



■ imaros



Work Package 2

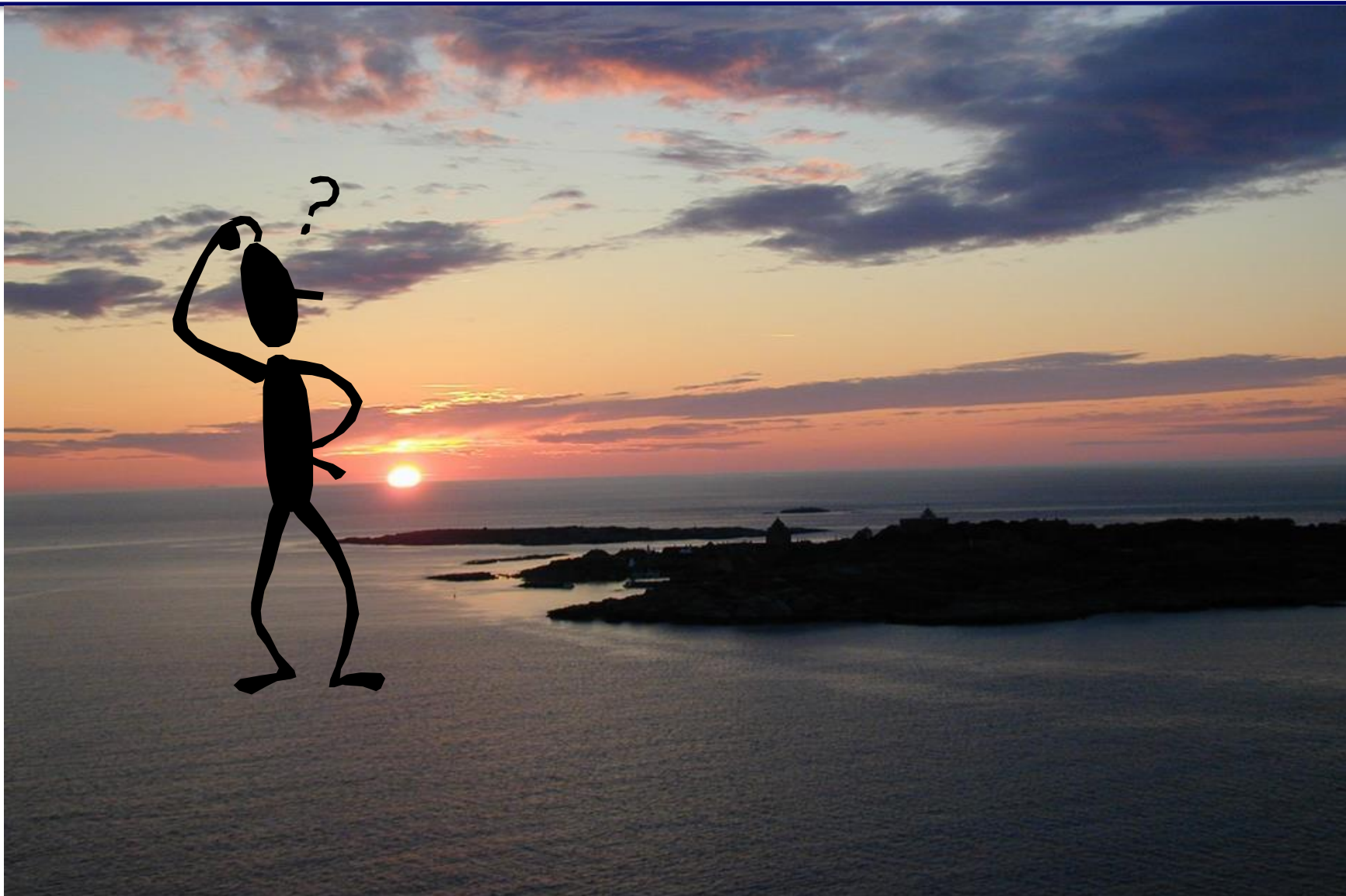
Torben Iversen
Royal Danish Navy Command



Co-funded by
the European Union

Compilation of Knowledge

imaros





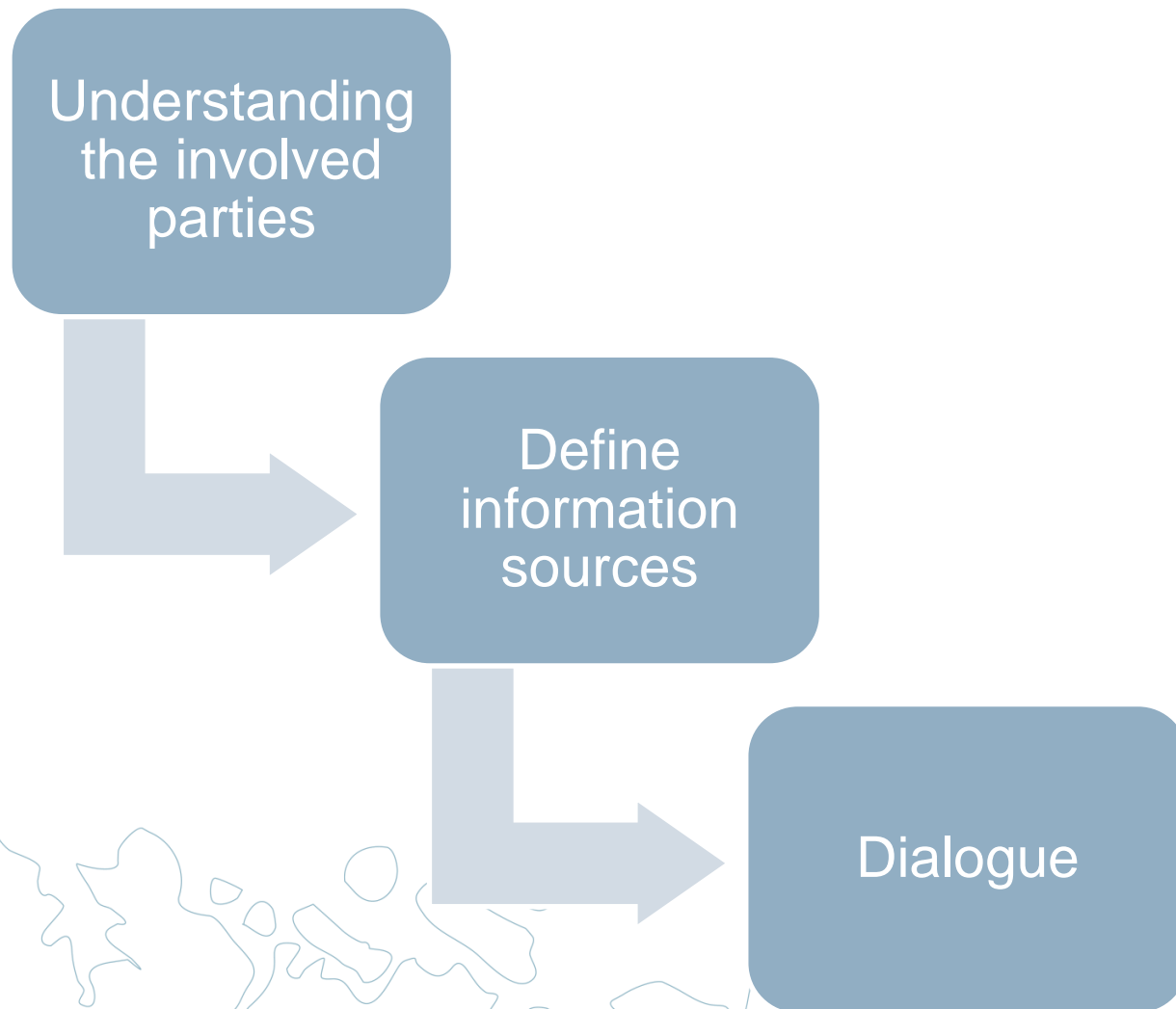
The starting point

- SINTEF report
 - Refinery products
- Makassar Highway experience
 - Proof of response challenges





Compilation of Knowledge





Compilation of Knowledge

SINTEF vs.
present oils

Global
uniformity

Representativeness

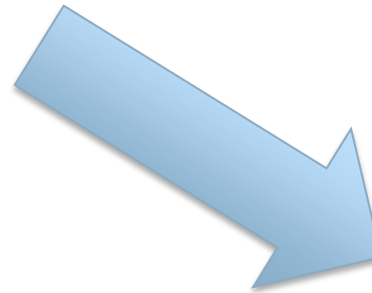
Market
trends

Market
characteristics



Captain / shipowners perspective

- The captain/shipowner
 - Scrubbers
 - Flexibility to bypass
 - Price level
 - Does not know the origin/producer of his bunker fuel
 - Only aware of very few characteristics
 - Price
 - Sulphur content
 - Flashpoint



- **If fuel characteristics and effective response measures differ from oil to oil, you cannot predetermine the most efficient response measure in advance.**





The bunker operator's perspective

- Oil is not just oil
 - Sweet vs. Sour Crudes
 - Categories of oil and the processes behind
- Prices determine preference
 - Congratulated scrubber users
- Blending

Typical Simple Down Stream Supply Chain

- Petrochemical refinery – produce refined products from crude to chemical and transport use.
 - Blending – Always.
- Trading company – Trading chemicals and oil products.
 - Blending – Always.
- Bunker trading company – Trading bunkers
 - Blending – never.
- Bunker supplier.
 - Blending - Often
- Charterer
 - Blending - Never
- Ship owner
 - Blending - Always





The perspective of the bystander

- Who is ultimately responsible for a bunker's content?
- Can the end-user make the bunker supplier responsible for the composition of VLSFO?
- Can the fuel supplier specify the environmental impact of a spill?
- Can fuel suppliers specify the physical behaviour of a spill?



-
- Produktchemskema.xlsx [Skrivebeskyttet] - Lokal
- File Home Insert Layout References Formulas Data Review View Help
- Calibri 11 A A Bold Italic Underline Text Color Fill Color Font Color Spelling & Grammar Language Tools
- W1
- | | A | B | C | D | E | F | G | H | I | J | K | L |
|----|--------------------|-----------------|----------|--|--|---|---|--|---|---------------------|-------------------------------------|--------|
| 1 | Common information | | | | | | | | | | | |
| 2 | Name (select)* | Technical Name* | Product* | The product makes up % of your total sales | Is the product a standalone product? (Please use dropdown) | Is the product a Journal? (Please use dropdown) | Has this product been known/reported to other projects? (Please use dropdown) | Do you have a recovery test certificate or similar information | When did you start to produce the product | Sulfur content in % | Trace and heavy metal contents in % | Visual |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | |

And then what happened?



Co-funded by
the European Union

Meanwhile around the world....

imaros

- COVID
- Oil Prices





Questionnaire

- What types of new generation ULSFO and VLSFO do you sell/trade/produce?
- Have some of your old products been replaced or lost market shares to ULSFO/VLSFO?
 - If yes, which products
- What are your thoughts on how the market will develop?
- Would you be willing to provide product data sheets?
- Would you be willing to provide samples for testing? (samples specified)
- Do you have knowledge about accidents wrt. Equipment or procedures because of the new products characteristics?





Dialogue partners

- Dutch Petroleum Association,
 - In specific Shell
- Swedish refineries,
 - In specific Preem and Stena Oil
- Belgian Petrol Federation
 - In specific Port of Antwerp and Fapetro
- EMSA contracted bunker deliverers
 - In specific REPSOL
- Repliers from the IMAROS partner countries
 - In specific Valetta Bunkers and Bunkerone Holding

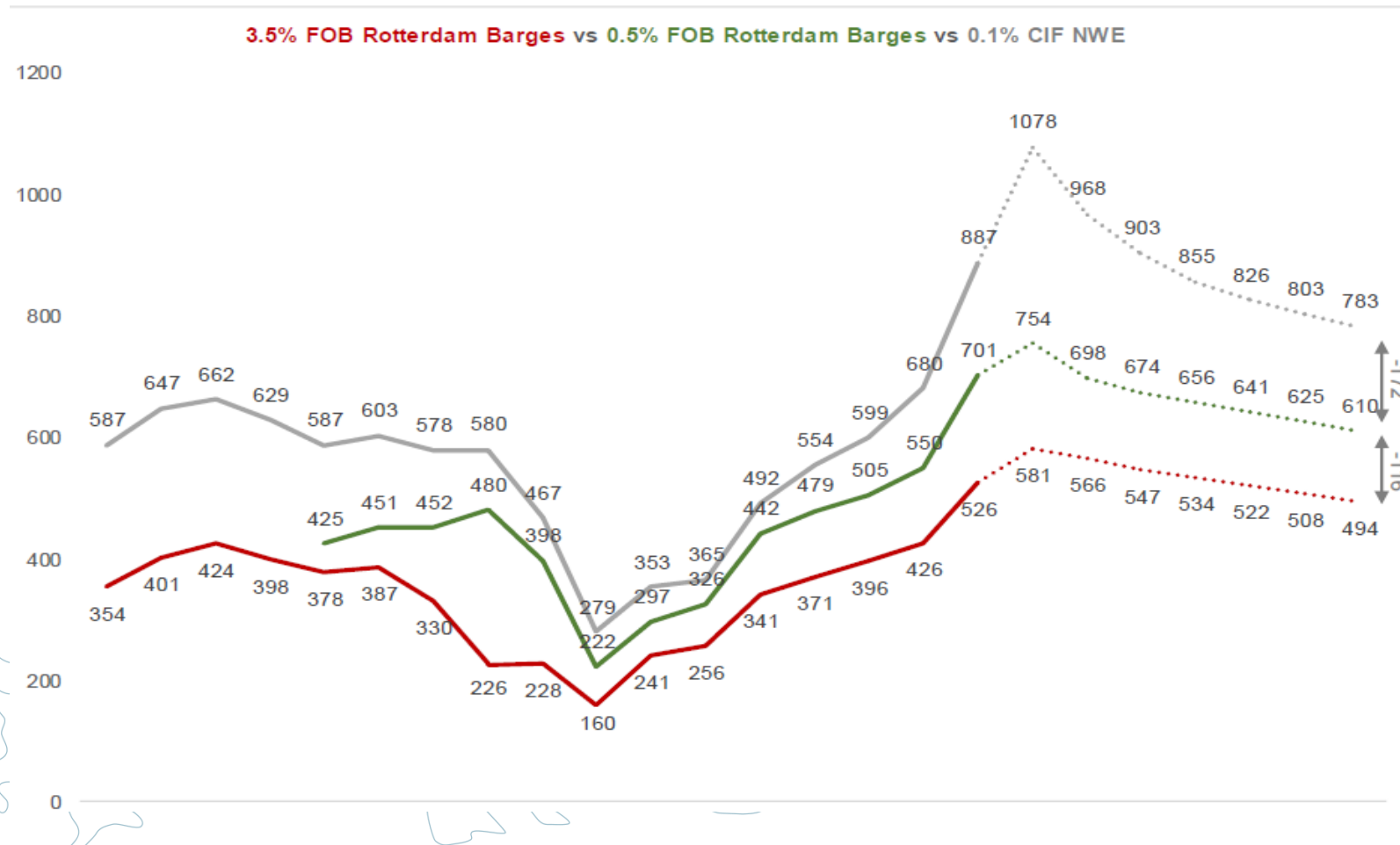
Full list will be in the IMAROS report



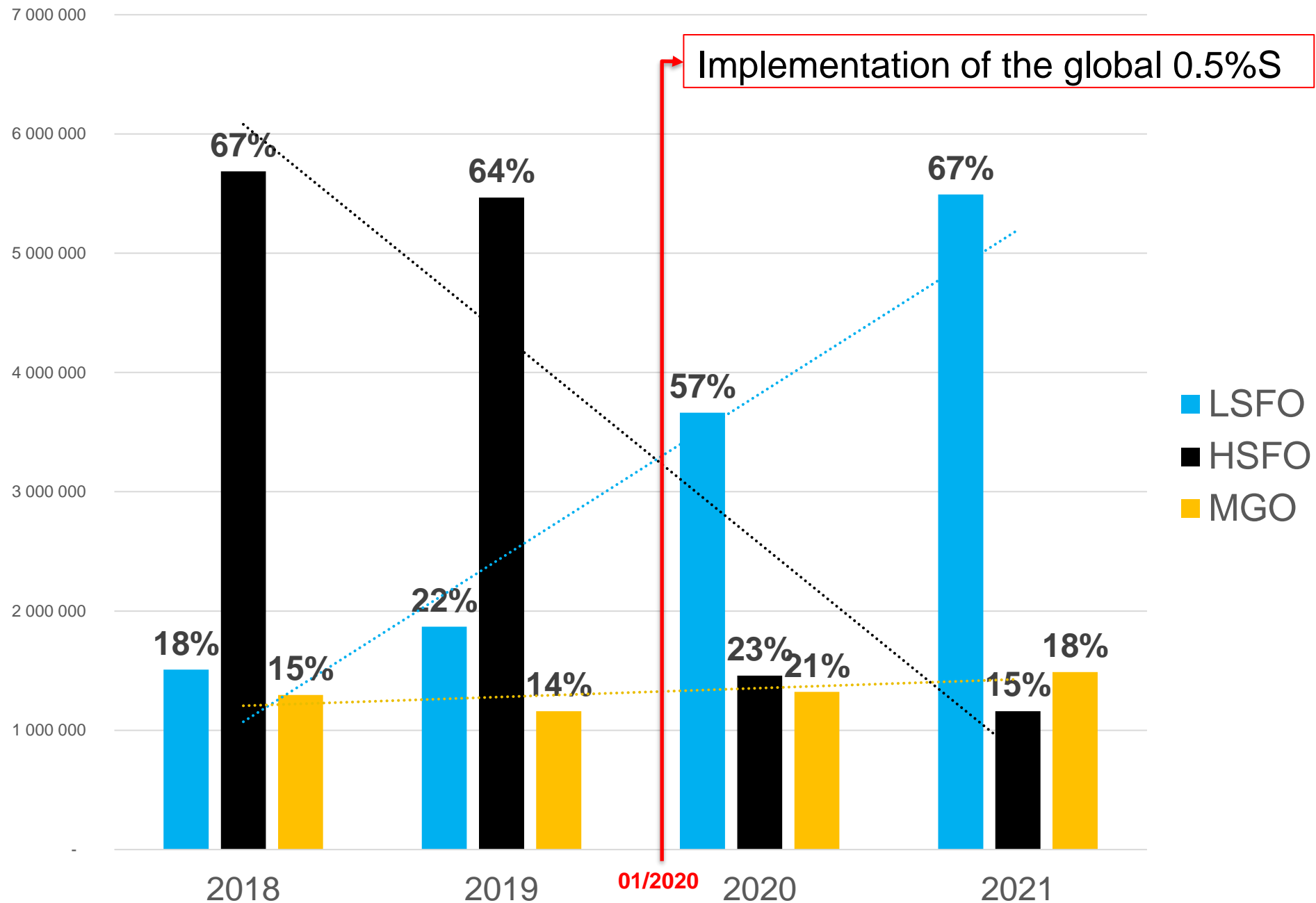


Outcome of dialogue

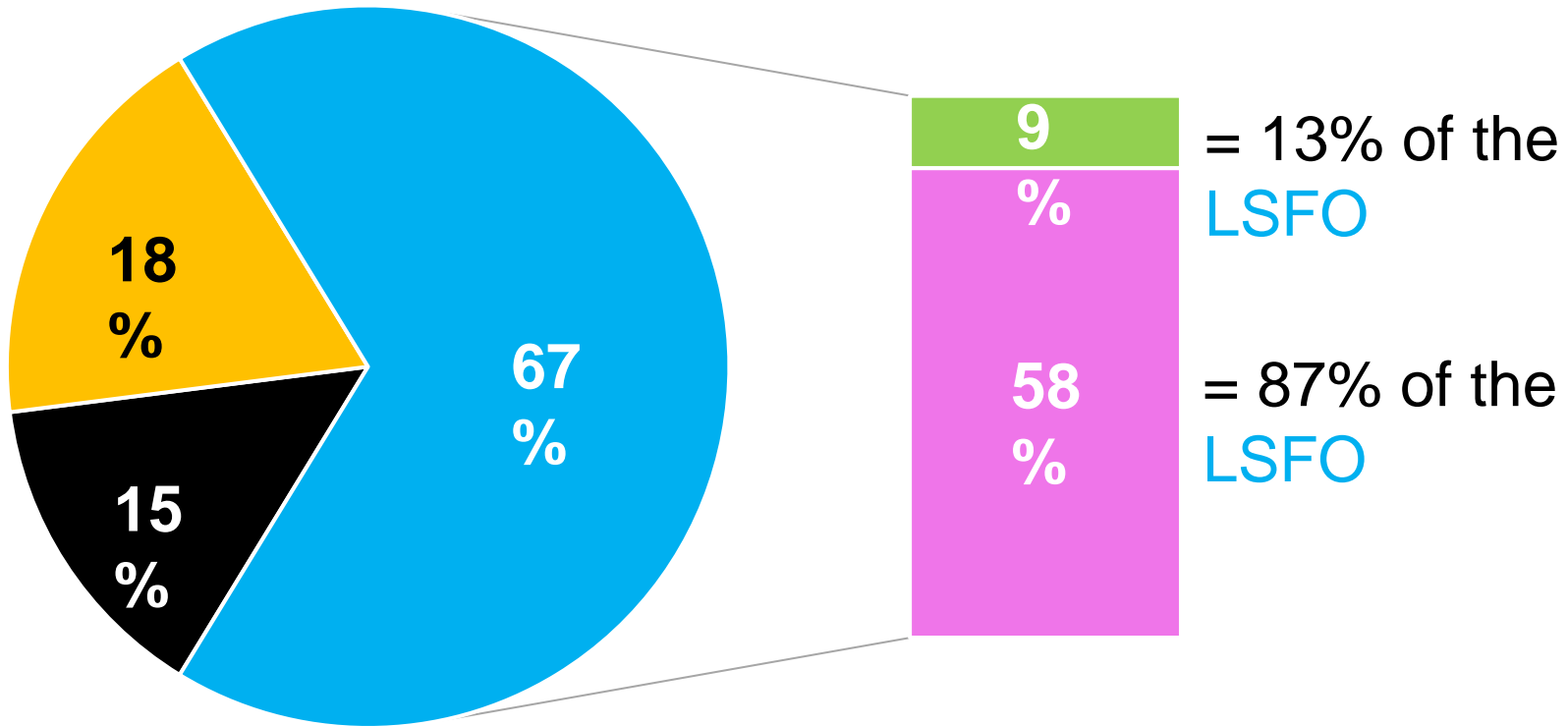
- Global uniformity, does it exist?
 - Palm oil as additive
 - WAKASHIO
- Market Characteristics
- Market trends
 - HFO vs Low Sulphur



Evolution BE Petrol Balance 2018 - 2021



Breakdown 2021



■ HSFO $\geq 0.5\%$
■ LSFO
■ VLSFO $< 0.5\%$

■ MGO
■ ULSFO $< 0.1\%$





Findings

- Predictability wrt response challenged
- There may be different trends in e.g. Asia vs. Europe
 - Blending policies
 - Batches
- Implications of the present political situation?
 - African Sweet Crude Oils
- What speaks for follow up
 - Trends – or lack of trends
 - Findings from WP 2 or 3

