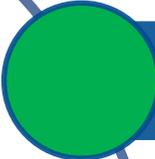


Weg(e) zur Null-Emissionskreuzschifffahrt



Online, June 14, 2021



Vorstellung Carnival Maritime



Null Emissionskreuzfahrt – was ist das?



Der Werkzeugkasten

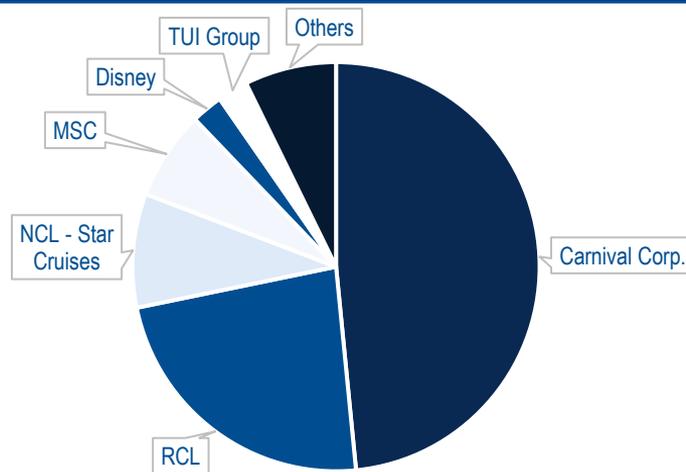


Ein Praxisbeispiel



CARNIVAL CORPORATION & PLC

- 107 ships visiting more than 700 ports around the world
- 18 new ships between 2018 and 2022
- Nearly 11 m. guests per year
- 48% worldwide market share





- 69 years of history
- 137 different itineraries,
- 261 destinations
- Italian excellence
- total of 10 ships in service
- all flying the Italian flag



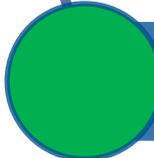
- one of the fastest growing and most economically successful tourism companies in Germany
- 14 cruise ships at present
- one of the most modern fleets in safety standards



- 4 cruise ships with unique Italian flavor
- provides the Asian passengers with Italian-flavored experience onboard
- In 2015 recognized as “Asia Best Cruise Line”
- Market leader in the region



Vorstellung Carnival Maritime



Null Emissionskreuzfahrt – was ist das?

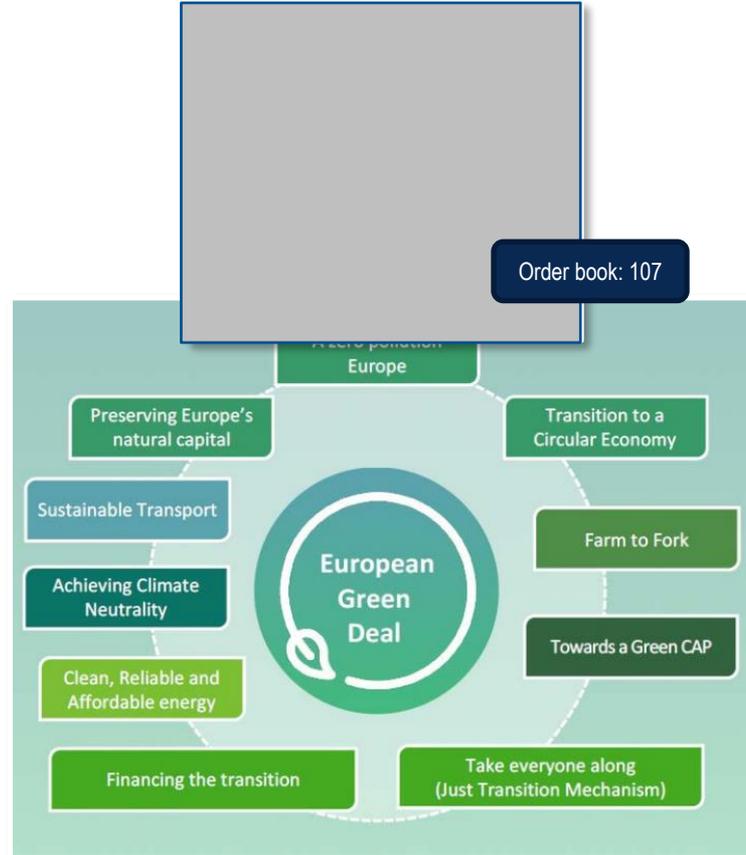
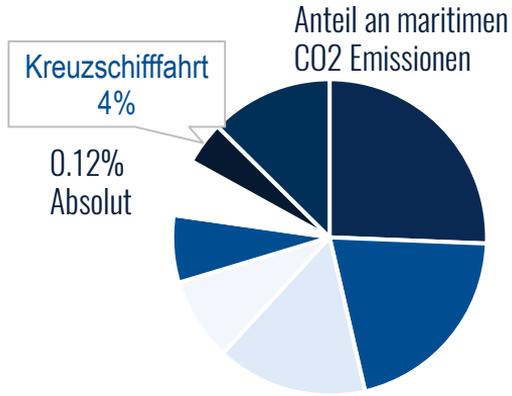


Der Werkzeugkasten

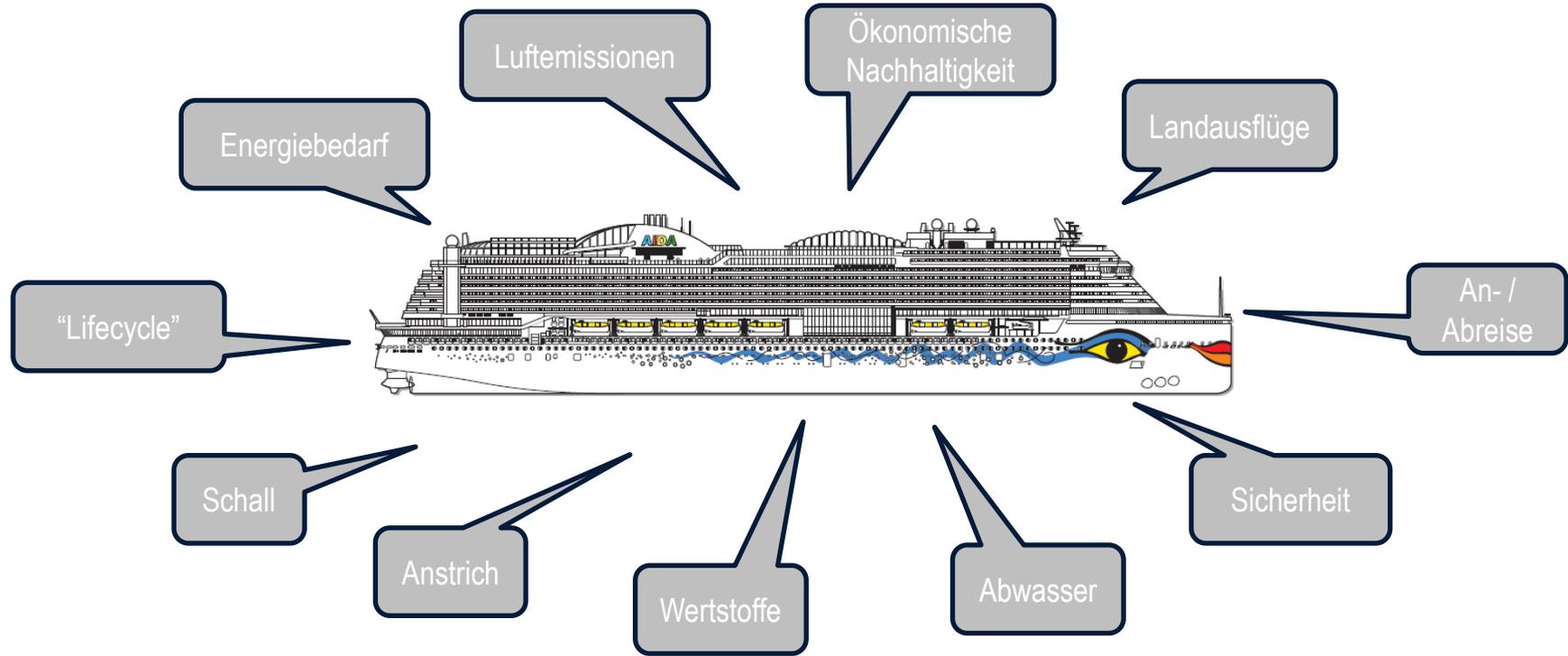


Ein Praxisbeispiel

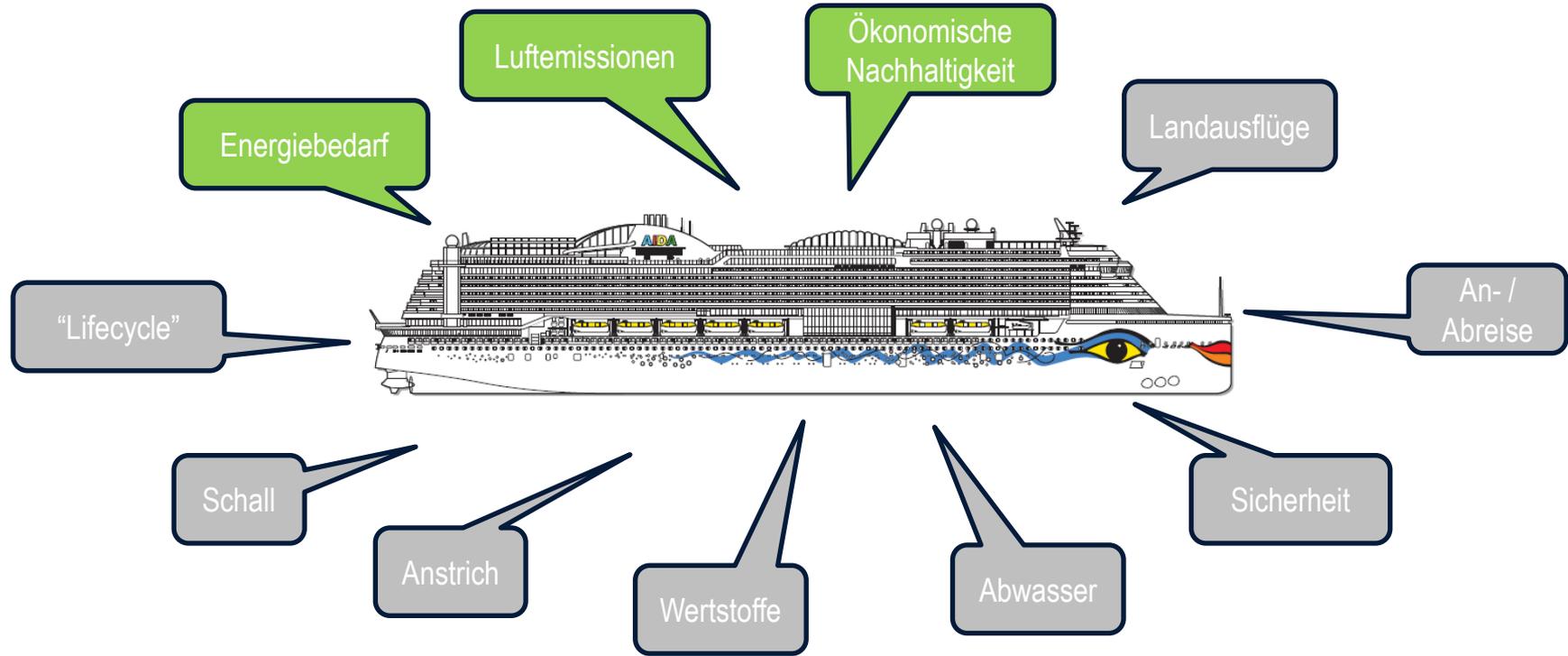
Warum “Null-Emissionskreuzschiffahrt”?



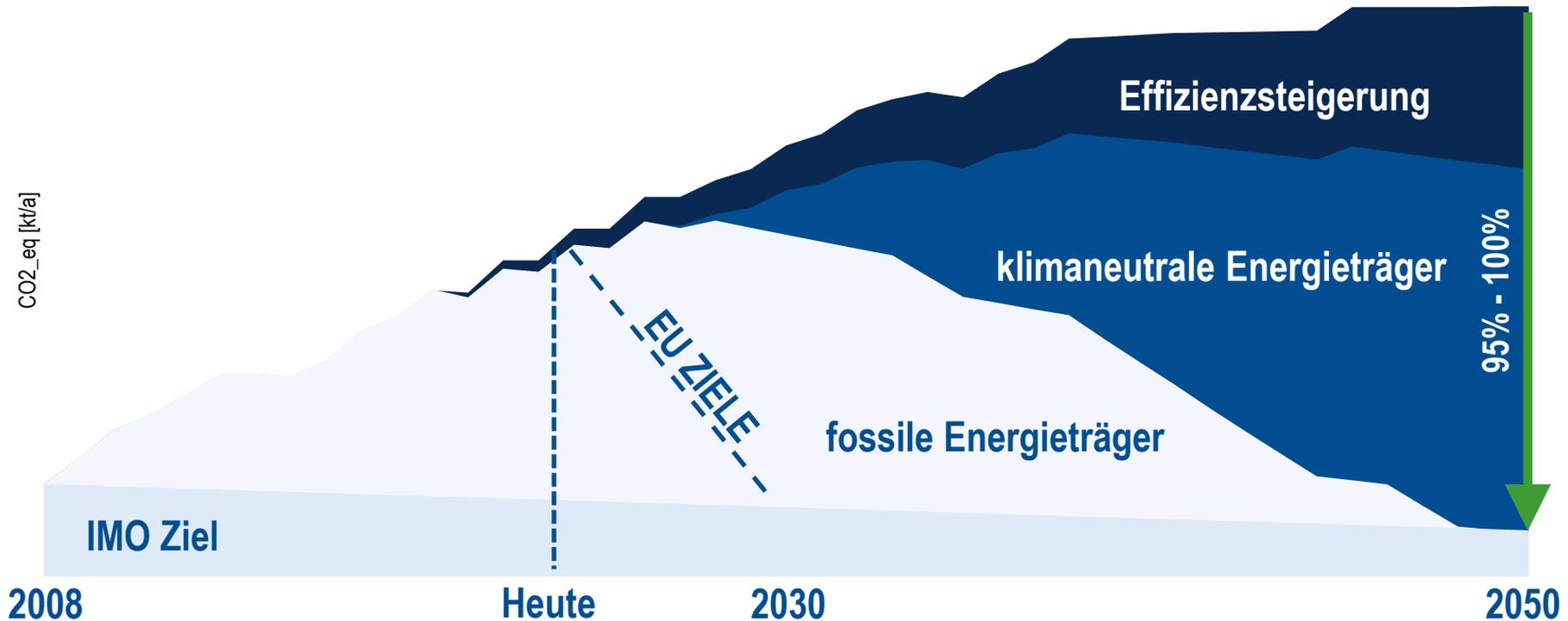
Bausteine einer nachhaltigen Kreuzschifffahrt



Bausteine einer nachhaltigen Kreuzschifffahrt



Klimaziele & Herausforderung für die maritime Industrie

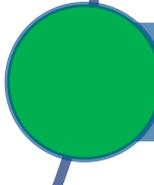




Vorstellung Carnival Maritime



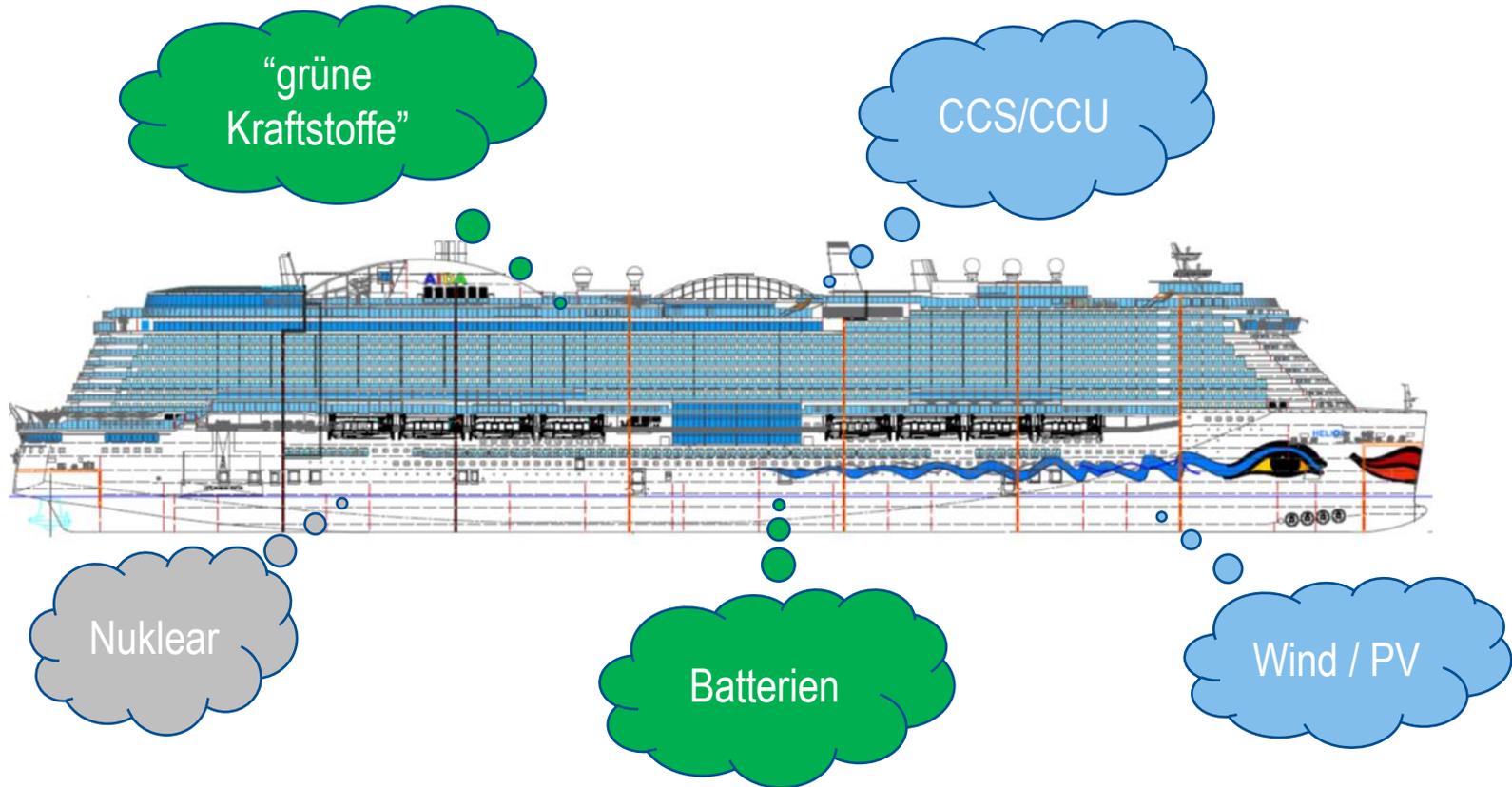
Null Emissionskreuzfahrt – was ist das?



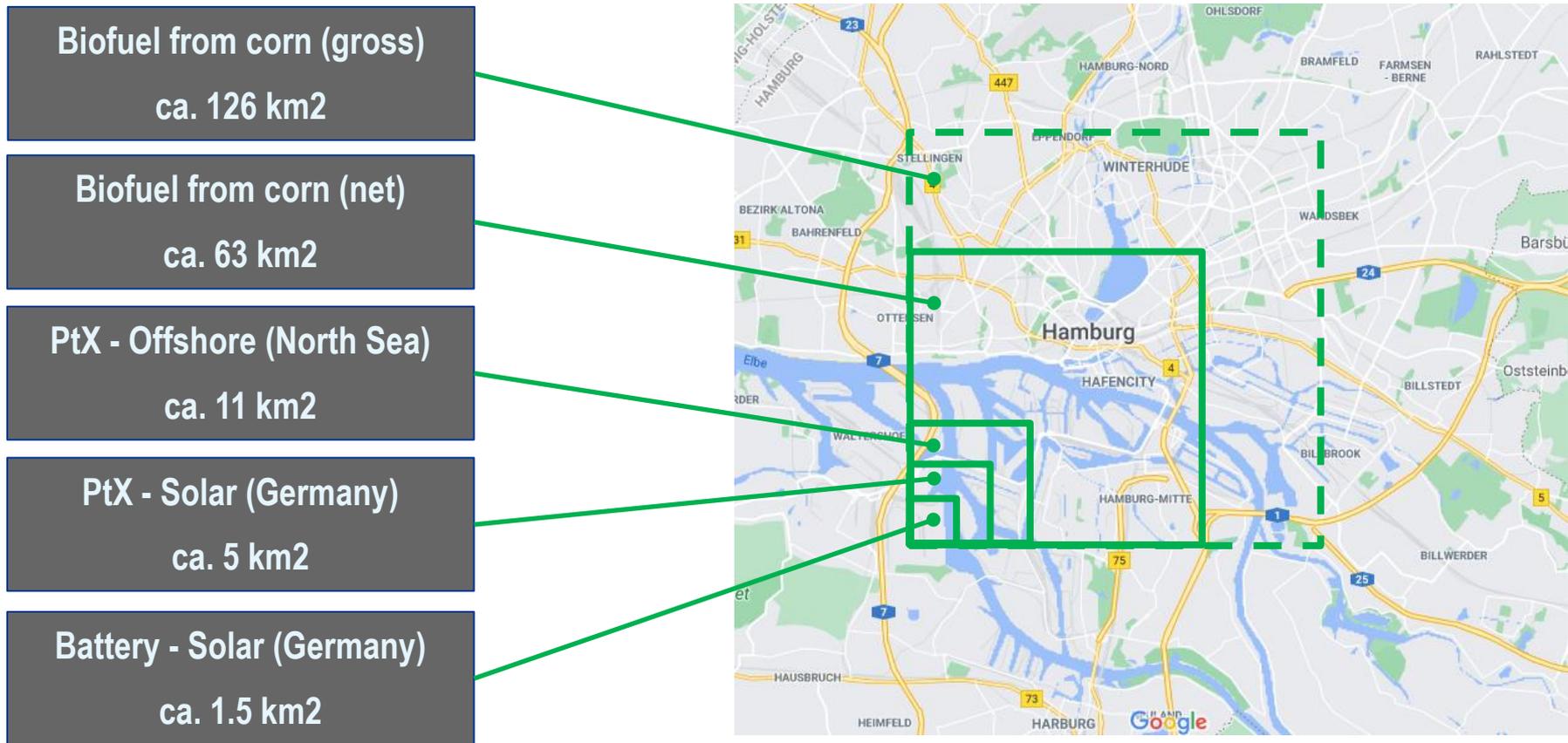
Der Werkzeugkasten



Ein Praxisbeispiel

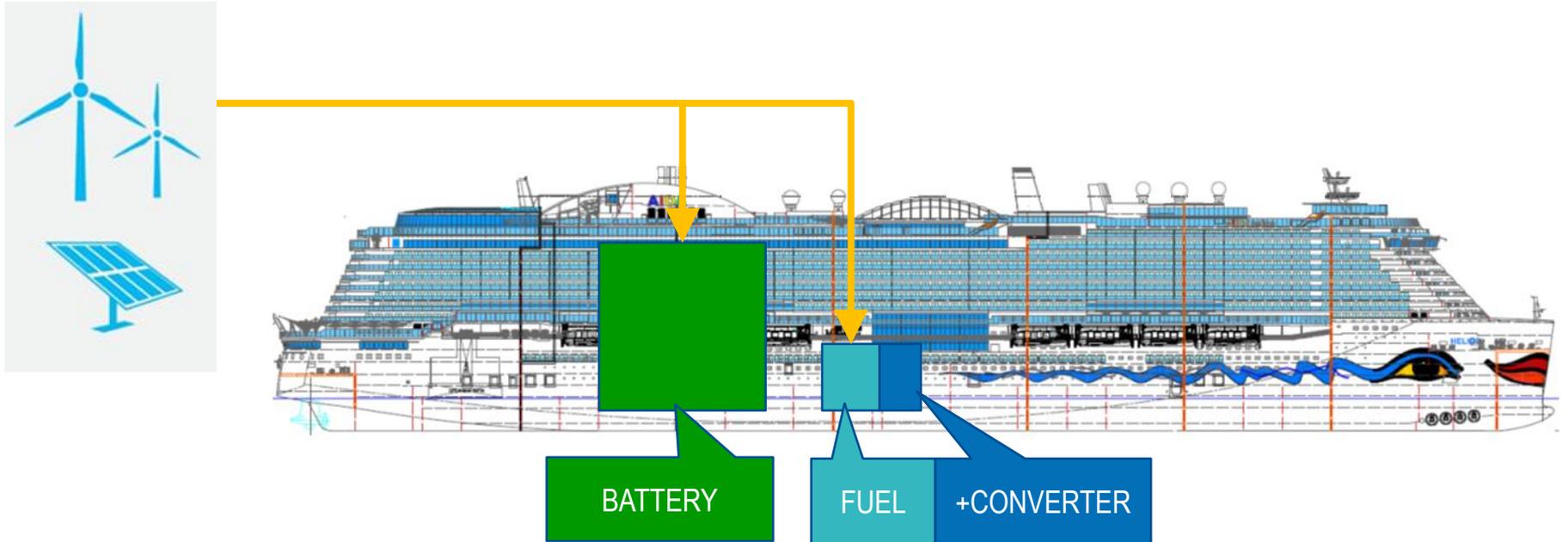


Langfristig müssen wir auf erneuerbaren Strom setzen

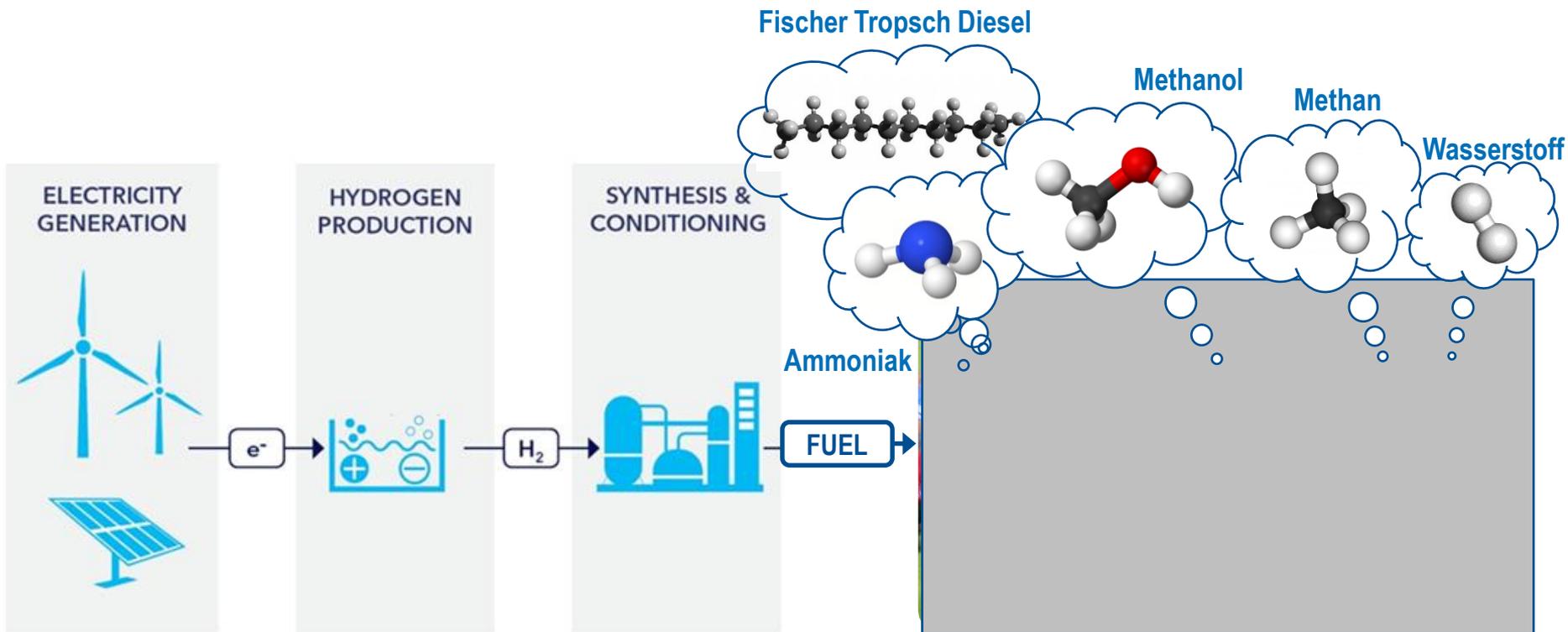


Nur flüssige Energieträger ermöglichen die Transportaufgabe

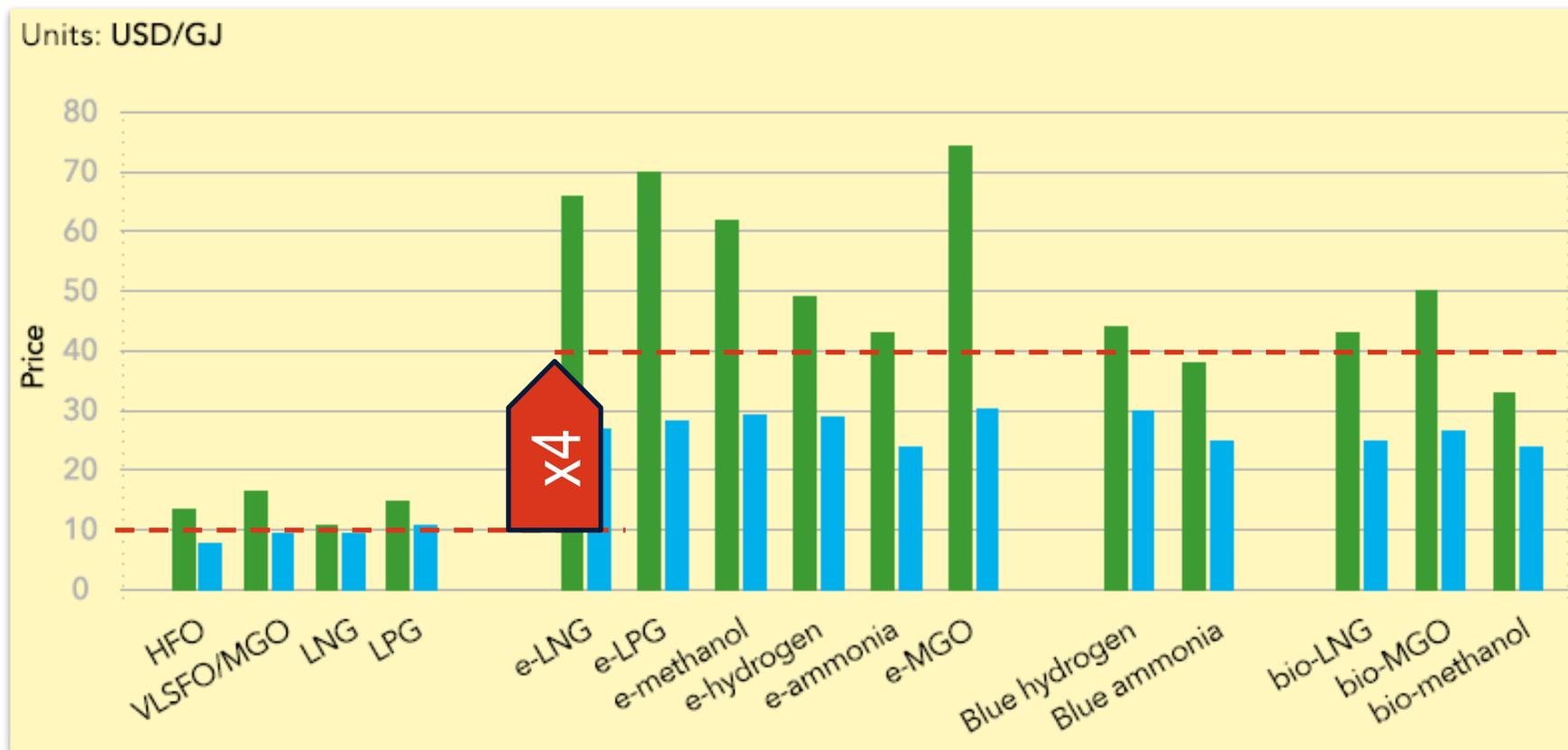
Beispiel: Benötigte Volumen, um den Atlantik zu überqueren



Wasserstoff! – Aber wir brauchen den richtigen Träger



“Grüne” Kraftstoffe ca. 3-5 mal teurer als fossile Kraftstoffe



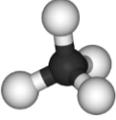
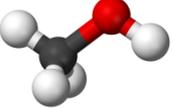
„Grüne“ Kraftstoffe

- Treibhausgasneutral
- Niedrige Emissionen
- Sehr teuer



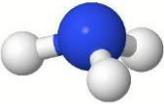
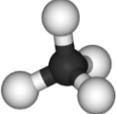
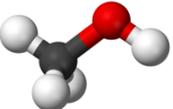
Konverter

- Niedrige / null Emissionen
- Hohe Effizienz
- Hohe Leistungsdichte
- Geringe Kosten
- Technische Reife

	Kolbenmaschine 	Turbine 	BSZ 
Wasserstoff 			
Ammoniak 			
Methan 			
Methanol 			
FT Diesel 			



In PaXell 2 wird untersucht: Methanol + Brennstoffzellen

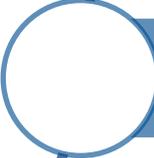
	Kolben maschine 	Turbine 	BSZ 	
Wasserstoff 				
Ammoniak 				
Methan 				
Methanol 				Projekt PaXell 2
FT Diesel 				



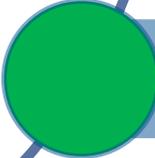
Vorstellung Carnival Maritime



Null Emissionskreuzfahrt – was ist das?



Der Werkzeugkasten



Ein Praxisbeispiel



Bundesministerium
für Verkehr und
digitale Infrastruktur



MEYER WERFT
PAPENBURG 1795



FREUDENBERG
INNOVATING TOGETHER

S E G N O

LÜRSSEN

Blohm+Voss



**HELM
PROMAN
METHANOL**



DNV·GL



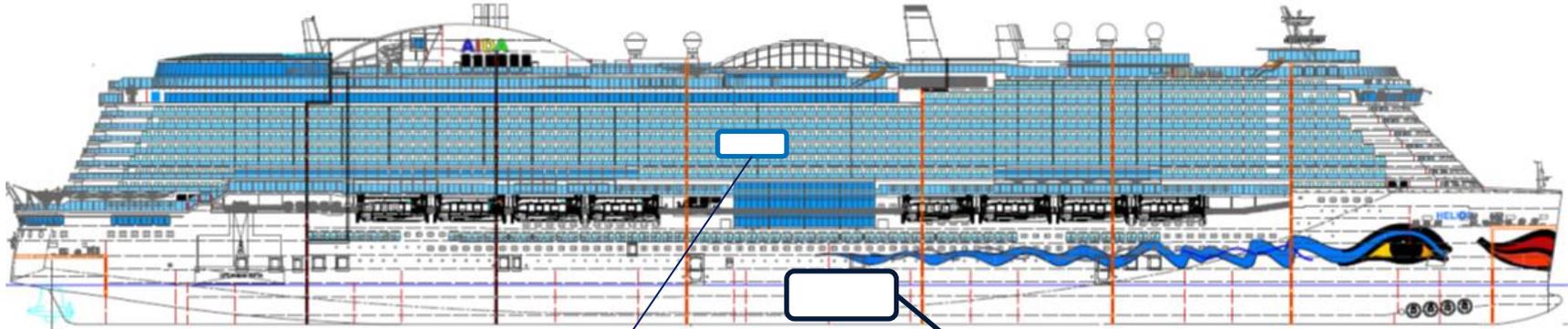
CARNIVAL
MARITIME



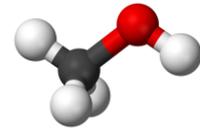
DLR



PaXell installation auf der AIDAnova - Betriebsstart Ende 2021



Fuel Cell



Methanol Tank

Danke!

