc in Earth Science



**Paula Hemenstall - Secretary**  
 Sage Training Programme in Tas Books



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



**Joe Hayden - Senior Executive Engineer**  
 Certificate in Public Procurement  
 Certified Measurement and Verification Professional (CMVP)  
 MSc in Sustainable Development  
 BA/BAI in Mechanical and Manufacturing Engineering



**Dec McCormac - Project Manager**  
 PMI Project Management Professional (PMP)  
 Diploma in Public Procurement  
 MSc in Sustainable Development  
 BA (Int'l) in Geography & Archaeology



**Donna Gartland - Executive Energy Planner**  
 MSc in Sustainable Energy Planning and Management  
 BEng in Energy and Environmental Engineering



**Suzanne Fitzpatrick - Communications Manager**  
 Certificate in Internal Communications  
 Diploma in PR and Event Management  
 BA in Journalism



**Brian Connolly - Energy Manager**  
 BSc in Sustainable and Electrical Control Technology  
 BSc in Electrical Services and Energy Management



**Rebecca Cachia - Civil Engineer**  
 GIS Level 8  
 Master of Engineering in Sustainable Infrastructure  
 Bachelors of Architecture and Structural Engineering



**John O'Shea - Energy Systems Analyst**  
 Post-Graduate Diploma in Sustainable Energy  
 CIBSE-certified Heat Networks Consultant  
 BEng in Civil Engineering



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



**Eoin Ahern - Energy Manager**  
 MEngSc in Sustainable Energy Research  
 MEngSc at UCC - Renewable Natural Gas  
 BE in Mechanical Engineering

## **02. ABOUT CODEMA**

(CONTINUED)

# **CORE COMPETENCIES**



## ENERGY MONITORING & MANAGEMENT

Monitoring & Reporting  
Energy Databases  
Energy Surveys  
Display Energy Certificates  
Renewable Energy  
Energy Efficiency Upgrades  
Energy Performance Contracting  
Measurement & Verification



## ENERGY POLICY & PLANNING

National & International Climate Change Policy  
Climate Mitigation & Adaptation  
Sustainable Energy Action Plans  
Energy Master Planning  
District Heating  
Techno-Economic Analysis  
Detailed Financial Analysis  
Advice on Development Plans and Policy Papers



## ENERGY AWARENESS

Home Energy Saving Kits  
Energy Awareness Programmes  
Staff Engagement  
Educational Workshops & Events  
Climate Awareness



## PROJECT MANAGEMENT

Development of local Climate Change Action Plans  
Local & EU Project Management  
EPC Facilitation  
Procurement Facilitation



## MATCH FUNDING

Match Funding from European Programmes  
European Co-operation  
National Funding Applications

## 03. WORK PROGRAMME 2017



# ENERGY MONITORING & 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 energy efficiency targets, which have been set at a 33% reduction in energy consumption by the year 2020. These targets have been set through successive National Energy Efficiency Action Plans (NEEAPs), under the European Energy Efficiency Directive (2012/27/EU). In the third NEEAP of 2014, this 33% target was reiterated as a central pillar of our national energy efficiency policy.

In January 2017, the government launched the Public Sector Energy Efficiency Strategy. The aim of the strategy is to ensure that senior leadership and accountability on energy efficiency are core to the local authorities' objectives. Senior managers in over 300 public bodies have been given the responsibility of ensuring compliance with existing energy performance reporting and monitoring requirements, and embedding structured energy management in their organisations. Throughout 2017, Codema worked with the relevant DLA Energy Performance Officers (EPOs) to help them fulfil this role, and will continue to do so in 2018.

The aim of the NEEAP is for the public sector to lead the way in relation to energy efficiency and help achieve the 33% energy reduction target "through strong, committed action".



### 2020 Energy Efficiency Targets

#### European

European Energy Efficiency Directive (2012/27/EU)  
20% energy reduction

#### National

National Energy Efficiency Action Plan (NEEAP)  
33% energy reduction

#### Local

Annual Reporting of Energy Efficiency Data under S.I. 542 of 2009 (restated under S.I. 426 of 2014)



### 2030 Energy Targets

Covenant of Mayors for Climate and Energy  
40% reduction in GHGs



Photo courtesy of Fingal County Council

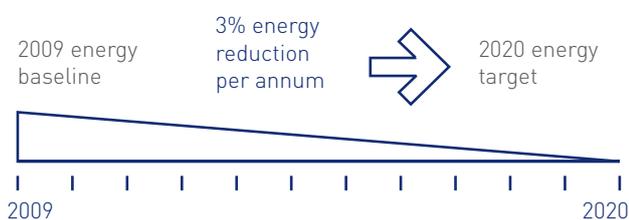
## Management of Public Sector Monitoring & Reporting

Under S.I. 426 of 2014, the DLAs have an obligation to report annually on their energy performance. In practice, this annual reporting entails compiling full data of their previous year's energy consumption. This comprises mainly 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 and transport fuels.

Codema has supported DCC, FCC and SDCC with this statutory reporting to the national energy Monitoring and Reporting (M&R) system operated by the Sustainable Energy Authority of Ireland (SEAI) on behalf of the Department of Communications, Climate Action and Environment (DCCA/E).

The M&R system is useful for tracking the individual local authority's progress towards the 2020 target, compared to the baseline year. This means that the DLAs must reduce their annual energy use by approximately 3% each year up to 2020, from the baseline year.

### Yearly Energy Targets



## M&R Data for 2017

In 2017, Codema entered the gas, electricity and fuel (heating and transport) data into the M&R system on behalf of DCC, FCC and SDCC. This included entering 2,130 electricity and gas accounts in total for all three local authorities.

The M&R data for 2017 shows that DCC, FCC and SDCC are currently on track towards meeting their 33% target by 2020, with DCC at 29.8%, FCC at 30.3%, and SDCC at 28.9% (Figure 1). However, it should be noted that these figures quoted are preliminary figures, and are subject to change as different stages of the M&R system are rolled out during the year, up until the publishing date in August 2018.

Figure 1: M&R data 2017



### 03. WORK PROGRAMME 2017

ENERGY MONITORING & MANAGEMENT (CONTINUED)

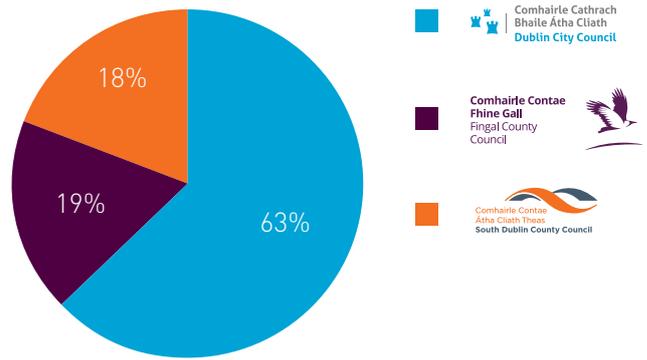
Therefore, based on the M&R data currently available for 2017, Codema calculates that these three councils consumed a combined total of 296 GWh of primary energy, and produced just over 61,250 tonnes of CO<sub>2</sub>. At 63%, DCC accounted for the largest percentage of the Total Primary Energy Requirement (TPER), as it has the largest population (Figure 2).

By using average national prices for electricity, heating gas and oil, as well as petrol and diesel, and applying this to the preliminary 2017 M&R data, Codema estimates the total cost of this energy use to be approximately €23 million for the three DLAs.

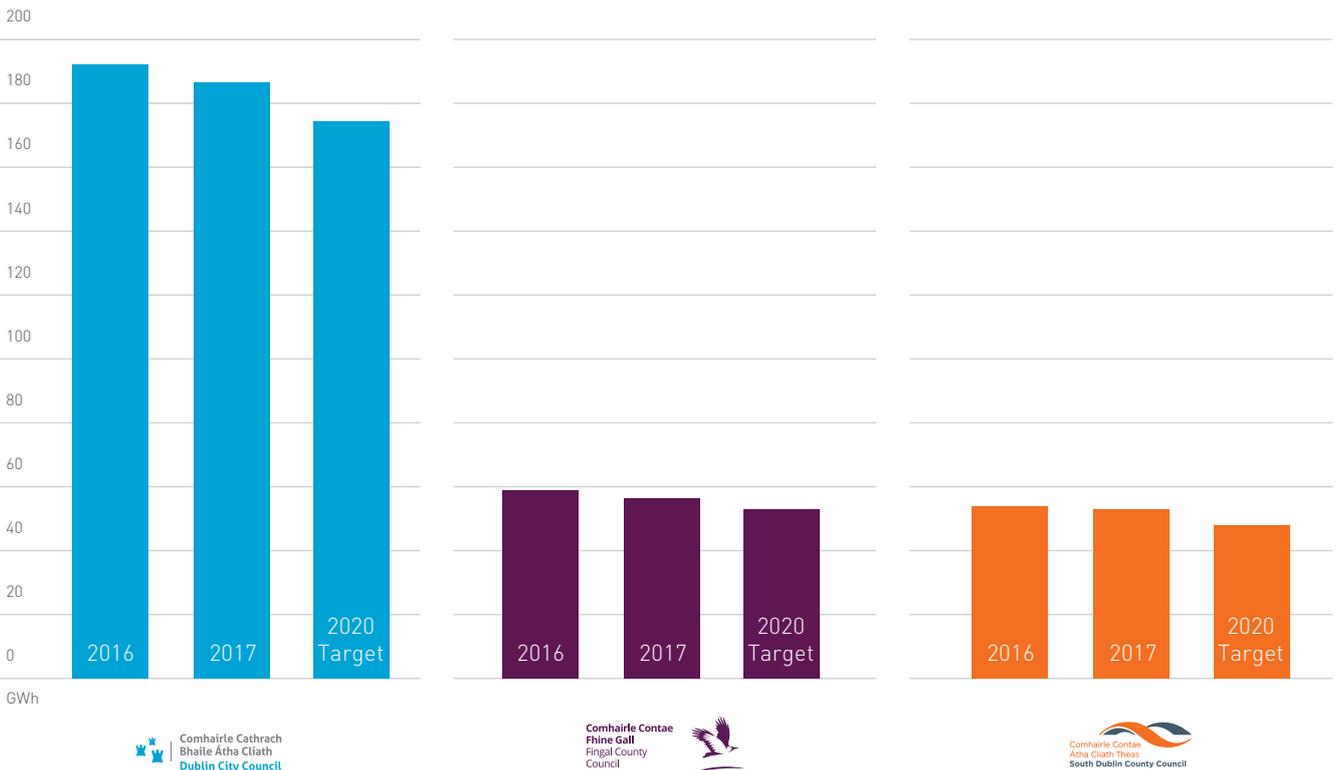
As can be seen in Figure 3 below, the preliminary TPER figures show a slight decrease of 9.8 GWh in 2017 across the three local authorities, when compared to the verified figures of the previous year. This slight decrease may be due to reductions in the majority of the local authorities' Significant Energy Users (SEUs). However, a more detailed analysis on this will be carried out once the energy data is verified and reported in the 2017 Energy Reviews for DCC, FCC and SDCC, which Codema is currently producing.

Figure 3 also illustrates where each local authority currently is in relation to its 2020 energy reduction target.

**Figure 2: Share of energy consumed by DCC, FCC & SDCC in 2017 (GWh TPER)**



**Figure 3: Energy consumed by DCC, FCC & SDCC in 2016-2017 (GWh TPER), compared to their 2020 targets**



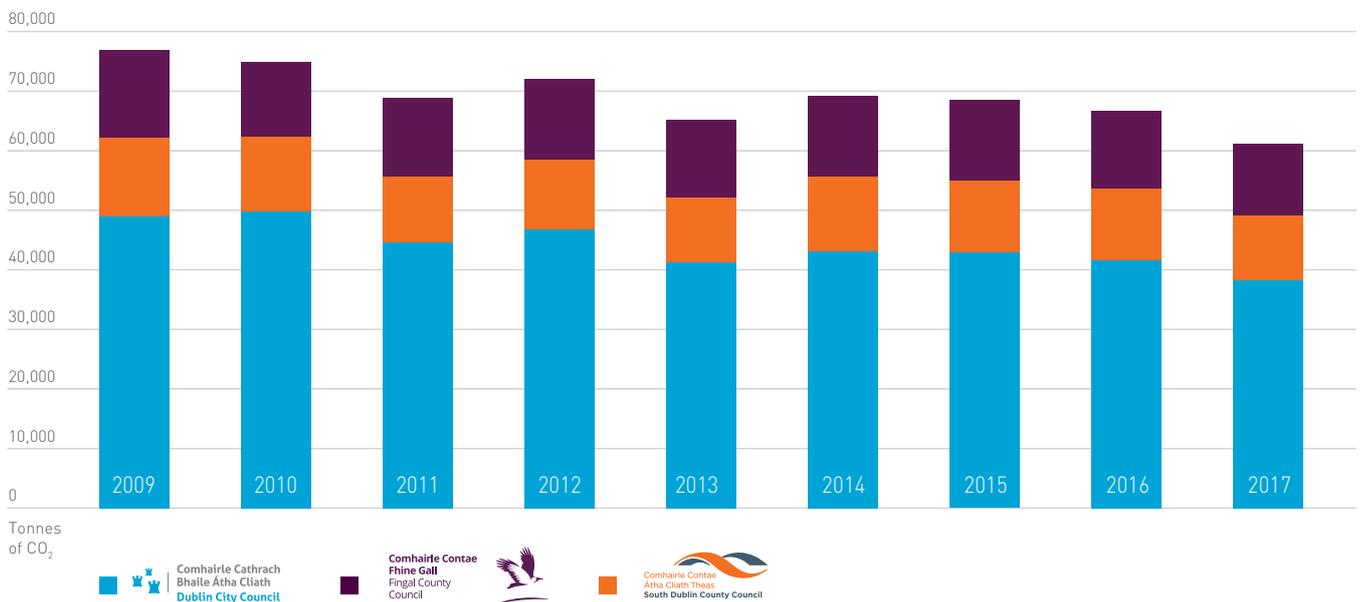
There were slight decreases in the carbon emissions produced by DCC, FCC and SDCC since 2009. This is partially due to the implementation of energy management practices by the local authorities, with the support of Codema.

Figure 4 shows the carbon emissions produced by each of these local authorities since the baseline year.

As can be seen in the charts, there were slight decreases since 2009. With the support of Codema, this is partially due to the implementation of energy management practices by the local authorities, which have helped to reduce their carbon emissions.

It also must be noted that this reduction in CO<sub>2</sub> is also due to the slow decarbonisation of the electrical transmission system within the country with the influx of renewable energy, which results in improved conversion factors from energy to carbon.

**Figure 4: Tonnes of CO<sub>2</sub> produced by DCC, FCC & SDCC, 2009-2017**



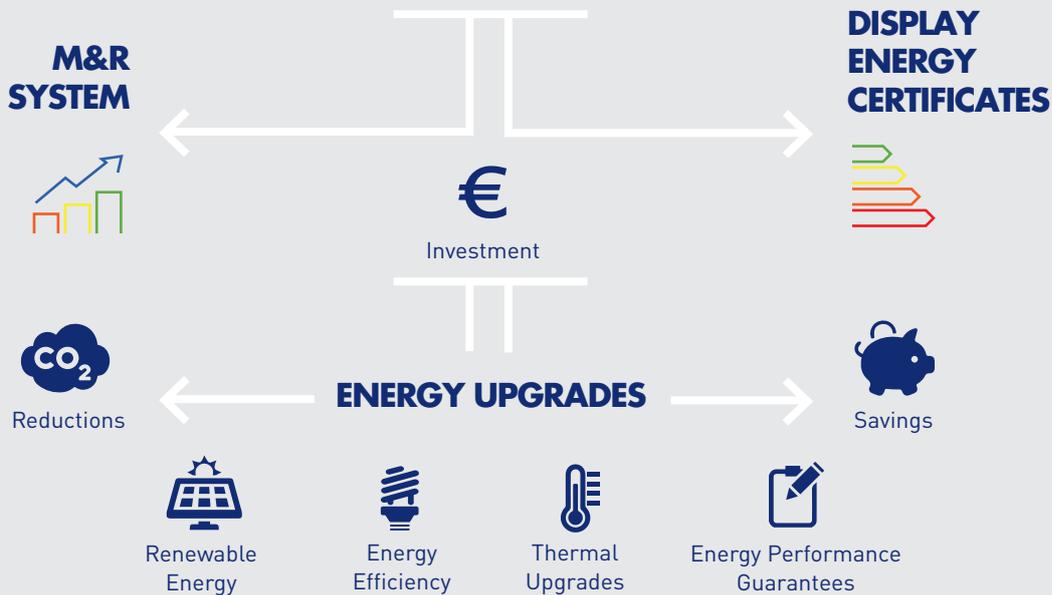
### 03. WORK PROGRAMME 2017

ENERGY MONITORING & MANAGEMENT (CONTINUED)

Codema can assist the DLAs with the following Energy Management Processes



### ENERGY SURVEYS OF BUILDING GROUPS





## Energy Reviews

In 2017, Codema produced the first Energy Reviews for DCC, FCC and SDCC. These Energy Reviews were based on 2016 data and aim to help the DLAs in their energy planning programmes, in order to meet the public sector 2020 energy targets. The Energy Reviews highlighted the total amount of energy that the councils consumed throughout 2016, 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, which will guide each DLA on how best to tackle their Significant Energy Users (SEUs) and meet public sector energy targets.

Codema is currently updating these Energy Reviews to account for 2017 data. These reviews will once again provide a breakdown of each local authority's energy use in 2017, highlighting where energy was used, what drove its consumption, and where the greatest energy savings can be achieved.

## Energy Oversight Committee

Based on the findings from its Energy Review and the appointment of its Energy Performance Officer (EPO), Dublin City Council established an Inter-Departmental Energy Oversight Committee in 2017. Codema helped facilitate these committee meetings in order to identify and cost potential projects in areas such as Public Lighting, Offices and Depots, Housing, Fire Stations, Sports Centres, Libraries, and Transport, which will help the council stay on track of 2020 energy targets. The first project proposals were finalised in December 2017, and are earmarked for completion in 2018. Codema will continue to work with the Energy Oversight Committee in 2018, and will aim to develop an Energy Management System within DCC, as part of this process.

## Fingal Community Centres

In September 2017, Codema presented to the board of FCC's community centres, as this group of buildings was identified as a Significant Energy User (SEU) in FCC's Energy Review. Therefore, the aim of the presentation was to help the community centre managers understand where energy is used in their buildings, what drives their consumption, and where the greatest energy-saving potential is. To finish the presentation, Codema's Energy Manager gave examples of successful projects that have been implemented in other local authorities that are relevant to the community centres.

Following this presentation, there were follow-up meetings with individual centre managers to discuss issues with particular buildings, and to discuss potential projects in the future. Codema aims to work with all the managers in these centres in 2018 to generate Display Energy Certificates (DECs) and identify viable projects.

### 03. WORK PROGRAMME 2017

#### ENERGY MONITORING & MANAGEMENT (CONTINUED)

##### Display Energy Certificates (DECs)

The information from Codema's energy database and energy surveys is used to prepare Display Energy Certificates for each local authority public building with a floor area greater than 250m<sup>2</sup> (as of July 2015), as required under the Regulation S.I. 243 of 2012.

Codema's Energy Manager is registered with SEAI as a DEC assessor, and therefore assisted DCC, FCC and SDCC with the annual inspection and certification of 67 public buildings in total in 2017. 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.

Codema also generated reports on the DECs that were carried out for DCC's, FCC's and SDCC's public buildings in 2017. These DEC reports provided detailed information on areas such as the type of buildings assessed, how they compare in terms of their energy efficiency, and recommendations for improving their energy performance.

Display Energy Certificates are a form of Building Energy Rating for public buildings, which give an indication of their energy efficiency.

##### Energy Surveys & Project Proposals

Throughout 2017, Codema conducted 67 site visits on behalf of DCC, FCC and SDCC. This included 37 sites visits to local authority buildings, such as sports and community centres, social housing blocks and offices, in order to generate energy audit reports, with various recommendations for the upgrade of these sites.

Codema also carried out 24 site visits to generate additional DECs for local authority public buildings, and six miscellaneous site visits for various other progress reports throughout the year. Codema will continue with these site visits and will use the results of these visits to see where energy-saving works can be best implemented across local authority buildings throughout 2018.

Photo courtesy of South Dublin County Council



## Lighting Upgrades

In 2017, Codema assisted DCC's Housing department with the upgrade of the landlord lighting and associated wiring and works in Ballybough House. The aim of this project was to reduce the electrical load, bring the installation to current standards, increase the level of lighting control, and improve the quality of lighting within the estate. The upgrades included the replacement of old fluorescent and SON fixtures with new LED lighting with microwave control.

A contractor was appointed and the works were completed in June 2017. Codema carried out an additional 25 surveys to identify other potential projects for lighting upgrades, and will continue to work with the Housing department to implement these projects in 2018.

## Renewable Energy

### DCC Solar Photovoltaic (PV) Project

Throughout 2017, Codema continued to monitor the performance of DCC's solar PV project, which involved the installation of solar PV panels on the roof of Civic Offices, three public library branches (Cabra, Coolock and Raheny), and Irishtown Stadium. The combined project savings are calculated at 96,907 kWh per year, which is the equivalent of over €12,000 in cost savings. Codema will continue to closely monitor the results of this project, with a view to replicating this across other suitable DLA public buildings.



### 03. WORK PROGRAMME 2017

#### ENERGY MONITORING & MANAGEMENT (CONTINUED)

An Energy Performance Contract is a contractual agreement by an Energy Service Company (ESCo) to guarantee energy savings over an agreed period of time.

#### Energy Performance Contracting (EPC)

##### EPC in DCC Buildings

In 2017, Codema continued to assist DCC with the ongoing Measurement and Verification (M&V) of its first EPC project involving Ballymun, Finglas and Markievicz Sports and Fitness Centres. The latest M&V figures show that in its first year, the council saved over €122,000 on its energy and maintenance costs, and has achieved average energy savings of 38%. Codema will continue to assist DCC with managing this M&V process in 2018.

Codema also promoted this EPC project with a site visit to Ballymun Sports and Fitness Centre in February 2017, which gave DLA staff and other stakeholders the opportunity to view the works that had been carried out as part of the project, and to get an insight from the contractor, building manager and project facilitator about the EPC process.

The DCC EPC project was further promoted in 2017 through applications to award programmes such as the LAMA Community and Council Awards and the SEAI Awards, where it was shortlisted on both occasions.

Due to the success of this pilot project, Codema also initiated a second EPC project with DCC in 2017. This project will involve an upgrade to the existing lighting, heating and ventilation systems across seven council 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.

Boiler upgrades may also be considered, including a review of the existing CHP system in Ballyfermot. To advance this project in 2017, Codema facilitated surveys of these buildings and prepared a technical file, along with submitting an application for a project assistance grant to SEAI.

The work is due to be completed in late 2018, and Codema estimates that total energy savings will be approximately 25-30%.

#### **EPC in DLRCC Buildings**

In 2017, Codema also met with Dún Laoghaire-Rathdown County Council's Energy Team to help initiate the council's first EPC project, involving Loughlinstown, Meadowbrook and Monkstown Leisure Centres.

Codema is currently working with DLRCC to complete the project identification and initial appraisal phase of this project. This will involve a detailed survey of each of the proposed buildings to assess their suitability for EPC, and to assess the potential for energy savings. If the results of this phase are positive, Codema will then proceed with the preparation of the necessary procurement and contract documentation,

with the aim of having a signed contract by the end of 2018. An application for a project assistance grant will also be submitted to SEAI in early 2018.

#### **EPC in FCC Buildings**

In 2017, Codema facilitated a detailed assessment and proposal to assess the suitability of an EPC in FCC. This project involves FCC's headquarters at County Hall in Swords, along with its Civic Offices (Blanchardstown), the Draíocht Arts Centre, and Blanchardstown Library. As the project was deemed suitable for an EPC, Codema then prepared a Project Identification and Initial Appraisal document, which was then forwarded on to FCC for approval. If approved, Codema will then proceed with the preparation of the necessary procurement and contract documentation to advance this project in 2018.

#### **EPC in SDCC Buildings**

Following a detailed energy survey of Tallaght and Clondalkin Leisure Centres in 2016, which deemed these buildings as suitable for EPC, Codema is currently in the process of completing the Project Identification and Initial Appraisal documents, which outline the benefits of the EPC approach when compared to traditional contracting. Once complete, this will be sent to SDCC for approval to proceed to the procurement phase. The aim is to have a signed contract by the end of 2018. An application for a project assistance grant will also be submitted to SEAI for this project.

Photo courtesy of South Dublin County Council



### 03. WORK PROGRAMME 2017

#### ENERGY MONITORING & MANAGEMENT (CONTINUED)

#### ENERGY MONITORING & MANAGEMENT - KEY OUTPUTS FOR 2017



**1 MORE LOCAL  
AUTHORITY  
EPC PROJECT  
INITIATED**



**67 DECS  
GENERATED  
FOR THE DLAS**



**2,130 ENERGY  
ACCOUNTS ENTERED  
INTO M&R SYSTEM**

#### Energy Monitoring & Management - Actions & Outputs 2017

Date	Actions	Project support	Outputs
<b>January - December</b>	Site visits of 67 DLA facilities	--	37 site visits for energy audit reports, 24 site visits for additional DECs, 6 miscellaneous site visits
<b>February</b>	Presented an overview of DCC Energy Use to DCC Senior Management	--	Presentation delivered to DCC's Senior Management Team
	Gathering MPRN and GPRN data for M&R process	--	2,130 energy accounts entered into M&R system
	Site visit to Ballymun Sports & Fitness Centre	GuarantEE	24 participants at site visit
<b>March</b>	Project Assistance Grant secured for FCC EPC	SEAI	SEAI funding received by FCC
	Monitoring & Verification of energy savings at Irishtown Stadium	GuarantEE	M&V report for Irishtown Stadium
<b>April</b>	Oversight of first M&V reports completed for DCC EPC	GuarantEE	First M&V report produced
	Gathering of other fuels data for M&R process	--	M&R process completed for 2017
<b>May</b>	Monitoring Report prepared on DCC solar PV project	--	Report submitted to DCC
<b>June</b>	Upgrades to lighting in Ballybough House	--	LEDs installed in all blocks in Ballybough House
<b>July</b>	67 DECs generated for DCC, FCC and SDCC public buildings	--	Display Energy Certificates issued for 67 public buildings
	Development of Energy Reviews for 3 DLAs	--	Energy Reviews completed for DCC, FCC and SDCC
<b>August</b>	DEC reports developed	--	DEC reports completed for DCC, FCC and SDCC

Date	Actions	Project support	Outputs
<b>September</b>	Facilitation of DCC Energy Oversight Committee meeting	--	17 committee members in attendance
	Oversight of second M&V report completed for DCC EPC	GuarantEE	38% energy savings achieved in first project year
<b>October</b>	Project Identification & Initial Appraisal documents developed for FCC EPC	GuarantEE	Documents submitted to FCC for approval
<b>November</b>	Application prepared for SEAI Project support for DCC EPCII	--	Application submitted to SEAI
	Project Identification and Initial Appraisal documents developed for DCC EPCII	GuarantEE	Document approved by DCC and project advanced
	Organised technical surveys of DCC buildings for EPCII	GuarantEE	7 audit reports and 1 overarching report
<b>December</b>	Facilitation of DCC Energy Oversight Committee meeting	--	12 committee members in attendance
	Project Identification and Initial Appraisal documents drafted for DLRCC EPC	GuarantEE	Draft document developed for DLRCC
	Landlord lighting project proposal	--	Proposal for upgrade of landlord lighting for 25 social housing complexes submitted to DCC

## 03. WORK PROGRAMME 2017



# ENERGY AWARENESS

### Home Energy Saving Kits

#### 'Phase 2' Expansion

The Home Energy Saving Kit scheme had a very successful year in 2017, which will hopefully carry on into 2018 and beyond.

In March 2017, Codema expanded the pilot phase of the Home Energy Saving Kits, with the support of Dublin City Council's Public Libraries and the Sustainable Energy Authority of Ireland (SEAI). The kits contain six key tools to help the public make sense of the energy they consume on a daily basis, and the expansion of this phase meant that the kits are now available to borrow from all of Dublin City Council's public library branches, and in greater quantities as well to cope with public demand. Sixty-seven kits in total are now in circulation within DCC's library network, and by the end of 2017, the kits had been used in approximately 700 homes across the city.

Codema also worked with SEAI and DCC's libraries during this phase to gather feedback from the users of the kits,

which will help to measure the effect that the kits are having on householder behaviour and energy-efficiency upgrades in the home. Codema will continue to work with SEAI in analysing this survey data, and a report detailing the results of this feedback is due in early 2018. This report will also help to determine any changes needed to the kits in future development stages.

#### Development in 2018

At the launch of 'Phase 2' of the Home Energy Saving Kits, the Minister for Communications, Climate Action and Environment, Denis Naughten TD, announced his intention to expand the scheme nationwide, beginning with libraries in Leitrim, Roscommon and Cork City. At the end of 2017, Codema was at the final development stages of these additional kits, and was preparing to launch the kits into these library networks in early 2018. This expansion will include a sample amount for libraries in the Dún Laoghaire-Rathdown, Fingal and South Dublin areas.



## Events

In 2017, Codema organised or participated in the following events relating to the Home Energy Saving Kit:

- **Launch of the Home Energy Saving Kit ('Phase 2')**

Codema and Dublin City Council's Public Libraries organised the launch of 'Phase 2' of the Home Energy Saving Kits on the 7th of March 2017 in Pearse Street Library. This event was attended by over 50 stakeholders, including representatives from the energy sector and local community groups. Prior to this launch, Codema visited all the library branches to conduct staff training and discuss any changes to this phase, as the support of on-the-ground staff is key to the success of the scheme.

- **Energy-Saving Workshops**

As part of Science Week, Codema organised free energy-saving workshops in Raheny, Cabra and Rathmines Libraries to help the public save energy at home and cut down on costs during the winter.

The workshops ran in partnership with Dublin City Council's Public Libraries and SEAI, and were very successful, with two out of the three workshops selling out completely. The workshops covered all areas of energy-saving, including heating your home, hot water, electrical appliances, and understanding your energy bill better.

A range of interactive stands were publicly displayed, and gave practical information on areas such as low-energy lighting, draught-proofing and insulation. Codema staff were also on hand to give demonstrations of the Home Energy Saving Kit.

- **Local Authority Staff Trials**

Codema ran very successful trials of the Home Energy Saving Kits in Dublin City Council and South Dublin County Council during 2017, where staff could use the kits in their own homes to get a sense of how much energy they are using every day and to encourage energy efficiency improvements. These trials were initiated by demonstrations of the kit both in SDCC's County Hall and DCC's Civic Offices, where Codema staff were on hand to show staff the various tools in the kit and how they could save them energy at home. By the end of 2017, 120 staff in total had signed up to try out a kit, and both Dún Laoghaire-Rathdown County Council and Fingal County Council were planning on running staff trials internally in 2018.

- **Community Engagement**

Codema also engaged citizens on the Home Energy Saving Kits by presenting to SEAI's Sustainable Energy Communities at the Energy Show in April 2017. Through their local library, Codema also gave a presentation to the University of the Third Age (U3A) group in Ballymun, and they began trialling the kit in November 2017.

- **Library Engagement**

At the Libraries Ireland Conference in March 2017, Codema gave a presentation on the Home Energy Saving Kits to library staff across Ireland, in order to create awareness of the scheme and encourage replication around the country.

## 03. WORK PROGRAMME 2017

### ENERGY AWARENESS (CONTINUED)

#### Think Energy

##### Think Energy in the DLAs

In 2017, DLRCC's Energy Team completed a range of innovative energy projects and Codema assisted with the promotion of this good work by creating an infographic and promoting the Energy Team through its website and social media channels. Codema will continue to work with all Energy Teams in 2018 to further highlight the range of energy projects that are being carried out by the DLAs, as they work towards meeting their 2020 targets. Codema will also continue to implement elements of its Think Energy campaign across the four DLAs, where required. This can include making a range of promotional material available (mousemats, stickers, etc.) and providing activities such as energy days, competitions, and staff surveys.

##### Think Energy in Residential Buildings

In 2017, Codema engaged with Dublin City Council's architects on the potential for Post Occupancy Evaluation surveys for two planned Nearly Zero Energy Building (NZEB) developments. Part of this process will involve the survey and collection of feedback from tenants after they have moved into these developments.

##### Think Energy Public Events

Codema promoted energy awareness by showcasing its Interactive Lighting Display, Home Energy Saving Kits, and a range of engaging material at the Over 55s public event in the Central Library in May 2017. We will continue to support public events in Dublin Local Authority buildings in 2018 to promote energy awareness.



## Awards

Codema had a very successful year on the awards front in 2017, winning four out of six awards, where we were nominated in the following programmes:

- **LAMA Community & Council Awards**

Won in the 'Best Energy Smart Initiative' category for the Home Energy Saving Kits, in partnership with DCC

Nominated with DCC in the 'Public Sector' category for the EPC project involving Ballymun, Finglas and Markievicz Sports and Fitness Centres

- **European Energy Service Awards (EESA)**

Scopped the top prize in the 'Best Energy Service Promoter' category at the EESA Awards in Berlin in May 2017. Codema received this award for our role in helping Dublin City Council to implement Ireland's first local authority Energy Performance Contract (EPC), and for promoting the EPC model across Ireland.

- **EU Sustainable Energy Awards**

Won the the top prize in the 'Consumers' category at the EU Sustainable Energy Awards, which took place in the Résidence Palace in Brussels in June 2017. These awards recognise outstanding projects that will help shape Europe's energy future, and the Home Energy Saving Kit was shortlisted from over 100 applications across Europe.

- **SEAI Sustainable Energy Awards**

Finalist with DCC in the 'Public Sector' category for the EPC project involving Ballymun, Finglas and Markievicz Sports and Fitness Centres, at the SEAI Awards in November 2017

- **CELSIUS Awards**

Scopped the top prize at the CELSIUS Awards in the 'Getting Started' category in November 2017. The award was for Codema and Dublin City Council's work on the Dublin District Heating System (DDHS).



### 03. WORK PROGRAMME 2017

ENERGY AWARENESS (CONTINUED)

#### ENERGY AWARENESS - KEY OUTPUTS FOR 2017



**10 X ENERGY AWARENESS  
EVENTS & PRESENTATIONS**



**67 X HOME ENERGY SAVING  
KITS IN CIRCULATION IN  
DCC'S PUBLIC LIBRARIES**



**6 X AWARD NOMINATIONS**

#### Energy Awareness - Actions & Outputs 2017

Date	Actions	Project support	Outputs
<b>February</b>	Shortlisted with DCC in LAMA Community & Council Awards for Home Energy Saving Kit and EPC Project	--	Home Energy Saving Kit wins LAMA award in the 'Best Energy Smart Initiative' category
	Presentation to DCC's Library Assembly	DCCPL / SEAI	Home Energy Saving Kit showcased to over 50 library staff
	Staff training in all DCC public libraries	DCCPL / SEAI	All DCCPL staff trained in the use of the Home Energy Saving Kit
<b>March</b>	Launch of 'Phase 2' of the Home Energy Saving Kits	DCCPL / SEAI	67 kits in total available to borrow from all of DCC's public libraries
	Demonstration of Home Energy Saving Kit to SDCC staff	--	40 SDCC staff signed up to try out kits
	Presentation on Home Energy Saving Kits at the Libraries Ireland Conference	DCCPL / SEAI	Kits presented to various library networks across Ireland
<b>April</b>	Presentation of Home Energy Saving Kits at the Energy Show	DCCPL / SEAI	Home Energy Saving Kits presented to a number of SEAI's SEC groups
<b>May</b>	Codema shortlisted for 'Best Energy Service Promoter' at EESA Awards	GuarantEE	Codema wins 'Best Energy Service Promoter' at the EESA Awards
	Participated in the Over 55s Day in Central Library	--	Demonstrated Home Energy Saving Kit and Think Energy material to library users

Date	Actions	Project support	Outputs
<b>June</b>	Home Energy Saving Kit a finalist in the EU Sustainable Energy Awards	DCCPL / SEAI	Home Energy Saving Kit wins an EU Sustainable Energy Award in the 'Consumers' category
<b>June - September</b>	Demonstration of Home Energy Saving Kit to DCC staff	--	80 DCC staff signed up to try out kits
<b>November</b>	DCC and Codema nominated in SEAI awards for EPC project	GuarantEE	DCC and Codema attend SEAI awards, where EPC project is shortlisted in 'Public Sector' category
	Public energy-saving workshops held in Cabra, Raheny and Rathmines Libraries	DCCPL / SEAI	Over 100 people attend the workshops and engaged on energy awareness
	Codema and DCC a finalist at the CELSIUS Awards in the 'Getting Started' category	--	Codema and DCC win CELSIUS award for work on the DDHS
	Presentation on Home Energy Saving Kits to U3A Ballymun	DCCPL / SEAI	Kits trialled within U3A group
	Infographic and content developed to promote DLR energy team	--	Infographic and content uploaded to DLR & Codema websites
	Proposal for Post-Occupancy Evaluation Survey prepared for North King Street NZEB development	--	Proposal sent to DCC's Architects for consideration
<b>December</b>	Meeting with DLRCC's Energy and Library Teams to discuss Home Energy Saving Kits	--	Libraries identified for roll-out of kits to DLRCC in early 2018
	Home Energy Saving Kits developed for all Roscommon, Leitrim and Cork City Libraries and for SEAI SEC and Schools programmes	SEAI	50 kits developed and ready for launch in early 2018

## 03. WORK PROGRAMME 2017



# ENERGY POLICY & PLANNING

### Climate Change

#### Dublin Local Authority Climate Change Action Plans

In early 2017, the final version of 'A Strategy Towards Climate Change Action Plans for the Dublin Local Authorities' was noted by all four councils. The aim of the strategy was to set out the local authorities' national and EU climate obligations and targets, and to take the first step towards exploring the possible action areas and themes that the DLAs could incorporate into their Climate Change Action Plans (CCAPs).

As part of the development of the CCAPs, Codema organised two workshops in 2017 on behalf of the DLAs' Directors of Services. The first workshop took place in the Assembly Room of Dún Laoghaire-Rathdown County Council in June, with the aim of facilitating an introductory session to climate change and its impacts on Dublin. The workshop also provided local authority staff with the opportunity to discuss their responses and actions to climate change, both at present and in the future. The second workshop took place in SDCC's County Hall in September, and set out to progress and compare the DLAs' climate change actions and identify measurable and realistic indicators for each of the following action areas: Energy and Buildings, Transport, Flood Resilience, Nature-Based Solutions, and Resource Management (with Climate Leaders and Innovation and Connected Citizens running through all of these action areas).

In December 2017, Codema circulated a first draft of the CCAPs to each of the DLAs for initial comment and feedback. In the same month, Codema began meeting with the councils' communication and environmental teams to discuss a public engagement strategy, which will play a key role in the development of the Action Plans.

Codema is now finalising the draft Action Plans for each DLA, with the following to be carried out before or in line with their publication in the autumn of 2018:

- Baseline Emission Inventories will be finalised for the four regions, taking into account 2016 Census data (see Energy and CO<sub>2</sub> Baselines section in this chapter)
- A peer review of each Action Plan
- Screening for a Strategic Environmental Assessment and an Appropriate Assessment
- Development of an online platform to create public awareness of climate change and to encourage submissions to the Action Plans
- Public consultation process of the draft Climate Change Action Plans

### Citizens' Assembly

In October 2017, Codema took part in the Citizens' Assembly discussions on climate change, where our Executive Energy Planner Donna Gartland gave examples of what's needed at a local level to tackle the effects of climate change. This included showcasing the DLAs' exemplar work in areas such as awareness (Home Energy Saving Kits), upgrading of buildings (Energy Performance Contracting) and renewable heat supply (district heating).



### Covenant of Mayors for Climate and Energy

In 2017, Codema facilitated DCC and SDCC in reinstating their commitment to the Covenant of Mayors for Climate and Energy (CoM). This initiative is a voluntary commitment by signatories to reduce CO<sub>2</sub> emissions by at least 40% by 2030, and to adopt an integrated approach to tackling climate change mitigation and adaptation. This means that all four DLAs are signatories to the Covenant of Mayors, with both DLRCC and FCC signing up in 2016.

Therefore, in line with CoM requirements, Codema began preparing the Baseline Emission Inventories for the four Dublin regions in 2017. These provide the necessary technical input for the Sustainable Energy and Climate Action Plans that must be submitted by signatories, as part of the CoM process. Codema will also assist the DLAs in completing the information required on the online tool for the CoM.



### Energy and CO<sub>2</sub> Baselines

In 2017, Codema successfully applied for funding under SEAI's Energy Research, Development and Demonstration (RD&D) programme to create energy and CO<sub>2</sub> baselines for the development of local authority climate change mitigation action plans. This funding allowed Codema to update energy and CO<sub>2</sub> baselines for the four Dublin local authority areas, taking into account the 2016 Census data.

As part of this project, Codema hosted a webinar in October 2017, which aimed to demonstrate the step-by-step approach used for calculating CO<sub>2</sub> emission baselines to other local authority regions across Ireland. The webinar was very successful, with over 20 different local authority staff participating from around the country.

Codema also produced 'Developing CO<sub>2</sub> Baselines - A Step-by-Step Guide for your Local Authority', as part of the RD&D project. This report documented Codema's methodology to calculating energy and CO<sub>2</sub> emission baseline methodologies for the Dublin region, in order to help advance and replicate this work to other local authority regions across Ireland.

This was also accompanied by a summary report of the Dublin region's 2016 baseline emissions inventory, and at the end of 2017, the detailed baseline emission reports for each of the four Dublin local authority areas were at an advanced stage.

### 03. WORK PROGRAMME 2017

#### ENERGY POLICY & PLANNING (CONTINUED)

#### Energy Planning & Climate Change Workshop

In October 2017, Codema organised a knowledge-exchange workshop on energy planning and climate change, in association with the Berlin Energy Agency. The aim of the workshop was to explore urban energy planning and climate change projects in Dublin and Berlin, and exchange knowledge on how to further low-carbon development in both regions.

Along with key attendees from the DLAs and SEAI, the workshop was attended by representatives from the Berlin Senate Department for Environment, Transport and Climate Protection, the Senate Department for Urban Development and Housing, and the Berlin Energy Agency.

Topics covered at the workshop included:

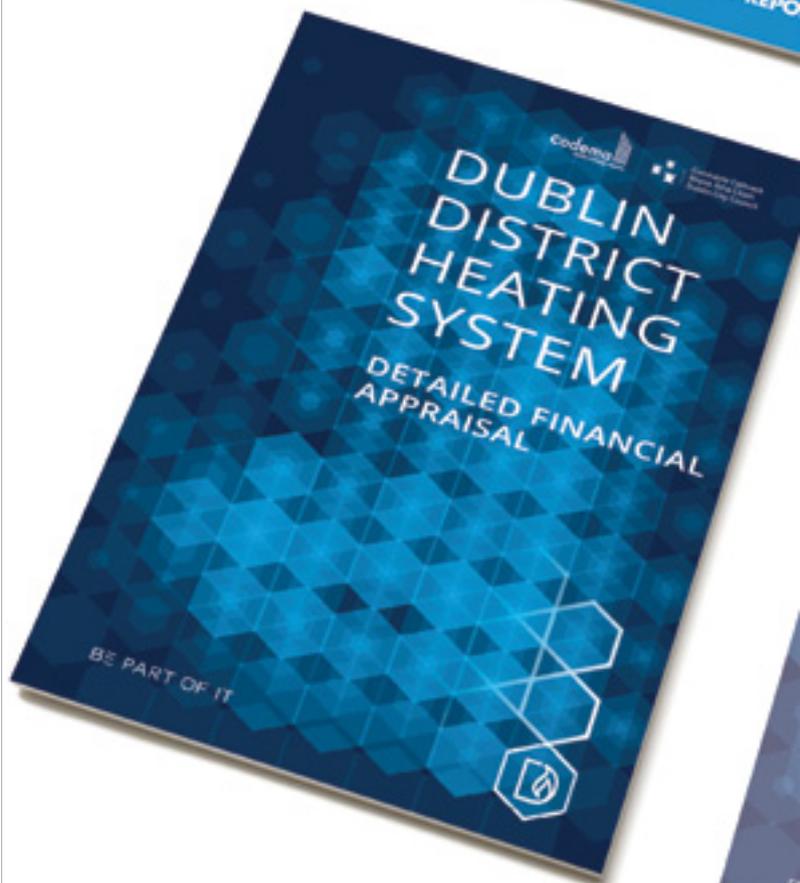
- Berlin's strategies to become climate neutral by 2050 - learnings for Dublin
- Mutual learning of Berlin's planning strategies and policies
- Overview of energy demand mapping / district heating in Dublin
- Integration of energy and climate change in Dublin's planning processes
- Technical solutions in urban districts for low carbon development

#### National Consultations

Codema also made numerous submissions to national level consultations, in particular to the Department of Communications, Climate Action and Environment (DCCA), which support the work of the DLAs in the area of energy and climate change. These included submissions to:

- National Adaptation Framework
- Citizens' Assembly (paper on Climate Change)
- Draft National Mitigation Plan
- Ireland 2040
- Renewable Electricity Support Scheme
- Renewable Heat Incentive
- National Planning Framework

In 2018, Codema will continue to lobby for supports for the DLAs to carry out projects to reduce greenhouse gas emissions, such as district heating, planning policy, energy retrofitting, renewable energy, and climate change action planning.



## District Heating

### National District Heating Working Group

Codema was invited to participate on the Department of Communications, Climate Action and Environment's District Heating Working Group, which was officially established in November 2017.

The aim of the group is to develop a policy framework to encourage the development of district heating, and Codema will play a key role in advising the Department on the local barriers and opportunities on how to develop this low-carbon heating infrastructure across Ireland.

### Dublin District Heating System

In 2017, Codema prepared a Detailed Financial Appraisal and a Market Research Report and Communications Strategy on the Dublin District Heating System (DDHS), which DCC is planning to implement in the Docklands area of the city.

The Detailed Financial Appraisal included a review of different scenarios to help determine the best options for financing the DDHS, and was presented at a high-level workshop to SEAI, the DCCA and senior management within DCC. Also, the Detailed Financial Appraisal was used to evaluate possibilities of European Investment Bank funding.

The Market Research Report and Communications Strategy set out to investigate the key stakeholders and customer interests for the DDHS project, and to better understand existing district heating schemes in the target area. As an example of a system that is already up-and-running, Codema organised a site visit to Elm Park, which has a small district heating system run by Veolia. This site visit gave DCC staff the chance to witness this district heating system in operation.

Codema's work in helping DCC to develop this district heating network was recognised at the CELSIUS Awards in November 2017, where it took the top prize in the 'Getting Started' category. Codema continues to be an active member of the DDHS steering committee, and will continue to work closely with the DDHS project team as energy advisers, including fortnightly meetings to update on project deliverables.

### South Dublin District Heating System

Throughout 2017, Codema continued to work with SDCC in developing 'Phase 1' of its district heating network in Tallaght, by carrying out the following activities on its behalf:

- Risk workshop with SDCC
- Developing the South Dublin District Heating business model
- Technical advice and system modelling
- Financial and economic modelling

### 03. WORK PROGRAMME 2017

ENERGY POLICY & PLANNING (CONTINUED)



- District heating system planning
- Marketing and communication materials and support

Along with SDCC staff, Codema also attended a district heating workshop in Manchester in June 2017 to explore the various business model options for district heating. In addition, Codema participated in the CELSIUS City UK and Ireland workshop the following month, in order to present the SDCC district heating system and gain expertise from the UK market.

All these activities receive EU support through the Interreg North-West Europe HeatNet project, which Codema is leading and SDCC is a full partner in. Codema is continuously supporting the development of SDCC's district heating network through technical, financial, contracting and procurement advice, and will publish an Outline Business Case on behalf of the SDCC's Chief Executive in May 2018.

## ENERGY POLICY &amp; PLANNING - KEY OUTPUTS FOR 2017



**2 X DISTRICT HEATING  
PROJECTS ADVANCED**



**2 X CLIMATE CHANGE  
WORKSHOPS HELD WITH  
DLA STAFF**



**7 X SUBMISSIONS TO  
NATIONAL POLICY  
CONSULTATIONS**

## Energy Policy &amp; Planning - Actions &amp; Outputs 2017

Date	Actions	Project support	Outputs
<b>January - November</b>	Reporting CCAPs' progress to Director of Services / SPCs	--	14 meetings held in total throughout 2017
<b>January - December</b>	SDDH Pilot Project meetings	HeatNet NWE	9 meetings to progress the SDDH pilot project
	Participation in DDHS Steering Committee	--	Attended 2 DDHS Steering Committee meetings during 2017
	Project support for DCC on the DDHS project	--	25 meetings with DCC and DDHS stakeholders in 2017
<b>January</b>	Presentation on CCAPs to Adaptation Committee of the national Climate Change Council	--	CCAPs presented to 11 committee members
	Final 'Draft Strategy Towards Climate Change Action Plans for the Dublin Local Authorities' submitted to the councils	--	Final Draft Strategy noted by all four councils
	Training delivered for Tipperary Energy Agency on district heating as part of EU SmartReflex Project	EU SmartReflex	Training delivered to 30 various stakeholders
<b>February</b>	Submissions to the Design and Implementation of a Renewable Heat Incentive in Ireland	--	Submissions prepared from Codema and on behalf of DCC and submitted to DCCAE

### 03. WORK PROGRAMME 2017

#### ENERGY POLICY & PLANNING (CONTINUED)

Date	Actions	Project support	Outputs
<b>March</b>	CPD Presentation delivered to DCC's Architects	--	3 x presentations given on energy and climate change
	Submission to Preliminary Stakeholder Engagement on the 'Ireland 2040 Our Plan'	--	Submission sent to Department of Housing, Planning and Local Government (DHPLG)
	Presented at CELSIUS City Talk webinar on South Dublin District Heating System	--	South Dublin District Heating System presented to CELSIUS members and stakeholders
<b>April</b>	Presentation at SEAI Energy Show on 4th Generation District Heating	HeatNet NWE	Presentation delivered to 40 stakeholders
	RD&D application for advancing Baseline Emission Inventories	--	Application approved by SEAI and funding secured
	Prepared submission to the Draft National Mitigation Plan	--	Submission sent to DCCAE
<b>May - October</b>	Facilitation of DCC and SDCC reinstating commitment to Covenant of Mayors for Climate and Energy	--	DCC and SDCC reinstated to the Covenant of Mayors for Climate and Energy
<b>June - November</b>	One-to-one meetings organised to develop climate change actions	--	61 DLA staff participate in one-to-one meetings
<b>June</b>	Attended district heating workshop in Manchester	HeatNet NWE	Knowledge exchange on district heating options with UK ESCOs
	1st staff workshop held for the 4 DLAs on Climate Change	--	Workshop attended by 47 DLA staff
<b>July</b>	Attended CELSIUS city UK and Ireland workshop on district heating	HeatNet NWE	Presented SDCC district heating system and accessed expertise from UK market
	Development of DDHS Detailed Financial Appraisal	--	DDHS Detailed Financial Appraisal submitted to DCC for review. Final report published and printed.
	Presented at DDHS Workshop	--	Presentation on Detailed Financial Appraisal of DDHS delivered
<b>August</b>	Review of tenders for DDHS	--	Evaluation of technical aspects of tenders completed
<b>September</b>	2nd staff workshop held for the 4 DLAs on Climate Change	--	Workshop attended by 47 DLA staff
	Presented Dublin's CCAPs at the Cities and Climate Conference 2017 at Potsdam, Germany	--	Conference attended by 153 participants

Date	Actions	Project support	Outputs
<b>October</b>	Local Area Renewable Energy Strategies training to Engineers Ireland	SEAI	Training delivered to 20 participants
	Hosted webinar on calculating CO <sub>2</sub> Baselines	SEAI	Over 20 local authority staff across Ireland participated
	Creation of 'Developing CO <sub>2</sub> Baselines – A Step-by-Step Guide for your Local Authority'	SEAI	Report submitted to SEAI and published online
	Summary report written on the Dublin region's 2016 baseline emission inventory	SEAI	Report submitted to SEAI
	Paper prepared at the request of the Citizens' Assembly on Climate Change	--	Paper on local level climate change actions submitted to Citizens' Assembly
	Presentation to Citizens' Assembly on Climate Change	--	Presentation on local level climate change actions to Citizens' Assembly
	Hosting of energy mapping and climate change knowledge-exchange workshop	--	28 participants, including representatives from Berlin Senate, SEAI and the four DLAs
	Submission prepared for Renewable Electricity Support Scheme in Ireland Consultation	--	Submission sent to DCCAE
	Prepared submission to National Adaptation Framework Consultation	--	Submission sent to DHPLG
<b>November</b>	Codema invited to participate in DCCAE's district heating working group	HeatNet NWE	Member of DCCAE's district heating working group
	DDHS nominated for CELSIUS Award	--	DDHS wins CELSIUS award in the 'Getting Started' category
	Prepared lecture for UCD in local energy planning	--	Lecture given to Master Students in Planning and Environmental Policy
	Submission prepared to the Ireland 2040 National Planning Framework	--	Submission sent to DHPLG
<b>December</b>	Development of Market Research Report and Communications Strategy on DDHS	--	DDHS Market Research Report and Communications Strategy submitted to DCC for review
	Development of first draft of Climate Change Action Plans for the four DLAs	--	First draft of Climate Change Action Plans submitted to DLAs for feedback
	Presentation of the Dublin CCAPs to the CCMA Regional Climate Change Offices	--	20 members of the CCMA Regional Climate Change Offices engaged on Dublin CCAP process

## 03. WORK PROGRAMME 2017



# PROJECT MANAGEMENT

### EU Projects

Codema initiates and manages projects that can access EU funding in areas that are beneficial to the Dublin Local Authorities (DLAs). These EU projects help the DLAs to stay up-to-date on the latest energy developments in Europe, test methods and technologies in Ireland which 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, communication with EU partners, as well as project administration and financial management.

### HeatNet NWE

Codema is leading the €11.5m HeatNet NWE project to promote the roll-out of 4th Generation District Heating and Cooling (4DHC) across North West Europe. 4DHC integrates heat, electricity and energy storage to achieve an overall smart energy system, combining high energy efficiency, high shares of renewable energy and waste heat resources.

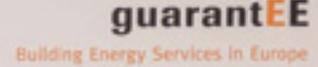
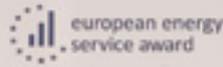
HeatNet NWE is supported through the Interreg North-West Europe programme and addresses the challenge of reducing CO<sub>2</sub> emissions in the region by creating an integrated, transnational approach to the supply of renewable and low carbon heat (including waste heat) to residential and commercial buildings, developed and tested in local district heating and cooling networks in Ireland, the UK, Belgium, France, and the Netherlands.

The project consists of 14 partners (including Codema as lead partner and SDCC) across five countries and aims to achieve savings of 15,000 tonnes of CO<sub>2</sub> each year by the end of the project.

As part of HeatNet NWE, Codema carried out the following tasks in 2017:

- Lead partner - day-to-day project management and supervision of communications within the project
- Financial Management - successfully submitted the first financial claim and received requested grant funding
- Continued to lead the Long-Term work package - creation of business cases, transition roadmaps and promotion of 4DHC
- Continued input into the Evaluation work package
- Ongoing input into developing the HeatNet NWE Model, which will help municipalities to begin implementing 4DHC projects
- Supported SDCC in developing Dublin's first large-scale public district heating network, with waste heat coming from a large local data centre

Codema also ran two HeatNet NWE partner meetings in 2017 to discuss progress on the project, visit pilot sites, and discuss any outstanding issues or work packages. The first meeting took place in Heerlen in the Netherlands, and the second meeting was held in Boulogne-Sur-Mer in France.



# European Energy Service Award



Codema initiates and manages projects that can access EU funding in areas that are beneficial to the Dublin Local Authorities (DLAs).

#### GuarantEE

Codema is a project partner in the Horizon 2020 project GuarantEE, which began in April 2016 and focuses on energy efficiency with performance guarantees in the private and public sectors. This project helped Codema to further our knowledge of Energy Performance Contracting (EPC) in 2017 by learning from other European countries such as Austria, the Czech Republic and Germany, where this new form of building energy management is widely used, due to the guarantee of energy savings.

Through our involvement in the GuarantEE project, Codema is continuing to develop and promote the role of the EPC facilitator in Ireland and the use of performance-based contracts. In 2017, Codema facilitated DCC in identifying its second EPC project involving seven of its sports facilities. GuarantEE will also support Codema in developing additional EPC projects in DLRCC, FCC and SDCC in 2018.

For more details on Energy Performance Contracting, please see the Local Project Management section in this chapter.

#### 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.

## 03. WORK PROGRAMME 2017

### PROJECT MANAGEMENT (CONTINUED)

#### Local Project Management

##### EPC Facilitation

In 2017, Codema supported DCC in identifying its second potential EPC project, which will be just the second project of its kind to be implemented in Ireland. An EPC is a contractual agreement by an Energy Service Company (ESCO) to guarantee energy savings over an agreed period of time. This project will involve an upgrade to the existing lighting, heating and ventilation systems across seven council sports facilities. 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.

In 2017, Codema worked closely with DCC to develop this second project by helping to identify a suitable pool of buildings, organising a technical survey of each of these buildings, and preparing an Initial Project Appraisal report. This project appraisal was approved by DCC management

in November 2017, and the project then advanced to the procurement phase. The overall procurement process will be conducted through competitive dialogue. Codema prepared the Pre-Qualification Questionnaire (PQQ) in December 2017 and this will be sent to DCC's legal and procurement departments before publication in March 2018.

Codema will continue to project-manage this EPC process on behalf of the council, in order to get the project to contract-signing stage. This will include working with DCC to sign off on the Invitation-to-Tender document.

This second EPC project is expected to achieve average energy savings of between 25-30% per year as a result of the upgrades. Codema and the contractor will verify these energy savings at regular intervals for the duration of the contract. The ESCo is also obliged to maintain and, if necessary, repair, the equipment associated with these upgrades, which can lead to significant savings in maintenance costs for the local authority.

Photo courtesy of Dublin City Council



## Energy Research, Development & Demonstration (RD&D) Projects

### Creating and Harmonising Energy and CO<sub>2</sub> Baselines for the Development of Local Authority Climate Change Mitigation Action Plans

In 2017, Codema successfully applied for funding under SEAI's RD&D programme to create energy and CO<sub>2</sub> baselines for the development of local authority climate change mitigation action plans. This funding allowed Codema to update energy and CO<sub>2</sub> baselines for the four Dublin local authority areas, taking into account the 2016 Census data.

Codema's management of this project involved drafting and submitting a high-quality application to SEAI, and making sure that all deliverables were completed on time and within the budget allocated, once the project was approved.

As a key deliverable of this project, Codema produced 'Developing CO<sub>2</sub> Baselines - A Step-by-Step Guide for your Local Authority', which documented our methodology in

calculating energy and CO<sub>2</sub> emission baseline methodologies for the entire Dublin region. This report acted as a guide to help other local authorities initiate their own work in generating baseline inventories for their region.

Codema also organised a webinar in October 2017 to share the results of this step-by-step approach with local authority staff from across Ireland. On completion of this project, Codema successfully submitted all paperwork for the RD&D grant drawdown, along with a summary report of the Dublin region's 2016 baseline emission inventory.



## 03. WORK PROGRAMME 2017

### PROJECT MANAGEMENT (CONTINUED)

#### Climate Change and the DLAs

In 2017, Codema managed the drafting of the DLA Climate Change Action Plans (CCAPs). This involved translating the published strategy into a work programme for delivery. Codema's climate team were tasked with gathering relevant information for content, which involved research into legislation, plans and policy, organising two regional DLA workshops, and conducting one-to-one interviews with over 60 council staff. In addition, the team devised a strategy for public engagement and consultation.

All these tasks were managed to ensure that the initial drafts of the CCAPs were produced in a timely manner. There have been several iterations of these draft CCAPs, which have been circulated to the relevant staff for comment and appraisal.



Phase 2 was successfully launched in March 2017, and resulted in an additional 50 kits being made available across DCC's public library network.

### Home Energy Saving Kits

In 2017, Codema received funding from SEAI and Dublin City Council's Public Libraries to develop 'Phase 2' of the Home Energy Saving Kits. This phase was successfully launched in March 2017, and resulted in an additional 50 kits being made available across DCC's public library network. Throughout 2017, Codema also worked with SEAI and its consultants M.CO to record the user survey results, in order to evaluate the impact of the kits on householder behaviour. At the end of 2017, over 200 surveys had been evaluated, with a detailed report due in Spring 2018.

In addition to Home Energy Saving Kits for the Dublin area, Codema also project-managed the development of kits for Roscommon, Leitrim and Cork City Libraries on behalf of the Department of Communications, Climate Action and Environment, and SEAI. This involved dealing with suppliers, procuring the tools for the kits, and updating all promotional material that accompanies the Home Energy Saving Kits. In December 2017, the kits for these three regions were at the final stages of development and ready to hand over to the library networks in early 2018.

### National & European Projects



District Heating



Energy Awareness



CO<sub>2</sub> Baseline Inventories



Project Applications



Energy Performance Contracting



Climate Change

### European Network

26 EUROPEAN PARTNERS  
ACROSS 15 EUROPEAN  
COUNTRIES



Learning from experienced EU partners



Showcasing Dublin's achievements to international audience



### 03. WORK PROGRAMME 2017

PROJECT MANAGEMENT (CONTINUED)

#### PROJECT MANAGEMENT - KEY OUTPUTS FOR 2017



**1 X SEAI RD&D  
PROGRAMME APPROVED**



**2 X HEATNET NWE  
PARTNER MEETINGS HELD**



**1 X WEBINAR HOSTED ON  
DEVELOPING CO<sub>2</sub> BASELINES**

#### Project Management - Actions & Outputs 2017

Date	Actions	Project Support	Outputs
<b>January - November</b>	Reporting CCAPs' progress to Director of Services / SPCs	--	14 meetings held in total throughout 2017
<b>January</b>	Submission of final 'Strategy Towards Climate Change Action Plans for the DLAs' to each of the four councils	--	Strategy noted by all four councils
<b>February</b>	Secured energy credit payment to DCC for Better Energy Communities 2016 project	--	Drawdown of energy credit payment for verified energy savings achieved
<b>March</b>	HeatNet NWE partner meeting in Heerlen	HeatNet NWE	28 participants at partner meeting
	Project Assistance Grant secured for FCC EPC	SEAI	SEAI Funding received by FCC
<b>April</b>	Applied to SEAI RD&D to create and harmonise CO <sub>2</sub> baselines	--	Application approved
	GuarantEE partner meeting in Amsterdam	GuarantEE	Codema represented at GuarantEE partner meeting

Date	Actions	Project Support	Outputs
June - November	One-to-one meetings organised to develop climate change actions	--	61 DLA staff participate in one-to-one meetings
June	1st staff workshop held for the 4 DLAs on Climate Change	--	Workshop attended by 47 DLA staff
September	HeatNet NWE partner meeting in Boulogne-Sur-Mer	HeatNet NWE	28 participants at partner meeting
	1st progress report and financial claim submitted	HeatNet NWE	Report approved and grant drawn down
	2nd staff workshop held for the 4 DLAs on Climate Change	--	Workshop attended by 47 DLA staff
October	Hosted webinar on calculating CO <sub>2</sub> Baselines	SEAI	Over 20 LA staff across Ireland participated
	Creation of 'Developing CO <sub>2</sub> Baselines – A Step-by-Step Guide for your Local Authority'	SEAI	Report submitted to SEAI and published online
	Summary report written on the Dublin region's 2016 baseline emission inventory	SEAI	Report submitted to SEAI
	Submitted paperwork for RD&D grant drawdown	SEAI	Successful drawdown of funds
November	GuarantEE partner meeting in Antwerp	GuarantEE	Codema represented at GuarantEE partner meeting
	Organised technical surveys of DCC buildings for EPCII	GuarantEE	7 audit reports and 1 overarching report
	Application prepared for SEAI project grant assistance for DCC EPCII	--	Application submitted to SEAI
	DCC EPCII - Project Identification and Initial Appraisal documents developed	GuarantEE	Document approved by DCC and project advanced
December	Final development of Home Energy Saving Kits project for DCCAIE and SEAI	SEAI	50 kits developed for SEAI, Roscommon, Leitrim and Cork City Libraries
	Preparation of PQQ document for DCC EPCII	GuarantEE	PQQ document developed and sent to DCC

## 03. WORK PROGRAMME 2017



### MATCH FUNDING

#### European Funding

In 2017, Codema was project partner on two European projects; HeatNet NWE, which supports the roll-out of 4th-generation district heating and cooling and is funded under the Interreg North-West Europe programme, and GuarantEE, which is supported through the Horizon 2020 programme and aims to advance Energy Performance Contracting across Europe.

A total net grant of €96,475 was drawn down in 2017 from HeatNet NWE, enabling Codema to provide better services and expertise to the Dublin Local Authorities to advance district heating in their areas. An additional €77,665 was also received as a final grant payment from the BuildSmart project, which ended in November 2016, and was supported through the Seventh Framework Programme (FP7).

A total net grant of €96,475 was drawn down in 2017 from HeatNet NWE, enabling Codema to provide better services and expertise to the Dublin Local Authorities to advance district heating in their areas.

Funding Programme	Project	Aim	Project Timeline	Net Grant Drawdown 2017 (€)
<p><b>INTERREG NWE Programme</b></p> 		<p>To promote the roll-out of 4th Generation District Heating and Cooling (4DHC) across North-West Europe</p> <p><a href="http://www.nweurope.eu/heatnet">www.nweurope.eu/heatnet</a></p>	<p>Sept 2016 - July 2020</p>	<p>€96,475 (60% funded)</p>
<p><b>Seventh Framework Programme (FP7)</b></p> 		<p>To demonstrate and mainstream cost effective techniques and methods for constructing very low energy buildings in various European climates</p> <p><a href="http://www.buildsmart-energy.eu">www.buildsmart-energy.eu</a></p>	<p>Dec 2011 - Nov 2016</p>	<p>€77,665 (75% funded)</p>
<b>Total EU Funding</b>				€174,140

### 03. WORK PROGRAMME 2017

#### MATCH FUNDING (CONTINUED)

#### National Funding

In 2017, Codema received a total of €72,263 in national funding from SEAI. This included funding for a RD&D project to create and harmonise baseline planning, and to further support the roll-out the Home Energy Saving Kits to selected libraries across Ireland. We also received funding to deliver training as part of SEAI's Local Authority Renewable Energy Strategies (LARES).

Also in 2017, Codema applied for and was successful in being appointed to SEAI's public sector framework, which will allow us to deliver or tender for services in the areas of Energy Management, Project Evaluation, Energy Contracting and Communications. These services will also bring added value to our work with the DLAs.

In 2017, Codema received a total of €72,263 in national funding from SEAI.

Organisation	Project	Aim	Funding 2017(€)
SEAI 	RD&D	Creating and Harmonising Energy and CO <sub>2</sub> Baselines for the Development of Local Authority Climate Change Mitigation Action Plans	€36,283
SEAI 	LARES	To train local authorities in energy demand mapping as part of SEAI's Local Authority Renewable Energy Strategies programme	€730
SEAI 	Home Energy Saving Kits	To extend the Home Energy Saving Kits to all Dublin City Council public libraries and extend scheme to Roscommon, Leitrim and Cork City Libraries	€35,250
<b>Total National Funding</b>			<b>€72,263</b>

## 04. FINANCIAL REPORT

### Profit and Loss Account 2017

City of Dublin Energy Management Agency Ltd  
**PROFIT AND LOSS ACCOUNT**  
 For the year ended 31 December 2017

2017  
 €

Turnover	
Republic of Ireland	765,056
Europe	395,624
	<b>1,160,680</b>
Cost of sales	(234,704)
<b>Gross profit</b>	<b>925,976</b>
Administrative expenses	(943,994)
<b>Operating profit</b>	<b>-18,018</b>
Interest receivable and similar income	
Interest payable and similar charges	(1,400)
<b>Profit on ordinary activities before taxation</b>	<b>-19,418</b>
Tax on profit on ordinary activities	1,868
<b>Profit for the year</b>	<b>-17,550</b>

## 04. FINANCIAL REPORT

(CONTINUED)

### Balance Sheet 2017

City of Dublin Energy Management Agency Ltd  
BALANCE SHEET  
For the year ended 31 December 2017

2017  
€

#### Fixed Assets

Tangible assets

-

#### Current Assets

Debtors

16,778

Cash and cash equivalents

302,938

**319,716**

**Creditors: Amount falling due within one year**

**(125,099)**

**Net Current Assets**

**194,617**

**Total Assets less Current Liabilities**

**194,617**

#### Capital and Reserves

Called up share capital

127

Profit and Loss account

194,490

**Equity attributable to owners of the company**

**194,617**

## 05. APPENDICES

### Table of Figures

Figure 1: M&R data 2017

Figure 2: Share of energy consumed by DCC, FCC & SDCC in 2017 (GWh TPER)

Figure 3: Energy consumed by DCC, FCC & SDCC in 2016-2017 (GWh TPER), compared to their 2020 targets

Figure 4: Tonnes of CO<sub>2</sub> produced by DCC, FCC & SDCC, 2009-2017

### Abbreviations

4DHC	4th Generation District Heating and Cooling	GPRN	Gas Point Reference Number
CCAP	Climate Change Action Plan	GWh	Gigawatt hour
CoM	Covenant of Mayors for Climate and Energy	kWh	kilowatt hour
CO <sub>2</sub>	Carbon dioxide	LAMA	Local Authority Members Association
CPD	Continuous Professional Development	LARES	Local Authority Renewable Energy Strategies
DCC	Dublin City Council	LED	Light-emitting diode
DCCAIE	Department of Communications, Climate Action and Environment	M&R	Monitoring and Reporting
DCPL	Dublin City Public Libraries	M&V	Measurement and Verification
DDHS	Dublin District Heating System	MPRN	Meter Point Reference Number (Electricity)
DEC	Display Energy Certificate	NEEAP	National Energy Efficiency Action Plan
DHPLG	Department of Housing, Planning and Local Government	NWE	North West Europe
DLAs	Dublin Local Authorities	NZEB	Nearly Zero Energy Building
DLRCC	Dún Laoghaire-Rathdown County Council	PQQ	Pre-Qualification Questionnaire
EESA	European Energy Service Award	PV	Photovoltaic
EPC	Energy Performance Contracting	RD&D	Research, Development and Demonstration
EPO	Energy Performance Officer	SDCC	South Dublin County Council
ESCo	Energy Service Company	SDDH	South Dublin District Heating
EU	European Union	SEAI	Sustainable Energy Authority of Ireland
FCC	Fingal County Council	SPC	Strategic Policy Committee
FP7	Seventh Framework Programme	TPER	Total Primary Energy Requirement
		U3A	University of the Third Age



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