



DANISH MARITIME AUTHORITY

THE MANDATORY OPERATIONAL GOAL-BASED SHORT-TERM MEASURE

GST Europe 2020

11 March 2020

Lau Blaxekjær, PhD

WWW.DMA.DK



[@DMA_SFS](https://twitter.com/DMA_SFS)



DANISH MARITIME AUTHORITY

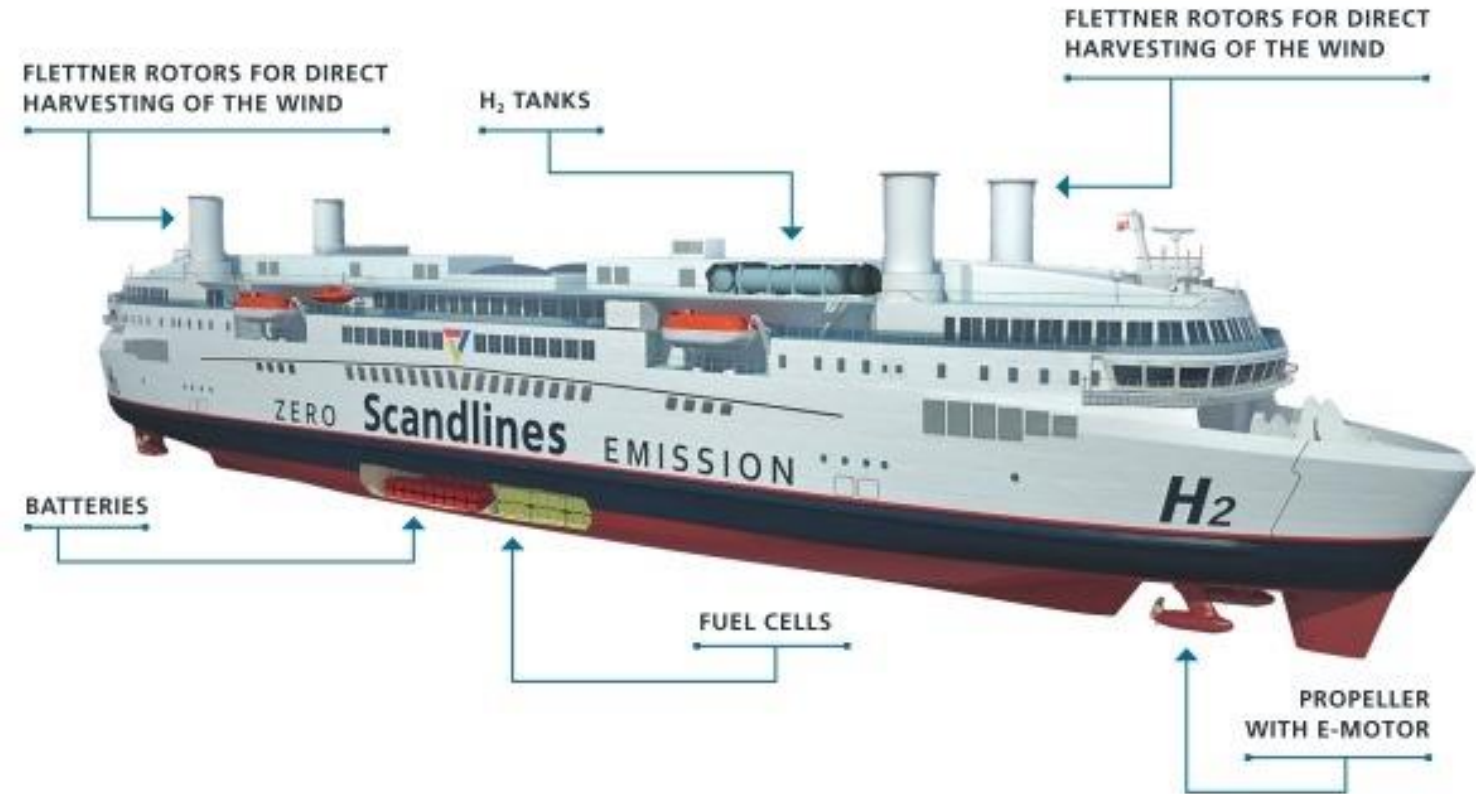
THE IMO GHG STRATEGY

- The initial IMO GHG strategy was adopted by the IMO in April 2018
- The strategy includes an absolute and a relative reduction goal:
 - *to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008*
 - *to reduce CO₂ emissions per transport work, as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008;*
- It also includes a list of candidate short-, mid- and long term measures.



NEED FOR INNOVATION

- Innovation is key
 - New fuels
 - More efficient ship design
 - New propulsion systems
 - Optimising the way sailed
 - Better port call
 - And much more!
- No solution fits all
- The end goal is full decarbonisation of shipping
- Setting a new course – but also new opportunities



WHY AN OPERATIONAL MEASURE?

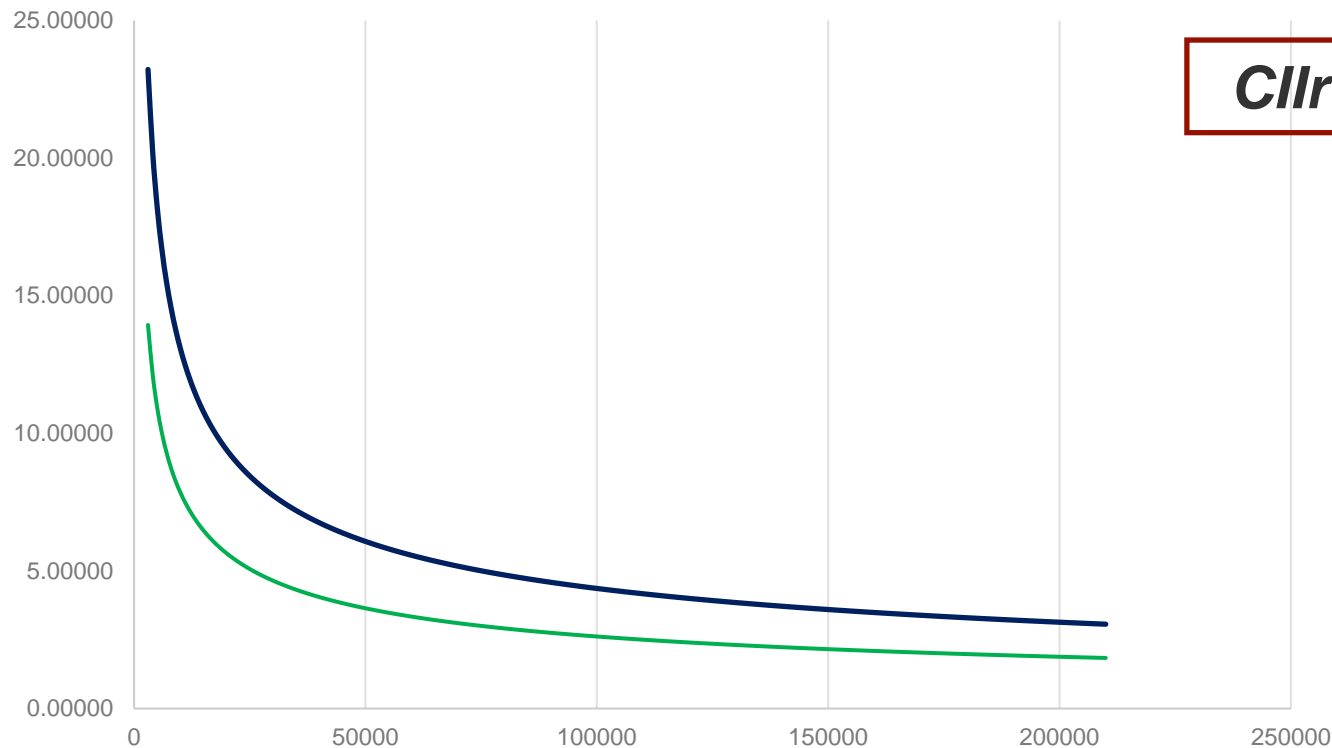
- 1) Highest ambition (Objective 2 and 3)
- 2) Highest flexibility (non-discrimination of solutions)
- 3) Mature proposal ready for agreement at MEPC75



MAIN PRINCIPLES

- Carbon Intensity Indicator
- Reference line and reference point for 2008

$$CII = \frac{\text{CO2emissions}}{\text{capacity} \times \text{distance}}$$



$$CII_{ref} = a \times K1 \times K2 \times capacity^c$$

MAIN PRINCIPLES

- "All" existing and new ships (> 90% CO2 emissions)
- SEEMP
 - Targets
 - Means
 - Methods
 - Flag State / Ros
 - IEE Certificate
 - Annual audits

Ship Type
Bulk carrier
Gas carrier
Tanker
Container ship
General Cargo ships
Refrigerated cargo carrier
Combination carrier
LNG carrier
Ro-ro cargo ship (vehicle carrier)
Ro-ro cargo ship
Ro-ro passenger ship
Cruise passenger ship having non-conventional propulsion



DANISH MARITIME AUTHORITY

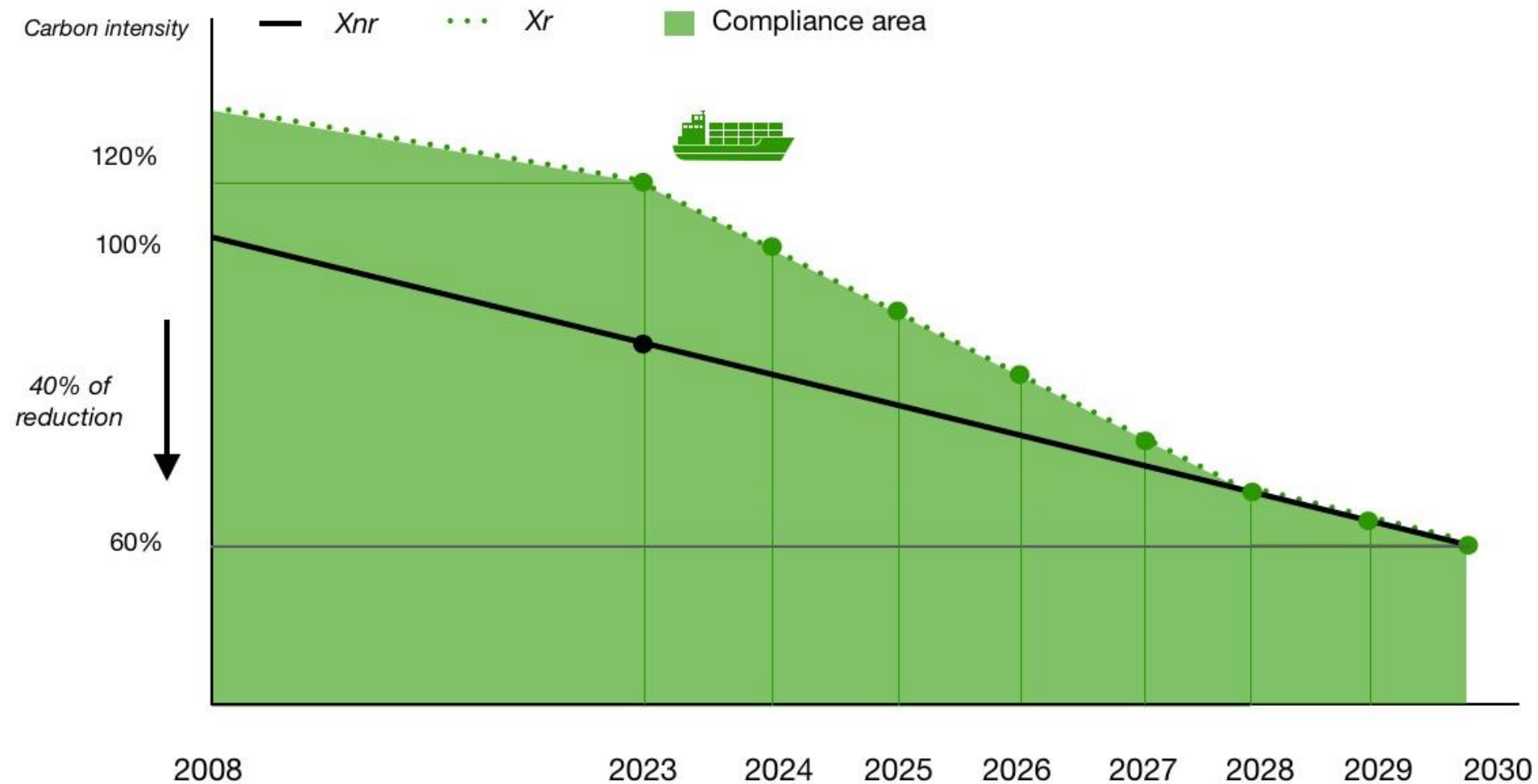
TARGETS

YEAR	2008	2023	2024	2025	2026	2027	2028	2029	2030
Nominal Reduction factor (Xnr)	0%	[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Bulk carrier		[27%]	[29%]	[31%]	[32%]	[34%]	[37%]	[39%]	[41%]
Gas carrier		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Tanker		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Container ship		[27%]	[29%]	[32%]	[35%]	[38%]	[41%]	[43%]	[45%]
General Cargo ships		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Refrigerated cargo carrier		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Combination carrier		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
LNG carrier		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Ro-ro cargo ship (vehicle carrier)		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]
Ro-ro cargo ship		[13%]	[14%]	[15%]	[16%]	[17%]	[18%]	[19%]	[20%]
Ro-ro passenger ship		[13%]	[14%]	[15%]	[16%]	[17%]	[18%]	[19%]	[20%]
Cruise passenger ship having non-conventional propulsion		[26%]	[28%]	[30%]	[32%]	[34%]	[36%]	[38%]	[40%]

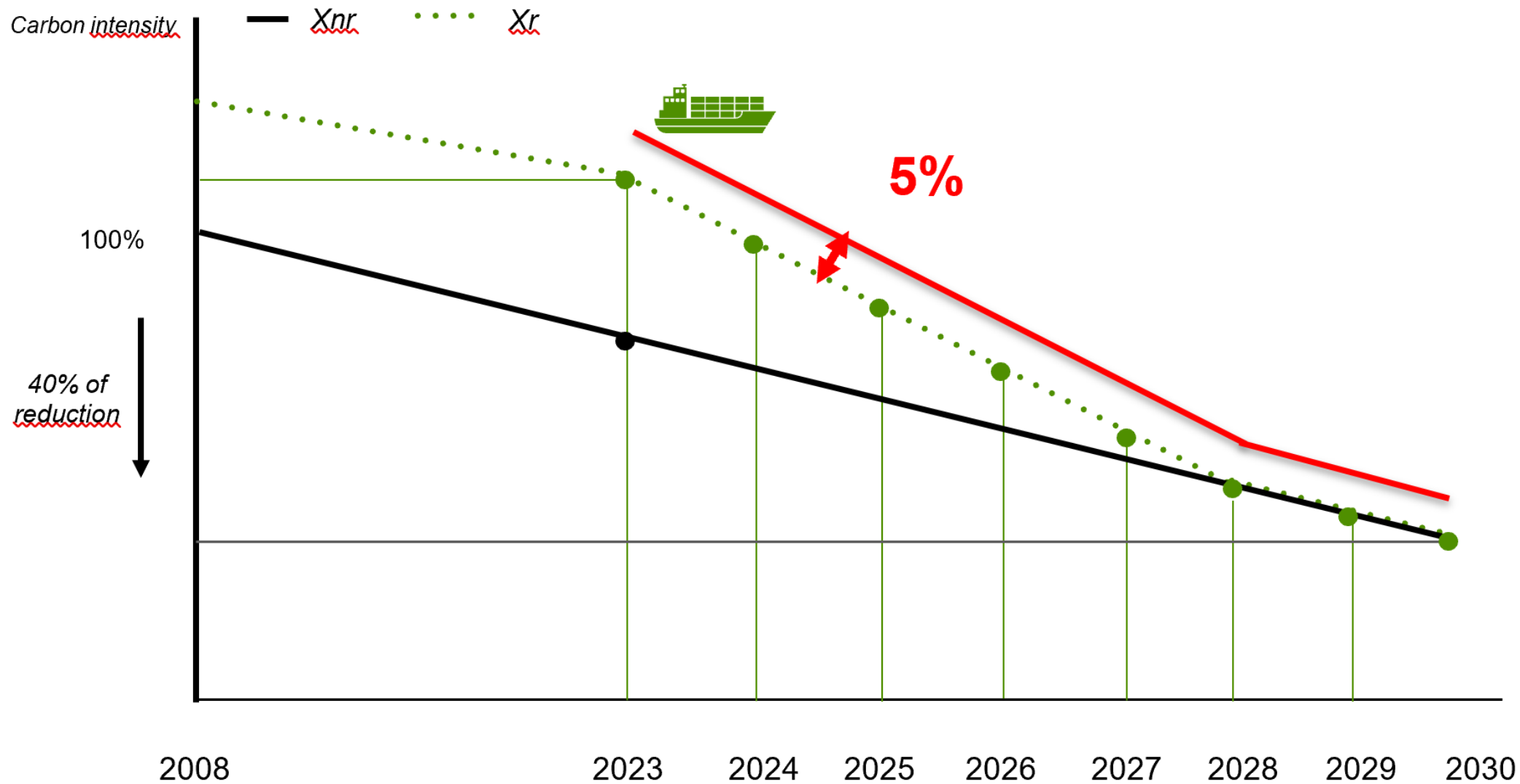


DANISH MARITIME AUTHORITY

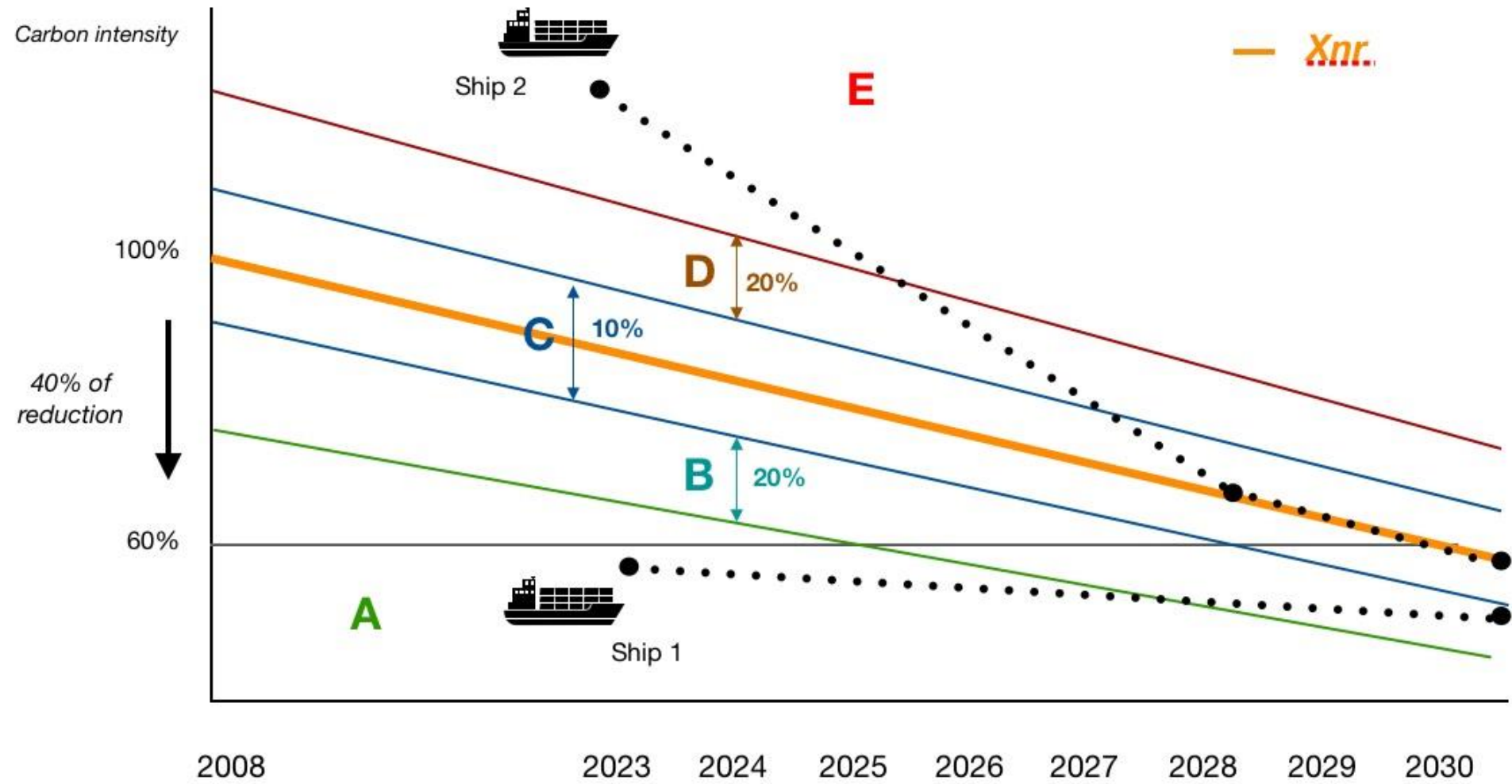
AN EXAMPLE



DANISH MARITIME AUTHORITY



RATING



COURSE AHEAD

- 2020: Agree and adopt
- 2020-2021: Develop guidelines
Revision of IMO's GHG Strategy
Mid-term measures
- 2022-2023: Entry into force
- 2026: Review



THANK YOU FOR YOUR ATTENTION

