

Why Data Quality Matters in the ETS and FuelEU Maritime Framework

Stathis Kalkounis
Energy & Environmental Engineer
Central Mare Inc.

Current Situation

Regulatory shift:
Emission metrics (tons CO2)



Financial Exposure
(EUAs, Fuel EU penalty costs)

1

Fragmented operational data

2

Manual input leads to reporting gaps and faulty data

3

Need for consistency through different reporting tools

Core Challenges

- 1 Systematic validation missing
- 2 Data entered is inadequate, wrong or completely missing
- 3 Supportive documents data mismatch
- 4 High stakes regulations

- 5 EU ETS inaccuracies translated to financial cost
- 6 Consumption mismatch, Wrong sequence of operations
- 7 CP disputes
- 8 Lowered CII exposes vessel's hireability

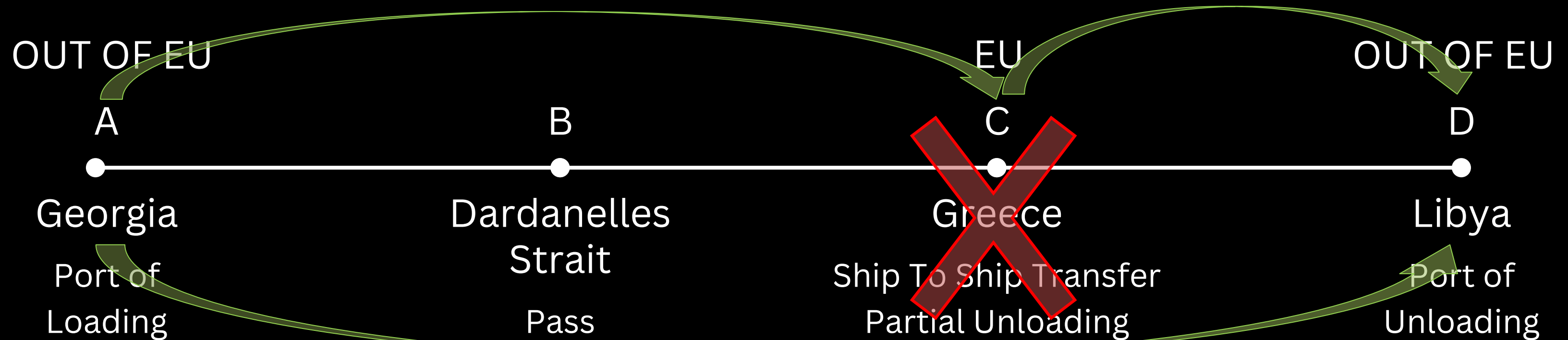


Result: The vessel's actual current condition is effectively unknown.

Core Challenges

- ⚠ Validation at the end of the reporting cycle
- ⚠ Minor data inconsistencies → financial exposure
- ⚠ Errors affect CP performance claims → speed and consumption disputes
- ⚠ Wrong calculated compliance balance → Fuel EU pooling arrangements off

Example



MR1 Vessel 39k DWT
Fuel Consumption A-D : 49 tons HFO / 178 tons MGO

Wrong calculation: STS unloading in Mytilini mistreated as an actual Port Stay

Total Voyage Cost : 372.8 EUAs $\xrightarrow{75 \text{ €} / \text{EUA}}$ 27960 €

Correct calculation: STS unloading in Mytilini not counting as an actual Port call

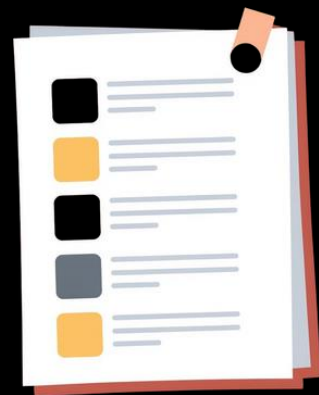
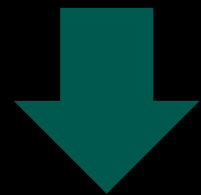
Total Voyage Cost : 0 EUAs 0 €

27960 €
charged
for a data
input error

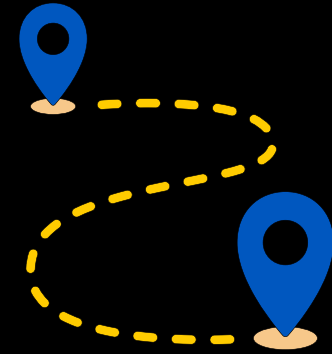
Recommended Approach



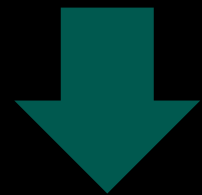
Fuel Consumption



BDN & LOP
(matching figures)



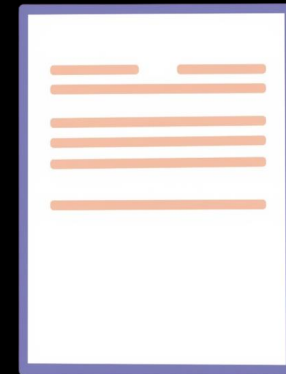
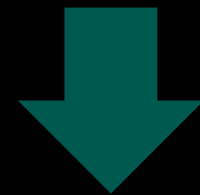
Mileage



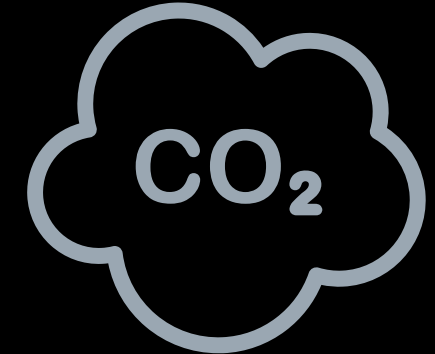
Noon reporting
(Correct miles)



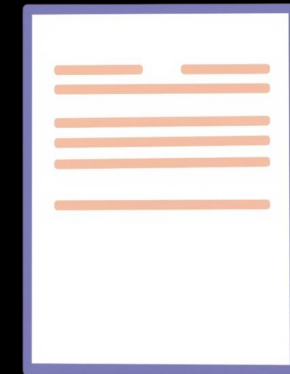
Vessel Operation



Noon reporting
(Correct operation)

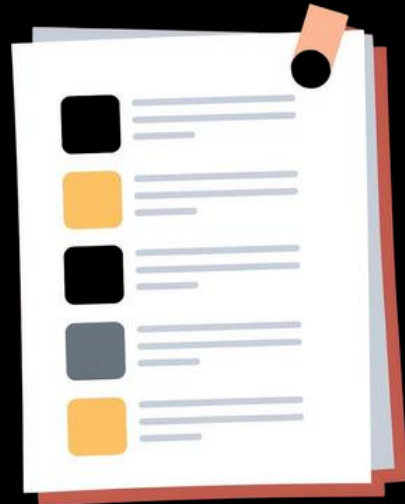


CII exemptions



Noon reporting
(Complete exemptions)

Recommended Approach



BDN / LOP

Proper filing of BDN & LOP - not at the reporting year end

Correct fuel type input - BDN fuel type OR viscosity

Correct fuel figures input - Matching BDN OR LOP numbers

FUEL CONSUMPTION



NOON REPORTS

Proper Mileage incl. maneuvering miles

Proper Operation type - 1st berth/Last unberth - STS OPL

Proper CII Exemptions :

- FCothers : Fuel consumed for Cargo discharge (fuel driven HPP for Cargo pumps)
- FCElec : Electrical consumption (kWh) for elec. driven HPP for Cargo pumps disch.
- FCboiler : Boiler consumption for cargo heating / discharging operation

MILEAGE

VESSEL OPERATION

CII EXEMPTIONS



Cross-year voyages exposed to EU regulations.

Recommended Approach

Cross-source validation

- unified data across all platforms

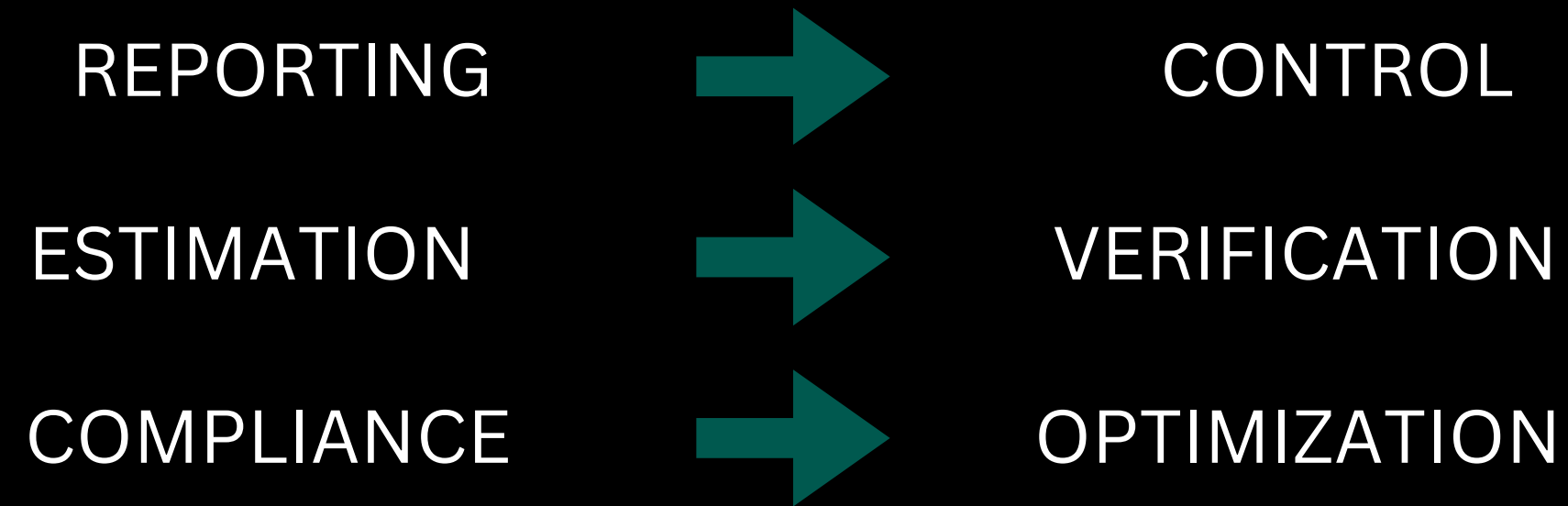
Automated / Manual reconciliation on a voyage base

- inconsistencies are flagged immediately

Complete documents filing

- every number is defensible

Conclusion



Question is not “are you compliant”?

It is:

Can you prove it—quantitatively, continuously, and
defensibly?

And if not:

The risk is already there. You just haven’t measured it yet

The most unpredictable system isn't the one that obviously fails — it's the one that produces unverified data that appears reliable.

Thank you for your attention