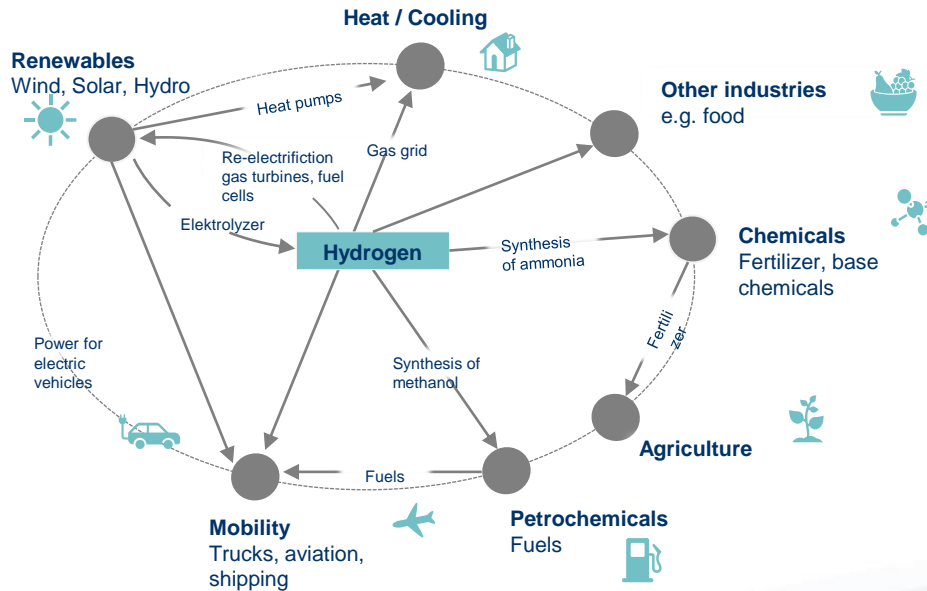




CEGH GreenHydrogen Index

Hydrogen Plays a Key Role in the Energy Transition



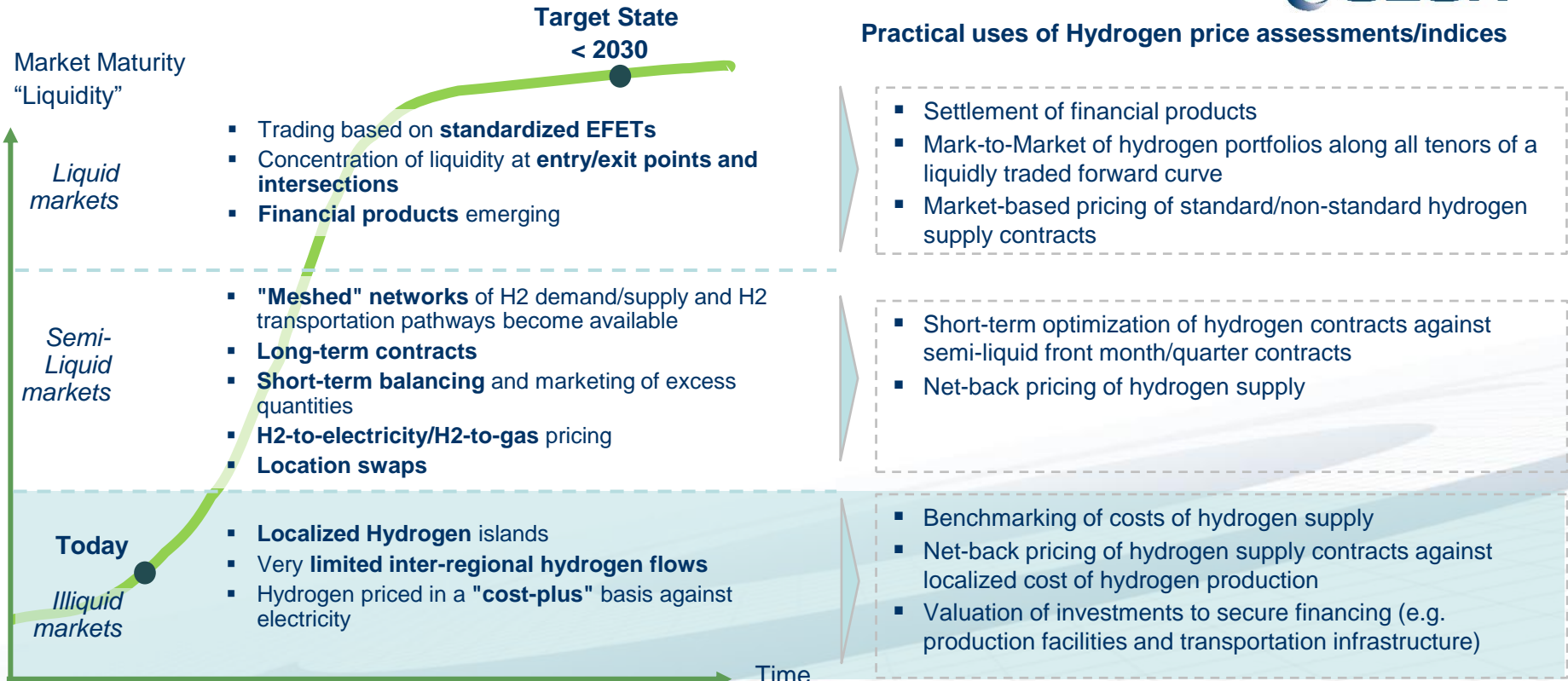
- Decarbonization of **high-temperature process heat** required in chemical and steel industry
- Use as a **feedstock** in the chemical industry, replacing methane gas
- **Power-to-X Technology** enabling sector coupling

EU's Green Deal defines measures for setting up a pan-European hydrogen market by 2030

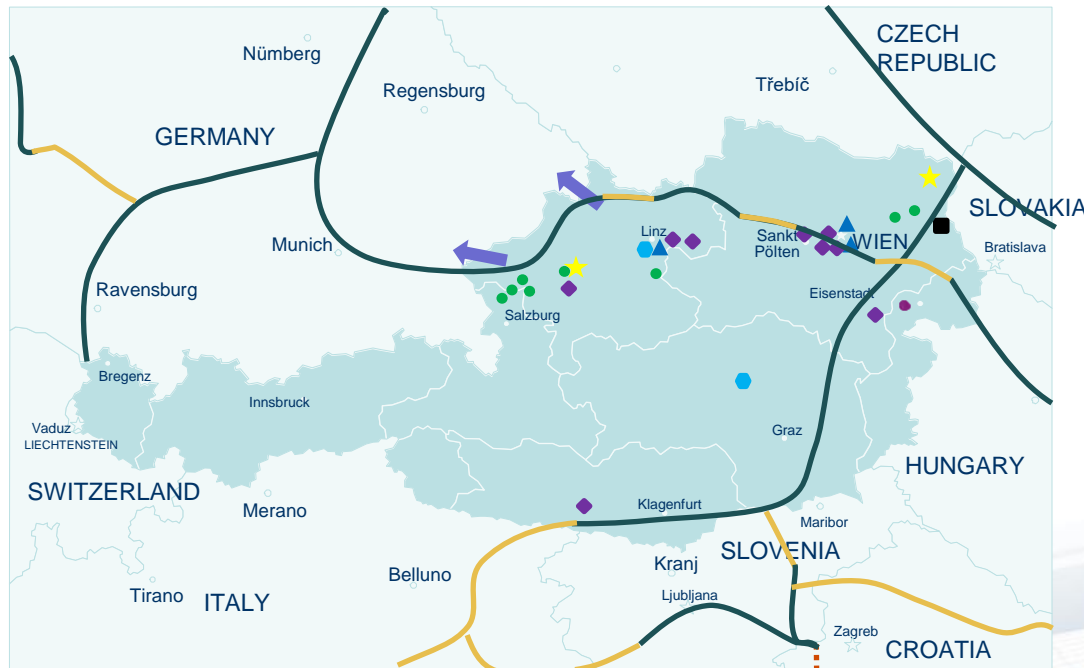
- Subsidies / grants for scaling up electrolyzer capacities across Europe
- Speeding up adoption of green hydrogen via subsidies / grants bridging the cost gap between conventional energy sources and green hydrogen
- Adoption of regulatory frameworks
- Development of infrastructure forming the physical backbone of the future hydrogen market
- Support of technology development and R&D

Translation of EU objectives at the level of member countries taking country-specific energy needs into account

Hydrogen Price Indices for Different Purposes at Different Development Stages of the Hydrogen Market



CEGH's Market Area is Strategically Well Located Within the European Hydrogen Market



- ▲ Domestic electrolyzer projects in Austria
- Existing gas storage facility
- ★ Planned H2 Storage
- ◆ Chemical Industries
- Steel production
- Baumgarten Gas Hub

CEGH's Hydrogen Hub connecting regional markets into a wider hydrogen market located in the center of Europe

- Large offtake potential from metals & steel industry in Austria which cannot be fully matched by local hydrogen production.
- Ambitious hydrogen consumption targets in Germany will require substantial hydrogen import to bridge the shortfall in local production.
- High potential for green hydrogen supply from Italy, western Balkans and access to North Africa (via Italy)

Source: PwC Research, European Hydrogen Backbone

CEGH Supports the Development of Hydrogen Markets



Provision of CEGH Hydrogen Indices

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

Set Up of a Marketing Platform for Biogas

- **Launch of the CEGH GreenGas Trading Platform** to facilitate trading of Biomethane Guarantees of Origin (GoOs) with or without biogas for the first time in Austria.
- Gradual expansion into other markets in Central - and Eastern Europe planned.
- Upgrade of functionalities according to market feedback.
- **Addition of trading of Green Hydrogen once Green Hydrogen becomes available.**

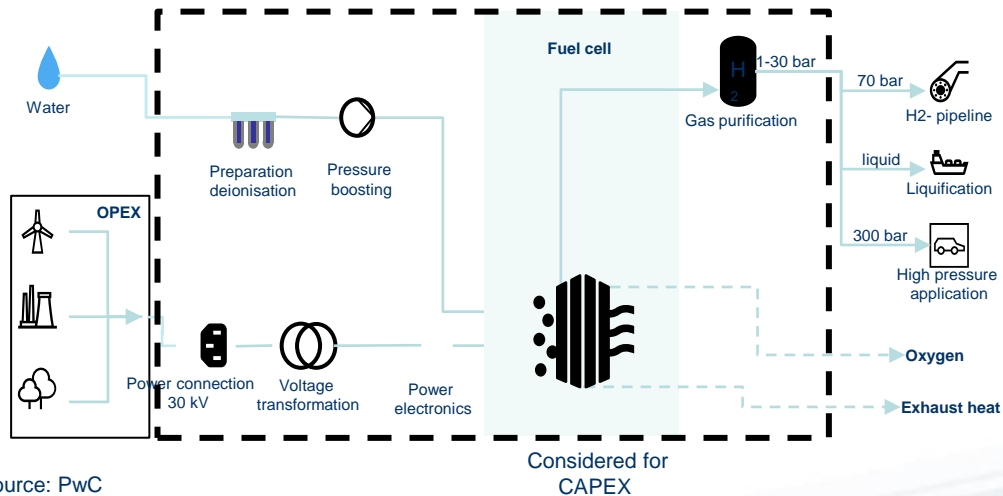
Continuous Stakeholder Dialogue

- **CEGH engages with key stakeholders within the emerging hydrogen ecosystem** 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.

At the Current State of Market Development, “Cost-Plus”-Approach for CEGH Green Hydrogen Indices



Battery Limits applied for Capex Calculation



Source: PwC

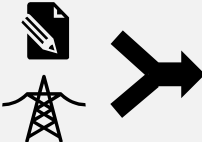
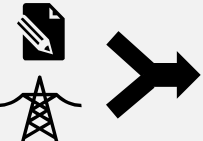
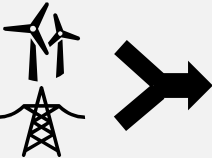

Cost of green power supply
+ Capex per Unit

“Cost-Plus”-Value of Green Hydrogen

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

CEGH Green Hydrogen Indices Measure the Value of the Various “Shades” of Green Hydrogen



Index	Green Power Supply for Hydrogen Production	Product Definition	Update
CEGH Green Hydrogen 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"> Over 24 hours optimized average baseload H2 Delivery 	<ul style="list-style-type: none"> Daily
CEGH Green Hydrogen 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"> Monthly, Quarterly, Seasonal and Yearly Products Baseload delivery 	<ul style="list-style-type: none"> Daily
CEGH Green Hydrogen PPA 40 Index	 <ul style="list-style-type: none"> 40% of green power (renewable PPA) and 60% “grey” power (forward) Sourcing of guarantees of origin via exchange / platforms 	<ul style="list-style-type: none"> 10 Year Baseload H2 	<ul style="list-style-type: none"> Daily
CEGH Green Hydrogen PPA 100 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 Year Baseload H2 	<ul style="list-style-type: none"> Daily

Access to CEGH GreenHydrogen Indices is Provided by Using CEGH's existing Website



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CEGH GreenHydrogen Indices

Publication date: 15-Nov-2022

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CEGH GreenHydrogen PPA 100 Index

Delivery Period	EUR/MWh
10-Year Baseload	107.000

CEGH GreenHydrogen PPA 40 Index

Delivery Period	EUR/MWh
10-Year Baseload	104.000

CEGH GreenHydrogen Spot Index

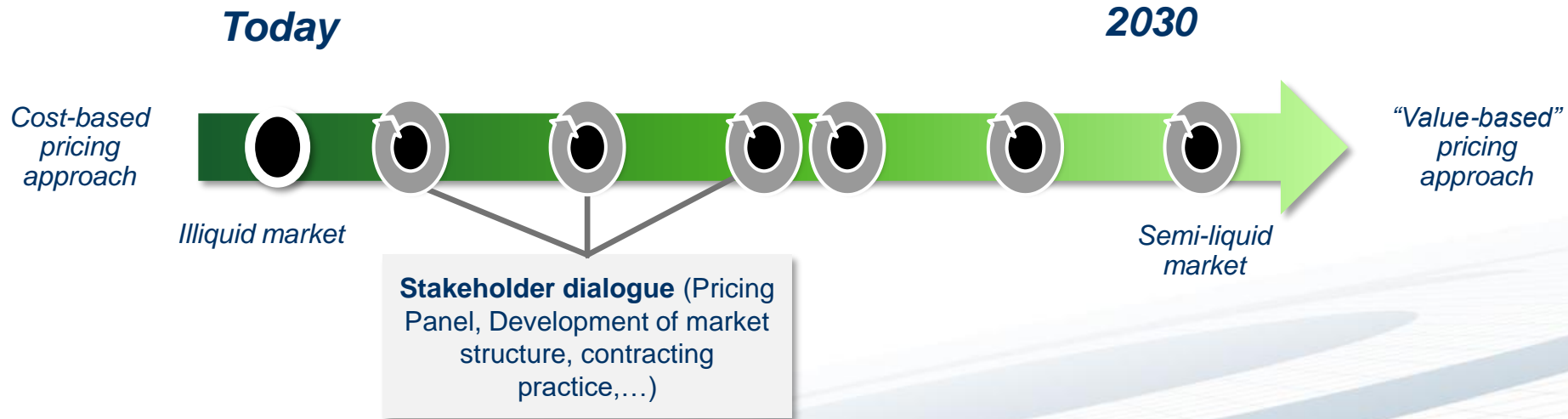
Delivery Period	EUR/MWh
15-Nov-2022	106.000

CEGH GreenHydrogen Forward Index

Delivery Period	Maturity	EUR/MWh
Dec 2022	Month +1	99.000
Jan 2023	Month +2	103.000
Q1 2023	Quarter +1	103.000
Summer 2023	Season +1	100.000
Winter 2023	Season +2	100.000
Calendar 2023	Calendar +1	107.000
Calendar 2024	Calendar +2	105.000
Calendar 2025	Calendar +3	108.000



Ongoing Stakeholder Dialogue Ensures Continuous Alignment of Index Design to Evolving Hydrogen Market



**Thank you very much
for your attention**

