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Fact sheet

Auction of emission allowances

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Table of contents

1	What is the aim of this fact sheet?.....	3
2	What are the relevant documents, and where can I find them?	3
3	Key definitions.....	3
4	What are the conditions for participation?.....	4
5	What else needs to be remembered prior to an auction?	4
6	When do auctions take place?	4
7	Can auction dates that have already been announced subsequently be changed?	5
8	Can an auction be cancelled once it is in progress?	5
9	What happens if an auction is cancelled?.....	5
10	How many emission allowances are auctioned?	5
11	When will I receive detailed information on a forthcoming auction?	6
12	What platform is used to conduct the auctions?	6
13	Auction procedure	6
13.1	What is the format of a bid in the auction process?.....	6
13.2	What is the clearing price, and how is it calculated?	8
13.3	What happens if, at the clearing price that has been calculated, there are price-quantity pairs from a number of participants?	11
14	I want to submit a bid – what do I have to do?.....	12
15	At what point do my bids become binding?	13
16	How do I find out whether or not my bid has been successful?	13
17	Which auction results are published?	14
18	How do I pay for the emission allowances I have purchased?.....	14
19	When will I receive the emission allowances I have purchased?	14
20	Who is available to answer any questions?	14

1 What is the aim of this fact sheet?

This fact sheet is intended to provide auction participants with a clear overview of the most important information concerning auctions of Swiss emission allowances for installations (CHU2) and emission allowances for aircraft (known as CHUA or aCHU). It also refers to the documents in which offer detailed information.

2 What are the relevant documents, and where can I find them?

- **Articles 47 to 49a of the CO₂ Ordinance, and its explanatory report:** The Ordinance of 30th November 2012 on the Reduction of CO₂ Emissions ([CO₂ Ordinance](#)), in the revised version that entered into force on 1st January 2020, governs the auction of emission allowances. The explanatory report on the CO₂ Ordinance can be found via the following FOEN website under 'Legal Bases' in the left-hand column: <https://www.bafu.admin.ch/climate>
- **General Terms and Conditions for Auctions (GTCA):** These GTCA must be expressly recognised and accepted in advance by operators of installations and operators of aircraft within the Swiss and European Union (EU) emissions trading system (ETS), by other companies from the European Economic Area (EEA) admitted to bid in auctions in the EU that wish to take part in the auction, as well as by auction agents and bid validators. The GTCA can be found at the bottom of the following FOEN website, under the 'Documents' tab in the 'Further information' section: <https://www.bafu.admin.ch/emissionsregistry>
- **Swiss Emissions Trading Registry: General Terms and Conditions (GTC):** The GTC can be found at the bottom of the following FOEN website, under the 'Documents' tab in the 'Further information' section: <https://www.bafu.admin.ch/emissionsregistry>
- **User Guide: Swiss Emissions Trading Registry (EHR):** Once they have logged in to the EHR, this document is available for all users to download in PDF format from the left-hand menu.
- **Swiss Emissions Trading Registry:** The Swiss Emissions Trading Registry is operated on the website with the address <https://www.emissionsregistry.admin.ch>.

3 Key definitions

Participant	Under Article 47 of the CO ₂ Ordinance, operators of installations and operators of aircraft within the Swiss and EU ETS, as well as companies from the EEA admitted to bid in auctions in the EU, are eligible for admission to the in auctions of emission allowances for installations (CHU2) and emission allowances for aircraft (CHUA).
Bid	In the competitive process, a bid consists of between one and twenty price-quantity pairs.
Price-quantity pair	Corresponds to the maximum number of emission allowances that a participant would like to purchase at a particular price for

	one allowance. A price-quantity pair consists of a bid price and a bid quantity.
Bid price	Corresponds to the price in a price-quantity pair.
Bid quantity	Corresponds to the quantity in a price-quantity pair.
Closed auction	Participants know their own bids only, but not those of other participants.
Uniform price	All participants who are successful in an auction pay the same price per emission allowance. This price is known as the clearing price for the auction in question.
Clearing price	Corresponds to the price which the successful participants must pay per emission allowance following the end of the auction. It is calculated following the auction or at the end of the bidding period.
Quantity awarded	Corresponds to the number of emission allowances that a participant has purchased or acquired in an auction.
Auction agent	Corresponds to a role or function in the Swiss Emissions Trading Registry. The auction agent is authorised enter bids, and to amend or withdraw them as necessary.
Bid validator	Corresponds to a role or function in the Swiss Emissions Trading Registry. The bid validator is authorised to validate (confirm) bids. Auction bids do not become binding until they have the approval of the bid validator.

4 What are the conditions for participation?

Under Article 47 of the CO₂ Ordinance, only operators of installations and operators of aircraft within the Swiss and EU ETS, as well as companies from the EEA admitted to bid in auctions in the EU, are eligible for admission to the auctions of emission allowances for installations (CHU2) and emission allowances for aircraft (CHUA) – and only if they satisfy the following conditions laid down in the CO₂ Ordinance: they hold an account as described in Art. 57 para. 1 or 1^{bis}; they have supplied the information specified in Art. 49 as required for participation; and they meet the requirements laid down in Art. 59 para. 2. The two roles of auction agent and bid validator must also have been assigned (see Section 14).

5 What else needs to be remembered prior to an auction?

We recommend that the auction agent and bid validator check their access to the Swiss EHR at an early stage. We would also remind you that, under the GTC for the Swiss EHR, passwords are supplied by registered post exclusively. This also applies during an auction.

6 When do auctions take place?

The FOEN publishes auction dates no later than one month prior to the auction on the Swiss EHR website. In general, each year there will be between one and four auctions of emission allowances for installations (CHU2), and at least one auction of emission allowances for

aircraft (CHUA). An auction will usually be held prior to the deadline for fulfilling the obligation to surrender emission allowances, as described in Art. 55 of the CO₂ Ordinance. As a rule, the bidding period will be between one and three working days. The duration of this period will be published no later than one month prior to the auction on the EHR home page.

7 Can auction dates that have already been announced subsequently be changed?

The FOEN reserves the right to cancel auction dates that have already been published in cases of unforeseeable interruptions to the functioning of the Swiss EHR as a result of force majeure, technical problems with Registry operations, or in order to ensure the security of such operations.

8 Can an auction be cancelled once it is in progress?

Under Art. 48 para. 2 of the CO₂ Ordinance, the FOEN may cancel an auction without making an award, if:

- There are suspicions of anti-competitive agreements or of unlawful practices on the part of dominant auction participants;
- Technical security risks or other reasons jeopardise the proper conduct of the auction;
- The clearing price during the auction period differs significantly from the applicable price on the secondary market in the EU.

In the case that FOEN releases any further information on the reasons and mechanisms for a significant deviation from the applicable price on the secondary market in the EU it would be published no later than one month prior to the auction date.

9 What happens if an auction is cancelled?

If the auction is cancelled, or if there is insufficient demand for the quantity of emission allowances allocated to a particular auction, the remaining emission allowances will be included in a subsequent auction. This may involve repeating the same auction, or allocating the emission allowances to (a) later auction(s).

10 How many emission allowances are auctioned?

The FOEN determines the number of emission allowances that are offered for auction on the basis of Art. 48 para. 1 of the CO₂ Ordinance.

Emission allowances for installations (CHU2): Art. 19 para. 5 of the partially revised CO₂ Act now permits the Federal Council to provide that auction quantities of emission allowances for installations be reduced if, for economic reasons, a considerable quantity of emission allowances is available on the market. Since Art. 45 para. 2 requires a reserve of five per cent of the cap to be retained to be made accessible to new participants and installations expanding their capacity, an increase of five per cent (and thus ten per cent in total) in the quantity of emission allowances that is not allocated free of charge owing to reductions in capacity, partial closures and closures should be seen as considerable. However, were the reserve to be used up entirely by new market entrants or expansions in capacity, it would indicate that the market should not be oversupplied. That is why, under Art. 48 para. 1 a of the CO₂ Ordinance, the FOEN does not auction more than ten per cent per

year of the previous year's cap for installations, even if no further emission allowances were to be allocated free of charge. This nonetheless applies only if the reserve has not been exhausted completely. This Swiss EHS rule will be reviewed for the 2021–2030 phase, and may be amended in line with developments in the EU ETS, or in methods to calculate free allocations.

Emission allowances for aircrafts: The FOEN auctions 15 per cent of the maximum emission allowances available for aircraft each year (Art. 48 para. 1 b CO₂ Ordinance).

The emission allowances which are not assigned to an auction will be cancelled at the end of the commitment period (Art. 48 para. 5 CO₂ Ordinance). For example, this will be the case with emission allowances for installations which are not auctioned owing to the quantity restriction under Art. 48 para. 1 a of the CO₂ Ordinance, or emission allowances for aircraft retained by the FOEN under Annex 15 point 2 c of the CO₂ Ordinance.

11 When will I receive detailed information on a forthcoming auction?

The auction quantities of emission allowances for installations and aircraft, as well as other details of relevance to the auction, such as minimum and maximum bid quantities, will be published no later than one month prior to the auction on the EHR home page.

12 What platform is used to conduct the auctions?

Auctions are handled via the Swiss EHR website: <https://www.emissionsregistry.admin.ch>.

13 Auction procedure

Auctions are held in a **competitive process**; they are *closed uniform price auctions* with only one *bidding round* in each case.

- **Closed:** Participants know their own bids only, but not those of other participants.
- **Uniform price:** All participants who are awarded emission allowances in an auction pay the same price per emission allowance. This price is known as the clearing price for the auction in question.
- **Bidding round:** A participant may submit only one bid for each auction process on a given auction date.

13.1 What is the format of a bid in the auction process?

Each participant is permitted to submit only one bid, consisting of between one and twenty price-quantity pairs.

A price-quantity pair corresponds to the **maximum** number of emission allowances that a participant would like to purchase at a particular price for one allowance. Participants may decide for themselves how many of the twenty possible price-quantity pairs they complete. They must enter a quantity for each price.

Important note: Please note the following difference compared with the auction of European emission allowances, which is conducted by the EEX on behalf of the EU: in the case of an auction conducted by the FOEN, the participant is permitted to submit only one bid, consisting of between one and twenty price-quantity pairs. Here, one price-quantity pair corresponds to the **maximum** number of emission allowances that, as part of its overall bid, a participant would like to purchase **in total** at a particular price for one allowance. In the case of auctions of European emission allowances, several bids may be submitted in each auction. Here, one bid corresponds to the number of emission allowances that the participant would like to purchase at a particular price for one emission allowance **in addition** to the previous, higher-priced bid (corresponds to the quantitative differences shown in step 1 of Section 13.2).

Example of a bid in an auction conducted by the FOEN:

Figure 1 shows the bid from participant A. It consists of three price-quantity pairs: A1, A2 and A3. Please note that the price refers to the price per emission allowance, and not the entire amount for the number of emission allowances being bid for on the same line.

Important note: In the Swiss Emissions Trading Registry, the auction agent must enter bid prices in **euro cents**. Upon validation, the bid validator sees price-quantity pairs in **euros**.

	Price (in euros)	Quantity
A1	14	200
A2	10	400
A3	8	600

Figure 1: Bid from participant A

Figure 1: If the price for an emission allowance is eight euros or less, participant A would like to purchase a maximum of 600. The maximum is given because participant A would also purchase fewer if, at a price of eight euros, there were no longer sufficient emission allowances available from the overall quantity at auction.

If the price for an emission allowance rises above eight euros, but to a maximum of ten euros, participant A would like to purchase a maximum of 400. In other words, participant A would be willing to pay a maximum of 4,000 euros for 400 emission allowances (400 x 10 euros).

A1 corresponds to the highest price-quantity pair – the highest price per emission allowance. If the price for an emission allowance rises above ten euros, but to a maximum of 14 euros, participant A would like to purchase a maximum of 200. If the price is 14 euros or more, they would not purchase any at all.

Figure 2 depicts the demand function for participant A, formed from the three price-quantity pairs of A1, A2 and A3.

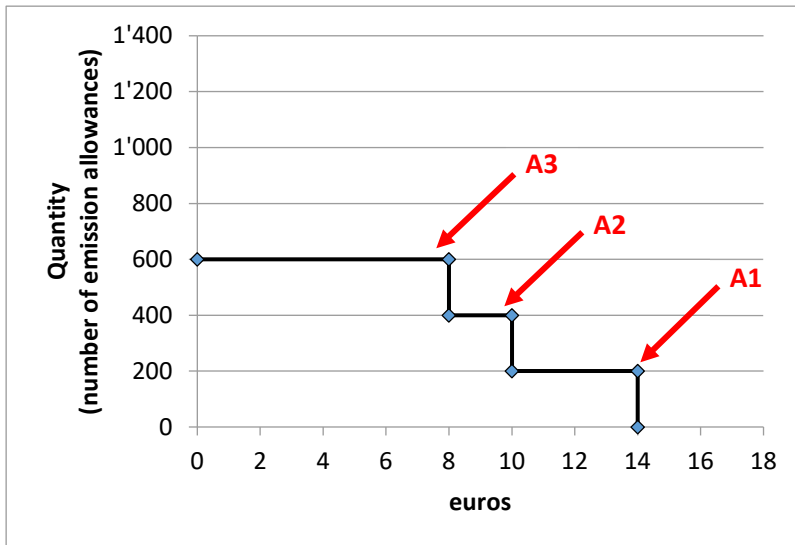


Figure 2: Demand function for participant A

13.2 What is the clearing price, and how is it calculated?

The clearing price corresponds to the price for one emission allowance, determined in the auction. All participants which have submitted a successful bid, i.e. all participants which have been able to purchase emission allowances, pay this clearing price for each of those allowances.

The way in which the clearing price is calculated is illustrated below on the basis of an auction of 1,300 emission allowances, for which participant A and participant B have each submitted a bid.

Important note: *The figures used for the bid are for illustration purposes only. The product of this sample calculation bears no relation to the actual price of a Swiss emission allowance.*

Step 1: Establish quantitative differences

In the first step, quantitative differences between the price-quantity pairs must be established so that these can then simply be added together. Figure 3 illustrates this conversion.

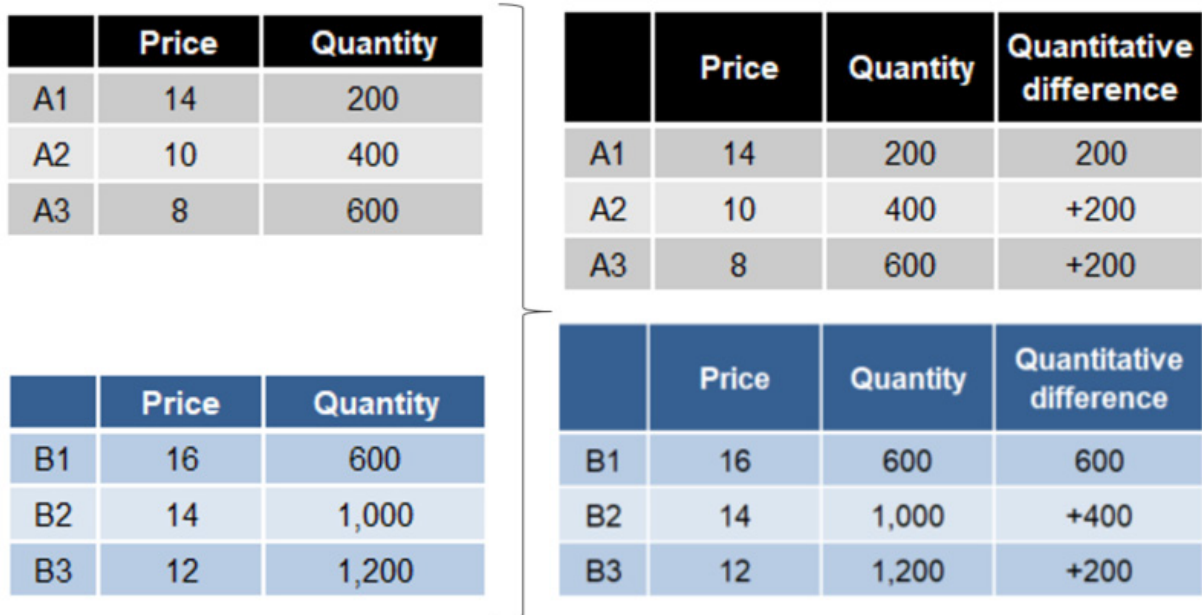


Figure 3: Bids from participants A and B (left), with quantitative differences (right)

Example taking participant A: the calculation begins with the highest price-quantity pair (A1 in the case of participant A). It is entered 1:1 in the new table on the right. If the clearing price falls to ten euros, participant A would like to purchase 400 emission allowances, or 200 more than at a price of 14 euros. Therefore, '+200' appears in the A2 line in the right-hand table. If the clearing price falls to eight euros, participant A would like to purchase 600 emission allowances, or 200 more than at a price of 10 euros. Therefore, '+200' appears in the A3 line in the right-hand table.

The quantitative differences for participant B are calculated in the same way.

Step 2: Sort

The price-quantity pairs for all participants which have submitted a valid bid – participants A and B in our example here – are sorted into descending order (highest price at the top). This is no longer done using the quantities themselves, but the quantitative differences (see Figure 4).

	Price	Quantity	Quantitative difference
A1	14	200	200
A2	10	400	+200
A3	8	600	+200

	Price	Quantity	Quantitative difference
B1	16	600	600
B2	14	1,000	+400
B3	12	1,200	+200

	Price	Quantitative difference	Quantity
B1	16	600	600
B2	14	+400	1,000
A1	14	200	200
B3	12	+200	1,200
A2	10	+200	400
A3	8	+200	600

Figure 4: Sorted price-quantity pairs for participants A and B (right)

Column 2 of the right-hand table in Figure 4 shows the prices falling from top to bottom. At a price of 14 euros (B2), participant B is willing to purchase $600+400=1,000$ emission allowances. This matches the original B2 price-quantity pair.

Step 3: Calculate the clearing price

The price-quantity pairs are added together in descending order until they reach the quantity of emission allowances being offered for auction, or exceed it for the first time (see Figure 5).

	Price	Quantitative difference
B1	16	600
B2	14	+400
A1	14	200
B3	12	+200
A2	10	+200
A3	8	+200

	Price	Quantities (total)
	16	600
	14	1,200
	12	1,400
	10	1,600
	8	1,800

Clearing price = 12 euros

Figure 5: Price-quantity pairs for participants A and B, added together (right)

Demand at 16 euros is 600 emission allowances (B1). If the price falls to 14 euros, it rises to 1,200 (B1+B2+A1), etc. At 12 euros, at 1,400 emission allowances demand exceeds the quantity on offer (1,300) for the first time. The clearing price is therefore 12 euros.

Important note: In this example, we are assuming that the clearing price does not differ significantly from the applicable price on the secondary market in the EU, so the auction has not been cancelled without any allowances being awarded.

Step 4: Calculate the quantities awarded

Price	Quantities (total)		Price	Quantitative difference
16	600	B1	16	600
14	1,200	B2	14	+400
12	1,400	A1	14	200
10	1,600	B3	12	+200
8	1,800	A2	10	+200
		A3	8	+200

Only 100 emission allowances are still available at a hammer price of 12 euros.

Figure 6: Quantities awarded

The quantitative difference table from Figure 4 is used to calculate the quantities awarded to participants A and B. All price-quantity pairs that are higher than the clearing price are factored in. Participant A thus receives 200 emission allowances, and participant B 600+400=1,000. At a clearing price of 12 euros, participant B would like to purchase an additional 200 emission allowances. However, only 100 are still on offer, because the other 1,200 have already been awarded. Participant B thus receives only a further 100 emission allowances, instead of the 200 they had wanted, thereby receiving 1,100 in total.

The result of this auction is therefore as follows:

	Clearing price	Quantity awarded	Total value
Participant A	12 euros	200 emission allowances	2,400 euros
Participant B	12 euros	1,100 emission allowances	13,200 euros

Figure 7: Auction result

13.3 What happens if, at the clearing price that has been calculated, there are price-quantity pairs from a number of participants?

If a number of price-quantity pairs have been submitted at the clearing price, and if their total is greater than the number of remaining emission allowances, these allowances are distributed between the participants in proportion to the additional quantities requested at the clearing price. If any emission allowances remain at the end of this process, they are carried over to the next auction, as only a whole number of allowances may be awarded to any participant.

Example:

The assumption is that the bids from participants A and B are those described in Figure 3, the only exception being that price-quantity pair A from participant A is as depicted in Figure 8. In this case, participant A would also wish to purchase additional emission allowances at a price of 12 euros each. Thus, in this example, at 12 euros both participant A and participant B would like to purchase a further 200 emission allowances.

	Price (in euros)	Quantity
A1	14	200
A2	12	400
A3	8	600

Figure 8: Bid from participant A

	Price (in euros)	Quantity
B1	16	600
B2	14	1,000
B3	12	1,200

Figure 9: Bid from participant B

At 12 euros per emission allowance, demand is therefore 400. Since 200 allowances have already been awarded to participant A, and 1,000 to participant B (see Section 13.2), only 100 still remain of the 1,300 originally put up for auction. These are distributed on a pro-rata basis between participants A and B, and because both have requested 200 emission allowances at 12 euros, each receives half of the remaining 100.

The result of this auction is therefore as follows:

	Clearing price	Quantity awarded	Total value
Participant A	12 euros	250 emission allowances	3,000 euros
Participant B	12 euros	1,050 emission allowances	12,600 euros

Figure 10: Auction result

14 I want to submit a bid – what do I have to do?

Step 1: Allocate the roles of auction agent and bid validator

The **two-man rule** (auction agent and bid validator) applies when submitting bids:

- The auction agent, as described in Art. 49a para. 1 a of the CO₂ Ordinance, is authorised to enter bids, and to amend or withdraw them as necessary.

- The bid validator, as described in Art. 49a para. 1 b of the CO₂ Ordinance, is authorised to validate bids. Auction bids do not become binding until they have the approval of the bid validator.

The way in which these roles are allocated is set out in the User Guide (see Section 2).

Step 2: Enter and confirm bid

Step-by-step instructions on entering and confirming a bid in the Swiss Emissions Trading Registry are given in the User Guide.

Please note the following important points:

- The auction agent must enter price bids in **euro cents**.
- Upon validation, the bid validator sees these price bids in **euros**.
- Only the auction agent is able to enter, change or delete bids.
- Only validated (confirmed) bids are included in the auction.
- For bids to be binding and included in the auction, they must be confirmed by the bid validator during the bidding period.
- Bids may be entered, amended, withdrawn and validated only during this bidding period. At the end of this period, bids are frozen and can no longer be amended, withdrawn or validated.
- The bid validator is notified by email as soon as the auction agent has proposed or amended a bid (providing the user has activated notification mails in the EHR).

15 At what point do my bids become binding?

All validated (confirmed) bids submitted by a participant via their account are binding on them and can no longer be changed or withdrawn. This applies even if the bidding period is still open.

16 How do I find out whether or not my bid has been successful?

As soon as the clearing price and the quantities awarded have been calculated and checked, the FOEN ends the auction and it is given 'Closed' status. As soon as the status has been changed, the auction agent receives notification by email that the auction has ended. Once it is over, the results of the auction can be viewed in the Swiss Emissions Trading Registry.

To do this, please log in and click on 'Auction bids' in the main menu to go to the overview of your bids. In the line giving the name of the auction in question, you will see the bid price (clearing price), the number of emission allowances awarded to you (quantity awarded), and the total value of the allowances you have purchased.

17 Which auction results are published?

The following information is published on the EHR home page:

- Total quantity purchased on the auction date;
- Clearing price (euros per emission allowance);
- Lowest price-quantity pair (euros per emission allowance);
- Highest price-quantity pair (euros per emission allowance);
- Average of all price-quantity pairs (euros per emission allowance);
- Median of all price-quantity pairs (euros per emission allowance);
- Total number of price-quantity pairs submitted;
- Total quantity requested;
- Total number of successful price-quantity pairs;
- Average number of price-quantity pairs per bidder;
- Average quantity requested per price-quantity pair;
- Average quantity requested per bidder;
- Average quantity of emission allowances purchased per bidder;
- Total number of participating bidders;
- Number of successful bidders.

18 How do I pay for the emission allowances I have purchased?

The FOEN invoices participants for the costs of the emissions allowances they have purchased. This invoice must be settled within 30 days in euros, and via a bank account in Switzerland or the EEA. The FOEN may exclude a participant which fails to pay the invoice from future auctions.

19 When will I receive the emission allowances I have purchased?

The FOEN will not transfer the emission allowances to the participant's account in the Swiss Emissions Trading Registry until payment has been received. It is notified only once a week of incoming payments. It is therefore very important for auctions before the expiration date that invoices are paid promptly, if you wish to use the emission allowances for surrender. Otherwise, it cannot be guaranteed that the allowances you have purchased will have been transferred to the account in question before the surrender deadline.

20 Who is available to answer any questions?

If you have any questions, please contact the Swiss EHR help desk. It can be reached either by phone on +41 (0)58 462 05 66, or by email at emissionsregistry@bafu.admin.ch.