

27th CEGH FEEDBACK WORKSHOP

11 June 2024



- **Welcome & Introduction**
- CEGH VTP Operations
- EEX CEGH Gas Exchange
- CEGH GreenGas Platform
- CEGH GreenHydrogen Index
- Q&A



Natural Gas

Gas trading places in Austria and in CEE:

- CEGH-VTP: benchmark hub for CEE region
- EEX CEGH Gas exchange markets in Austria and in the Czech Republic

Biomethane

Support the development of biomethane markets and its role in the future energy mix:

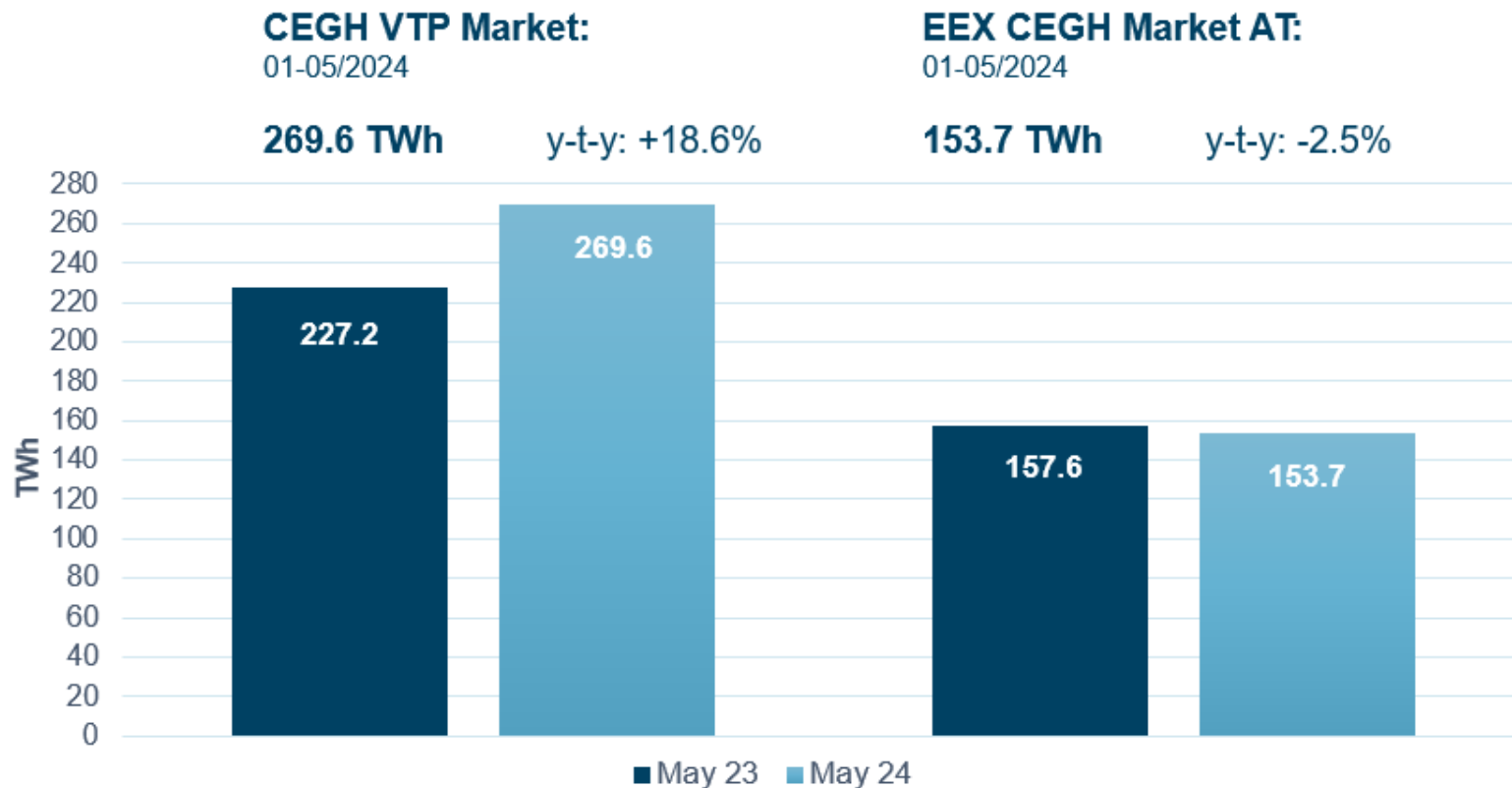
- CEGH GreenGas Platform
- EFET CEGH Standard Contract for Biomethane Certificates

Green Hydrogen

Support the development of hydrogen markets:

- CEGH Green Hydrogen Index
- Build-up of future hydrogen markets

CEGH Monthly Volumes 01-05/2024

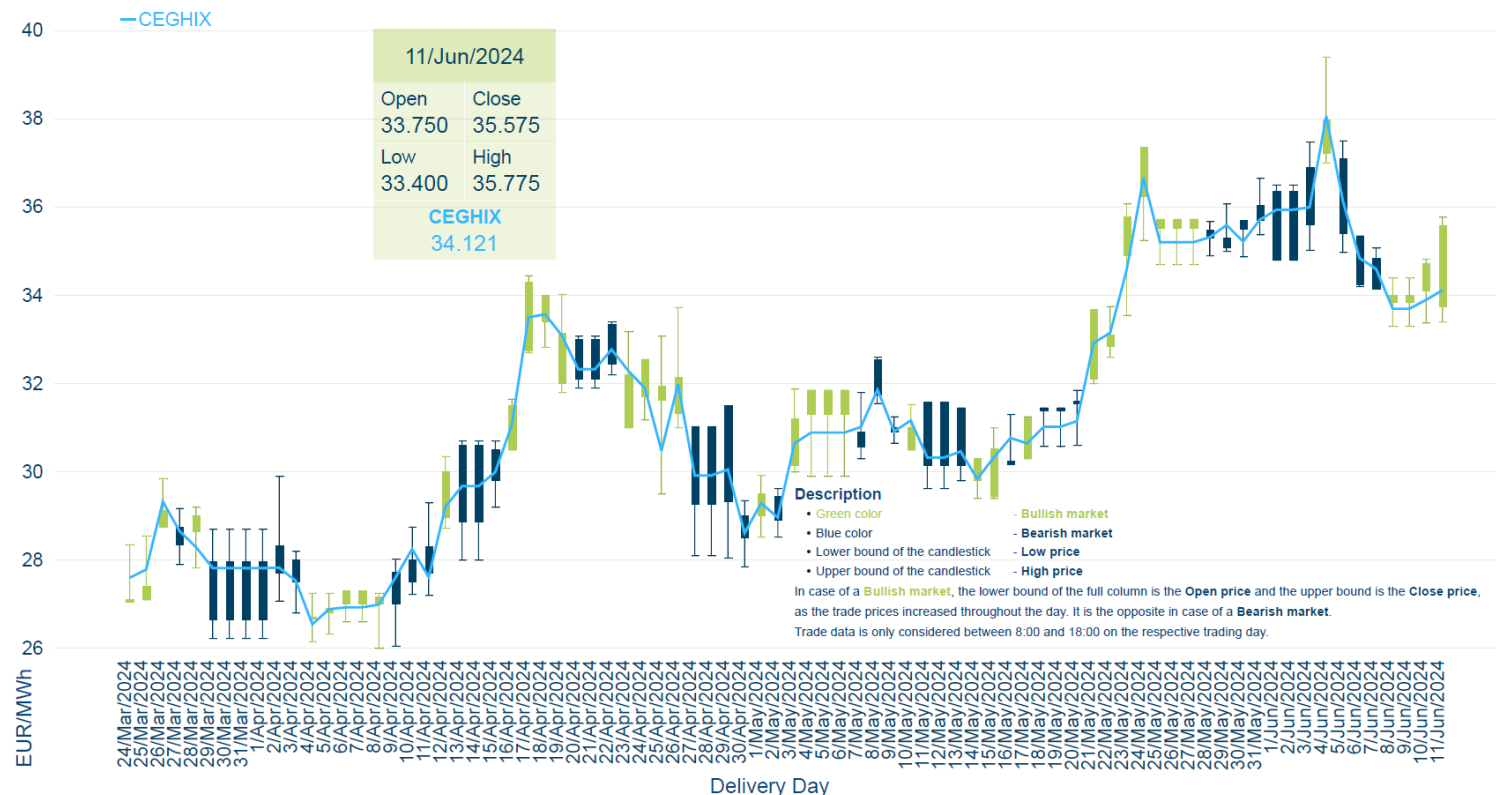


EEX CEGH Spot Prices

Open-Low-High-Close and CEGHIX Spot Index



EEX CEGH Spot Day-ahead/Weekend Open-Close-Low-High Prices and the CEGHIX Spot Price Index

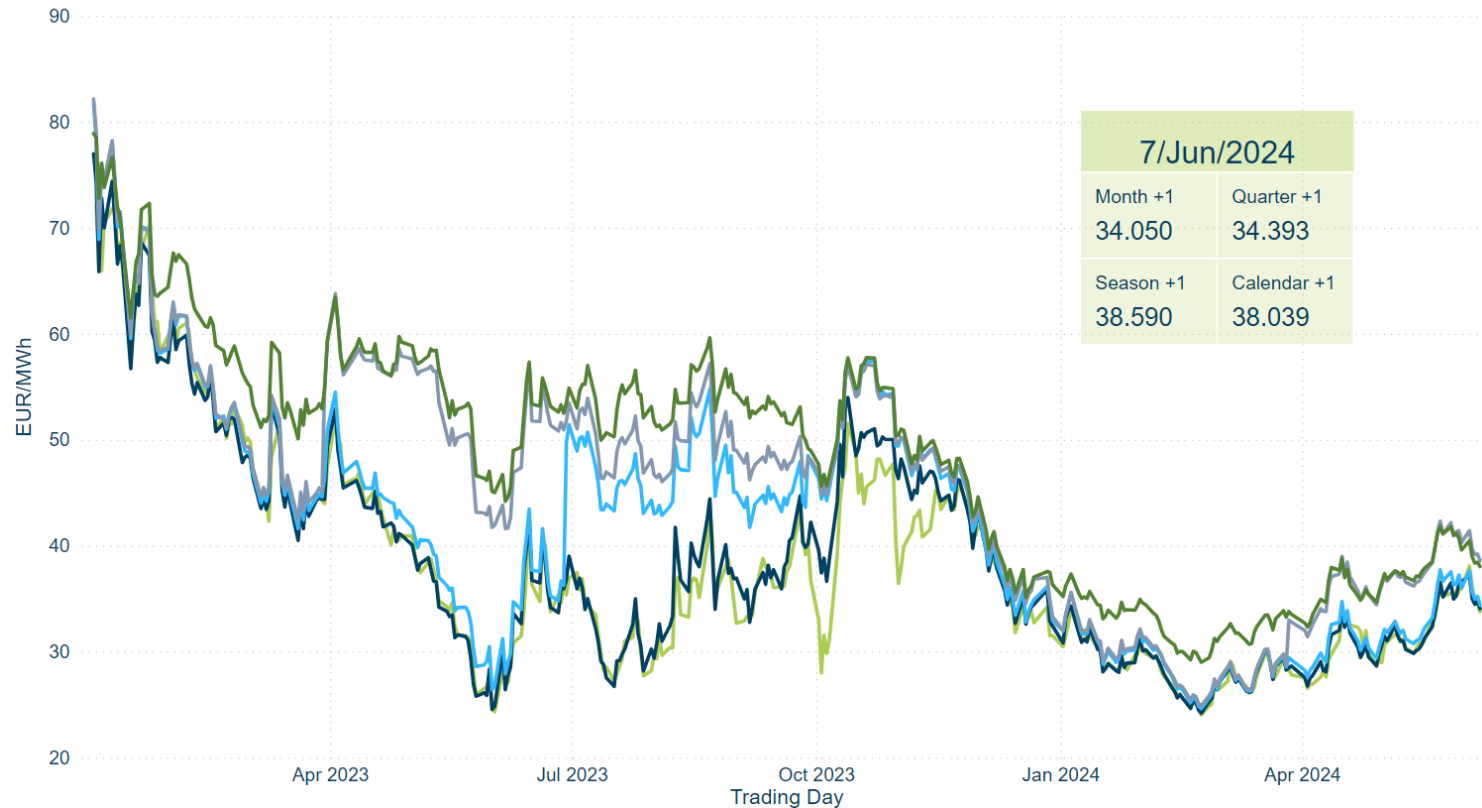


EEX CEGH Futures Prices

Daily Settlement Prices and WAVG CEGHIX since January 2023



Maturity ● Weighted Average CEGHIX ● Month +1 ● Quarter +1 ● Season +1 ● Calendar +1



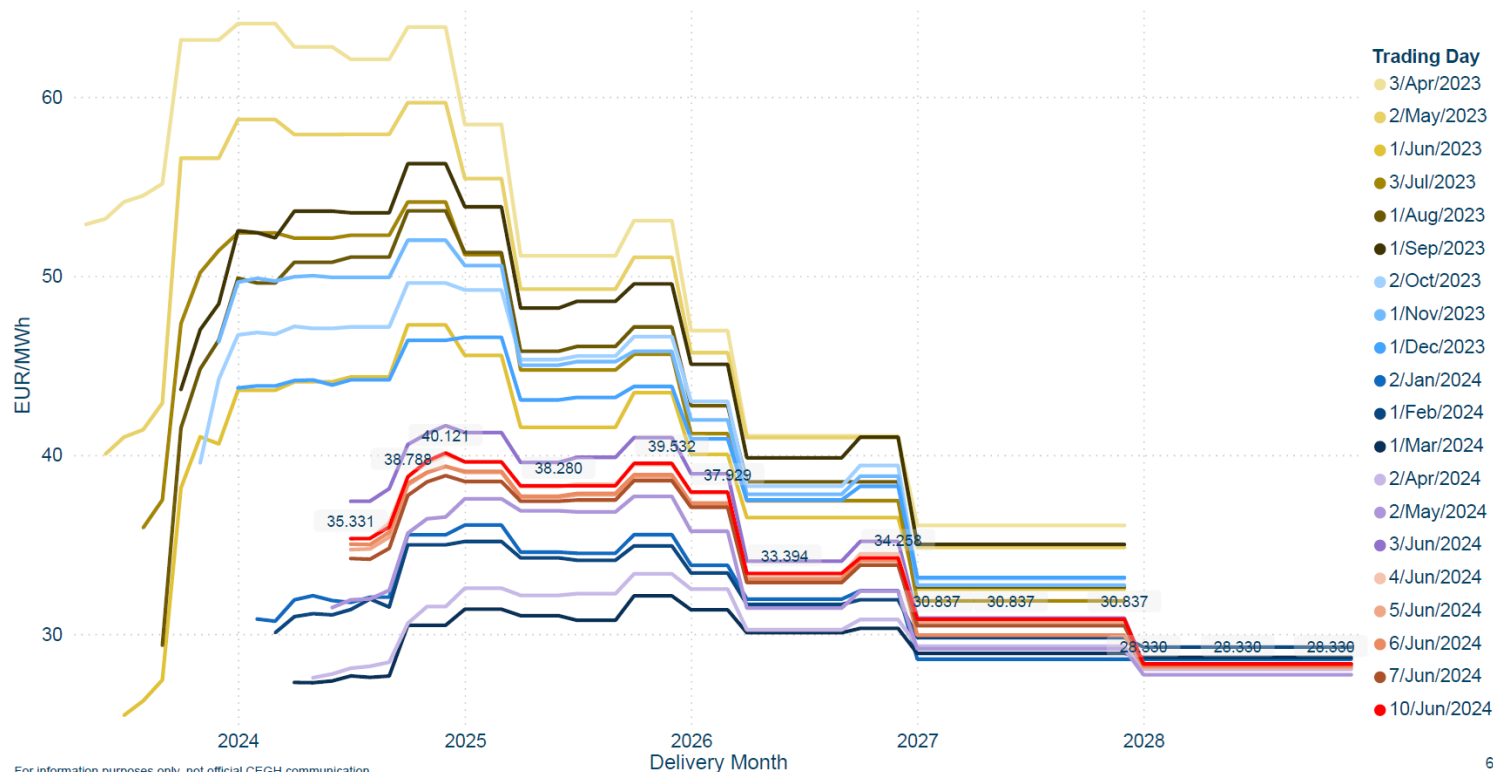
EEX CEGH Futures Prices

Arithmetic Average of Daily Settl. Prices for the respective Delivery Month



EEX CEGH Monthly Arithmetic Average Futures Settlement Prices

The Arithmetic Average of the EEX CEGH Futures Daily Settlement Prices for the respective Delivery Month

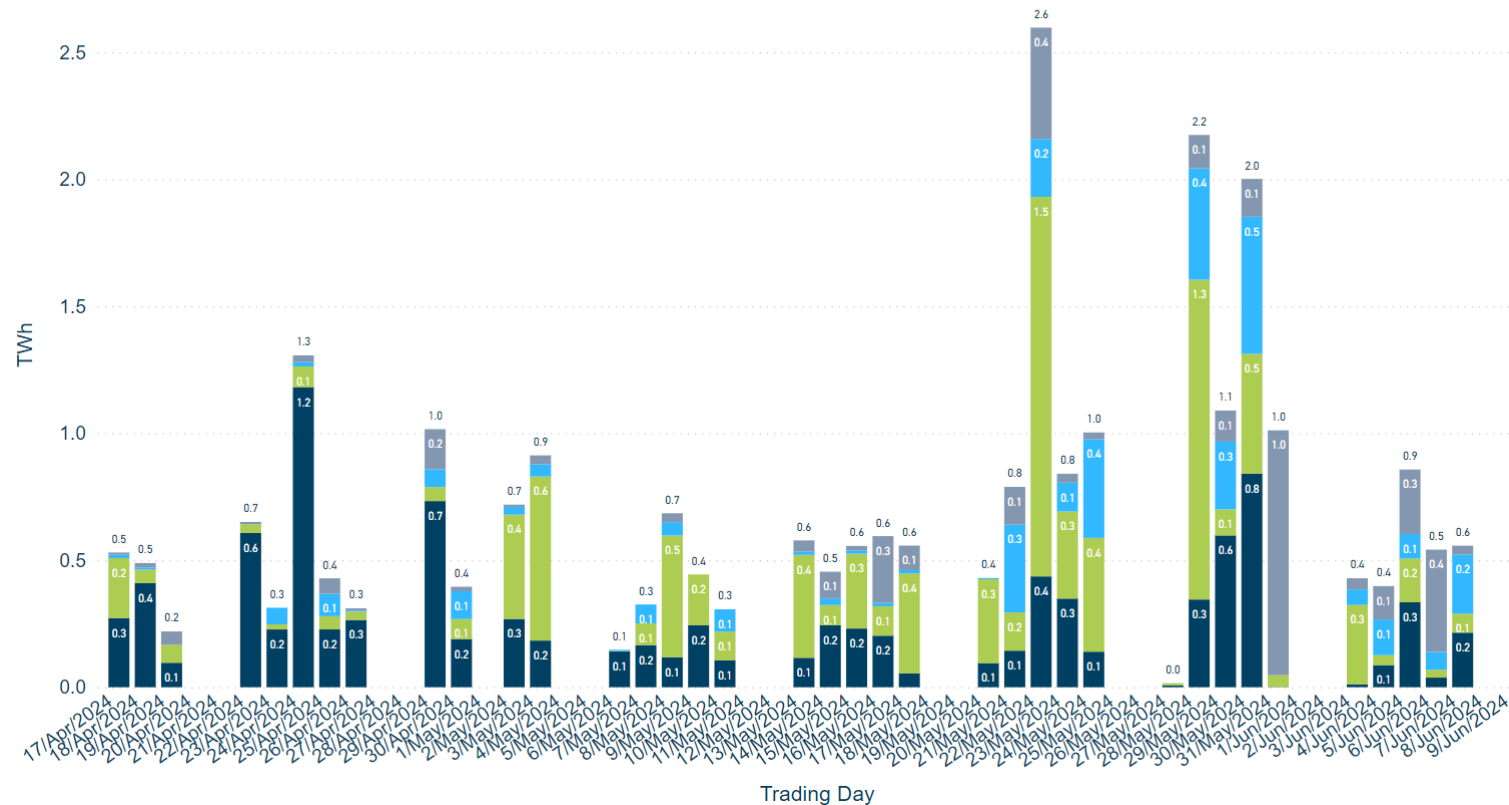


EEX CEGH Futures Market

Daily Traded Volumes

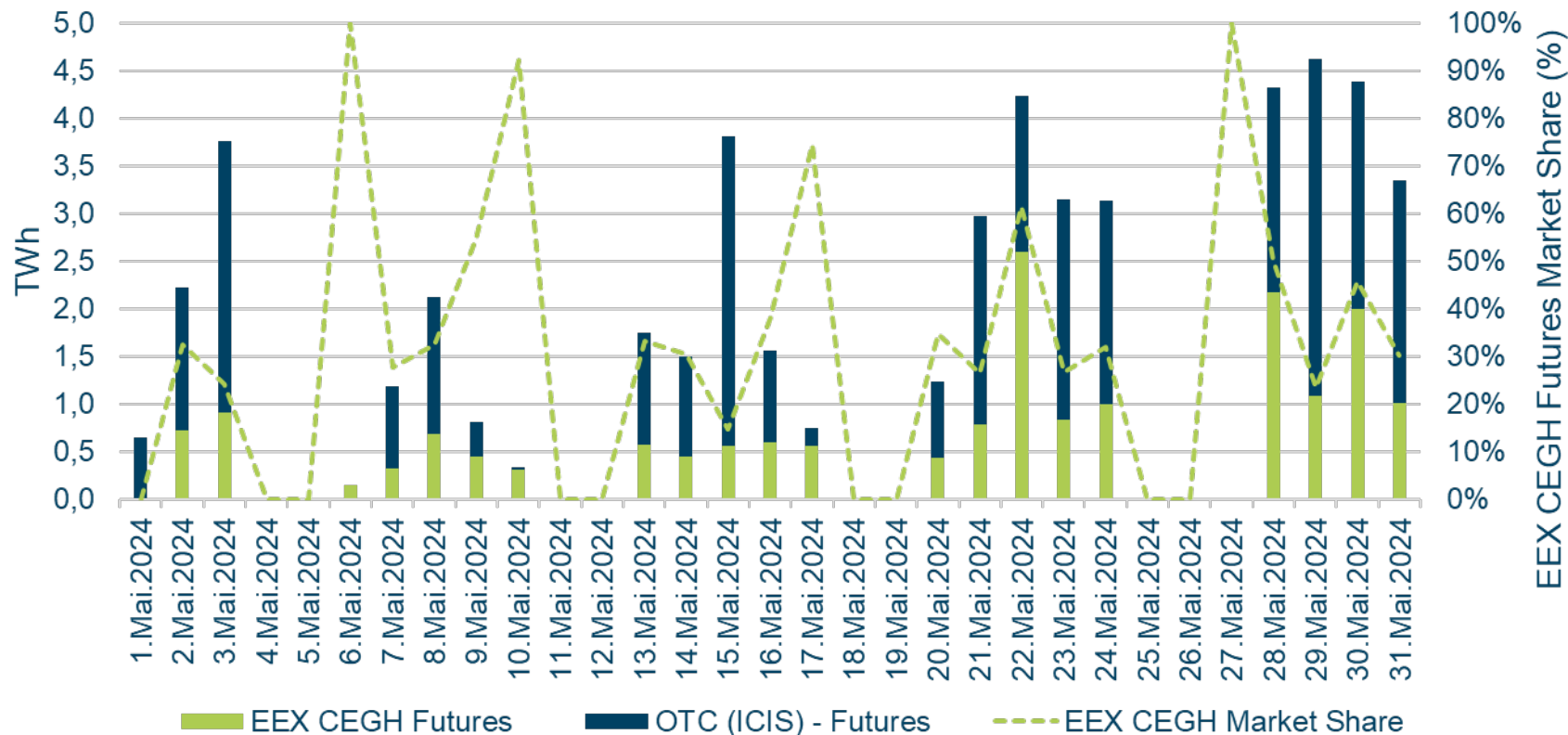


Futures Contract ● Month ● Quarter ● Season ● Calendar



CEGH VTP Traded Volumes - Futures

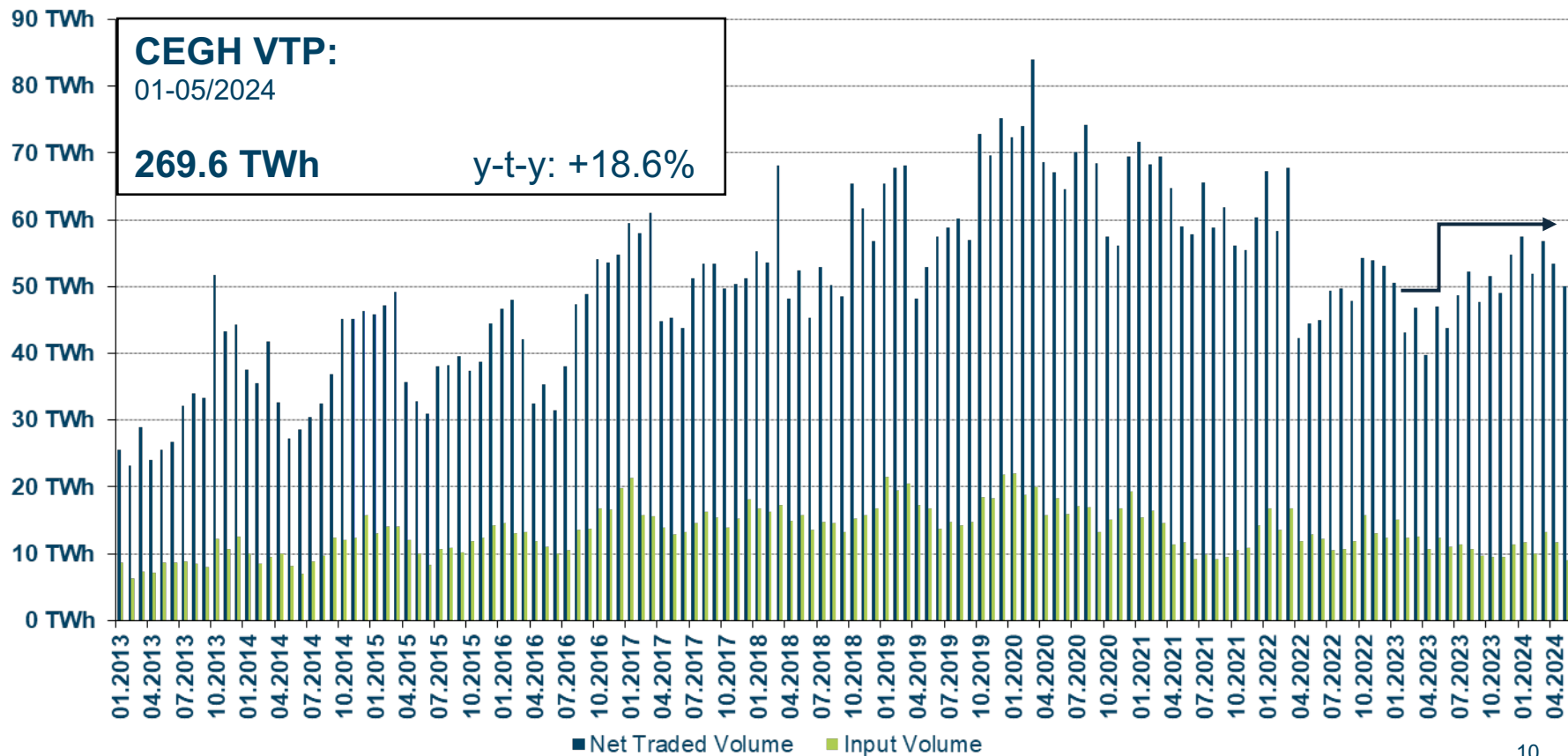
Daily Traded Volumes



- Welcome & Introduction
- **VTP Operations**
- EEX CEGH Gas Exchange
- CEGH GreenGas Platform
- CEGH GreenHydrogen Index
- Q&A

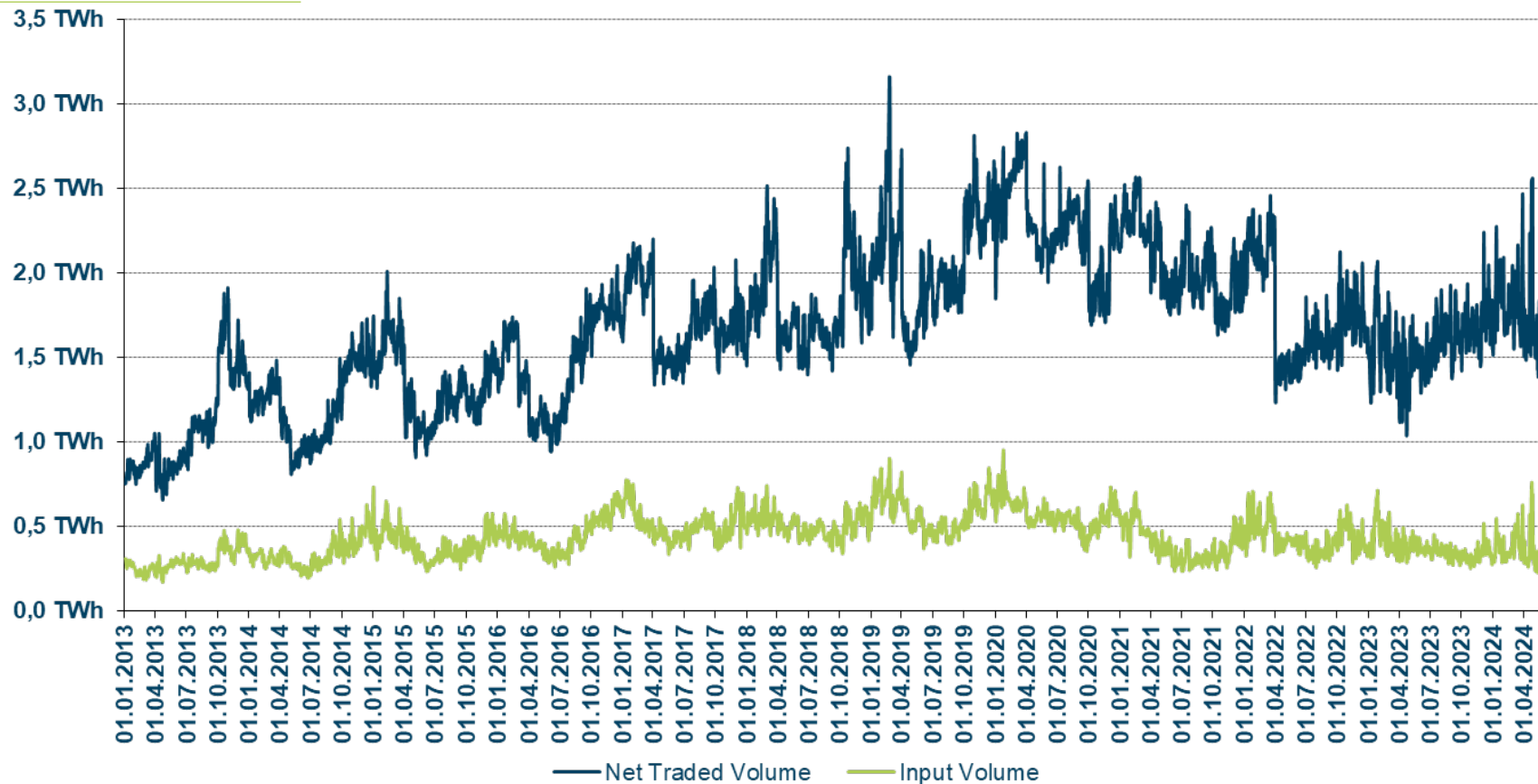
CEGH VTP: Monthly Net Traded Volume

Since January 2013



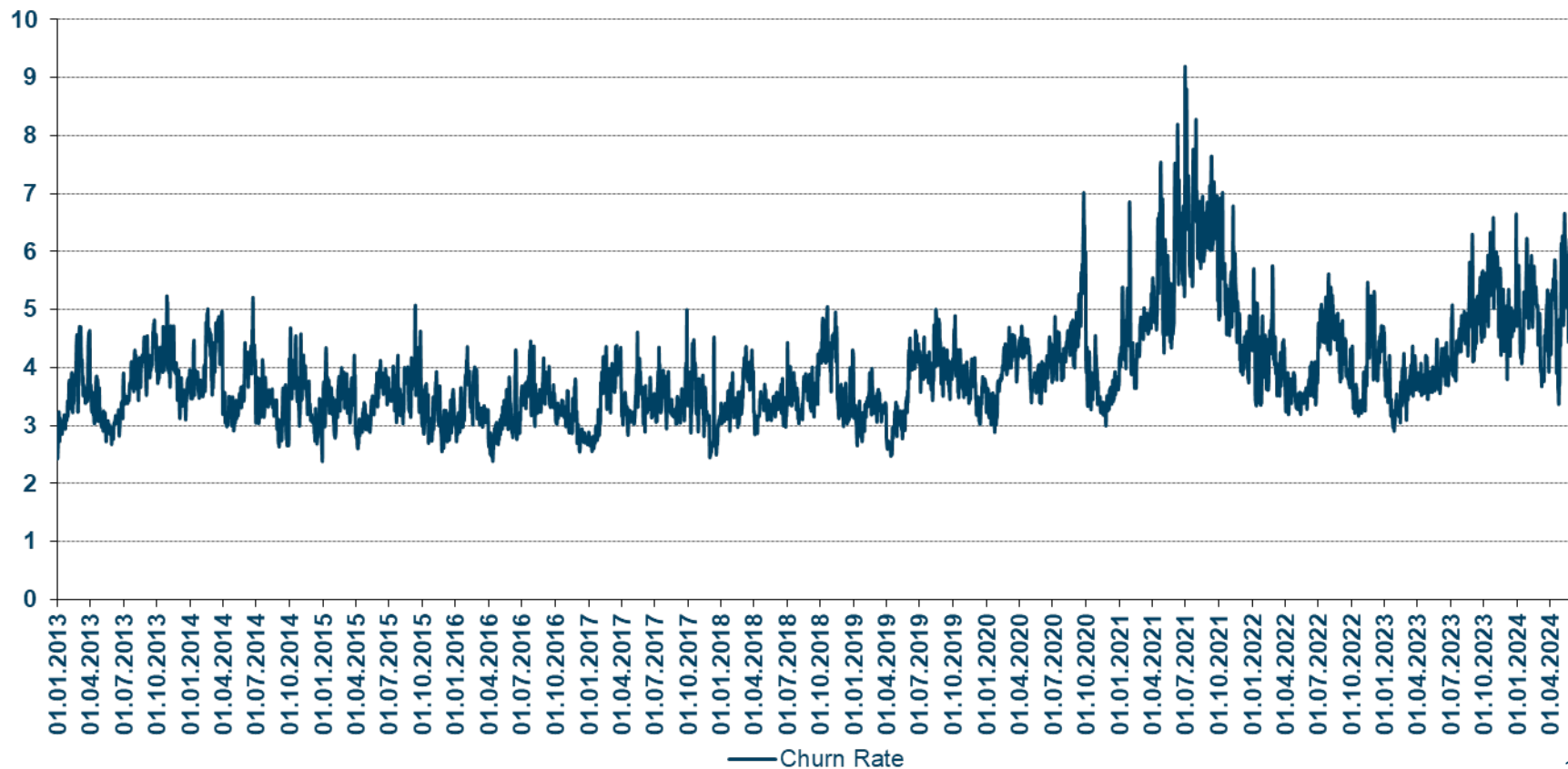
CEGH VTP: Daily Net Traded Volume

Since January 2013

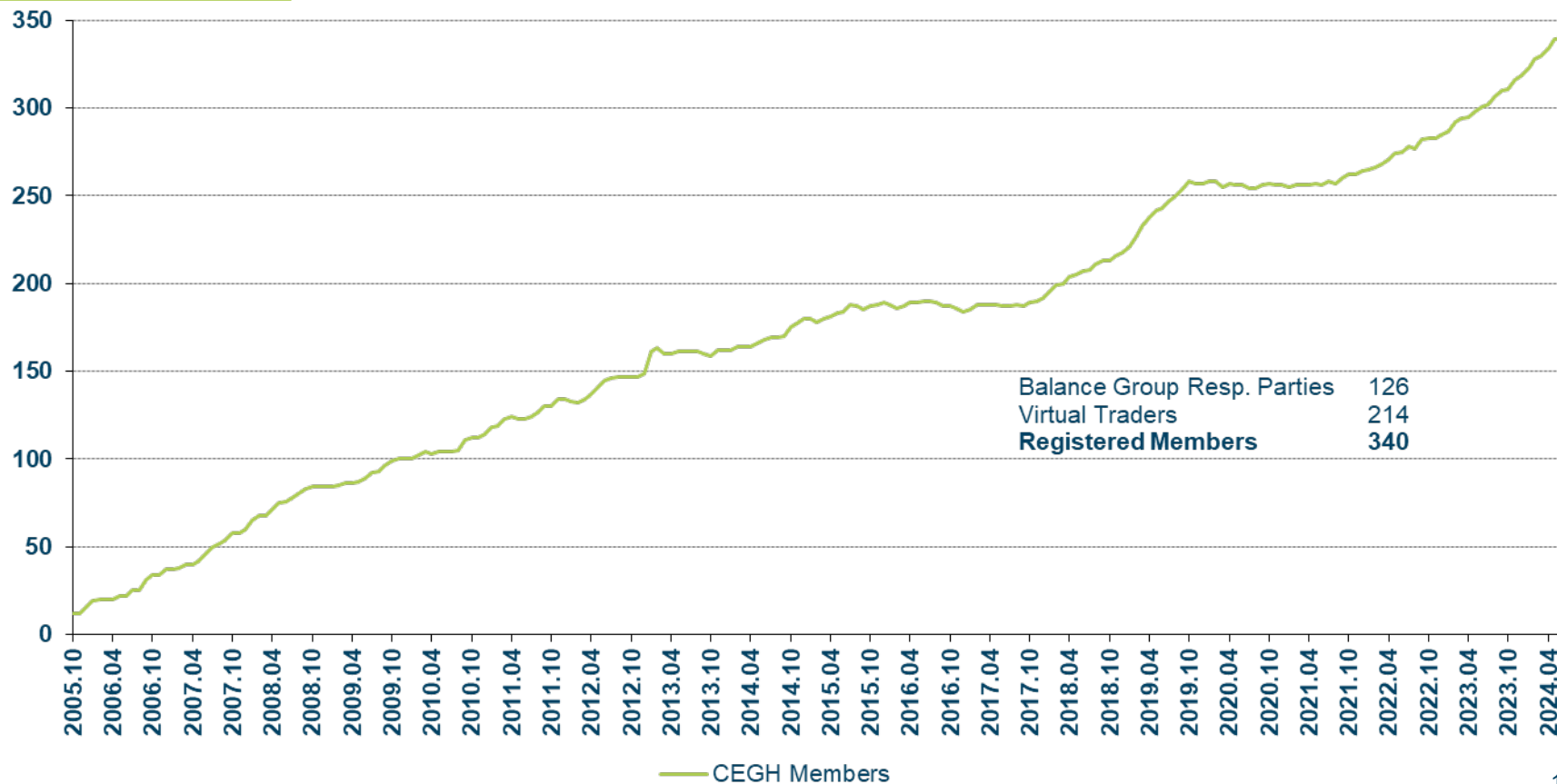


CEGH VTP: Daily Churn Rate

Since January 2013



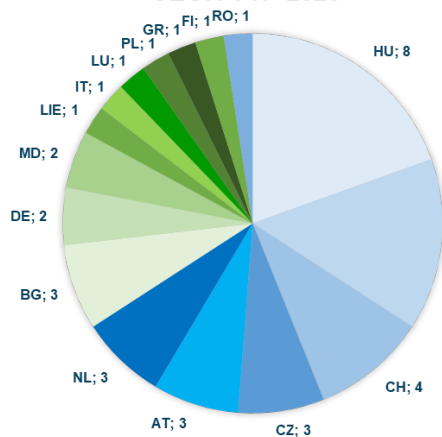
CEGH VTP: Number of Registered Members



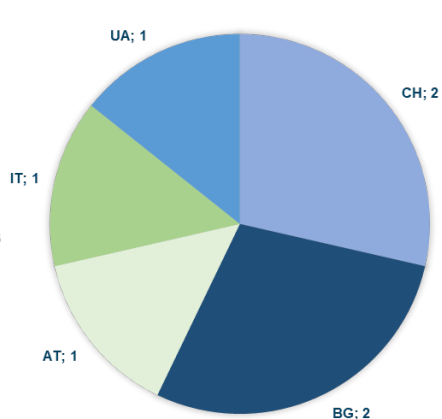
CEGH Customer Development

- **New members joining CEGH in 2023:**
41 new members and 7 member terminations
resulting in **319 members** in total at the end of the year.

**NEW CUSTOMERS
CEGH VTP 2023**

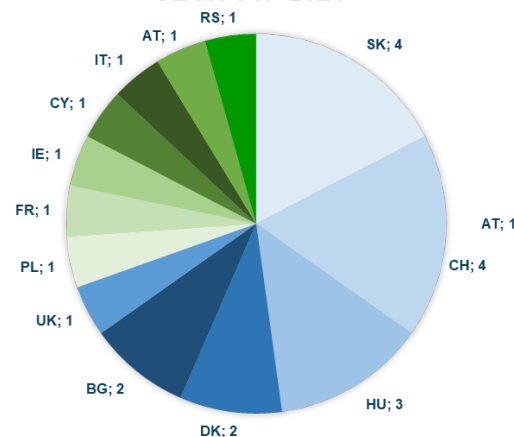


**CUSTOMER TERMINATIONS
CEGH VTP 2023**

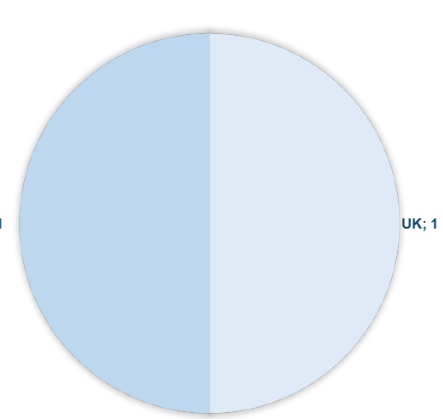


- **New members joining CEGH in 2024:**
23 new members and 2 member terminations
resulting in **340 members** in total by June 2024.

**NEW CUSTOMERS
CEGH VTP 2024**

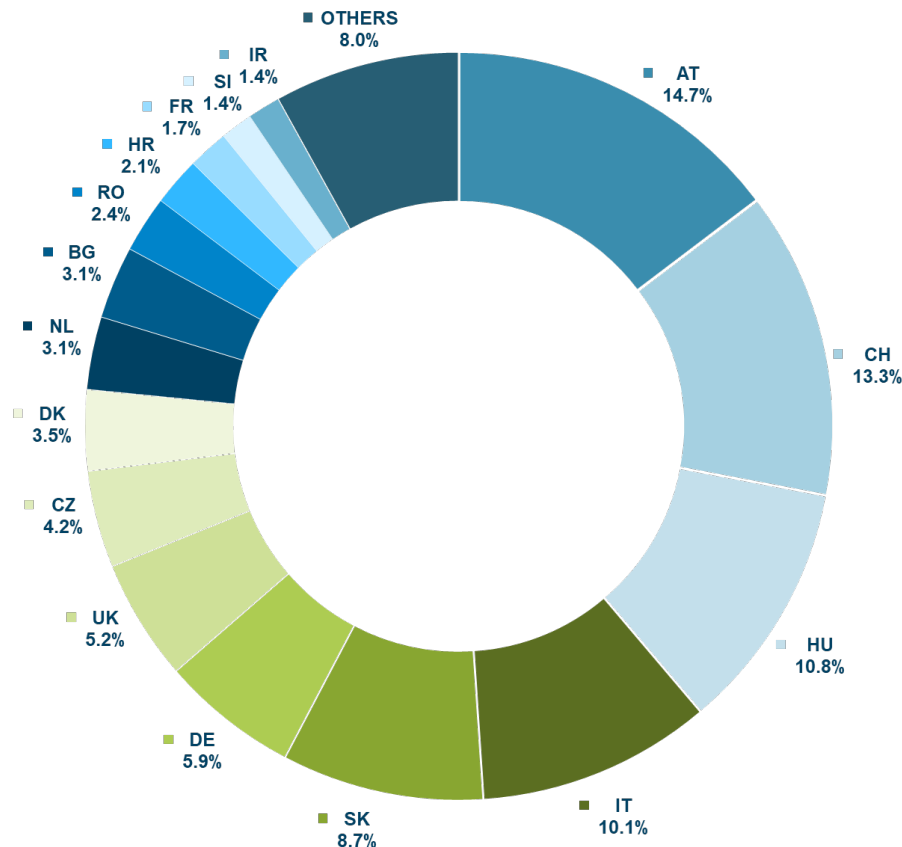


**CUSTOMER TERMINATIONS
CEGH VTP 2024**



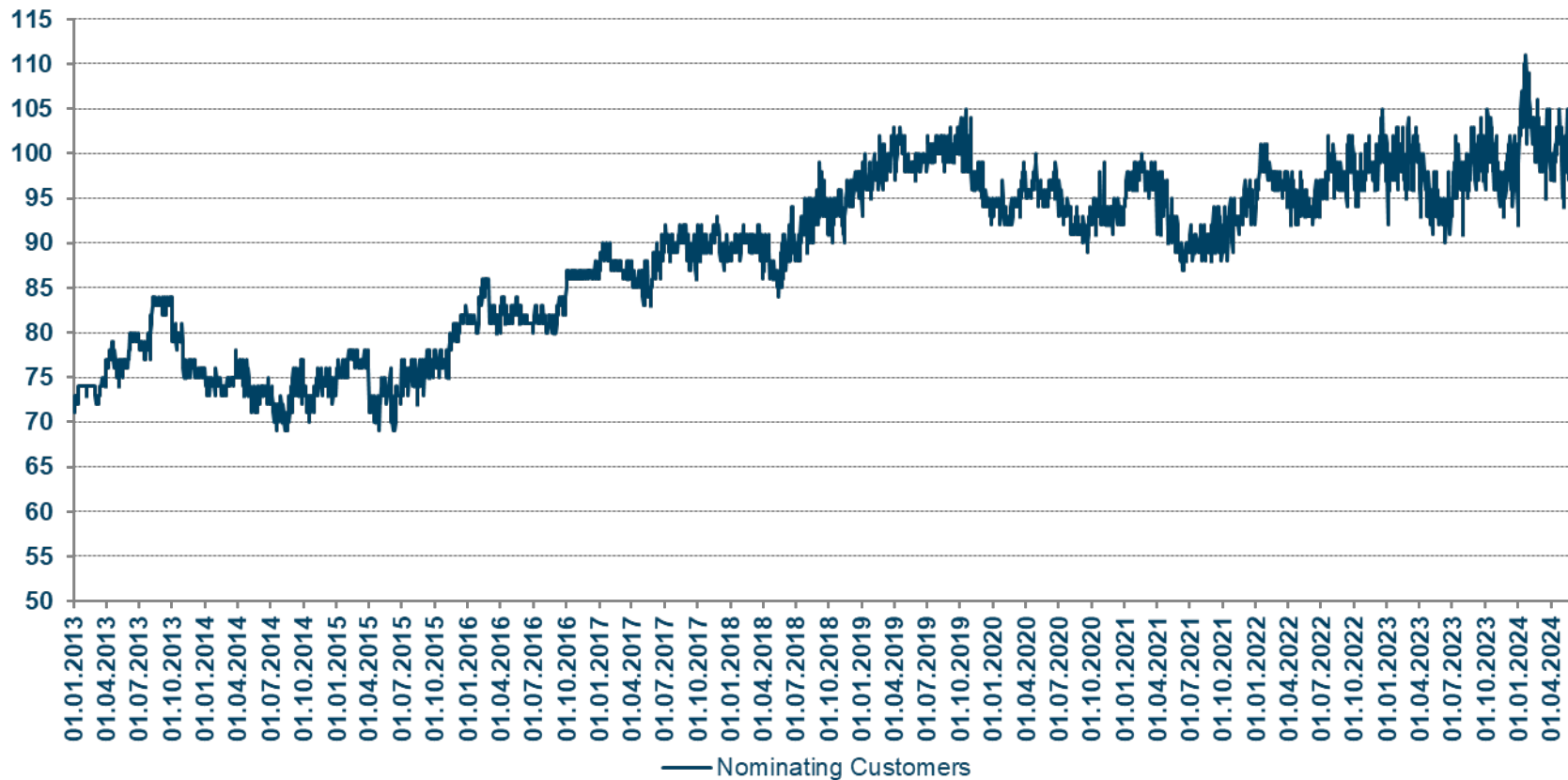
CEGH VTP: Number & Origin of Members

340 Members
June 2024

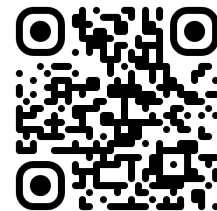


CEGH VTP: Nominating Customers on Daily Basis

Since January 2013

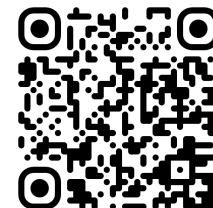


CEGH REMIT Platform



- Available 24/7
- Contents open to the public
- Supports “templates” and “wildcards”
- AGGM, GCA and CEGH publish on CEGH REMIT platform their Urgent Market Messages (UMMs): Main source of information in the Austrian Market Area
- Posting only for registered users
- Postings fulfil legal obligation to publish insider information acc. to REMIT Art. 4
- Meeting all ACER requirements and recommended by E-Control
- Free of charge plus publication alert / RSS feed subscription
- Registered users and publication alert users can manage received notifications either via country selection or via information type

CEGH Gas Storage Marketing Platform



Key Facts

- Launched: November 2018
- Approx. 90 companies registered
- Offered working gas volume: more than 28 TWh
- Primary & secondary capacity marketing
- 3 Categories: 1. Storage Capacity, 2. Gas in Storage, 3. Balance Group Service
- Publication of storage offers (SELL) only for companies with a CEGH contract
- Publication of storage requests (BUY) free of charge for companies until further notice

Framework

- Free to use and easy to register for all interested parties for bidding – no bidding checks and restrictions – everyone can place a bid for every publication on the platform
- 2-ways to use the Storage Platform: auction mode or publication until revoked
- Allocation according to the rules of the initiator who is selling / buying

➤ <https://www.gashub.at/storagemarketing/overview.xhtml>

- Welcome & Introduction
- VTP Operations
- **EEX CEGH Gas Exchange**
- CEGH GreenGas Platform
- CEGH GreenHydrogen Index
- Q&A

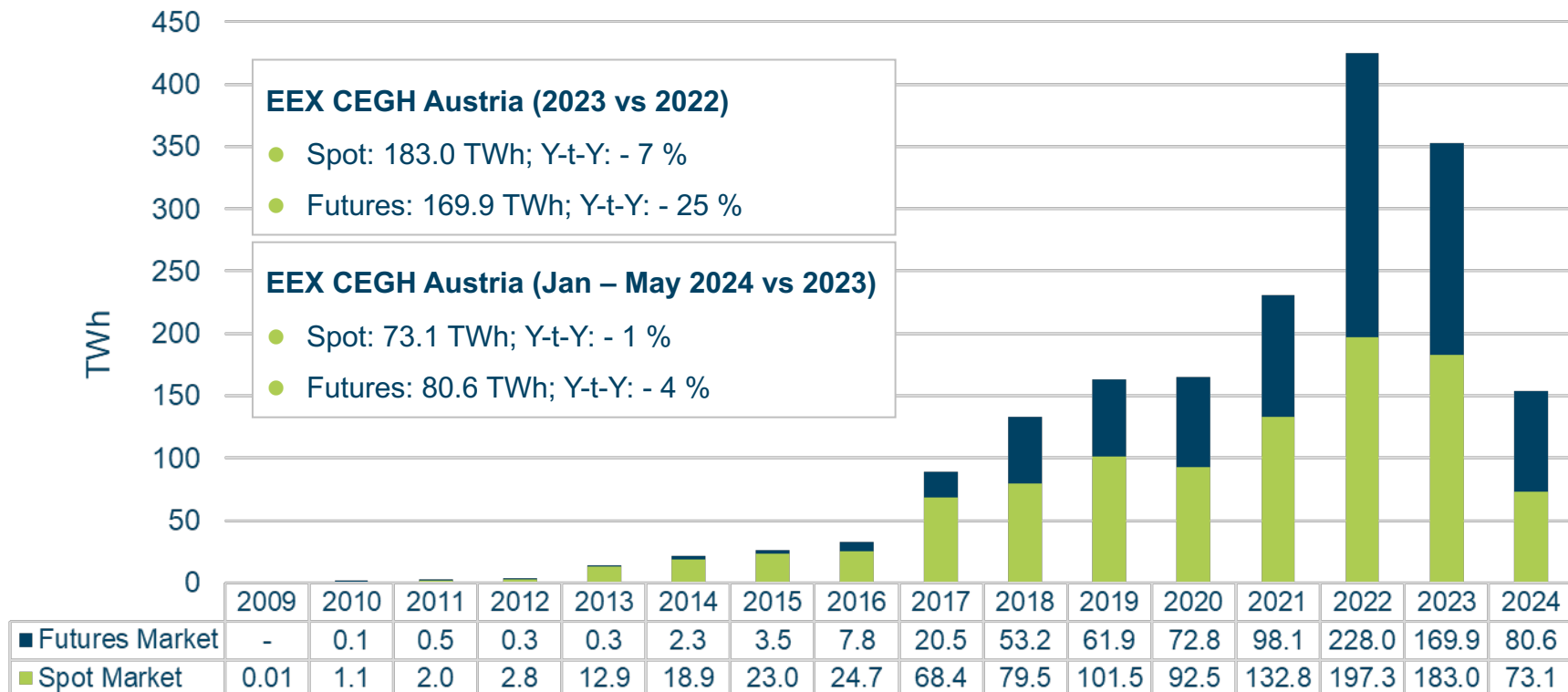
EEX - European Natural Gas Traded Volumes

Yearly Traded Volumes; January 2015 – April 2024



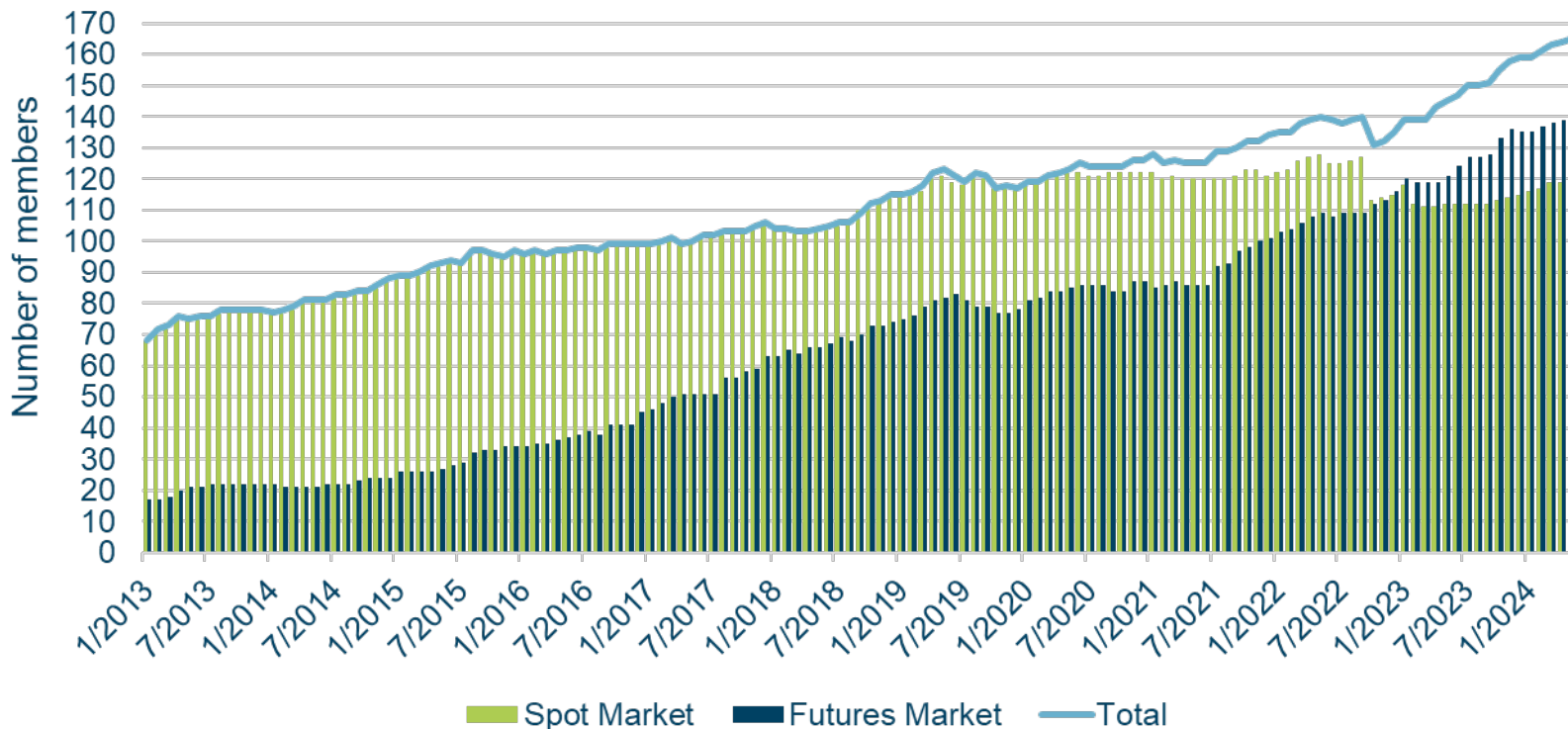
EEX CEGH Austrian Gas Market

Yearly Traded Volumes; January 2009 – May 2024



EEX CEGH Austrian Gas Market

Development of Members since 2013



Status & Growth of EEX CEGH Members

Jan – May 2024



Membership growth CEGH-VTP

Total Spot Market: 126

4 New Members

- EP Commodities (CH)
- Openlogos SA (CH)
- PETROCHINA INTERNATIONAL (London) (UK)
- Trisolaris AG (CH)

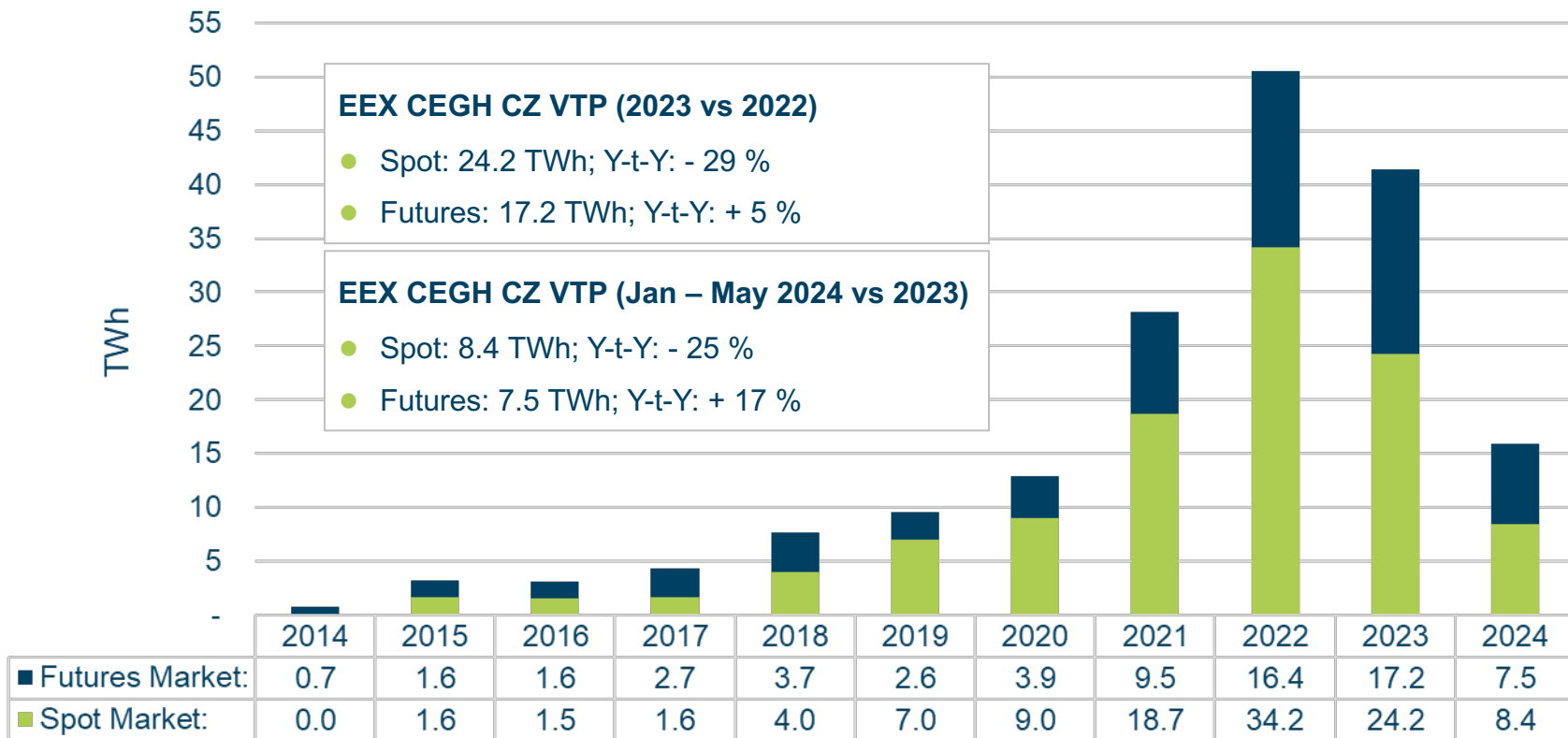
Total Derivatives Market: 131

5 New Members

- Dare Global Limited (UK)
- EP Commodities AG (CH)
- PETROCHINA INTERNATIONAL (London) (UK)
- UBS AG (CH)
- Windsor Belmont Commodities Ltd (IM)

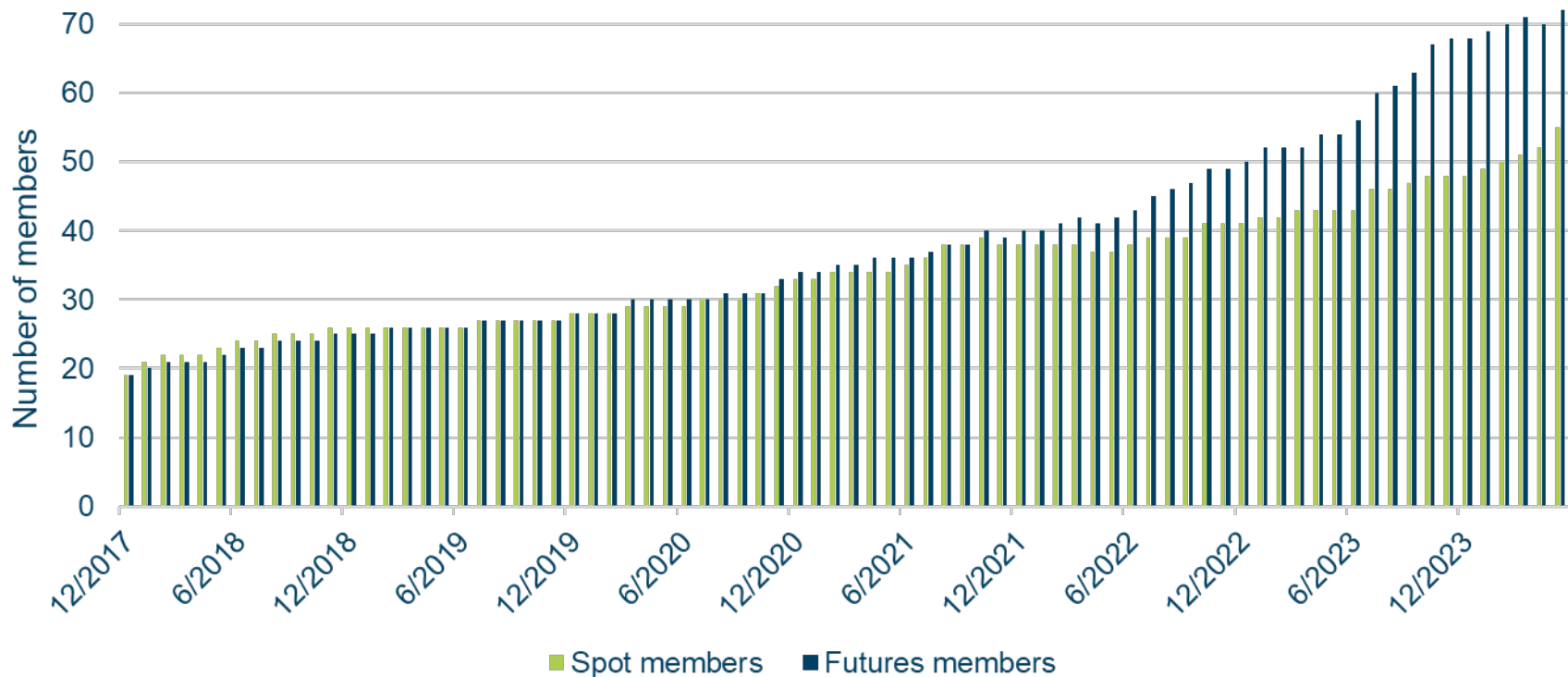
EEX CEGH Czech VTP Gas Market

Yearly Traded Volumes; February 2014 – May 2024



EEX CEGH Czech VTP Gas Market

Development of Members since 2017



Status & Growth of EEX CEGH Members

Jan – May 2024



Membership growth CZ-VTP

Total Spot Market: 52

4 New Members

- D.TRADING d.o.o. (HR)
- EP Commodities AG (CH)
- Torreol, s. r. o. (SK)
- Trisolaris AG (CH)

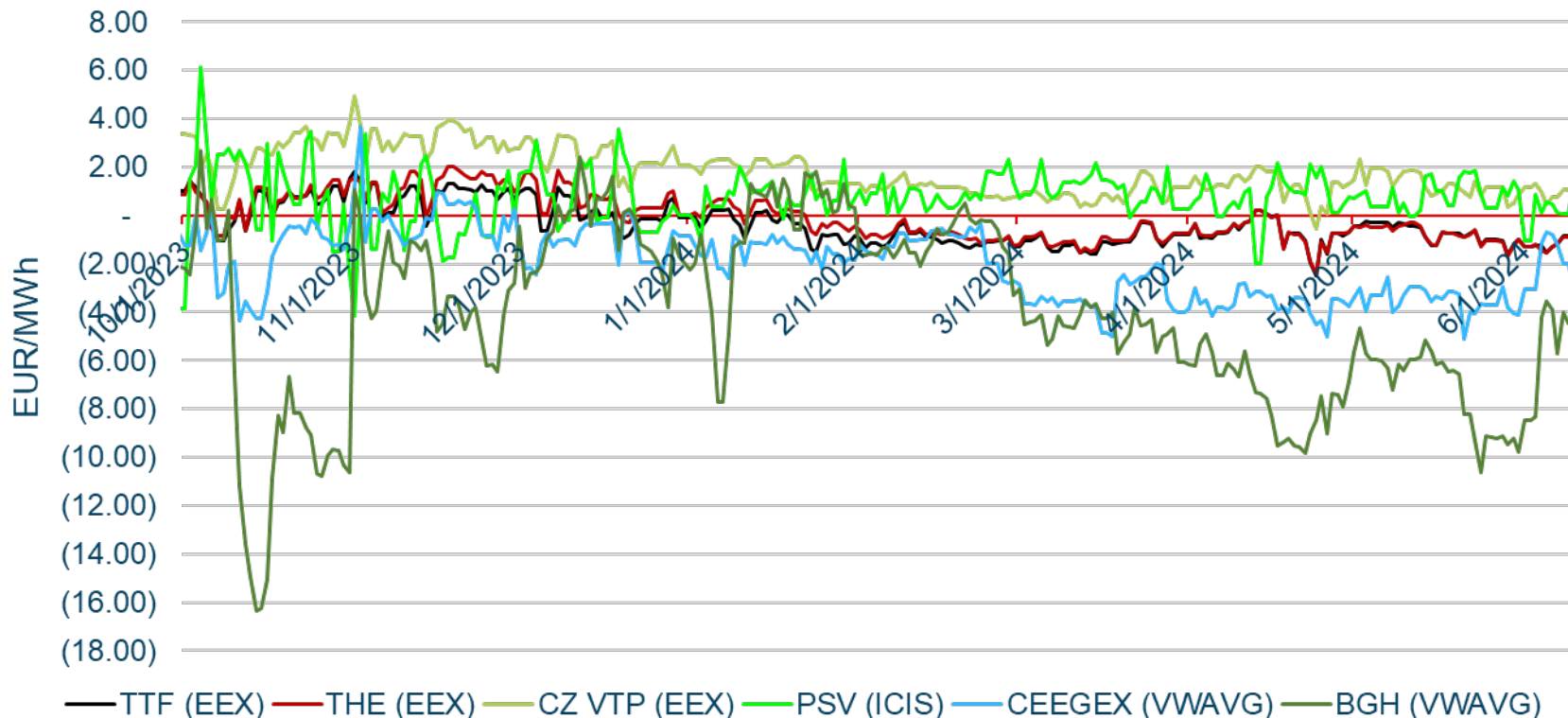
Total Derivatives Market: 71

3 New Members

- EP Commodities AG (CH)
- Torreol, s. r. o. (SK)
- Windsor Belmont Commodities Ltd (IM)

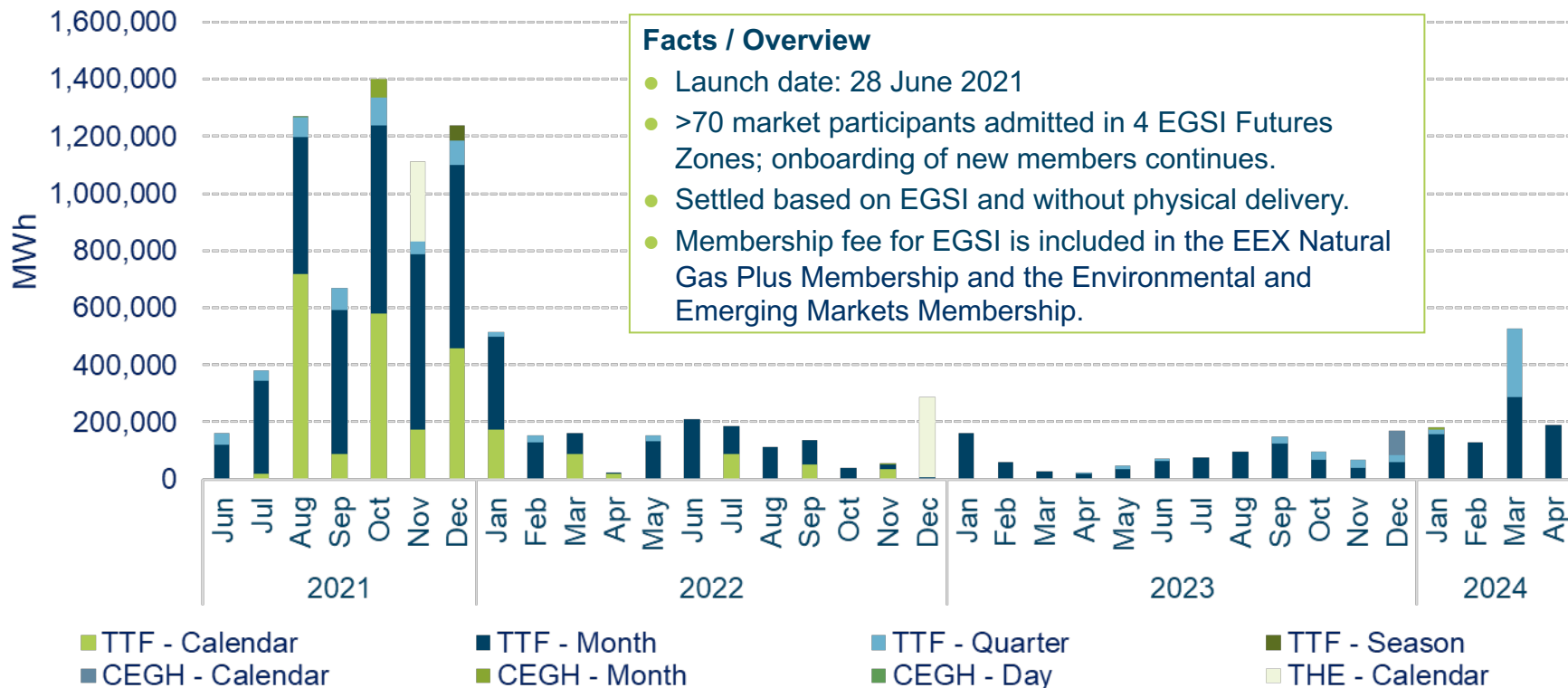
Regional Spot Prices Compared to CEGHIX

Positive range – more expansive than CEGHIX; negative range – cheaper than CEGHIX



EEX Financial Gas Futures (EGSI)

28 June 2021 - 14 May 2024



- EEX introduced a new market making system („Matrix Market Making Scheme”) for the derivatives segment including gas (for all EEX gas hubs).
- Key aspects
 - Tender launched in 10/2023 enabling competition and equal treatment.
 - Almost all available seats were awarded; CEGH VTP could fill 2 seats (out of the 3); for CZ VTP 1 seat remains available.
 - The new Market Making Scheme allows Market Makers (MM) to continuously choose between different performance levels; tight/standard/wide spreads with different time presence levels and lot sizes.
 - Provides more flexibility; MMs can adjust quoting to concrete market situation without having to ask EEX first to announce changing market situations.
- MM activity started as of 1 January 2024 and performance levels on CEGH VTP are met, thus providing opportunities for trading for all exchange members.

In contrast to commercial Market Making, RMM is not based on a financial incentive system but aims to ensure regulatory oversight (according to Commission Delegated Regulation (EU) 2017/578).

- Exchanges are obliged to identify algorithmic traders pursuing market making strategies in financial instruments (i.e. commodity derivatives and EUA spot).
- RMM was suspended in 2023 due to price volatility. EEX starts to measure fulfilment again as of May 2024.
- Members who fulfill will have to sign an RMM agreement (i.e. be identified as an RMM).
- RMM quoting requirements:
 - in at least one instrument
 - for at least 50% of the trading time
 - on at least 50% of the trading days
 - bid and ask not diverging by more than 50% and
 - with the RMM Spreads determined by the Management Board of EEX ([find here](#)).

- **May 2023:** acquisition of 66% of GET Baltic, the gas exchange of the Baltic countries and Finland (integration into EEX completed in Feb 2024).
- **June 2023:** EGSI benchmark is extended to NBP (EOD introduced before in March).
- **June 2023:** new tradable maturities introduced on CEGH VTP futures, next full 12 months, 11 quarters and 11 seasons made available.
- **Sept 2023:** Market Making tender published for gas markets with bid submission deadline of 1 Nov 2023.
- **Oct 2023:** deactivation of all ZEE contracts following the regulatory approval of the Belgian gas regulator to merge ZEE and ZTP gas market areas.
- **Nov 2023:** Central Coordinators were appointed at EEX to enable more self-administration via the Member Section.

- **Jan 2024:** introduced new volume rebates for gas derivatives (all hubs), to standardize further and ensure equal/fair treatment, any member trading a combination of hubs over 4 TWh/month (excluding free legs) is entitled to receive rebate, published in price list.
- **April 2024: JKM/LNG (\$TTF) launch** - extended product offering on gas derivatives, financially settled EEX TTF Natural Gas Month (\$/MMBtu) Futures.
- **April 2024:** changed ISINs of CEGH VTP futures products.
- **June 2024: upcoming,** frontend / interface prices will increase slightly.
- **Oct 2024: upcoming,** EEX Paris (PWX) ftp server will be shut down, all data are available on EEX Group DataSource server and/or APIs.

Should you need detailed information on any of the above items, please contact us.

- Welcome & Introduction
- VTP Operations
- EEX CEGH Gas Exchange
- **CEGH GreenGas Platform**
- CEGH GreenHydrogen Index
- Q&A

CEGH GREENGAS PLATFORM

CEGH GreenGas Platform

For Marketing of Green Gases



CEGH GreenGas Platform – Way to more transparency and liquidity

CEGH GreenGas Platform for **marketing of green gases**, such as biogas and hydrogen, in EU and selected additional countries (e.g. Norway, Turkey, Ukraine, Switzerland and Great Britain)

Development of the **CEGH GreenGas Platform based on market feedback** in order to meet the current needs and wishes

Gradual expansion and further development is envisaged

Functionalities of CEGH GreenGas Platform will be expanded alongside the evolving green gas market

CEGH offers its **CEGH GreenGas Platform free of charge**

CEGH GreenGas Platform

Easy Access to Trading Biomethane/Certificates/Guarantees of Origin (GOs)



- Platform was developed closely with market participants.
- CEGH GreenGas Platform enables trading of certificates / GOs or bundled certificates / GOs together with biomethane, or biomethane without certificates / GOs
- Connected Registers:
 - Germany: DENA
 - Denmark: Energinet
 - Austria: E-Control, AGCS
- Offers and requests can be posted anonymously (optional) for EU and select countries, with or without registry.
- Create term sheet directly on the platform for easy contract negotiation.
- Launching as "bulletin board" and as "auction" based on market feedback
- Easy registration and newsletter function
- Potential for expansion to other countries and feature extensions

Please log in to view details.

OPEN FOR BIDDING UNTIL REVOKED

Ask Minimum price: **17.00 € / MWh** Publication date: 07.09.2024 09:08 Offer ID: 607

Product: Guarantees of origin/Certificate
Registry / Certificate / Country of origin: Energinet / Guarantees of origin / Denmark
Bidding period until revoked:
Production support: Yes

Volume: **20,000 MWh** Date of issue: 01.01.24 Validity period: 01.01.24 - 31.12.24 Unspecified (F(1030000))

☒ Offen
☒ beendet
☒ veröffentlicht
☐ zurückgezogen

Unternehmen:
Angebots ID:

Seite: **Kauf** **Vorverkauf**

Register:
Nachweis:
Land:
Veröffentlichungsdatum:
Gebotszeitraum:
Filter

Landwärme CE Trading Kft.

Vorverkauf Minimum Preis: **172.90 € / MWh**

Menge: **0,343 MWh** Lieferzeitraum: 01.01.23 09:00 - 01.01.24 09:00
Menge: **3,004 MWh** Biomasse (B1 Biomasse) (1), Ausschleisskraft (2), Mengengerüst plausibel (4), Einsatzstoffbleich (5), Erzeugermenge in Erdgasnetz (6), Massenerzeugung bis zur Einspeisung in das Erdgasnetz (7)
Produktionsdatum: 09.09.2024

EEG 2 **GEBOT SAUGABE BIS AUF WIDERRUUF MÖGLICH**

Veröffentlichungsdatum: 21.09.2022 11:08
Angebots ID: 648

Product: Biomethan mit Herkunftsnachweis/Zertifikat
Registry / Nachweis / Herkunftsländ: DENA / DENA Biogaserzeuger / Deutschland
Gebotszeitraum bis auf Widerruf
Offenbart: Nein

Wien Energie Vertriebs GmbH & Co KG

Vorverkauf Minimum Preis: **40.00 € / MWh**

Menge: **876 MWh** Produktionszeitraum: 01.12.21 - 01.01.22
Biomethan auf Basis von Biogas (B110000)

EEG 2 **GEBOT SAUGABE BIS AUF WIDERRUUF MÖGLICH**

Veröffentlichungsdatum: 31.09.2022 13:00
Angebots ID: 627

Product: Herkunftsnachweis/Zertifikat
Registry / Nachweis / Herkunftsländ: AGCS Biomethan Register Österreich / Biomethannachweis / Österreich
Gebotszeitraum bis auf Widerruf

Wien Energie Vertriebs GmbH & Co KG

Vorverkauf Minimum Preis: **40.00 € / MWh**

Menge: **848 MWh** Produktionszeitraum: 01.11.21 - 01.12.21
Biomethan auf Basis von Biogas (B110000)

CEGH GreenGas Platform



New features for easy access to trading in biomethane / GOs

- Now available to additional countries (all EU members and additional countries e.g. GB, NOR, CH, TUR, UA)
- Post offer/request with or without a registry (available registries: Energinet, DENA, E-Control and AGCS)
- If existing registry is used, input information according to its criteria (e.g. for the DENA registry according to the product matrix)
- Without registry, provide relevant information (e.g. production period, feedstock, subsidy, carbon intensity, Proof of Sustainability, etc.) based on the term sheet available on the platform
- Option to specify designated purpose or delivery point if not using registry.

2. Product Details

Side:

Product:

Country of origin:
Austria
Germany
Italy
Switzerland
Belgium
Bulgaria
Denmark
Estonia

Certificate:

Carbon intensity	Unit	Volume	Unit	Transfer date
<input type="text"/>	gCO2eq/MJ	<input type="text"/>	MWh	<input type="text"/>

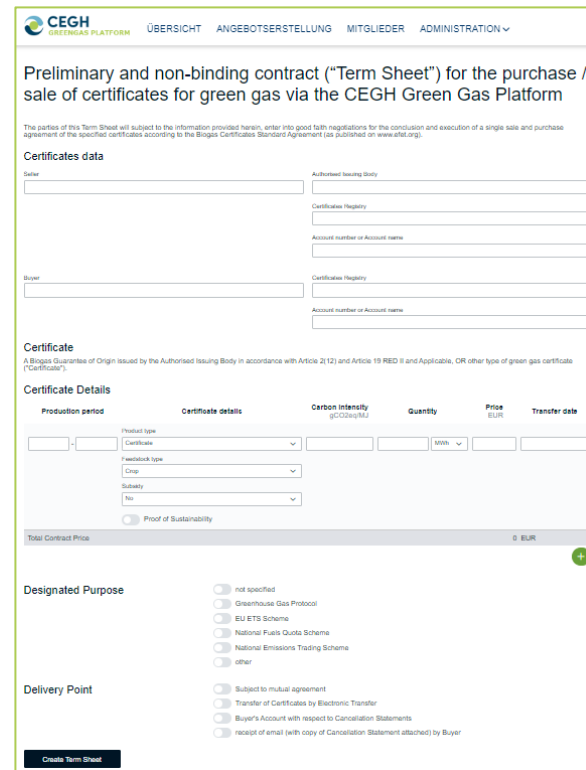
☐ Proof of Sustainability

Designated Purpose: ☐ not specified
☐ Greenhouse Gas Protocol
☐ EU ETS Scheme
☐ National Fuels Quota Scheme
☐ National Emissions Trading Scheme
☐ other

Delivery Point: ☐ Subject to mutual agreement
☐ Transfer of Certificates by Electronic Transfer
☐ Buyer's Account with respect to Cancellation Statements
☐ receipt of email (with copy of Cancellation Statement attached) by Buyer

“Term sheet” functionality:

- Existing information from the CEGH GreenGas Platform is prefilled depending who starts the process.
- You can edit all existing prefilled information or add further information directly on the platform.
- Fill out the predefined term sheet parameters as needed, no mandatory fields.
- Press “Create term sheet” to create and download a PDF which can be printed for signature.



The screenshot shows the 'Preliminary and non-binding contract ("Term Sheet") for the purchase / sale of certificates for green gas via the CEGH Green Gas Platform'. The form is divided into several sections:

- Certificates data:** Includes fields for Seller, Authorized Issuing Body, Certificates Registry, Account number or Account name, Buyer, and Certificates Registry (repeated).
- Certificate:** A text area for the certificate details, with a note: "A Biogas Guarantee of Origin issued by the Authorised Issuing Body in accordance with Article 21(2) and Article 19 RED II and Applicable, OR other type of green gas certificate ("Certificate")."
- Certificate Details:** A table with columns: Production period, Certificate details, Carbon Intensity (gCO₂e/MJ), Quantity, Price (EUR), and Transfer date. The table contains one row with dropdown menus for Product type, Feedstock type, Subsidy, and Proof of Sustainability.
- Total Contract Price:** A field showing 0 EUR.
- Designated Purpose:** Radio buttons for: not specified, Greenhouse Gas Protocol, EU ETS Scheme, National Fuels Quota Scheme, National Emissions Trading Scheme, and other.
- Delivery Point:** Radio buttons for: Subject to mutual agreement, Transfer of Certificates by Electronic Transfer, Buyer's Account with respect to Cancellation Statements, and receipt of email (with copy of Cancellation Statement attached) by Buyer.
- Create Term Sheet:** A button at the bottom left.

“Term sheet” as PDF for further use:

Preliminary and non-binding contract (“Term Sheet”) for the purchase / sale of certificates for green gas via the CEGH Green Gas Platform

The parties of this Term Sheet will subject to the information provided herein, enter into good faith negotiations for the conclusion and execution of a single sale and purchase agreement of the specified certificates according to the Biogas Certificates Standard Agreement (as published on www.efet.org).

Certificates data:

Seller:	Authorised Issuing Body:
	Certificates Registry:
	Account number or Account name:
Buyer:	Certificates Registry:
	Account number or Account name:

Certificate: A Biogas Guarantee of Origin issued by the Authorised Issuing Body in accordance with Article 2(12) and Article 19 RED II and Applicable, OR other type of green gas certificate (“Certificate”).

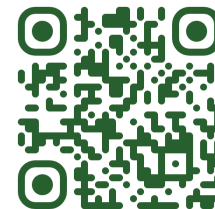
Certificate Details (fill in, if applicable):

Production period	Certificate details	Carbon Intensity (gCO ₂ eq/MJ)	Quantity	Price (EUR)	Transfer date
	Product Type: Certificate Feedstock type: Crop Subsidy: No <input type="checkbox"/> Proof of Sustainability		MWh		

Total Contract Price	EUR
-----------------------------	-----

Designated Purpose	<input type="checkbox"/> not specified <input type="checkbox"/> Greenhouse Gas Protocol <input type="checkbox"/> EU ETS Scheme <input type="checkbox"/> National Fuels Quota Scheme <input type="checkbox"/> National Emissions Trading Scheme <input type="checkbox"/> other
Delivery Point	<input type="checkbox"/> Subject to mutual agreement <input type="checkbox"/> Transfer of Certificates by Electronic Transfer <input type="checkbox"/> Buyer's Account with respect to Cancellation Statements <input type="checkbox"/> receipt of email (with copy of Cancellation Statement attached) by Buyer
Signature Date:	Signature Date:
Signature Seller	Signature Buyer

CEGH GreenGas Platform



Interested persons or companies

- register for publication alerts via E-Mail or
- register as “Platform Users” for the possibility to place bids/asks

Platform Users

- publishing bids / asks for
 - certificates / Guarantee of Origins (GOs)
 - bio-methane volumes without certificates / GOs
 - bio-methane volumes with certificates / GOs
- informing all registered platform users by using the CEGH GreenGas Platform
- collecting bids
- the contact for all product related questions

CEGH

- operator of the CEGH GreenGas Platform
- providing technical support for customers
- further improving and developing the CEGH GreenGas Platform based on market needs

The conclusion of a contract for the offered products is subject to discretion of the company offering or requesting this product.

- Welcome & Introduction
- VTP Operations
- EEX CEGH Gas Exchange
- CEGH GreenGas Platform
- **CEGH GreenHydrogen Index**
- Q&A

GREEN HYDROGEN



CEGH GreenHydrogen Indices

- **CEGH Hydrogen Indices facilitate** monitoring the „cost gap“ between hydrogen and alternative sources of energy supply and enables market participants to evaluate business cases for hydrogen projects.
- **Further enhancements of price assessments** planned once the hydrogen market becomes more liquid (e.g. benchmarking costs of supply, “net-back pricing”).

Stakeholder Dialogue





- **CEGH engages with key stakeholders** including politicians, regulators, producers and offtakers.
- Key areas for alignment include regulatory frameworks (e.g. third-party access to hydrogen infrastructure), market model (entry-/exit system vs. physical hub), balancing code, design of framework agreements etc.

→ **Target: Support the development of hydrogen markets!**

CEGH GreenHydrogen Indices (since Dec 2022)

Measuring the Value of the Various “Shades” of Green Hydrogen

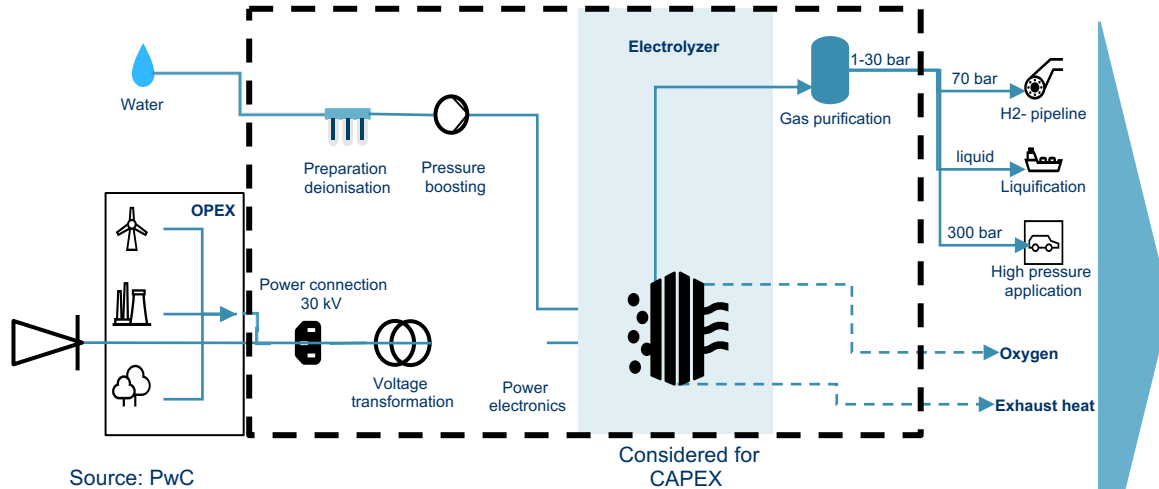


Index	Green Power Supply for Hydrogen Production	Product Definition
CEGH GreenHydrogen Spot Index	 <ul style="list-style-type: none"> Sourcing of “grey” power in the day-ahead market Sourcing of guarantees of origin via exchange / platforms 	<ul style="list-style-type: none"> Cheapest Day-ahead power prices optimized with a yearly hPfc
CEGH GreenHydrogen Forward Index	 <ul style="list-style-type: none"> Sourcing of “grey” power in forward markets Sourcing of guarantees of origin via exchange / platforms 	<ul style="list-style-type: none"> Cheapest Monthly, Quarterly, Seasonal and Yearly power prices optimized with yearly hPfc
CEGH GreenHydrogen PPA 40 Index	 <ul style="list-style-type: none"> 40% of green power (PPA) and 60% “grey” power (forward) Sourcing of guarantees of origin via exchange / platforms 	<ul style="list-style-type: none"> Combination of 10 Years PPA and Optimized Grid Supply
CEGH GreenHydrogen Index	 <ul style="list-style-type: none"> 100% sourcing of green power via power purchase agreements (renewable PPA) 	<ul style="list-style-type: none"> 10 Years PPA Pay as Produced

Cost-Plus-Approach for Hydrogen Indices

Due to Current Market Stage

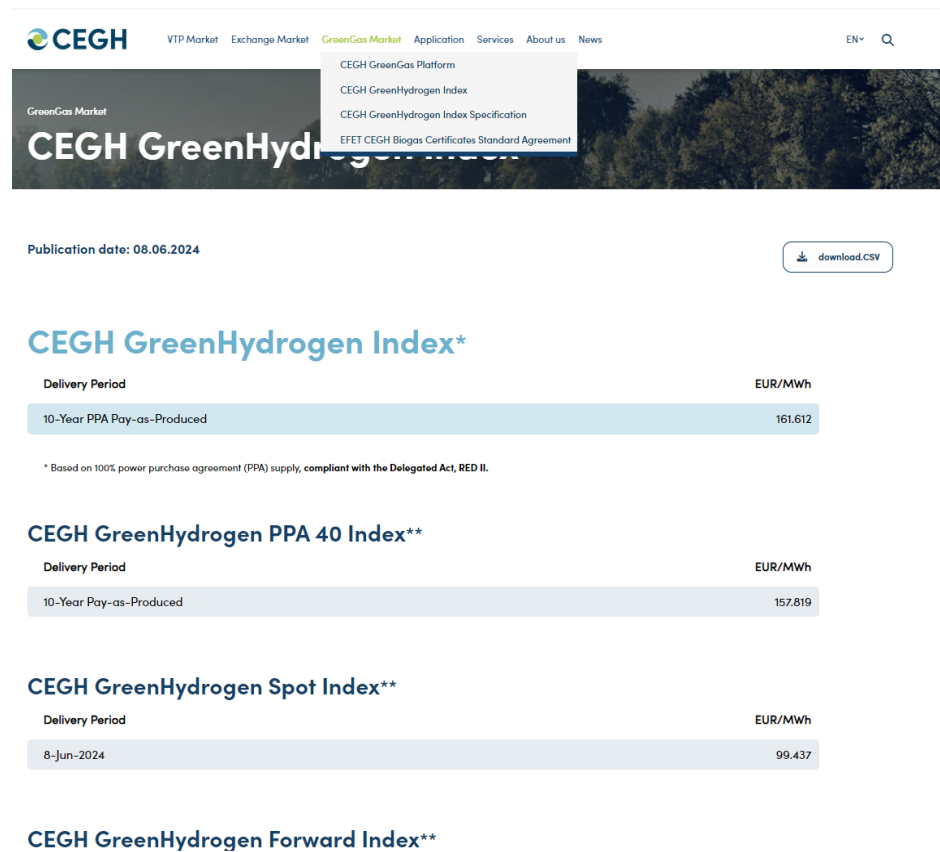
Battery Limits applied for Capex Calculation



- Estimated Capex for electrolyzer is re-assessed on a regular basis
- Consideration of learning curve effects for „forward“ hydrogen price assessments

$$\begin{aligned} &\text{Cost of green power supply} \\ &+ \text{Capex} \\ \hline &\text{“Cost-Plus”-Value of Green Hydrogen} \\ &\text{Values in EUR/MWh (high heating value)} \end{aligned}$$

CEGH GreenHydrogen Indices on CEGH's Website



CEGH

VTP Market Exchange Market **GreenGas Market** Application Services About us News

EN

GreenGas Market

CEGH GreenHydrogen Index

CEGH GreenHydrogen Index Specification

EFET CEGH Biogas Certificates Standard Agreement

CEGH GreenHydrogen Index

Publication date: 08.06.2024

download.CSV

CEGH GreenHydrogen Index*

Delivery Period	EUR/MWh
10-Year PPA Pay-as-Produced	161.612

* Based on 100% power purchase agreement (PPA) supply, compliant with the Delegated Act, RED II.

CEGH GreenHydrogen PPA 40 Index**

Delivery Period	EUR/MWh
10-Year Pay-as-Produced	157.819

CEGH GreenHydrogen Spot Index**

Delivery Period	EUR/MWh
8-Jun-2024	99.437

CEGH GreenHydrogen Forward Index**

Access to CEGH GreenHydrogen Index:

➤ <https://www.cegh.at/en/greengas/cegh-greenhydrogen-index/>

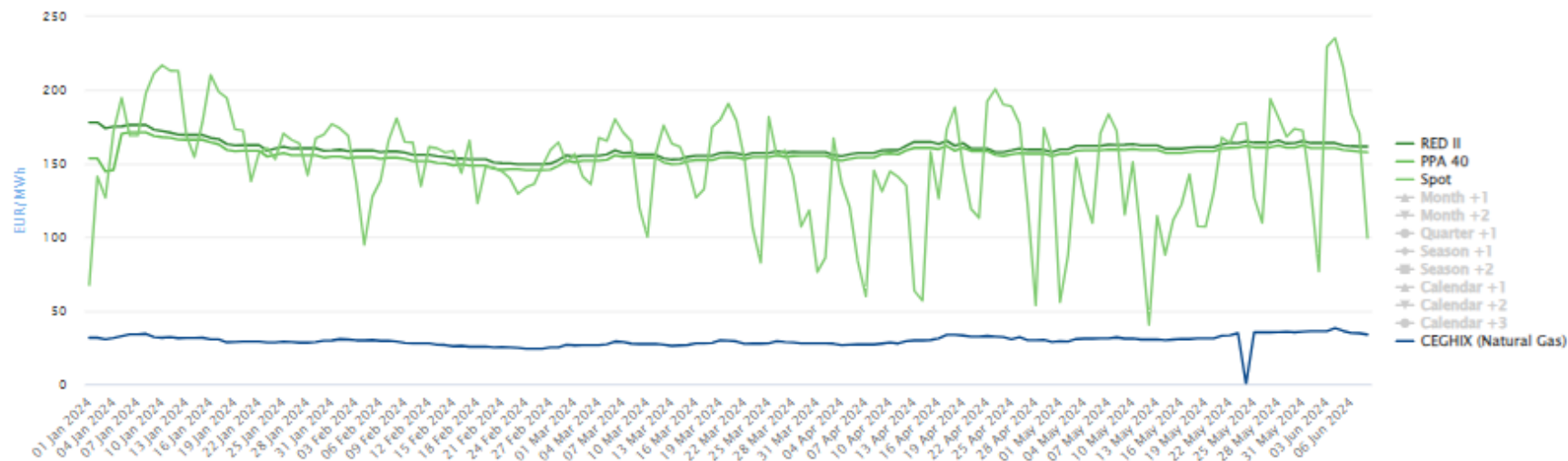


Access to Index specification and Index description:

➤ <https://www.cegh.at/en/greengas/cegh-greenhydrogen-index-specification/>

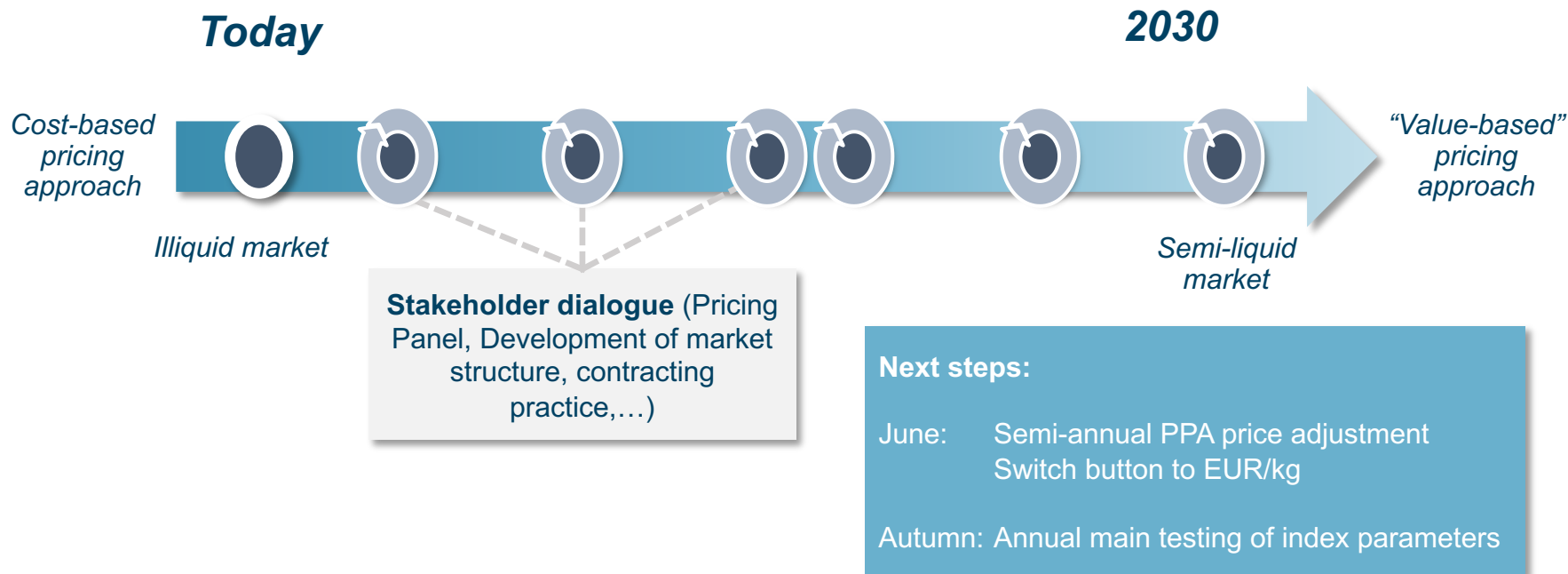


Development of CEGH H2 Indices since January



Continuous Alignment of Index Design

Ongoing Stakeholder Dialogue ensures continuous Alignment of Index Design to evolving Hydrogen Market



- Welcome & Introduction
- VTP Operations
- EEX CEGH Gas Exchange
- CEGH GreenGas Platform
- CEGH GreenHydrogen Index
- **Q&A**

Q&A Session





**THANK
YOU FOR
YOUR
ATTENTION**