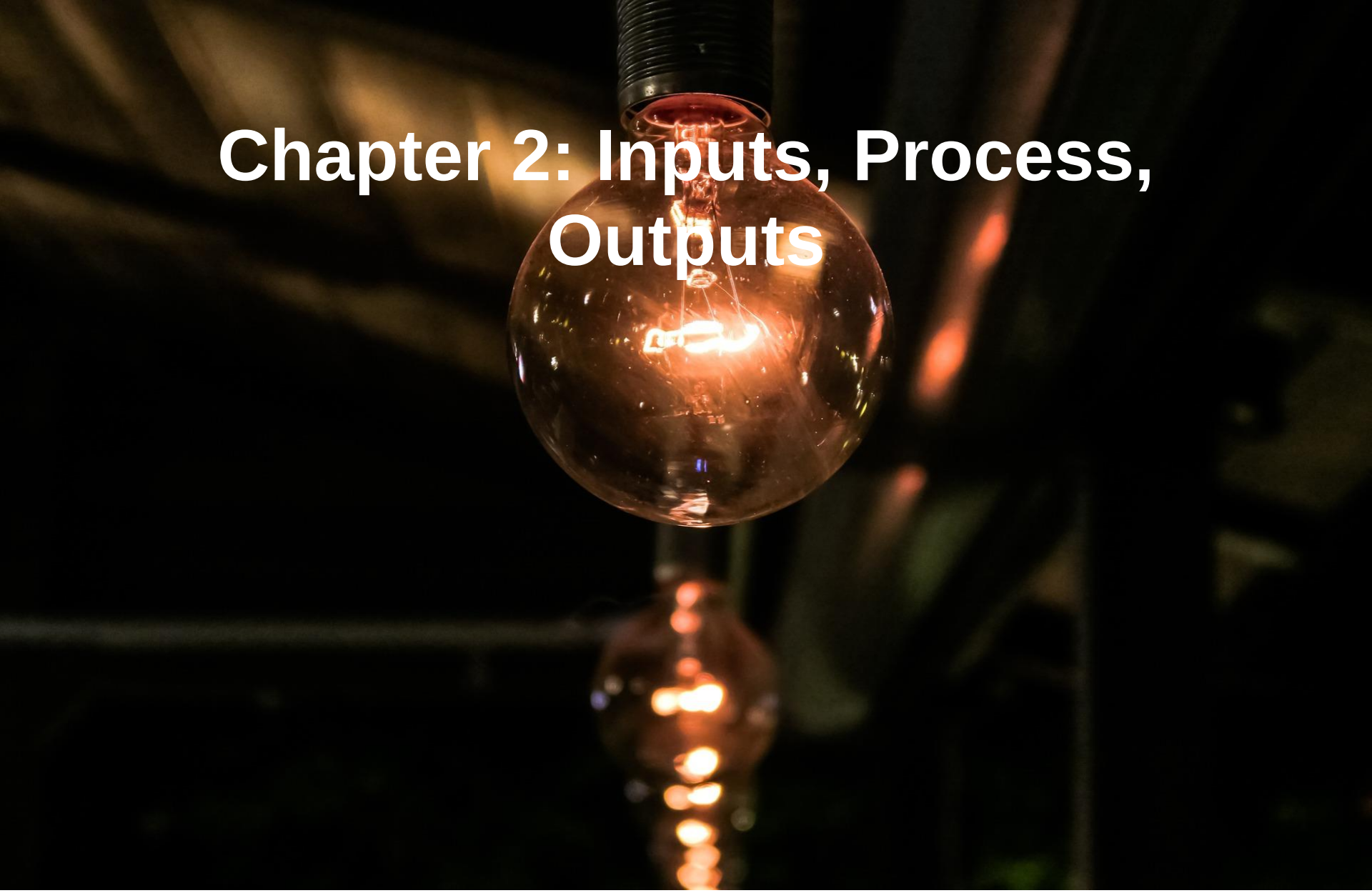
Chapter 2: Inputs, Process, Outputs



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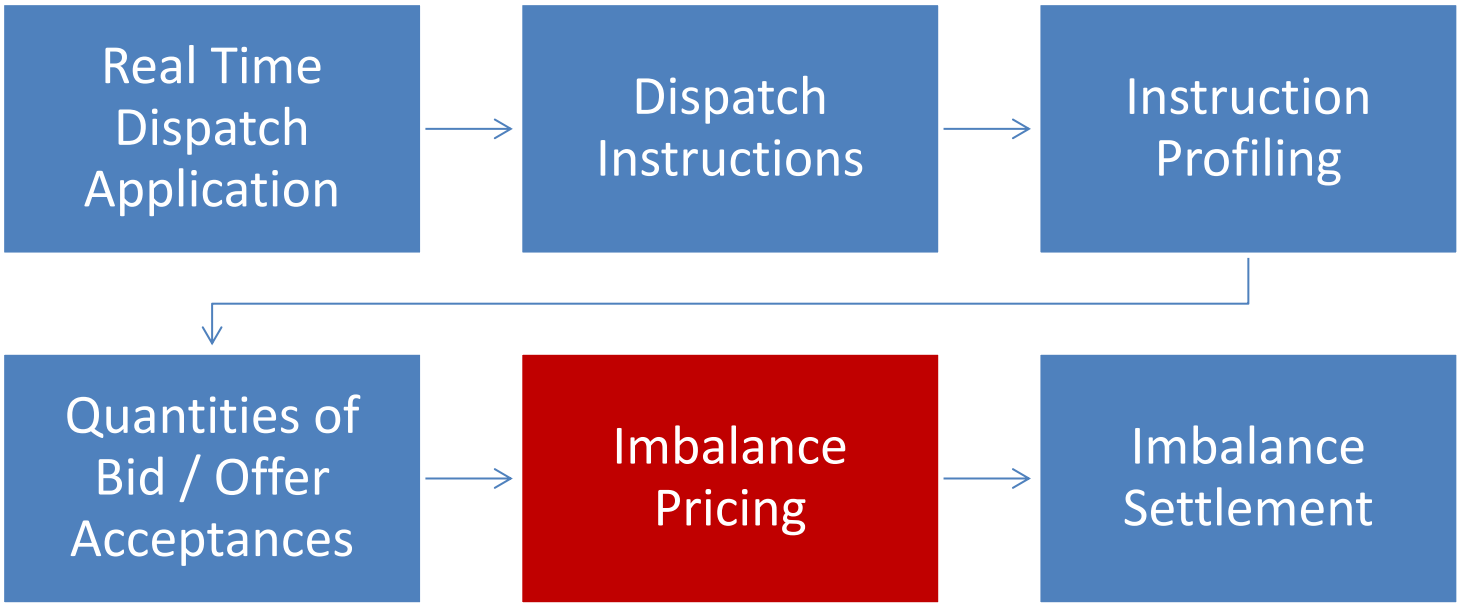
Imbalance Pricing Process



- The Imbalance Pricing process takes place immediately after the real time operation of the system between the calculation of instruction profiles and quantities of bid/offer acceptances and before imbalance settlement;

Process and Timings

- The Imbalance Pricing Period is five minutes:
  - This is in line with the resolution of the systems used to facilitate the objective application the Flagging & Tagging process;
  - A price for each five minute period is calculated, and the average of all five minute prices in a half hour is used as the price which applies in settlement;
  - This means that Bid Offer Acceptances, the primary input into the pricing process, are calculated twice by the Market Operator: once at five-minute resolution and once at 30-min resolution.

- Imbalance Price Reports published publically ex-post close to real-time:
  - Imbalance Pricing Period and Imbalance Settlement Period granularity prices published asap after completion of each pricing calculation run, no later than 30 minutes after Imbalance Settlement Period;
  - Includes all supporting data: important interim price calculations, QNIV, all QBOA and PBO, Flags and Tags.

Transparency

- A major focus in the detailed design of the Imbalance Pricing functionality was transparency;
- Transparency relates primarily to the timely availability of data and information required to understand and replicate the process and its outcomes, which needs to consider the following three timescales:
  - Ex-ante transparency:
    - Information based current scheduling and trading that facilitates forecasting of PIMB.
  - Real-time transparency:
    - Information based on actual values feeding into the PIMB provided close to real time.
  - Ex-post transparency:
    - Information provided ex-post to facilitate shadow settlement, queries, etc.

Ex-ante transparency

- Ex-ante transparency includes the following considerations:
  - Rules governing the price calculation:
    - These need to be unambiguous in how they are applied to enable shadow calculations.
  - Processes feeding the price calculation:
    - These are not as detailed as rules, but provide clarity on the steps involved in the process to facilitate modelling and forecasting.
  - Data feeding into the price calculation:
    - This includes parameters and indications of the state of the system in advance inform ex-ante trading decisions.

Real-time transparency

- Real-time transparency primarily relates to the timely availability of suitable data, including:
  - Providing as close as possible to real-time all required inputs to shadow calculate PIMB based on rules;
  - Providing as close as possible to real-time all reports necessary from input calculations to support forecasting and shadow calculations.

Ex-post transparency

- Ex-post transparency also primarily relates to the timely availability of suitable data, including:
  - Providing more accurate data used in settlement to facilitate shadow calculations based on rules;
  - Providing a more complete set of data not available in real-time for commercial / market power reasons.

Exception handling

- Exception handling in the Imbalance Pricing Process:
  - Repricing only occurs for manifest errors in the pricing calculator:
    - In all other situations alternative options exist, for example using a backup price or pausing the calculation and publication of the price for a short period of time.
  - In order to result in a recalculation of the price, the manifest error must be queried within five Working Days;
  - The following slide shows the pricing outcomes in a number of events.

Chapter E - Imbalance Pricing - Exception Handling Map