



215 m



172 m



147 m



134 m

Why large double-ended ferries could become the most competitive solution for the Baltic Sea ?



Estonian Maritime Conference 2026

25.09.2026 | TALLINN

Introduction



82

years



95

employees



1000+

references



>25M€

current contract backlog



>1.4B€

current shipbuilding contract



31

ships under construction



Your Speaker Today



- Vincent Rudelle
- Managing Director LMG Marin France
- 20 years+ at LMG Marin
- Project manager for TS Laevad ferries in 2014-2016
- Lead Bid Manager on the new ferry for the Estonian State Fleet

Before we start....

Today's presentation uses generic data and/or publicly available information only. No confidential client, project or commercially sensitive information will be shared.

LMG Marin and the ferry market

- First car ferry in 1949
- 71 ferries and ropax designed since 2006 ranging from 43 meters to 172 meters
- 29 ferries under constructions as per today
- LMG Marin has been at the forefront of the emergence of large double-ended ferries:
 - Exceeding 130 meters
 - Exceeding 250 cars
 - Exceeding 1000 passengers
- Designed to operate short international voyages in open seas



The BC Ferries story

1993 *Spirit-Class*



2008 *Coastal-Class*



TODAY *Summit-Class*



- Conventional single ender
- Direct mechanical propulsion
- 16 MW

- Largest double-ended ever built when delivered
- Diesel-electric propulsion
- Conventional propeller
- 16 MW

- Even bigger than the Coastal Class
- Diesel-electric propulsion
- Azipods
- Battery hybrid
- Up to 70 MWh of installed battery capacity

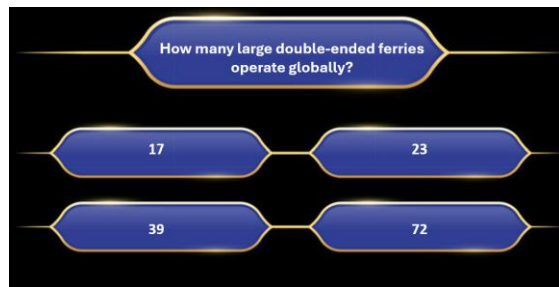
The BC Ferries story

*“A classic example would be Coastal Class versus a Spirit-class ship. A **Spirit takes seven or eight minutes to turn around on each sides**, Coastal Class doesn’t have to do it because it can load on both ends. There’s very substantial fuel savings there”*

BC Ferries CEO in 2008
David Hahn



A strong momentum for large double-ended ferries

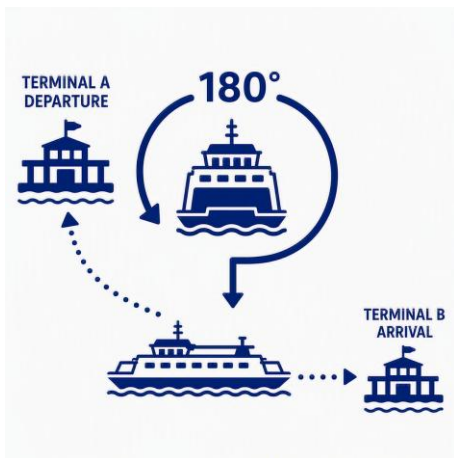


Large and very large double-ended ferries are a relatively new trend in shipping. The combination of finetuned design processes, better technologies and a strong focus on efficiency are making them state-of-the-art assets for RoPax operators serving short international voyages.

39 large double-ended ferries identified :

- 63% are less than 20 YO
- 40% are less than 10 YO
- Orderbook accounts for 10% of global fleet

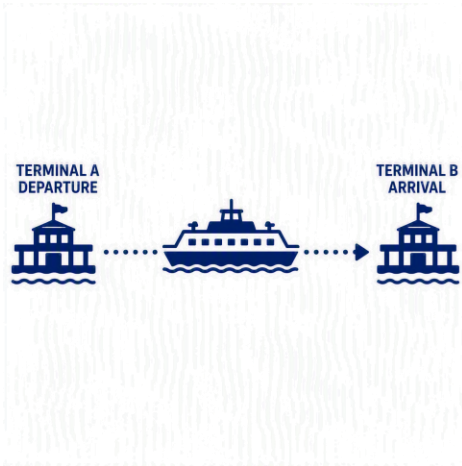
The single-ender manoeuvring



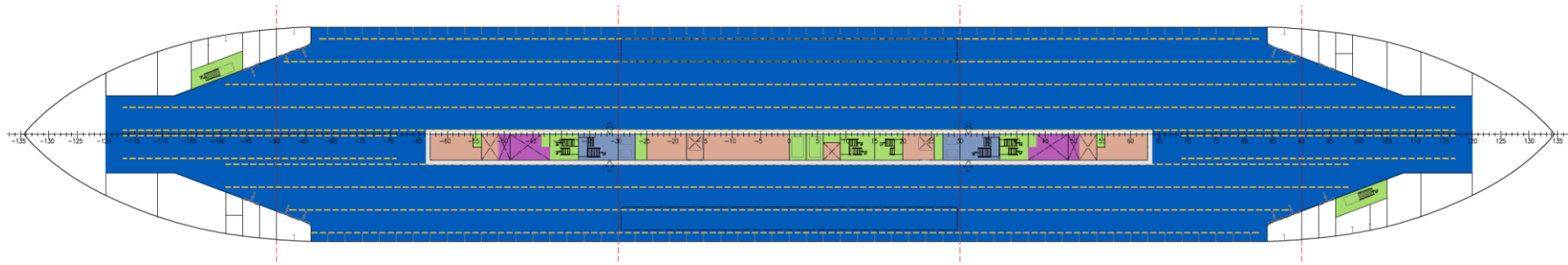
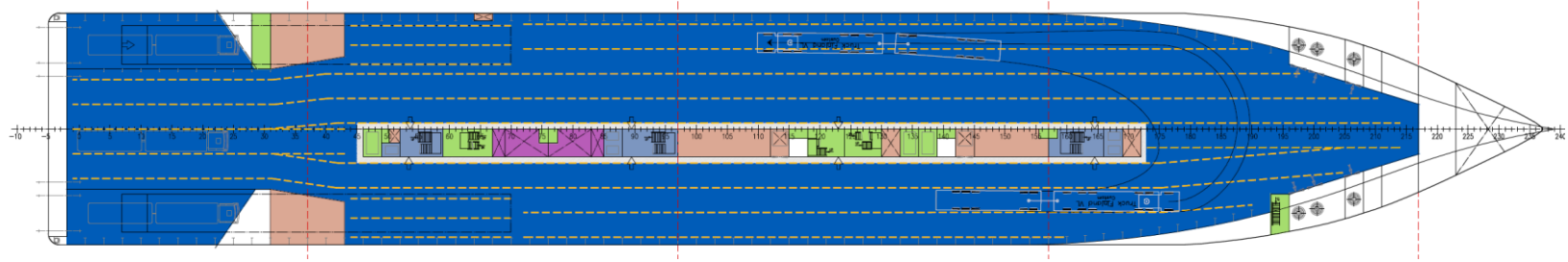
"A Spirit takes seven or eight minutes to turn around on each sides"



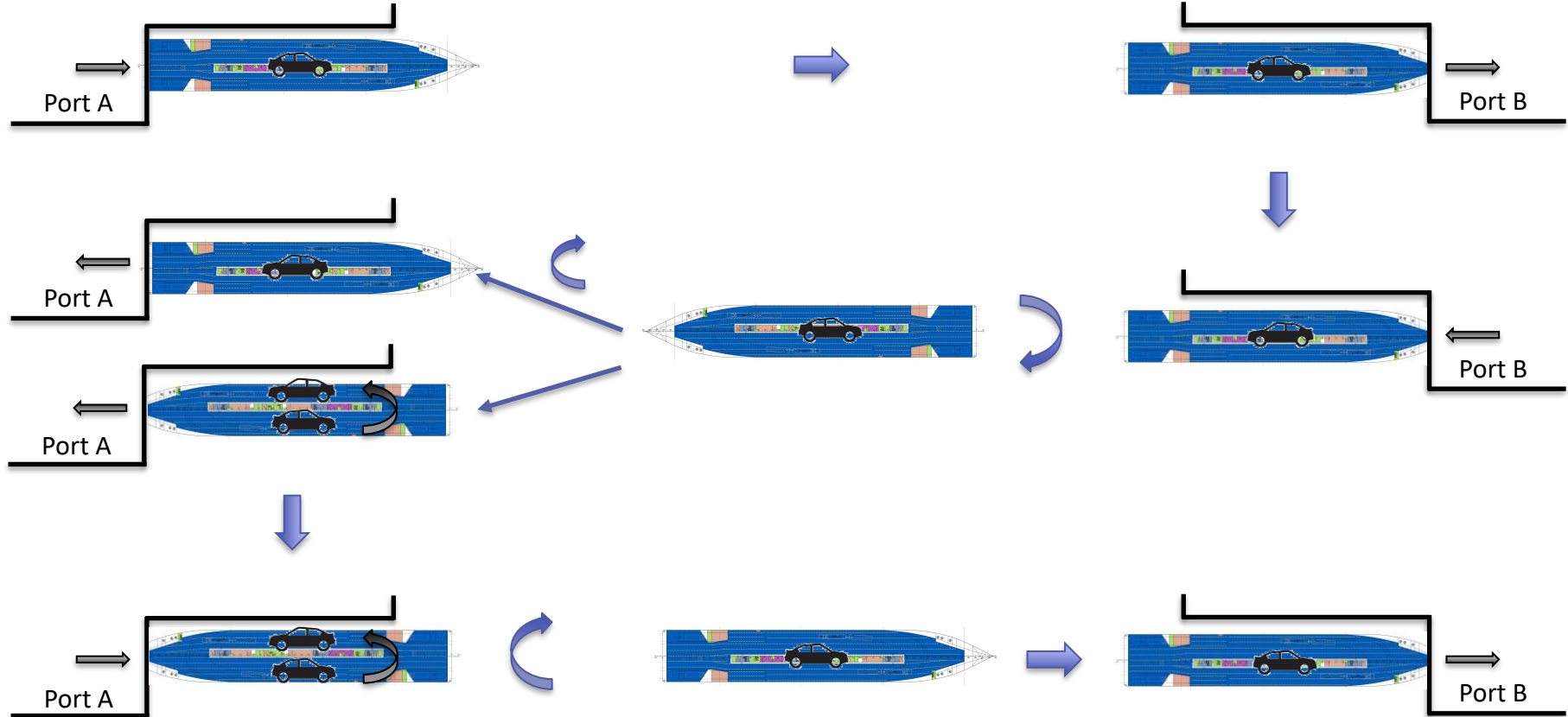
The double-ender manoeuvring



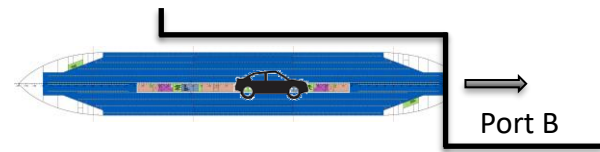
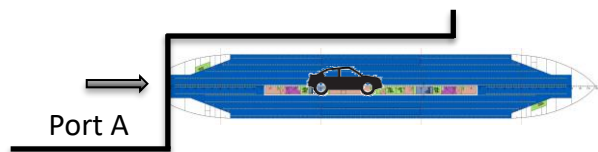
An efficient loading of vehicles?



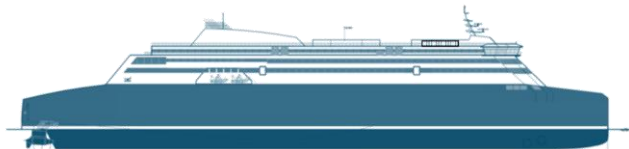
An efficient loading of vehicles?



An efficient loading of vehicles?

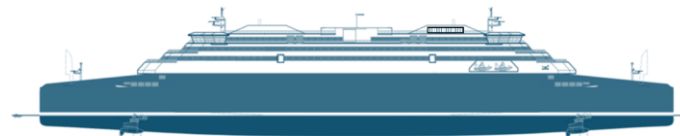


An energy efficient operation?



Main dimensions

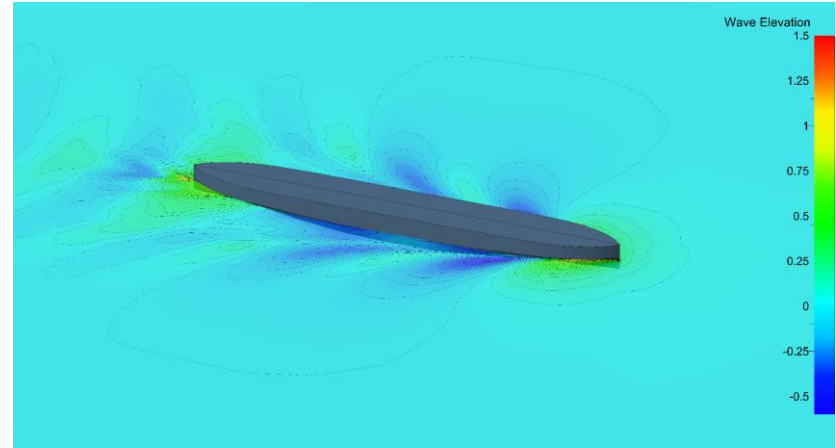
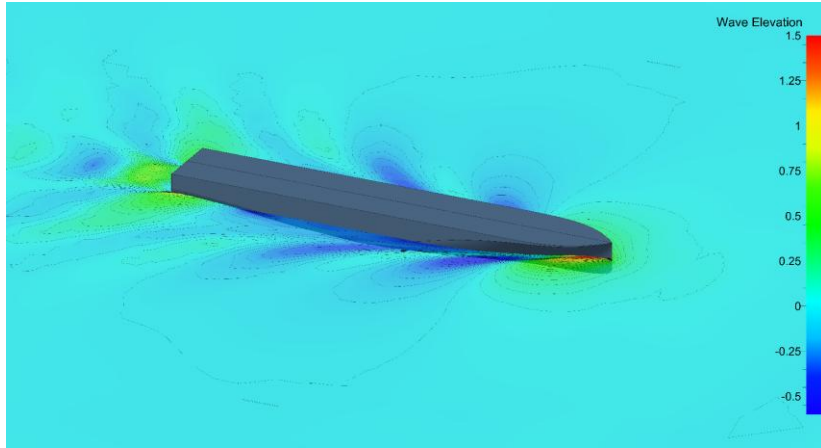
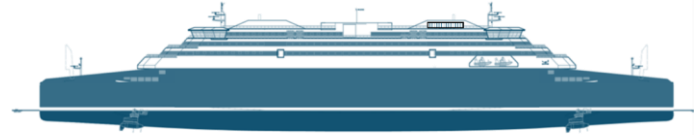
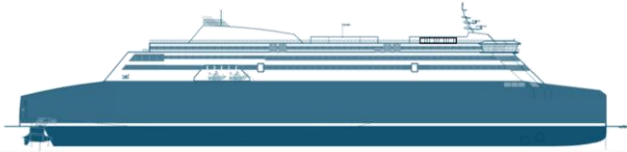
Length overall	195.0 m
Beam moulded	30.0 m
Passenger Capacity	2000 persons
Lane meters, Trucks	2000
Lane meters, Personal Cars	1000



Main dimensions

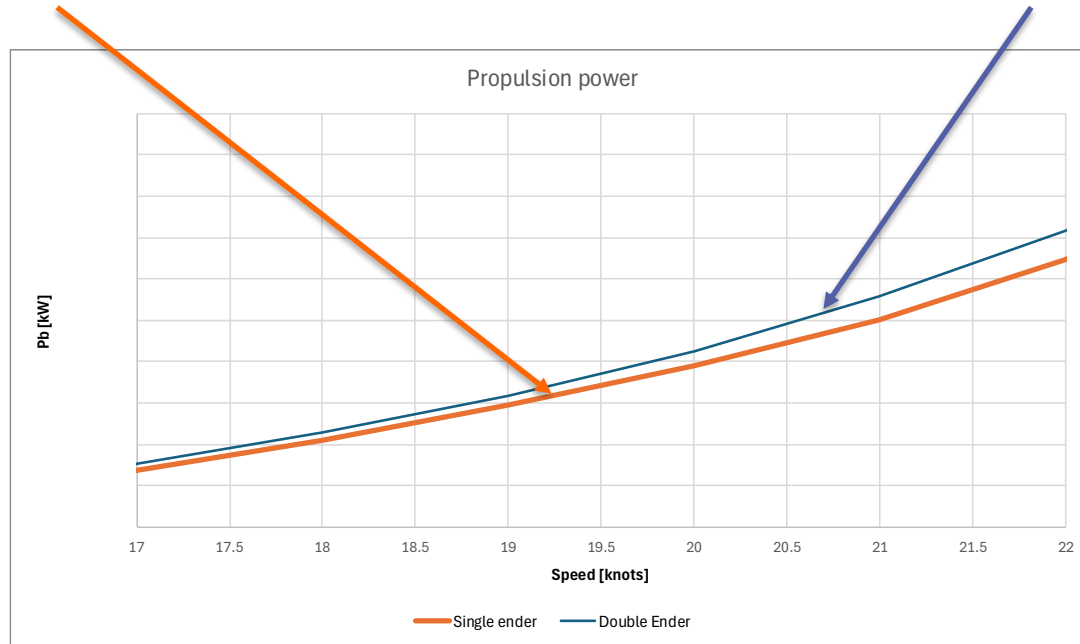
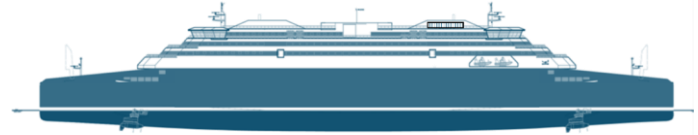
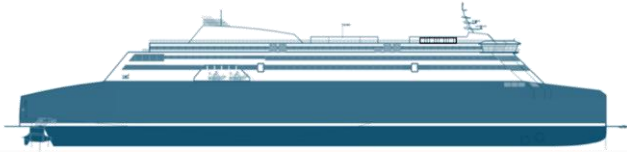
Length overall	215.0 m
Beam moulded	30.0 m
Passenger Capacity	2000 persons
Lane meters, Trucks	2000
Lane meters, Personal Cars	1000

An energy efficient operation?

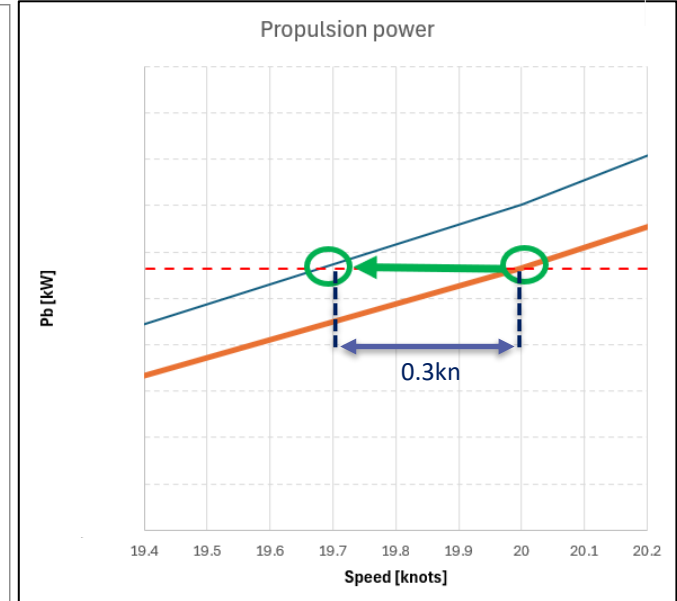
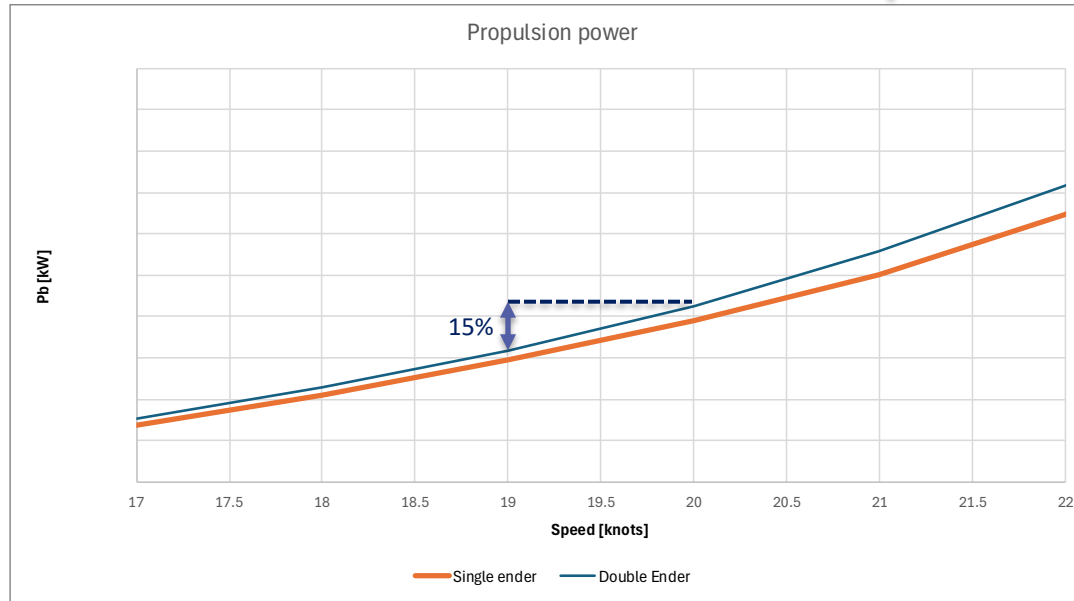
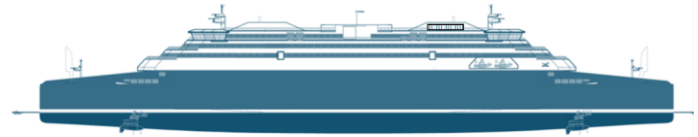
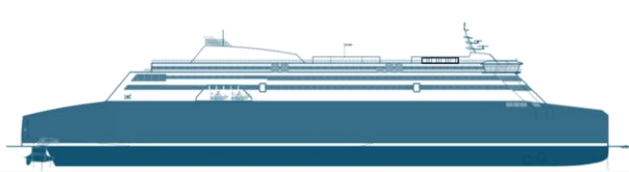


- The propulsive power requirement of the double-ended vessel is conservatively assumed to be 5% higher than the single-ended vessel at 20 knots.

An energy efficient operation?

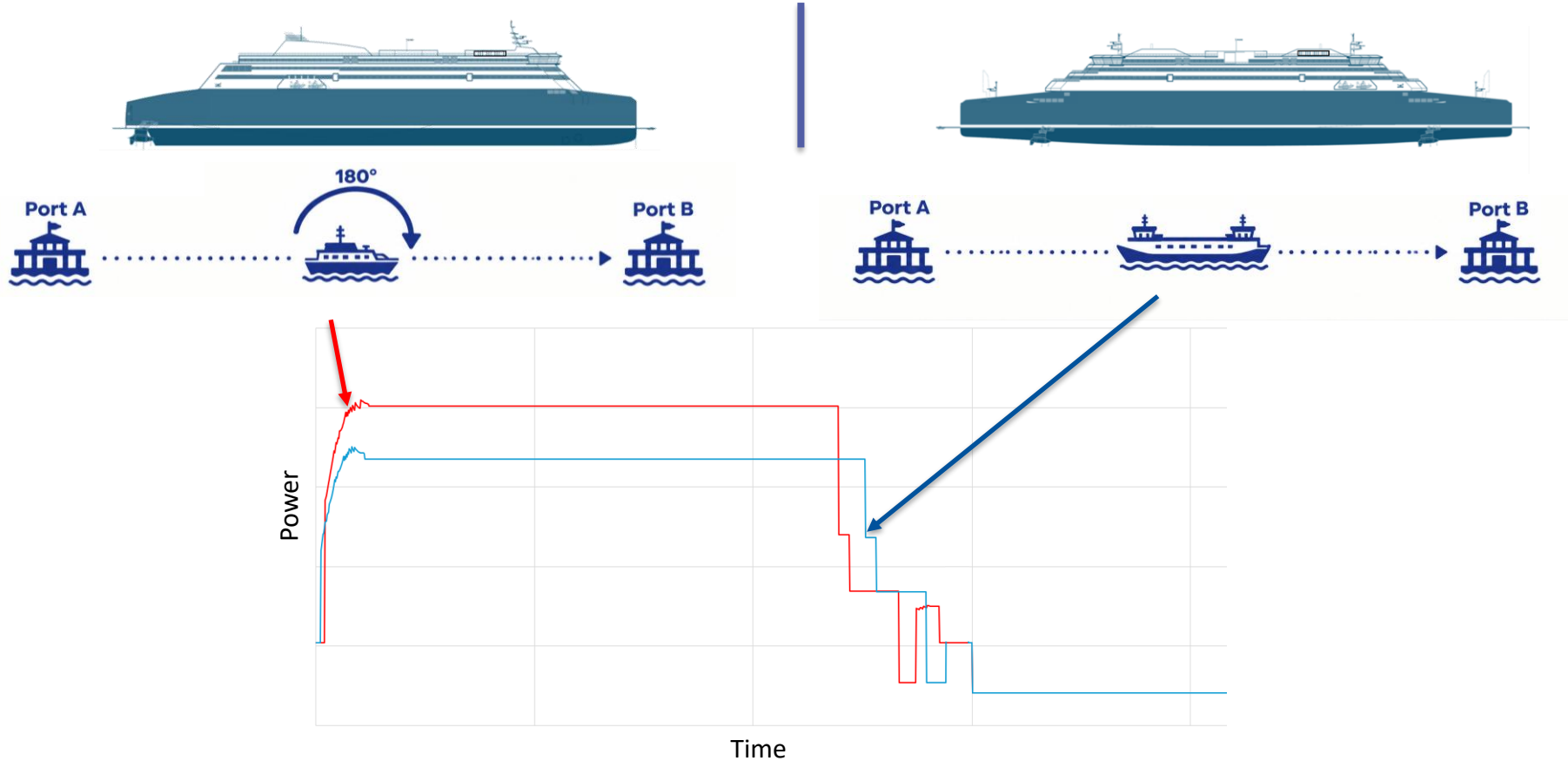


An energy efficient operation?

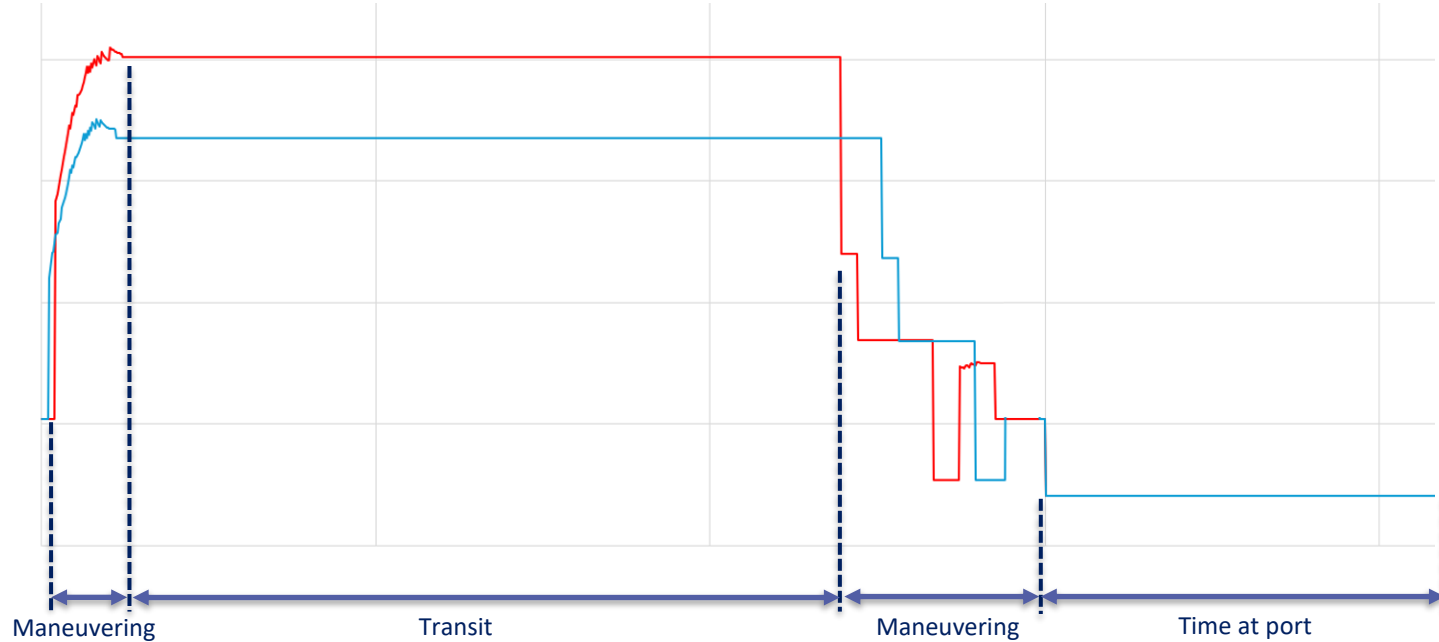
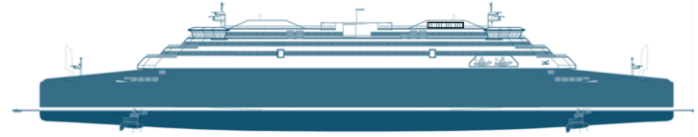
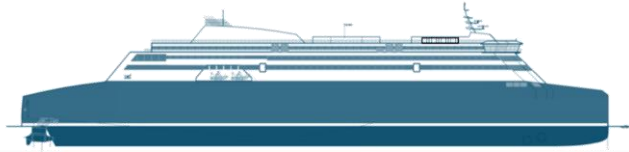


- Even assuming the double-ended ferry is 5% less propulsive efficient than the single-ended alternative, it becomes competitive when operating at 19.7 knots compared with a single-ended ferry operating at 20 knots.

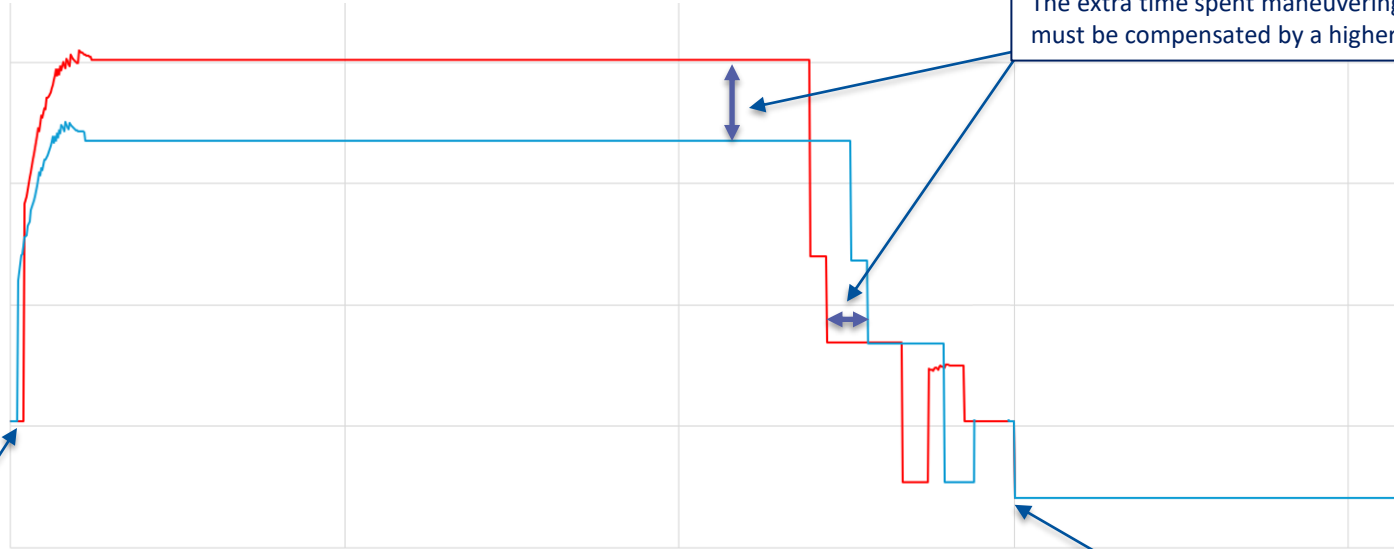
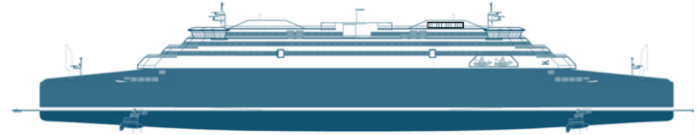
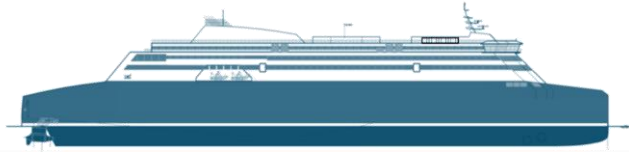
An energy efficient operation?



An energy efficient operation?



An energy efficient operation?



The extra time spent maneuvering by the single-ended must be compensated by a higher transit speed.

Same departure time

Same arrival time

An energy efficient operation?

Assuming a 5 minutes time saving on maneuvering, how would that affect the transit speed?

Base case (single ender)

Voyage duration	1h	2h	3h	4h
departure	1	1	1	1
Acceleration	10	10	10	10
transit	33	93	153	213
deceleration	10	10	10	10
arrival	6	6	6	6
Total	60	120	180	240

Double ender

Voyage duration	1h	2h	3h	4h
departure (min)	1	1	1	1
Acceleration (min)	10	10	10	10
transit (min)	38	98	158	218
deceleration (min)	10	10	10	10
arrival (min)	1	1	1	1
Total (min)	60	120	180	240

Time saved on maneuvering is used during transit, allowing to reduce the transit speed.

Voyage duration	1h	2h	3h	4h
Transit Speed (Single Ender)	20			
Transit Speed (Double Ender)	17.4	19.0	19.4	19.5

An energy efficient operation?

And with a focus on energy :

Base case (single ender)				
Voyage duration	1h	2h	3h	4h
transit (min)	33	93	153	213
Transit Speed (Double Ender)	20.0			
estimated energy consumption	7054	19879	32704	45530
Double ender				
Voyage duration	1h	2h	3h	4h
transit (min)	38	98	158	218
Transit Speed (Double Ender)	17.4	19.0	19.4	19.5
estimated energy consumption	5286	17714	30405	43157
comparison with Single ender	-25%	-11%	-7%	-5%

The “hidden” benefits



- **Safe return to port by design**
 - Two redundant engine/ battery rooms - “Redundant by design”
- **Resilience**
 - The symmetrical design provides operational resilience
- **Maneuvering**
 - Equal propulsive power in each vessel’s end makes the maneuvering capabilities unmatched
- **Ice capability**
 - No need to perform 180° turns in ice condition
- **Improved sales**
 - Lower speed means extra crossing time = extra sales time onboard
- **More efficient loading and unloading of vehicles**
 - Double enders are sometimes called “*traffic-machines*”, limited vehicle maneuvering compared to a single-ender
 - Less time on vehicle deck for higher client satisfaction
 - Less crew manning required for deck maneuvering logistics
- **Interested in electrification?**
 - Any Watt saved onboard translates into battery capacity saving and shore charging grid upgrade saving

A large potential not yet explored?



Curious? Let's get in touch....



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