

# PureStream on Nasdaq Europe

## Frequently Asked Questions

### What is PureStream on Nasdaq Europe?

PureStream on Nasdaq Europe is a volume-based trajectory trading facility designed to minimize market impact while maximizing liquidity from equal counterparts.

PureStream matches Indications of Interest (IOIs) based on liquidity transfer rates. This allows institutional investors to minimize market impact and automate parent orders execution by trading a percentage of the market's future volume at the market's Volume-Weighted Average Price (VWAP).

### Why is Nasdaq launching PureStream in Europe?

The rise in indexing and passive investing has increased the popularity of benchmark strategies such as VWAP and Percent of Volume (POV). PureStream on Nasdaq Europe facilitates these strategies by introducing a volume-based trajectory trading facility that executes trades in open-ended batches, as an alternative to single point-in-time liquidity sourcing.

### What are the benefits of PureStream on Nasdaq Europe?

1. **Minimal market impact:** PureStream's unique Liquidity Transfer Rate (LTR) matching tracks the market's volume, executes at the VWAP, and ensures no pre-trade information is revealed, effectively reducing the risk of information leakage and reducing market impact when executing long-term trading interest.
2. **Flexible execution:** PureStream allows you to trade fractions or multiples of the market's future volume, based on your execution goals.
3. **Risk management:** With no predefined time for trades and a robust reputational scoring mechanism, the PureStream system discourages unwanted behaviour.
4. **Access to liquidity:** As a venue-operated service, PureStream on Nasdaq Europe allows you to tap into a much broader pool of liquidity compared to in-house solutions.
5. **Simplicity:** Use your existing Nasdaq Europe membership and infrastructure, with no need for separate connectivity or complex setups.

### What is a non-actionable Indication of Interest (IOI)?

An IOI is an expression of conditional trading interest to buy or sell an instrument. PureStream IOIs are non-disclosed and non-actionable and contain information on quantity of shares, Liquidity Transfer Rate, and the limit price.

## Is there a minimum size for IOI?

Yes, IOI needs to be at least 20,000 EUR when entered (or an equivalent amount in the instrument's trading currency).

## What is the Liquidity Transfer Rate (LTR)?

The LTR is a percentage of the market's future volume that a member is willing to trade. When IOIs are submitted, the LTR is expressed as a range – each IOI has a minimum and maximum LTR.

## Which Liquidity Transfer Rate ranges are available?

The standard LTR ranges a trader may select are 5-15%, 5-30%, and 10-200%. Traders may also choose a custom range, as long as the minimum LTR is 1% or above and the maximum is 500% or below.

## How does the matching logic work in PureStream on Nasdaq Europe?

1. Non-actionable IOIs are submitted to PureStream on Nasdaq Europe. The system tries to identify a match.
2. When a match is found, the members are asked to firm-up their IOI within a specific time period. Once the firm-ups are received, a PureStream matching cycle begins.
3. Nasdaq records the benchmark trades executed on the benchmark venues by monitoring real-time trade feed. The volume executed across the benchmark trades is aggregated until at least two benchmark trades have been executed and a minimum notional threshold is reached. This is the Minimum Stream Value (MSV).
4. Once a set of benchmark trades reaches the MSV, a PureStream trade is executed at VWAP, calculated over the benchmark trades. The execution size is the agreed LTR times the aggregated total volume traded in the benchmark trades.
5. Steps 3 and 4 are repeated until the full volume is traded, the limit price of one of the IOIs crosses the price of one of the benchmark trades, or one of the IOIs is cancelled.

## How can I protect from matching with small sized IOI?

It's possible to add a Minimum Acceptable Quantity (MAQ) in order to specify the minimum quantity eligible for matching on the contra side. The MAQ is validated before a stream starts. It is not validated for each PureStream trade.

## How is the matching priority determined?

PureStream on Nasdaq Europe prioritizes and matches IOIs based on the Liquidity Transfer Rate, rather than price or time. Matching priority is member/ LTR/ size/limit price/time. IOIs are matched based on their highest common LTR.

## What is volume-weighted average price (VWAP)?

VWAP is the volume-weighted average price that an instrument has traded at throughout a time period or instances, based on both volume and price.

## Which trades contribute to the calculation of the VWAPs used by PureStream on Nasdaq Europe?

VWAP is calculated based on trades executed on lit order books as part of continuous trading on benchmark venues. These trades are defined as benchmark trades. At least two benchmark trades are required to calculate the VWAP for a PureStream trade.

## Which instruments are available for trading in PureStream on Nasdaq Europe?

European shares and depositary receipts primary listed in regulated markets in Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway, Netherlands, Portugal, Spain and Sweden. Details on markets and instruments in scope will be available in Nasdaq reference data services.

## What are the benchmark venues used for calculating VWAP?

The primary market where an instrument is listed on and the MTFs where it's traded.

- **Primary markets:** Nasdaq Copenhagen, Nasdaq Helsinki, Nasdaq Stockholm; Euronext Amsterdam, Brussels, Dublin, Lisbon, Milan, Oslo, Paris; Deutsche Börse XETRA; Bolsa de Madrid; Vienna Stock Exchange.
- **MTFs:** Cboe Europe, Aquis Europe, Turquoise Europe and First North Sweden.

## What is the Minimum Stream Value (MSV)?

The Minimum Stream Value is the minimum size of a PureStream trade to be executed based on the benchmark trades and LTR. The MSV is set to 5,000 EUR or the equivalent amount in the instrument's trading currency.

## How can I identify trades executed via PureStream on Nasdaq Europe in post-trade market data feeds?

PureStream trades will be published in real time on the market data feeds and identified with the following new Market Identifier Codes (MIC): PCSE for Nasdaq Copenhagen instruments, PHEL for Nasdaq Helsinki instruments, PSTO for Nasdaq Stockholm instruments and PFSE for European instruments (including Norwegian shares) on First North Sweden. The trades will also be flagged as negotiated trades with the post-trade flags PRIC and BENC.

## How will Nasdaq monitor trading activity on PureStream?

A robust reputational scoring mechanism is used to monitor trading activity and protect the integrity of the service. Scores will be put in place to monitor users who are repeatedly breaking established PureStream matches and not responding to firm-up requests.

## How do I connect to PureStream on Nasdaq Europe?

All Nasdaq Nordic members will have access to PureStream trading for their respective Nasdaq Nordic exchanges. For trading European instruments on First North Sweden, relevant post-trade arrangements will need to be verified. PureStream on Nasdaq Europe is supported both on FIX and OUCH protocols.

## What are the post-trade arrangements for PureStream trades?

PureStream trades are CCP cleared through Nasdaq Nordic existing interoperable clearing model allowing members the choice of a CCP from Cboe Clear N.V., LCH Ltd and SIX x-clear Ltd.

## Do IOIs participate in Nasdaq Nordic lit or dark order book trading?

No, PureStream on Nasdaq Europe trading is fully separate from the other trading methods offered by Nasdaq Nordic.

## What are the trading hours on PureStream on Nasdaq Europe?

PureStream on Nasdaq Europe will follow the underlying primary markets' trading hours. IOIs will only be eligible to match during continuous trading sessions.

## Which Nasdaq entities offer PureStream trading in Europe?

PureStream trading will be offered from each Nasdaq Nordic exchange for the shares and depositary receipts traded in the respective regulated markets: Nasdaq Copenhagen, Nasdaq Helsinki and Nasdaq Stockholm. European shares and depositary receipts will be admitted to trading on Nasdaq First North Sweden for PureStream trading purposes.

## What are the trading fees for PureStream on Nasdaq Europe?

Fees to use PureStream on Nasdaq Europe will be published prior to the go live date. They will be made publicly available on the Nasdaq website in the Nordic Cash Market fee list document.

## What are the differences between PureStream on Nasdaq Europe and PureStream Alternative Trading System (ATS)?

PureStream on Nasdaq Europe is built on the successful and proven solution developed by PureStream Trading Technologies Inc that is already in use in their ATS in the US and on Nasdaq Canada.

Some minor adjustments have been made to reflect the different regulatory landscape between the regions. The main differences are:

- PureStream ATS generates a fill based on a minimum stream quantity condition expressed in number of shares; whereas PureStream on Nasdaq Europe consolidates at least two benchmark trades up to a nominal value threshold before generating a fill at VWAP.
- PureStream on Nasdaq Europe does not support immediate midpoint matching. However, the same execution outcome can be achieved in Nasdaq's dark pool Nordic@Mid.
- PureStream on Nasdaq Europe does not support firm orders, but only non-actionable indications of interests.

For the purpose of this document Nasdaq Europe and Nasdaq Nordic refers to, either each individually or all together, Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd and Nasdaq Stockholm AB.

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