



EU ETS Lessons Learned

...and new challenges ahead with FuelEU

OceanScore at a Glance

From the industry, for the industry



OceanScore

data – compliance - solutions
Serving shipping since 2020



Our solutions

Leading EU ETS management solution and services
Preparing for FuelEU management and further regulatory requirements



Our backers

Leading industry players (MSC, Doehle Group),
investors (TecPier, theDOCK) and individuals

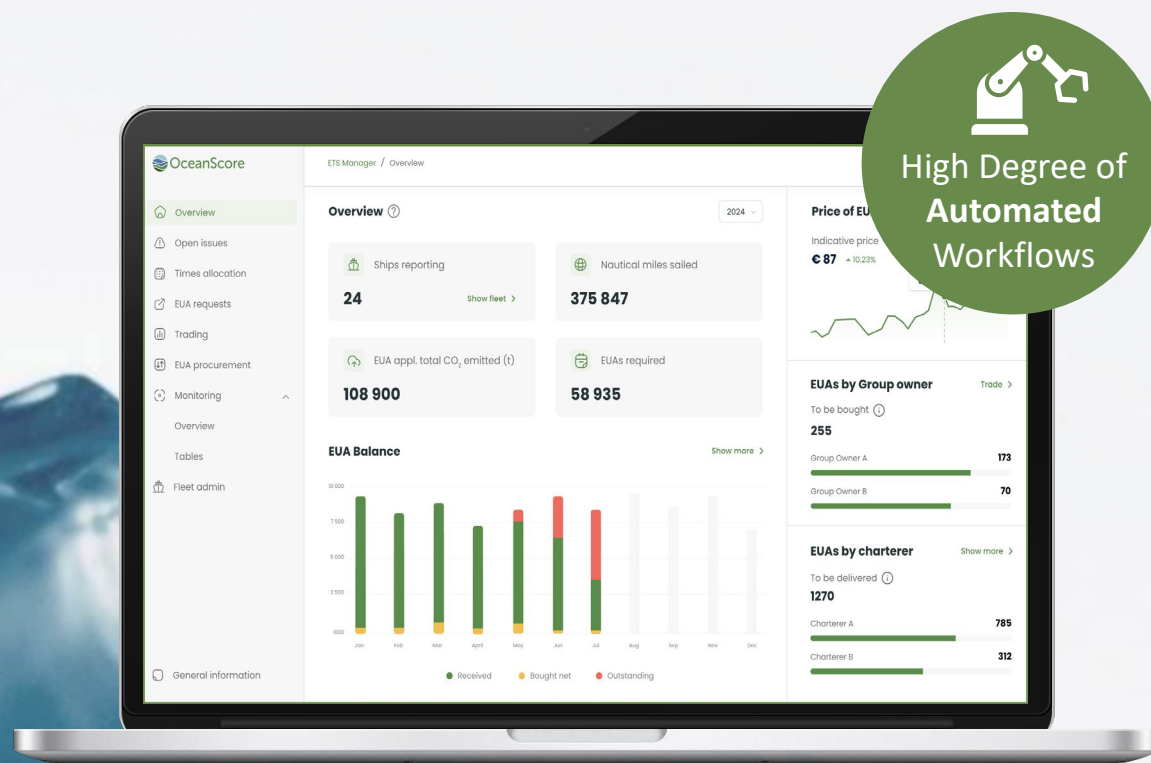


Our team

25 industry veterans, data scientists and customer enthusiasts based in Germany, Poland, Portugal and Singapore. Growing quickly

OceanScore's ETS Manager

Shipping's leading ETS Management solution



Streamline all processes between stakeholders



Gain 360° transparency on all related data & processes



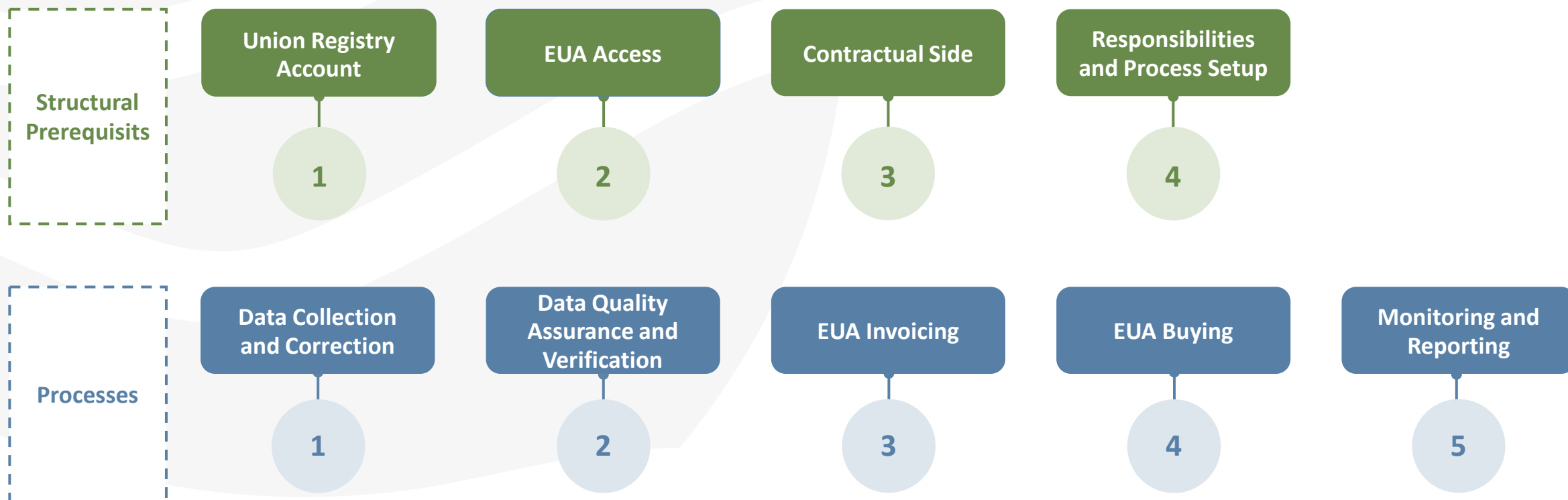
Benefit from an advanced, integrated EUA trading solution



Opt to outsource the entire process to OceanScore

Best Practices: Structures and Processes

The necessary steps for EU ETS compliance in shipping, covering structural prerequisites like registry accounts and contracts, as well as processes for data management and EUA transactions



Union Registry Setup

One shall normally do

“We opened one MOHA per ship to avoid the risk of contaminating our entire fleet by not surrendering the correct number of EUAs for one vessel.”

Trading Account or/and MOHA?



- Similar functionalities
- If MOHA can be opened, **no Trading Account**

How many Accounts?



- **One.** To reduce complexity of opening accounts, buying EUAs, moving them, monitoring
- **Theoretical contamination risk.** Six months to surrender post-verification. Penalties with no contamination risk, blocked entry later if at all

Exceptions

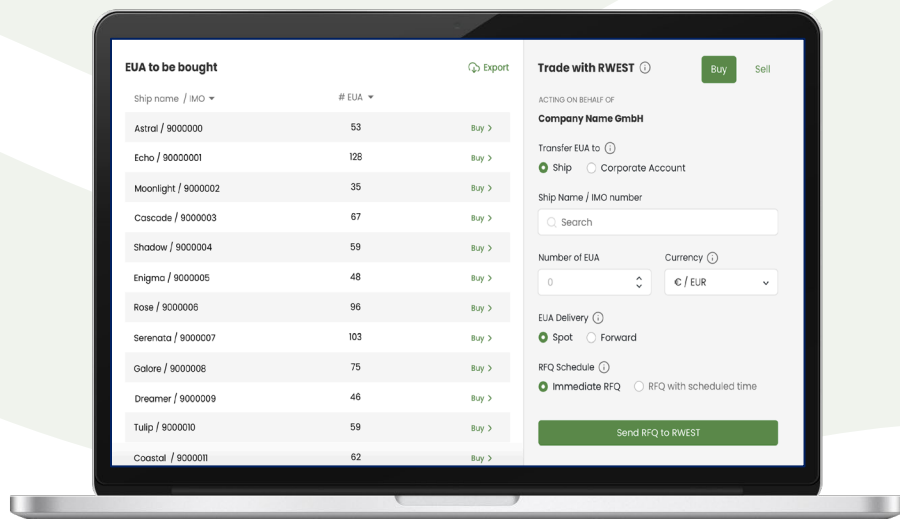


- **Manager for different owners.** Dedicated (trading) accounts provide more transparency

Securing Access to EUA's

Prices will converge

“ I am discussing with half a dozen banks and brokers to try to find the best deal for us. Prices differ significantly. ”



How many partners / sources?



- **Two (+-)**
- Prices in the end will not differ significantly (+-50cts?)
- KYC processes tedious and time consuming, not worth the effort
- EUAs are a commodity with high transparency. Expect prices to fluctuate but converge
- **Two sources should do: To every now and then compare and as signal to partner**

What to look out for?



- **Good interface**, buying process
- **Buying odd volumes**: off hires often not requiring large lots to be acquired
- **Forwards** (in certain segments) – benefits vs. futures
- Transactions in Euro and Dollar
- Buy and sell?

Contractual Clarifications

Keep it simple



SHIPMAN

- Ideally, DOC holder to **assume responsibility** at least for process. Needs to be aligned (new directive!) with MRV responsibility, IMO DCS. FuelEU Maritime targeting **DOC Holder** as well
- **Owner often SPVs** – requiring each SPV to be verified, to open MOHA, to surrender,... separately
- **Exception:** Vessel owned in Europe (corporate), managed from outside: Owner might be “easier”
- **Keep it simple.** For example, no benefit of “monthly forecasting”
- Make sure (as manager) that you get **reimbursed for extra effort**, cost of tools

VS



Charter Party

- **Keep it simple.** Resist inappropriate reporting requests
- **Prefer settlement in EUAs** to avoid EUA price risk
- **In case of cash settlement:** Expect not to buy EUAs at closing prices at exchange – build in buffer or properly design process of settlement
- **Assess risk of counterparty** when agreeing settlement timings, incl. option to request prepayment if needed (especially when cash settlement!)

Responsibilities & Processes

Need for clearly defined internal processes

*“ We are still discussing.
Nobody has the extra time
needed or is fully
responsible anyways. ”*

Process Logic



- **Fleet Management:** Data handling and verification
- **Chartering/Commercial:** C/P and EUA invoicing
- **Finance:** EUA procurement, Union Registry monitoring and EUA report closure

Process Standards



- **Schedule tasks** (like monthly EUA request checks on 5th, bi-weekly Union Registry account checks every 2nd Friday, ...)
- **Establish protocols for:**
 - Resolving cross-unit issues (e.g., Incorrect data blocking EUA requests)
 - Handling vacations and sick leaves
- **Appoint (initial) coordinator** for overall oversight

Data Collection & Correction

Time for professional digital solutions – and real-time tackling of data issues

Ship-Shore Reporting at Next Level

- With **increasing numbers** of stakeholders and ever more **complex regulation** (and thus data requirements) professional, seamless all **digital solution necessary**
- **Increasing advantage** of commercially available solutions



“The good old days of text messages are over.”

Real-Time Data Correction

- Ensure **immediate corrections of data** issues to base (monthly) EUA requests on high-quality data and **minimize disputes**
- Establish ongoing processes to **prevent year-end issue accumulation** for MRV compliance



Data Quality Assurance & Verification

Flexible data sharing and verification becoming more relevant

Data Capabilities

- **Solid API (in/out) and data management capabilities** (comprehensive scope of data provided, flexibility on time, data fields,...)
- Data sharing options **at no extra cost**
- Customer service

Understandings ETS

- **Commercial voyages** (not just MRV) displayable
- Ice class, transshipment ports, outermost regions **rules known**
- Month end plus **voyage-based data**

Voyage Verification

- Longer term time charters **manageable with annual verification** within MRV
- Voyage verification **requests by charterers**

“ *ETS made us re-evaluate how we want our data to be managed and by whom.* ”



EUA Request Processes a New Challenge

Request processes to be solidly designed and prepared

EUA settlement

- **Request EUAs** instead of cash (if possible)



Automated Information Integration

- Ensure **automatic availability of all relevant documents** (voyage reports, EUA computation backups), providing required detail
- Include **automated attachment of off-hire reports** for deductions



Timely EUA Requests

- Ensure **prompt EUA requesting with back-up options** in case of sickness, vacations,...



“We thought we could somehow run this through our accounting system.”

”



EUA Procurement Strategy

Simplicity wins over trying to beat the market

Do not Speculate

- **EUA prices are neither low nor high**, they are the best estimate of the sum of all market participants
- **Volatility is high** – including intraday volatility (up to €5 / EUA!)

When to Buy

- **Buy EUAs as necessary**: off-hire, funds received, voyage set
- Regular, scheduled EUA buying (**monthly/bi-weekly**)
- Small **penalties** for low-volume **purchases**

Forwards/Future

- **"Forwards" for cash flow protection** when fixing based on assumed ETS price with settlement later
- Forward offer **more flexibilities** than futures

“ We have bought all EUAs we believe to need for the next 12 months. Now we have a solid basis for pricing. ”



Monitoring and Managing ETS Risk

Especially process monitoring can become vital

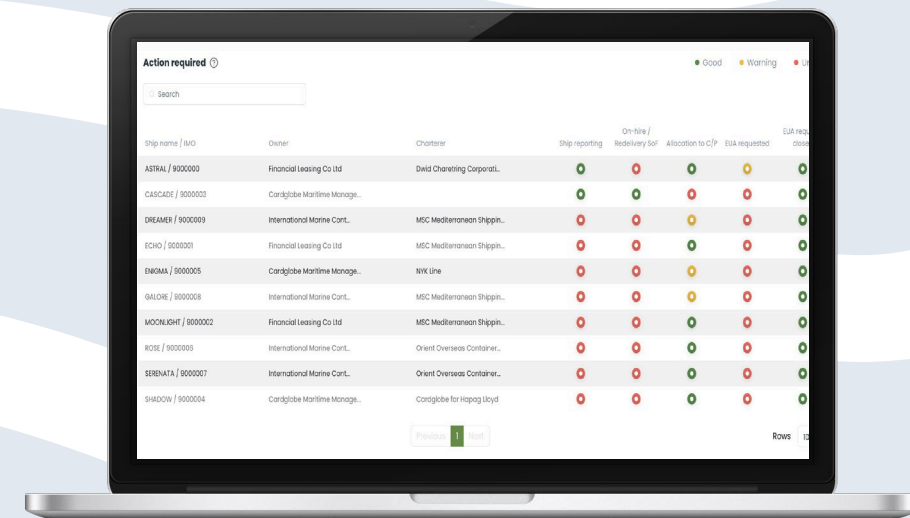
Operational Monitoring

- **APIs / data flows** intact?
- **ETS clauses** in C/Ps and SHIPMANs?
- Onhire and redelivery **SOFs documented**?
- **EUA requests** generated and sent?
- **EUA information statements** sent (if needed)?
- **Data issues and disputes** visible and being resolved in time?
- EUA requests **overdue**?
- EUAs (or funds/cash) **received as requested**?



Financial Monitoring

- **Total EUA exposure**
- **Allocation:** charterer vs. owner
- **EUA status:** Open, invoiced, pending, disputed, or received
- Views per charterer, owner, vessel

Ship name / IUD	Owner	Charterer	Ship reporting	On-hire / redelivery SOF	Allocation to C/P	EUA requested	EUA received
ASTRAL / 9000000	Financial Leasing Co Ltd	Daid Chartering Corporati...	0	0	0	0	0
CASCADE / 9000003	Cordisbe Maritime Manage...		0	0	0	0	0
DREAMER / 9000009	International Marine Car...	MSC Mediterranean Shippi...	0	0	0	0	0
ECHO / 9000001	Financial Leasing Co Ltd	MSC Mediterranean Shippi...	0	0	0	0	0
ENOMA / 9000005	Cordisbe Maritime Manage...	NKK Line	0	0	0	0	0
GALORE / 9000006	International Marine Car...	MSC Mediterranean Shippi...	0	0	0	0	0
MOONLIGHT / 9000002	Financial Leasing Co Ltd	MSC Mediterranean Shippi...	0	0	0	0	0
ROS / 9000008	International Marine Car...	Orient Overseas Container...	0	0	0	0	0
SIBENATA / 9000007	International Marine Car...	Orient Overseas Container...	0	0	0	0	0
SHADOW / 9000004	Cordisbe Maritime Manage...	Cordisbe for Hapag Lloyd	0	0	0	0	0

Some Concluding Thoughts

1

Charter Parties and SHIPMANs often still to be concluded, MOHAs cannot be opened, KYC processes tedious

Uncertainty Lies Ahead

2

Best practices only start to evolve – and will continue to do so as experiences accumulate

Learning Continues

3

With complex FuelEU around the corner, pressure is on to get sorted – EU ETS must be mastered before

ETS before FuelEU

4

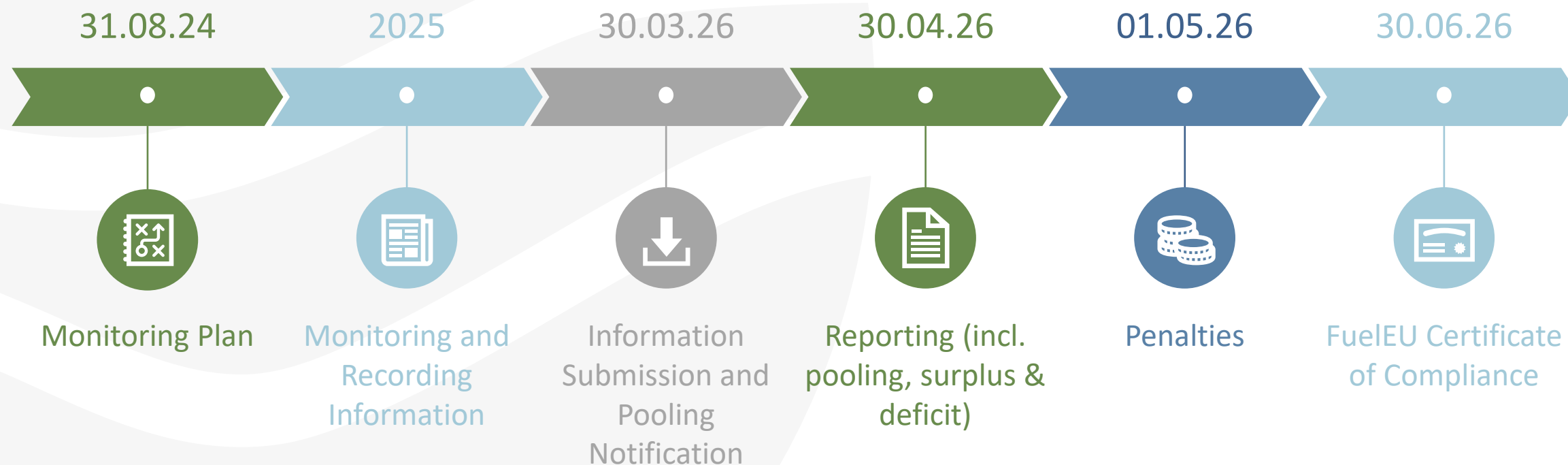
Learn from others and reach out to partners with in-depth EU ETS understanding

Collaboration is Key

One hundred days into the regulation, lots of work still lies ahead, including gearing up for FuelEU

FuelEU Maritime: New Regulation coming fast

Enforcement of FuelEU starting Jan 1, 2025



FuelEU Maritime: Introducing new Metrics

Redefining how we talk about bunker, emissions, energy

$$\frac{\text{Fuel converted into WtW CO}_2\text{eq}}{\text{Total Energy}}$$

=

$$\frac{\text{gCO}_2\text{eq}}{\text{MJ}}$$



WtW: Well to Wake, i.e. considering emissions of extraction, processing, impact of changed land use, transport as well as from fuel use (higher than known emissions factors, default values for traditional fuels)

CO₂eq (in g): CO₂ equivalent (including factors for methane, N₂O)

Total Energy (in MJ): Energy used on board from all sources, including OSP, wind

the numbers

2020 Reference Value

91.16 gCO₂eq/MJ

2025 Target Value

2% reduction, 89.3 gCO₂eq/MJ

Penalty System:

if exceeding target: Conversion of exceeding gCO₂eq into VLSFOeq
Penalty: €2,400 per ton VLSFOeq

The EU's "Basic Formula" is not Quite so Basic

FuelEU Maritime's complex emissions calculations for 'Well to Tank' and 'Tank to Wake', along with discount incentives for green propulsion methods and ice-classed vessels



Well to Tank (WtT)

$$\frac{\sum_i^{n fuel} M_i \times CO_{2eqWtT,i} \times LCV_i + \sum_k^c E_k \times (CO_{2eqelectricity,k} = 0)}{\sum_i^{n fuel} M_i \times LCV_i \times RWD_i + \sum_k^c E_k}$$



Tank to Wake (TtW)

$$\frac{\sum_i^{n fuel} \sum_j^{m engine} \times M_{i,j} \times \left[\left(1 - \frac{1}{100} C_{slip j} \right) \times (CO_{2eqTtW,i,j}) + \left(\frac{1}{100} C_{slip j} \times CO_{2eqTtW,slip,i,j} \right) \right]}{\sum_i^{n fuel} M_i \times LCV_i \times RWD_i + \sum_k^c E_k}$$

Discounts

1. Wind Propulsion	2. Ice Class	3. OSP	4. RFNBOs
Discounts for wind propulsion (if at least 5% of installed power)	Discounts for Ice-Class (5% similar to ETS, but only when not sailing in ice) and special discounts (up to 30%) for actually sailing in ice	OSP assumed to have zero emissions WtW	Reward factor in the denominator



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**Any further questions?
Contact us!**



More information can be found on
our website **www.oceanscore.com**

