



#### A YEAR OF CHANGE



#### New Shareholder

A successful capital raise of € 110m completed in March created the foundation for our growth plan through 2026. For the first time, a capital fund invested significantly in the public hydrogen refuelling infrastructure.



#### **New Positioning**

A new company contract allowed us to reposition the company with a focus on 350bar truck and bus refuelling, and commercial customers. With 700bar car refuelling available at all stations/HRS, we also keep the option of serving passenger cars and light commercial vehicles.



#### **New Hires**

We were able to hire excellent people, thereby strengthening our team of passionate experts - mainly in the fields of business development, engineering, and operations.

### **MILESTONES 2022**



€110m additional investment confirmed by new and existing investors



8 new HRS opened



3 smart dispensers for additional 350bar



93,2% availability



342,000kg H2 refuelled



**30.2% green H2** 



21,619 monthly active H2.LIVE users

(as of: 12/2022)



# **01 SETCARD** SAFETY

# ACHIEVEMENTS 2022

YEAH 2022

- 1 Emergency response procedure testing and one safety day
- 6 Newsletters
- 5 Trainings (+ driver safety training for every employee)

# STRATEGY 2023

- » Safety Council
- » Emergency response procedure testing
- » Newsletter
- » Safety day trainings
- » Learning from others
- » Exchange with industry

# OPPORTUNITIES & RISKS

- » New HRS operators in the market without experience: the expected lack of availability, poor performance, and bad service might be blamed on H2 MOBILITY.
- » Any accident at any HRS will have an effect on the H2 ramp-up.

01 Safety

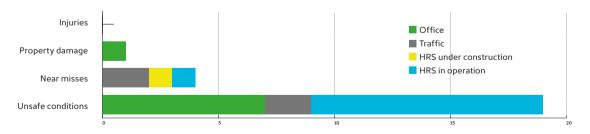
### **INCIDENT ANALYSIS AND TRAINING**





Emergency notification system

- » Rules of conduct as well as a safety plan and newsletter have been implemented.
- » Safety day training program was offered.
- » Emergency Response Procedure-Test was hold.



Most frequent incidents in 2022 were data and IT security (phishing-mails) related, gas alarms or near road accidents.



# **02 SETCARD** PROJECTS & ROLLOUT

ACHIEVEMENTS 2022 YEAH 2022

- 4 HRS with 700 and 350bar built
- 4 HRS 700bar built
- 3 Smart Dispensers added

STRATEGY 2023

### What are we building for?

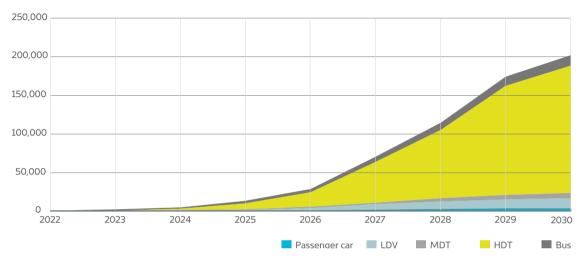
- » Ramp-up commercial vehicles with the target for 350bar being: 120 by 2025/26
- » Ramp-up passenger cars 700bar
- » Implementation of focus regions

OPPORTUNITIES & RISKS

### **Growing competition**

- » Supply bottlenecks and price trends
- » Competition for locations
- » Funding

### **MARKET RAMP-UP**



- » Buses and MDV with 350bar refuelling will be the key growth driver for hydrogen mobility and therefore the main focus for H2 MOBILITY for the next 5 years.
- » Nevertheless, H2 MOBILITY will continue to build for cars and LDV and will prepare for the emerging market of Long Haul.

H<sub>2</sub> (kg) demand 2022 – 2026

#### FIRST AVAILABLE REGIONAL HAUL H2-VEHICLES





Busses e.g. Solaris, VanHool, Toyota Caetano (left picture), ARTHUR BUS (right picture) and soon also from Daimler and Hyundai.



Trucks e.g. Hyundai (picture), Clean Logistics, soon also from Hyzon, MAN, Daimler.

# All regional haul vehicles today use 350bar for refuelling, with big advantages:

Refuelling hydrogen with 350bar is 1 to  $2 \in /kg$  cheaper than 700bar due to the lower cost to serve. Therefore parity with battery-electrical vehicles is possible.

350bar is robust. Compared to the more complex 700bar technology, it has a significantly higher availability and performance.

The 350bar network is a good basis for the introduction of 700bar vehicles.

For the future introduction of hydrogen in long haul transport, a pan-European network is necessary.

### IMPLEMENTATION OF FOCUS REGIONS FOR NETWORK EXPANSION



#### Secured demand

from identified customers in the region

#### **Customer requirements**

in line with H2M's capabilities

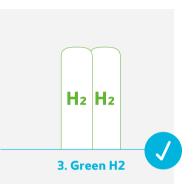


### **Existing network**

to strengthen new and existing HRS

#### **Optimised maintenance**

through regional bundling



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Creation of a market for **green H2** 

Transferability of regional demand to new stations

Basis for a strong **nationwide network** 

### **EXPANSION STRATEGY WITH FOCUS ON 350BAR INCLUDING 700BAR**

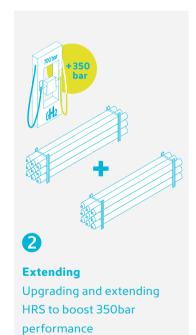
H2 MOBILITY will operate a 350bar (+ 700bar) network for MDV and HDV applications concentrated in focus regions, countrywide with more than 120 refuelling points by 2026.

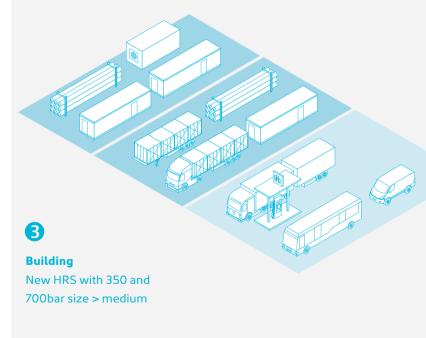




#### **Enabling**

Adding 350bar capability to our existing 700bar network





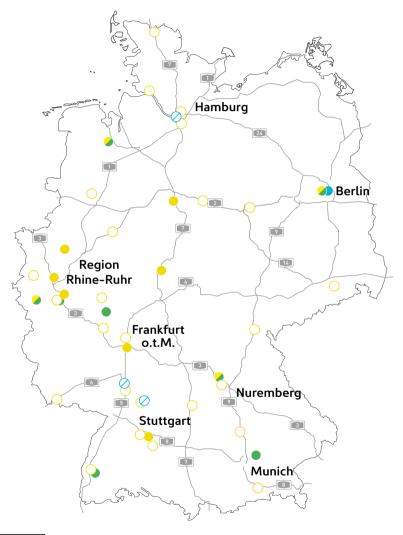
built 5/2022 & planned 5/2023

Expansion strategy 2023-2026: built 3/2022 & planned 20/2023

built 3/2022 & planned 4/2023



### **PROJECTS 2022 & 2023**



- 4 New HRS 700bar in operation
  Wesseling, Kirchheim, Freiburg, Landshut
- New HRS 700bar in planning
  Berlin Rummelsburger Landstraße
- 4 New HRS 350+700bar in operation Oldenburg, Berlin Tempelhofer Weg, Düren, Erlangen
- 3 New HRS 350+ 700bar in planning HH Schnackenburgallee, Mannheim, Heidelberg
- 8 New 350bar Smart Dispensers + Extension Storage in operation Düsseldorf Oerschbachstraße, Frankfurt Hanauer Landstraße, Frechen, Herten, Köln-Bonn Flughafen, Laatzen, Lohfelden/Kassel, Stuttgart Flughafen
- 25 New 350bar Smart Dispensers + Extension Storage in planning

Bad Homburg, Bad Rappenau, Berg bei Hof, Braunschweig, Brunsbüttel, Dresden, Freiburg, Fürth, Handewitt, Hasbergen, HH Flughafen, HH Großmoorbogen, Hirschberg, Heidelberg, Ingolstadt, Irschenberg, Limburg, Magdeburg, Metzingen, Mönchengladbach, Rheda-Wiedenbrück, Siegen, Saarbrücken, Sindelfingen, Wesseling



### **NEW PARTNERSHIPS**

### In 2022, important strategic partnerships were concluded with, among others:

- » Hylane, with greater 250t/a demand potential
- » Toyota Material Handling, with potential in leveraging Toyota MH's sales force capacity, access to attractive locations, and base-load potential





Hylane

Toyota Material Handling



03 Driving with hydrogen

### **H2 MOVES BERLIN - 200 MIRAI FLEET**



200 Mirai in Berlin by summer 2023

> H2 MOBILITY has played a key role in promoting the cooperation between Toyota, ennoo and Anglo American "H2 moves Berlin": Uber now offers users to book hydrogen-powered Toyota Mirai. 200 Mirai will be available in Berlin by summer 2023.

03 Driving with hydrogen

### **OPEL VIVARO-E HYDROGEN**



The latest addition to the H2 MOBILITY fleet is the new Opel Vivaro-e HYDROGEN, a panel van that is used by Operations. Or to take our colleague Nora kite surfing!

The van became the first four-weel star in our new 'Fascinated by...' film series, in which H2 MOBILITY is introducing team members, also to support recruiting.

Watch Nora's film on YouTube

» FASCINATED BY THE WIND

03 Driving with hydrogen

#### **CLIMATE NEUTRAL MOBILITY FOR RENT**





Hylane will be using the first co-branded H2 MOBILITY refuelling card

Simply select the vehicle of your choice and have it made available for rent, including registration, service and maintenance, insurance and discounted access to hydrogen at H2 MOBILITY filling stations - that is the offer from Hylane, a DEVK subsidiary. The Hyundai XCIENT Fuel Cell can already be booked. The Hyzon HyMax-250 in two variants, MAN FRAMO FC 260/280, Daimler Actros HyBatt will follow. The first 44 hydrogen trucks are expected to be on the road by summer 2023.

On 17 November, the first Hylane truck was presented at the BMDV conference on climate-friendly commercial vehicles. The first Hylane truck is also the first registered Hyundai XCIENT Fuel Cell in Germany.



# **04 SETCARD** OPERATIONS

YEAH 2022

# ACHIEVEMENTS 2022

342t H2 demand – in 2022 nearly doubled!

93,2% Availability

91,8% Performance

#### **STRATEGY**

### How will we be operating?

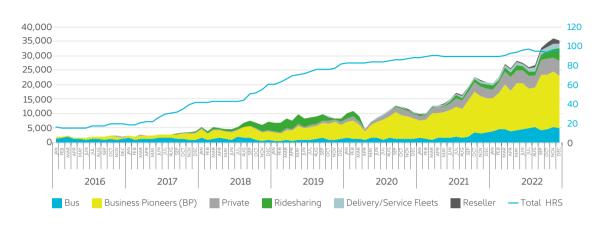
- » Exchanging and refitting of technology for better availability/performance
- » 100% green H2 at all H2 MOBILITY stations by 2028

# OPPORTUNITIES & RISKS

# Pending decisions and energy price uncertainties

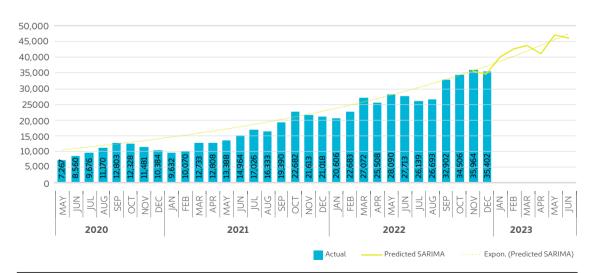
- » Delegated Act (RED II): pending definition of "Green H2"
- » Energy price development, impact on the price of H2
- » Green hydrogen production ramp-up

### **SELLING HYDROGEN**



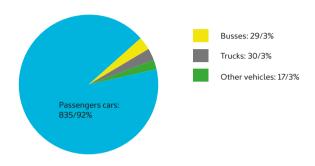
2022: H2 demand at H2 MOBILITY stations has nearly doubled (2021: 191t / 2022: 342t)

Demand H2 (kg) per customer segment at H2 MOBILITY stations



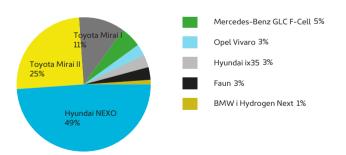
Monthly sales will increase to 45t/month in the first two quarters of 2023. This means that the line slope has increased more than sixfold in the last 38 months. 04 Operations 25

### **SELLING HYDROGEN**



- » 2022 the Hyundai NEXO and the Toyota Mirai II were the driver of demand
- » Due to a successful campaign Hyundai sold > 300 NEXO in August 2022

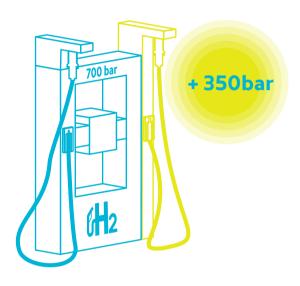
New registrations by class in 2022





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#### **SMART DISPENSER**



Smart dispensers installed: 3 in 2022, to be installed: 20 in 2023

#### In 2022, 18 H2 MOBILITY operators ...

- » took 50 to 120 calls/day
- » carried out 800 maintenance operations
- » replaced 60 fuelling couplings
- » achieved 20% energy savings in Leverkusen, Weiterstadt, and Heidelberg by replacing chillers
- » installed three 'smart dispensers' to existing 700bar facilities – the quick, low-cost H2 MOBILITY solution for 350bar refuelling with simple approval procedures

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### **H2 MOBILITY INVENTION**



#### New metering device

In 2022, H2 MOBILITY calibrated a number of stations in the Netherlands.



The H2 MOBILITY metering device allows for calibrating stations during ongoing operation  $\dots$ 

... instead of being out of operation for days.



# **05 SETCARD** DIGITAL BUSINESS

ACHIEVEMENTS 2022

YEAH 2022

#### **New features**

- » Trip planner: Plan and navigate a trip and easily make decisions about refuelling
- » Utilisation diagram and storage information: Avoid congestion at HRS

### Diversification of payment options

- » Payment via DKV for 700bar vehicles
- » Digital payment via ryd app
- » Co-branded fuel cards for Hylane and H2 delivery

# STRATEGY 2023

#### What will H2.LIVE become?

- » Connect the dots: Tackle the supply and demand problem by integrating existing H2.LIVE features
- » Seamless digital payment: Authenticate and pay with the H2.LIVE app
- » Better data, better decisions: Integration of vehicle-related data to improve refuelling decisions

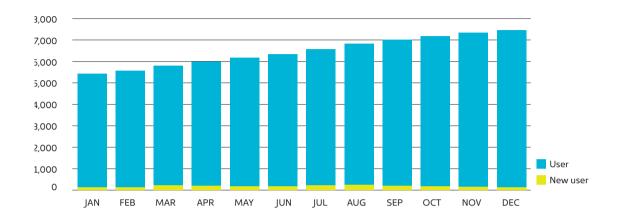
# OPPORTUNITIES & RISKS

# Building a digital eco-system for hydrogen mobility in Europe

- » Set API standards together with plant manufacturers and OEM
- » Partnerships with OEM for better data availability
- Expand the strong relationships with other HRS operators and put all new HRS in Europe on the map
- » Enable digital payment at all HRS in Germany and plan the European roll-out

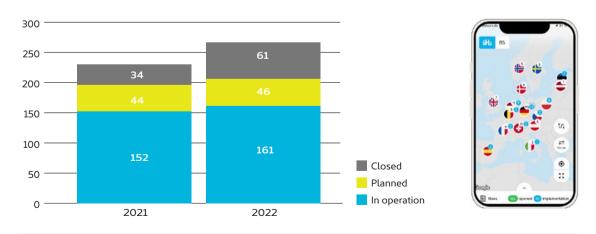
### **H2.LIVE APP 2022**

- » 2022 the number of registered user has increased by 27%.
- » Average of more than 21,000 monthly active users on the website and app in 2022.



H2.LIVE App registered

» The number of stations mapped on H2.LIVE has increased by 117%.

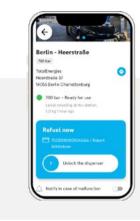


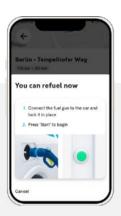
Numbers of stations on H2.LIVE



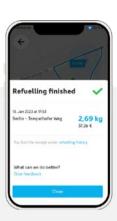
## **NEW FEATURES 2022 (EXTRACT)**



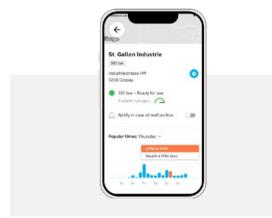








350 bar layer



Activation of fuel pump



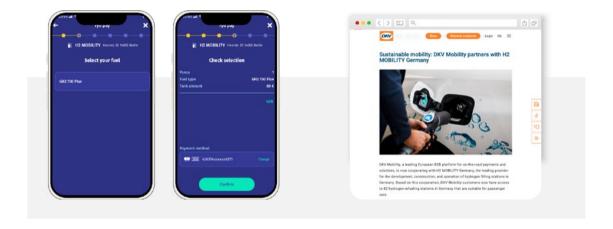






Slot manager Trip planner

### **INTEGRATION OF OTHER PAYMENT PROVIDERS**



Integration e.g. of DKV, ryd, Mastercard, Shell Card

In 2022, H2 MOBILITY has entered into cooperation agreements with various payment providers to make more barrier-free refuelling and payment options for hydrogen possible.

### **H2 OPERATOR APP AND OPERATOR NEWSLETTER**

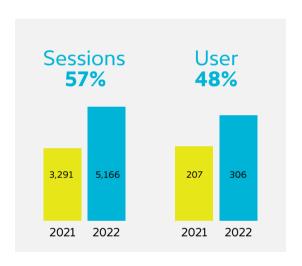
# Helpful tools and information for all HRS operators in Europe





Free H2.LIVE operator app

» Operator newsletter



H2 Operator usage 2022 vs 2021



06 WOCHE DES WASSERSTOFFS

#### **WOCHE DES WASSERSTOFFS 2022**

- » 25 June to 3 July 2022
- » Projects and activities around hydrogen (all sectors)
- » In 56 cities and communities in southern Germany (live and digital)
- » Target groups: Interested public, business and politics, press
- » Free events to experience, try out and discuss, such as opening ceremonies, open days, tours, test drives, presentations, webinars, films etc.
- » Initiated by H2 MOBILITY with the support of various partners (including e. g. NOW - National Organisation Hydrogen and Fuel Cell Technology, e-mobil BW, H2.B)

#### For example, the WDW in Erlangen

#### H2 City Tour with hydrogen bus shuttle

- » From the town hall square, with information booths, stage show by H2.B, NürnbergMesse and H2 MOBILITY, and exhibition of various H2 vehicles such as the new BMW ix5 and the Opel Vivaro-e HYDROGEN ...
- » to the Erlangen hydrogen filling station, where the focus was on the H2 filling station infrastructure, H2 in public transport, electrolysis and LOHC storage technology ...
- » to the Südgelände, where, among others, the Helmholtz Institute and the Fraunhofer Institute for Integrated Systems offered various presentations and hands-on activities.



Hydrogen refuelling station in Erlangen



H2 City Tour Erlangen with hydrogen bus shuttle



Activities at the town hall square

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### **MANY FILMS FOR THE EVENT**



#WDWS2022

Find all WOCHE DES WASSERSTOFFS films on our » YouTube channel.



Five ministers on the launch of the WDWS



Linde on the H2 value chain



CEP and DWV on the importance of hydrogen as an energy storage medium



About the new Opel Vivaro-e HYDROGEN



Refuelling hydrogen at the new station in Erlangen



Hydrogen projects by EIFER + Steinbeis Europa Zentrum

Originally founded in February 2015 by the shareholders Air Liquide, Daimler, Linde, OMV, Shell and TotalEnergies (formerly known as TOTAL), H2 MOBILITY Deutschland is now the world's largest operator of hydrogen refuelling stations. Hyundai and Hy24 joined in 2021 and 2022 respectively.

#### Shareholders

















#### **Associated Partners**













#### **Funding**

















