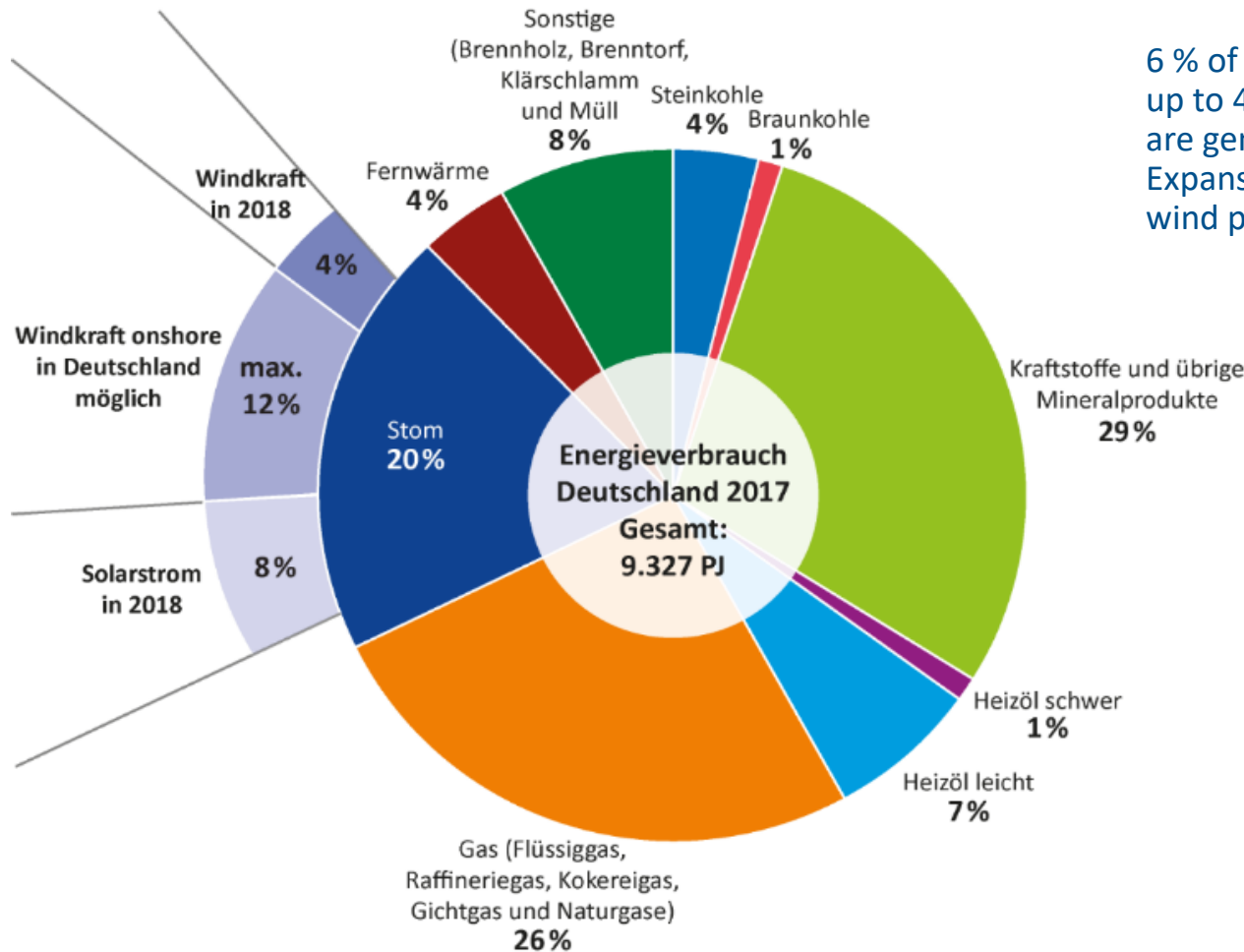


Sustainability and environmental protection – Economic perspective: energy consumption



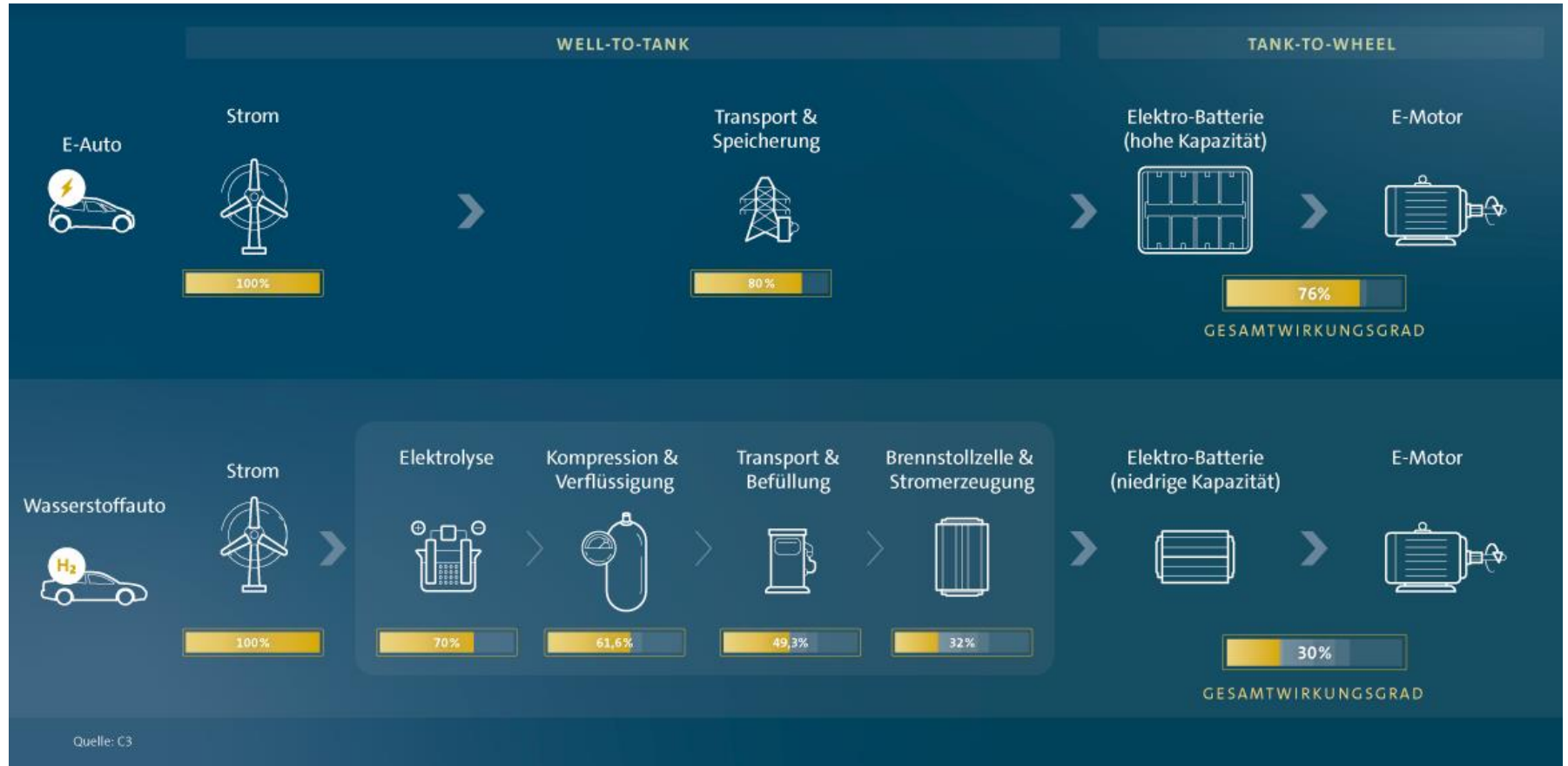
6 % of the total energy consumption and up to 40 % of the electricity consumption are generated from renewable sources! Expansion of approx. 25 % with offshore wind power is expected!

Quelle: Studie „Ein Strommarkt für die Energiewende Weißbuch – BMWi“; BMWi – BVWP, Ergebnispapier „Strom 2030“ des BMWi | Grafik links VDV

Battery and fuel cell

Efficiency- and profitability analysis

The efficiency levels in comparison to when ecological electricity is used



Quelle: www.volkswagenag.com

Battery and fuel cell – Buses with hydrogen fuel cell drive

- At the moment only fuel cell buses from Caetano, Van Hool and Solaris are available.
- Fuel cell buses from EvoBus will soon be available.



At the moment there are around 1000 e-buses and around 50 fuel cell buses in use in Germany.



Quellenangaben: Internetseiten der Hersteller

Conclusion

- Environmental legislation requires a significant reduction in emissions by 2030!
- The hydrogen infrastructure will not be established until 2030 at the earliest.
- The National Hydrogen Strategy only provides for the use of green hydrogen obtained from renewable energies through electrolysis.
- The demand for green hydrogen for which there are no alternatives, e.g. in the steel industry, shipping and aviation, will increase significantly.
- H2 technology is still at its early stages. There are few providers of e-buses with fuel cell drives and hardly any system expertise for fleet operation.
- Battery electric drives offer the lowest TCO values.
- Many requirements in public transport can be mapped with current and future batteries. This enables a short-term start to emission-free mobility. Bio and synthetic fuels (as low-emission fuel) as well as hydrogen for emission-free vehicles offer alternatives.