Viessmann - Hydrogen for sustainable heating

17.11.2021

Alexander Ziehe

AGENDA

1. About Viessmann
2. Hydrogen in heating
3. Viessmann strategy
4. Partnership opportunities

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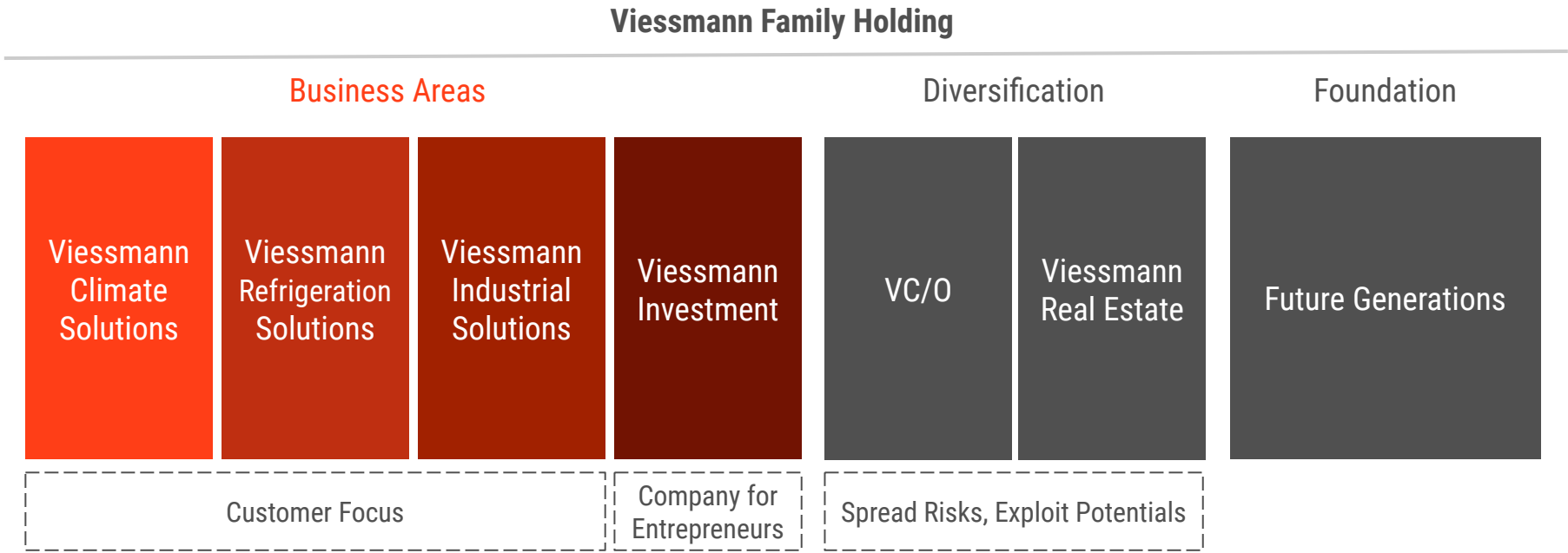
We are a family business

Independently owned, responsibly led, executing fast

Organisational Design:

Business Areas, Diversification, Foundation

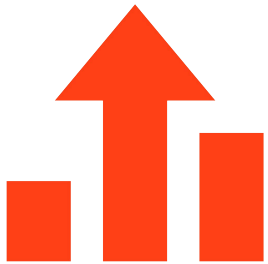


Our reach:

from 1992 to 2020 becoming a global family

> 120
sales offices
globally

> 20
manufacturing
sites globally



> 60%
growth
since 2009

> € 2.8 bn
turnover 2020

Das Integrierte Viessmann Lösungsangebot

The Integrated Viessmann Solution Offering

Dienstleistungen
Value Added Services

VIESMANN WÄRME · VISHARE · V+ · VITOLEADS · FörderProfi · ...

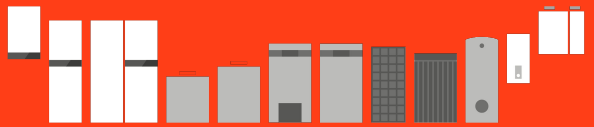
Digitale Services
Digital Services

ViCare · Vitoguide · ViStart · ...

Konnektivität & Plattformen
Connectivity & Platforms

Connectivity inside · Vitocontrol · wibutler · Vitoconnect · GridBox · ...

Produkte & Systeme
Products & Systems



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Climate goals

= Natural gas phase-out

Energy transition

= Green gas phase-in

Solution

= Hydrogen!

Why hydrogen in heating?

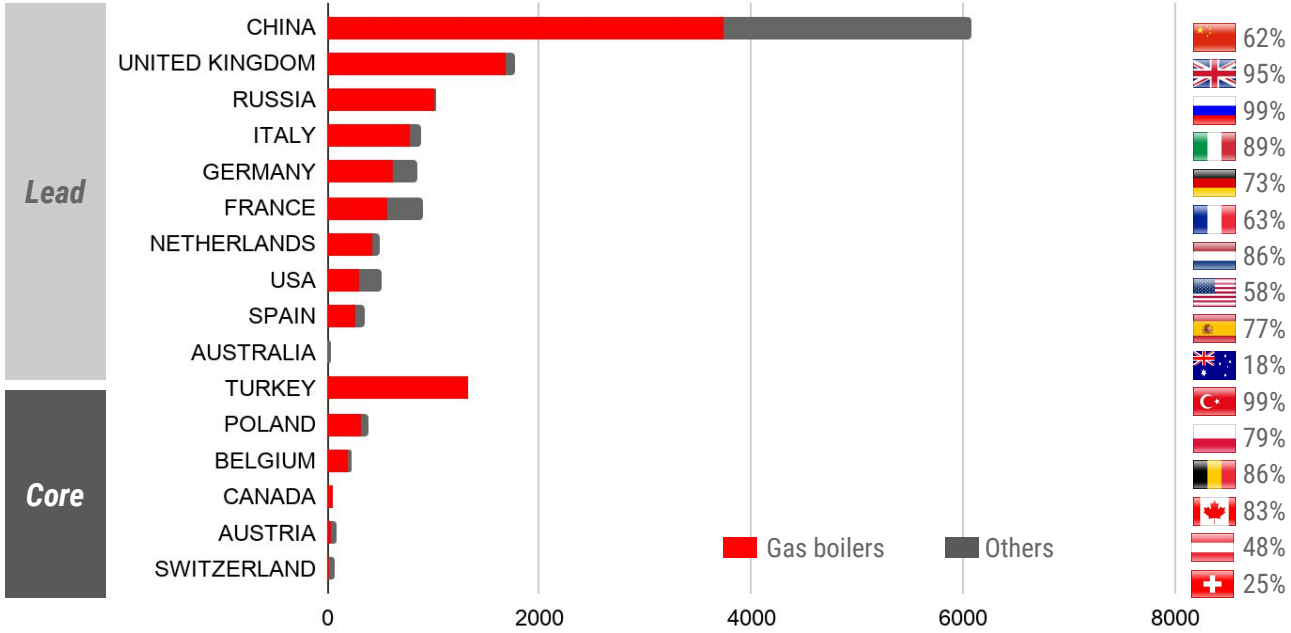
1. Additional value-adding option to decarbonize buildings
2. Balanced building renovations rates and increased social acceptability

3. Optimized energy system
4. Quick ramp-up of the hydrogen market - across sectors

Market relevance

Gas boilers accounted for 75% of major markets in 2020

Share of gas boilers[1] of total market (2020 - in K units)



Comments

- Gas-based heating devices today dominating across markets
- Decarbonized solutions required due to regulatory pressure
- Two main options:
  - Alternative devices (heat pumps, renewable energy)
  - **Decarbonized gases, e.g. hydrogen**

Includes Floor Standing Gas Cond, Floor Standing Gas Non Cond, Wall Hung Gas Cond, Wall Hung Gas Cond on Floor Std Cylinder, Wall Hung Gas Non Cond / Source: BRG data

Costs: Hydrogen production costs are expected to reduce significantly by 2030

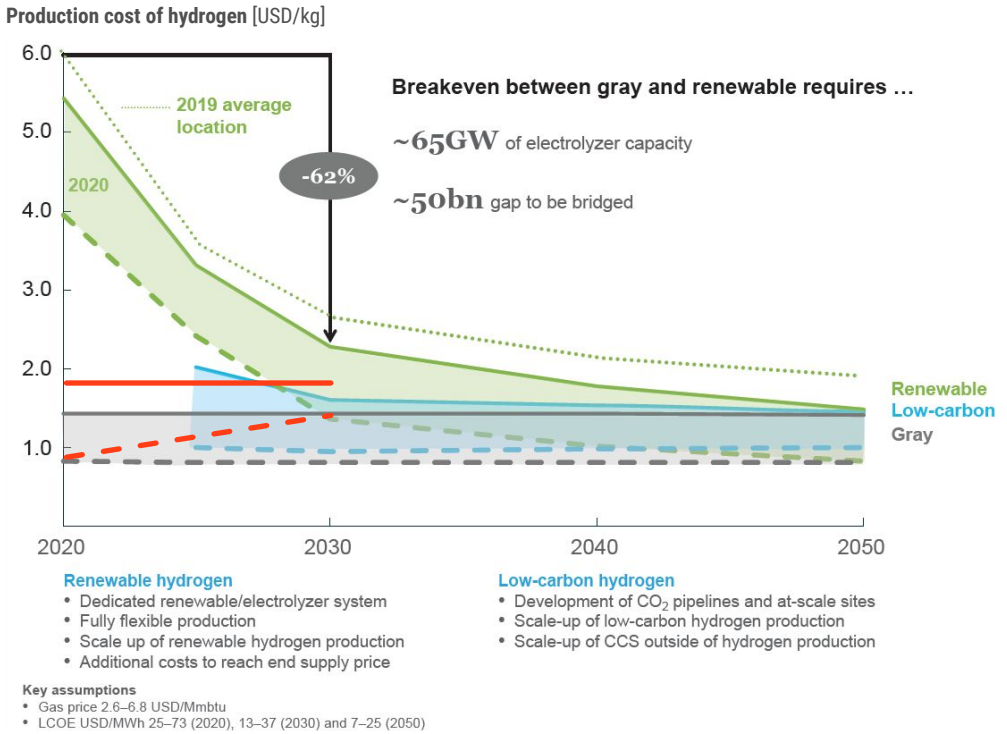
Hydrogen production costs are declining faster than previously thought

60%

production cost reduction projected for renewable hydrogen by 2030 vs. 2020 baseline

Hydrogen Insights Report 2021
Hydrogen Council, McKinsey & Company

Hydrogen production costs by production pathway



Source: McKinsey & Company: Hydrogen Insights, A perspective on hydrogen investment, market development and cost competitiveness, February 2021

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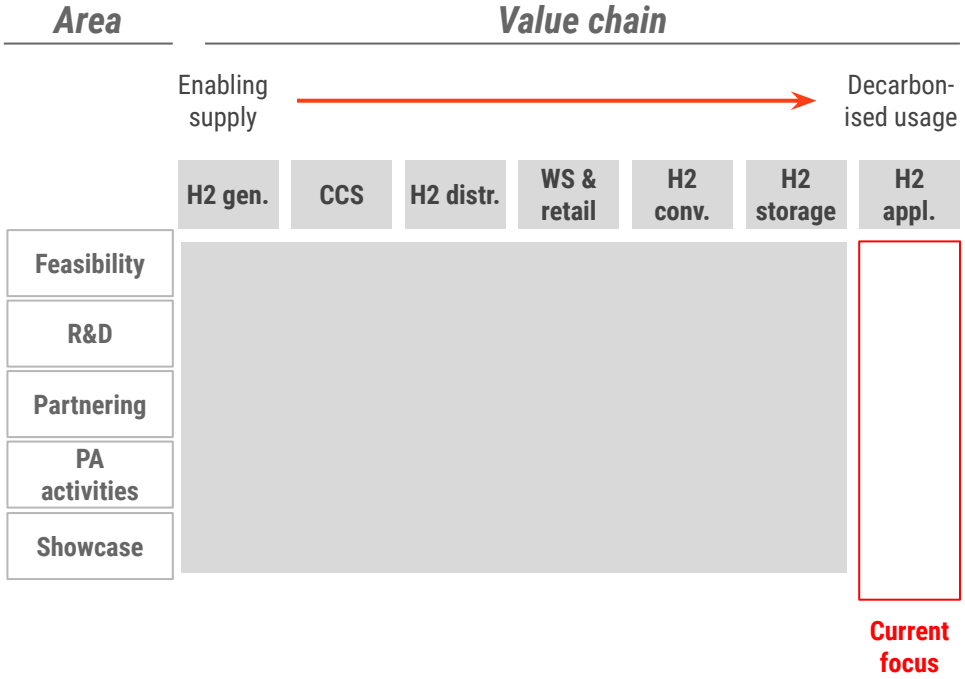
Opportunities

Opportunities evaluated across the entire hydrogen value-chain



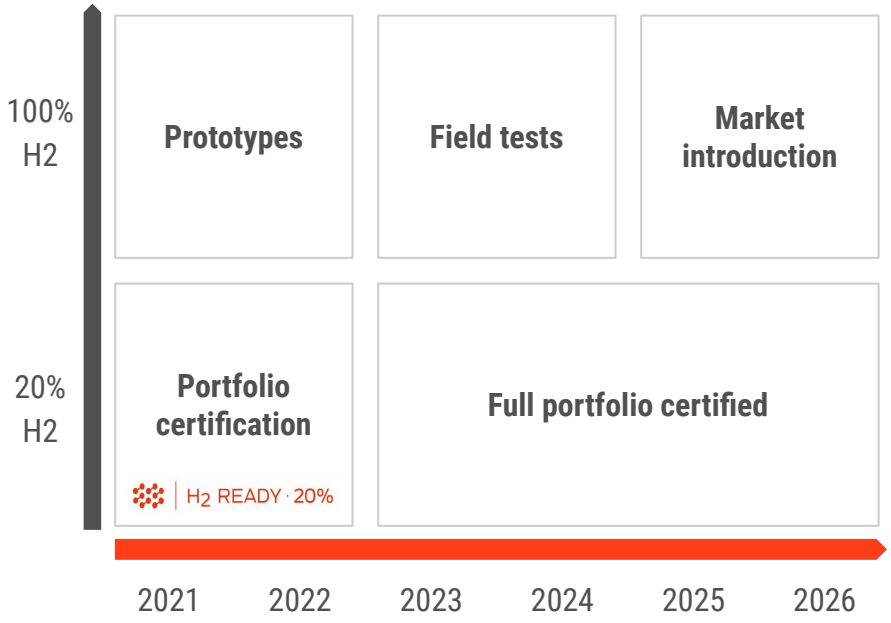
Use cases in focus

		Combustion[1]	CHP	Fuel Cells
Commercial	Energy intensive industries	✔		
	District heating/ process heat	✔	✔	✔
	Municipal housing projects	✔	✔	✔
	Office buildings	✔	✔	✔
	Public sector build.	✔	✔	✔
Residential	Apartment buildings	✔	✔	✔
	Family houses	✔		✔
	Single apartments	✔		

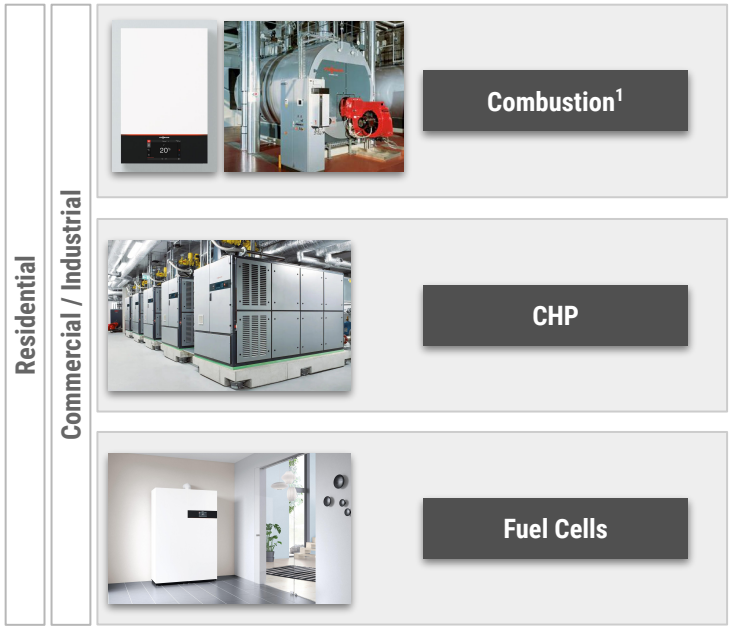
1. Incl. hybrid solutions

H2 in Buildings: At Viessmann, we are making our entire gas-based heating product portfolio 100% H2-ready

Journey to H2-Readiness



Gas-based Portfolio becoming H2-Ready



1. Incl. hybrid solutions

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Objectives

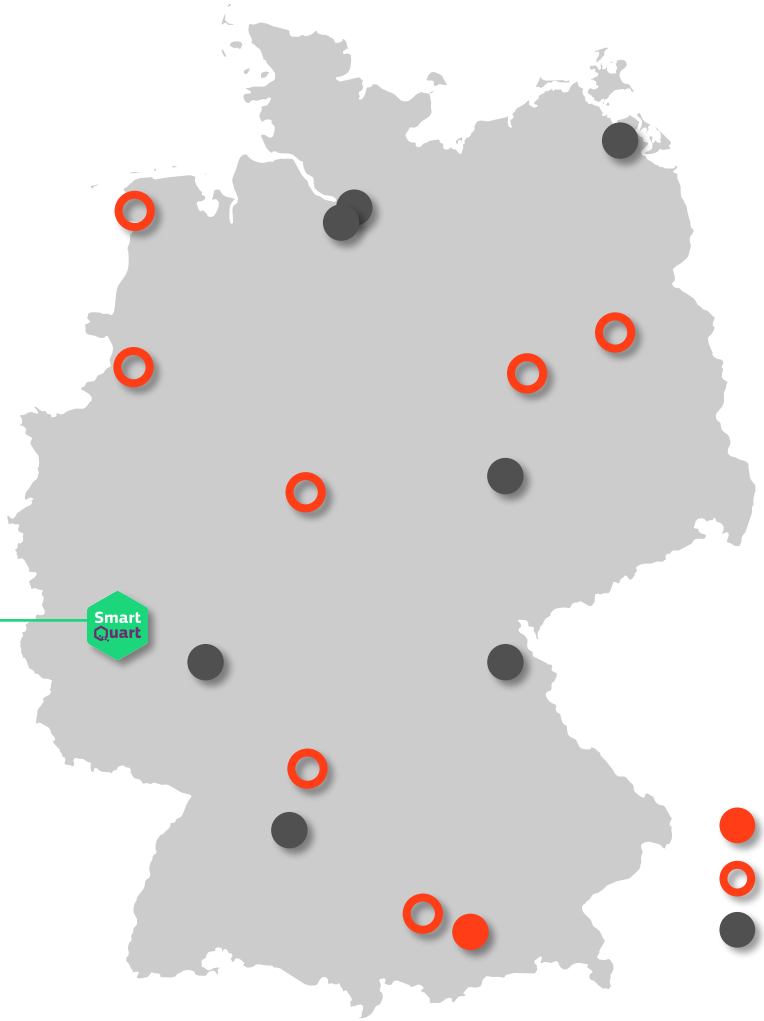
- Identify opportunities
- Forge partnerships
- Build showcases
- Promote H2 technology

Project SmartQuart

SmartQuart is one of the "Living labs of the energy transition"

Selected by the Federal Ministry of Economics and Energy

One of the key demonstration projects of the German energy transition



Realized H2 projects with Viessmann participation

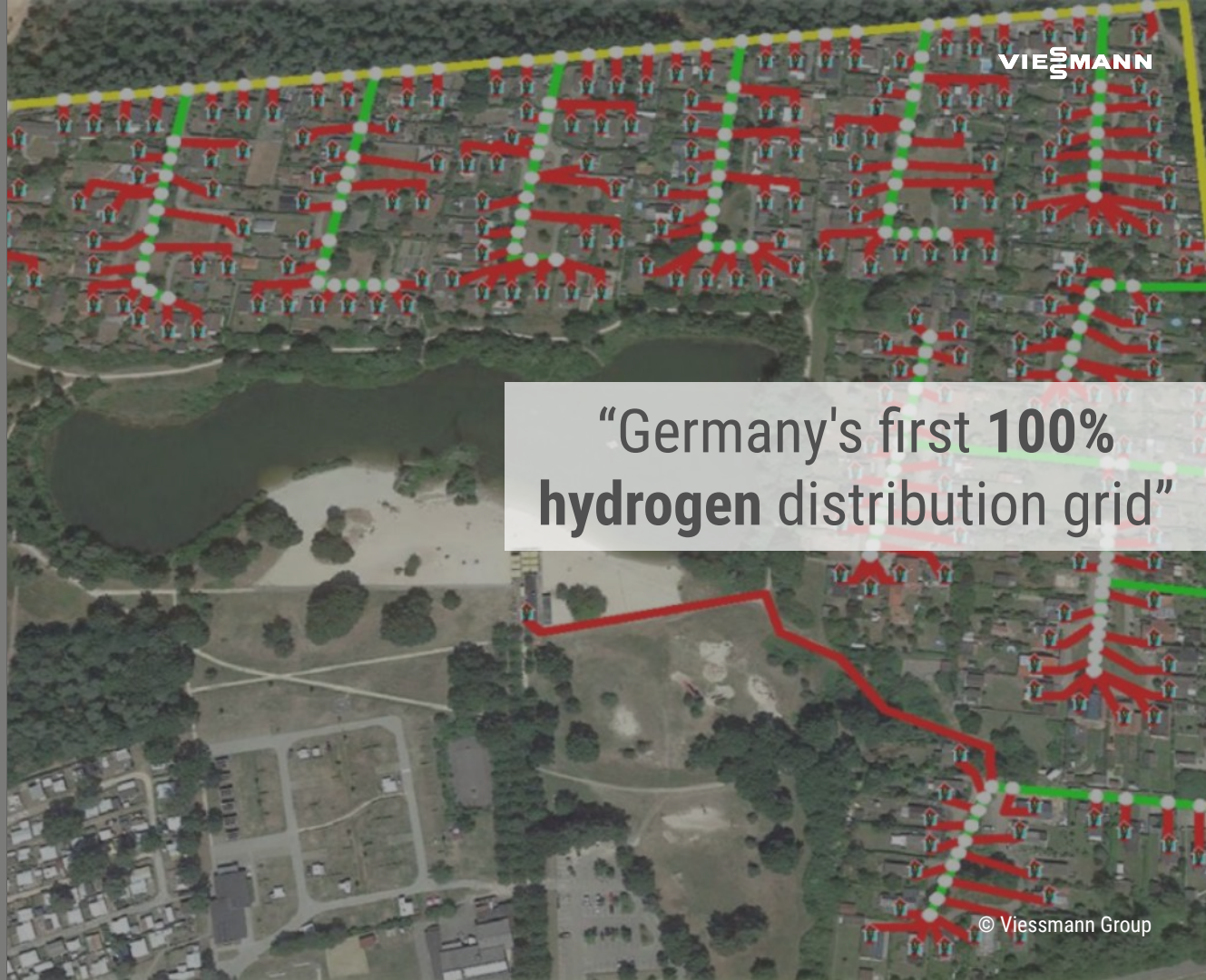
Planned H2 projects with Viessmann participation

Other H2 projects

Source: SmartQuart Project, Viessmann

Project example

- Consortium: Viessmann & energy utility / grid provider
- Gas grid transformation
- 100% green H2
- 60-80 homes
- 100% H2-ready devices: Vitodens & Vitovalor
- 2022-2024




VIESMANN
Let’s co-create living spaces for generations to come!

Visit our Content Hub on https://viessmann.family/hydrogen for information, proof points, downloads, videos and much more on H2