KNOWLEDGE TRANSFER FROM THE DEMONSTRATOR TO THE REPLICATOR SITES IN EUROPE

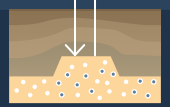
EU STARS H_2

REPLICATOR NETHERLANDS

Hydrogen backbone → Hydrogen backbone

Q_{in}: 175 kNm³/h | Q_{out}: 350 kNm³/h

D: 2750 m
Th: 100 m



P_{H2}: 150-250 bar
P_{min}: 10 P_i: 300 bar

T: 107 °C | **GIIP:** 5700 Mm³ | **H_2 WV:** 1076 Mm³

Equivalent to electricity for 1 million Dutch households ≈ Amsterdam + Rotterdam + The Hague*

THE NETHERLANDS

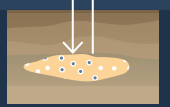
POLAND

REPLICATOR HUNGARY

Hydrogen grid/Electrolyzer → Grid/Local power generation

Q_{in}: 40 kNm³/h | Q_{out}: 50 kNm³/h

D: 1170 m
Th: 10 m



P_{H2}: 90-130 bar
P_{min}: 70 P_i: 115 bar

T: 83 °C | **GIIP:** 222 Mm³ | **H_2 WV:** 45 Mm³

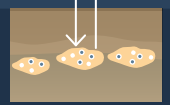
Equivalent to electricity for 65,000 Hungarian households ≈ Szeged*

REPLICATOR SPAIN

Hydrogen grid → Hydrogen grid

Q_{in}: 71 kNm³/h | Q_{out}: 71 kNm³/h

D: 840 m
Th: 22 m



P_{H2}: 40-80 bar
P_{min}: 20 P_i: 82 bar

T: 60 °C | **GIIP:** 300 Mm³ | **H_2 WV:** 155 Mm³

Equivalent to electricity for 170,000 Spanish households ≈ Bilbao*

AUSTRIA

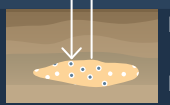
HUNGARY

REPLICATOR AUSTRIA

Electrolyzer/Grid → Grid

Q_{in}: 38 kNm³/h | Q_{out}: 52 kNm³/h

D: 630 m
Th: 8 m



P_{H2}: 35-70 bar
P_{min}: 10 P_i: 70 bar

T: 30 °C | **GIIP:** 340 Mm³ | **H_2 WV:** 100 Mm³

Equivalent to electricity for 100,000 Austrian households ≈ Linz*

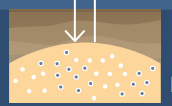
SPAIN

DEMONSTRATOR RUBENSDORF

Electrolyzer → CHP/Natural gas grid

Q_{in}: 0.4 kNm³/h | Q_{out}: 0.6 kNm³/h

D: 1100 m
Th: 2 m



P_{H2}: 30-70 bar
P_{min}: 22 P_i: 107 bar

T: 34 °C | **GIIP:** 10 Mm³ | **H_2 WV:** ~1 Mm³

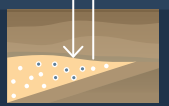
Equivalent to electricity for 1,000 Austrian households ≈ Hallstatt*

REPLICATOR AUSTRIA

Electrolyzer/Grid → Grid

Q_{in}: 60 kNm³/h | Q_{out}: 90 kNm³/h

D: 1030 m
Th: 5 m



P_{H2}: 35-90 bar
P_{min}: 8 P_i: 90 bar

T: 40 °C | **GIIP:** 420 Mm³ | **H_2 WV:** 175 Mm³

Equivalent to electricity for 175,000 Austrian households ≈ Graz + Leoben*

FUNDING

This project is supported by the Clean Hydrogen Partnership and its members.

Clean Hydrogen Partnership

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LEGEND

Q_{in} = injection flowrate
Q_{out} = production flowrate
D = depth
Th = thickness
GIIP = gas initially in place
T = temperature
PH_2 = hydrogen operating pressure range
P_{min} = minimum reservoir pressure
P_i = initial pressure
H_2 WV = hydrogen working volume
CHP = combined heat and power
UGS = Underground Gas Storage

This comparison is for illustration only, as the hydrogen will be mainly used in industry rather than households.