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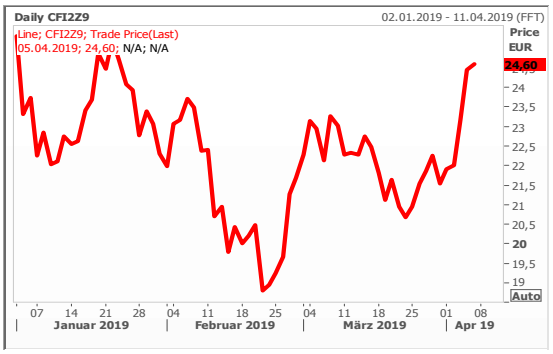


EUA DEC19 01.01.2019 up to 05.04.2019 Source: ICE

Emission News 02-2019

Practical Information for Emission Trading

Edition 09.04.2019

The regulations of CORSIA (part II) and the EU ETS for airlines – Prices for EUA certificates higher and higher

Similarities and Differences between the systems

Now we point out similarities and differences, where, in principle, CORSIA MRV is very similar to EU ETS MRV, so we begin with listing the similarities between the two MRV systems:

First, in EU-ETS, as well as in CORSIA, the operator is the accountable entity, which carries the responsibility to be compliant with the provisions and regulations.

Second, under both systems, the aircraft operator is attributed to a particular State.

Both systems cover only CO2 emissions and MRV is the underlying accountability principle in both systems. Concerning the surrendering requirements, under EU ETS the surrendering obligation remains unchanged at least until 2020.

The offsetting requirements under CORSIA are applicable for the first time in the year 2021.

The main difference is the actual coverage of flight emissions. CORSIA covers all international flights, thus more routes, and therefore has more potential for an increased amount of emission to be offset compared to the amount of emission to be mitigated under the EU ETS scenarios.

CORSIA route coverage is designed so that, if the airline's home state and the state to which it is flying is included, the route both ways is included and the airline will need to monitor, report and offset the emissions it produces. If the home state is included but the state to which the airline is flying is not or if both states are not included, the route is exempt from offsetting but still falls under the MRV requirement.

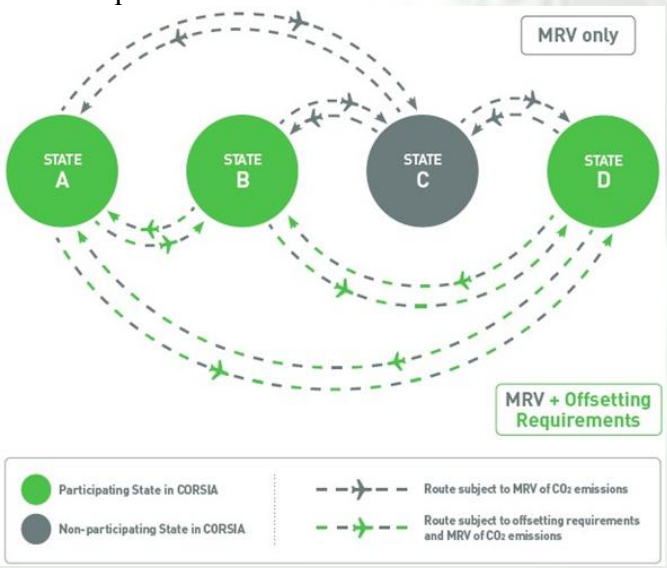


Figure 3: Illustration of the Route Coverage of CORSIA / Source ICAO

Another important point is the definition of the operator itself. EU-ETS regulates aircraft operators

(that includes helicopters), whereas CORSIA speaks of aeroplane operators (planes with wings). For aeroplane operators, the coverage starts exceeding the maximum certificated take-off mass of greater than 5 700 kg.

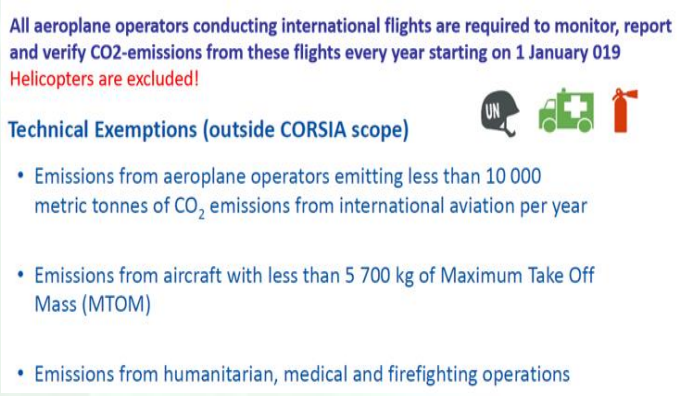


Figure 4: Scope of CORSIA / Source Verifavia

As stated in Annex 16, Volume IV, Part II, Chapter 2, 2.1.1, "The Standards and Recommended Practices of this Chapter shall be applicable to an aeroplane operator that produces annual CO2 emissions greater than 10 000 tonnes from the use of an aeroplane(s) with a maximum certificated take-off mass greater than 5 700 kg conducting international flights, as defined in 1.1.2, on or after 1 January 2019, with the exception of humanitarian, medical and firefighting flights." The exceptions from CORSIA MRV are a little less than under EU-ETS, as there testing flights, training flights, VFR flights and flights for a head of state are also exempt.
Now we discuss the similarities and differences with regards to the MRV process.

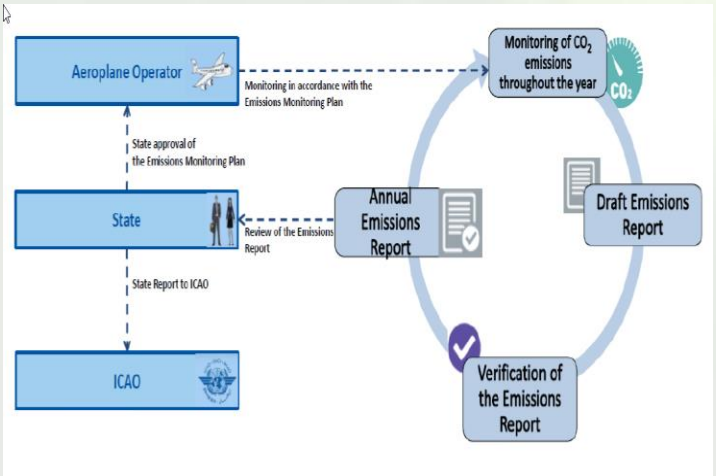


Figure5 : Compliance Cycle for CORSIA / Source : ICAO

The MRV process, as regulated in the CORSIA SARPS and in the EU-ETS MRR, explained in brief is that the airline has a monitoring plan, under CORSIA and EU-ETS in which they tell their authority, state or EU competent authority, how they are recording and measuring emissions. The state authority has to approve the EMP, whereas the airline goes through the year and records its emissions for international flights under CORSIA and emissions from flights between airports in the EEA under EU-ETS.

The common denominator is that all flight fuel and emissions data will have to be audited and, for all of those audits, MRV will be needed. MRV stands for Monitoring, Reporting and Verification, whereby the airlines create report which are delivered to an auditor who will provide the verification and produce an attestation and audit certificate which emission report is then all provided to the airline's regulator – ICAO for CORSIA or the EU for ETS.

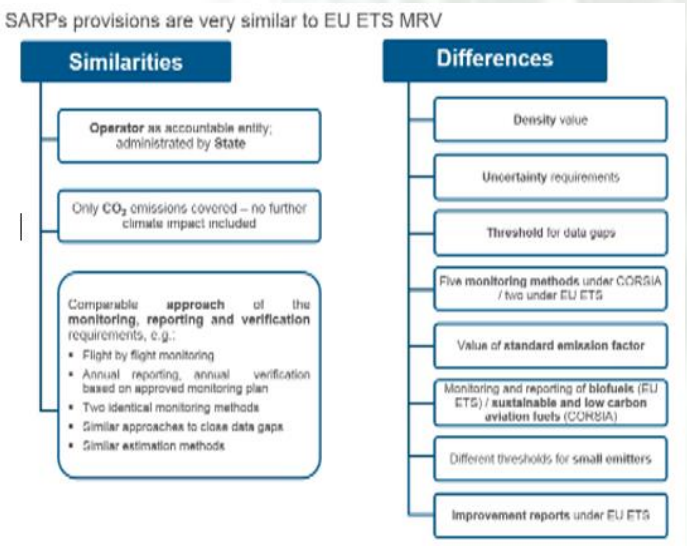


Figure 6. Similarities and Differences between EU ETS and CORSIA / Source : DEHSt

We are using the above graphic, taken from the DEHSt tutorial to summarize the similarities and differences in the MRV for the CORSIA SARPS and the EU-ETS MRR.

As in the EU ETS the operator in CORSIA is the accountable entity, which carries the responsibility to be compliant with the provisions.

- Both systems cover only CO2 emissions. MRV approach is as well comparable.

So, for example, it is a flight by flight monitoring approach for both systems, with the requirements of annual reporting and annual verification processes based on an approved monitoring plan. Therefore, requirements regarding contents of monitoring plan and emissions report are identical. Both systems offer two identical monitoring methods, Method A and Method B, and offer a similar approach to close data gaps.

Despite that both MRV provisions are very similar, there are still some differences between the two systems: First, the three differences, namely:
Trotz der Tatsache, dass beide MRV-Bestimmungen sehr ähnlich sind, gibt es immer noch einige Unterschiede zwischen den beiden Systemen:
Beginnen wir mit den 3 wichtigsten Unterschieden:

- Applied density value for the calculation of emissions (conversion of volume into mass), which, under COSRIA can be standard or actual
- Uncertainty requirements and the threshold for data gaps, which has been elevated to is 5% under CORSIA

It's important to point out the difference regarding the five eligible monitoring methods under CORSIA and only two eligible monitoring methods under EU ETS and the different estimation tool, as described in the figure below:

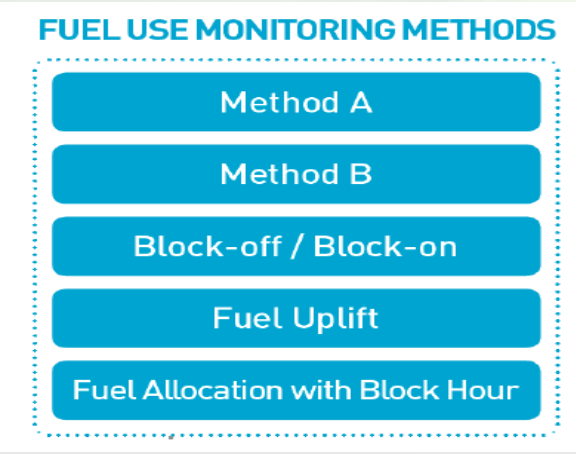


Figure 7: Five Monitoring Methodologies / Source : ICAO

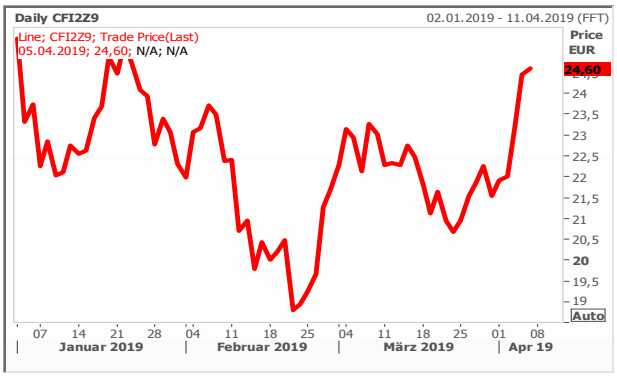
EU-ETS only knows the fuel use monitoring methods "A" and "B" and the estimation tool is called the "Small Emitters Tool" but CORSIA uses a very similar approach of calculating the standard emissions of a given aircraft type for a given flight distance with the CERT-Tool.
Das EU-ETS kennt nur die Überwachungsmethoden für Kraftstoffverbrauch nach Methode "A" oder "B". Das Schätzwerkzeug unter ETS ist das "Small Emitters Tool", CORSIA verwendet jedoch einen sehr ähnlichen Ansatz mit den CERT Tool zur Berechnung der Standardemissionen eines bestimmten Flugzeugtyps für eine gegebene Flugentfernung .

A final MRV difference, if ever so slight, that has to be mentioned is that reported emissions under CORSIA produce 3.16 tonnes of CO2 emissions, whereas EU-ETS calculates 3.15 tonnes of CO2 emissions for every 1 tonne of fuel burned.

We will close our comparison by looking at offsetting, as the overall similarity of CORSIA and EU-ETS is that emissions need to be offset. At the very end of the MRV process the airline will surrender carbon credits (EUAs) under EU-ETS or offset the share of reported emissions through CER (Certified Emission Reductions) still to be specified by ICAO for CORSIA.

Figure 8 : CORSIA Emission Units Source : ICAO

The figure above (page before), taken from ICAO shows, the origin of emission units, being generated by green projects or programs, that then will be traded at carbon markets. ICAO specifies the units that are deemed eligible for COSRIA, which then in turn can be bought by aeroplane operators to offset and cancel their actual verified emissions.
The figure below shows, EU-ETS carbon credits, used for offsetting, which are generated by the EU itself. The EUA or EUAA (EU Aviation Allowances) and are provided to the carbon markets under a EU market cap that corresponds to the overall GHG reduction targets agreed by the EU for Kyoto and Paris. Prices for both types of carbon credits fluctuate as a result of supply and demand, which is depicted by the chart of the EUA, dated April 5th 2019.



Price EUA around 25 Euro/ton Source: ICE London

Both, CORSIA and EU-ETS require the state to maintain a register for reported and cancelled emissions. The MRV"O" process, so the complete cycle of reporting and "O" offsetting requires a state to assure that each airline has actually surrendered carbon credits and that these credits are not used again. Under CORSIA, carbon credits must be cancelled, and this process has to be verified by a 3rd party verifier, whereas under EU ETS carbon credits have to be transferred from the operator's account to the state authority.

CORSIA is similar to ETS in another aspect, where as 1 tonne of fuel burn produce 3.16 tonnes of CO2 emissions (EU-ETS calculates 3.15 tonnes of CO2 emissions for every 1 tonne of fuel burned).
Under COSRAI is important to clearly distinguish between the reporting and the offsetting obligation.

As a rule of thumb, during the full lifetime of CORSIA, every international flight has to be monitored, reported and verified. Therefore, the offsetting obligation is "just" an add-on to this general reporting obligation (at least until 2027, where CORSIA is mandatory for every state).

How offset will be calculated in CORSIA will be different from ETS. It will start with the aircraft operator monitoring emissions and sending a verified emissions report to their State Authority every year. States will consolidate the emissions data for all aeroplane operators under its jurisdiction before reporting it to ICAO who, in turn, calculates a Growth Factor which is communicated back to the airline. The airline takes the reported emissions and multiplies it by the Growth Factor and those are the emissions that have to be offset, called the individual airline offset requirement. That Growth Factor is taken from the two baseline years, 2019 and 2020, and this is what ICAO will communicate to the individual operator.

How airlines can actually offset differs from ETS which creates carbon credits that it sells to airlines – a good revenue stream. ICAO takes a different approach. The aircraft operator is made aware of the quantity of emissions that have to be offset and will have to buy CORSIA Eligible Emissions Units, Certified Emissions Reductions (CERs), which are tradeable. The current price for CERs is lower than the EU emission allowance. Each emission unit is designed to offset 1 tonne of carbon dioxide. The airline buys them, reports the purchase to ICAO and their obligation is covered.

A CER emission unit, in use under CORSIA, comes from a project that takes carbon dioxide out of the air such as planting a forest, or projects that reduce CO2 emissions (renewables, clean tech, electric transportation) where it is possible to measure the carbon dioxide that will be taken out of the air as the forest grows. Such projects yield certified emission reductions which can then be bought by stationary or aviation emitters.

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