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FlyORO

Session 6: Era of Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other Aviation Cleaner Energies

Agenda

01 **FlyORO Introduction**
Our journey
Achievements to date

02 **AlphaLite**
The world's first SAF modular
blending system

03 **Analysis**
6-months fuel price comparison
Flexible blends price comparison

04 **Airports Integration**
Last-mile blending benefits
Collaboration operations flow

05 **Last-mile Case Study**
Conceptualizing last-mile SAF
blending operations at ATH

- Jan 2022 Launched FlyORO Brand
- Jul 2022 IATA Strategic Partner Fuel Technical Group
SGD 565K Investment & Government Grants
- Aug 2022 Shell Startup Engine Programme and
Featured Startup at Singapore International Energy Week
- Jan 2023 Trial & Commissioning of First AlphaLite Unit (TRL 9)
- Apr 2023 Grand Launch with Jet Aviation
- Q4 2023 ISCC Corsia Plus & ASTM Organization Member
USD 1.6M Pre-A Expansion Funds to AU & US
- Q1 2024 Signed First Commercial Deal in Australia



SELETAR AIRPORT, JET AVIATION



LATEST PROJECT AWARDED:

WELLCAMP TOOWOOMBA AIRPORT (WTB) BY WAGNER SUSTAINABLE FUELS

AlphaLite in construction, ready to be commissioned by Q4 2024.



Proprietary Technology

WO2020/145893



A revolutionary cost effective way to blend SAF for airports.

Custom Blend

On-Demand

Digital Integrated

ASTM Specification

Deploy Anywhere

Flexible Scale-Up

Modular & Easy Tie-in

PROPRIETARY SAF BLENDING TECHNOLOGY

1 Fluid Detection



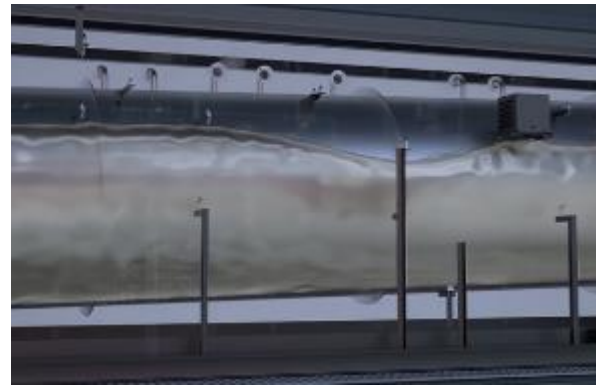
- Fuels charged at precise volume, ratio and charging rates.
- Fluid properties detected along charging line.

2 Automated Blend Recipe



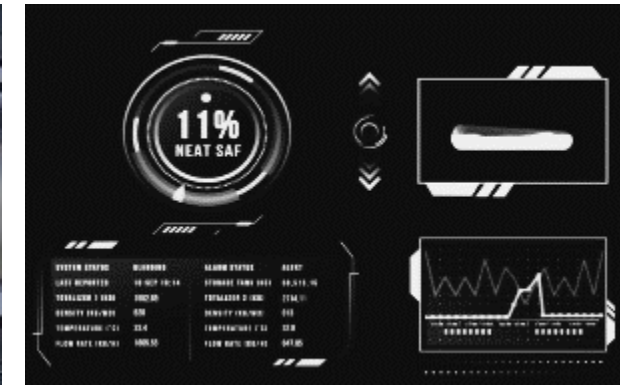
- Feed data sent to control system.
- Auto generate blend recipe specific to fuel type, volume and compositions.

3 Precision Blend Control



- Based on feed data and computational fluid dynamics for ASTM QA.
- No need for conventional mixer.

4 Data Integrations



- Blend recipe is optimized fit-for-purpose to exact blend product type.
- Short batch cycle of 20-30 mins.

1

Standalone

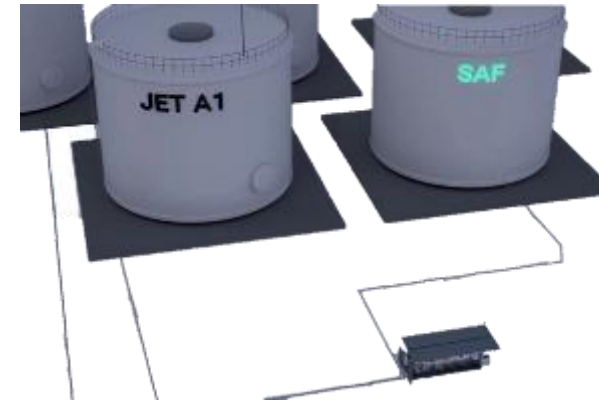


Blend throughput

- 2,160,000 litres/day per unit
- Higher capacity can be configured

2

Bulk Tank Integration



Blend throughput

- Depends on tank capacity
- Higher capacity can be configured
- OR multi-units integrated for scaleup

HOW WE SIMPLIFY FOR AIRPORT FUEL OPERATORS

Sustainable competitive advantage in a fast-growing market

80% ↓

Cheaper VS constructing
new tanks

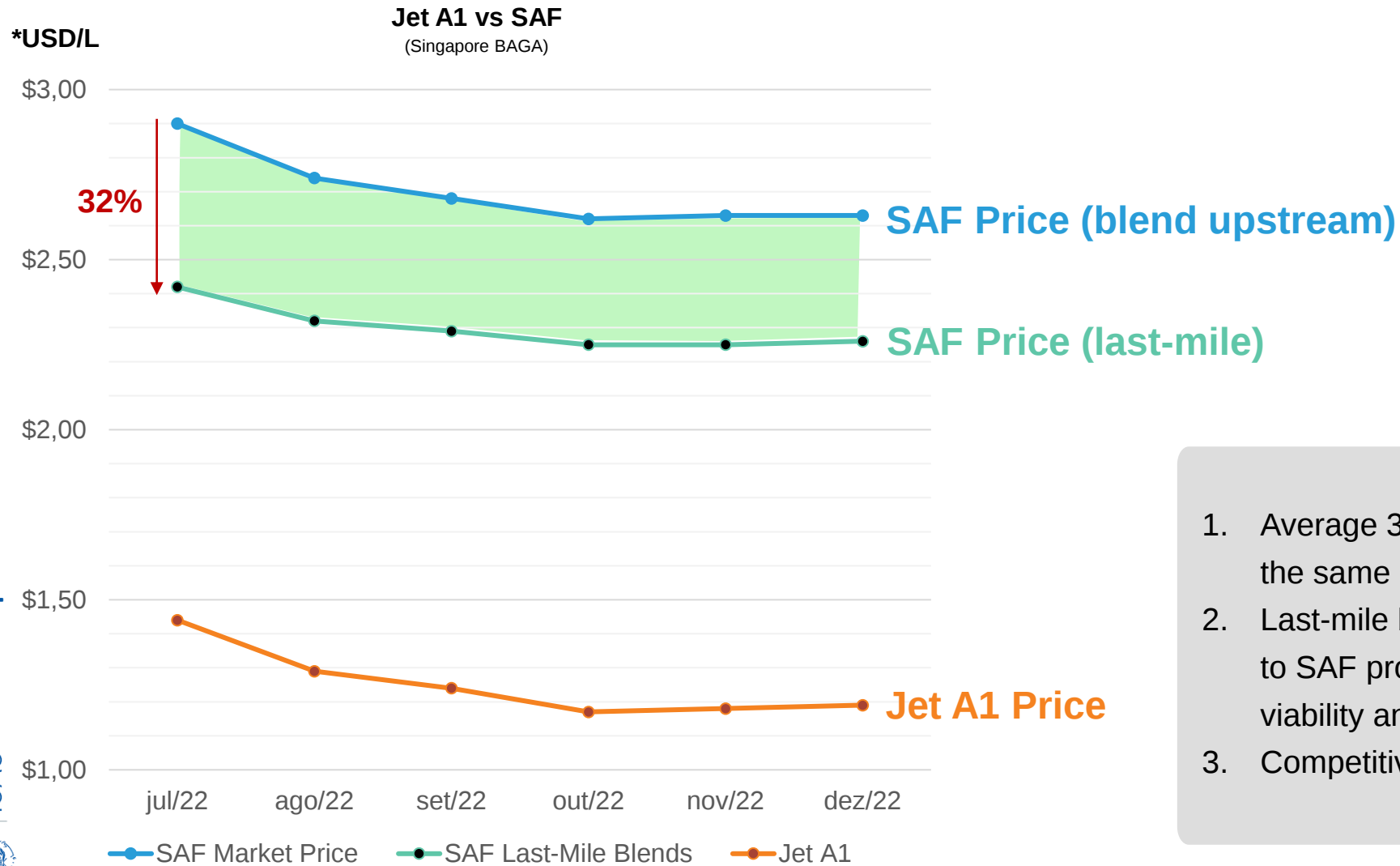
83% ↓

Faster VS constructing
new tanks

93% ↓

Faster in blending
order fulfilment time

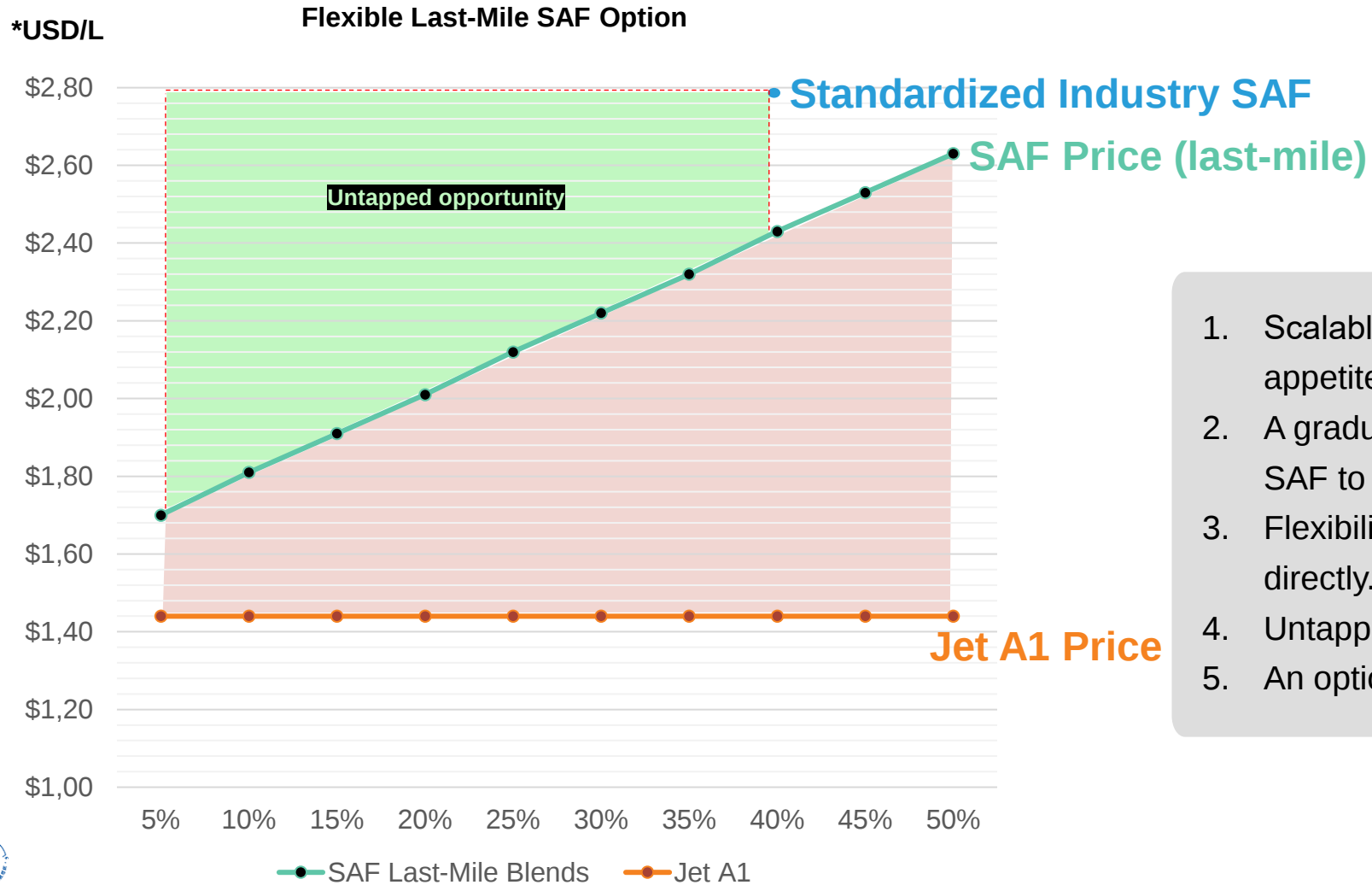
PRICE COMPARISON 6-MONTH ANALYSIS



1. Average 32% savings in SAF procurement for the same emission reduction attributes.
2. Last-mile blending offers a strategic approach to SAF procurement, enhancing economic viability and industry adoption.
3. Competitive SAF pricing.

*Assumptions: Batch size 20kL; ASTM USD0.09/L; Uplift USD0.07/L; Blend ratio 40%

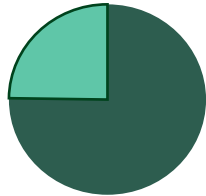
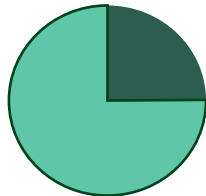
FLEXIBLE BLENDS & REDUCED COST OF ADOPTION



1. Scalable SAF adoption according to flyer's appetite.
2. A gradual and acceptable approach to introduce SAF to flyers.
3. Flexibility and control fully managed by flyers directly.
4. Untapped opportunity to scale SAF adoption.
5. An option for lower cost adoption.

*Assumptions: Batch size 20kL; ASTM USD0.09/L; Uplift USD0.07/L; Jet A1 USD 1.44/L

AIRPORTS CONTRIBUTE BY BEING INFRASTRUCTURE READY

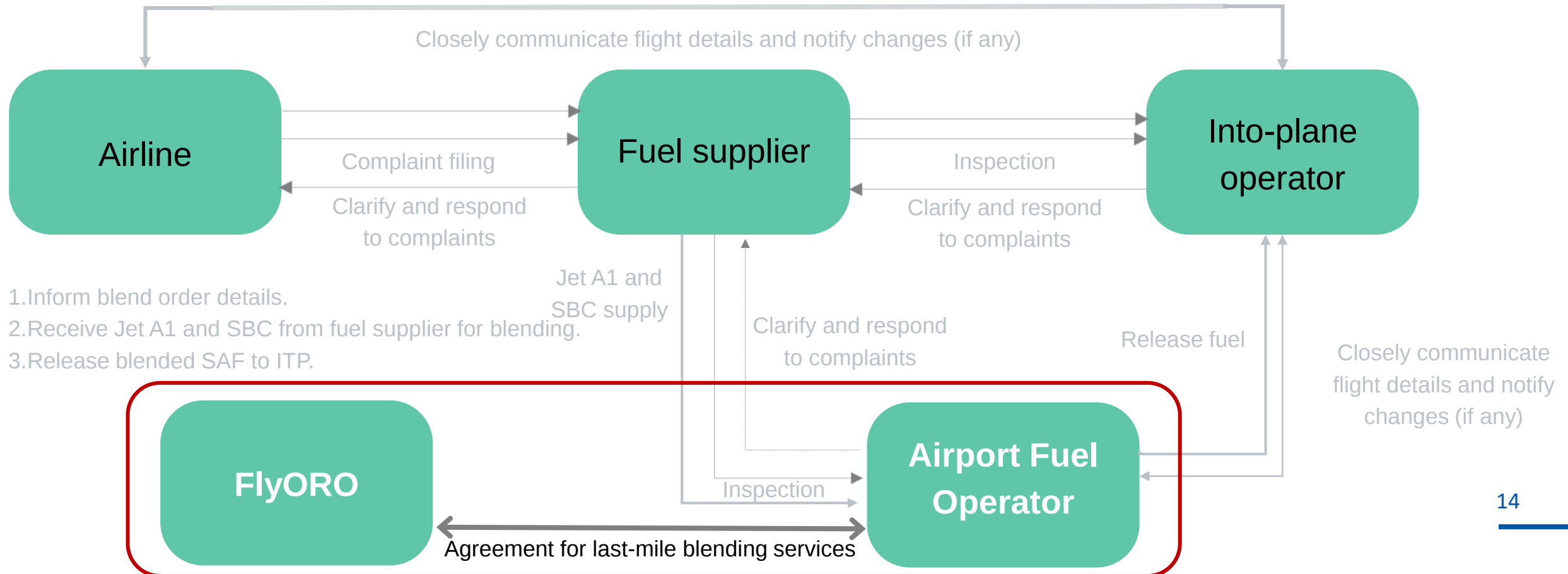
Case	Scenario	Impact	Airport's level of participation*
Scenario I: Before airport	SAF is blended and standardized upstream before delivery to airport	- Limited control over SAF supply at airport. - SAF can only be tracked administratively. - Fixed and high blends create unattractive prices leading to weak/slow adoption.	
Scenario II: Last-mile	SAF is blended and customized directly at airport	- Enhanced offering given to airlines. - Offer custom SAF blends to the entire airport ecosystem. - Administrative and physical tracking of SAF is made available.	

Condition: Airport operator has full/partial authority to fuel supply chain

MINIMAL OPERATIONAL CHANGE TO AIRLINE & AIRPORT OPERATOR

1. Negotiate service-inclusive buying-selling prices.
2. Enter into an into-wing contract.
3. Airline pays blend products service-inclusive fees to fuel supplier.

1. Inform the contract details.
2. Hire ITP to provide services to Airline, who is the customer of oil company.
3. Transport blended SAF to Airline.
4. Pay service fees to ITP.



CONCEPTUALIZING LAST-MILE SUPPLY CHAIN AT ATHENS INTERNATIONAL AIRPORT (ATH)

OPTION A: STANDALONE

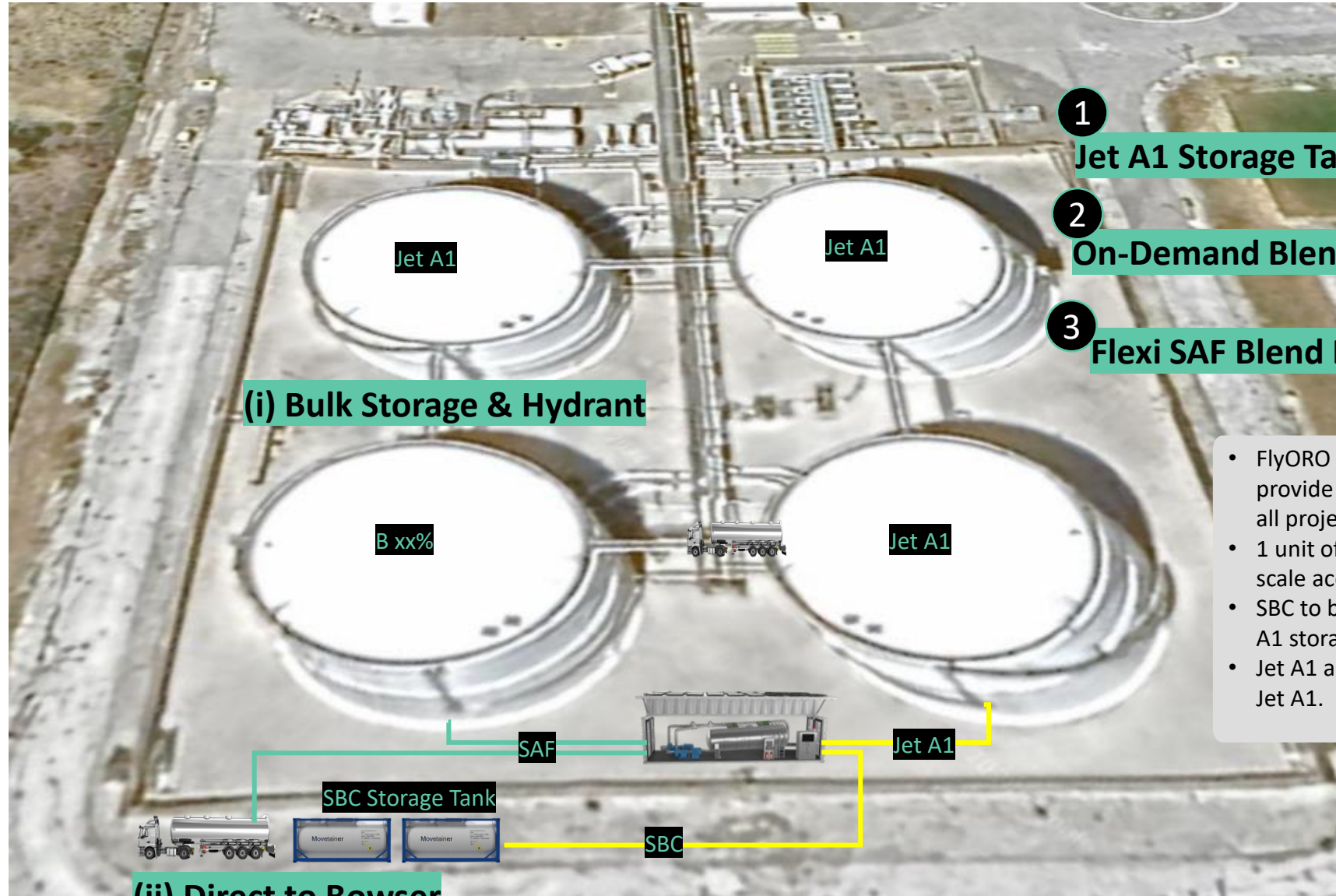


- FlyORO offers site visit and engineering review to provide the best recommended solution, applicable to all projects.
- Number of AlphaLite dependent on total SAF volume requirement.
- SBC to be transported and stored separately from Jet A1 storage.
- Entire SAF blending operations will be a standalone and positively segregated from Jet A1.

Source: Google Earth

CONCEPTUALIZING LAST-MILE SUPPLY CHAIN AT ATHENS INTERNATIONAL AIRPORT (ATH)

OPTION B: BULK TANK INTEGRATIONS



- 1 Jet A1 Storage Tank
- 2 On-Demand Blend & Certify
- 3 Flexi SAF Blend Product

- FlyORO offers site visit and engineering review to provide the best recommended solution, applicable to all projects.
- 1 unit of AlphaLite typically sufficient, possibility to scale according to demand.
- SBC to be transported and stored separately from Jet A1 storage.
- Jet A1 and SBC will remain positively segregated from Jet A1.

UNLOCKING THE FUTURE OF BLENDS



Thank You

