



Planning of Aviation Fuel Concessions

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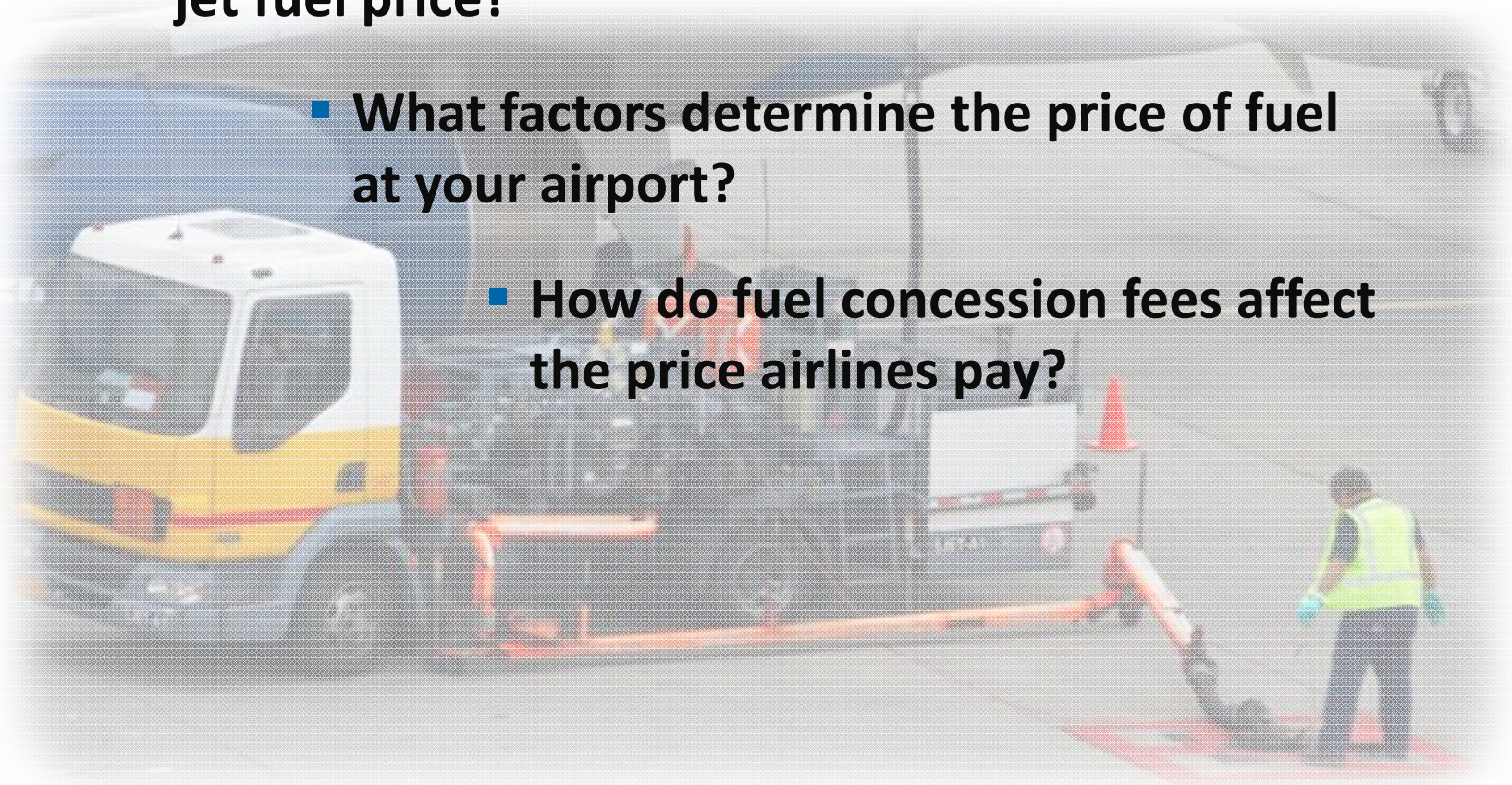


1. Airport Fueling Basics

- 2. Airport Fuel Infrastructure
- 3. Airport Fuel Operating Models
- 4. Planning a Fuel Concession

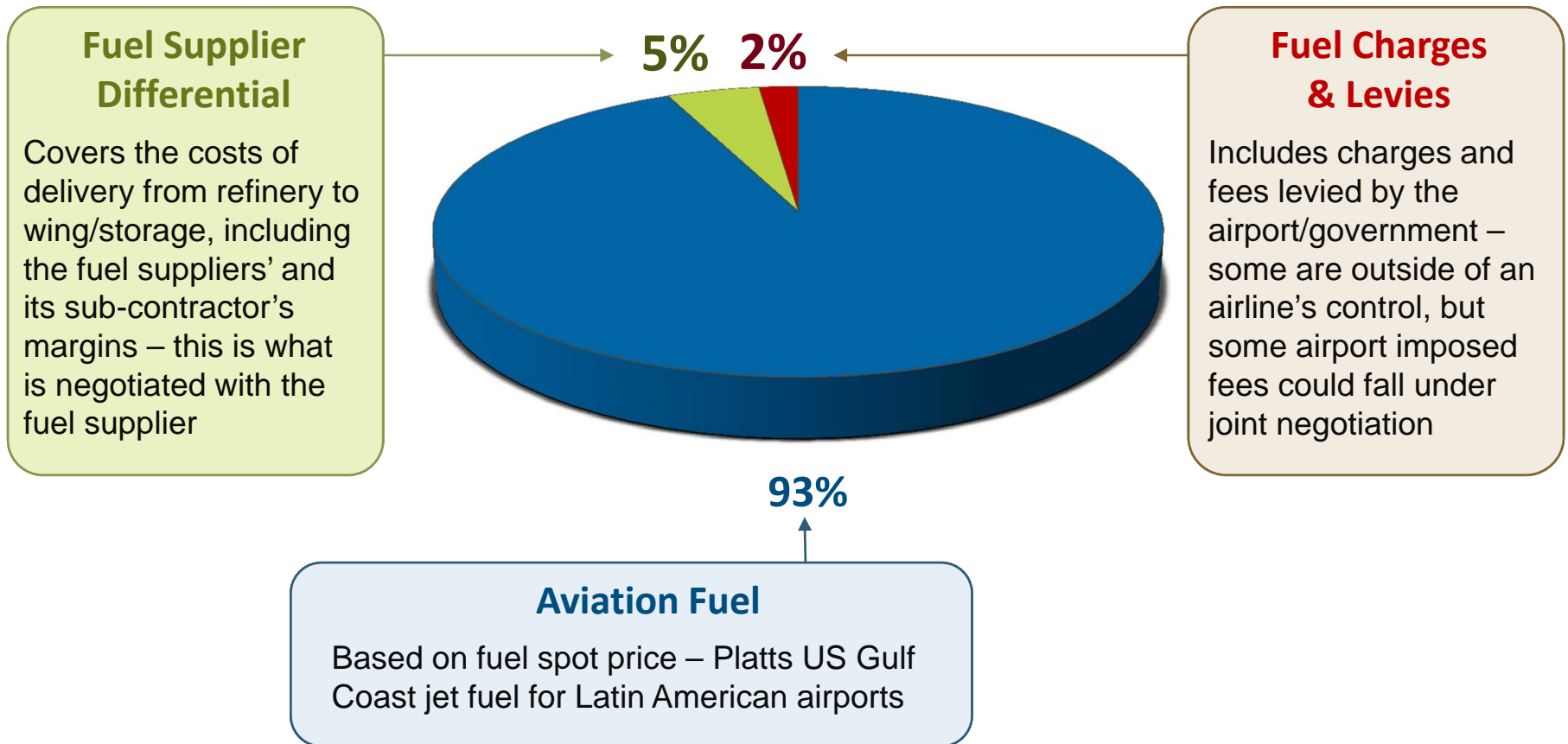
In planning an airport fuel concession, airports must understand basic concepts about the jet fuel business

- What are the components of the final jet fuel price?
 - What factors determine the price of fuel at your airport?
 - How do fuel concession fees affect the price airlines pay?



The fuel price itself represent about 93% of the total cost to airlines

Airline Total Fuel Cost Breakdown
(Estimated)



The price of fuel that an airline pays at your airport will depend on various factors



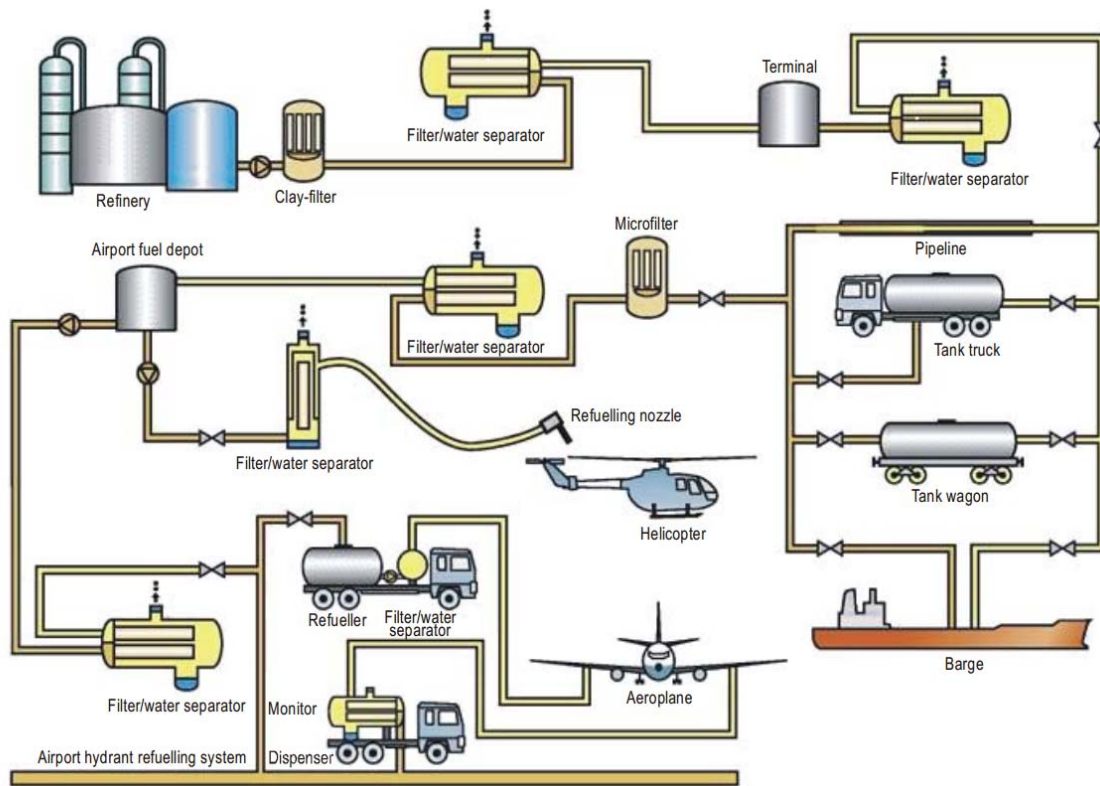
The supply chain – i.e., the cost of getting fuel from the refinery to the plane – drives cost



- There will be country-specific factors (e.g. staff costs, taxing regime, etc.) that will affect costs
- Hard to access airports (e.g. islands) will have higher fuel transportation costs
- There will be a number of other airport-specific factors that will affect the cost of fuel supply from fuel refinery to wing, incl. fuel concession fees.

AIRPORT FUELING BASICS

Into-plane costs account for ~30% of the overall differential costs



Indicative Freight Costs:

- Pipeline costs: 2.4USC/USG
- Truck costs: 6USC/USG

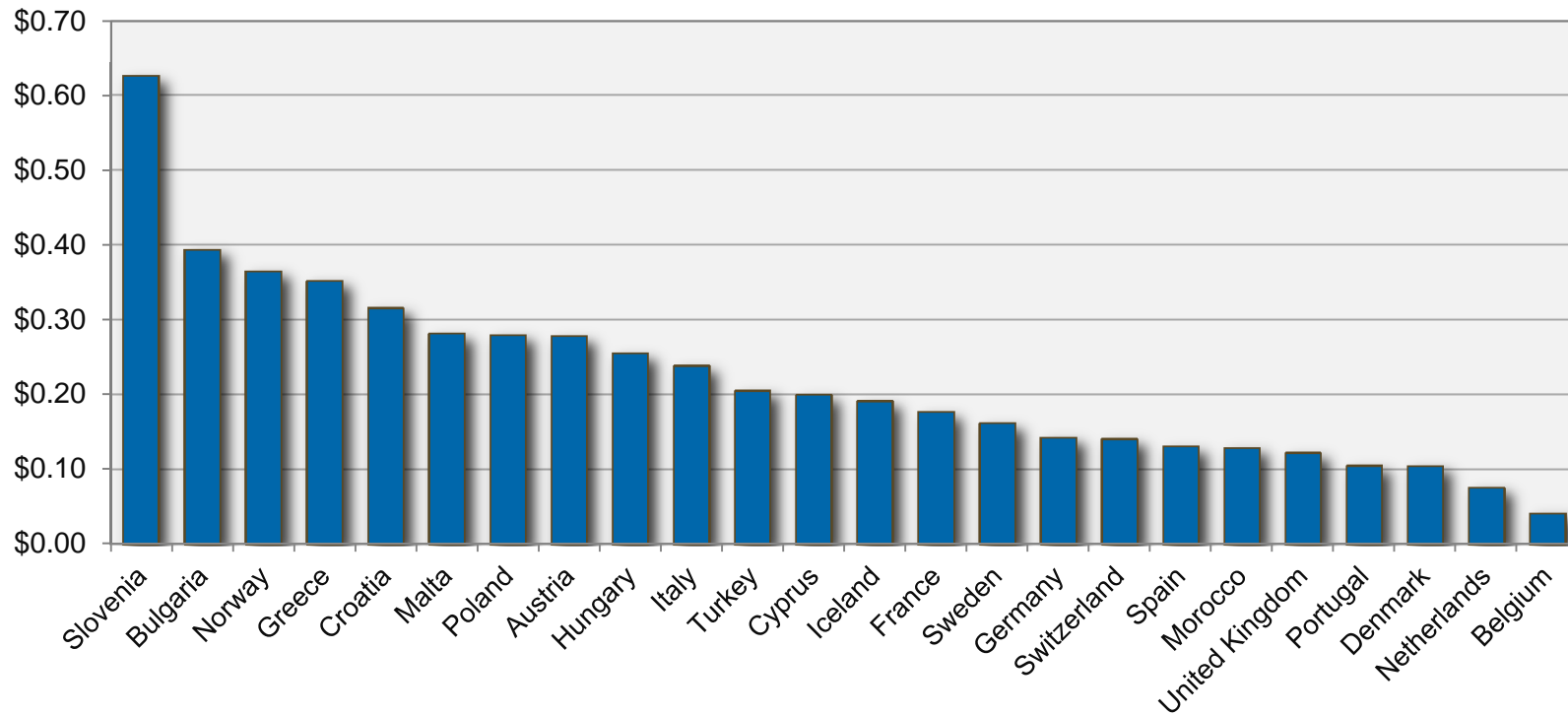
Activity	%
Freight costs from refinery	~30%
Laying down costs	~20%
Airport storage costs	~20%
Into-plane costs	~30%

Source: ICAO

***Costs are indicative as they will be airport specific
 – EACH airport has its own fuel supply chain***

Fuel price “differentials” can vary widely between airports, even among those in a same region

Example of Supplier Differentials
(European Airline)



Market competitiveness – i.e., the number of suppliers at your airport – also affects pricing



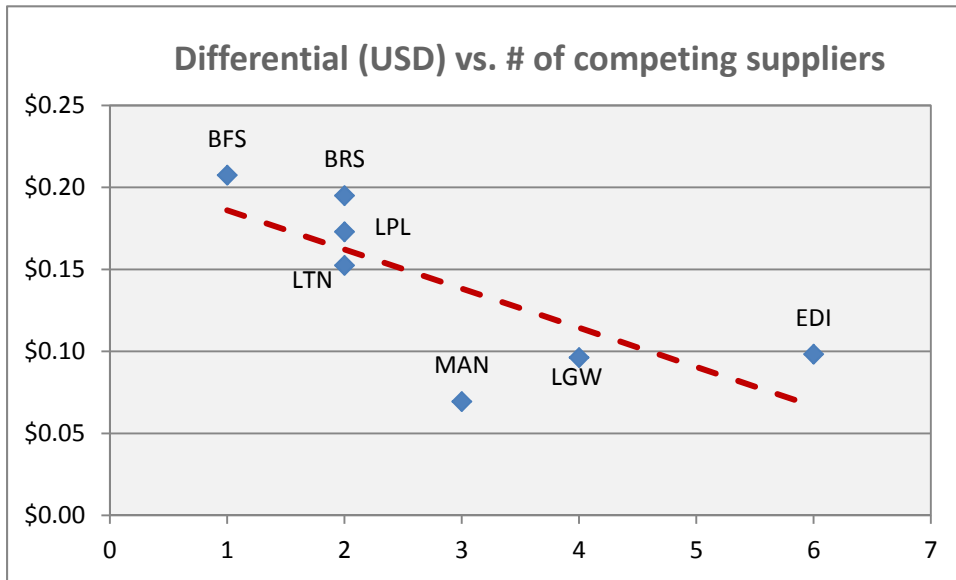
Supplier Competition



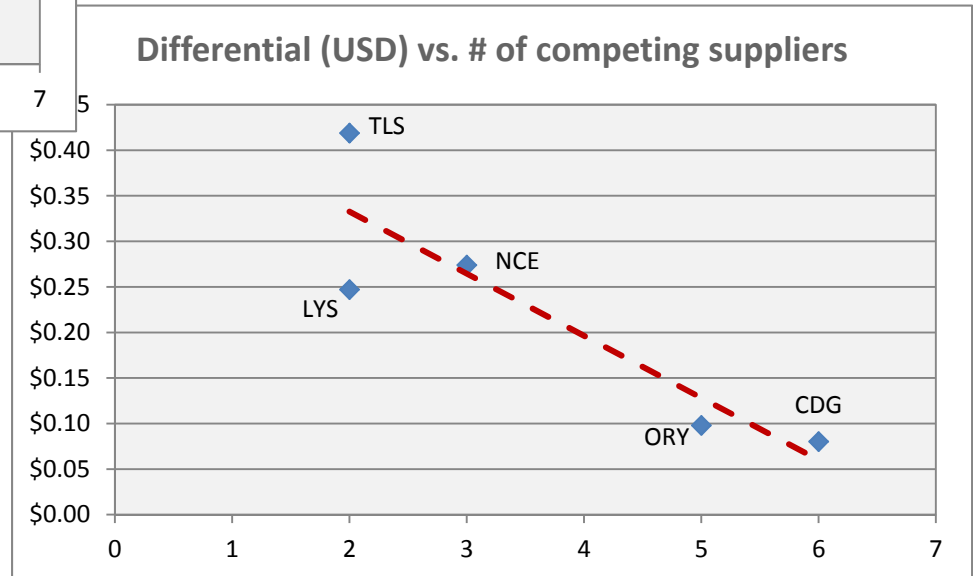
- A competitive market tends to reduce prices, improve efficiency and foster innovation
- How competitive a market is will depend on the number of suppliers, the types of suppliers and the number of customers

Supplier density drives the differential costs downwards

United Kingdom



France



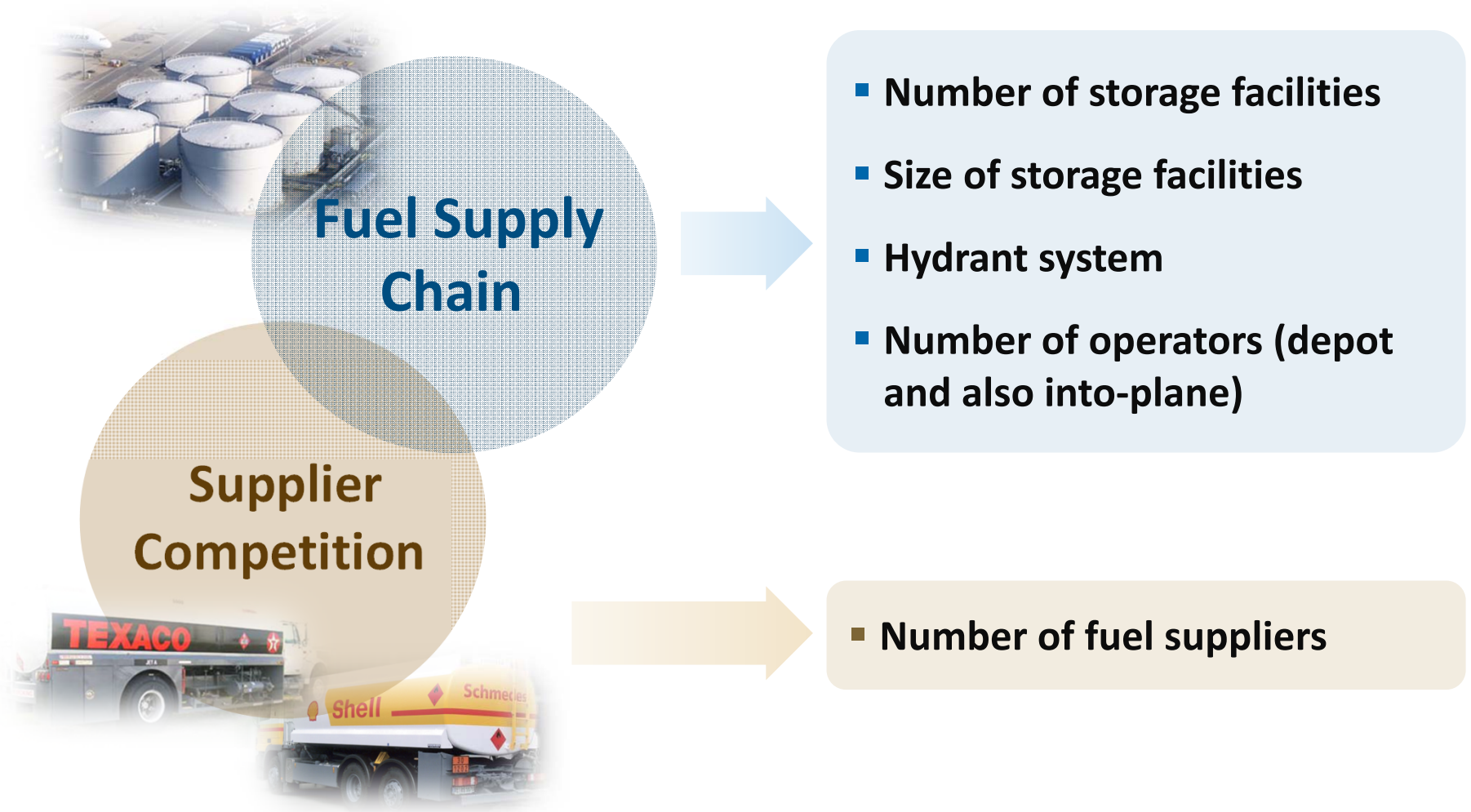
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Airlines' Levers

- How good a deal an airline can make will also depend on how attractive it is as a customer, which will depend on:
 - Its share of the market
 - Financial strength
 - Schedule consistency
 - Growth potential
 - Daily demand profile

An airport's fuel strategy can have considerable influence on two of the three drivers of cost





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The airport fuel infrastructure has three distinct parts



Airports need to ensure that their airport has a dependable and sufficient fuel supply

■ Supply methods

- Pipelines are safer and cheaper than ground transport (barge, rail, or truck)
- Pipelines are highly recommended for large airports with significant fuel uplift

■ Ensuring adequate supply

- Not a concern if a refinery or terminal is near the airport and fuel can be stored there
- If refinery/terminal is far away (lengthy supply chain), need to ensure that there is fuel storage at the airport
- Rule-of-thumb is for airport to have 5 to 7 days of fuel on hand



Airports also need to ensure that they have sufficient storage on-site

- **Number of facilities**
 - Multiple facilities (individual operators)
 - Consolidated facility (single operator)
- **Storage capacity**
 - Customer base requirements
- **Main system components**
 - Storage tanks
 - Pumps/filters
 - Control systems
 - Loading/offloading point (fill stand)



Finally, airports need a safe and efficient method of delivering fuel from the storage depot to the aircraft

- **Two into-plane methods**
 - Refueller truck
 - Hydrant system
- **Benefits of hydrant systems**
 - Hydrant carts much cheaper than a large refueller
 - Safer; refuellers (trucks) can increase accidents and also lead to ramp congestion
- **When hydrant systems make sense**
 - Justified if pumping more than 10 million gallons/month (rough rule)
 - Only relevant when laying new apron (e.g., terminal expansion)





1. Airport Fueling Basics
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- 3. Airport Fuel Operating Models**
4. Planning a Concession

Airports have three basic options when it comes to jet fuel supply and handling

Full outsourcing

- Outsource ownership, management and operation

Hybrid

- Own facility, but outsource management and operation

Full insourcing

- Own, manage and operate facility



Airport choice depends on appetite for risk, cost of capital, and time left in concession – there is no “one size fits all” model

Full Outsourcing

■ Oil company-owned facilities

- **Description:** Each oil company owns and operates its own facilities
- **Pros:** High competition among suppliers
- **Cons:** High cost, inefficient; limited fuel suppliers; airport lacks influence on operators
- **Example:** Argentina, Brazil

■ Oil company joint-venture

- **Description:** Oil companies jointly own a single facility (sometimes with airline equity partners)
- **Pros:** High competition among suppliers; cost-efficient
- **Cons:** Limited fuel suppliers; airport lacks influence on operators
- **Example:** Brazil (e.g., GRU, GIG); Chile (SCL); Australia (SYD), Hong Kong (HKG)



Full Outsourcing, *cont'd*

- From 1940s-1990s, oil companies owned and operated fuel facilities at most airports worldwide
- Since 1990s, oil companies have been exiting the business of operating airport facilities due to low margins (esp. in North America and Europe)
- Oil companies have also been exiting the into-plane (ITP) business
 - Very labor and capital intensive, and low margin



Oil company exit from airport operations creates opportunities for airport operating companies.

Full Outsourcing, *cont'd*

■ Airline-owned facilities (“fuel consortium”)

- **Description:** Airlines own facility and hire third party to operate
- **Pros:** Highly competitive and cost-efficient; multiple fuel suppliers (open access)
- **Cons:** Airport gives up day to day control; cost transparency benefits airlines
- **Example:** Very common at large North American airports, (e.g., LAS, LAX, MIA, ORD, YYZ, YUL, etc.)

■ Fuel concession model

- **Description:** Airport tenders construction, management and operation to a third party (or multiple third parties)
- **Pros:** Highly competitive and cost-efficient; multiple fuel suppliers (open access); airport sets terms***
- **Cons:** Airport bears more liability than other full outsourcing options
- **Example:** Single operator/open access: BOG, LIM, PTY, UIO.
Single operator/single fuel supplier: SDQ

*** Efficiency depends on applicable regulations, and airport planning effectiveness and terms of concession

Hybrid

- **Airport-owned facilities operated by third party**
 - **Description:** Airport owns facilities, but hires a third party to operate
 - **Pros:** Highly competitive and cost-efficient operation; multiple fuel suppliers (open access); potentially lower construction cost (lower WACC)
 - **Cons:** Airport responsible for CapEx; increased liability
 - **Example:** South Africa (all major airports); London Stansted; Dubai World Central; Jeddah



Full In-sourcing

- **Airport owned and operated facility**
 - **Description:** Airport owns and operates fuel infrastructure
 - **Pros:** Greater revenues to airport operator; full control over operation and management
 - **Cons:** Higher operating costs and capex, and greatest risk/liability since outside airport's core competency
 - **Example:** Tulsa (TUL), Tucson (TUC), Phoenix (PHX) **used** to do this, but stopped





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Key Planning Questions (Representative List)

■ Fuel Supply & Farm Operation

- Is there an existing monopoly supplier (or operator)?
- Is it possible to have different/multiple suppliers (or operators)?

■ Infrastructure

- Is sufficient land (for fuel depot) available on-airport?
- How adequate is existing infrastructure?
- How long will current capacity last?
- What are long-term infrastructure needs?

■ Pricing

- Are “into-plane” prices fixed by regulator?
- How competitive are airport fuel costs?
- What is potential for tankering?
- How price-sensitive is demand?



Step 1: Determine your airport's fuel supply needs

1. Develop fuel uplift forecast

- Traffic forecast (movements)
- Evolution of aircraft type mix
- Fuel uplift per aircraft type
- Effect of new generation aircraft

2. Determine infrastructure requirements

- Pipeline
- Depot (storage tanks)
- Hydrants
- Pumps

Good planning is critical to defining the right concept, reducing costs, and creating revenue opportunities



Step 2: Evaluate and select qualified firm(s)

1. Technical competence and expertise requirements

- Fuel supply is vital to your airport
- Fuel handling is very risky

Only firms that meet technical competence and expertise requirements should be considered

2. Lowest cost solution (i.e., construction and/or operation)

- Tender must provide very specific requirements and describe airport needs
- *Clear Technical, Operational, and Safety standards*

Fuel handlers should be treated as a critical, long-term business partner of your airport!

Step 3: Generating revenues from fuel supply

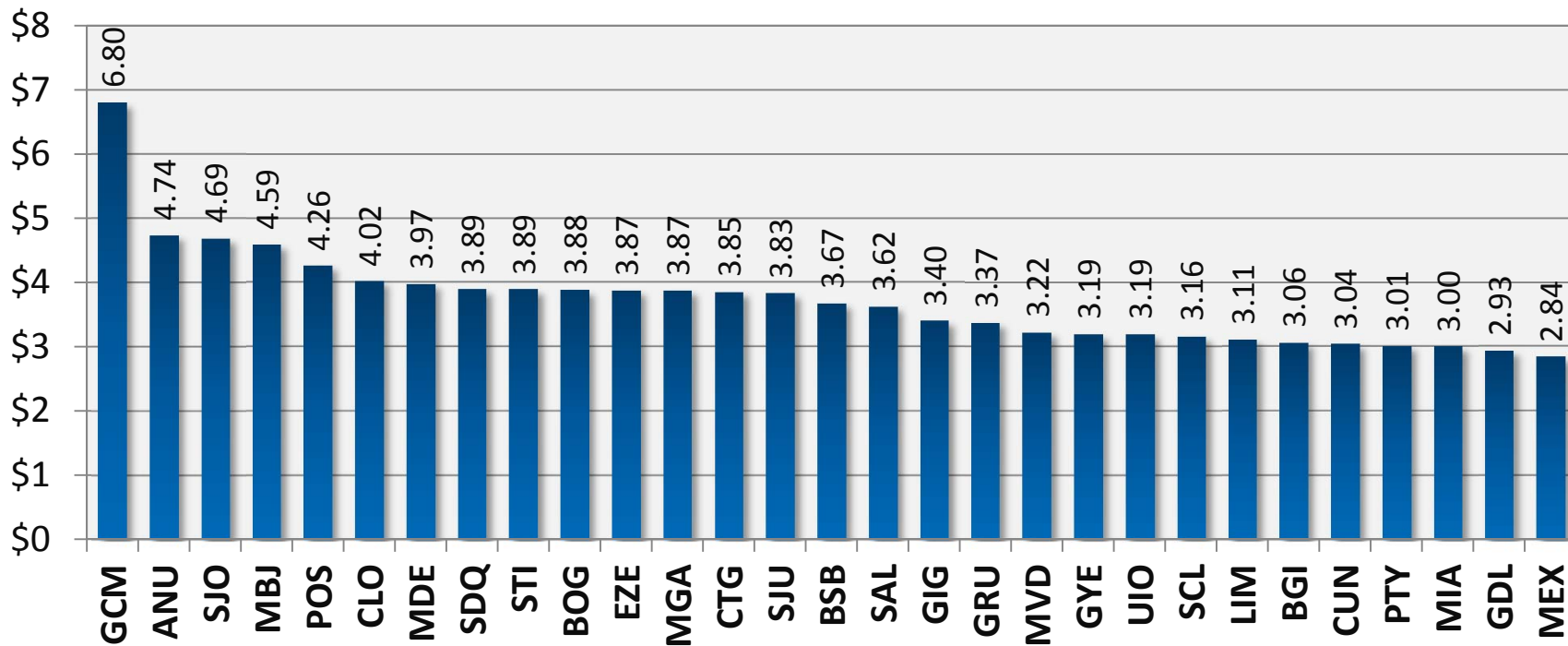
- **Fuel Concession Fee**
 - Variable
 - *Volume*
 - *Sales*
 - Fixed

- **Other fees from fuel-related activities**
 - Into-plane provider
(% of gross revenue)



Airports need to understand how their decisions about fuel supply will affect the competitiveness of their airport...

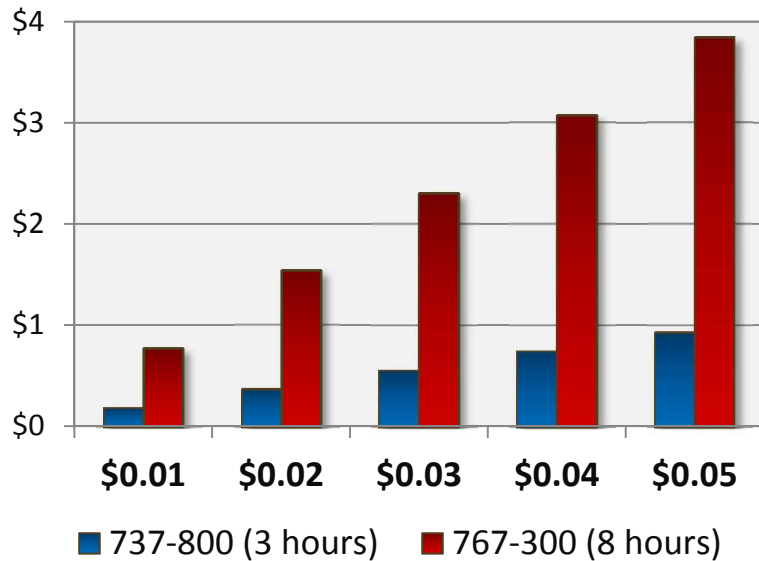
Fuel Price at Select Latin America and Caribbean Airports – International Flights
(USD per Gallon)



Note: Prices as of June 13, 2014
Source: RDC airportcharges.com

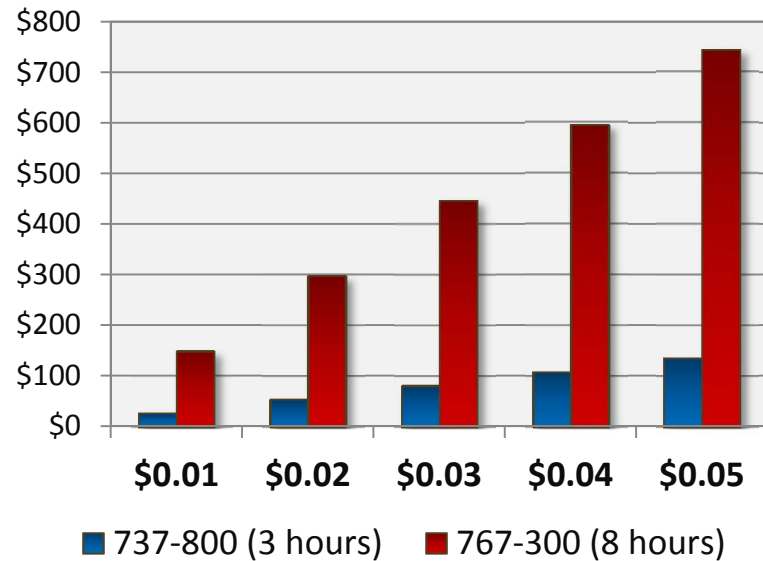
... and what impact a fuel concession fee has on the airfares and airline operating costs

Effect of Fuel Concession Fee Increase:
Cost per Passenger (USD)



Note: assumes 85% load factor

Effect of Fuel Concession Fee Increase:
Annual Cost to Airline (USD, '000)



Note: assumes 85% load factor and three daily flights

Airlines need to assess the effect of the into-plane fee in the context of its overall airport charges structure

ICAO Guidelines (Doc 9562)

Revenues from Non-Aeronautical Activities:

“4.18 Aviation fuel and oil concessions (including throughput charges). All concession fees, including any throughput charges, payable by oil companies or any other entities for the right to sell or distribute aviation fuel and lubricants at the airport. [...]”



Cost Basis for Fuel Concession:

“4.116 These would include any maintenance costs, administrative overheads and capital costs attributable to premises, land and equipment owned by the airport and placed at the disposal of the fuel concessionaries (this include any fuel farms, pipes, hydrants, pumping facilities, etc.) Also include would be costs of firefighting and security services attributable to the storing and tanking of fuel [...], as well as costs attributable to the use by the concessionaries of ground access facilities and services.”

Fundamental Planning Guidelines

- **Fuel Supply Infrastructure**
 - Keep it simple to lower costs

- **Suppliers (oil companies, into-plane providers)**
 - Maximize competition to lower costs

- **Concession Agreement**
 - Minimize/transfer risk and liability to operator
 - Capture as much revenue as possible for the airport
 - Ensure simple administration and oversight



Thank you!



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