



Changes to Marine Fuels Supply Considerations

Bunker Summit – Greece 2007

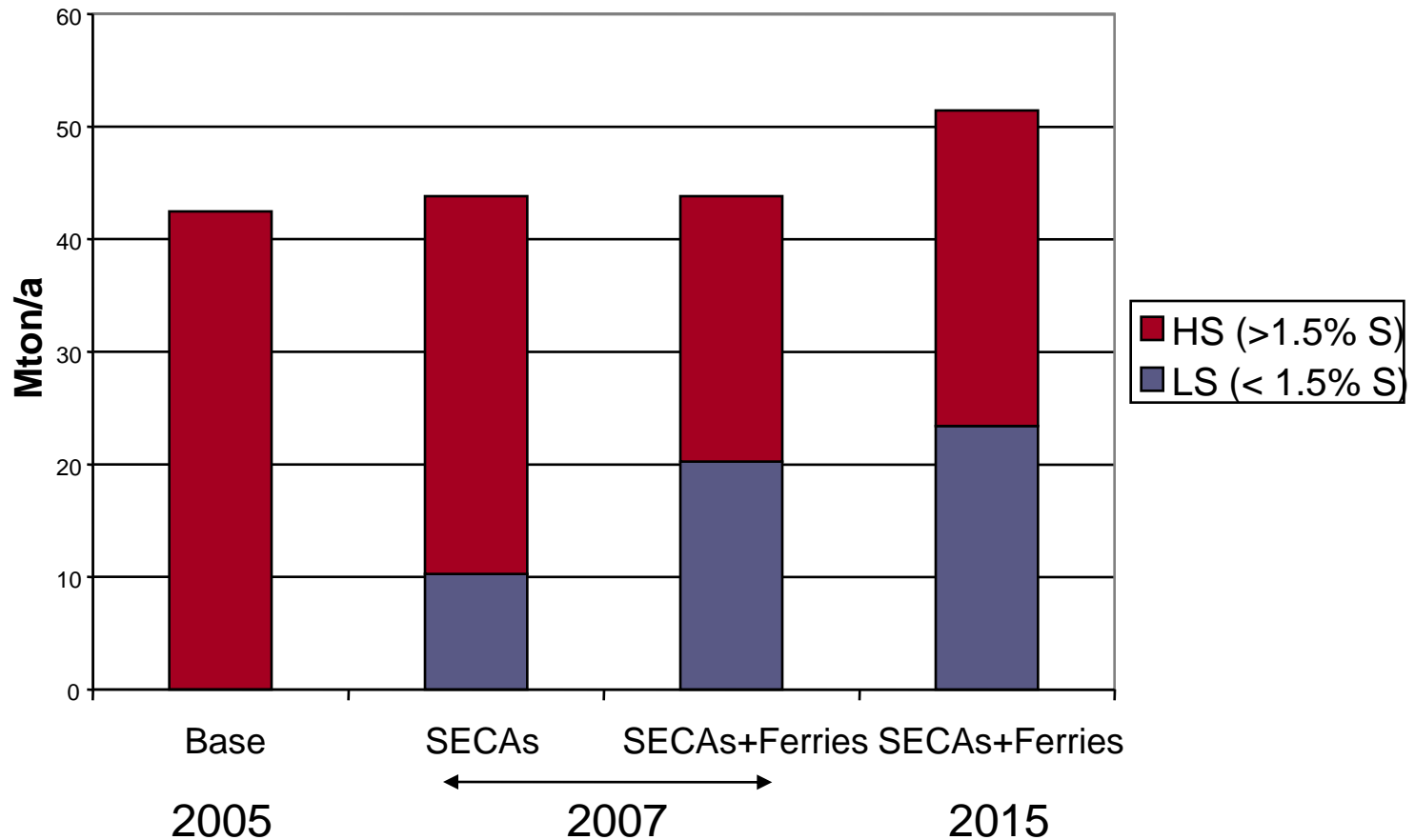
Martin Suenson, EUROPIA
Athens, May 2007



**EUROPEAN
PETROLEUM
INDUSTRY
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European Marine Fuel Market

Estimated EU Marine Bunker Fuel Demand



Source: CONCAWE

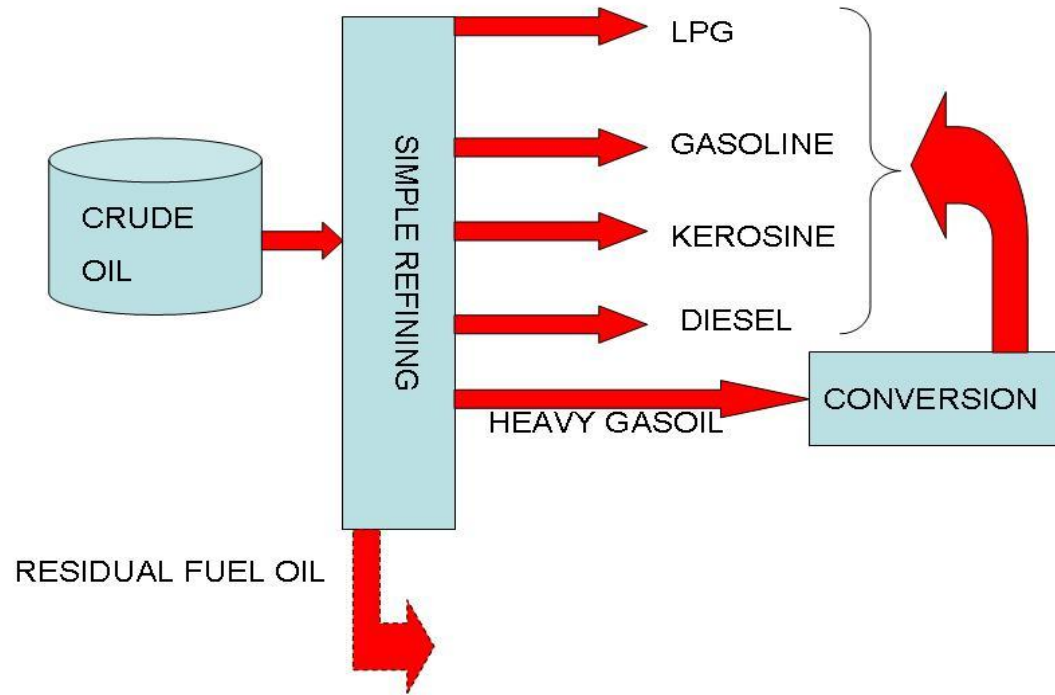


Large changes to marine fuel specifications

- Fuel specifications can be set by regulation, but availability/production will be driven by economics.
- Individual refiners will make decisions based on normal prudent business logic.
 - Expected margins
 - Alternatives to production
 - Alternative investment opportunities
 - Regional strategy
 - Confidence in market stability
 - 15+ years
 - Driven by fundamentals, not potentially temporary situations, e.g. tax breaks or incentives



Refinery production



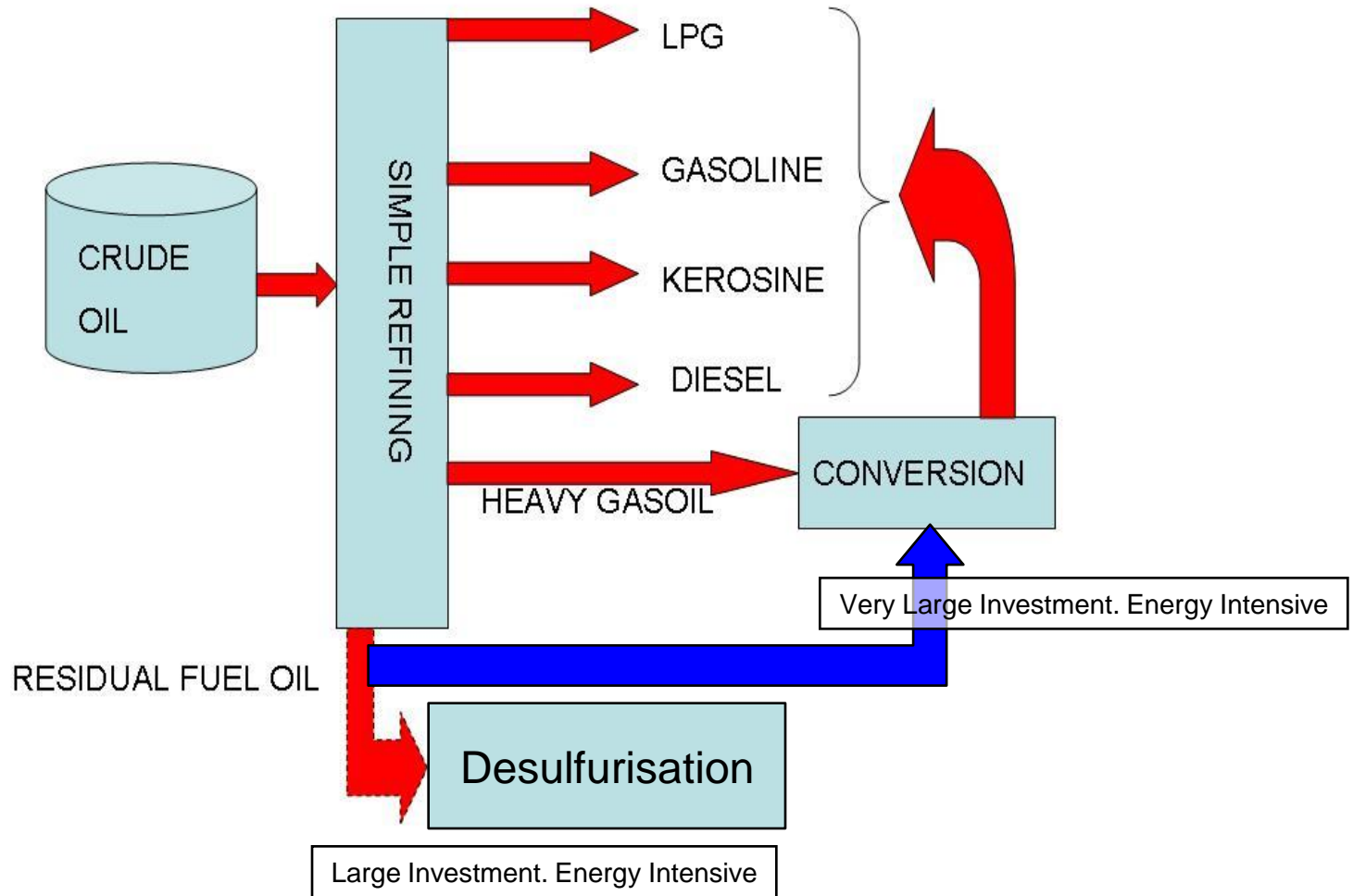
Yield of each product relatively fixed

Product properties and yields are functions of refinery configuration and the crude oil properties (origin).

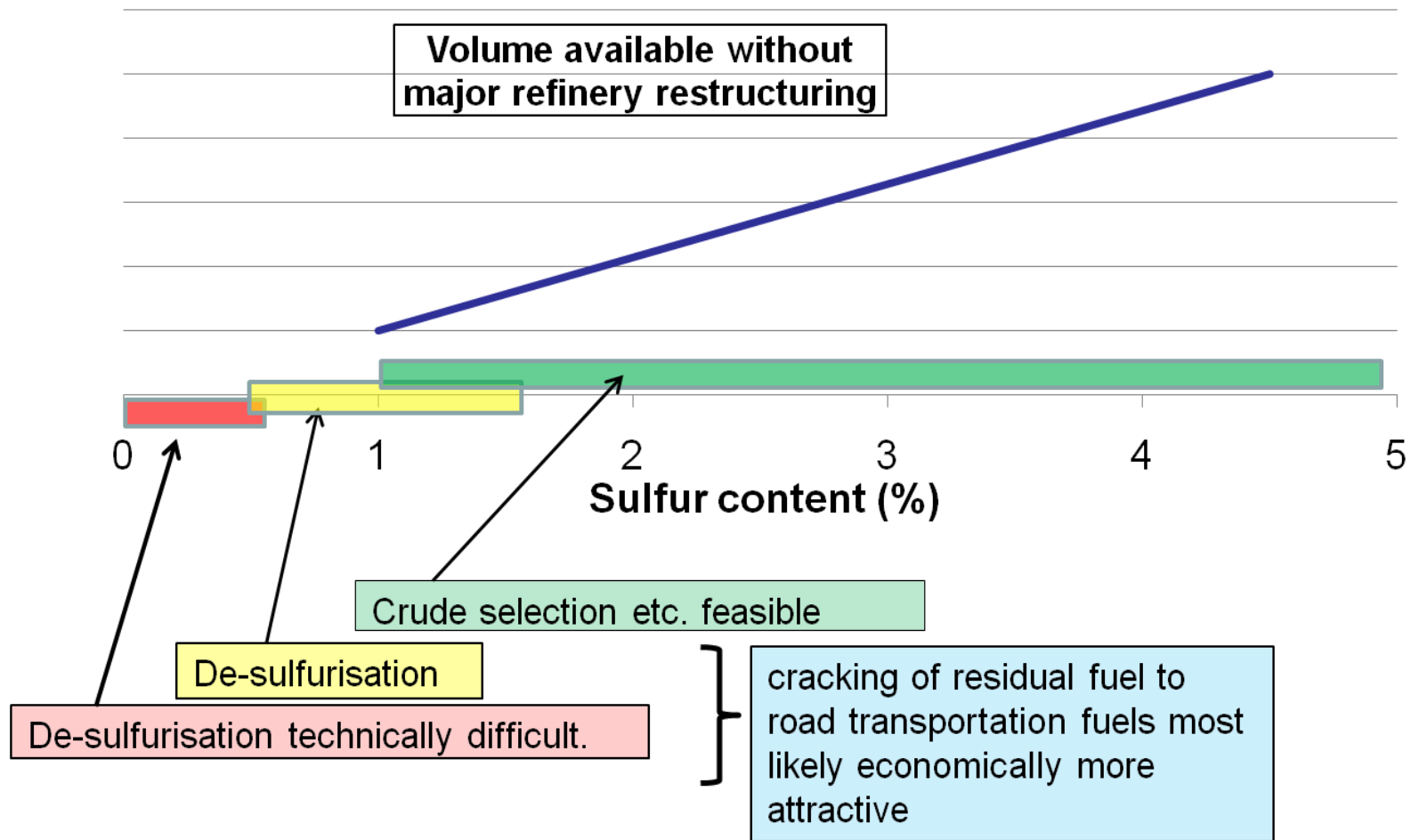
Selecting low sulfur crudes will give low sulfur residual fuel oil – up to a limit



Producing very low sulfur marine fuels



Low Sulfur marine fuels Means and availability



Example: An “all distillates world” European response options

- Large scale change:
 - World:
200 million tpa of additional distillates – would require ca. 600 million tpa of crude (more than annual production of Saudi Arabia)
 - Europe:
50 million tpa of additional distillates
Europe currently imports ca. 33 mill tpa of distillates from a.o. Russia
- Most options are insufficient:
 - Operational adjustments
 - Import products from outside EU
 - Replace distillates in other markets (ex.: heating oil to gas)
 - Leave marine fuels markets and seek alternative outlets
- Will require large investments in refineries
 - Each investment is very large with a refiner’s perspective
 - Resource shortage and investment dynamics: 20+ years to complete the change
 - Significant increase in refinery CO₂ emissions



Impacts

Individual refiners will seek their best course of action and the market reactions can only be predicted in qualitative terms.

However, some effects are very likely

- Supply situation would become uncertain
 - Market dynamics: Who will invest and when?
- Cost of marine fuels would likely more than double
- Price increases likely for all distillate products
 - Automotive diesel, jet, home heating oil
- Change in refinery configuration can only be gradual and could take some 20 – 30 years.
 - Distillate fuels and residual fuels would need to co-exist in the market for a long time
 - Significant price difference would require international compensatory mechanisms to avoid competitive distortions



