# Introduction

The Levenseat Renewable Energy (LREL) waste treatment facility consists of an advanced materials recovery facility and a combined heat and power plant, designed to recover recyclable material from black waste and maximise diversion from landfill.

Once all efforts have been made to recover recyclable material from waste streams, the next best option is to recover energy from the remaining waste. This not only means we are recovering value from waste; we are also diverting waste from landfill and helping to contribute to Scotland's renewable energy targets.

# Key Facts

**12.5MW**

Electricity Generated

Equivalent to the needs of

**25, 000 Homes**

**215, 000 tonnes**

Processing Capacity

# Interesting Facts

The LREL facility is designed to process residual waste, otherwise known as black bin waste, waste that householders have deemed to be unrecyclable, yet we are able to recover and recycle on average 20% of the material received.

84, 000 Aluminium cans recovered

224,875 Plastic bottles recovered

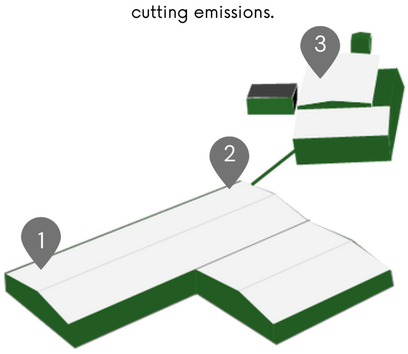
Other materials recovered include WEEE from electrical equipment, organic fines that are sent for composting, and ferrous metals in the form of pots and pans etc.

*based on 2020 annual statistics

**Step 1: Recovery of Recyclates**
Materials such as wood, cardboard, ferrous metals, non-ferrous metals, mixed plastics, and inerts are all recovered and diverted back into the manufacturing or construction industries.

**Step 2: Fuel Preparation**
The remaining waste is prepared into a fuel known as Refused Deriver Fuel. This fuel is made to a specific, detailed standard to ensure a clean and efficient conversion process and to minimise production of ash and other by-products

**Step 3: Energy Recovery**
Our Power Plant provides an environmentally responsible means of producing reliable baseload electricity. The Plant uses non-recyclable waste as a fuel, reducing our reliance on fossil fuels, the need for landfill and cutting emissions.




# Emissions Monitoring

Emissions are monitored directly by our Continuous Emissions Monitoring System (CEMS). This system is fitted inside the stack so it monitors the flue gas before it is released into the atmosphere.

The majority of our emissions are compounds of normal air like steam, oxygen, nitrogen and carbon dioxide. For the very small remainder of emissions, they go through a sophisticated treatment process that ensures emissions remain well below all relevant standards.

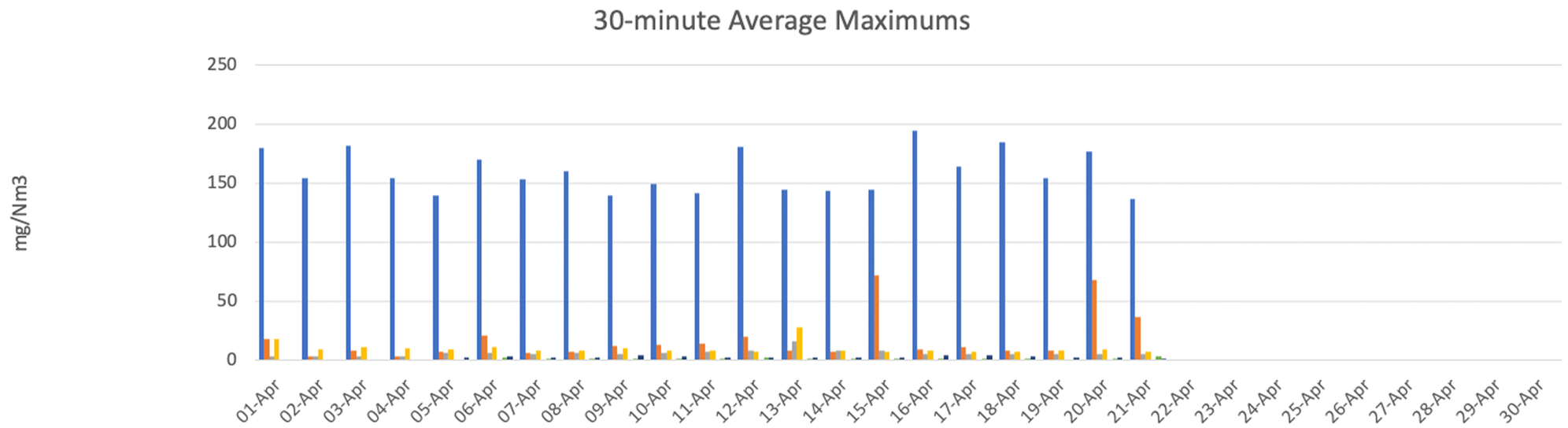
In addition to providing information to SEPA for regulatory compliance, the CEMS also allows the Power Plant team to monitor the processes. The data provided by the monitoring systems gives useful feedback on how the processes are operating, thereby allowing the team to safely and efficiently run the plant.

| | Permitted levels mg/Nm3 | |
|---|---|---|
| | **Daily** | **30 min max average** |
| Nitrogen Oxide ($NO_x$) | 200 | 400 |
| Carbon Monoxide (CO) | 50 | 100 |
| Sulphur Dioxide ($SO_2$) | 50 | 200 |
| Hydrogen Chloride (HCl) | 10 | 60 |
| Ammonia ($NH_3$) | 10 | |
| Total Organic Carbon (TOC) | 10 | 20 |
| Particulates | 10 | 30 |

## Please see below for this months report

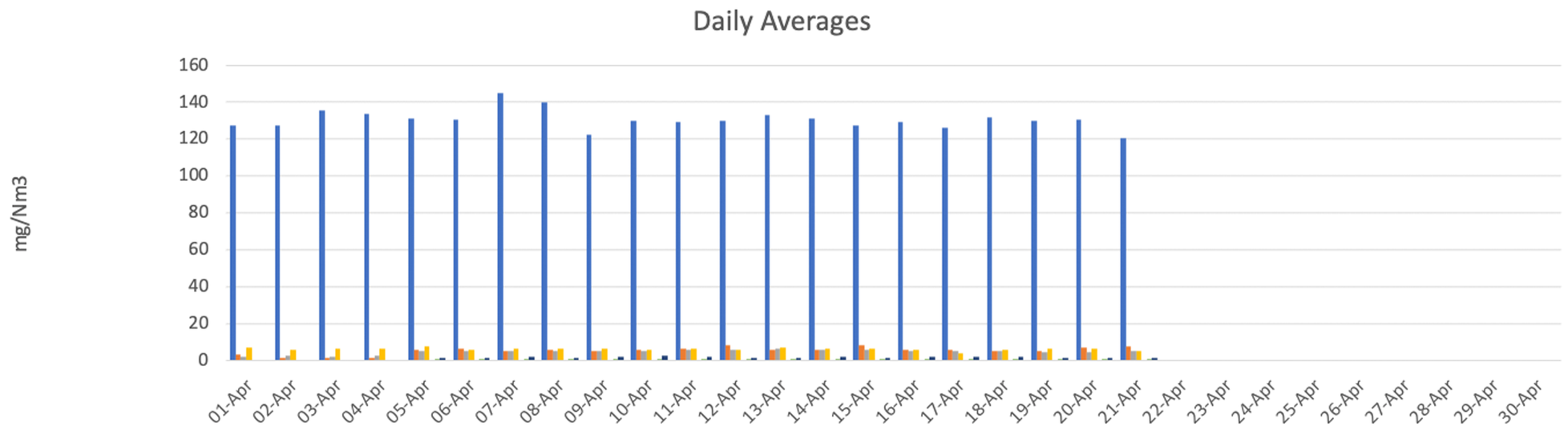
Learn more at www.lrel.co.uk

# APRIL 2023 DAILY AVERAGE CEMS REPORT




| | 01-Apr | 02-Apr | 03-Apr | 04-Apr | 05-Apr | 06-Apr | 07-Apr | 08-Apr | 09-Apr | 10-Apr | 11-Apr | 12-Apr | 13-Apr | 14-Apr | 15-Apr | 16-Apr | 17-Apr | 18-Apr | 19-Apr | 20-Apr | 21-Apr | 22-Apr | 23-Apr | 24-Apr | 25-Apr | 26-Apr | 27-Apr | 28-Apr | 29-Apr | 30-Apr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOx 30m Max | 179.2 | 154.2 | 181.7 | 154.3 | 139.3 | 169.9 | 153.3 | 160.1 | 139.5 | 149.4 | 141.9 | 180.2 | 144.5 | 143.6 | 143.9 | 193.8 | 164.4 | 184.9 | 154.2 | 176.8 | 136.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CO 30m Max | 17.8 | 3.8 | 8.7 | 3.9 | 7.5 | 20.7 | 6.1 | 7.8 | 12.6 | 13.6 | 13.9 | 20.2 | 8.3 | 7.5 | 72 | 9.1 | 11.2 | 8.4 | 8.3 | 67.8 | 36.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SO2 30m Max | 3.9 | 3.3 | 3.2 | 3.8 | 6.3 | 6.8 | 5.5 | 6.5 | 5.7 | 6.6 | 7.7 | 8.2 | 16.4 | 8.5 | 8.1 | 5.6 | 5.7 | 5.9 | 5.5 | 5.5 | 5.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HCl 30m Max | 18.1 | 9.3 | 11.1 | 10.8 | 9.5 | 11.6 | 8 | 8.7 | 10.3 | 8.1 | 8.1 | 7.9 | 28.2 | 8.1 | 7.9 | 8.1 | 7.8 | 7.9 | 8.5 | 9.7 | 7.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NH3 30m Max | 0.7 | 0.6 | 0.4 | 0.5 | 0.2 | 0.3 | 0.2 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOC 30m Max | 0.7 | 0.5 | 0.4 | 0.3 | 1 | 2.3 | 1.2 | 1.1 | 1.2 | 1.3 | 1.3 | 2.2 | 1.2 | 1.1 | 1.2 | 1.1 | 1.2 | 1.2 | 1 | 1.2 | 3.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Particulate Matter 30m Max | 0.5 | 0.7 | 0.5 | 0.4 | 2.3 | 3.1 | 2.8 | 2.7 | 4.5 | 3.7 | 2.7 | 2.7 | 3 | 2.5 | 2.7 | 4.5 | 4.6 | 3.1 | 2.1 | 2.2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| | 01-Apr | 02-Apr | 03-Apr | 04-Apr | 05-Apr | 06-Apr | 07-Apr | 08-Apr | 09-Apr | 10-Apr | 11-Apr | 12-Apr | 13-Apr | 14-Apr | 15-Apr | 16-Apr | 17-Apr | 18-Apr | 19-Apr | 20-Apr | 21-Apr | 22-Apr | 23-Apr | 24-Apr | 25-Apr | 26-Apr | 27-Apr | 28-Apr | 29-Apr | 30-Apr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOx Daily Mean | 127.7 | 127.6 | 135.6 | 133.5 | 131 | 130.5 | 145.2 | 139.7 | 122.3 | 130.2 | 129.2 | 130.2 | 133 | 131.3 | 127.6 | 129.2 | 126.3 | 131.6 | 130.2 | 130.3 | 120.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CO Daily Mean | 3.2 | 1.5 | 1.6 | 1.6 | 6 | 6.9 | 5.5 | 5.7 | 5.5 | 5.8 | 6.7 | 8.6 | 5.7 | 6.2 | 8.6 | 6.1 | 5.8 | 5.5 | 5.2 | 7.1 | 7.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SO2 Daily Mean | 2.4 | 2.7 | 2.3 | 2.7 | 5.6 | 5.1 | 5.1 | 5.3 | 5.3 | 5.4 | 6.1 | 6.1 | 6.6 | 6.2 | 6.3 | 5.1 | 5.3 | 5.2 | 4.9 | 5 | 5.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HCl Daily Mean | 7.3 | 6.2 | 6.4 | 6.4 | 7.9 | 6 | 6.8 | 6.8 | 6.4 | 6.3 | 6.5 | 6 | 7 | 6.4 | 6.4 | 6.1 | 4.1 | 5.8 | 6.5 | 6.4 | 5.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NH3 Daily Mean | 0.3 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOC Daily Mean | 0.2 | 0.2 | 0.2 | 0.2 | 1 | 1.1 | 1 | 1 | 1 | 1 | 1 | 1.2 | 1 | 1 | 1.1 | 1 | 1 | 1 | 1 | 0.9 | 1.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Particulate Matter Mean | 0.3 | 0.3 | 0.3 | 0.3 | 1.7 | 1.7 | 2 | 1.8 | 2 | 2.6 | 2.2 | 1.9 | 1.9 | 2 | 1.9 | 2.1 | 2.4 | 2 | 1.6 | 1.6 | 1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |