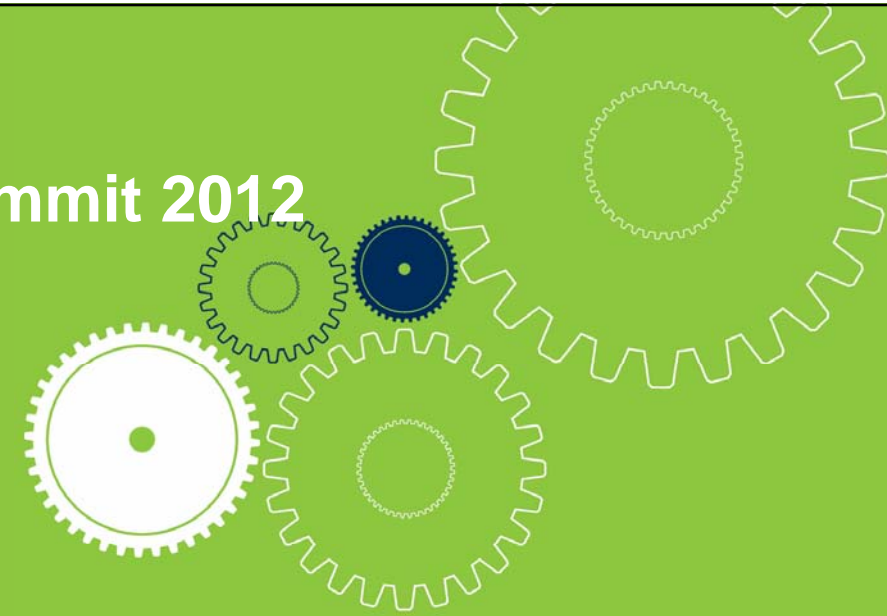


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Session 4

Imperatives for sustainable investments in Shipping

Lloyd's
Register

LIFE MATTERS

Making decisions in a complex world



Negotiating complexity



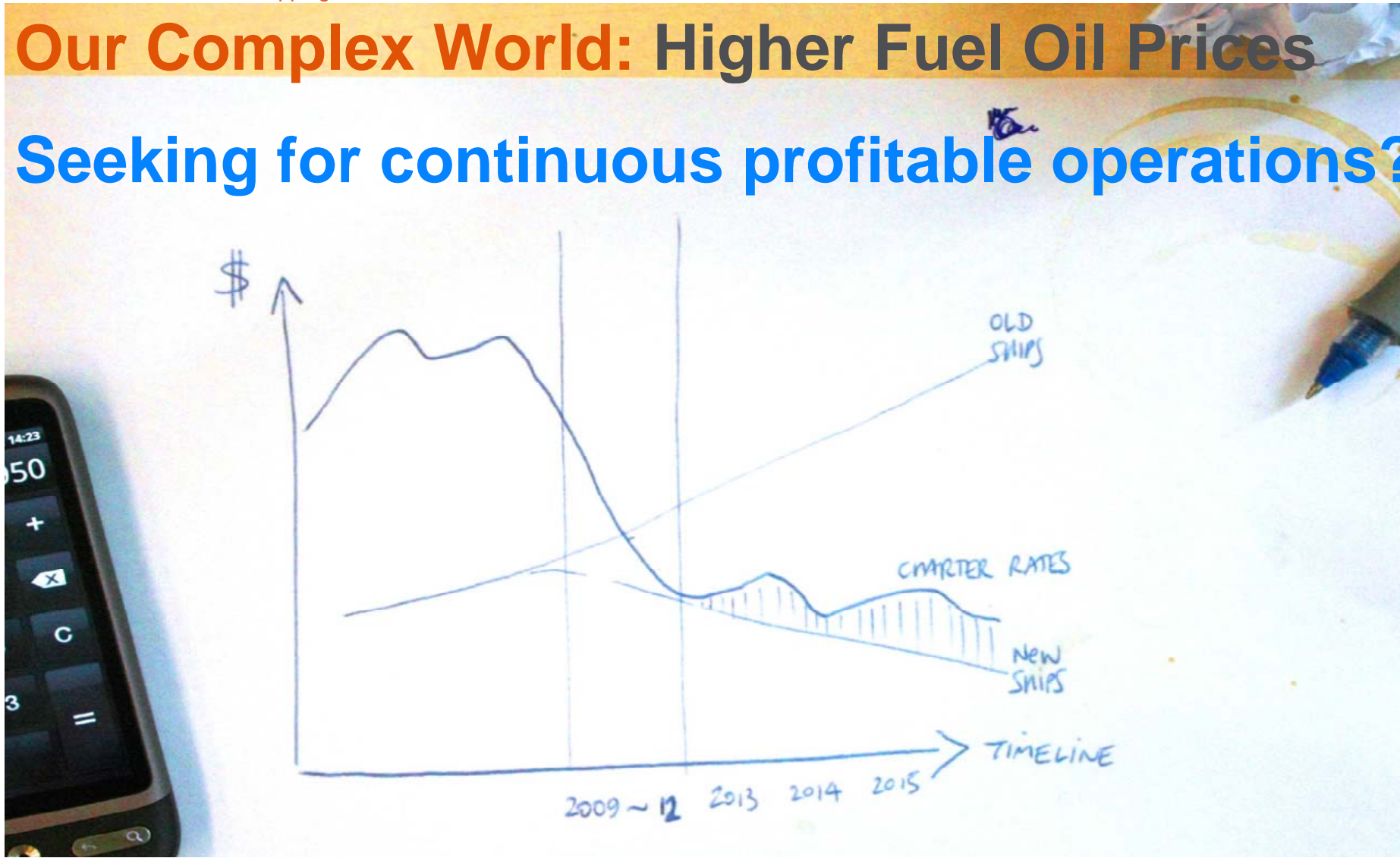
Higher fuel
prices

New
technology

New
regulation

Our Complex World: Higher Fuel Oil Prices

Seeking for continuous profitable operations?



Solutions for Reducing FOC



New Designs

Existing

Designs

In-Service Ships

Hull Lines (Fore, Mid and Aft Bodies)

Propeller designs

Rudder design and bulb

Appendages design, location

Energy saving devices

Hull interactions underwater (wake fields, discharges,...)

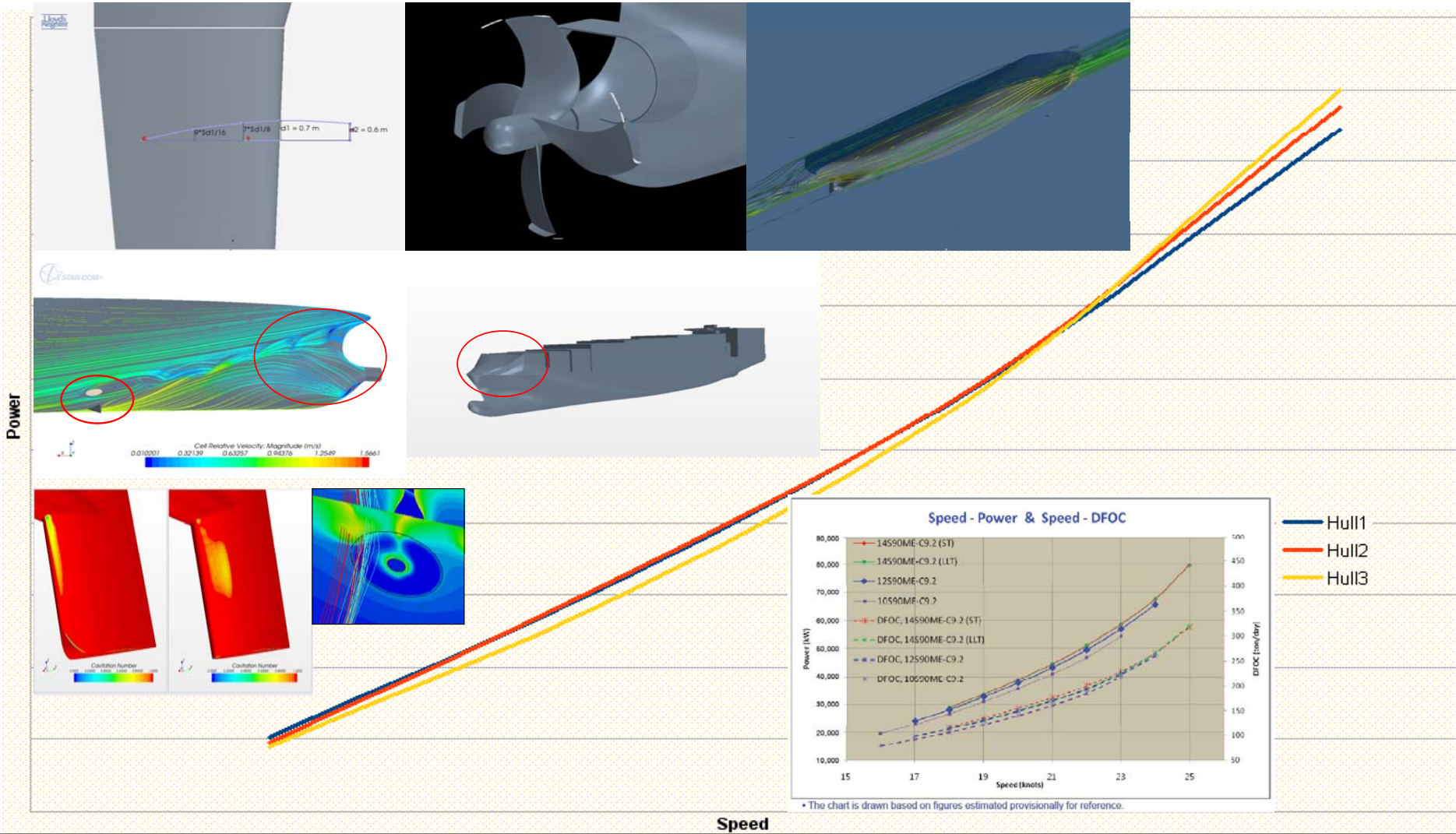
Aerodynamic drag optimization

Compliance with Rules

Cavitation / erosion performance

Novel designs

INTEGRATED SOLUTIONS to meet Target Performance

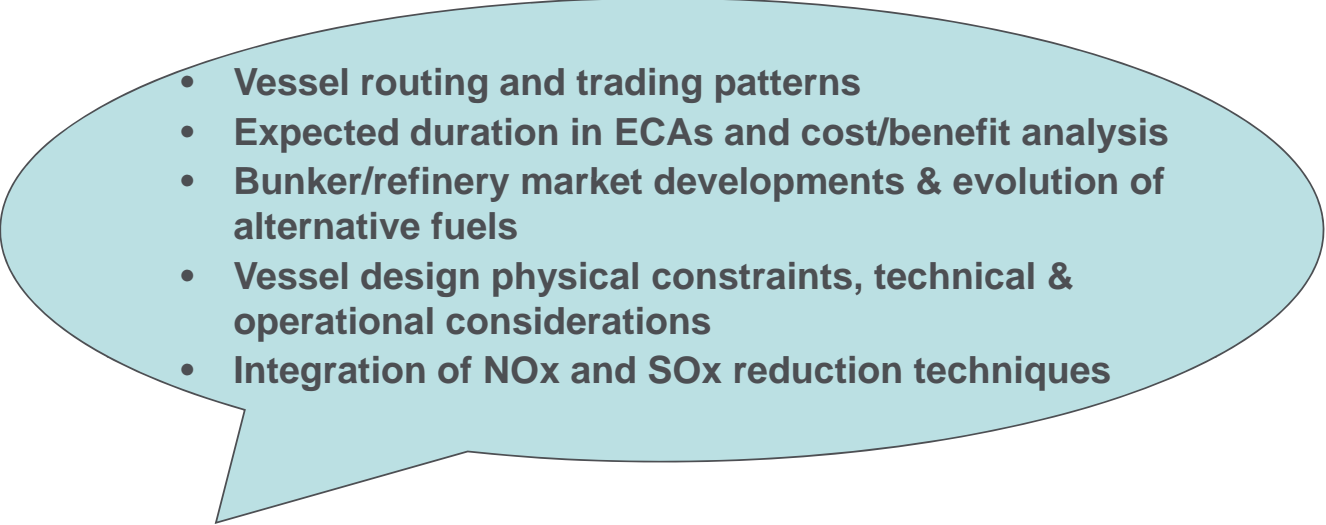


If companies can get this right at a strategic level and implement energy management – whether in new designs, existing ships and in operations – then net bottom line and compliance benefits can follow.



Considerations:

- Newbuild vs Resale/2nd Hand
 - Asset prices
 - New designs
 - FOC
 - Delivery
 - Environmental Regulations
 - Charterer requirements
 - Retrofit solution feasibility
- Commercial advantage
- Flexibility - Speed
- Future cost of carbon

- 
- Vessel routing and trading patterns
 - Expected duration in ECAs and cost/benefit analysis
 - Bunker/refinery market developments & evolution of alternative fuels
 - Vessel design physical constraints, technical & operational considerations
 - Integration of NOx and SOx reduction techniques

- Fuel availability and future fuel flexibility
- Human resource requirements
- Risk of non-compliance
- Public perception

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Thank you!

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