

Corrigendum: The Future of Hydrogen: Assumptions Annex

Issued: June 2019

Link to report: <https://iea.blob.core.windows.net/assets/a02a0c80-77b2-462e-a9d5-1099e0e572ce/IEA-The-Future-of-Hydrogen-Assumptions-Annex.pdf>

On the top half of page 5, in the table “Ammonia (NH₃)” change the figures in first row of ‘Electrolysis’.

- Instead of 945, it should show 1160
- Instead of 855, it should show 885
- Instead of 760, it should show 575

Table before:

The Future of Hydrogen		Assumptions annex			
	Electricity consumption	GJ/tNH ₃	1.3	1.3	1.3
	Emission factor	kgCO ₂ /kgNH ₃	0.12	0.11	0.09
Coal	CAPEX	USD/tNH ₃	2 175	2 175	2 175
	Annual OPEX	% of CAPEX	5	5	5
	Coal consumption	GJ/tNH ₃	38.4	38.4	38.3
	Electricity consumption	GJ/tNH ₃	3.7	3.7	3.7
	Emission factor	kgCO ₂ /kgNH ₃	3.9	3.9	3.9
Coal w/CCUS	CAPEX	USD/tNH ₃	2 810	2 810	2 810
	Annual OPEX	% of CAPEX	5	5	5
	Coal consumption	GJ/tNH ₃	38.4	38.4	38.3
	Electricity consumption	GJ/tNH ₃	5.3	5.3	5.3
	Emission factor	kgCO ₂ /kgNH ₃	0.2	0.2	0.2
Biomass	CAPEX	USD/tNH ₃	6 320	6 320	6 320
	Annual OPEX	% of CAPEX	5	5	5
	Biomass consumption	GJ/tNH ₃	45.0	45.0	45.0
	Electricity consumption	GJ/tNH ₃	5.0	5.0	5.0
	Emission factor	kgCO ₂ /kgNH ₃	0.0	0.0	0.0
Electrolysis	CAPEX	USD/tNH ₃	945	855	760
	Annual OPEX	% of CAPEX	1.5 %	1.5%	1.5%
	Electricity consumption	GJ/tNH ₃	37.8	35.3	33.2
	Emission factor	kgCO ₂ /kgNH ₃	0.0	0.0	0.0

Notes: 25-year lifetime and 95% availability assumed for all equipment. CCUS options correspond to those capturing all emissions streams, and consider a 95% capture rate. The electrolysis route parameters include the electrolyser costs (see Hydrogen table). For major routes deployed, average energy performance is assumed today, tending towards best practice technology by 2050. Declining CAPEX/OPEX for CCUS options reflects the size of capture capacity required as the energy intensity improves. Emission factors correspond to net direct CO₂ emissions in the industrial sector.

Table corrected:

	Electricity consumption	GJ/tNH ₃	1.3	1.3	1.3
	Emission factor	kgCO ₂ /kgNH ₃	0.12	0.11	0.09
Coal	CAPEX	USD/tNH ₃	2 175	2 175	2 175
	Annual OPEX	% of CAPEX	5	5	5
	Coal consumption	GJ/tNH ₃	38.4	38.4	38.3
	Electricity consumption	GJ/tNH ₃	3.7	3.7	3.7
	Emission factor	kgCO ₂ /kgNH ₃	3.9	3.9	3.9
Coal w/CCUS	CAPEX	USD/tNH ₃	2 810	2 810	2 810
	Annual OPEX	% of CAPEX	5	5	5
	Coal consumption	GJ/tNH ₃	38.4	38.4	38.3
	Electricity consumption	GJ/tNH ₃	5.3	5.3	5.3
	Emission factor	kgCO ₂ /kgNH ₃	0.2	0.2	0.2
Biomass	CAPEX	USD/tNH ₃	6 320	6 320	6 320
	Annual OPEX	% of CAPEX	5	5	5
	Biomass consumption	GJ/tNH ₃	45.0	45.0	45.0
	Electricity consumption	GJ/tNH ₃	5.0	5.0	5.0
	Emission factor	kgCO ₂ /kgNH ₃	0.0	0.0	0.0
Electrolysis	CAPEX	USD/tNH ₃	1160	885	575
	Annual OPEX	% of CAPEX	1.5 %	1.5%	1.5%
	Electricity consumption	GJ/tNH ₃	37.8	35.3	33.2
	Emission factor	kgCO ₂ /kgNH ₃	0.0	0.0	0.0

Notes: 25-year lifetime and 95% availability assumed for all equipment. CCUS options correspond to those capturing all emissions streams, and consider a 95% capture rate. The electrolysis route parameters include the electrolyser costs (see Hydrogen table). For major routes deployed, average energy performance is assumed today, tending towards best practice technology by 2050. Declining CAPEX/OPEX for CCUS options reflects the size of capture capacity required as the energy intensity improves. Emission factors correspond to net direct CO₂ emissions in the industrial sector.