

Ecodan R290 8.5kW Air Source Heat Pump

CIBSE TM65 Embodied Carbon Mid-level Calculation



Assesment Date: 13th December 2024
Assessor / Organisation: Mitsubishi Electric Residential Product Marketing
Contact: embodied.carbon@meuk.mee.com

Embodied Carbon with 'Mid-level TM65 Calculation' Method (kg CO₂e) Total:

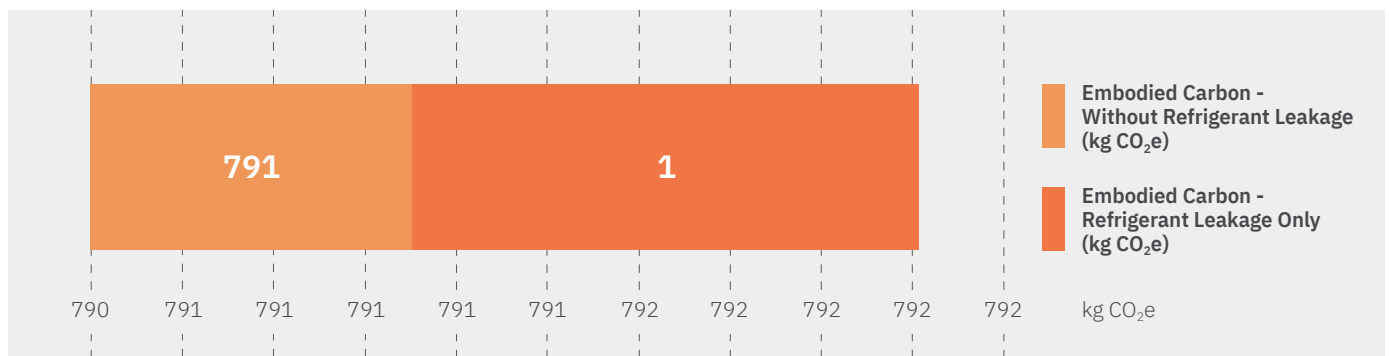
792

Capacities (kW)*

8.5

Embodied Carbon Result per kW (kg CO₂e/kW):

93.20



PUZ- WZ85VAA - Product Information

Type of product	A2W Heat Pump
Capacity of equipment (kW)	8.50
Product weight (kg)	102.50
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	15
Type of refrigerant	R290
Refrigerant GWP*	3
Energy consumption of the factory per unit of product (kWh)	26.66
Location of manufacture	UK
Product Complexity	Category 3: High

*Nominal cooling capacity conditions as per data book



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CIBSE TM65 Embodied Carbon Mid-level Calculation



Embodied Carbon Results Breakdown (kg CO₂e)

A1: Material extraction	431
A2: Transport	81
A3: Manufacturing	32
A4: Transport to Site	1
B1: Use	1
B3: Repair	55
C1: Deconstruction	0
C2: Transport	1
C3: Waste Processing	8
C4: Disposal	0

Embodied Carbon Results - without Refrigerant Leakage (kg CO₂e)

A1-C4 (excluding B1,C1)	609
A1-C4 with Buffer Factor (excluding B1, C1)	791

Embodied Carbon Result - Refrigerant Leakage Only (kg CO₂e)

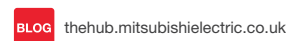
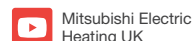
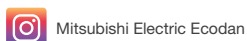
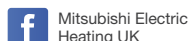
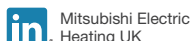
B1 (Refrigerant leakage during use) + C1 (Refrigerant leakage end of life)	1
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Assumptions

A1: Material carbon coefficient source	TM65 Table 2.1 & The ICE Database
B1: Refrigerant annual leakage rate (%)	2
C1: Refrigerant end of life recovery rate (%)	99
B3: Materials replaced as part of repair (%)	10 (TM65 Assumption)
C4: Percentage of product going to landfill (%)	30



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Effective as of January 2025



Ecodan R290 10kW Air Source Heat Pump

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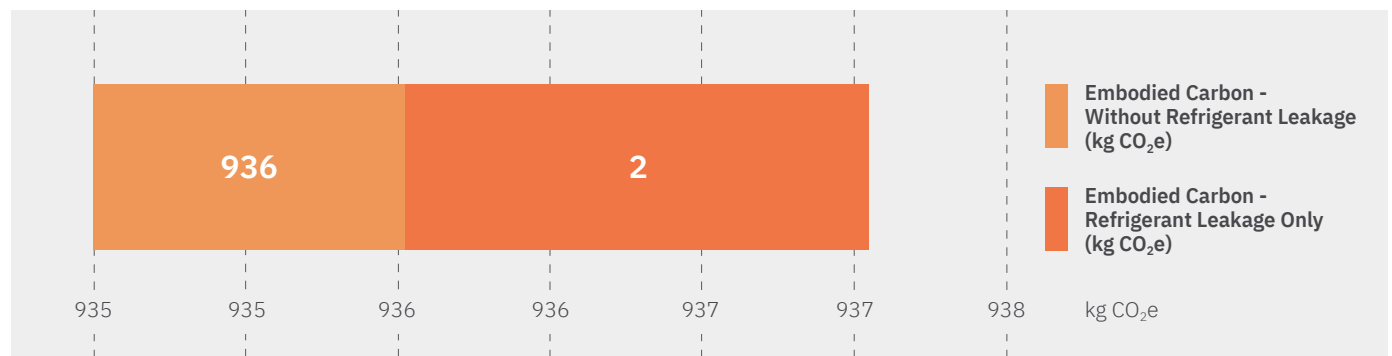


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Embodied Carbon with 'Mid-level TM65 Calculation' Method (kg CO₂e) Total:

937

	Capacities (kW)*	10
Embodied Carbon Result per kW (kg CO ₂ e/kW):		93.71



PUZ-WZ100VAA - Product Information

Type of product	A2W Heat Pump
Capacity of equipment (kW)	10.00
Product weight (kg)	119.50
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	15
Type of refrigerant	R290
Refrigerant GWP*	3
Energy consumption of the factory per unit of product (kWh)	26.66
Location of manufacture	UK
Product Complexity	Category 3: High

*Nominal cooling capacity conditions as per data book



Ecodan R290 10kW Air Source Heat Pump

CIBSE TM65 Embodied Carbon Mid-level Calculation



Embodied Carbon Results Breakdown (kg CO₂e)

A1: Material extraction	518
A2: Transport	94
A3: Manufacturing	32
A4: Transport to Site	1
B1: Use	1
B3: Repair	65
C1: Deconstruction	0
C2: Transport	2
C3: Waste Processing	8
C4: Disposal	0

Embodied Carbon Results - without Refrigerant Leakage (kg CO₂e)

A1-C4 (excluding B1,C1)	720
A1-C4 with Buffer Factor (excluding B1, C1)	936

Embodied Carbon Result - Refrigerant Leakage Only (kg CO₂e)

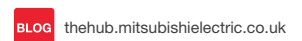
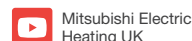
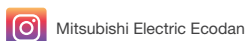
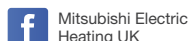
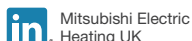
B1 (Refrigerant leakage during use) + C1 (Refrigerant leakage end of life)	2
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Assumptions

A1: Material carbon coefficient source	TM65 Table 2.1 & The ICE Database
B1: Refrigerant annual leakage rate (%)	2
C1: Refrigerant end of life recovery rate (%)	99
B3: Materials replaced as part of repair (%)	10 (TM65 Assumption)
C4: Percentage of product going to landfill (%)	30



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Ecodan R290 12kW Air Source Heat Pump

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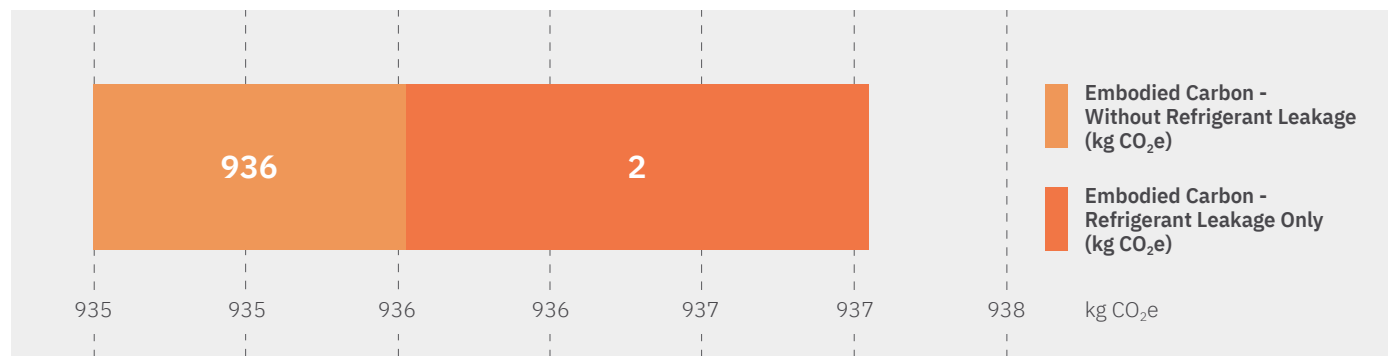


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Embodied Carbon with 'Mid-level TM65 Calculation' Method (kg CO₂e) Total:

937

	Capacities (kW)*	12
Embodied Carbon Result per kW (kg CO ₂ e/kW):		78.09



PUZ- WZ120VAA - Product Information

Type of product	A2W Heat Pump
Capacity of equipment (kW)	12.00
Product weight (kg)	119.50
Material breakdown for at least 95% of the product weight? (Y/N)	Y
Service life of the product (years)	15
Type of refrigerant	R290
Refrigerant GWP*	3
Energy consumption of the factory per unit of product (kWh)	26.66
Location of manufacture	UK
Product Complexity	Category 3: High

*Nominal cooling capacity conditions as per data book



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Embodied Carbon Results Breakdown (kg CO₂e)

A1: Material extraction	518
A2: Transport	94
A3: Manufacturing	32
A4: Transport to Site	1
B1: Use	1
B3: Repair	65
C1: Deconstruction	0
C2: Transport	2
C3: Waste Processing	8
C4: Disposal	0

Embodied Carbon Results - without Refrigerant Leakage (kg CO₂e)

A1-C4 (excluding B1,C1)	720
A1-C4 with Buffer Factor (excluding B1, C1)	936

Embodied Carbon Result - Refrigerant Leakage Only (kg CO₂e)

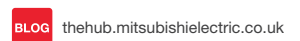
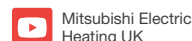
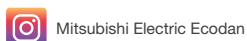
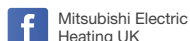
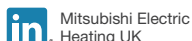
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