

Baseline Report, 2022 Report and Target Setting

For the

Pledge to Net Zero

For

Axiseng M&E Ltd.

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Document History

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1. Purpose of the report

This is a report summarising our baseline and 2022 carbon footprint and target setting for the Pledge to Net Zero initiative, to which we have signed up with the guidance of ACEI.

It explains how we calculated our baseline figure of our company's carbon emissions and our short/mid-term and long-term targets for the initiative.

It also includes some top line ideas for reducing our carbon footprint in the next couple of years working towards our goal.

2. General information

Axiseng is a highly resourced, independent building services consulting engineering practice. As responsible professional advisers, we represent our client's best interests in every aspect of our service with advice, designs and lifetime costs tailored to suit the specific mechanical, electrical and environmental needs of each individual project.

Axiseng currently maintains a core staff of over 40 professional personnel. All of our staff are highly experienced and formally qualified in building services engineering. All projects are directed by a Chartered Engineer with support from specialists in energy management, sustainability and building energy rating. Our leadership team comprising Cian Dowling, Ray Mason and Gillian Corrigan are well known in the construction industry for their integrity, expertise and project commitment. Cian, Ray and Gillian are supported by our Associate Directors, Niall Herlihy, Rachel McKenna and Aaron O'Doherty. The size of our practice allows the Directors and Associates to maintain a strong personal presence throughout the full duration of every project.

We have established a reputation for consistently delivering a high-quality service across a broad range of commercial, institutional and industrial developments for our clients who include some of the foremost institutions and eminent professionals in Ireland.

We are based at 47 Mount Street Upper, Dublin 2, D02 AC95.

Organisational and operational boundaries

For our baseline year, we have taken 2019. This is due to 2020 and 2021 being un-precedented with most of our staff working fully remotely and not attending the office.

For the purposes of the calculations, we have taken the number of staff 48 as it was in 2019.

For the purposes of calculations, we have taken the number of staff as 44 as it was in 2022.

For the operational boundaries, it was quite a simple decision since we only had one office to consider (47 Mount Street) which is building we have a long-term lease but also this is managed by ourselves so we can affect many decisions about how we use the building.

Scope 1

For Scope 1, we have taken the natural gas consumption for the building as it's heated by it.

The building is naturally ventilated so there is no need to include a refrigerant in this category.

We also do not have a company fleet, so this is excluded from the calculations.

Scope 2

For this, we have taken our electricity consumption and we have chosen the location-based approach.

We have calculated the emissions with the help of the SEAI emission factors as available on their website.

Scope 3

Following the guidance of ACEI, we have included these categories in the Scope 3 calculations.

- Category 1 - Purchased Goods and Services
- Category 3 - Transmission and Distribution Loss
- Category 5 - Waste generation in operation
- Category 6 - Business travel
- Category 7 - Employee commuting
- Category 15 - Investments

3. Methodology for calculating the carbon footprint calculation

Scope 1

We have gathered the natural gas consumption data from our energy supplier, Energia. The invoices offered a very good breakdown of the actual consumption by year.

This was multiplied by the emission factor as published by the SEAI on their website in the section of emission factors for natural gas.

Scope 2

The data about our electricity consumption for the year was collected from the invoices supplied by our supplier, Energia. We also track these individually on our energy tracker, so the amounts were readily available.

The consumption was multiplied by the National Grid Emission Factor 2019 as we chose the location-based approach for this scope.

Scope 3

We used an independent calculation for this scope as the GHG calculation tool did not cover all the categories we needed to include. We took guidance from the GHG Protocol's Scope 3 Calculation Guidance.

Category 1 – Purchased Goods and Services

We chose the spend-based approach as we have a good data accuracy for our spend divided into different spent categories. The spend in Euro was converted into American Dollars using an average conversion course for 2019.

This was multiplied by the cradle-to-gate emission factors from the Environmentally-extended input-output (EEIO) databases that were available online.

Category 3 – Transmission and Distribution Loss

We did not calculate this category as with the location-based approach for Scope 2, these were included in the national grid emission factor.

Category 5 – Waste Generation in Operation

For this category, we have collected waste/recycling data from the invoices of our waste provider, Panda.

The weight of each category was then multiplied by the emission factor of the waste disposal method as published in the National Inventory Report 2020.

As the residual waste in Ireland is all incinerated to produce energy, the CO₂ produced is not counted. Similarly, the industrial composting seems to not create CO₂ (only other greenhouse gasses), so this type of waste was also excluded.

In our calculation, we have also included the security shredding of our paper waste as provided by Cyclone Couriers. In this case, since they confirmed that all our shredding has been recycled, we have used the information that production of a kilogram of recycled paper produces 0.7kg of CO₂.

The difficulty here was to get the emission factor for the dry recycling category as we could not find any emission factors for this waste disposal method, so we estimated, based on the example above, the emission factor of 0.5. This needs to be reviewed in the future for a more precise calculation.

Category 6 – Business Travel

For this category, we have used the spend-based method.

The spend for the year was taken from the expense documentation for accounting purposes and multiplied by the emission factor (taken again from EEIO) for petrol (as majority of the travel was in petrol-fuelled vehicles).

Category 7 – Employee commuting

To collect the data for this category, we did an employee survey where we enquired about the type of transport and the distance travelled by each employee.

As the base year was 2019 when all employees attended the office for work, we calculated that every employee travelled to the office every day of the working week.

The responses received were summarised and extrapolated to include all the employees in the base year (48ppl).

Category 15 – Investments

This category, even though recommended by ACEI, does not apply on our business.

4. Carbon Footprints Reported

| | Source | Baseline year (tCO2e) |
|--------------|------------------------------------|-----------------------|
| Scope 1 | Natural gas | 15.06 |
| Scope 2 | Electricity (location-based) | 9.70 |
| Scope 3 | Business travel | 1.52 |
| | Commuting | 83.68 |
| | Purchased Goods & Services | 42.62 |
| | Transmission & Distribution Losses | 0 |
| | Waste Generated in Operation | 1.15 |
| | Investments | 0 |
| TOTAL | Location-based emissions | 153.72 |

| | Source | 2022 (tCO2e) |
|--------------|------------------------------------|---------------|
| Scope 1 | Natural gas | 10.84 |
| Scope 2 | Electricity (location-based) | 8.31 |
| Scope 3 | Business travel | 2.41 |
| | Commuting | 61.23 |
| | Purchased Goods & Services | 41.82 |
| | Transmission & Distribution Losses | 0 |
| | Waste Generated in Operation | 0.86 |
| | Investments | 0 |
| TOTAL | Location-based emissions | 125.48 |

5. Set Targets and Future Plans

For our target setting, we used the SBTI Target setting tool.

Our target

46% absolute reduction of Scope 1 and 2 GHG emissions by 2030 and 90% by 2050. For Scope 3, a 28% absolute scope reduction by 2030 and 90% by 2050 from a 2019 base year.

Section 3. Absolute Contraction Approach

Well below 2 degree scenario (WB2C)

[Review all target modelling data](#)

| | Base year (2019) | Target year (2030) | % Reduction |
|-----------------------------|------------------|--------------------|-------------|
| Scope 1 emissions (tCO2e) | 15 | 11 | 27.5% |
| Scope 2 emissions (tCO2e) | 10 | 7 | 27.5% |
| Scope 1+2 emissions (tCO2e) | 25 | 18 | 27.5% |

1.5 degree scenario (1.5C)

[Review all target modelling data](#)

| | Base year (2019) | Target year (2030) | % Reduction |
|-----------------------------|------------------|--------------------|-------------|
| Scope 1 emissions (tCO2e) | 15 | 8 | 46.2% |
| Scope 2 emissions (tCO2e) | 10 | 5 | 46.2% |
| Scope 1+2 emissions (tCO2e) | 25 | 13 | 46.2% |

Section 2. Absolute Contraction Approach

| | Base year (2019) | Target year (2030) | % Reduction |
|--|------------------|--------------------|-------------|
| Company Scope 3 emissions - 2C (tCO2e) | 129.0 | 111.5 | 13.5% |
| Company Scope 3 emissions - WB2C (tCO2e) | 129.0 | 93.5 | 27.5% |
| Company Scope 3 emissions - 1.5C (tCO2e) | 129.0 | 69.4 | 46.2% |

To achieve these targets, we are currently putting a plan together to approach this systematically and efficiently.

Some top line initiatives for the short-term reduction of emissions in Scope 1 & 2 may include better heating management of the office, better management of the electricity usage in the office (for example, changing to LED lights, installing motion-sensor light-switches for areas of lesser use, turning off devices not in use, etc.)

For Scope 3, as our biggest contributor to the office carbon footprint is employee commuting, this might include encouraging employees to take less carbon-heavy journeys and increase walking, cycling, using public transport, etc. As the working style has changed during and after the pandemic, a hybrid working model with some aspect of working from home will also affect the calculations for this category of emissions.

We will also investigate options of offsetting our carbon in various ways, but including the employees in this process, increasing wellbeing and environmental behaviour (planting trees, restoring boglands, etc.).