



DNV

WHEN TRUST MATTERS

Ensuring Safe Progress for Shipping

MPA International Safety@Sea Conference

Knut Ørbeck-Nilssen, CEO DNV Maritime

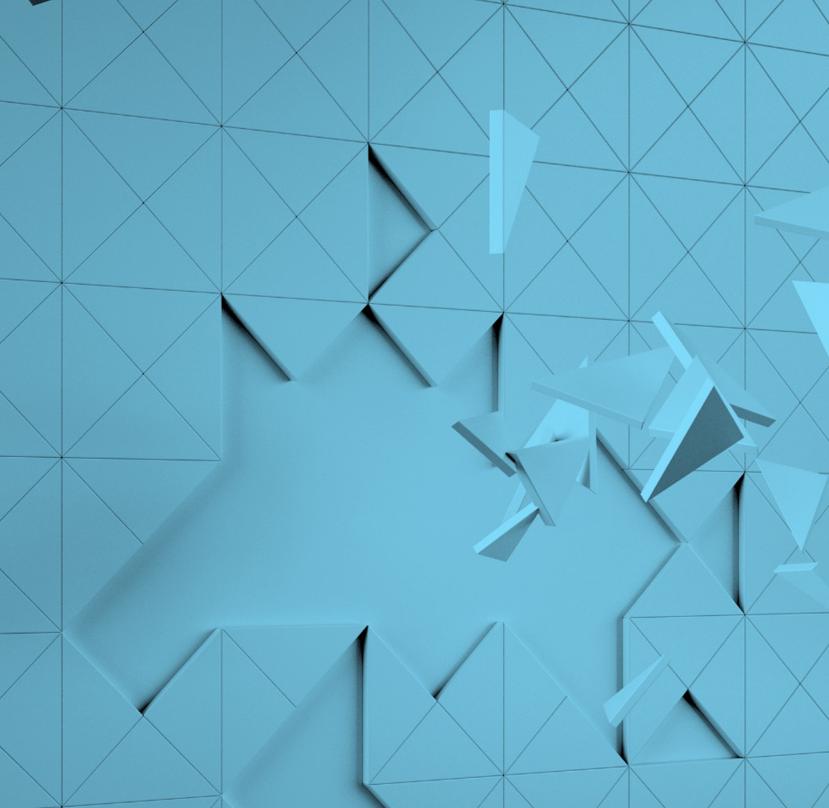
Singapore, 30 August 2022



A world in transition – tectonic shifts rocking our foundations



Political shocks and unpredictable markets



Decarbonization defines regulations and ESG agendas



Technology enables a maritime renaissance

Impacts of the pandemic prevail

- **Lower maintenance levels on board**

- Lack of onboard surveys/audits/PSC inspections, superintendent onboard support and spare parts have led to a dip in general maintenance level across the industry
- Paris MOU reported 521 PSC detentions in 2021, its highest detention rate since 2017. This regional trend is not currently mirrored in other PSC regimes but calls for vigilance

- **Crew crisis**

- Crews are fatigued and still face challenges while travelling
- Lack of personnel due to the conflict in Ukraine
- Outlook for finding next generation of seafarers challenging

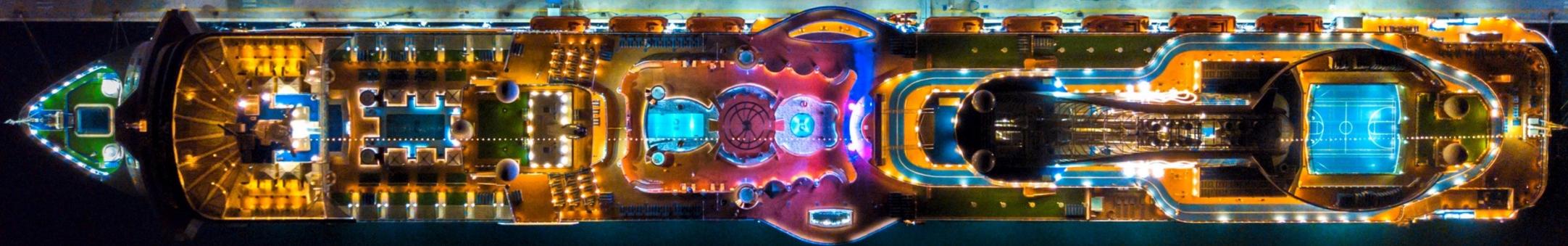


Ship safety: 2021 marks end of positive trend

- While the total number of recorded casualty incidents has been declining since 2017, in 2021 numbers reached the highest in ten years.
- Much of the increase occurred in the second half of the year. Reasons could possibly be correlated to increased activity as businesses were recovering from the pandemic.
- Fire safety is an ongoing concern – especially on large containerships and Ro-Ro vessels transporting electric cars.
- This means firefighting systems need to be ship specific.
- Container losses continue to be a safety issue that can be hard to predict. DNV addresses this challenge with new Anti-Roll Assist app.



Preventing blackouts can save lives



Multiple power-loss events on vessels in recent years

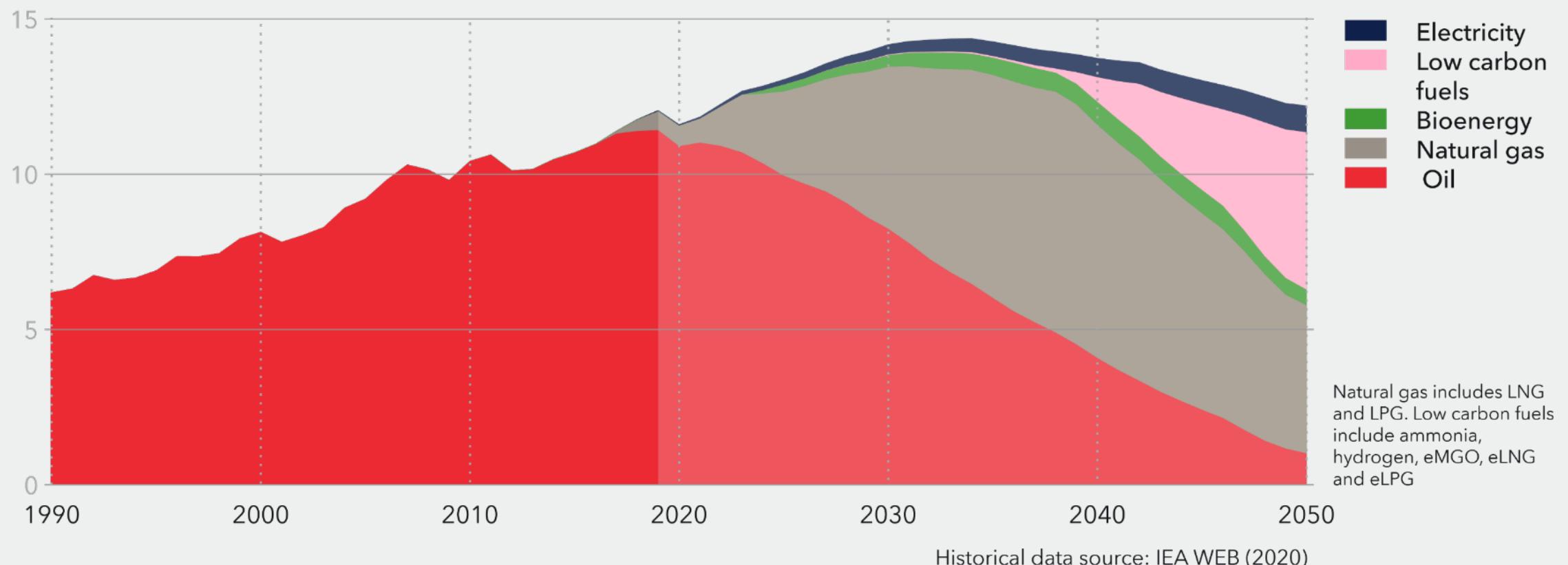
Blackouts can pose a serious risk to vessels, people and the environment

DNV published guidance on how to use holistic barrier management to manage these risks

Decarbonization outlook: The maritime fuel mix will change dramatically

World maritime subsector energy demand by carrier

Units: EJ/yr



Emerging fuels create new safety risks for assets and crews



Slow steaming and new fuels could increase risk of machinery failure

Alternative fuels made up 17% of newbuilds in 2021 and more than 36% of GT

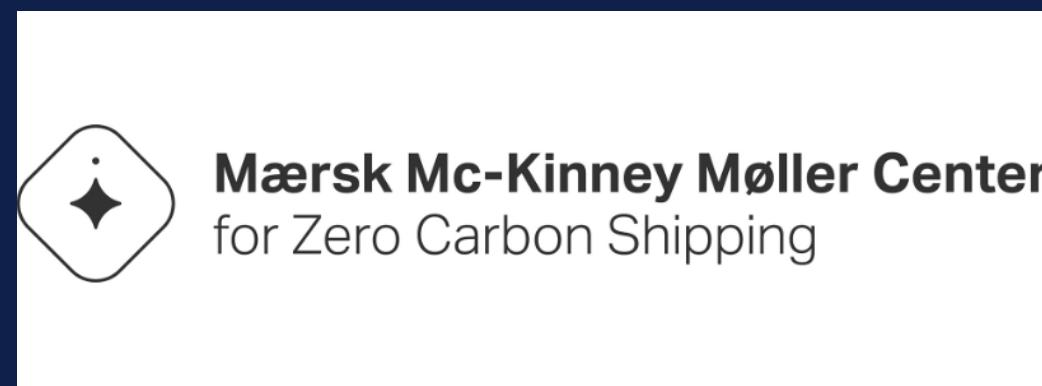
Technical challenge: Changes to storage and propulsion systems

Human factor: Extensive crew training needed for operations and bunkering

Collaboration is the...



...real fuel of the future



Thank you for listening.

Knut Ørbeck-Nilssen, CEO DNV Maritime
knut.oerbeck-nilssen@dnv.com

www.dnv.com