

EUの関連動向

2023年6月

資源エネルギー庁

【参考】EU再エネ指令委任規則案における扱い 1/2

1. 欧州の政策等動向調査: (3)RED委任規則案

第10回メタネーション推進官民協議会
(2023年2月24日) 資料4-4

RED委任規則案における原料CO2の扱い及び再エネ基準について

- 2023年2月、RCF・RFNBOのRED適格基準を評価するLC-GHG排出量の算定方法、再エネ基準を提案。
 - a. LC-GHG排出量算定方法: 算定方法や排出削減基準、回収CO2の控除条件(原料CO2の考え方)等を提示
 - b. 再エネ基準: RCF・RFNBO製造時における再エネ基準(追加性・時間的相関性・地理的相関性)を提示

a. LC-GHG排出量の算定方法: 算定方法・排出削減基準

- LC-GHG排出量の算定方法は以下の通り。

$$E = e_i + e_p + e_{td} + e_u - e_{ccs}$$

E : RCF・RFNBO使用時の総GHG排出量

e_i : 投入物の供給によるGHG排出量

$$e_i = e_i \text{ elastic} + e_i \text{ rigid} - e \text{ ex use}$$

$e_i \text{ elastic}$: 弾性投入物によるGHG排出量

$e_i \text{ rigid}$: 剛性投入物によるGHG排出量

$e \text{ ex use}$: 投入物の従来使用によるGHG排出量

e_p : 製造プロセス由来のGHG排出量

e_{td} : 輸送時のGHG排出量

e_u : 使用時のGHG排出量

e_{ccs} : 地下貯留分のGHG排出量

- 排出削減基準はベースラインと比較して70%以上。
- 「b. 再エネ基準」を満たす電力は排出量ゼロとみなす。
- 上記 $e \text{ ex use}$ は次頁の回収源別CO2が該当。

b. 再エネ基準: 追加性・時間的相関性・地理的相関性

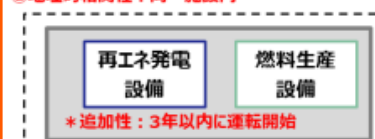
- 合成燃料製造に用いる電力を再エネとみなすことができるケースとして、以下の2パターン(①②)を提示。

<①再エネを直接調達>

①地理的相関性: 直接接続

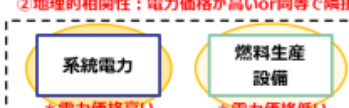


②地理的相関性: 同一施設内



<②再エネを系統から調達>

①地理的相関性: 生産設備と同じ入札区域



③地理的相関性: 洋上風力の入札区域と隣接



<②再エネを系統から調達>する場合の追加性・時間的相関性

- * 追加性※1: 3年以内に運転開始、補助金を受けていないこと
- * 時間的相関性: 1時間以内※2の再エネ電気を調達(蓄電池も同様)

※1: 2027年までに稼働する場合2037年まで免除、※2: 2029年末まで「1時間」→「1か月」

(出所)「C(2023) 1086 final」、「C(2023) 1086 final ANNEX」、「C(2023) 1087 final」よりみずほリサーチ&テクノロジーズ作成

【参考】EU再エネ指令委任規則案における扱い 2/2

1. 欧州の政策等動向調査: (3)RED委任規則案

第10回メタネーション推進官民協議会
(2023年2月24日) 資料4-4

a. LC-GHG排出量の算定方法:原料CO2の考え方について

- RCF・RFNBOは、RED適格燃料として、ベースライン(輸送用化石燃料:94gCO₂eq/MJ)と比較して、LC-GHG排出量を70%以上削減することが求められる。
- LC-GHG排出量算定において、*e ex use*(回収CO₂)は、下表に該当するCO₂の場合、控除が可能である。
 - 一定条件(回収源)で、燃焼時CO₂から回収CO₂を差し引くことが可能。回収源は下表の5通り。

LC-GHG排出量の算定方法:原料CO2の考え方

回収源	基準
産業活動由来CO ₂	以下の対象産業・対象期限に由来する場合 ・対象産業: * EU-ETSで対象となる産業活動※(効果的なカーボンプライシングの対象として考慮) ・対象期限: * 発電用燃料の燃焼に由来するCO ₂ は2035年まで対象 * 発電用以外の燃料の燃焼に由来CO ₂ は2040年まで対象
バイオ由来CO ₂	持続可能性基準・GHG排出削減基準に適合する、バイオ燃料、バイオ液体燃料、バイオマス燃料の燃焼・生産に由来する場合
大気由来CO ₂	大気中から回収される場合
RFNBO燃料由来CO ₂	RCF・RFNBOの燃焼に由来する場合
自然発生由来CO ₂	自然的に発生する場合

※対象となる産業活動は次頁参照

(出所)「C(2023) 1086 final」、「C(2023) 1086 final ANNEX」よりみずほリサーチ&テクノロジーズ作成

改正EU-ETS

- 4月18日、欧州議会は、EU ETSの見直しを含むFit for 55の関連法案を採択。4月25日、EU理事会も同法案を採択し、立法手続きが完了。
- EU域外で回収されたCO2から生産するカーボンリサイクル燃料の存在も念頭におかれている。

<欧州委員会提案>

(40)

Renewable liquid and gaseous fuels of non-biological origin and recycled carbon fuels can be important to reduce greenhouse gas emissions in sectors that are hard to decarbonise.

Where recycled carbon fuels and renewable liquid and gaseous fuels of non-biological origin are produced from captured carbon dioxide under an activity covered by this Directive, the emissions should be accounted under that activity.

To ensure that renewable fuels of non-biological origin and recycled carbon fuels contribute to greenhouse gas emission reductions and to avoid double counting for fuels that do so, it is appropriate to explicitly extend the empowerment in Article 14(1) to the adoption by the Commission of implementing acts laying down the necessary adjustments for how to account for the eventual release of carbon dioxide and how to avoid double counting to ensure appropriate incentives are in place, taking also into account the treatment of these fuels under Directive (EU) 2018/2001.

<採択案>

(68)


Renewable liquid and gaseous fuels of non-biological origin and recycled carbon fuels can be important for reducing greenhouse gas emissions in sectors that are hard to decarbonise.

Where recycled carbon fuels and renewable liquid and gaseous fuels of non-biological origin are produced from captured CO2 under an activity covered by this Directive, the emissions should be accounted for under that activity.

To ensure that renewable fuels of non-biological origin and recycled carbon fuels contribute to greenhouse gas emission reductions and to avoid double counting for fuels that do so, it is appropriate to explicitly extend the empowerment in Article 14(1) of Directive 2003/87/EC to the adoption by the Commission of implementing acts laying down the necessary adjustments for how to account for the eventual release of CO2, in a way that ensures that all emissions are accounted for, including where such fuels are produced from captured CO2 outside the Union, while avoiding double counting and ensuring appropriate incentives are in place for capturing emissions, taking also into account the treatment of those fuels under Directive (EU) 2018/2001.

- 改正EU-ETS及びRED/RED委任規則案により、カーボンリサイクル燃料（RCF）・非バイオ由来再生可能燃料（RFNBO）に関するEUの考え方が一定程度明確化。
- 一方で、カーボンリサイクル燃料は、脱炭素化が困難な分野におけるCO2削減のための利用という考え方を示しており、今後は、特に航空機燃料の分野における、合成航空機燃料の導入に係るルール整備や民間における具体的事業が進むと想定される。
- ドイツは、H2Globalによるアンモニア、グリーンメタノール、e-SAFの調達を発表。

EU



【RefuelEU Aviation】（EU理事会、欧州議会等で議論中）

- 航空燃料供給者に、EU域内で供給する航空燃料に対して一定比率以上のSAF・合成燃料の混合を義務づけ。

	2025	2030	2035	2040	2045	2050
SAF	2%	6%	20%	34%	42%	70%
うち合成燃料	—	1.2%	5%	10%	15%	35%

- 航空会社に対しては、域内空港でのSAFの給油を義務づけ予定。
- EU域内の各国も、独自のSAFの供給義務・目標を設定。イギリスでは、2030年までに航空燃料の10%をSAFに置き換える目標を設定し、燃料供給事業者に対する義務を2025年に導入予定。

2023年5月29日
第37回 資源・燃料分科会
資料5 P17（抜粋）

Federal Ministry for Economic Affairs and Climate Action launches first auction procedure for H2Global – €900 million for the purchase of green hydrogen derivatives

08/12/2022

Introduction

The Federal Ministry for Economic Affairs and Climate Action has launched the procurement procedure for the import of green hydrogen under the H2Global programme. Minister Habeck commented on this today in Johannesburg, since the H2Global instrument can also play an important role in the development of the market in South Africa and Namibia, two countries he is currently visiting.

In December 2021, the Federal Ministry for Economic Affairs and Climate Action approved a €900 million funding instrument entitled H2Global. The idea is to purchase green hydrogen products cheaply on the world market and to sell them to the highest bidder in the EU. This will support the global market ramp-up of green hydrogen. The hydrogen exporters gain security for their investment decisions through long-term purchase contracts, and the importers gain access to green derivatives.

Federal Minister Habeck said: “We want to make Germany and Europe a lead market for green hydrogen. We are therefore launching a first auction procedure for the import of green hydrogen worth €900 million.”

To this end, a competitive bidding procedure will enable HINT.CO, an intermediary, to purchase hydrogen derivatives at the lowest possible price in contracts lasting ten years. The large purchase contracts incentivise investment in renewable energy and the production of hydrogen-based ammonia, methanol and sustainable aviation fuel (eSAF). The production must take place outside the EU and EFTA. The import prices are set via a transparent international competitive bidding procedure.

The first deliveries of these sustainable hydrogen derivatives to Germany and Europe are scheduled for the end of 2024. The H2Global auction process is the first global bidding procedure for the purchase of hydrogen and its derivatives. It will identify the world's first market price for green hydrogen and its tradable derivatives.

In the 2023 federal budget, the Federal Government is planning to provide a further €3.5 billion for new auction rounds to cover periods up to 2036. The coalition agreement and the Immediate Climate Action Programme have also set out the goal of establishing H2Global as a European instrument. At the same time, the instrument has already been opened up to other European countries.

Companies and consortia can obtain the tender documents here: <https://exficon.de/tad/current-tenders/>

Purchase of Green Hydrogen Derivatives (electricity based Sustainable Aviation Fuel (e-SAF))

Country	Germany, World
Deadline	May 30, 2023
Financing	Bundesrepublik Deutschland (BRD)
Reference Number	Hintco
Subject	Purchase of Green Hydrogen Derivatives (Lot 3 - electricity based Sustainable Aviation Fuel (e-SAF))

Project measures:

This tender is part of H2Global, an instrument for the competition-based promotion of the market ramp-up of hydrogen and its derivatives on an industrial scale, which are produced using electricity from renewable energy sources. The Federal Ministry for Economic Affairs and Climate Protection is providing funding of EUR 900 million for the H2Global instrument to support projects in countries where green hydrogen and its derivatives can be produced cost-effectively. Green technologies are to be established there and a contribution made to meeting the growing demand for green hydrogen and its derivatives in Germany and the EU. The tender will procure the hydrogen-based products

- green ammonia (Lot 1),
- green methanol (Lot 2) and
- electricity based Sustainable Aviation Fuel (e-SAF) (Lot 3, project at hand)

for import into Europe.

Requested Consulting Services:

In order to provide incentives for investments, the H2Global funding instrument envisages, on the one hand, long-term purchase agreements (HPAs) to ensure planning and investment security for producers and, on the other hand, short-term sales agreements (HSAs) with purchasers to meet the European demand for sustainably produced hydrogen and its derivatives. The H2Global funding instrument envisages that Hintco will purchase the products at the lowest possible prices through a tendering process and subsequently sell them to the highest bidder. The difference in costs between the (expected higher) purchase price and the (lower) sales price is compensated by Hintco from the funding granted by the BMWK. The HPA to be awarded in the present procurement procedure (Lot 3) relates to the purchase of electricity based Sustainable Aviation Fuel as a derivative of green hydrogen.

独・H2GLOBALによるe-SAF等の域外調達のETSにおける扱いの検討

- 水素及びその派生物の調達を担う独・H2Globalは、2022年6月に、「Preparation of a study „Assessment of emission rights of green PtX products”」という調査を公募。
- この中のWork Package 2として、「Examples of emission reduction accounting for green hydrogen and green derivatives (trading in the EU and imports from non-EU countries)」の項目が示され、以下のような調査項目が挙げている。

In this work package, the (prospective) accounting under the EU ETS will be traced by means of illustrative examples, in each case in comparison to intra-European trade. The question of how emissions can be tracked will also be addressed.

- i) Crediting of green methanol imported into the EU from non-OECD / OECD countries;
- ii) Crediting of green ammonia imported into the EU from non-OECD / OECD countries;
- iii) Crediting of green e-kerosene imported into the EU from non-OECD / OECD countries;
- iv) Crediting of green hydrogen imported into the EU via pipelines from EFTA, EU and North Africa.

In each case, the consumption is to be traced as follows:

- i) Consumption of green hydrogen in energy-intensive industry and heavy transport;
- ii) Consumption of green methanol in the chemical industry as a raw material and as a fuel in marine transport;
- iii) Consumption of green ammonia in fertilizer production, as an H₂ carrier, and as a fuel in marine transportation;
- iv) consumption of green e-kerosene in aviation (mandatory refueling in the EU; with destination in the EU).

In particular, the requirements to be fulfilled in the third country and in the EU for accreditation have to be examined and elaborated. In this respect, the following guiding question is important: What are the requirements for GHG accounting and recognition of the green attribute today, based on the European / German regulation and in relation to a possible further development in RED III?