ETA webinar

"LNG and Hybrid tugs, experiences so far and future outlook"

17th February 11.00am - 12.15am

WHY CLEAN UP YOUR TUGS ?

It is a matter of time tugs have to emit less pollution

VANAF 1 JANUARI 2020 ALLEEN EURO 6-VRACHTAUTO'S WELKOM OP DE MAASVLAKTE

Ontheffingenbesluit Euro 6-zone Maasvlakte wordt aangepast.

Om de luchtkwaliteit te verbeteren mogen vanaf 1 januari 2020 alleen nog Euro 6-vrachtauto's de Maasvlakte oprijden. Met deze maatregel werkt de gemeente Rotterdam aan schone mobiliteit. De Euro 6-zone is ingesteld met een verkeersbesluit. Dat houdt in dat vrachtauto's de zone niet in mogen rijden, uitgezonderd: Euro 6-vrachtauto's óf vrachtauto's die niet ouder zijn dan zeven jaar én van vóór 2013.

We know this will come

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AHEAD IN TOWAGE

HYBRID TUGS IN YOUR OPERATION

What does it bring: to the operator
to the port
to the client

What does it cost: for the operator
for the client

What does it mean: for the technical department
for the planning
for the crew

What are the side effects : for the operator
for the Human resource department

WHAT DOES IT BRING?

To the operator :

- less fuel consumption /C02 (climate change)
- less N0X and PM (local emissions)
- a greener image
- a long term, future proof vision

To the port :

- More expansion possible
- Better air quality and less noise

To the client :

- Smaller environmental footprint in the transport chain
- Can confirm the "green statement" in the company policy

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WHAT DOES IT COST

For the operator

- Approx. 1mio Euro capex depending on technology
- ROI of 5-10 years depending sailing profile

For the Client

- 0 Euro

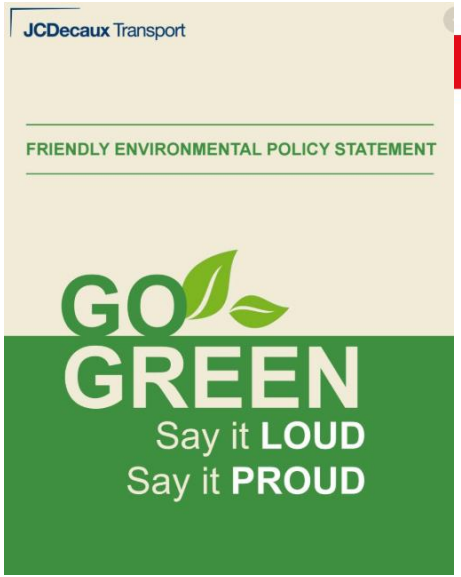
green statements

For the port

- Facilitate shorepower?
- Positive incentives for clean ships?

THE SUNDAY TIMES
BEST GREEN COMPANIES
2nd Greenest Company In The UK

mayor of london's green procurement code



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ISO9001

BSI UKAS 003
ISO14001

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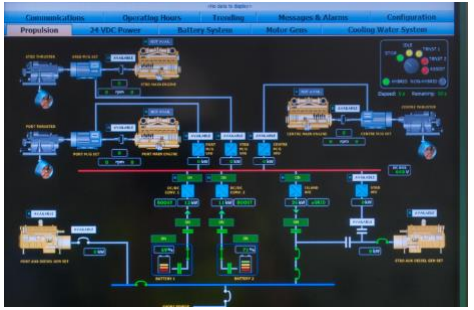
WHAT DOES IT MEAN FOR YOUR OPERATION

Technical department

- Interest in the new technology systems
- Remote assistance
- Less engine overhaul (due to approx. 50% lower running hrs. of main engines)

Planning

- Lower speed to achieve optimal savings
- Long distances transit must be done with the hybrid tug
- Know if the hybrid tug is configured for shorepower or not

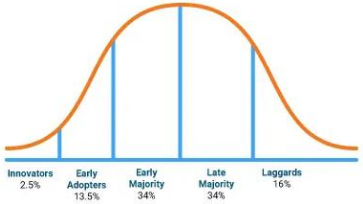


Crew

- Must have interest in the system
- Teamwork between engineer and captain is needed
- Remote support for batteries is commonly used for safety reasons

SIDE EFFECTS / LEARNINGS

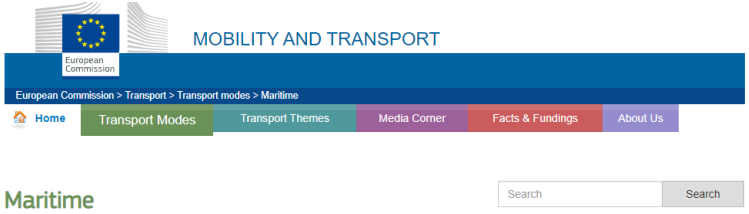
Crew wants to work with new technologies and clean air will knock on the door



++ (Still) belong to the early adopters

++Be ready for new regulations

++Win prices



--Clients are not yet rewarding the contracts automatically to green tugs

-- Battery cost are not (yet) reducing

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WHY NOT HYBRID TUGS EVERYWHERE ?

Sailing profile must fit

- Terminal towage is normally not for a hybrid tug

- Transit time must be at least
  2x the towing time

- High transit speeds will reduce the savings

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Thank you
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POWER
AHEAD
AHEAD IN TOWAGE