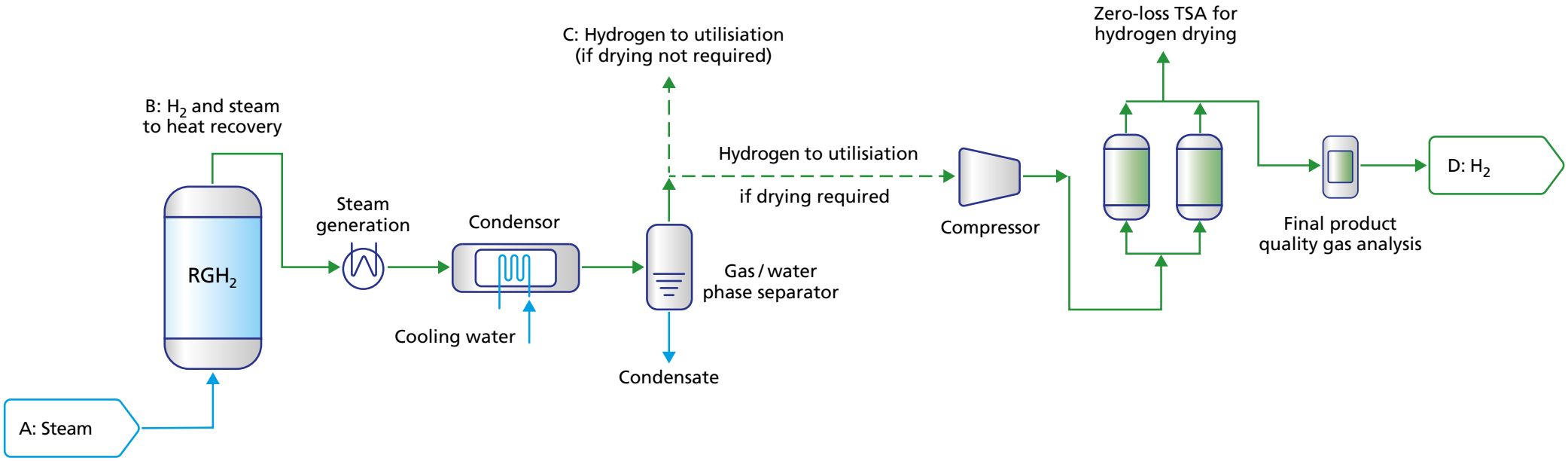
Stage 2: Steam oxidation and hydrogen production.
Oxidation of the RGH_2 oxygen-carrier with steam generated from heat produced by the RGH_2 process.

sbh4 consulting



Biogas / Landfill gas feed Stream	H_2 Mol%	H_2O Mol%	Temp °C
A: Steam to RGH_2	0	100	185
B: H_2 and steam to heat recovery	44	56	806
C: H_2 to utilisation or dryer	96	4	Ambient
D: High purity, dry H_2 product	99.99	Trace	Ambient

Key reactions in the RGH_2 plug-flow, iron-oxide chemical looping reactor

$6Fe + 6H_2O \leftrightarrow 6FeO + 6H_2$
$6Fe0 + 6H_2O \leftrightarrow 6Fe_3O_4 + 2H_2$

BFG / BOFG Feed Stream	H_2 Mol%	H_2O Mol%	Temp °C
A: Steam to RGH_2	0	100	150
B: H_2 and steam to heat recovery	43	57	737
C: H_2 to utilisation or dryer	96	4	Ambient
D: High purity, dry H_2 product	99.99	Trace	Ambient