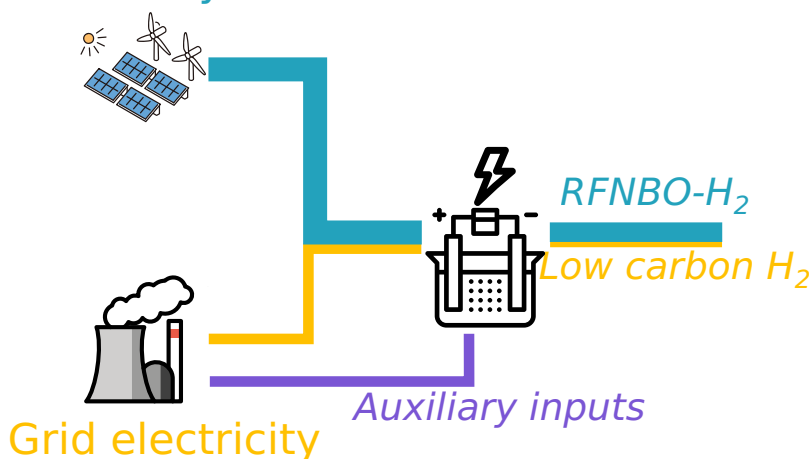


2: Fully renewable and grid electricity

How to average over different timeframes

Fully renewable electricity



Electrolyser running at 764 MW with fully renewable, directly connected electricity, complemented by grid electricity. Oxygen is vented.

This case study shows that until 2030, it is possible to choose between monthly averaging or hourly averaging. As an example, we show an example of both. We pick one hour with particularly low renewables to exemplify how the calculation has to be done.

Assumptions

Parameter	Symbol	Monthly averaging	Hourly averaging, low renewables
Efficiency of the electrolyser	η_{ely}	$(60\%$	
Relevant renewable electricity used	e_{ren}	(500 GWh)	(264 MWh)
Relevant grid electricity used	$e_{\text{grid_ely}}$	(50 GWh)	(500 MWh)