

**egts™**



# Fuelling Aviation with Green Technology: Overview and Environmental Benefits of EGTS electric taxiing

Sept 9 & 10, 2014

 **SAFRAN**  
Messier-Bugatti-Dowty

**Honeywell**  


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## EGTS™ – Meeting Agenda

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- Why EGTS?
- General Introduction to EGTS System
- Benefits/Value
- Summary and Way Forward

*Informing ICAO on EGTS Program and Related Benefits*

# Why An Electric Taxiing System ?

30%-40% of Airline cost is fuel

6% of fuel is burnt on ground

60,000 FOD incidents cost \$1.1B

50% on runway & stand Insight SRI Ltd.



Aviation Industry produces 2% of worldwide CO<sub>2</sub> emission



Air traffic in Europe will nearly double by 2030

19 to 39 key airports at saturation



Neutral Carbon Growth from 2020



50% reduction in carbon emission by 2050



Noise reduction improves comfort of passengers and ground personnel

**SAFRAN and HONEYWELL Have Formed a 50/50 JV to Develop EGTST<sup>TM</sup>**

# Concept of EGTS

An innovative system allowing aircraft to **pushback and taxi** *without main engines running*



APU generator powered motors allow aircraft to “taxi”

***A Step Towards The More Electric Aircraft***

# EGTS Schematic Architecture

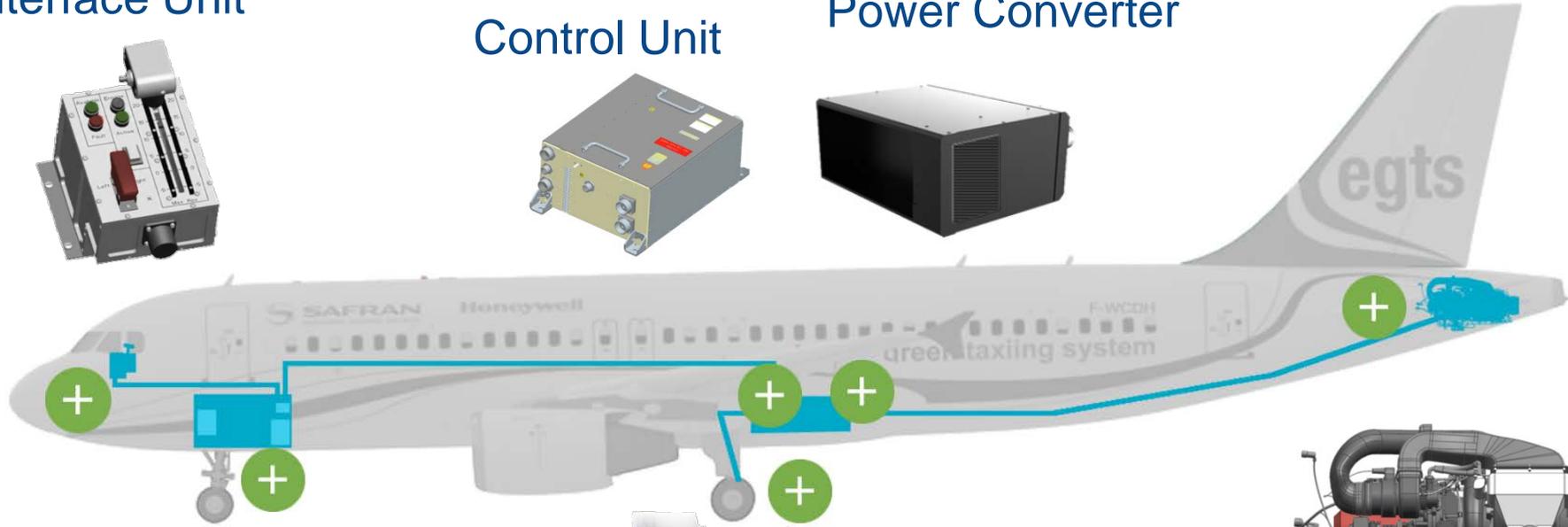
Interface Unit



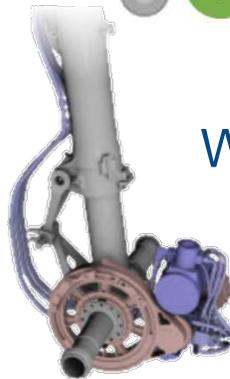
Wheel Actuator Control Unit



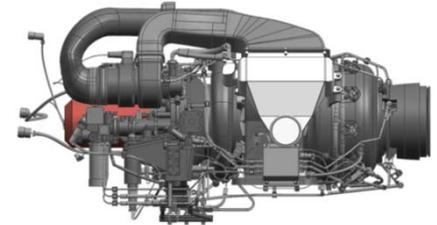
Power Converter



EGTS Controller



Wheel Actuator

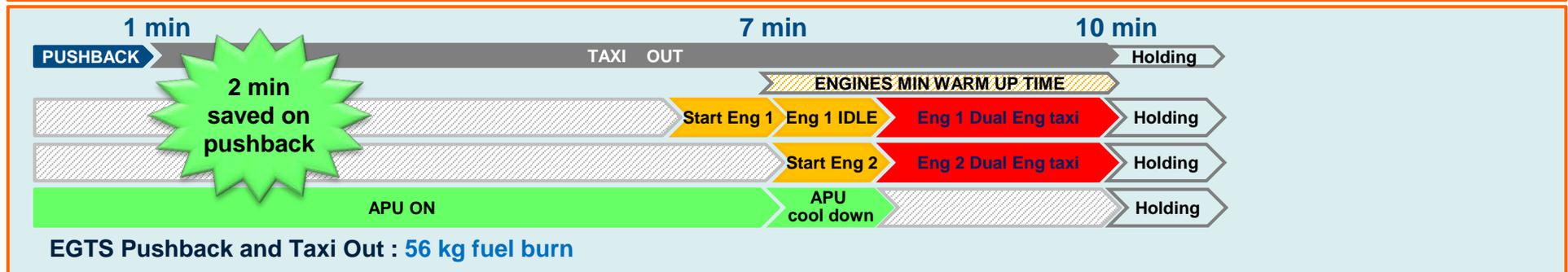
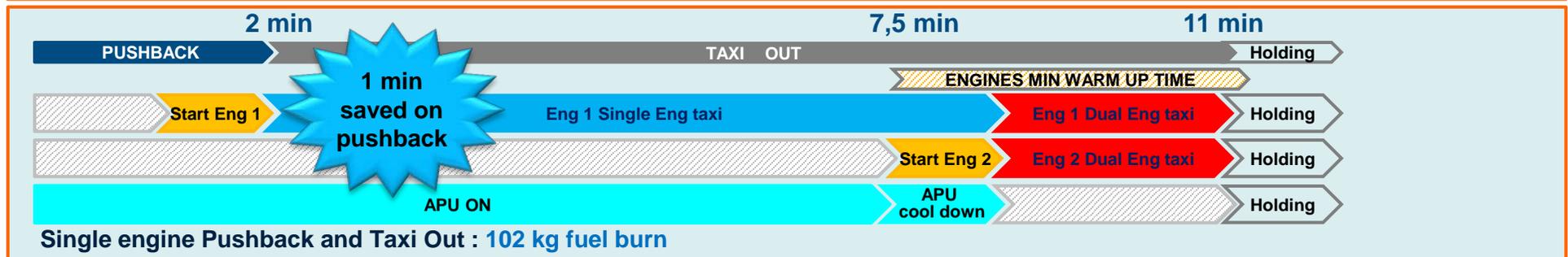
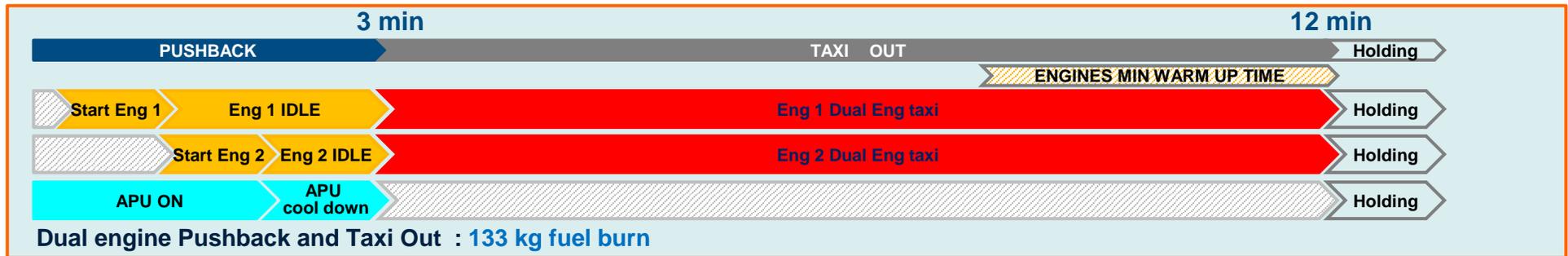


APU Generator



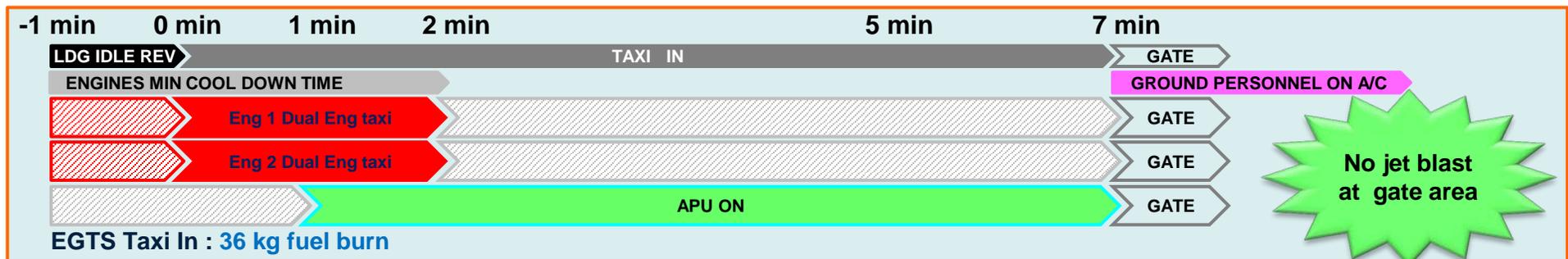
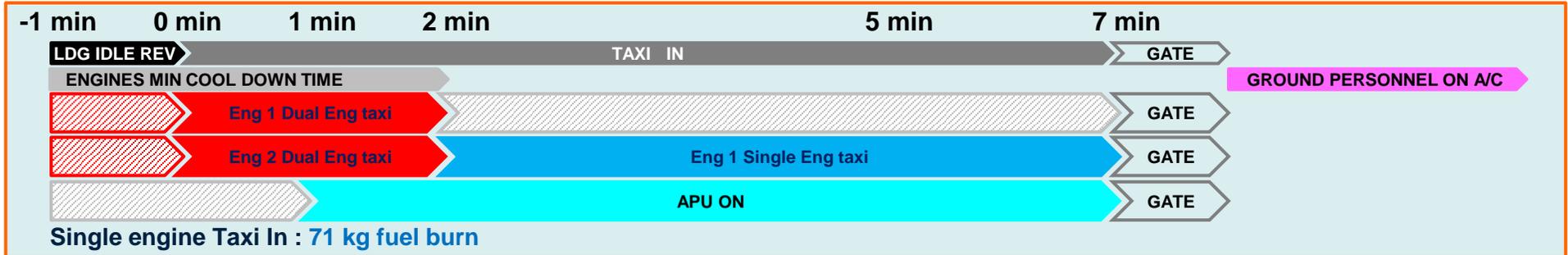
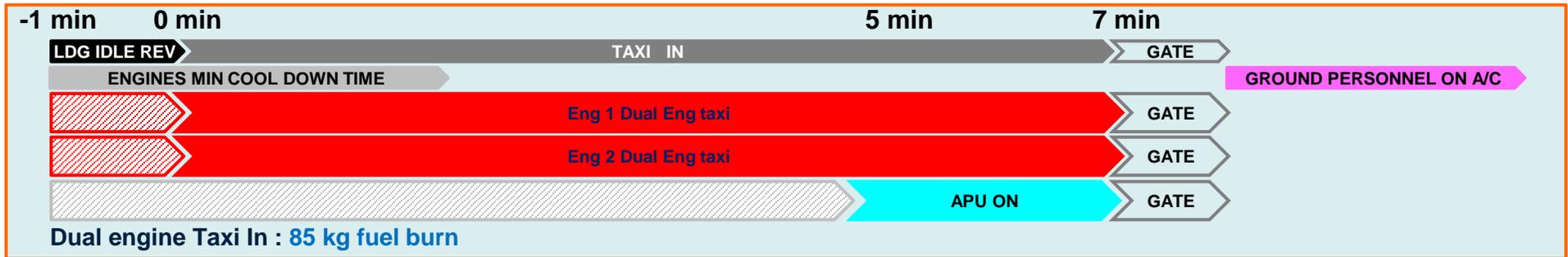
**EGTS™ - Technology Under Development**

# Ground Operations Process – Pushback & Taxi Out



**Up to 2 Min. Time Savings with EGTS vs. Dual Engine Taxi**

# Ground Operations Process – Taxi In



**Safer Environment for Ground Handling Personnel**

# EGTS Value Proposition

- High value offering to Single Aisle Airline Customers with significant savings and “Green” benefits,

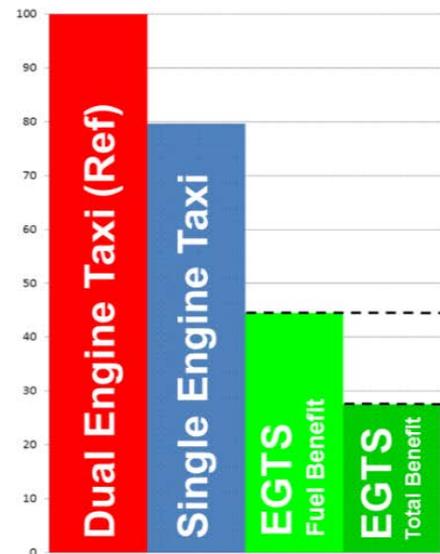
## *designed to:*

- meet Airlines & Airports operational requirements

## *reducing:*

- Fuel burn
- Airport Emissions / Noise
- Need for Ground Tug
- Other Direct Operation Costs

Dual / Single Engine Taxi / EGTS  
Fuel burn and Costs



### Additional EGTS savings :

- Pushback costs
- Carbon credit
- Foreign Object Damage
- ....

### As well as:

- Aircraft positioning
- On Time Performance
- ...

**Target Savings: ~3% Block Fuel Reduction Depending on Mission**

## EGTS Environmental Benefits

- Slashing fuel burn and emissions on ground

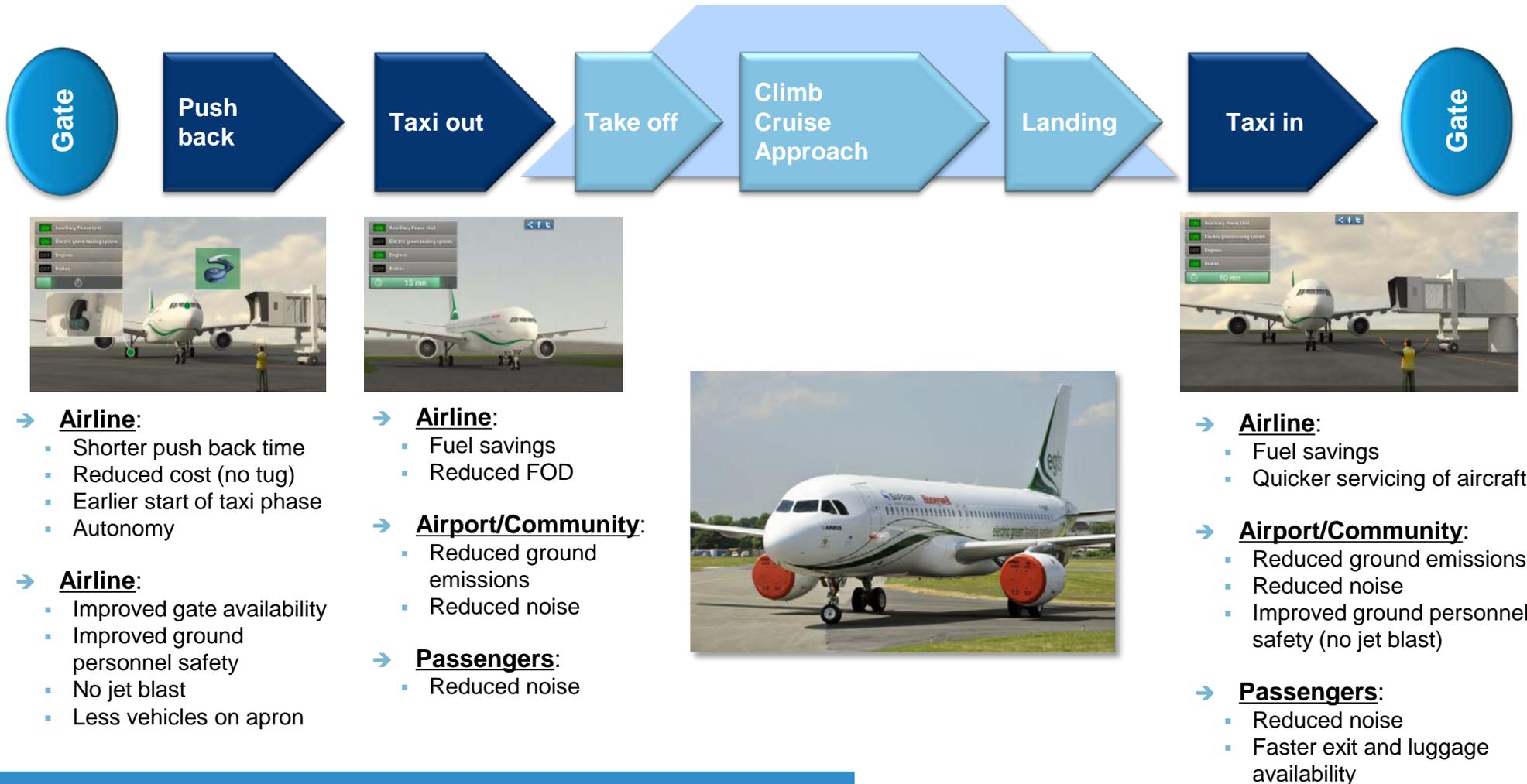


Example : 17 min taxi out



*The Best Opportunity to Drastically Reduce Emissions on Ground*

# EGTS Benefits Airlines, Airports, Community and Passengers



**Delivers Benefits to All Stakeholders**

# Summary And Way Forward

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## • Main benefits

- Fuel burn and pushback costs savings
- Ground operations improvements
- Environmental footprint reduction



## • Next steps

- Technology maturing through simulation and test program in labs and on aircraft
- Work on benefits for all stakeholders – Airlines, Airports, Community

***EGTS : An Innovation Supporting Sustainability***

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