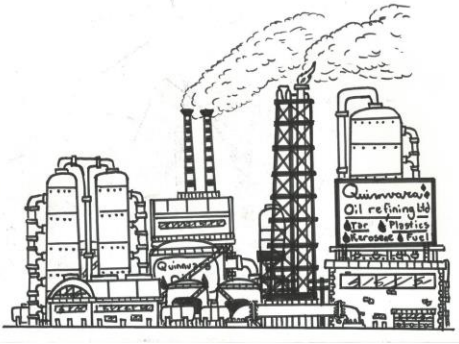


Jet fuel supply chain constraints – the bottlenecks and what needs to be done



General – capacity – access – age – environmental – Government policy restrictions – off-spec product – geopolitics – replacement cost (previously covered) – cost impact (covered later today)

Refineries – closures – maintenance – unplanned disruptions – repurposed – location issues

Pipelines – availability – multi product vs dedicated – pumps – maintenance – unplanned disruptions

Rail – availability & scheduling – competing network access – safety – receipt facilities – limited scale

Road – availability – safety – reliability – receipt facilities – drivers – limited scale

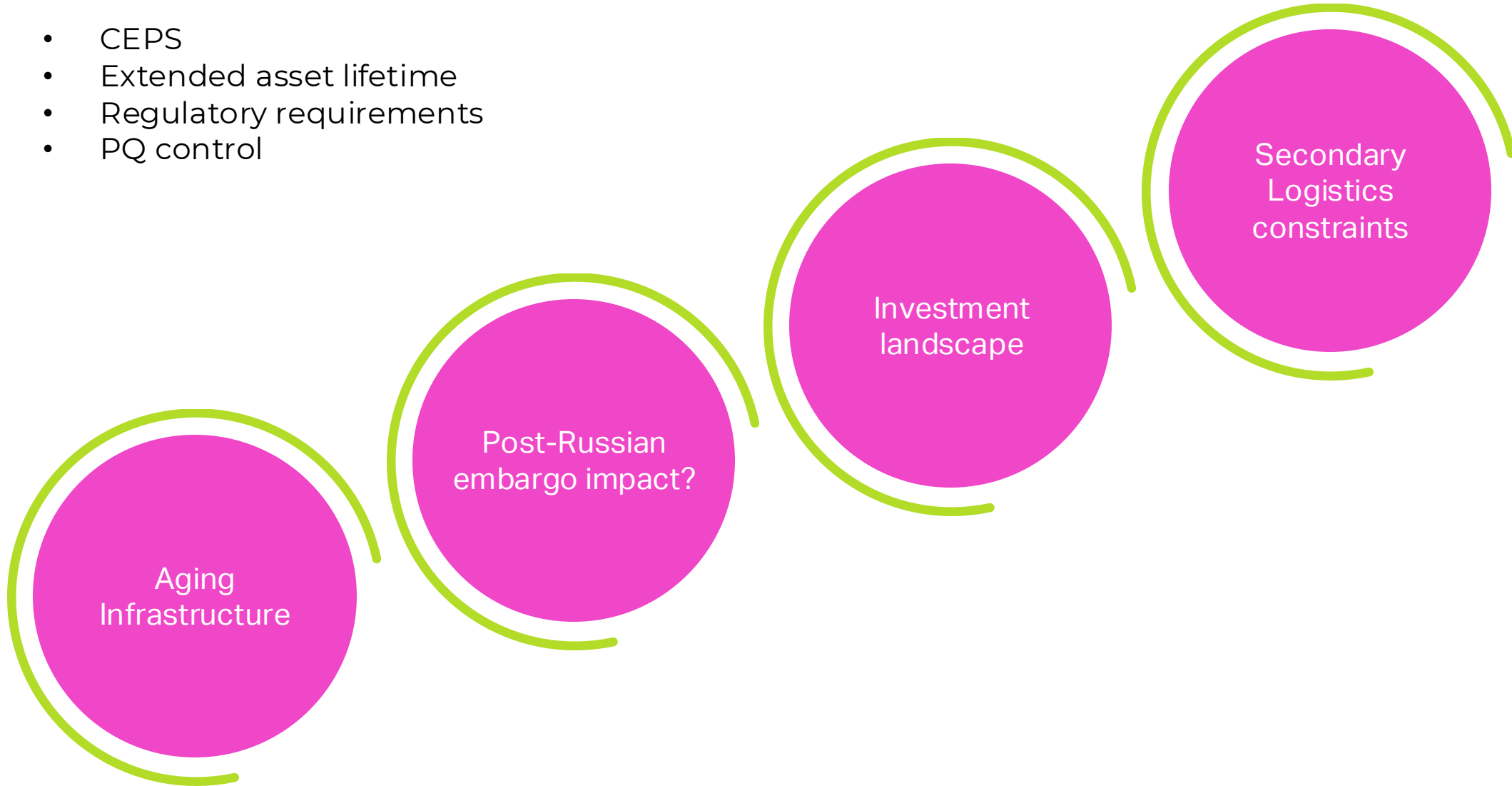
Ships & barges – availability & scheduling – weather – safety – manpower – offloading facilities

Storage tanks – on & off airport – planning constraints – safety – space

European picture



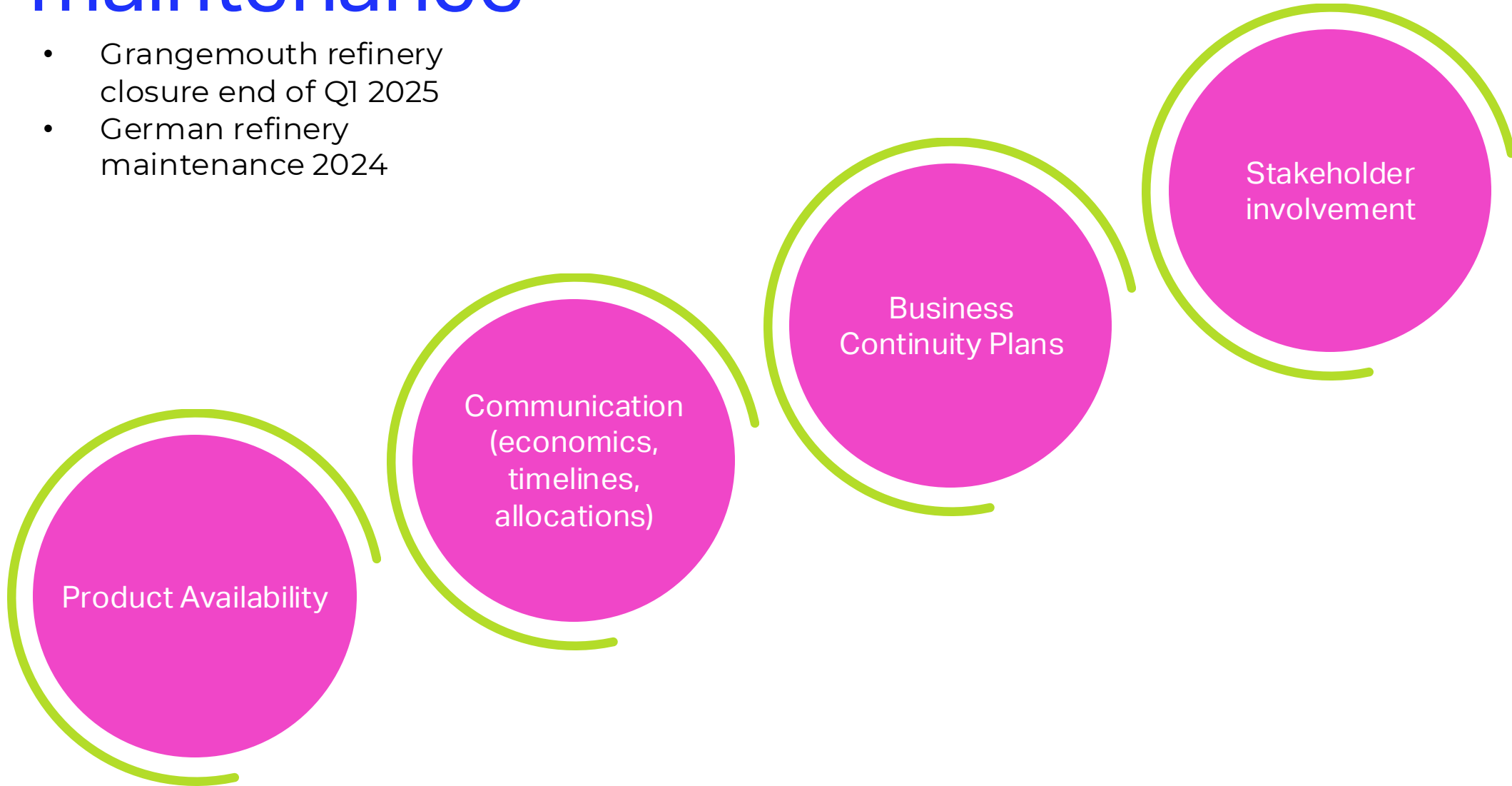
- CEPS
- Extended asset lifetime
- Regulatory requirements
- PQ control



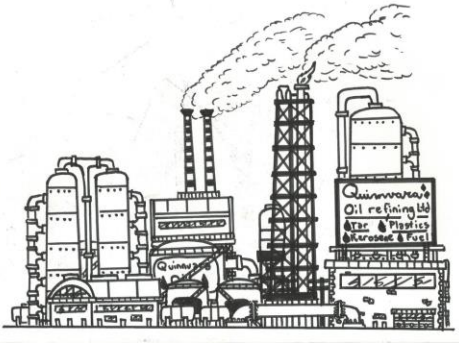
Impact of Refinery closure and maintenance



- Grangemouth refinery closure end of Q1 2025
- German refinery maintenance 2024



Jet fuel supply chain constraints – the bottlenecks and what needs to be done



General – capacity – access – age – environmental – Government policy restrictions – off-spec product – geopolitics – replacement cost (previously covered) – cost impact (covered later today)

Refineries – closures – maintenance – unplanned disruptions – repurposed – location issues

Pipelines – availability – multi product vs dedicated – pumps – maintenance – unplanned disruptions

Rail – availability & scheduling – competing network access – safety – receipt facilities – limited scale

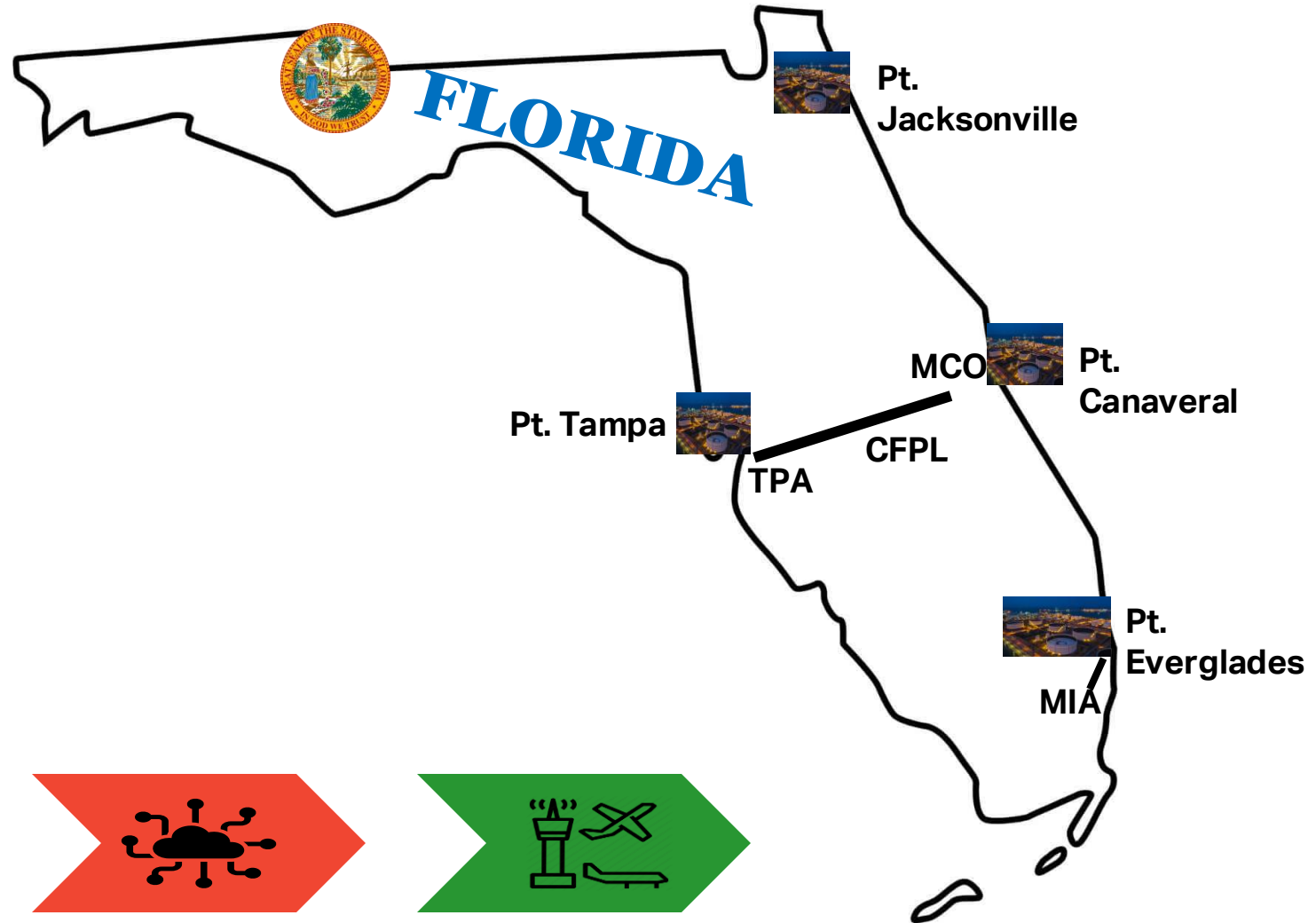
Road – availability – safety – reliability – receipt facilities – drivers – limited scale

Ships & barges – availability & scheduling – weather – safety – manpower – offloading facilities

Storage tanks – on & off airport – planning constraints – safety – space

It's not Florida Man's fault

- Florida is an "island"
- Unique Supply Constraints/Challenges
 - Marine terminals storage capacity/dock congestion
 - Jones Act Vessels/vessel scheduling
 - Pipeline capacity/pumping cycles/shutdowns
 - On-airport storage capacity
 - Weather: hurricanes, fog
 - Suppliers supply/trading related disruption



Readiness



Capacity

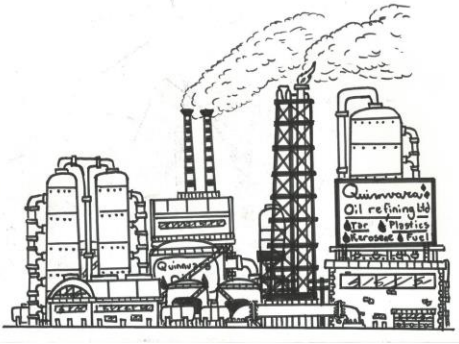


Communication



Ensure Supply

Jet fuel supply chain constraints – the bottlenecks and what needs to be done



General – capacity – access – age – environmental – Government policy restrictions – off-spec product – geopolitics – replacement cost (previously covered) – cost impact (covered later today)

Refineries – closures – maintenance – unplanned disruptions – repurposed – location issues

Pipelines – availability – multi product vs dedicated – pumps – maintenance – unplanned disruptions

Rail – availability & scheduling – competing network access – safety – receipt facilities – limited scale

Road – availability – safety – reliability – receipt facilities – drivers – limited scale

Ships & barges – availability & scheduling – weather – safety – manpower – offloading facilities

Storage tanks – on & off airport – planning constraints – safety – space

South Africa – difficult supply situation due to vulnerable supply chain and reliability

Different types of shortages and root causes

2022 / JNB – floods damage port and rail track facilities causing major supply issues
2023/25 CPT/JNB –refinery shutdowns (planned or unplanned) with multiple irritations
in case of planned shutdowns, often poor timing (seasonality, too short after other local maintenance)

Communication is key ... but was often difficult

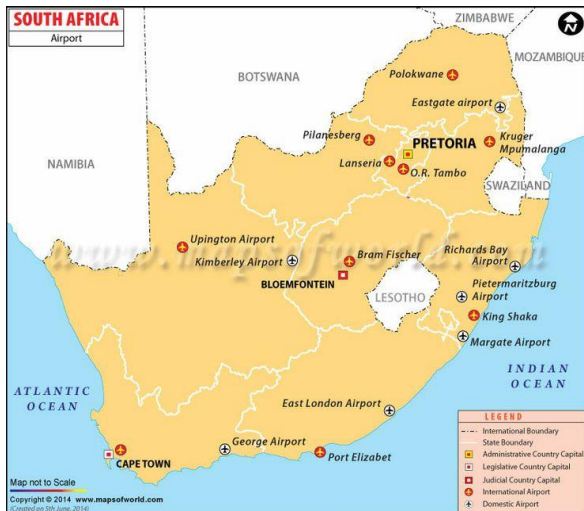
- often late/unclear/contradicting information
- Very limited 24/7 availability at suppliers
- Inconsistent use of NOTAMs
- Insufficient cooperation between suppliers

Logistics limited

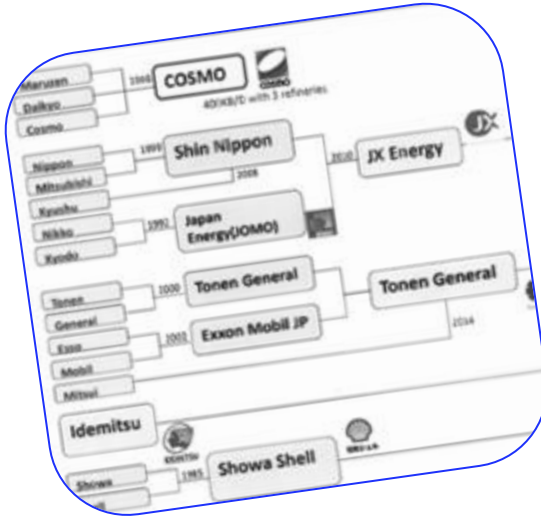
- Limited supply paths into airports
- Tankage capacity limited, often insufficient buffer
- Insufficient investments into infrastructure

Expectations to suppliers, authorities, tank farm operators

- Establish robust 24/7 support structure, comprehensive warnings
- Improve planned refinery maintenance cycles
- Have plan B to anticipate the unexpected, be pro-active
- Work closer locally on infrastructure and keep it modern
- Provide adequate and timely information on supply situations
- Improve operation transparency instead of high-level statements



Japan – ongoing and further increasing tight market situation is leading to concerns



✓ Supplier Portfolio

- From a multifaceted supplier landscape down to a few
- Uncertainty about further development



Pressure on prices due to ...

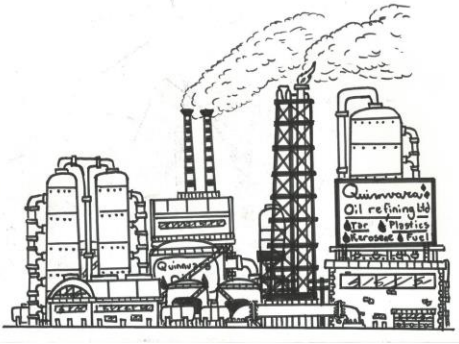
- Product shortages
- High degree of imports
- Dependencies on other suppliers and logistics
- Tank space occupied by other petrol products
- Lack of investments



Future developments

- Ambitious governmental plan on tourism growth
- Less refinery capacity vs more uplift demand
- Further dependency on imports
- Aging staff
- Lack of ITP staff & coastal barge operations

Jet fuel supply chain constraints – the bottlenecks and what needs to be done



General – capacity – access – age – environmental – Government policy restrictions – off-spec product – geopolitics – replacement cost (previously covered) – cost impact (covered later today)

Refineries – closures – maintenance – unplanned disruptions – repurposed – location issues

Pipelines – availability – multi product vs dedicated – pumps – maintenance – unplanned disruptions

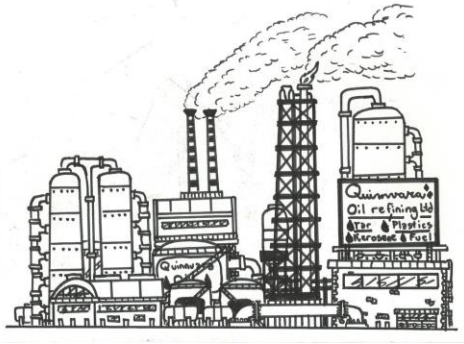
Rail – availability & scheduling – competing network access – safety – receipt facilities – limited scale

Road – availability – safety – reliability – receipt facilities – drivers – limited scale

Ships & barges – availability & scheduling – weather – safety – manpower – offloading facilities

Storage tanks – on & off airport – planning constraints – safety – space

Jet fuel supply chain constraints – the bottlenecks and what needs to be done



Thank you