Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

**Environment and Transportation Department,**
**Block 2, Floor 6,**
**Dublin 8.**

**25th November 2020.**

**To Each Member of the Climate Action, Environment and Energy Strategic Policy Committee**

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**Section 1:**

**Report on Dublin Waste to Energy (DWtE) Facility**

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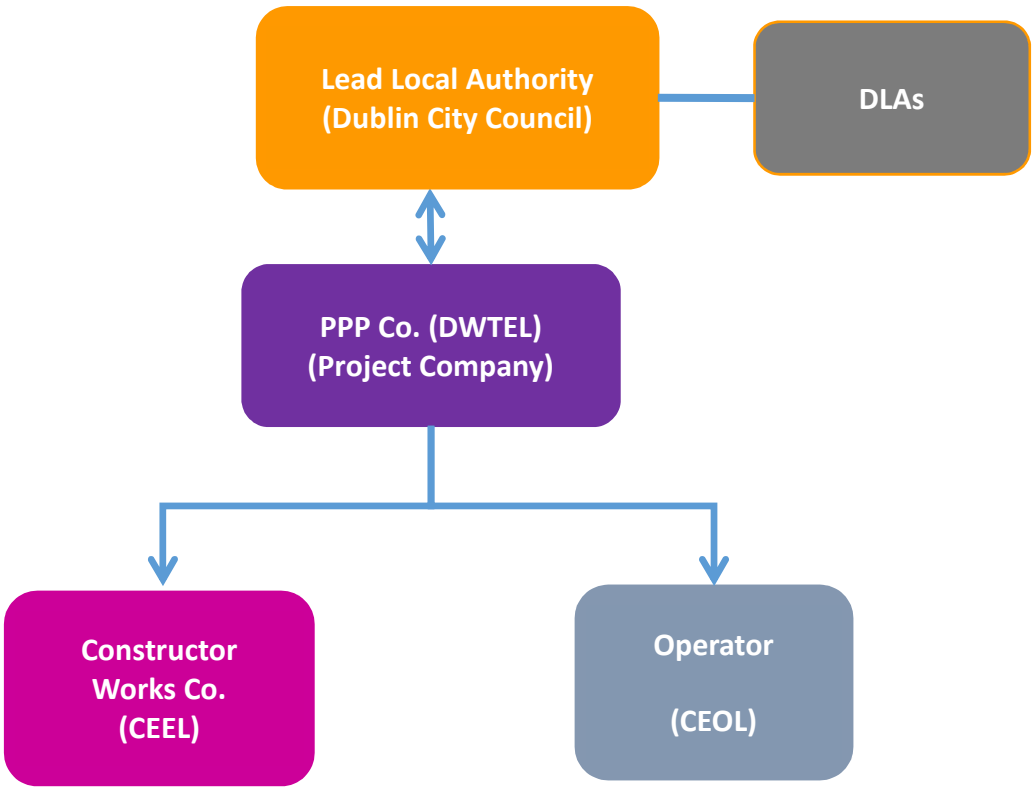
## 1.1 Introduction

The DWtE Project is a partnership between Dublin City Council (the Authority) acting on behalf of the four Dublin Local Authorities and Dublin Waste to Energy Limited (DWTEL) the PPP Company. The DWtE Facility is designed to treat 600,000 tonnes per annum (tpa) of non-hazardous residual municipal and industrial waste. The Facility was developed under a PPP Contract, with the high level contract structure set out below:



The Facility obtained the necessary planning approval from An Bord Pleanála (ABP) on the 19th of November 2007 and the Facility was issued with a Waste Licence (now an Industrial Emission Licence), by the Environmental Protection Agency (EPA) on the 1st December 2008. The Facility commenced its commissioning process in June 2017 and became fully operational in November of that year. To date the Facility has managed and thermally treated just over 2million tonnes of non-hazardous residual municipal and industrial waste.

### 1.1.2 Overview of Waste Management Policy and Treatment Capacity in Ireland.

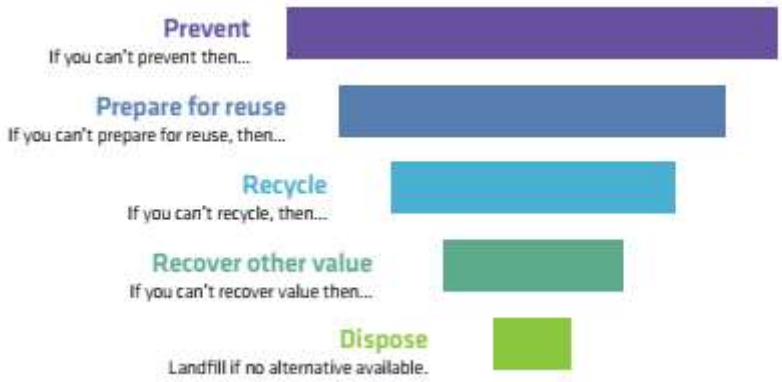
The framework for the prevention and management of waste is set out in the three regional Waste Management Plans which are statutory documents underpinned by national and EU waste legislation and have been adopted by all local authorities within Ireland.

The Eastern Midlands Regional Waste Management Plan (EMRWMP) 2015-2021 provided an overview of the existing and planned thermal treatment capacity within Ireland at the time of the Plan, the results were presented in table 16.7, which is reproduced below.

**Table 16-7: Active and Pending Capacity for the Thermal Recovery of MSW**

| Thermal Recovery Activity (Number of facilities) | Active (Tonnes) | Pending (Tonnes) | Total (Tonnes) | Intake (2013) |
|---|---|---|---|---|
| Waste-to-Energy (2) | 220,000[94] (1) | 600,000[95] (1) | 820,000 | 206,000 |
| Cement Kilns (3) | 215,000 (2) | 127,875 (1) | 342,875 | 140,000[96] |
| Pyrolysis (1) | - | 65,000 (1) | 65,000 | - |
| **Total (6)** | **435,000** | **792,875** | **1,227,875** | **346,000** |

The Plan also analysed the need for additional thermal treatment capacity for residual municipal waste by examining the future projections in waste arising to 2020 and to 2030 and assumed that Ireland would improve its recycling rate from the then 40% to 50% by 2020 and to 60% by 2030. It also made several assumptions with regard to the phasing out of landfills as a treatment option for the management of municipal solid waste, in line with national and European policies and reflecting the waste hierarchy.

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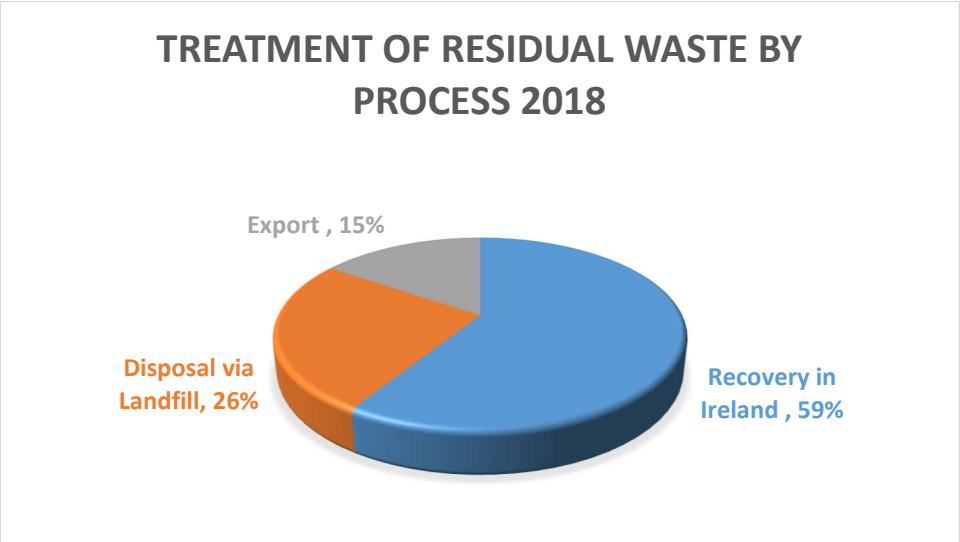
The plan forecast that by 2020, waste generated in Ireland would grow to between 3.0 and 3.2 million tpa and that the national need for thermal recovery facilities, would grow to between 1.5 and 1.6 million tpa compared to the then current and anticipated thermal recovery capacity of 1.23 million tpa.

The 2017 annual report noted that:

> *Waste capacity (for treatment, recovery, disposal, and export), continues to be a challenge. While recovery capacity increased during the reporting period, with the commencement of the Dublin Waste to Energy (DWE) project, disposal capacity to landfill has decreased in the same period. The country continues to depend on the export market for the recovery of residual municipal waste. There are indications that increased recovery capacity will be provided by the cement manufacturing industry however this is likely to be offset by the closure of the East Galway Landfill. In this scenario, export dependency will rise for the foreseeable future in the absence of any further major waste infrastructure developments. Waste prevention is a key target of the Regional Waste Management Plans (RWMPs) and notwithstanding renewed economic growth, there are signs that prevention measures together with increased recycling and diversion are having an impact on the quantity of residual waste arising.*

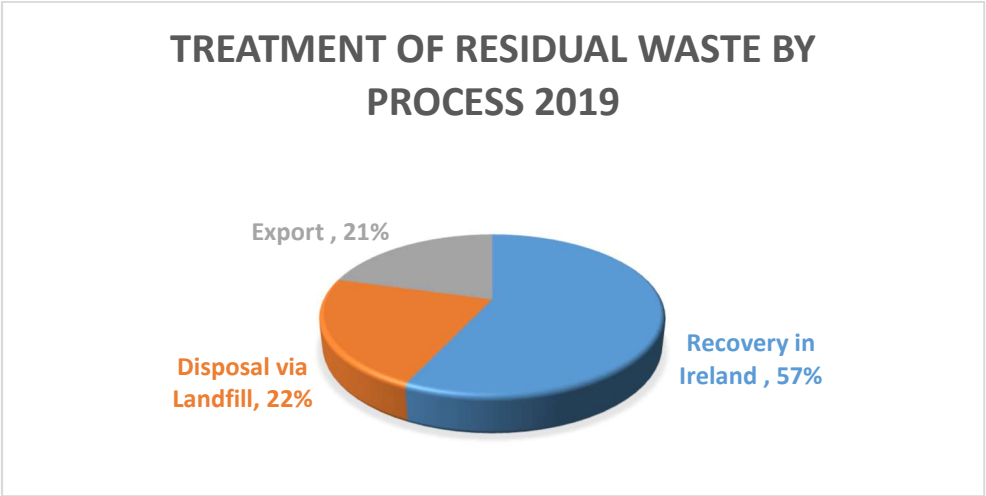
The report further noted that there was 1.6m tonnes of residual waste, sent for thermal treatment or disposal as set out in the chart below:

In 2018 there was 1.76m tonnes of residual waste, sent for thermal treatment or disposal as set out in the chart below.




It is noted that the DWtE facility operated at full operational capacity and treated 599,000 tonnes of non-hazardous residual municipal and industrial waste in this year allowing Ireland to achieve a 59% recovery rate. The chart also shows that Ireland is still highly reliant on the export and disposal of our residual waste, with circa 270,000 and 450,000 tonnes of residual waste being managed via these methods respectively.

In 2019 there was approximately 1.79m tonnes of residual waste, which was sent for thermal treatment or disposal as set out in the chart below.




It is noted that the DWtE facility again operated at full operational capacity and treated 599,000 tonnes of non-hazardous residual municipal and industrial waste in this year allowing Ireland to achieve a 57% recovery rate.

The chart also shows that Ireland is still highly reliant on the export and disposal of our residual waste, with circa 370,000 and 400,000 tonnes of residual waste being managed via these methods respectively.

## 1.2 Overview of Operations:

The Facility has managed and treated approximately 530,000 tonnes of non-hazardous residual municipal and industrial waste in the year to date and will treat just under 600,000 tonnes by the end of 2020.

Each combustion line has its own independent train of Air Pollution Control (APC) equipment. Throughout the air pollution treatment process the emissions are continuously monitored using a real time continuous emissions monitoring system (CEMS). Each stack has its own CEMS. In addition, a redundant CEMS is continuously on standby in the event of one of the live systems going down. These systems are calibrated weekly and certified on an annual basis to best practice and EPA guidance. Furthermore, quarterly independent stack testing is undertaken as per Schedule B.1 of the Facility IE Licence.

From data submitted to the EPA by DWTEL it is clear that the facility operates well within its licence limits with respect to concentration Emission Limit Values (ELVs) and mass flows.

The data indicates that emissions to air from the Facility are generally running at less than 10% of the licence limits with respect to the concentration Emission Limit Values (ELVs) and mass flows. The only exception to this statement is with respect to $NO_2$ which is averaging 70% of the ELV, these values are still well below the relevant limit values.

In addition to stack testing undertaken by an independent monitoring company appointed by the operator, the EPA also appoints an independent third party to undertake emissions monitoring at the stack, who report directly to the EPA.

### 1.2.1 Environmental Performance

The CEM data and stack test results for the Facility are available for review and download on the Facility's website. The half hourly data for the previous day is also available for review at https://www.dublinwastetoenergy.ie/About-the-Facility/Emissions-Data

Additional information in respect of the EPA site visits and monitoring is available at http://www.epa.ie/terminalfour/ippc/ippc-view.jsp?regno=W0232-01

The weekly CEM data for both boiler line 1 & 2 between 02/11/2020 and 08/11/2020 are set out below:

**Boiler 1**

| Measured Emission | Total Dust | TOC | HCL | SO2 | CO | NOx |
|---|---|---|---|---|---|---|
| Limit | 10 | 10 | 10 | 50 | 50 | 200 |
| Unit | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 |
| 2 November, 2020 | 0.40 | 0.37 | 0.00 | 0.09 | 7.69 | 135.32 |
| 3 November, 2020 | 0.34 | 0.54 | 0.04 | 0.67 | 8.15 | 131.58 |
| 4 November, 2020 | 0.35 | 0.36 | 0.01 | 0.31 | 4.27 | 129.37 |
| 5 November, 2020 | 0.38 | 0.34 | 0.00 | 1.00 | 3.42 | 141.64 |
| 6 November, 2020 | 0.37 | 0.33 | 0.00 | 0.90 | 3.23 | 145.51 |
| 7 November, 2020 | 0.36 | 0.43 | 0.00 | 0.95 | 4.49 | 152.12 |
| 8 November, 2020 | 0.34 | 0.31 | 0.01 | 0.65 | 3.02 | 149.65 |

**Boiler 2**

| Measured Emission | Total Dust | TOC | HCL | SO2 | CO | NOx |
|---|---|---|---|---|---|---|
| Limit | 10 | 10 | 10 | 50 | 50 | 200 |
| Unit | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 | mg/Nm3 |
| 2 November, 2020 | 0.84 | 0.15 | 0.03 | 0.45 | 4.70 | 149.78 |
| 3 November, 2020 | 0.86 | 0.15 | 0.01 | 0.10 | 4.55 | 150.78 |
| 4 November, 2020 | 0.82 | 0.14 | 0.03 | 0.11 | 5.49 | 149.78 |
| 5 November, 2020 | 0.95 | 0.15 | 0.05 | 0.28 | 5.34 | 148.38 |
| 6 November, 2020 | 0.98 | 0.15 | 0.04 | 0.15 | 4.76 | 150.35 |
| 7 November, 2020 | 1.04 | 0.21 | 0.01 | 2.98 | 6.44 | 149.31 |
| 8 November, 2020 | 0.75 | 0.16 | 0.04 | 1.33 | 4.55 | 150.18 |

It is noted that the tables show the daily averages from the continuous emissions monitoring system for total dust, gaseous and vaporous organic substances expressed as Total Organic Carbon, Hydrogen Chloride, Sulphur Dioxide, Carbon Monoxide and Oxides of Nitrogen emitted from each stack. The measured values and emission limit values are described in mg/Nm3. These values have been standardised to the following conditions in accordance with the Industrial Emission license issued by the EPA: temperature of 273 K, pressure of 101.3 kPa, dry gas and 11% oxygen.

The DWtE Facility emission data from independent stack testing for each combustion line for the period Q2 2019 to Q2 2020 is set out in the table below, including the percentage below EPA limits.

| Parameter | Units | Result Line 1 Q2 2019 | Result Line 2 Q2 2019 | Result Line 1 Q3 2019 | Result Line 2 Q3 2019 | Result Line 1 Q4 2019 | Result Line 2 Q4 2019 | Result Line 1 Q1 2020 | Result Line 2 Q1 2020 | Result Line 1 Q2 2020 | Result Line 2 Q2 2020 | EPA License Limit | Avg | % Below EPA License Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dates** | | **02-11 April** | **02-11 April** | **22-26 Jul** | **22-26 Jul** | **14-18 Oct** | **14-18 Oct** | **13-17 Jan** | **13-17 Jan** | **29 Apr - 06 May** | **30 Apr - 06 May** | | | |
| $PM_{10}$ [1] | **mg/m³** | 0.123 | 0.149 | 0.337 | 0.137 | 0.143 | 0.136 | 0.147 | 0.139 | 0.125 | 0.152 | - | 0.17 | |
| $PM_{2.5}$ [1] | **mg/m³** | 0.121 | 0.147 | 0.294 | 0.135 | 0.141 | 0.134 | 0.157 | 0.148 | 0.134 | 0.162 | - | 0.17 | |
| Cadmium & Thallium [1] | **mg/m³** | 0.00062 | <0.00065 | <0.00069 | 0.0007 | <0.00065 | 0.00067 | <0.0006 | <0.0006 | <0.00057 | <0.001 | 0.05 | 0.00 | **98.7** |
| Heavy Metals [1] | **mg/m³** | 0.024 | 0.0072 | 0.022 | 0.082 | 0.045 | 0.095 | 0.016 | 0.0085 | 0.017 | 0.02 | 0.5 | 0.03 | **93.5** |
| Mercury [1] | **mg/m³** | 0.00069 | 0.00125 | 0.0013 | 0.00043 | 0.0003 | 0.0031 | 0.0003 | 0.00023 | 0.001 | 0.00049 | 0.05 | 0.00 | **98.4** |
| Arsenic [1] | **mg/m³** | <0.00037 | <0.00039 | 0.0021 | 0.00039 | 0.00048 | 0.0006 | 0.0008 | 0.00038 | 0.00044 | <0.00038 | 0.2 | 0.00 | **99.7** |
| Dioxins & Furans (NATO I-TEQ) [1] | **ng/m³** | 0.0004 | 0.00043 | 0.0313 | 0.00028 | 0.0037 | 0.002 | 0.00158 | 0.00021 | 0.00111 | 0.0005 | 0.1 | 0.00 | **96.4** |
| Hydrogen Fluoride [1] | **mg/m³** | 0.17 | <0.051 | 0.049 | 0.17 | 0.054 | 0.048 | <0.053 | <0.041 | 0.173 | 0.138 | 4 | 0.11 | **97.2** |
| Nitrous Oxide [1] | **mg/m³** | 2.05 | 3.72 | 4.21 | 4.84 | 0.54 | 0.19 | 4.26 | 1.92 | 4.81 | 4.47 | 400 | 2.90 | **99.3** |
| Volumetric Flow Rate (REF) [1] | **m³/hr** | 245562 | 229680 | 231955 | 245912 | 238993 | 246328 | 244332 | 259789 | 262002 | 247239 | 275000 | 245540 | |

**Average below EPA Emission limits to Air** **98%**

### 1.2.2 Compliance with Statutory Consents

As of the 19th of November 2020 there have been 70 incidents reported to the EPA in respect of the Facility's performance during commissioning and operation and the EPA has issued a total of 49 non-compliance notices.

In 2020, there have been 10 incidents reported to the EPA and 9 non-compliances issued by the EPA. A summary of the Non-Compliance notices are set out below:

| Category | Description |
|---|---|
| 1 Waste Management | Waste Categories and Quantities |
| 2 ELVs | 2 no ELV's for TOC |
| 6 Furnace Temperature | Temperature below 850°C |

The two ELV breaches for TOC were attributed to gas bottles within the furnace during normal operation and systems are now in place with all waste operators to eliminate any further material of this nature being delivered to the Facility.

## 1.3 Overview of the Project Economics for Dublin City Council.

### 1.3.1 Overview of DWtE Refinancing 2017

DWTEL was responsible for financing the construction, commissioning and operation of the Dublin Waste to Energy Facility. In 2014, the Project was funded on a project finance basis by a consortium of domestic and international banks in conjunction with equity investors.

In January 2017, DWTEL notified Dublin City Council as the Authority that they intended to refinance the DWtE project's debt funding post the commencement of operation, which occurred in November 2017.

At the time the senior debt was secured for the project (2014), senior debt margins for Irish PPPs were very high, primarily due to Ireland's participation in the EU/IMF programme and the State's sub investment grade credit rating.

However, subsequent to Ireland's emergence from the EU/IMF programme and uplift in credit ratings, debt margins for Irish PPPs have substantially declined as international funders re-enter the Irish market. The improved funding market created scope for significant refinancing gains, as there were much improved financing terms available for both senior debt margins and base rates.

Dublin City Council as the Authority, appointed the National Development Finance Agency (NDFA) and Philip Lee as financial and legal advisors respectively for the refinancing process in early 2017.

Under the terms of a Project Agreement ('*the PPP Contract'*), it is standard practise that the Authority would be entitled to a percentage of any refinancing gain associated with a PPP project debt restructuring. The gain is expressed in Net Present Value (NPV) terms discounted at the sponsor's equity Internal Rate of Return (IRR). The Project Agreement further permits the Authority to take its share of the refinancing gain as a lump sum payment. The Project refinancing occurred on 14 December 2017 and the Authority's refinancing gain was calculated to be €8,025,224. In line with the Dublin Local Authorities Agreement the respective Local Authorities were entitled to and received the following amounts:

| **Dublin Local Authority** | **Amount** |
|---|---|
| **Dublin City Council** | **€3,318,359** |
| Fingal County Council | €1,724,611 |
| South Dublin County Council | €1,674,859 |
| Dun Laoghaire Rathdown County Council | €1,307,396 |
| **Total** | **€8,025,225** |

### 1.3.2 Risk/Revenue Sharing

The Dublin Waste to Energy Project Agreement contains a number of key risk sharing mechanisms, related to project revenues as set out below.

**Authority Contingent Obligation (ACO)**

During the first 15 years of the Facility's Operation, '*the PPP period*', the DLA's are bound by an Authority Contingent Obligation (ACO) mechanism to underpin the waste market revenue of the Facility. Under the ACO the DLA's will provide partial (i.e. 58%) revenue support in respect of any shortfall below a threshold waste revenue. The ACO only becomes effective if the Operator fails to achieve the threshold waste revenue in any year during the PPP period.

**DLA Revenue Streams**

In return for the provision of the ACO, the DLA's will receive 54% of all DWtE waste revenue above the threshold waste revenue for the PPP period (i.e. the first 15 years). In addition, they will receive 25% of energy revenue above an agreed energy revenue threshold for the PPP period and 45% of energy revenue above the same threshold for the merchant period (i.e. the subsequent 30 years –(years 15 to 45)).

Generally, electricity generated at the DWtE facility will be sold at the wholesale market price. However, for the first 13 years of operation (i.e. until 31 December 2030) the DWtE facility will benefit from a national renewable energy feed-in tariff under the REFIT 3 Programme which will provide a guaranteed price per MWh for approximately 57% of the electricity produced at the facility. This means that if the wholesale price of electricity is below the REFIT 3 tariff, approximately 50% of the electricity will be guaranteed the REFIT3 tariff by the State.

Actual returns to the DLA's will depend primarily on the development of the waste and electricity markets, although a significant element of the energy revenue is effectively guaranteed until 31 December 2030.

### 1.3.3 Revenue for 2018

The Dublin Local Authorities have received a payment of €2.3m from DWTEL as the facility operator in 2018. This payment is comprised of a once-off payment associated with the first year of operations as per the contract and the respective Local Authority shares are set out below:

| Dublin Local Authority | Amount |
|---|---|
| **Dublin City Council** | **€951,050** |
| Fingal County Council | €494,270 |
| South Dublin County Council | €480,010 |
| Dun Laoghaire Rathdown County Council | €374,670 |
| **Total** | **€2,300,000** |

### 1.3.4 Revenues for 2019

The Dublin Local Authorities received a payment of €6.7m in 2019, which was associated with the Facility's operation in 2018, the respective Local Authority shares are set out below:

| Dublin Local Authority | Amount |
|---|---|
| **Dublin City Council** | **€2,792,012.27** |
| Fingal County Council | €1,451,036.12 |
| South Dublin County Council | €1,409,172.82 |
| Dun Laoghaire Rathdown County Council | €1,099,924.54 |
| **Total** | **€6,752,145.75** |

### 1.3.5 Project Cash Flows

Dublin City Council's capital expenditure, which was approximately €38.5m in total, will be financed from the refinancing gain and the annual revenue stream, outlined above. Given the projected quantum of the operational revenues, it will take approximately 17 years to finance Dublin City Council's expenditure to date.

### 1.3.6 Commercial Rates

The Dublin Waste to Energy operator, DWTEL will be liable for the payment of rates throughout the operational phase of the Project, with the annual charge being circa €4.5m.

## 1.4 Application Process for an Increase in Treatment Capacity at the DWtE Facility

As set out in section 1.1 above, Ireland is still highly reliant on the export and disposal of our residual municipal and industrial waste, which is contrary to our waste policy goals and objective, including

our agreed targets within the Eastern Midland Regional Waste Management Plan 2015-2021. The Plan set a target to reduce to 0% the direct disposal of unprocessed municipal waste to landfill from 2016 onward in favour of higher value pre-treatment processes and indigenous recovery practices. The Plan also set a target to achieve a recycling rate of 50% of managed municipal waste by 2020 and 60% by 2030.

Following a review of the DWtE performance and maximum capacity, DWTEL as the operator and holder of the Industrial Emissions Licence, sought a review of the licence granted by the EPA, with a view to increasing the permitted annual quantity of waste that can be accepted and treated at the facility from 600,000 tpa to 690,000 tpa.

As part of the application, DWTEL has confirmed that:

- it is not proposed that there will be any physical modification to the DWtE facility to cater for the additional throughput,

- the operator will not be seeking any increase in the level of permitted emissions to air or water, nor any change to the current licence conditions, and

- the operator is satisfied that the proposal will not result in any additional traffic on the road network in excess of that assessed by ABP when consent was granted for the facility.

In addition to the application to the EPA as the licencing authority for the Facility, it is now proposed that Dublin City Council will commence a planning process with An Bord Pleanála to ensure that the planning consent would also allow for the acceptance and treatment of an additional 90,000 tonne of non-hazardous residual municipal and industrial waste at the Facility. Given that the Dublin Waste to Energy Facility is already constructed and, subject to a successful applications, it has the ability to manage and treat an additional 90,000 tpa which can be diverted away from either export or disposal to landfill. Therefore increasing the throughput of the facility offers the most sustainable environmental solution in terms of dealing with this waste at this point in time and for the foreseeable future.

However, to minimise any risk to the achievement of recycling targets in the event that additional planned thermal treatment capacity coming on stream in the State there may be a case to make the licensing of additional throughput at the DWtE facility subject to review in say 5 years' time.

**Section 2:**

**Report on the Dublin Waste to Energy Community Gain Fund for the Irishtown, Ringsend and Sandymount Catchment Area.**

## 2.1 Community Gain Liaison Committee Membership

In March 2020, the Community Gain Liaison Committee advertised publicly for three new Community Representatives to sit on the Committee. The outgoing Committee members were:

- Mary Doolin, Ringsend and District Response to Drugs, representing the Community, Residents Association and Voluntary sector.
- Elizabeth Allman, Sandymount Ladies Golf Society, representing Arts, Culture, Education, Environment and Sports sector.
- John Nolan, Dublin Stevedores Ltd., representing the Business, Enterprise and Charity sector.

11 applications were received by the closing date of the 13th March 2020.

- A total of five applicants were nominated to represent Community, Residents Association and the Voluntary Sector.
- A total of six applicants were nominated to represent Arts, Culture, Education, Environment and Sport.
- A total of four applicants were nominated to represent Business, Enterprise and Charity.

A meeting of the selection panel was held by videoconference on Friday 30th October 2020. The selection panel comprised of the Lord Mayor Hazel Chu, Céline Reilly, Executive Manager of the Environment and Transportation Department Dublin City Council and Peter McLoone, Chairperson of Community Gain Liaison Committee.

As set down in the Community Gain Liaison Committee's terms of reference, the selection panel considered the detailed applications submitted on behalf of each candidate using the following criteria:

- General Community Reach (Geographical and Service Delivery) – 50 marks
- Membership - 50 marks
- Longevity in Community Life in the Area - 50 marks

The Selection Committee nominated the following for appointment to the Community Gain Liaison Committee:

- David Turner, nominated by Sandymount Residents Association to represent the interest of the Community, Residents Association and the Voluntary Sector.
- Eimear Mc Cormack, nominated by St Patricks Rowing Club to represent the interests of the Arts, Culture, Education, Environment and Sport sector.

- Anthony McDonald, nominated by The Irish Nautical Trust and Poolbeg Yacht and Boat Club to represent the interest of Business, Enterprise and Charity sector.

Each Community representative shall be appointed for a two year term and may be re-appointed for one successive two year term following a selection and evaluation process.

### 2.2 Dublin Waste to Energy Community Gain Fund

In line with the Dublin Waste to Energy's planning approval, Dublin Waste to Energy Limited, have contributed €10.38m as an initial capital contribution and are making an ongoing annual contribution of circa €600k per year since the commencement of operation in June 2017. In total the Dublin Waste to Energy Community Gain Fund has received funding of approximately €11.86m to date.

### 2.3 Dublin Waste to Energy Community Gain Projects Grant Schemes

The Community Gain Liaison Committee have run three Dublin Waste to Energy Community Gain Projects Grant Scheme to date, one in 2016, 2017 and 2019.

All 67 beneficiaries in respect of the Dublin Waste to Energy Community Gain Projects Grant Schemes 2016 and 2017 have now completed their grant-aided projects and a total of circa €9m has been drawn down to fund local community projects.

Some notable projects completed to date include:

- The refurbishment of Ringsend and Irishtown Community Centre.
- The installation of a 'Sea Adventure' playground in Seán Moore Park.
- The extension to Irishtown Stadium.
- The renovation of Railway Union Sports Club.
- St. Patrick's Church stained glass window restoration.
- The installation of a new science laboratory in Ringsend College.

With regard to the Dublin Waste to Energy Community Gain Projects Grant Scheme 2019, 38 projects were approved in principle and circa €1.1m of the €1.7m approved has been drawn down to date. Twenty organisations/groups have yet to complete their projects and drawdown their grant funding. The grant drawdown expiry date for these projects is the 31st December 2020 however, due to government restrictions in respect of Covid-19 it is anticipated that these projects will require an extension to their drawdown expiry date.

**Section 3:**

**Report on District Heating Project**

## Section 3.1 Introduction

The Dublin District Heating System (DDHS) will be a thermal energy network that uses energy from waste heat and distributes it as hot water through insulated dual (supply and return) pipe lines to homes and business for space heating, hot water and industrial purposes.

District Heating (DH) systems offer advantages in terms of higher energy efficiencies and reduced consumption of energy resources. They are fully compatible with European and National policies and objectives for carbon dioxide ($CO_2$) reduction, energy efficiency, security of energy supply, sustainability and competitiveness. DH can also offer capital cost savings and reduced operating and maintenance costs to customers.

## Section 3.2 Dublin City Council - District Heating Corporate Policy and Objectives

Dublin City Council has previously committed to progressing a Dublin District Heating System (DDHS), focusing on the general area of the Dublin Docklands and Poolbeg Peninsula in numerous plans and reports as set out below:

- National Development Plan 2018 - 2027
- Dublin City Development Plan 2011 – 2017
- Dublin City Development Plan 2016 - 2022
- North Lotts and Grand Canal Dock Strategic Development Zone Planning Scheme 2014.
- Dublin City Sustainable Energy Action Plan 2010-2020
- Poolbeg West Strategic Development Zone Planning Scheme 2019

### Section 3.2.1 Dublin City Council Policy Objectives:

Building on the Dublin City Council Climate Change Action Plan 2019-2024, Dublin City Council is "committed to safeguarding the environment and increasing the City's capacity to reduce greenhouse gas emissions and adapt to the impacts of Climate Change, in order to increase economic competitiveness and attract inward investment."

Dublin City Council has a long-term goal to expand District Heating throughout the City and wider Dublin area. The objective of Dublin City Council in relation to the Project is to develop a highly efficient District Heating system which minimises carbon emissions, improves air quality, reduces dependence on imported fossil fuels and is accessible to as many customers in the Dublin City area as possible.

The DDHS aims to utilise waste heat from electrical generation stations and industrial facilities on the Poolbeg peninsula in order to supply space heating and hot water to homes and businesses in the Poolbeg West, North Lotts and Grand Canal Dock Strategic Development Zone ("SDZ") areas of Dublin City. The Dublin Waste to Energy ("DWtE") Facility has been identified as the primary heat source for the network. The boilers, turbine and condensers installed at the Facility have been designed to export up to 90MW of thermal energy from the Facility. It is noted that the Project will require the development of a back-up/peak load heat plant to supply heat to the network during periods when the primary heat source is unavailable and during peak load hours. Additionally, it is envisaged that the network will be developed with a thermal energy storage capacity to optimise the heat pricing and to serve as a back-up/peak load heat source. The back-up and thermal storage infrastructure are together referenced as the "Projects Energy Centre".

**Section 3.3 Investment to date**

Dublin City Council has already invested in elements of a District Heating network in Dublin in a number of locations, namely:

- Under the river Liffey
- Under the LUAS on Mayor Street Upper
- Under the road beside the 3 Arena (Point Theatre) off North Wall Quay.

The development of the network to date represents an investment by Dublin City Council of circa €12m.

**Section 3.4 Overview of Project delivery model and timeframes**

**Work to Date**

Dublin City Council engaged a Danish district heating consultant to examine the appropriate business/commercial delivery models and the role of Dublin City Council, in the ownership, delivery, operation and maintenance of each of the following:

- heat generation / source
- heat distribution network
- heat supply to customers

The consultant is also completing a high-level review of engineering options for the delivery of district heating, developing engineering options to a strategic / feasibility level of detail, identifying project risks and making recommendations as to how these risks could be addressed in future designs.

In addition, the consultant is preparing a detailed design for the Poolbeg West SDZ, to ensure that the necessary DH infrastructure is delivered within this area as part of the site enabling works.

Dublin City Council has also engaged the services of the National Development Finance Agency as Financial Advisors for the Project, in conjunction with appointing McCann FitzGerald as legal advisors for the Project.

Following a recent advertisement towards the end of 2018 on the E-tenders' webpage, which sought views from the market on the project, we are currently finalising recommendations on the most appropriate Business Delivery Model Strategy and preparing the associated Business Case and procurement strategy. It is anticipated that the Business Case and associated procurement strategy will be published in Q1 2021.

**The current preferred Project delivery model**

The current preferred delivery model is that Dublin City Council would seek the delivery (including design), ongoing maintenance of a District Heating distribution network and the marketing/retailing of District Heating to commercial and domestic end users by utilising a Joint Venture Company ("JV" or "Joint Venture").

The JV Company will be a partnership between Dublin City Council and an experienced partner, who has previously designed, built, operated and maintained large scale DH networks. Once appointed, Dublin City Council in conjunction with our project partner will finalise the delivery of the DH network in order to deliver the DH to customers.