

# Austro Engine



## Fuel Efficiency in Aviation

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# Austro Engine



## Agenda

1. Introduction of Austro Engine
2. Challenges of the aviation industry
3. Austro Engine's evolutionary technology vision
4. Solutions and concepts



## Austro Engine – Engineering Innovation

- Competence Center for aviatric powertrain solutions founded in 2007
- Member of Diamond Aircraft Group
- Development and production organization
- Located in Wiener Neustadt, 85 employees
- Development and production focus on efficient Heavy Fuel piston engines
- Light Weight Rotary Engines complimentary field of operations

## Unique Selling Proposition

- Heavy Fuel Capability
- Ultra-Lightweight engine systems
- Application Integration Services

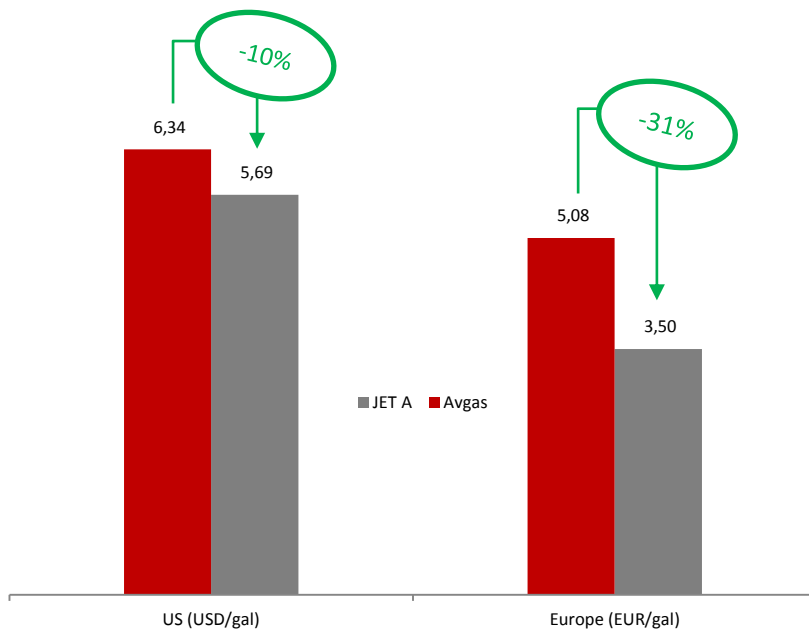


# Industry Challenges - GA



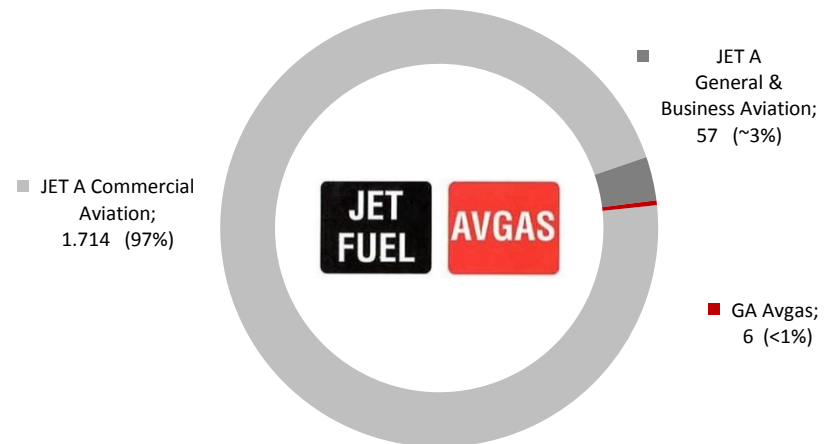
## General Aviation industry facing technology transition

- Traditional OEM primarily focusing on classic aircraft design
- Fuel economy and availability as driving changes of technology
- Disruptive Technology considered key element of market success



Data source: US NE region, [www.100ll.com](http://www.100ll.com) – Europe: LOAN prices

## Approximate fuel consumption 2012 by aviation in Million Barrel



Data source: Internal analysis referring partially to IATA reports

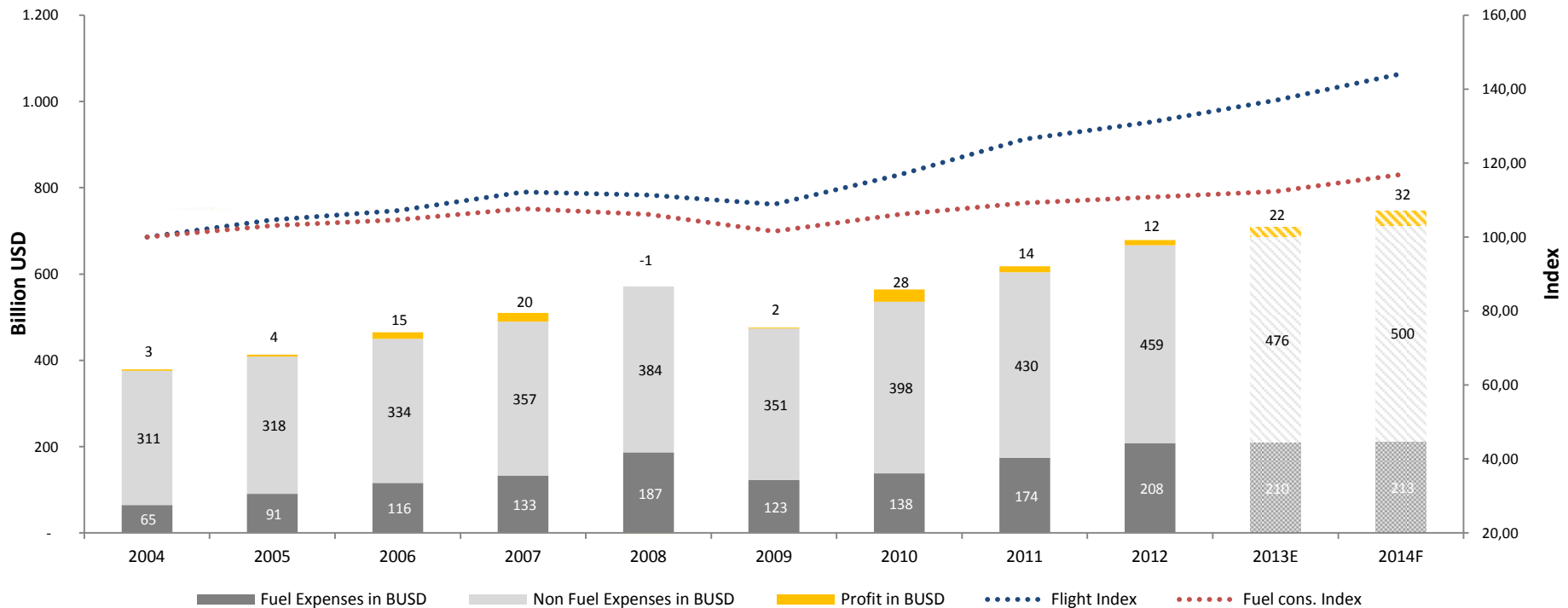
# Industry Challenges - Airlines



## Airline Industry driven by high dependency on fuel costs

- Fuel costs accounts for ca. 30% of total operating costs (2012)
- Thin profit margins as main industry characteristics based on low price acceptance
- Increased operations efficiency over last decade
- Efficiency gains based on new generation of fleets and engines

Expense Structure 2012



# Evolutionary technology vision

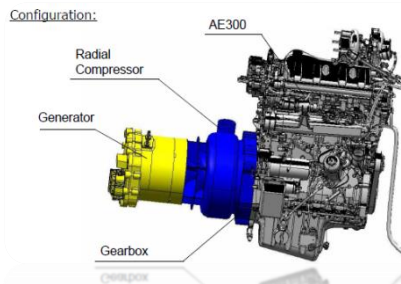
**Austro Engine striving to provide resource efficient and ecologically worthwhile propulsion technology for aviation**

- Derived Strategic Vision contains three main goals
- A. Deployment of Technology – General Aviation
- B. Increase of efficiency – Commercial and General Aviation
- C. Research and Development – Commercial and General Aviation



A

**Deploying latest technology standards to aviation**



B

**Increase efficiency of aviation propulsion systems**



C

**Research and Development of alternative fuel sources**

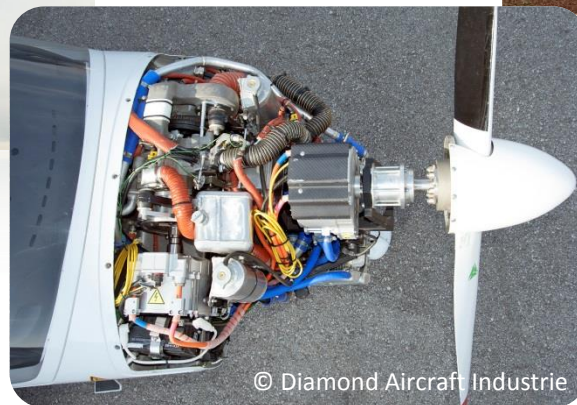
Complexity, Time



# C. Alternative Systems

## Austro Engine actively involved in development of future propulsion systems

- Hybrid propulsion system development in cooperation with EADS and Siemens
- Algae Fuel evaluation in partnership with EADS
- Electric Engine development with French partners



## Efficient use of oil based fuel of main essence as alternative technologies may have long-term perspective

- Fuel Economy of key driver for future private as well as commercial aviation
- Efficiency gained through technology evolution
- Development of alternate propulsion solutions seem to have long-term perspective







## Engineering Innovation

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