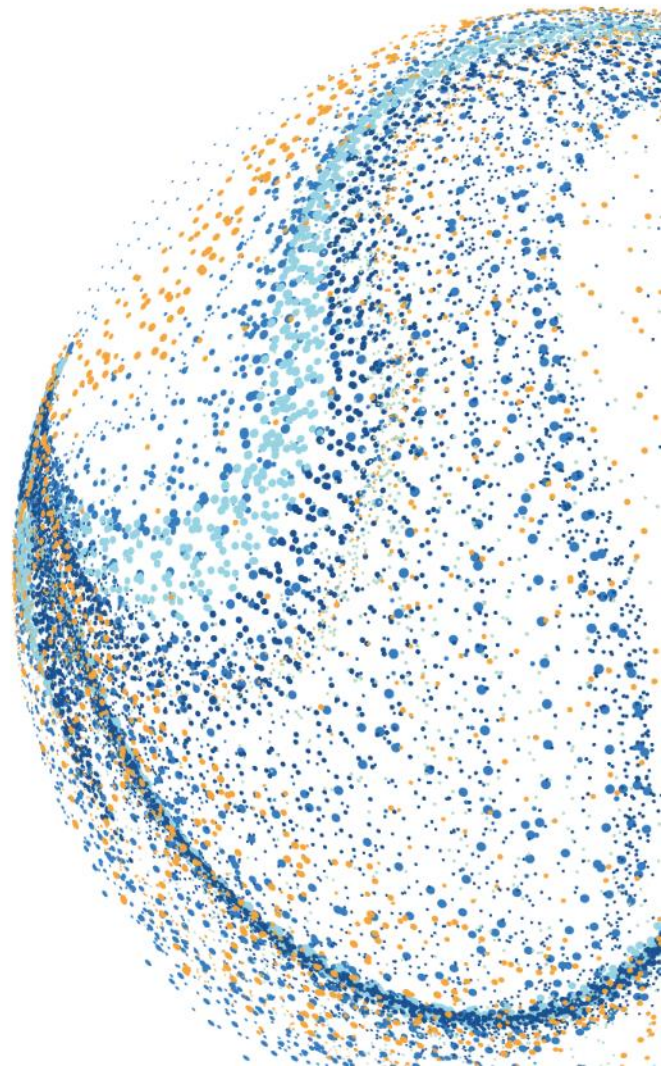
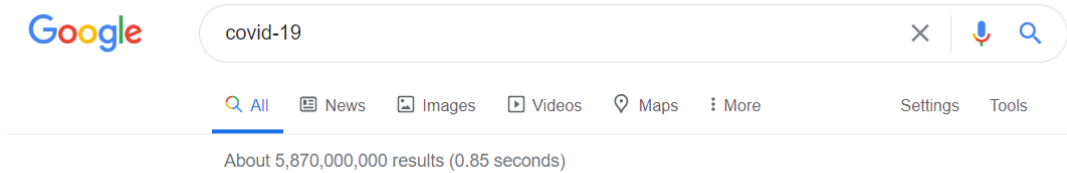


# The curious case of Scrubbers – Impact of COVID-19

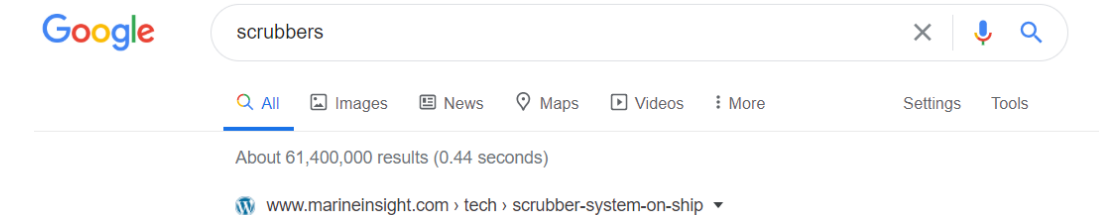
Sachin Gupta  
Director | Chemical Products  
Marine Products



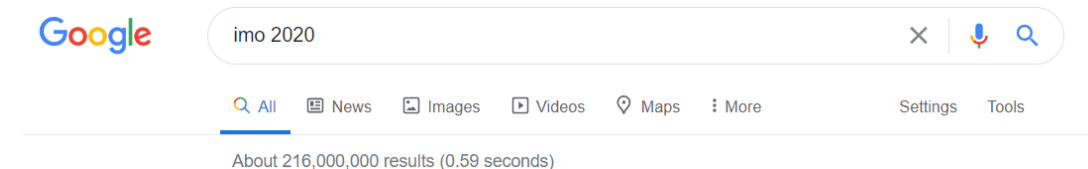
# A humbling comparison : seemingly related topics can be completely unrelated



→ • 5 billion hits as base line



→ • Scrubbers for 1% of search compared to covid-19



→ • IMO 2020 searches form 3.6% compared to covid-19



# IMPACT OF COVID-19 ON THE SCRUBBER DEMAND



# Restricted onsite project mgmt for scrubbers

## Limitations

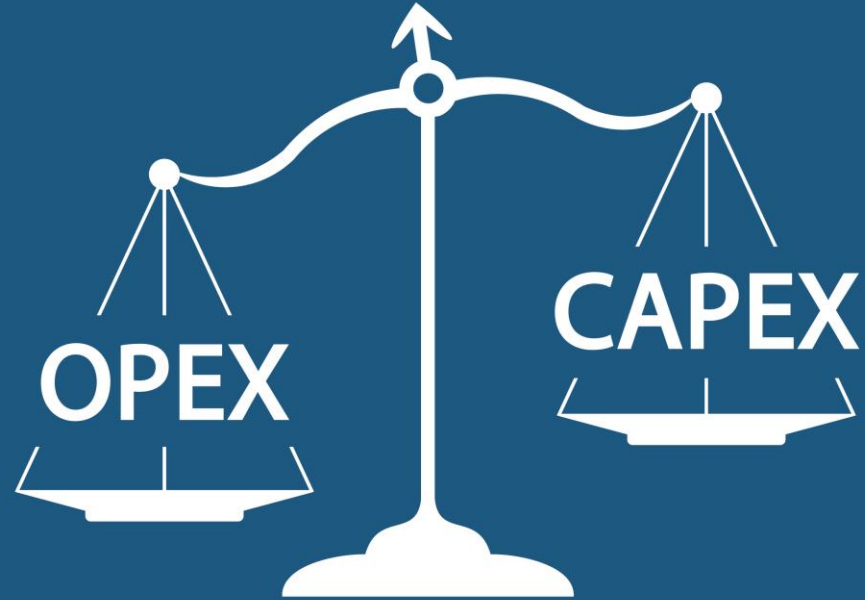
- Retrofit takes 45 - 50 days
- Project team needed physically to coordinate the activity
- Experienced and competent personnel needed onsite
- Missing parts will need human intervention to facilitate/co-ordinate



# Financials does not stack in favor of scrubbers for now

## Drying pool of cash:

- Costs MUSD 4 - 5, long time to recover investment
- Stretched balance sheets, holding on to cash
- Switch off scrubber much earlier before entering restricted ports, consume more expensive fuel that raises opex costs
- Captive market like cruise or vessels trading in ECA areas all the time is now questionable





# Regulations on the effluent discharge will continue to tighten

- Effluent discharge is not acceptable – clear water effluent can be seen that raises concerns with port authorities
- Growing number of port restrictions:  
Australia, Belgium, Singapore, USA east / West, China, Taiwan – PSC are adding one by one



**COVID OR NO COVID –  
OPERATIONAL CHALLENGES  
WILL REMAIN**



# Operational Challenges

Galvanic corrosion

Leakage from pipes

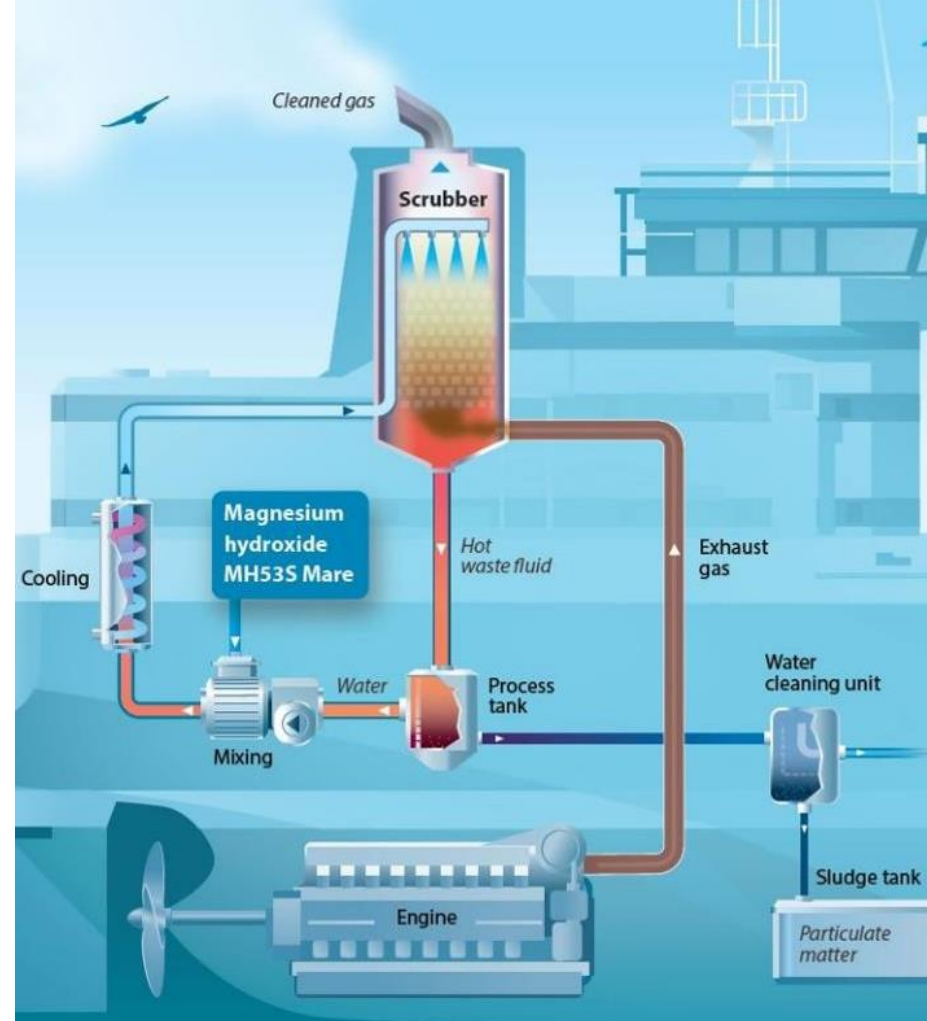
Flooding

Vibration, Electrical equipment are vulnerable

Back pressure, Improper combustion

All vessels don't have perfectly operating main engine

Scrubber takes focus away





# Operational challenges: availability of commodity chemicals

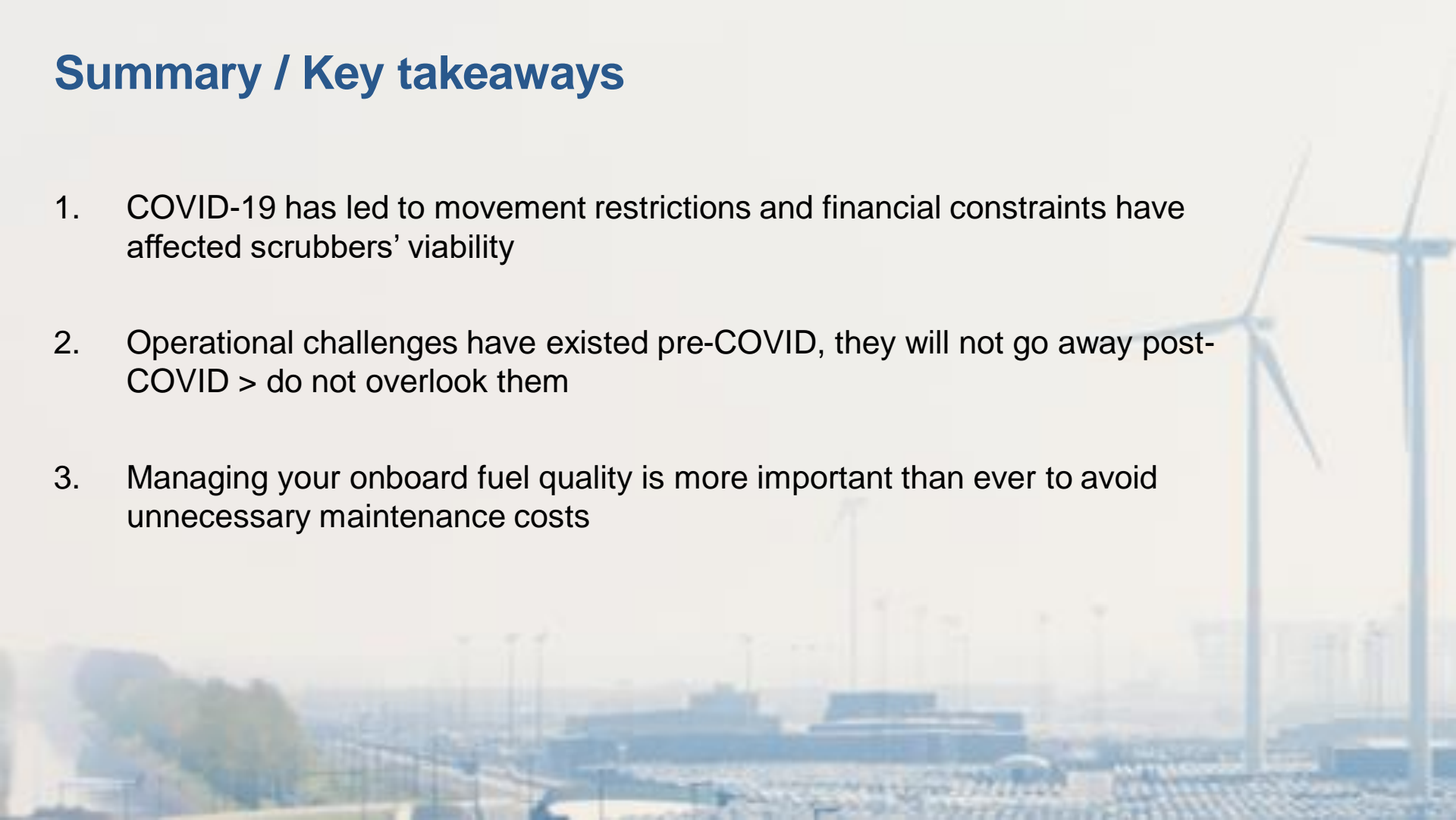
## Commodity chemicals:

- Not available in ports
- Sodium hydroxide, considered DG liquid and must have some specific type of license
- Engage barge or truck – special preparation needed when supplied



# Summary / Key takeaways

1. COVID-19 has led to movement restrictions and financial constraints have affected scrubbers' viability
2. Operational challenges have existed pre-COVID, they will not go away post-COVID > do not overlook them
3. Managing your onboard fuel quality is more important than ever to avoid unnecessary maintenance costs



# Thank You for Attending

Download our new **whitepaper**

Our new whitepaper is  
available for download:



<https://www.wilhelmsen.com/imo2020/imo-2020-whitepaper-safely-navigating-new-VLSFO-challenges/>

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Thank You

