a pioneering hydrogen aviation startup

(selected for TechStars and Venture Miami)

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VIDEO LINK

H2 *inside*

VISION

Our vision is to create and commercialize a sustainable, affordable multipurpose autonomous air frame capable of airlifting heavy payload cargo configurations including road vehicles that would give customers 1) the freedom to FLY their road vehicle over longer distances using clean energy and 2) faster last mile delivery and emergency response solution connecting urban and rural areas.

MISSION

Develop a hydrogen fuel cell powered autonomous electric Vertical Takeoff and Landing (eVTOL) air vehicle or 'Flying Forklift', designed to carry road vehicles. The LuftCar vehicle will serve:
1) air cargo markets by providing affordable last mile, door to door delivery for distant communities
2) emergency medical services and disaster relief by airlifting ambulances and rescue vehicles
3) defense and national security by providing ship to ship, ship to shore and shore to outpost mission capable flying forklift platforms
4) regional transportation by connecting distant communities with major cities, democratizing travel with faster and low-cost operations.

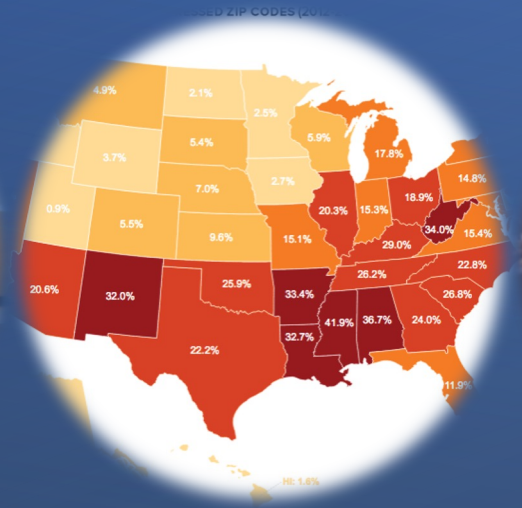
Design and develop a hydrogen fuel cell / battery hybrid propulsion system, which will be plugged into LuftCar and other eVTOL platforms, creating demand for green hydrogen and accelerating the adoption of hydrogen in air mobility.

Problem we are solving

Cargo – last mile

No true last-mile, door-to-door delivery solution for air cargo, resulting in higher shipment and logistics cost.

Connect communities



No affordable multimodal (air and road) disaster relief and emergency response vehicles

Decongest interstate travel

Less than 2% of passengers choose air travel to commute 500 miles or less due to longer wait time, cost

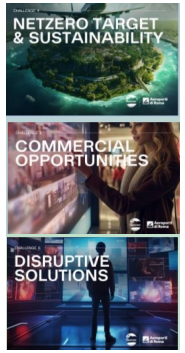
Defense

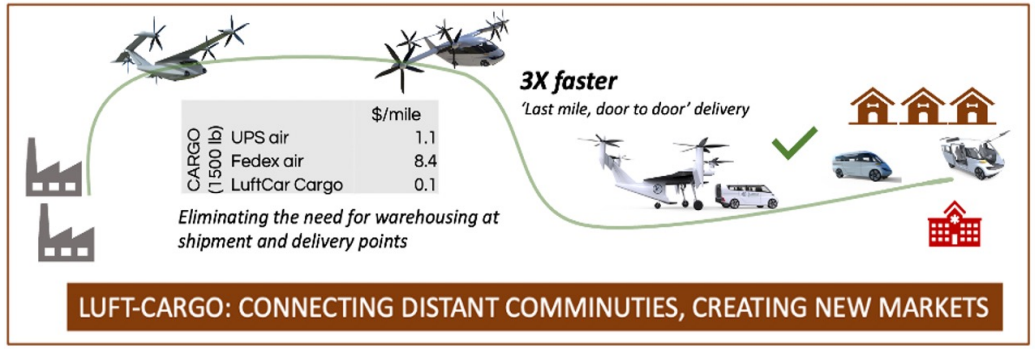
Air Force: Last mile cargo delivery / Airmen transport solution; support logistical readiness

Navy / Marine Corps: ship to base and base outpost logistics connector

Market Opportunity and Use Cases aligned with Objectives

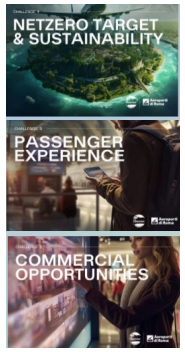
TAM: 1.0 T

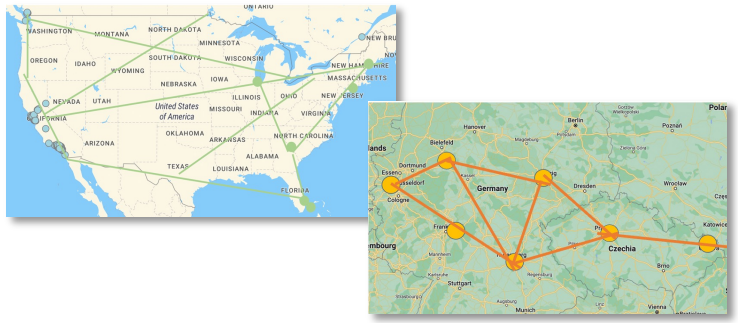




Cargo last mile delivery – disruptive modular air frame creates a new profitable low-cost air cargo market

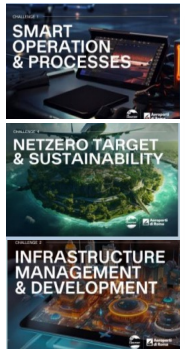
TAM: 0.5 B

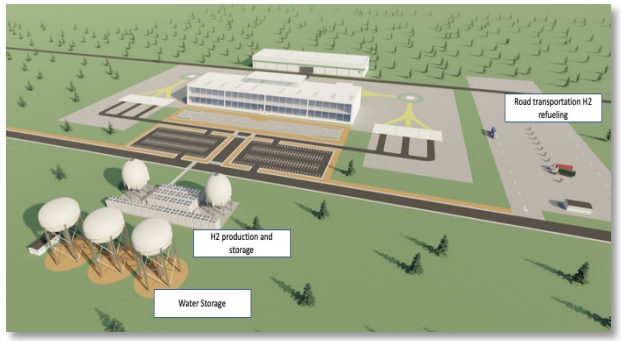




Regional transportation solution, connecting distant communities, at low cost, democratizing air travel. Freedom of travel and airlifting road vehicle across hilly and archipelago terrain and contested zones.

TAM: 1.0 T





LuftCar built LuftPads – strategically located vertiports developed in partnership with suppliers that provide H2 onsite production, storage and refueling for trucks, buses, air mobility vehicles and utility back up is an efficient infrastructure development initiative – providing sustainable zero emissions fuel availability, accelerating hydrogen economy throughout the region.

TAM

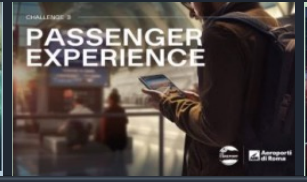
Ten-year total available market

> $1 Trillion by 2035 for just Advanced Air Mobility
> $500+ billion by 2032

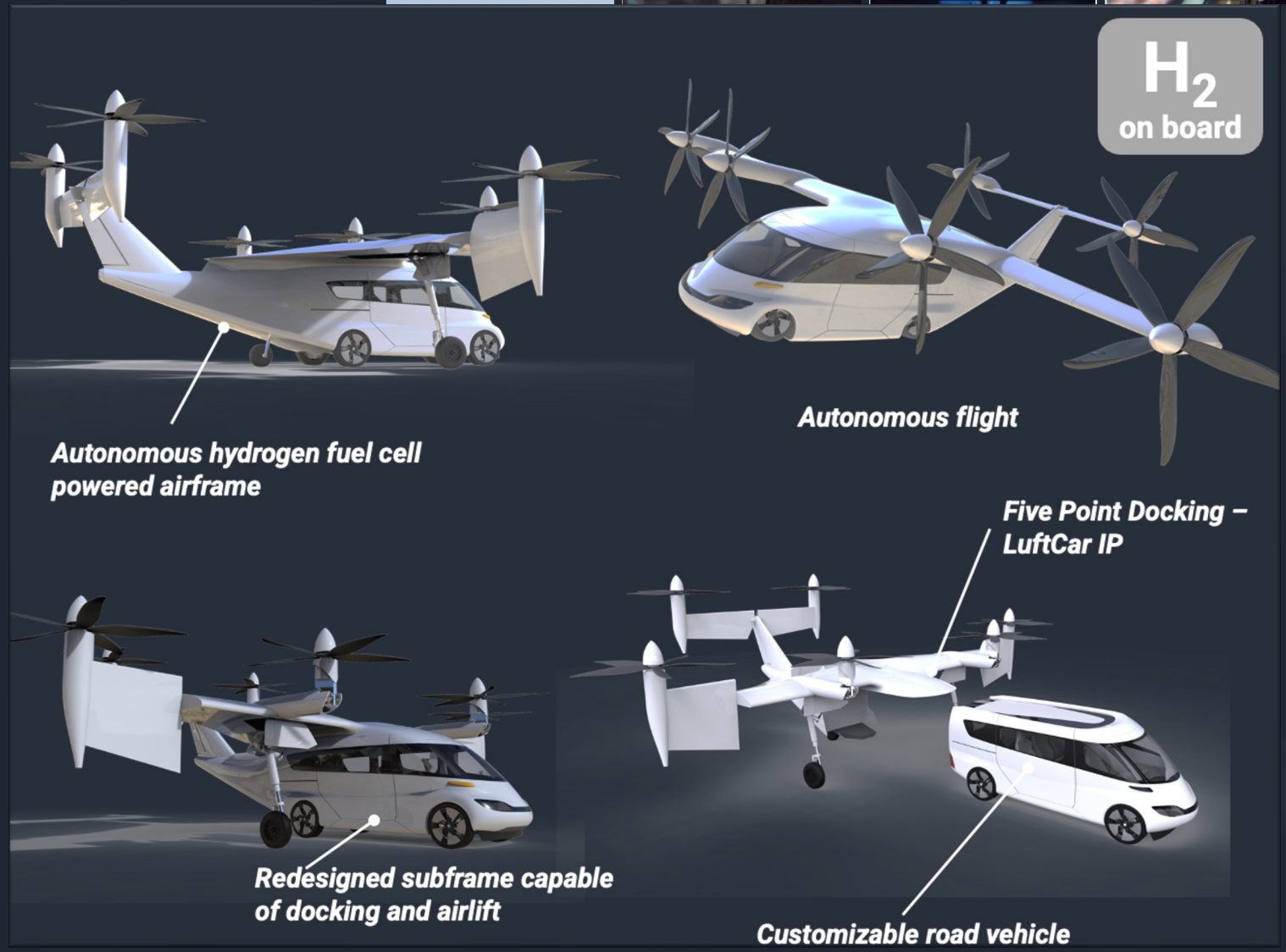
Sources: Morgan Stanley, Roland Berger, FEV

https://www.rolandberger.com/en/Insights/Publications/Regional-Air-Mobility-How-to-unlock-a-new-era-of-aviation.html

Innovation 1 – Module Air Cargo eVTOL vehicle



LuftCar



Technology Readiness Level [TRL] – 3
Concept validation through digital twin and simulation. Prototype building in progress

LuftCar will provide clean, fast and low-cost transportation and door-to-door delivery with a hydrogen powered regional air and road mobility eVTOL vehicle with a 500 km air travel for 2500 kg payloads

LuftCar

1917

Curtis Auto plane

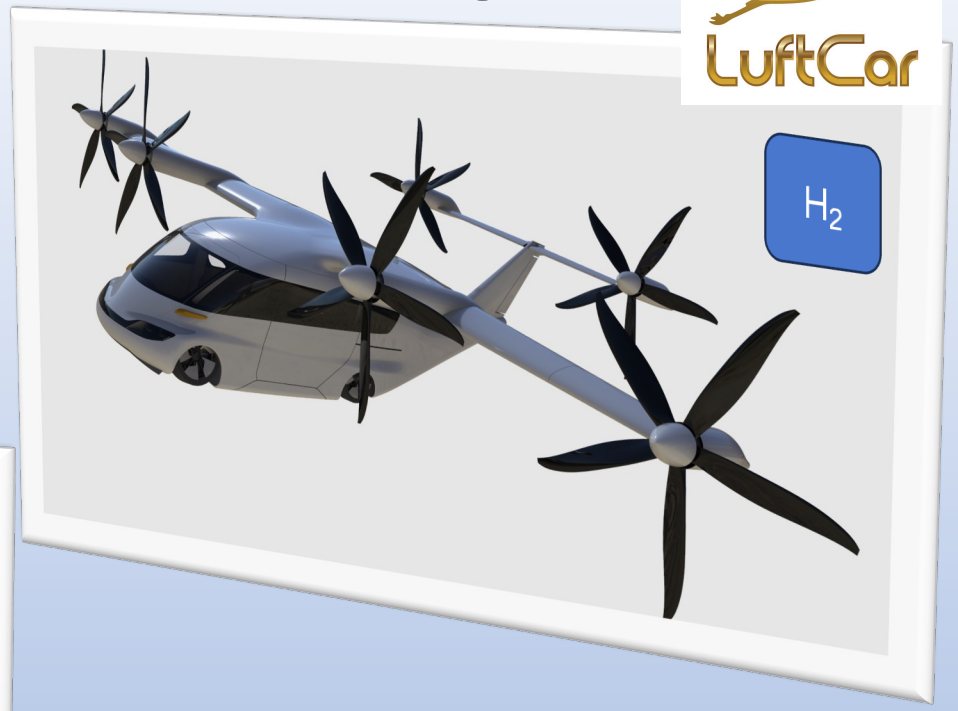
1973

Ave Mizar Flying Car

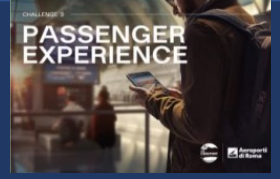
2019

Terrafugia

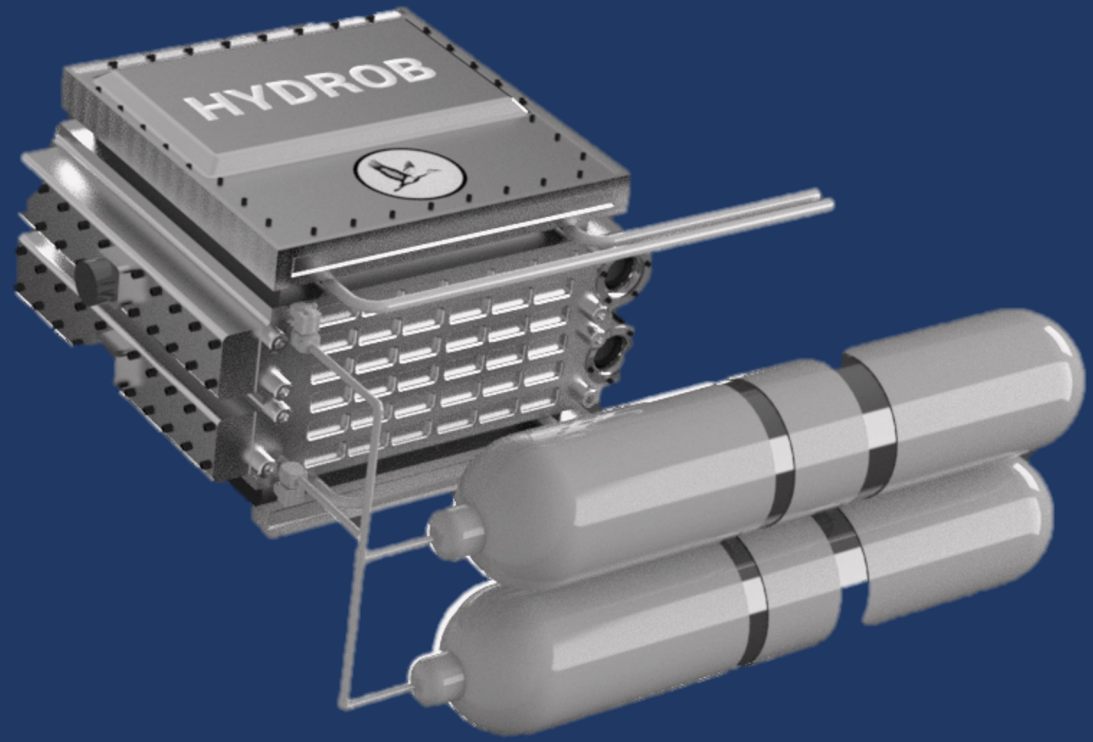
2024



Innovation 2 - H2 fuel cell electric propulsion



HYDROB™ H2 fuel cell – Battery hybrid propulsion engine



Technology Readiness Level [TRL] – 5

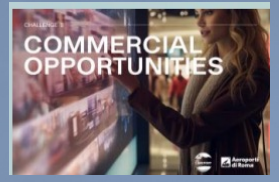
Prototype validated on bench. Vehicle integration is next step

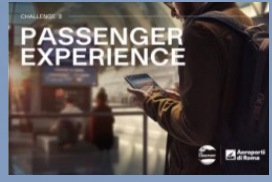
BOSCH

KENWORTH

LuftCar

Innovation 3 – collaborative H2 ecosystem





LuftCar

Air cargo warehouse

MRO / Business center

Road transportation H2 refueling

Landing pads

Storage bays with retracting autonomous H2 refueling

H2 production and storage

Flight Controls / radar

LuftPad Concept – H_2 for air vehicles, road trucks and utility back up

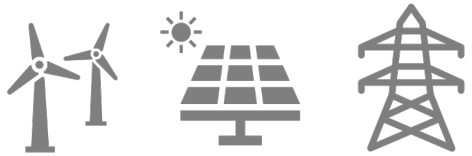
LuftCar airframes can be rented to carry road vehicles. LuftCars and other eVTOLs can be refueled here

Technology Readiness Level [TRL] – 6

Pilot project in the works in USA. Infrastructure subcomponents are available

Hydrogen life cycle at the airport

Inputs



Electricity from
Distributed renewables
(solar/wind)
Grid purchase

Water

AIRPORT

On-Site (Distributed)
Hydrogen Production

Hydrogen
Storage

Hydrogen Refueling

Zero emissions Wells to
Wheels

Back-to-Grid Solution for
Utilities

Hydrogen on-site back to
electricity for the airport

Hydrogen as
Transportation Fuel

Regional airports can be a hydrogen hub and a regional transportation hub

LuftCar H2 Tool Kit for Business Leaders

LuftCar launches

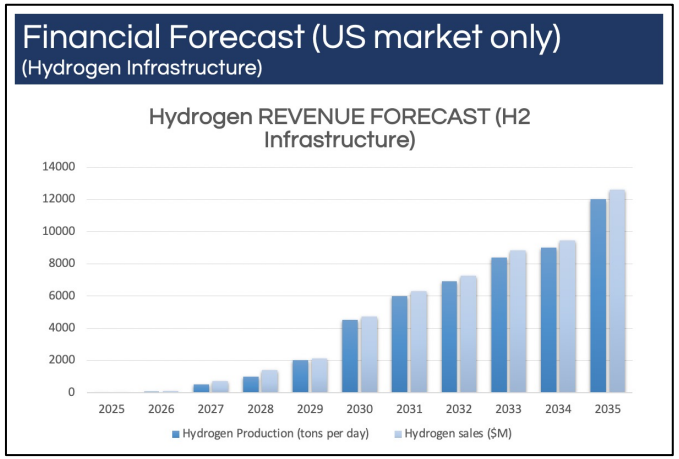
The H – E – A – T

Hydrogen Economic Analysis Tool

For business leaders to make 'Go – No Go' Decisions on H2 investment
Combines bottoms up economic analysis and emissions from NREL and Argonne's GREET model with LuftCar's Business Strategy tools

H-E-A-T
LuftCar

- Hydrogen Infrastructure strategy, forecast and planning, cost analysis, pricing and execution
- H2 Demand forecasting
- Technology roadmap – LuftCar maintains a real time technology roadmap for Hydrogen production, storage and distribution technologies and cost.
- Make onsite OR transport solutions analysis.
- Matchmaking and optimizing H2 Value chain.
- Setting up partnerships with industries, regulators, and customers
- Tableau visualization dashboards



developed H2 Go to Market strategies for top focus – Philippines, India, and Germany.

developed transportation models and H2 demand forecast for the state of Connecticut

selected by NYSERDA for submission to the US Department of Energy NE Hydrogen Hub

Advanced Air Mobility (AAM) planning report for Philippines- LuftCar

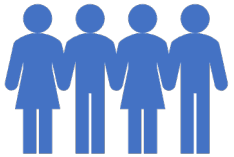
Air Traffic Management:

Air traffic forecast

Air highway planning

Entry to and exit from air highways

Management of controlled and uncontrolled air space



Use cases – market research

Air cargo delivery

Access to remote and disadvantaged communities

Community impact

Fueling Infrastructure planning

Hydrogen refueling and battery charging vertiports planning

Hydrogen and grid power demand forecast

Sustainability

Clean energy

Advanced Air Mobility (AAM) integration

Establishment of refueling infrastructures (LuftPads)

Construction and operation of H2 refueling vertiport, in partnership with H2 producer.

Alliance with global leaders in refueling equipment and H2 production

Certification and regulations:

Validation with FAA on AAM planning

LuftCar has well established relationship with FAA and EASA

Certification with local aviation regulatory body

LuftCar Accomplishments

Technology milestones:

- ✓ TRL 3 (Technology Readiness Level) for vehicle
- ✓ TRL 5 for Hydrogen engine.

Partnerships:

- ✓ OEM customer eFrancisco Motors in Philippines
- ✓ Bosch Aviation
- ✓ National Renewables Lab [NREL]
- ✓ Dusseldorf Airport, Germany
- ✓ Kenworth Trucks

Sales traction and fundraising:

- ✓ Purchase order for 15 vehicles from an UAE cargo customer.
- ✓ Raised $1.5 M in cash and kind
- ✓ LOI from Advent Health for air ambulances
- ✓ UPS expressed interest to witness first flight
- ✓ Interest from U.S. Navy
- ✓ Admitted to TechStars, but declined by LuftCar
- ✓ Cohort at the Built in Miami program

US Army support letter for the LuftCar's H2 concept

SR

Singh, Rajneesh K CIV USARMY DEVCOM ARL (USA) <rajneesh.k.singh.civ@army.mil> Today at 12:10 AM

To: santh.sathya@luftcar.com

Hi Sathya,

It was great chatting with you today.

I do believe that H2-based propulsion is a disruptive technology to significantly increase the range/endurance for Army's aviation applications

My group's focus is on developing analysis capabilities for VTOL vehicle platform design and control. I look forward to continued interactions with you and explore opportunities for collaborations to accelerate the technology maturation.

Regards,
--
Dr. Rajneesh Singh
Lead - Integrated Analysis (FCDD-RLW-WF)
DEVCOM - Army Research Laboratory
Aberdeen Proving Ground, MD-21005
Cell: 301-938-5402
Email: rajneesh.k.singh.civ@army.mil

U.S.ARMY

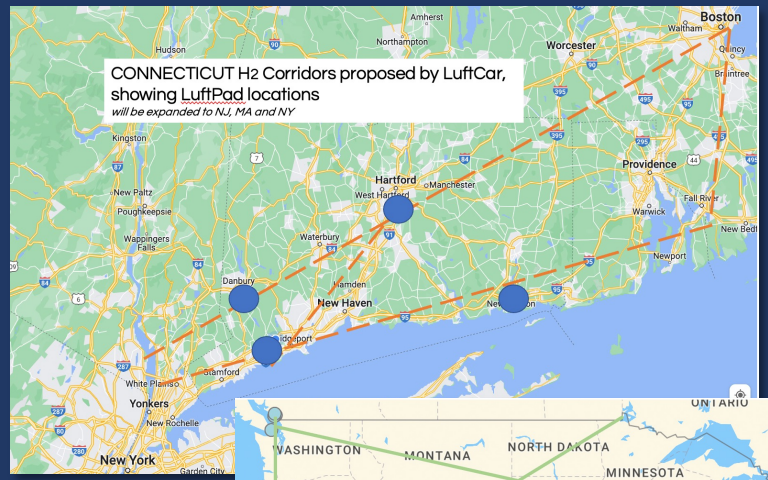
NAVAIR The First Option Ready • Willing • Able OFFICE OF SMALL BUSINESS PROGRAMS

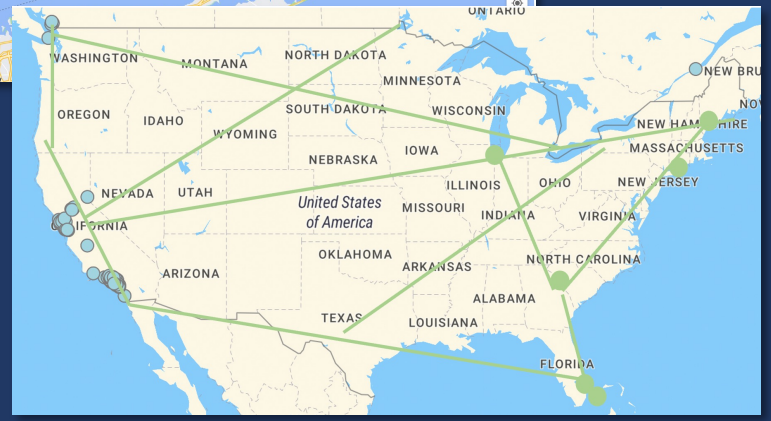
Philippines Department of National Defense Letter of Interest

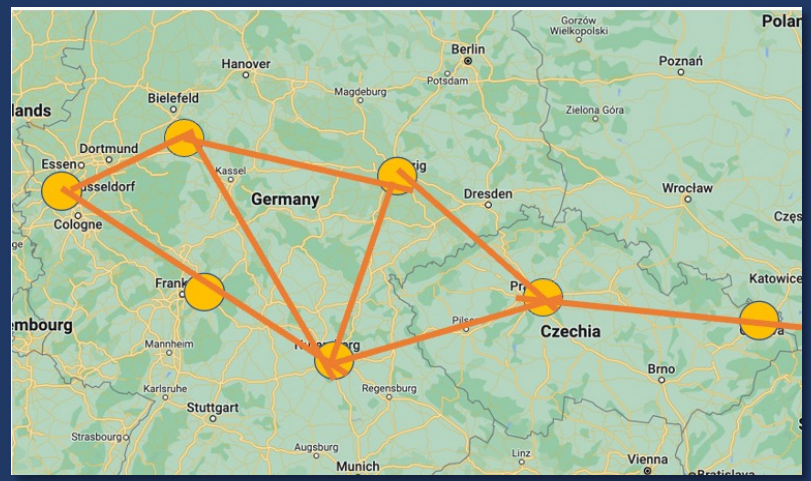
Letter of interest signed by Maj. Alexander Adajar, PAF, military assistant of Sec. Joselito Ramos, Department of National Defense Assistant Secretary for Logistics, Acquisition as part of the Self-Reliant Defense Posture from Philippines

KAGAWARAN NG TANGGULANG PAMBANSA REPUBLIKA NG PILIPINAS

LuftCar - Hydrogen refueling infrastructure planning







LuftCar has established government relations in France, Czech Republic, Philippines, UAE and USA

LuftCar partnerships in development

BOSCH	Hydrogen fuel cell partner
San Francisco Motor Corporation	Road vehicle OEM partner / investor
KENWORTH	Truck OEM partner
Düsseldorf Airport DUS	Airport partner - Europe
CAA Connecticut Airport Authority	Airport partner – Connecticut, USA

UF University of Florida	Innovation hub partner Prototype partner
City of Miami Florida	'Built in Miami' partner; LuftCar is Venture Miami Cohort
NASA	Purchased license on tilt wing technology
Air Liquide	Liquid hydrogen provider

Other partners

UCONN Huskies · Argonne National Laboratory · Bridgeport Regional Business Council · Live Green · NREL National Renewable Energy Laboratory · CAT Connecticut Center for Advanced Technology, Inc. · Connecticut Southwestern Area Clean Cities Coalition

LuftCar has formed meaningful strategic partnerships and relationships to bring the LuftCar vehicle into commercialization. Prototypes are being built in Florida.

Awards and Recognition

Clean Tech Open 2021 regional award winner

Aviation Week Demolition Derby winner for best concept - 2021

CADE museum Innovation Prize finalist -2021

TechConnect Defense Innovation Award winner – June 2022

TechConnect Urban Air Mobility Finalist – Sept 2022

Global Health and Pharma – best air ambulance concept – Oct 2022

Innovator of the year – Hydrogen Aviation – Live Green CT – Dec 2022

Sought after Industry presenter and thought leader (2021 – 2024)

Top 10 Aviation Startups – Feb 2024

Selected for TechStars Feb 2024

COMPETITIVE LANDSCAPE

eVTOL	FLAG	ROAD AND AIR	RANGE	H_2	PAYLOAD	AUTONOMY
LuftCar		+++	+++	+++	++	++
Joby		-	+	++	-	+
Lilium		-	+	+	+	-
Archer		-	+	+	+	-
Beta Tech		-	++	+	+	-
Pipistrel		-	++	-	+	++
Wisk		-	-	+	-	++

Best in class range and payload
300 – 500 miles, 1500 lb.

3X market size due to H2 fuel cell electric propulsion

2X market size due to air and road vehicles ‘docking mechanism’

Why invest in LuftCar?

- High growth industry – $30 B revenue in 10 years
- 2X more market opportunity than competition
- Ride the Hydrogen wave and eVTOL wave
- 40X ROI for early-stage investors in 10 years
- Futuristic air/road concept addressing today's need
- Global market, cutting edge IP
- Dealership and supply chain opportunities in global markets
- First right to partner for early-stage investors

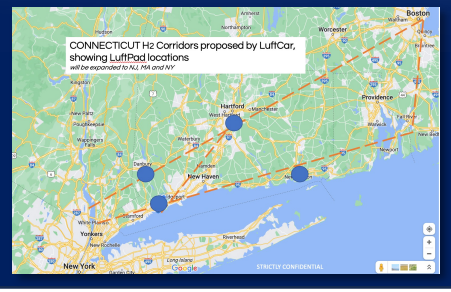
Impacts on ADR Sustainability Values

Health emergency

LuftCar air ambulances can deliver healthcare including vaccines and medical shipments (up to 1500 kg payload) and transport doctors to distant communities (up to 550 km range). LuftCar has secured a letter of interest from Advent Health – a major healthcare provider in the USA

People

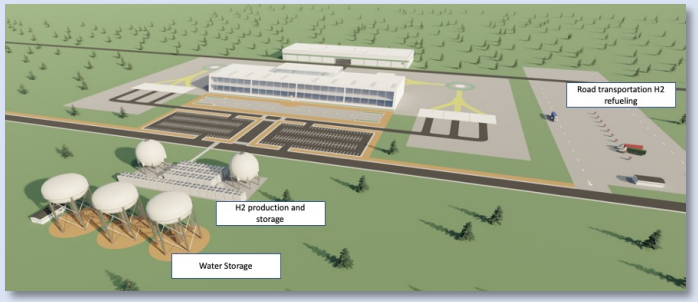
Economic development and territory



LuftCar vehicle concept enables low cost (0.6 to 0.8 $ per seat per mile), heavy payload (>1500 kg) high range (550 KM) capability connecting people from distant communities to urban centers.
This creates quicker access to jobs , medical care and tourism for all sections of the society, democratizing air travel. LuftCar vehicles can be scaled up to accommodate 20 passengers.
The Air Cargo – last mile, door to door concept will help communities access to essentials like food, commercial goods and industrial cargo. Food producers and small businesses can distribute goods to distant markets directly without the help of brokerages.

Climate change

Green infrastructure



LuftCar vehicles create demand for green hydrogen gas (30 Kg of Hydrogen per refueling per mission). We expect around 50 billion tons of hydrogen to be sold due to vehicles like LuftCar by 2035.
LuftCar vehicles are ZERO emissions from Wells to Wheels / Wings.
The LuftPad concept being built in airports is our green infrastructure solution. It involves partnerships with green hydrogen producers on site and liquid hydrogen storage providers. We minimize losses, reduce the cost per kilogram of hydrogen of hydrogen at the pump and create a compelling business case for green hydrogen transition.

Diversity, Gender Equality and UN WEP

LuftCar is a minority owned organization with 50% minorities in leadership

Target for 2024 / 2025:
Women in leadership team: 50%

Women and minorities in mid level management: Proportionate to demographics in the industry (40% women and 30% minority)

40% reinvestment in local communities

No tear down of existing infrastructure

Level 4 autonomy, enabling women empowerment in the long-term developing economies