



# The drive to fly

Innovating everyday mobility by offering air  
mobility solutions for generations to come





# Mobility is a basic human need





# Mobility is Changing







# The need for mobility is growing due to GDP growth

Road infrastructure is not sufficient to deal with traffic





Adding a third dimension  
to our mobility offers new  
highways in the sky

Shortening commutes

Hardly any additional infrastructure  
needed







# CO2 neutral transportation is not a question of 'if'

Transportation is currently the largest  
producer of energy-related CO2  
emissions accounting for 24%

<https://www.weforum.org/agenda/2021/04/future-of-transport-sustainable-development-goals/>

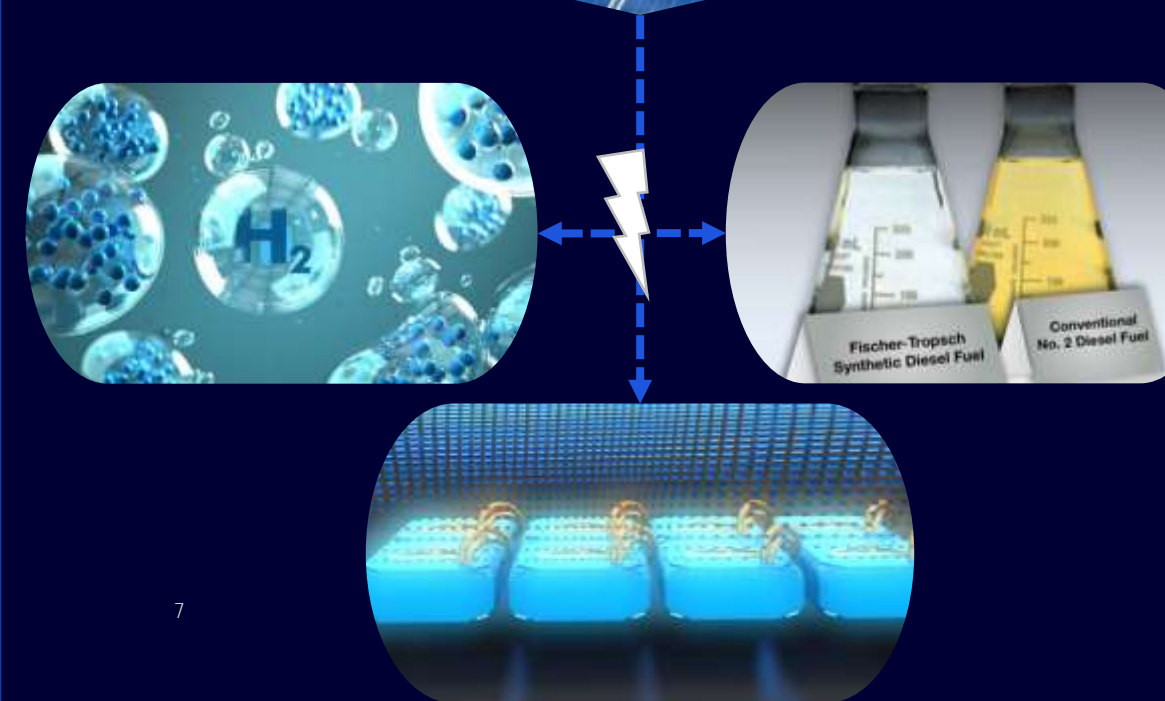






For Aviation the following technologies will be the solution:

- E-Fuels: CO2 Neutral Synthetic Fuels
  - “Can reduce the CO2 emissions of internal combustion by around 85%”
    - Porsche VP Dr. Frank Walliser
- Hydrogen
- Battery powered (only for short range)





# Autonomous, connected, electric and shared (ACES) solutions

Are safer, less congestion, zero-  
emissions and lower mobility cost





# Resulting in an emerging air mobility market





FlyDrive  
Mobility

Advanced Air  
Mobility Market  
\$1.5-\$2.9 Trillion  
by 2040  
(Morgan Stanley)

Urban  
Air  
Mobility







# Dominating the first big market segment in the Advanced Air Mobility industry, FlyDrive Mobility.

## Segment 1: FlyDrive

the market segment of the PAL-V Liberty

Door-to-door air mobility  
400-500 km range



## Segment 2: Urban Air Mobility

Platform-to-platform public transport  
40-100 km range







## What's FlyDrive?

“Advanced Air Mobility ”  
is composed of the  
FlyDrive + VTOL segments

Together these are worth  
**\$ 2,7 trillion**  
over 2024-2040

The FlyDrive segment is  
very distinct from the VTOL  
segment

### 2024 – 2040

Phase 1: **FLYDRIVE**

**Door to Door region**

2.5m vehicles until 2040  
PAL-V with little competition



The FLYDRIVE segment benefits  
from **several major advantages**:

- ▶ 500km / 310 miles flight range
- ▶ Uses **existing infrastructure** and **regulation**, fast time-to-market
- ▶ « Door-to-door »
- ▶ Owned by users and offered as service
- ▶ Individuals, governmental organisations and corporations

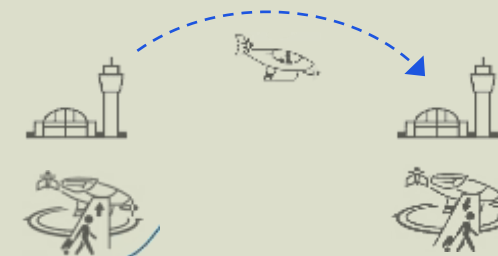
**Vs**

### 2028 – 2040

Phase 2: **VTOL**

**“bus like service :station to station”**

5.2m vehicles until 2040  
Intense competition



- ▶ Restricted to short hops
- ▶ Requires **new infrastructure** and **new regulation** (long term)
- ▶ « Hub-to-hub » air taxis..... (bus)
- ▶ Public transport
- ▶ Public transport corporations and governmental organisations

It all starts with  
the Liberty







# Today, small helicopters/ planes are hardly used for mobility

## Because:

1

You are never sure you reach your destination or get back home (weather)

2

Many strips are in isolated areas, no taxi is coming, no train, no rentals. You will have to hitchhike

3

You always have to go the same way back to pick-up your plane and car, no freedom of travel



Technical

Based on the  
safest and  
easiest  
aviation  
platform:

The  
Gyroplane







# A solid foundation to be first in FlyDrive segment and to scale from there



2008: Started with a strong visionary team of world-class engineers, certification experts and entrepreneurs



2012: Flying and driving the PAL-V One, Proof of Concept wrt technology *AND* certifiability



2020: European Road admission for PAL-V Liberty



2021: Full certification basis finalized with EASA



Today: Final stage in type certification and delivery start: compliance demonstration



# The PAL-V Liberty offers true door-to-door air mobility with one vehicle



Platform to sustainable aviation:  
1<sup>st</sup> gen: E-Fuels or standard car fuel  
2<sup>nd</sup> gen: Hybrid  
3<sup>rd</sup> gen: Full electric



Max flight speed: 180 km/h  
Max drive speed: 170 km/h



400-500 km flight range (single leg)  
800-1000 km flight range (one-stop)  
1300 km drive range



2 people



European Road Admission obtained EASA CS-27 (Aviation) in the final stage



Low noise due to low rotor RPM



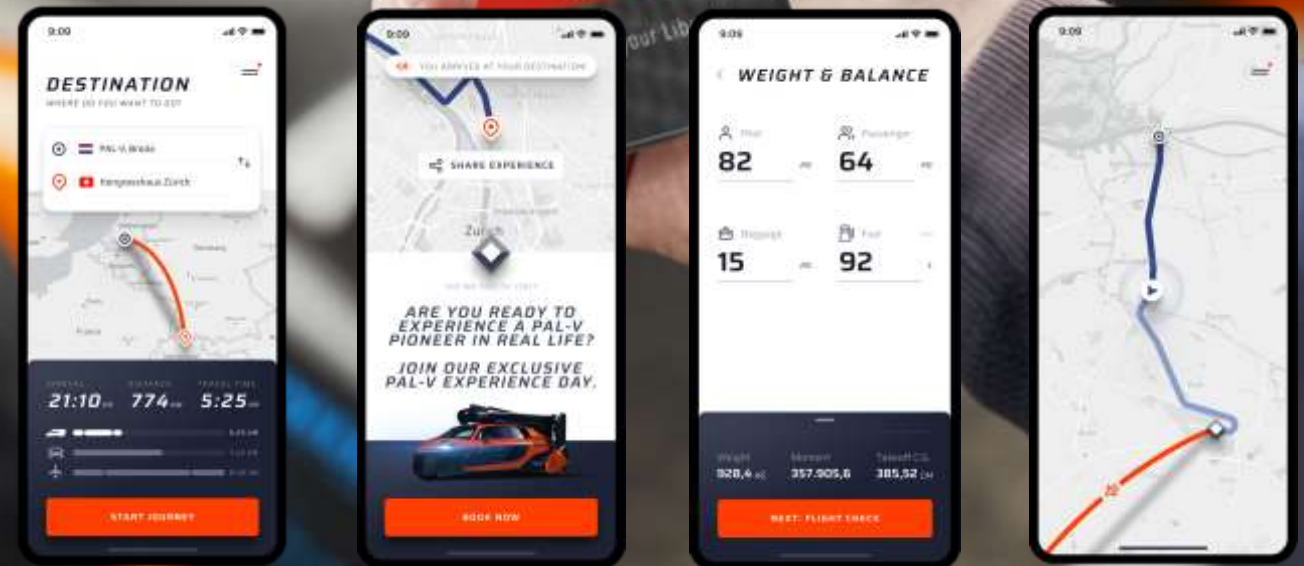




# PAL-V App supporting the customer full customer journey and connecting the full ecosystem

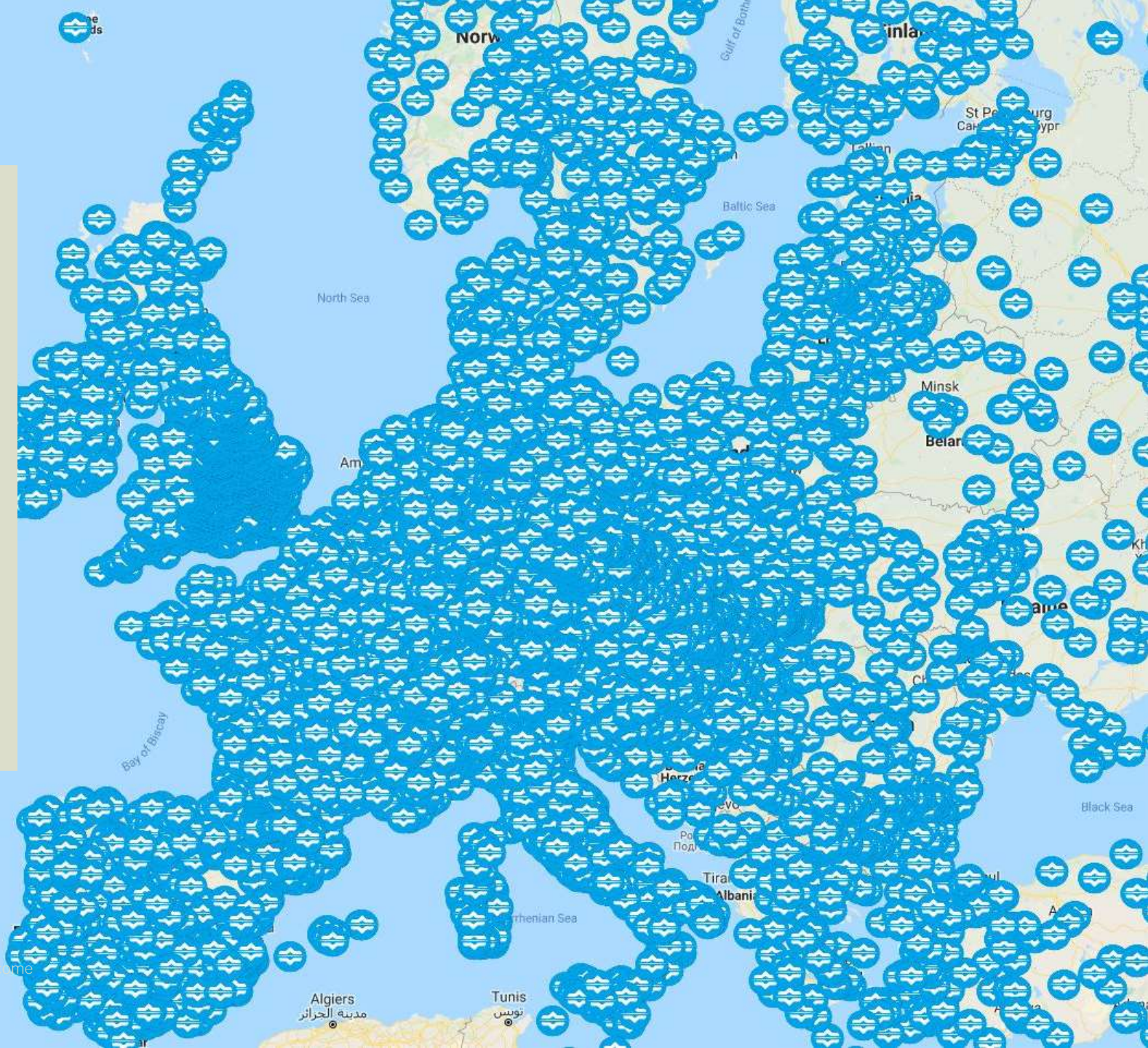
Including:

- FlyDrive navigator
- Vehicle connection & status
- Automatic status updates to i.e. maintenance and flight school
- Airport fee payment system
- Insurance & lease options
- Community & networking
- Ride sharing/MaaS

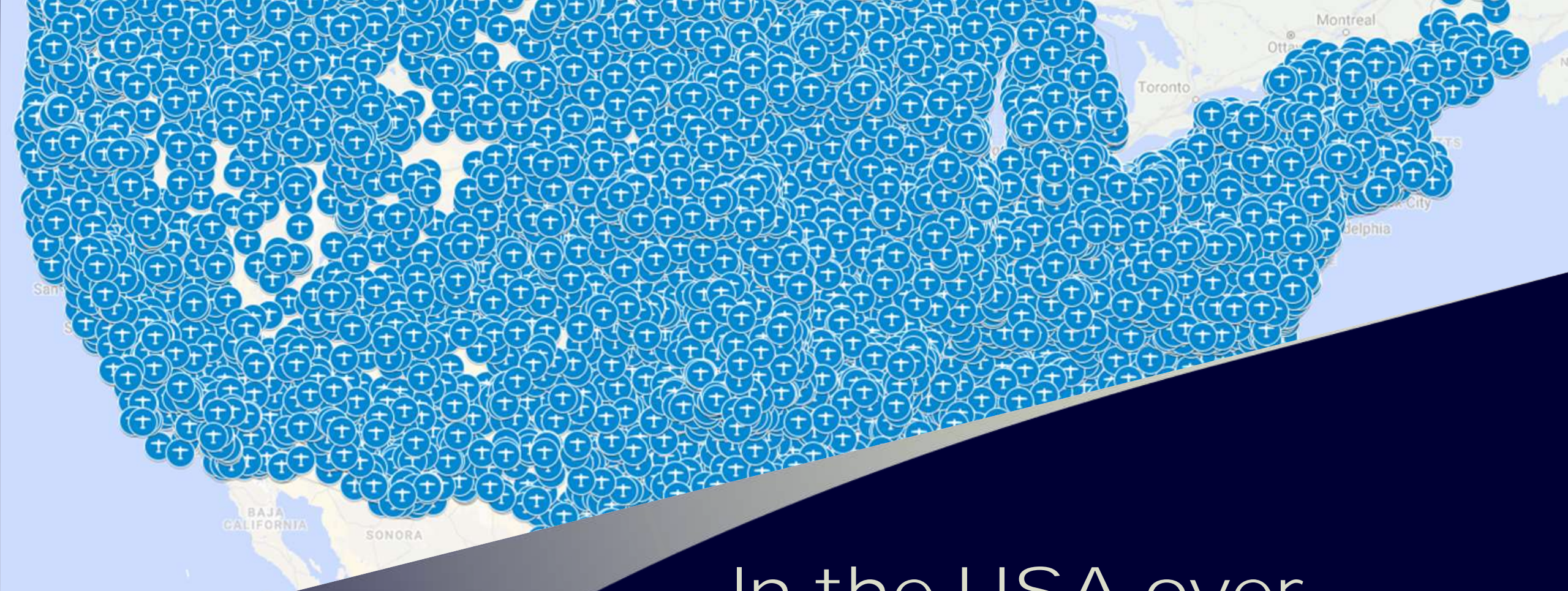




Small airstrips  
are everywhere  
around the  
corner







In the USA over  
14,000 airstrips exist

And landing on private property  
is allowed



Take-off from  
private land:  
Possible in  
most countries

Landing on grass is  
even better than tarmac







Many  
professional  
applications



Professional application:

# Policing





Professional application:

First response





Professional application:

Coast guard/  
observation





Professional application:

## Delivery/ Taxi Service



Professional application:

Peace keeping





Professional application:

Homeland  
security:  
Special  
Operations





Professional application:

Aid operations,  
First response





# Flexibility of driving or flying

Choose the most efficient mode of transportation, driving or flying. Pass the traffic and natural obstacles





# Complying with world aerospace regulations

- EASA has confirmed certifiability in 2018 (first discussions in 2009)
- FAA regulations are identical to EASA
- 80% of worldmarket accepts EASA (McKinsey)
- Certifying a plane/helicopter takes 8-10 years: PAL-V is in last phase

A very strong second layer of protection  
(on top of strong patent portfolio)



FAA







# Certification Progresses well Road approval August 2020



# Cooperation with prestigious parties in maintenance



Kuwait Airways: one of the biggest maintenance suppliers in the Gulf Region







# Royal attraction



# Growing brand in China



荷兰飞行汽车制造商PAL-V首席执  
行官及创始人

Robert Dingemanse





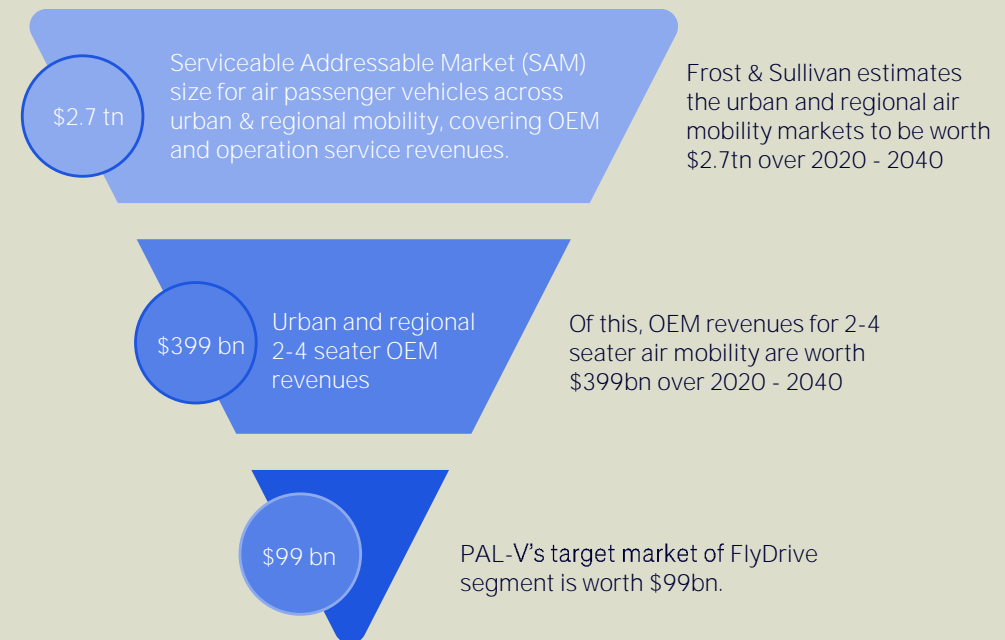


## Advanced Air Mobility market summary

We are a leading  
player in a  
2.7 trillion-dollar  
market

With a total addressable market size  
estimation of \$99 bn in FlyDrive solutions.

A \$2.7 trillion total market, 2.5 million vehicles until 2040. PAL-Vis positioned to be the leader in the Advanced Air Mobility market due to its early start in creating a FlyDrive product.





# The company from above







2022 Fundraising  
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# Changing the future of mobility

