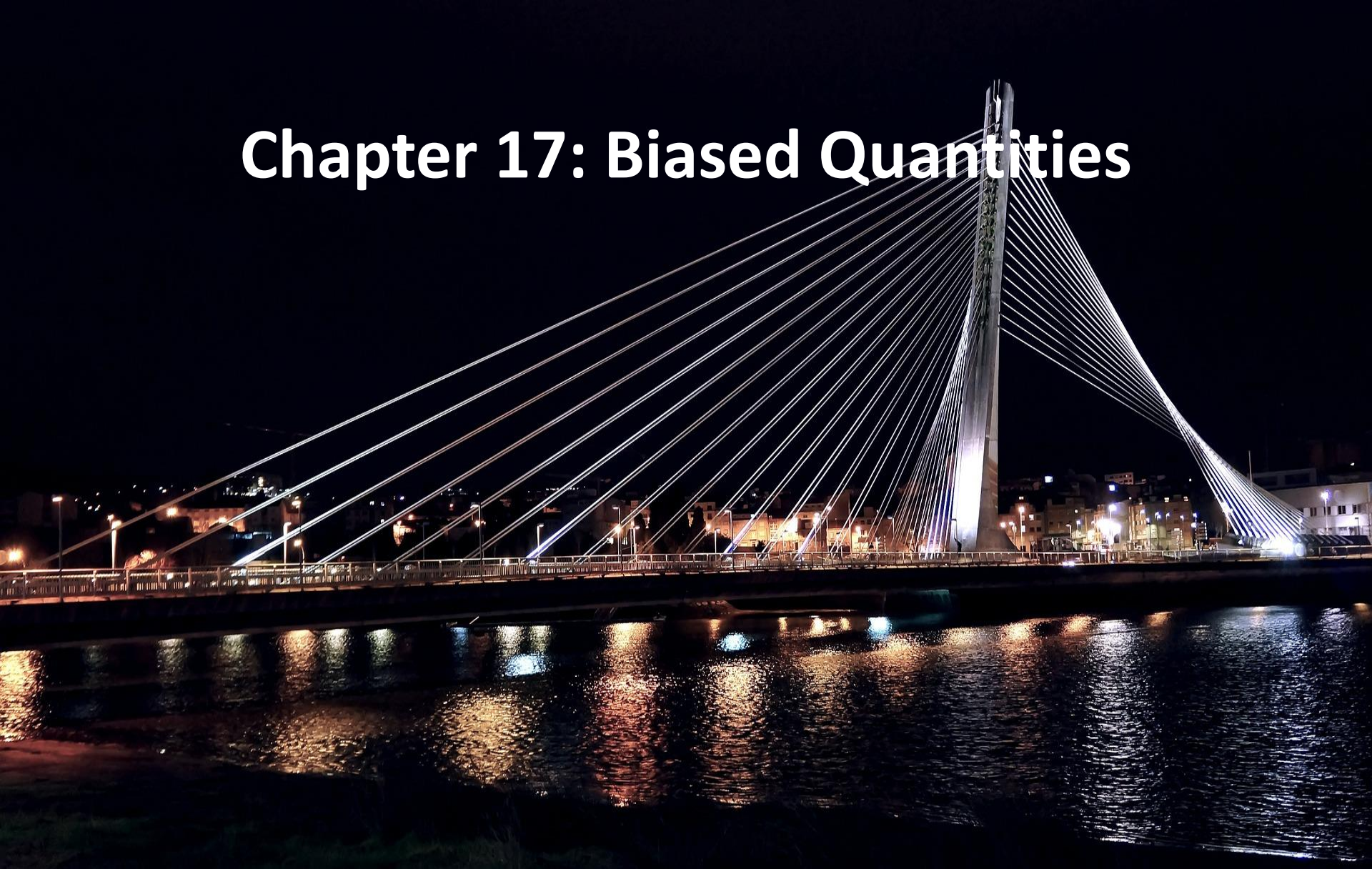
Chapter 17: Biased Quantities



EIRGRID semo SONI
Single Electricity Market Operator

Biased Quantities

- A biased quantity is one which has been calculated as a BOA due to the difference between the unit's FPN Quantity profile and their Dispatch Quantity profile, but which in reality represents an output range which was not sold or bought in the balancing market – it was already sold or bought in the ex-ante markets. Because of this, it is not eligible to receive balancing market payments at the Imbalance Settlement Price or Bid Offer Price;
- It is a quantity which results from a difference between the unit's FPN Quantity profile that they submit, and their net ex-ante market trades (QEX) that the FPN is supposed to represent;
- Depending on the direction of the bias (i.e. if the FPN is submitted at a value below QEX or above QEX), BOAs calculated may not actually represent increasing a unit's output above their market position, or decreasing a unit's output below their market position, i.e. it should not volume which is procured in the balancing market, and should not be settled as a balancing market action:
  - If the FPN is submitted below QEX, then some Accepted Offer Quantities could be biased because the volume between the FPN and QEX has already been sold in the ex-ante markets, it is not sold in the balancing market;
  - If the FPN is submitted above QEX, then some Accepted Bid Quantities could be biased because the volume between the FPN and QEX does not represent decreasing a unit's output below their market position.
- In order to compare like-with-like, a half-hour integrated MWh quantity for the FPN (QFPN) needs to be created to compare with QEX to determine the bias.

Biased Quantities

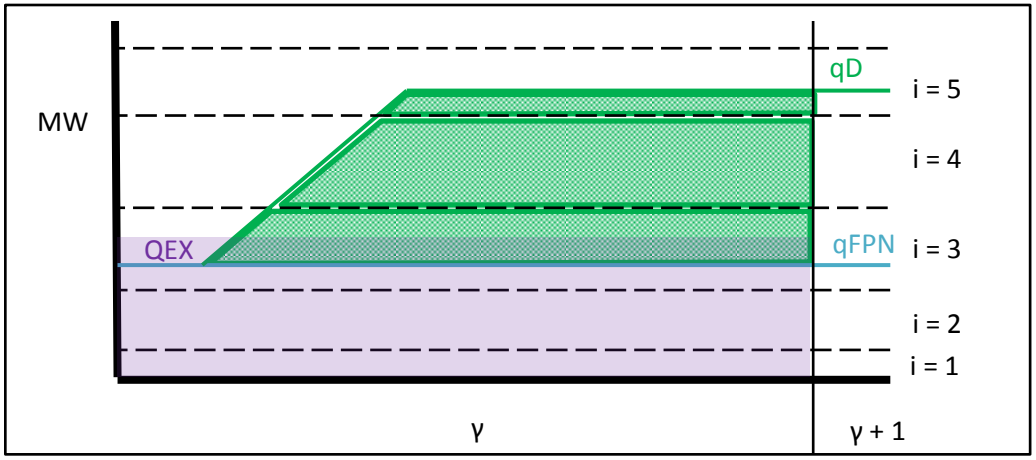
- The volume due to this difference between the Ex-Ante Quantity and the FPN is implicitly not included in the Imbalance Component, as it only considers the Ex-Ante Quantity versus the Metered Quantity. Therefore a process of determining which of the BOAs calculated are biased needs to be carried out so that this volume can be removed from the Premium and Discount Components to ensure that a BOA does not receive a payment for which it is not eligible;
- When carrying out this process, those BOAs “closest to the FPN” are considered first, as the FPN is the quantity causing the bias and from which the bias starts;
- Considering that the SOs would accept offers to increase generation from FPN level in merit order from lowest to highest price, this is the order in which Accepted Offers are considered biased until the total volume of BOAs considered biased is equal to the total Biased Quantity;
- Similarly, considering that the SOs would accept bids to decrease generation from FPN level in merit order from highest to lowest price, this is the order in which Accepted Bids are considered biased until the total volume of BOAs considered biased is equal to the total Biased Quantity.

Biased Quantities

- Autoproducers do not have biased quantities calculated on their Generator Units:
  - Their ex-ante trades would be on a Trading Unit, not on their Generator Units, but their PNs are on their Generator Units;
  - If biased quantities were calculated for them, any dec action on them would be seen as biased, which is not the correct outcome from a market design point of view.
- The biased quantity is also used to ensure that wind units do not get Curtailment Payments or Charges, or Discount Component Payments for constraints, when they have not been constrained or curtailed below their ex-ante market traded position:
  - If their availability (and therefore FPN) is above their Ex-Ante Quantity, and they are dispatched down, a BOA would still be calculated for that action, but in settlement it would be deemed biased and therefore a biased quantity equal to the BOA would be subtracted from it, removing it from the Discount and Curtailment components;
  - It would already have been removed from the Imbalance component, which would just consider their Metered Quantity (reflecting the level of output to meet their curtailment or constraint instruction) versus their Ex-Ante Quantity;
  - Overall, if a wind unit is dispatched down from an availability level which is higher than their traded position, and are not dispatched below their traded position, it would result in a reduction in the payments they would have received at the Imbalance Settlement Price for the difference between their Metered Quantity and their Ex-Ante Quantity.

Biased Quantities

Is the balancing action actually changing your ex-ante trade position?

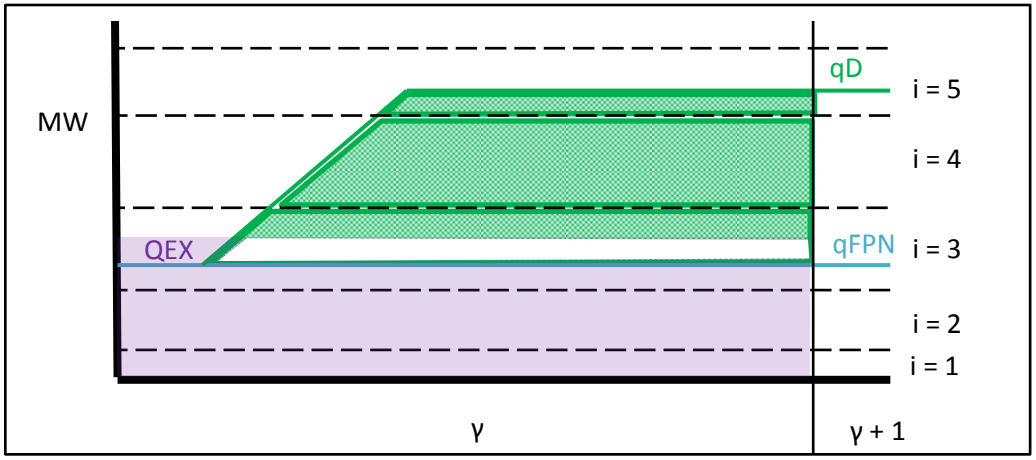


$$CPREMIUM_{u\gamma} = \sum_{o}\sum_{i}\Big(Max\big(PBO_{uoi\gamma} - PIMB_{\gamma}, 0\big) \times \big(QAOLF_{uoi\gamma} - Max\big(QAOOPOLF_{uoi\gamma}, QAOBIAS_{uoi\gamma}, QAOUNDEL_{uoi\gamma}, QAOTOTSOLF_{uoi\gamma}\big)\big)\Big)$$

$$CDISCOUNT_{u\gamma} = \sum_{o}\sum_{i}\Big(Min\big(PBO_{uoi\gamma} - PIMB_{\gamma}, 0\big) \times \big(QABLF_{uoi\gamma} - Min\big(QABBPOLF_{uoi\gamma}, QABBIAS_{uoi\gamma}, QABUNDEL_{uoi\gamma}, QABNFLF_{uoi\gamma}, QABCURLLF_{uoi\gamma}, QABTOTSOLF_{uoi\gamma}\big)\big)\Big)$$

Biased Quantities

Is the balancing action actually changing your ex-ante trade position?



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