

Volution Group plc

MVHR Emissions Savings

Emissions Savings Assessment

Reference: A01

1 | 12 September 2022

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Ove Arup & Partners Limited
8 Fitzroy Street
London
W1T 4BJ
United Kingdom
arup.com

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1. Introduction

This report has been prepared by Arup for Volution Group plc (“the Client”). It is part of a commission to assess the annual GHG emission savings potential from the use of Volution Mechanical Ventilation with Heat Recovery (MVHR) products. An MS Excel calculator has been developed to provide a sense of scale of the annual emission savings from the annual global MVHR product sales.

Emissions calculations are based on the methodology and assumptions described in the accompanying Technical Report.

1.1 Issues discussed in this report

This report presents key findings from the calculator for the Client’s group sales in Financial Year 2021-2022 (FY22) as reported in August 2022.

2. Results

The report has been prepared with product and sales data provided by the Client for the purposes of this commission. The results are presented separately for the ERI business and the direct product sales from the Client’s group activities. The emissions have been calculated with current emission factors in 2022.

2.1 Sales data

The largest number of sales for Volution Group subsidiaries in the financial year FY22 were in Germany, with the UK having the second largest volume of sales. The sales shown in Figure 1 include both domestic and commercial applications.

All the countries shown in Figure 1 & 2 have been included in the tool to calculate the emissions avoidance and facilitate reporting of results.

Regional sales - Volution products

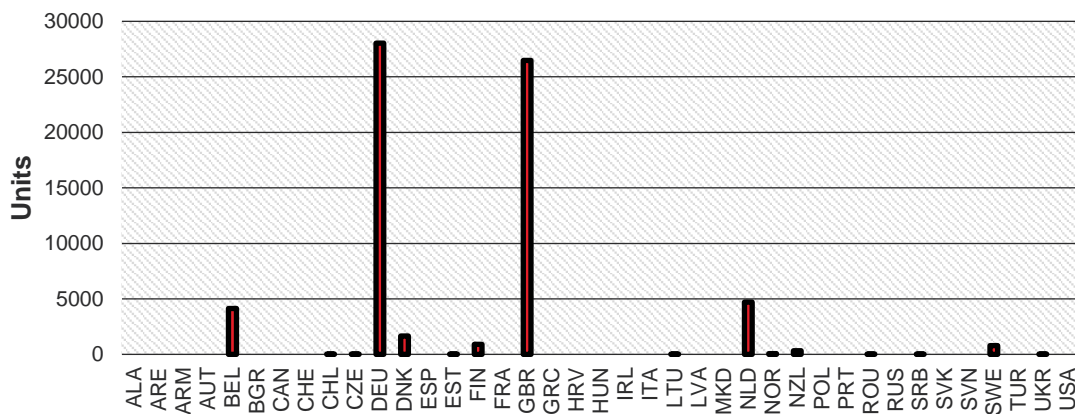


Figure 1. Number of MVHR products sold in different countries by Volution Group in FY22

Figure 2 shows the sales of MVHR parts in different countries world-wide. The main markets (in term of number of sales) for the ERI business in FY22 were Finland, followed by the UK. The distribution of sales shows the world-wide presence of ERI products.

Regional sales - Volution ERI

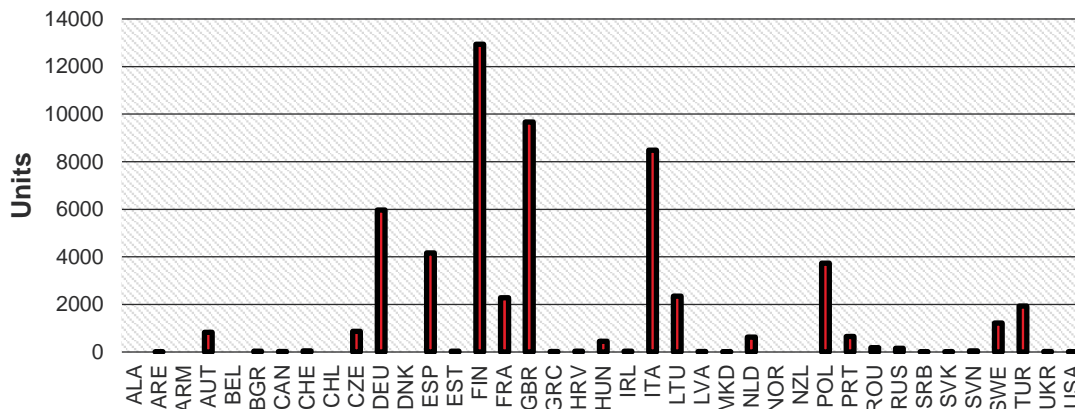


Figure 2. Regional sales of Volution ERI business in FY22

2.2 Emissions – Volution Group products

The total emissions avoidance from the use of Volution Group products in domestic applications for the financial year FY22 is estimated to be **47 ktCO₂e**. Commercial applications account for **1.7 ktCO₂e** emissions avoided (Figure 3).

Avoided emissions according to building use (tCO₂e)

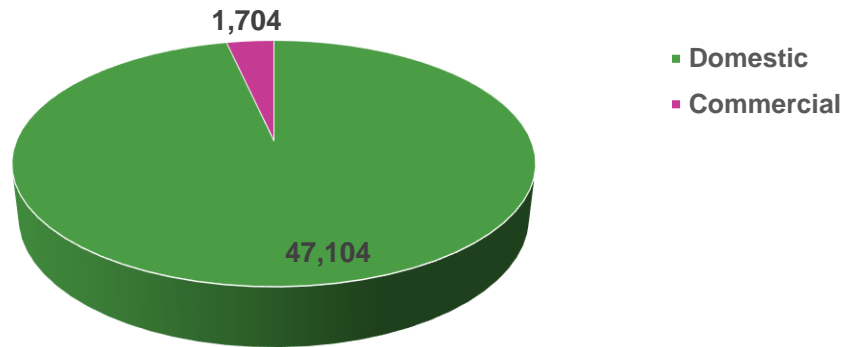


Figure 3. Emissions avoided from the sales of domestic (green) and commercial (pink) products

The regional breakdown of the estimated emissions avoidance is shown in Figure 4. Interestingly, the estimated carbon emissions avoided with the use of MVHR in the UK (Figure 4) are higher than those in Germany despite the larger volume of sales in Germany (Figure 1). This is explained by the higher airflow rates in the products sold in the UK and consequently they achieve higher savings.

Emissions avoidance from regional sales - Volution Group

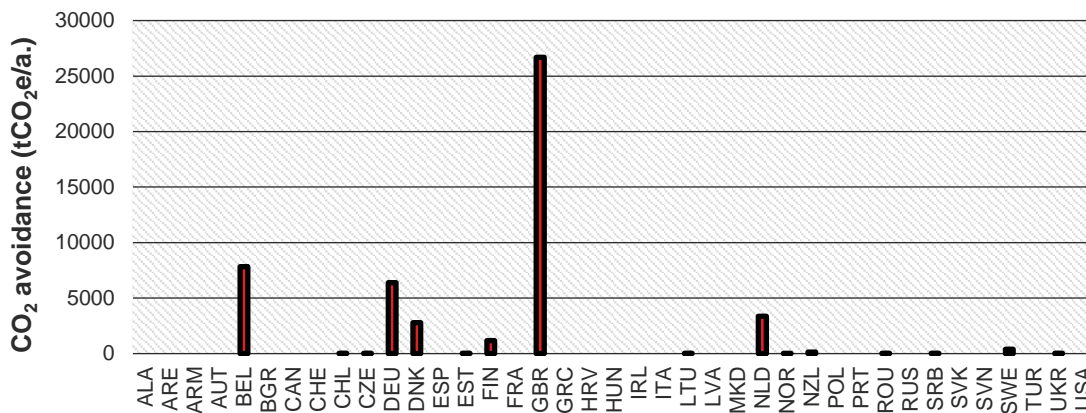


Figure 4. Regional emissions avoidance from the Volution Group product sales in FY22

Figure 5 shows the carbon emissions avoided in all countries where Volution Group has market presence.

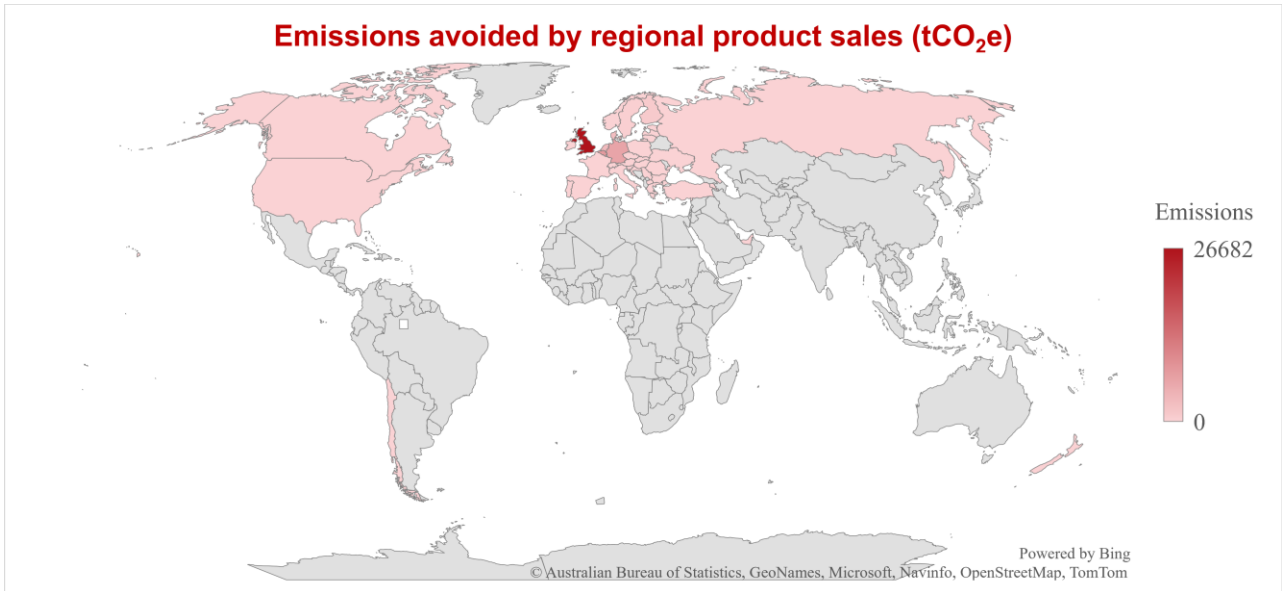


Figure 5. Estimated emissions avoided per country with Volution Group sales

2.3 Emissions – Volution ERI business

The total emissions avoidance from the use of commercial products from the Volution ERI business for the financial year FY22 is estimated to be **174 ktCO₂e**. This part of the business focuses on commercial applications, and it does not have domestic systems. The sales data includes 6,839 unique products listed in the product database.

The regional emissions breakdown is shown in Figure 6. The largest share of emissions avoidance comes from Finland, followed by Germany and Italy. The ERI products in Poland achieve large emissions avoidance in relation to the number of sales in the country. This is likely explained by the airflow of the units and the climate of Poland.

Emissions avoidance from regional sales - Volution ERI

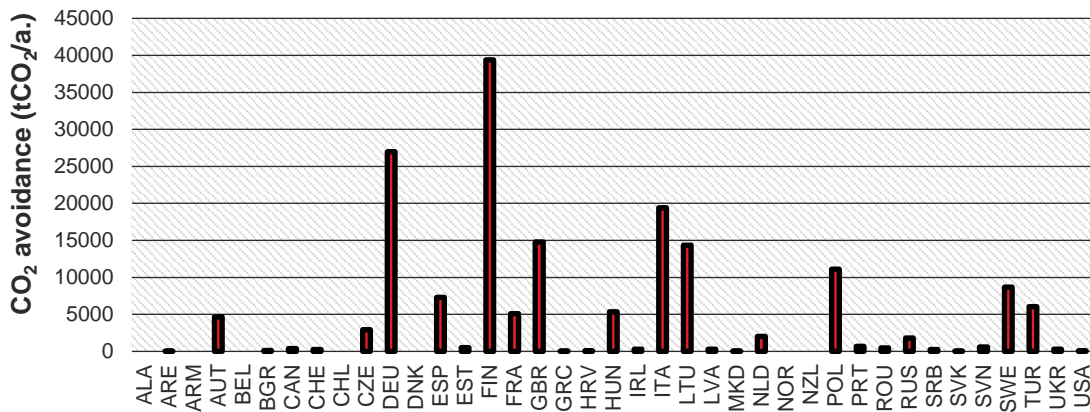


Figure 6. Volution ERI business regional potential for carbon emissions avoidance

3. Conclusion

The analysis estimates that the Volution Group MVHR products sales can deliver emissions savings of **223 ktCO₂e** world-wide. For comparison and scale, in 2019, the energy related domestic emissions in the London Borough of Camden were 258 ktCO₂ and in Westminster 294 ktCO₂, respectively¹. The volume of sales and the estimated emission avoidance achieved, show the impact MVHR can have on the reduction of heating demand in the buildings sector and the important role heat recovery systems can play in achieving net zero targets at neighbourhood, city, and national levels.

The annual potential for emissions avoidance will change according to the number of sales and type of products sold, but also in relation to the future carbon intensity of the national electricity and gas mains grid. A shift towards high efficiency electric heating technologies, building retrofits and decarbonisation of the electricity grid is expected to reduce the annual emission avoidance potential from MVHR systems.

¹ London Energy and Greenhouse Gas Inventory (LEGGI), 2019. Available at <https://data.london.gov.uk/dataset/leggi>

ARUP

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