

LIFE COASE

Collaborative Observatory for ASsessment of the EU ETS

Providing knowledge for improved emissions trading

Deliverable D2.2

Transactions dataset, plus User guide

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Dataset and Sources

The dataset relies on public sources, such as the European Union's Transaction Log (EUTL), leakage lists and the Bureau van Dijk Orbis database provided by the Joint Research Centre. It is publicly accessible via the EUI's research repository Cadmus: [Transactions data in the EU transaction log](#), as well as on the website of the author: [EUETS.info](#).

The following chapter includes the user guide which was published together with the dataset to increase the accessibility of the data.

Transactions Data in the EU Transaction Log

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November 19, 2024

1 Introduction

The EU Transaction Log (EUTL) records all transfers of allowances in the EU Emissions Trading system (EUETS). In this short note we provide an introduction into transactions under the EUETS. We first provide an overview how allowance transfers work and who are the involved parties. We then explain the characteristics of these transfers and how they evolve over time. Finally, some Frequently Asked Questions are provided that should lower the barrier of stepping into the analysis of the transaction data.

The empirical part of the note is based on the dataset provided by [EUETS.INFO](https://euets.info). The full structure of the dataset is explained in [Abrell \(2021\)](#). The figures presented in this note together with the code to reproduce them are available in a Github repository: https://github.com/jabrell/transaction_eutl.

2 Function of the EU Transaction Log

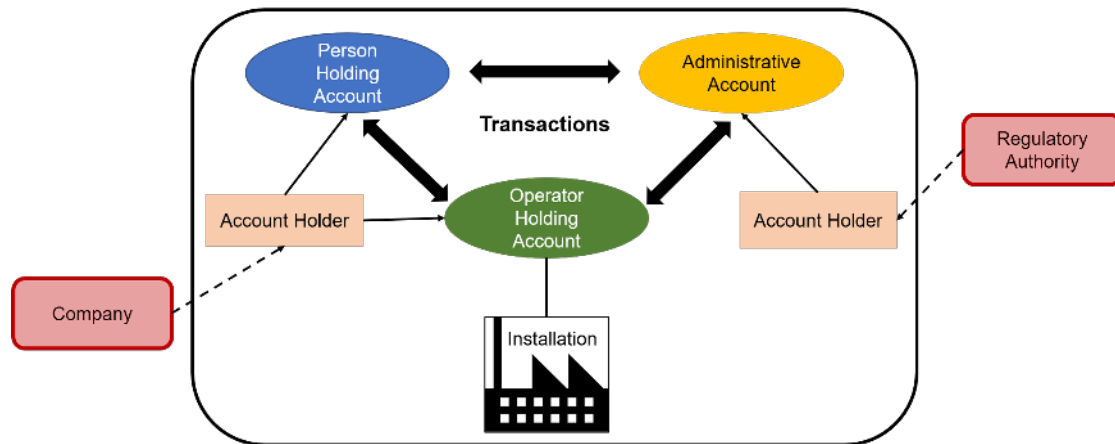
The EU Transaction Log (EUTL) is the administrative backend of the EU Emissions Trading System (EUETS). From an administrative perspective, the EUTL consists of the three major entities. Installations, accounts, and account holders (Figure 1). The transfer of allowances is allowed between accounts, only.

Installations are regulated entities, i.e., they must surrender allowances equal to their previous year's emissions. The scope of the EUETS is defined on the activity level, i.e., it regulates emissions of installations that are listed in Annex I of the EUETS directive ([European Commission, 2024](#)). The basic characteristics of installations provided in the EUTL include the activity type according to this Annex I, the address of the installation and verified emissions for each year.¹

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¹The address is only meaningful for stationary installations. Mobile installations, i.e., aviation and maritime ship-

Figure 1: Basic functioning of the EU Emissions Trading System



Source: Abrell (2021)

Accounts are the basic accounting entity in the EUTL. I.e., only accounts can hold and transfer allowances.² Therefore, each installation must be associated to exactly one account at a given point in time. These operator holding accounts are responsible for acquiring and surrendering allowances equal to the verified emissions of the installation. Administrative accounts represent the regulator of the system. These accounts are responsible for creating and deleting allowances. In order to comply with their regulatory obligation, operator holding accounts must transfer allowances equal to the emissions of their associated installation to an administrative account. If an installation receives free allowances, an administrative account transfers allowances to the respective operator holding account (OHA). The EUETS is an open system in the sense that also non-regulated entities such as financial intermediaries or NGOs can hold and transfer allowances. These actors have to register a person holding account (PHA). For each account, the EUTL provides the type of account together with the account holder.

Account holders are legally responsible for the accounts. Each account holder is related to at least one account. An account holder can also be responsible for several accounts but one account is associated with one account holder. For administrative accounts, the account holder is the European Commission or an administrative representative of one of the countries participating in the EUETS. For operator (OHA) and person holding accounts (PHA), the account holder often is a company but natural persons could register a PHA as well. As an example, consider a company that produces steel with several installations. For each installation, the company has to register an OHA. Firms with several installation often follow a centralized strategy to manage their carbon allowances. For this the firm would open an additional PHA that is responsible only for the trading activities. All of these accounts would belong to the same company. It is important to note, that the company itself is represented in EUTL only as an account holder that is characterized by the address of the responsible person and sometimes some additional

ping operators, can freely register in each member state.

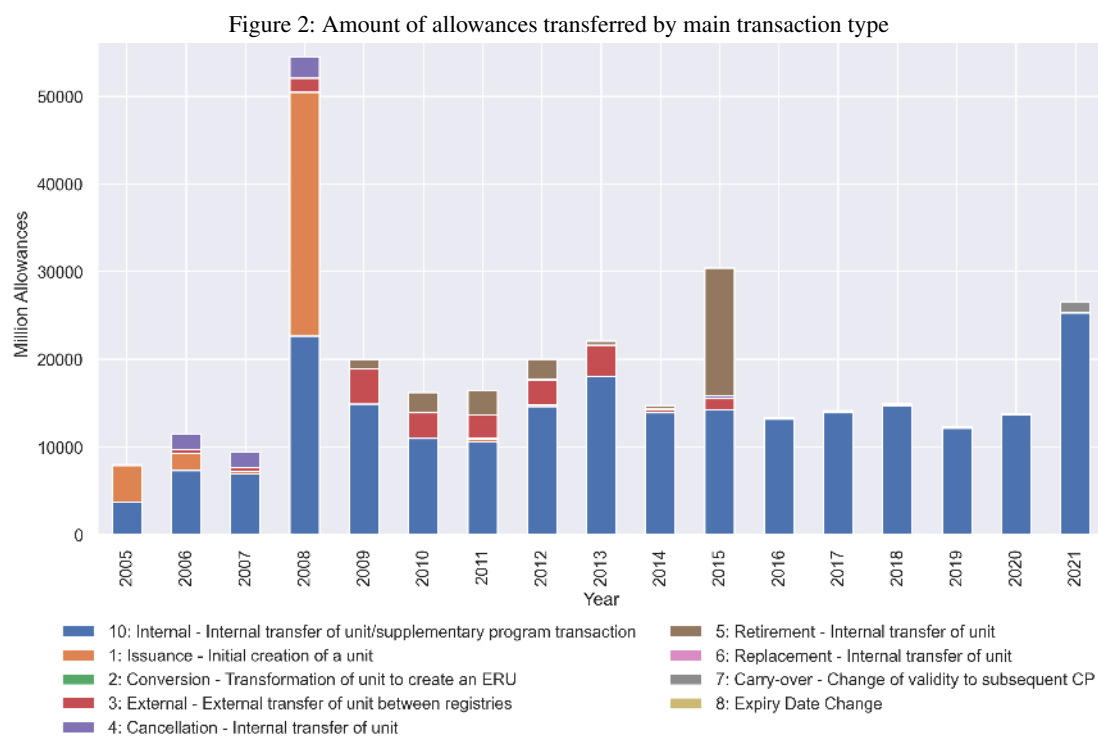
²For a full list of account types and their categorizations see Abrell (2021).

information such as the company registration number. However, no additional information is available from the EUTL.

Most accounts in the EUTL have an account holder. However, for some accounts the account holder is missing. This is mostly the case for accounts that are not registered in the EUTL, i.e., foreign account, as these are registered in another trading system and the information is not transferred.³

3 Transactions

Transactions take place between accounts. The public version of the EUTL only provides information on transactions in which OHA and PHA are involved. Transactions between administrative accounts such as the creation and cancellation of allowances or the conversion from allowance type to another are not publicly observed. Transactions are publicly available with a three years delay and only for transactions that are completed. It should be noted, that transaction reported under the EUTL are not necessarily trades that take place over the allowance market. They rather record the transfer of allowances. Such a transfer might be connected to trade over the market but has not to be. E.g., the surrendering of allowances is a transfer but no associated market trade exists.



In a transaction, allowances are transferred from the transferring account to the acquiring ac-

³In the data from [EUETS.INFO](https://eucts.info) these accounts can be identified as they have a negative account identifier.

count. Transactions are therefore characterized by a transaction identifier, the date when the transaction is completed, the type of allowance that is transferred, an identifier for the transferring and acquiring account, the main and supplementary type of transaction, and the amount of allowances transferred. Since several allowance types can be transferred in a single transaction, the transaction identifier as provided by the EUTL is not unique but the combination of the transaction identified and the unit type is unique.

3.1 Transaction Types

Transaction types come in two forms: main and supplementary transaction types. Figures 2 and 3 show the amount of allowances transferred in each year by the respective transaction type. There does not exist an official unified list of these transaction types. One reason might be that they are often specific for a certain period of the EUETS. In the early years, transaction types might also come from the UNFCCC regulation for the Kyoto Protocol. If clarification for more recent transaction types is needed, the registry regulation [European Commission \(2019\)](#) and its recent amendments [European Commission \(2023\)](#) are usually very helpful.⁴

Internal transfers are the most important main transaction type in particular after the conversion of the EUETS from a system of registries by member state (the Community Independent Transaction Log, CITL) to a common registry (the EUTL) in 2013. Before the system in 2013, we also observe internal registry operations such as the *Initial creation of unit*. These also explain the spike in allowances transferred in 2008 that corresponds to the creation of allowances for the 2008 to 2012 period.

For the major part of transactions, the supplementary transaction type is not provided. Transactions without a supplementary type are often standard transactions, i.e., transactions between OHAs and PHAs (Figure 3). In the case of administrative transfers (transfers in which an administrative is involved), the supplementary is usually provided. The most important transactions types in this regard are primary allocation of allowances (auctioning and free allocation) together with surrendering of the allowances.

3.2 Allowance Type

Accounts can hold different allowance types (Figure 4). The major parts are units are created within the EUETS and come in three forms. Allowances for the period 2005 to 2007 that have been valid only in these years. In the period from 2008 to 2012 — the first Kyoto commitment period — the EU allowances have been backed by the allowances created under the Kyoto protocol (Assigned Amount Units, AAU). Since 2013, the EU introduced their own allowance types (EU General Allowances, EUA). The amount of allowances transferred in the different years, depict this pattern of the standard EU allowance type over time.

There are three other classes of allowances. First, allowances related to aircraft operators. Second, allowances related to the flexible Kyoto mechanism (Certified Emission Reductions, CER, Emission Reduction Units, ERU, and Removal Units, RMU). Third, the Swiss Emissions

⁴A full list of transaction types that exist in the current version of the dataset provided by [EUETS.INFO](#) is given in [Abrell \(2021\)](#).

Figure 3: Amount of allowances transferred by supplementary transaction type

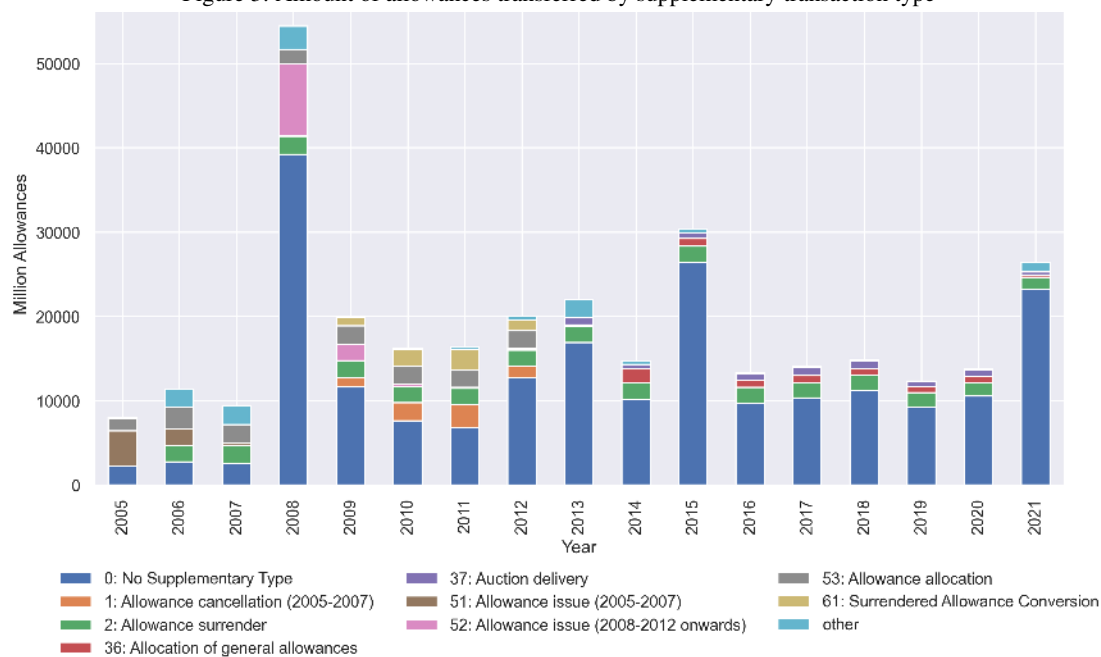
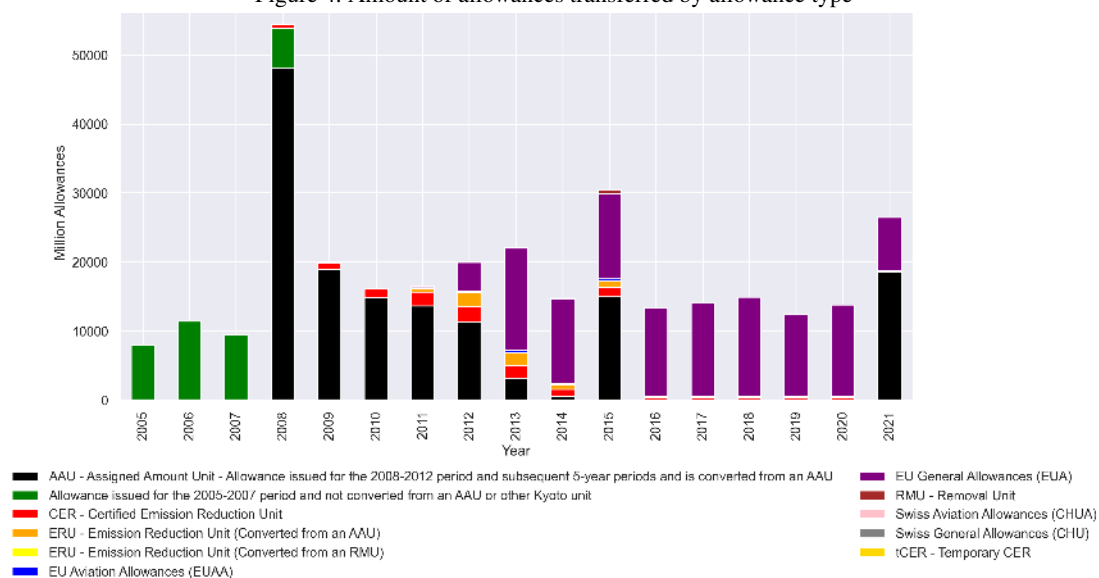


Figure 4: Amount of allowances transferred by allowance type



Trading System has been linked with the EUETS in 2020. Therefore, there are also Swiss allowances in the EUETS.

4 Frequently asked questions

4.1 Are all transactions observed?

No, we do not observe transactions that are internal to the registry, i.e., transaction between administrative accounts. In addition, there are indications that some transactions are missing.

4.2 I want to analyze transfers only between operator and person holding accounts. How to filter the transactions?

While filtering on the transaction types should be possible, it is not recommendable since the transaction types are not very reliable in particular in the earlier year. I recommend using the type of the accounts involved in the transaction. For operator holding accounts the account type numbers are 100-7 (Operator Holding Account), 100-9 (Aircraft Operator Account), 120-0 (Former Operator Holding Account). For person holding accounts: 100-8 (Person Holding Account), 100-12 (Trading Account), 121-0 (Person Account in National Registry).

A problem that usually arises is the fact that we only observe transfers but not the actual market trades. The major part of market trades take place via future trades. This can be observed by annually occurring spike of allowances transferred in December that coincides with settlement of the futures.⁵ This leads to two major problems, first without further data we do not observe the price of the trade. Second, due to the settlement process we lose the information who is trading with whom since the trade goes over the market operator.

4.3 How can I analyze auctions?

For auctions allowances are transferred from the EU Commission to the auction platform. The transaction has the supplementary type 27 (Auction delivery). The transferring account is of type 100-14 (Auction Account) and the acquiring account of type 100-13 (Auction Delivery Account). There are four of these auction delivery accounts (ECC AG Auction Delivery Account EU, ECC AG Auction Delivery Account PL, ECC AG Auction Delivery Account DE, UK Auction Trust Account - DECC). The auction delivery account, i.e., the trading platform, then transfers allowances to the auction participants according to the auction outcome.

4.4 Can I calculate the allowance holding at the account level?

In principle that is possible by aggregating over past transactions. Transaction in which the account is transferring (acquiring) and negative (positive) allowances flow. It is advisable to drop transactions with the supplementary type 33 and 34 (Banking). These transactions seem to be banking from the 2008-2012 to the 2012-2020 period and transfer allowances from the account to the EU Commission. The corresponding transfer back seems, however, to be missing in the transaction data. Even if these transactions are dropped, account holdings sometimes become negative. This is an unresolved issue that might be due to missing transaction data or due to confusions in the completion dates of transactions. There is an example available on GitHub https://github.com/jabrell/pyeutl/blob/main/orm_2_Installations.ipynb.

⁵See the graph in the corresponding GitHub repository.

4.5 Can I analyze transactions at the firm level?

Firms or companies are not part of the EUTL. To do a rigorous analysis, one must link the account holders to companies. This is often done using the Orbis database. The JRC has published the linking and it is included in the data (at the account level): <https://publications.jrc.ec.europa.eu/repository/handle/JRC128492> . Still one has to decide what exactly is the firm which is a non-trivial task. Companies often have multiple subsidiaries. ORBIS provides information on the ownership structure but the level of aggregation must be decided (e.g., the company itself, the national owner, or the global owner).

4.6 Where are the NACE codes coming from?

The NACE codes are extracted from the leakage lists provided by the EU Commission. It is not entirely clear, how these codes have been decided upon. It is important to note, that these NACE codes are at the installation level, i.e., determined by the activity or product the facility is producing. Therefore, these codes usually differ from NACE codes that are provided by a firm-level database such as, e.g., ORBIS. It is also difficult to compare emissions aggregated by NACE code to information obtained from other sources (e.g., production data provided EURO-STAT) due to two reasons. First, it might be that not all companies included in the additional information are covered by the EUETS. Second, it is unclear whether the additional source assigns the same NACE code as the leakage list.

References

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