

ISSUE IDENTIFICATION

The Problem

High carbon Emissions from Last-Mile Delivery in UAE

- Last-mile delivery contributes ~53% of total logistics emissions
- UAE transport sector = 19%–22% of total emissions
- E-commerce growing 20% annually in UAE

Heavy-duty vehicles are a major source of:

- CO₂ (primary greenhouse gas)
- NO_x (~34% of transport emissions)
- PM2.5 (~17% of air pollution)

Business Impact:

- High fuel and operational costs for delivery companies
- Inefficient last-mile routing increases time and expenses
- Rising demand puts pressure on logistics infrastructure
- Companies face sustainability regulations and carbon reduction targets



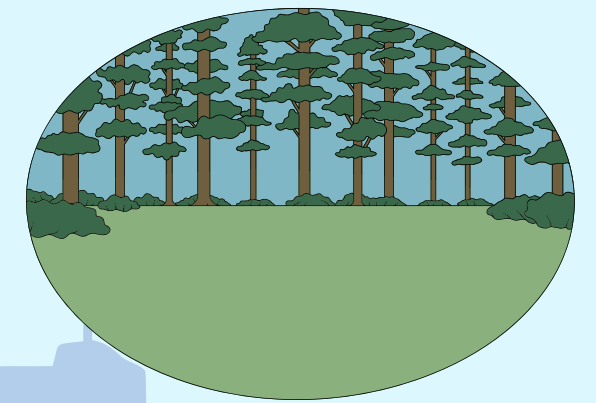
**REDUCES AIR
POLLUTION**



**LOWERS GREEN
HOUSE EMISSIONS**



**IMPROVES HUMAN
HEALTH**



**PROTECTS NATURAL
HABITATS**

Transport is one of the UAE's largest contributors to urban air pollution.

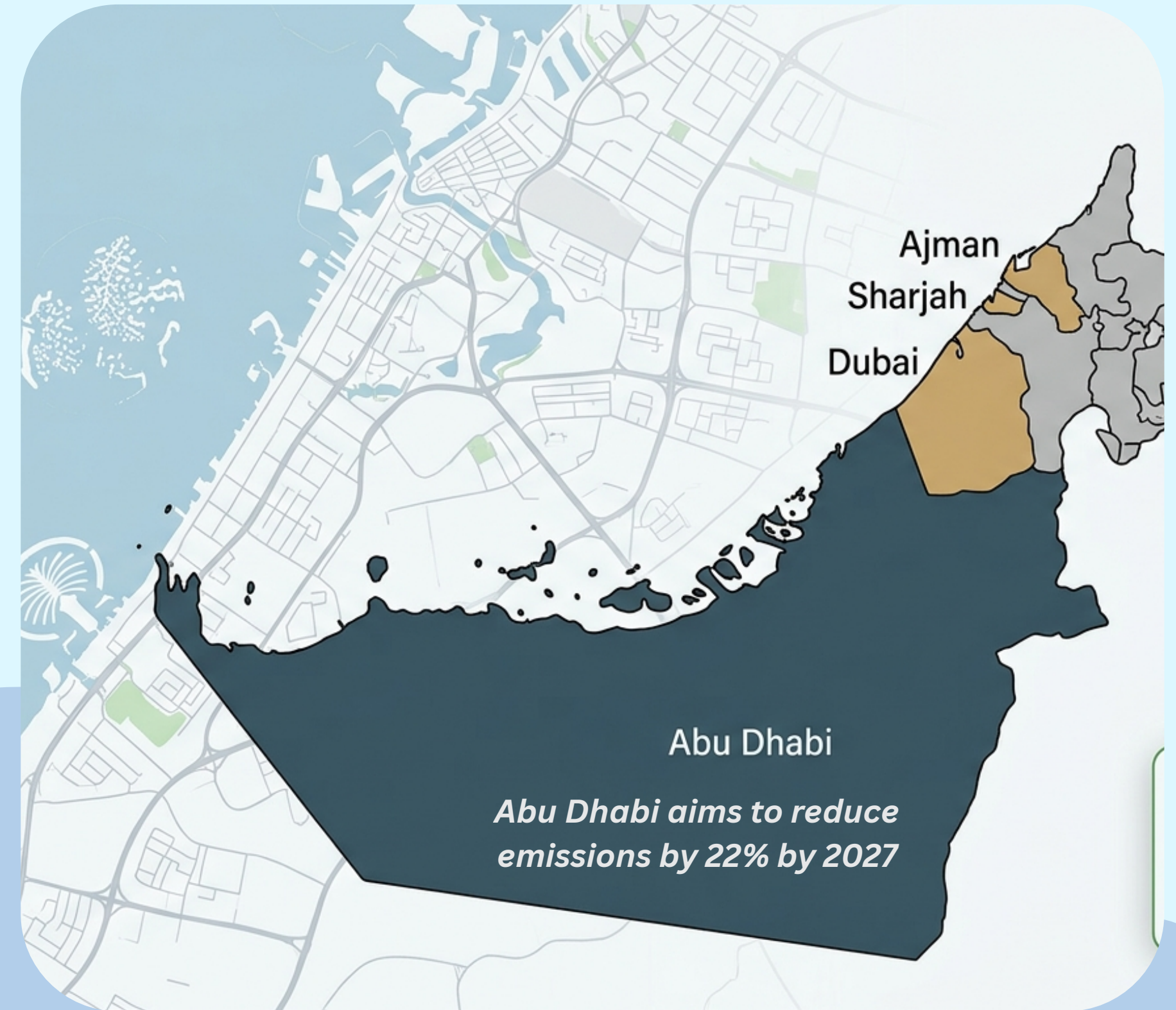
UAE RELEVANCE

Growing Pressure on Urban Transport Emissions

Why UAE?

- UAE urban population exceeds 85%, increasing delivery demand
- E-commerce sector growing 15%–20% annually
- Transport contributes 19%–22% of national CO₂ emissions
- Electric Vehicles adoption is below 5%
- Extreme Climate Impact: High summer temperatures affect EV battery efficiency and operational range.

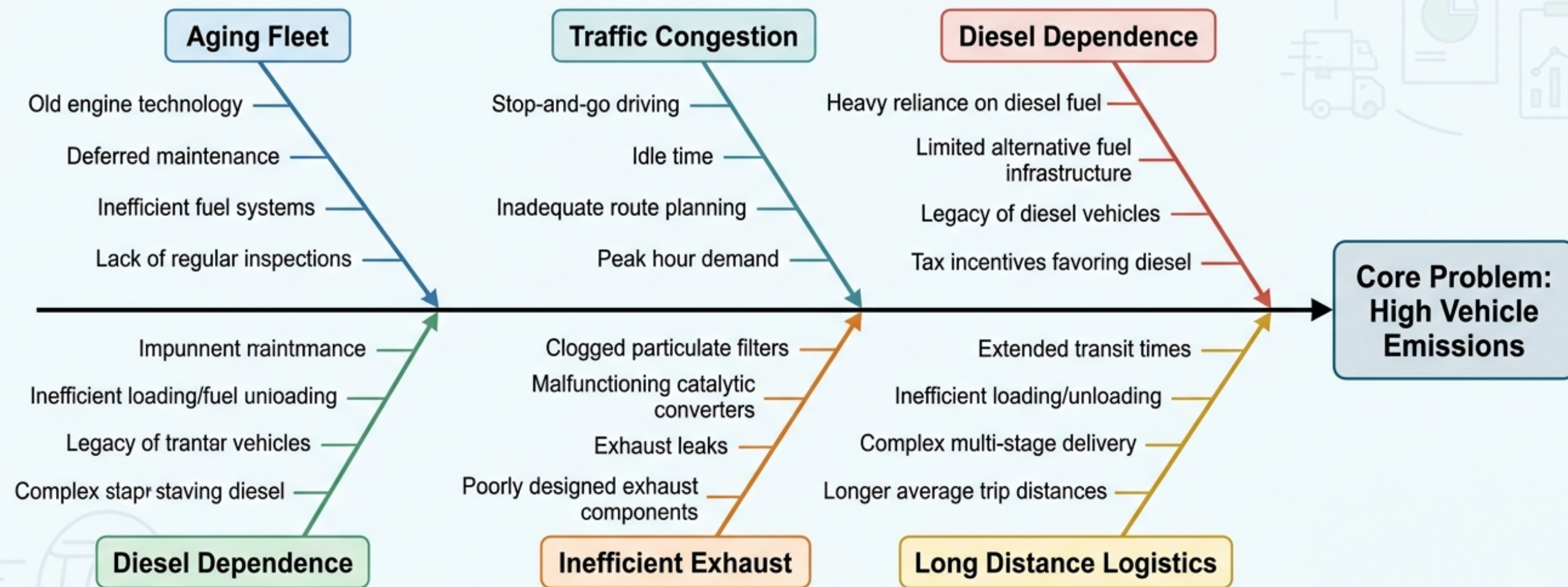
Aligned with UAE Net Zero 2050



→ “Demand is increasing faster than decarbonization effort”

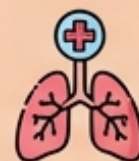
PROBLEM ANALYSIS

Service Marketing Blueprint Analysis: Fleet Emission Causes



Business Cost

- Increased operational and fuel costs
- Regulatory fines



Health Risk

- Respiratory illnesses
- Cardiovascular problems



ESG Pressure

- Negative environmental impact
- Reputational damage
- Stricter sustainability targets

OUR SOLUTION

Solution: ECaust Retrofit Emission System

- A plug-in exhaust device for delivery vehicles
- Works on existing fleets (no replacement required)

What makes it different:

- Retrofit design → Works on 100% of current fleets.
- *Instant impact* → Reduces harmful pollutants (NOx & PM2.5) by up to 85%.
- Low-cost → ~15% the cost of EV replacement with zero downtime.
- Fast installation → Rapid deployment across large delivery fleets.

→ **A practical solution for real-world fleet decarbonization**

How it works:

- **Mesh-based catalytic filter breaks down harmful gases**
- **Converts pollutants into less harmful emissions**
- **Enhances exhaust efficiency in real time**



“The go-to solution for companies seeking sustainability without operational disruptions”

WHY WILL COMPANIES ADOPT ECAUST?

WHY WILL COMPANIES ADOPT ECAUST?

Economic & Environmental Impact:

- **Reduces Fuel Consumption by 10–15%:** Directly lowering monthly operational expenses.
- **Avoids Regulatory Fines:** Prevents AED 1,000+ fines per vehicle for emission violations.
- **Improves ESG Performance:** Helps companies meet sustainability reporting requirements.

Operational Feasibility:

- **Zero Downtime:** Installation takes **<30 minutes**; no specialized tools or training needed.
- **100% Compatibility:** Works with all existing diesel-powered delivery fleets.
- **Low Maintenance:** Durable filter technology requiring service only every **50,000 km**.

Feasibility & Market Scalability:

- **Financial Payback (ROI):** Full cost recovery achieved within **6–9 months** through fuel savings.
- **Market Potential:** Targeting **150,000+** commercial delivery vehicles operating in the UAE.
- **Strategic Alignment:** Fully complies with **UAE National Air Quality Strategy 2031**.

TARGET MARKET:

- **Primary:** Large delivery platforms (Talabat, Deliveroo, Amazon, Noon).
- **Secondary:** Logistics companies, fleet operators, and government initiatives.



→ **Cost savings + compliance + sustainability**

FEASIBILITY OF ECAUST IMPLEMENTATION

Technical Feasibility:

- Plug-and-Play Design: No internal engine modifications or complex rewiring required.
- Universal Compatibility: Works with 100% of existing diesel-powered delivery fleets (Vans, Trucks, and Motorcycles).
- Durable Filtration: Uses high-efficiency catalytic mesh technology designed for extreme operating temperatures.

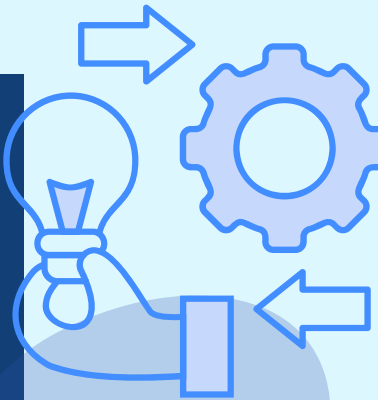
Operational Feasibility:

- Rapid Installation: Deployment takes <30 minutes per vehicle; can be performed during shift breaks.
- Zero Downtime: Fleets remain operational immediately with no need for specialized driver training or new charging infrastructure.
- Simplified Maintenance: Professional cleaning required only every 50,000 km, ensuring long-term reliability.

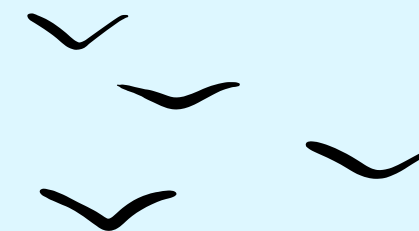
Economic & Regulatory Feasibility:

- Low Capital Barrier: AED 750 per unit compared to AED 150,000+ for a new Electric Vehicle (EV).
- Direct Cost Savings: Proven 10–15% reduction in fuel consumption and operational costs.
- Instant Compliance: Fully aligns with UAE National Air Quality Strategy 2031, avoiding AED 1,000+ environmental fines.

→ **Scalable, low-cost, and ready for immediate deployment across existing UAE fleets.**



FINANCIAL VIABILITY



Value Proposition:

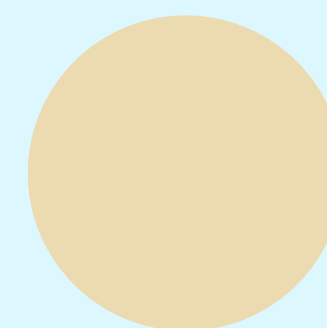
- Affordable emission reduction (AED 750 vs AED 150K).
- No engine modifications required.
- Direct fuel savings (10–15%).

Key Operations:

- Manufacturing high-efficiency catalytic meshes.
- Strategic partnerships with UAE delivery giants.
- Maintenance & subscription-based filter replacements

Revenue & Growth:

- Direct sales + recurring service revenue.
- Scalable model covering the entire MENA region.



→ Scalable and profitable business model

FINANCIAL VIABILITY & REVENUE MODEL

1. Revenue Model:

- **B2B Sales:** Direct sales to logistics fleets at **AED 750** per unit.
- **Bulk Discounts:** Tiered pricing for large-scale adoptions (e.g., 500+ vehicles).
- **Subscription:** Annual maintenance and filter replacement service.

2. Cost Advantage (The Bottom Line):

- **Low CAPEX:** ~99% cheaper than buying a new Electric Vehicle (EV).
- **No Infrastructure Cost:** Zero spending on charging stations or engine modifications.

3. Break-even Analysis:

- **Customer Payback:** **Full ROI for the client within 6–9 months via fuel savings.**
- **Fine Prevention:** Immediate saving of potential AED 1,000+ in environmental fines.



Feature	EV Fleet Transition (AED 150,000+)	ECaust Retrofit (AED 750)
Initial Cost Barrier	[High Capital Expenditure]	Low-Cost Deployment [Low Capital Expenditure]
Charging Infrastructure (Not included)	(Not included) [Months to Install]	No Infrastructure Required [Immediate Deployment]
ROI	ROI (Delayed, 3+ Years)	ROI (Immediate, < 1 Year)

BUSINESS MODEL CANVAS



Key Partners

- Delivery companies
- Government/regulators
- Suppliers



Key Activities

- Manufacturing
- Installation
- Maintenance



Value Proposition

- Low-cost emission reduction
- Retrofit → no replacement
- Immediate impact



Key Resources

- Technology
- Manufacturing
- Team



Customer Relationships

- Contracts
- Support



Customer Segments

- Delivery platforms
- Logistics companies
- Fleet operators



Cost Structure

- Production
- Labor
- Distribution



Channels

- Direct B2B sales
- Partnerships



Revenue Streams

- Product sales
- Maintenance services



SCALABILITY



Positioned as a low-cost, scalable alternative to full exhaust replacement systems.

- Bulk pricing available for large fleet orders

REVENUE STREAMS:

- Product sales
- Maintenance services
- Filter replacement (recurring revenue)

MARKET SCALE:

- 200,000+ delivery vehicles in UAE (est.)

CUSTOMER SEGMENTS:

- Delivery platforms
- Logistics companies
- Fleet operators

VALUE PROPOSITION:

- Low-cost emission reduction
- Retrofit → no vehicle replacement
- Immediate environmental impact
- Low-cost = fast adoption across SMEs & large fleets

CHANNELS:

- Direct B2B sales
- Strategic partnerships

SCALING PLAN:

- UAE → GCC → Global expansion

Our solution is highly scalable because it improves existing vehicles at low cost, enabling rapid adoption across the UAE and beyond.

WRAP UP & REFERENCES

- Last-mile delivery is a growing contributor to urban emissions in the UAE
- Current solutions are costly and slow to scale

ECaust offers:

- Immediate emission reduction
- Low-cost retrofit solution
- Scalable implementation across delivery fleets

<https://www.weforum.org/agenda/2020/09/last-mile-delivery-emissions-cities/>

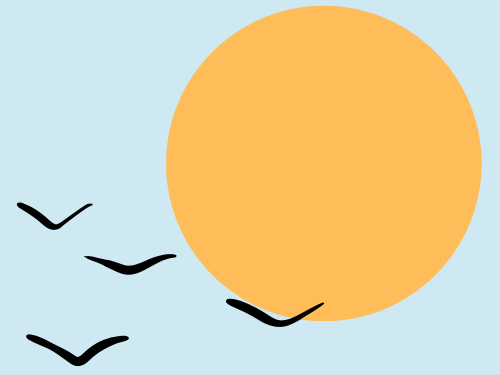
<https://climateactiontracker.org/countries/uae/policies-action/>

<https://www.iqair.com/ae/united-arab-emirates>

<https://u.ae/en/information-and-services/environment-and-energy/climate-change>

<https://www.trade.gov/country-commercial-guides/united-arab-emirates-smart-and-sustainable-mobility>

→ **Supporting UAE's Net Zero 2050 goals**



ECAUST

Topic A -low carbon last-mile delivery for UAE cities



جامعة عجمان
AJMAN UNIVERSITY

Leen El Hanach
khawla
zainab Muawia eltayeb





جامعة عجمان
AJMAN UNIVERSITY

**THANK
YOU**

