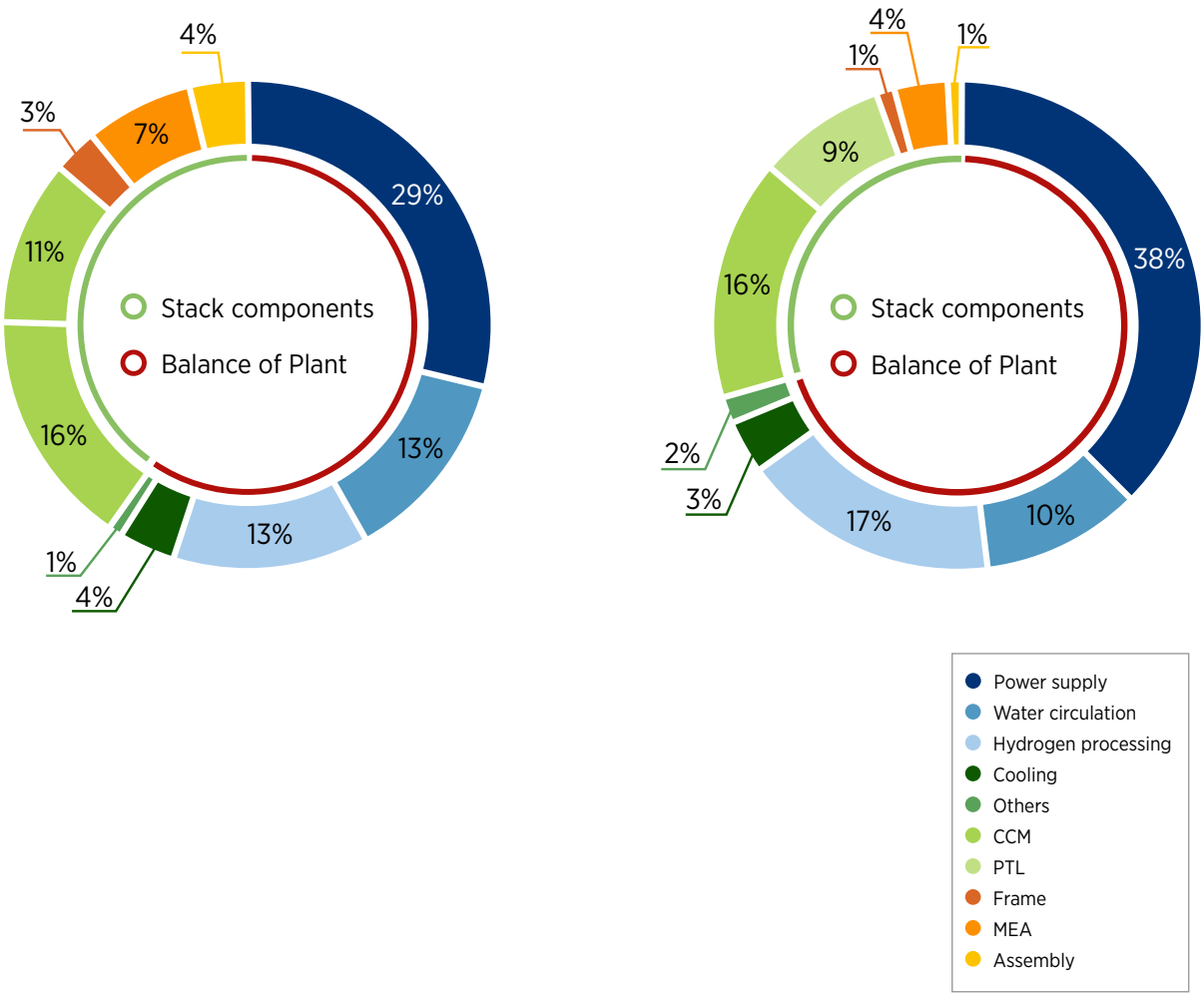
For the balance of plant, however, the cost reduction is smaller than for the stack. The same increase in production rate, from 10 MW/year to 1 GW/year, leads to a cost reduction of about 40% in the balance of plant. This means the balance of plant goes from about 55% of the total cost to almost 75% on a 1 GW/year scale (see Figure 28).

The largest cost reductions – of 50%-60% – can be achieved in the deionized water circulation and the cooling systems. These, however, are relatively small and the dominant costs of the power supply and hydrogen processing only reduce by about 30%.

Figure 28. Cost breakdown for PEM electrolysers for a (a) 10 MW/year; (b) 1 GW/year production scale.



Based on IRENA analysis based on Mayyas et al., 2019.