



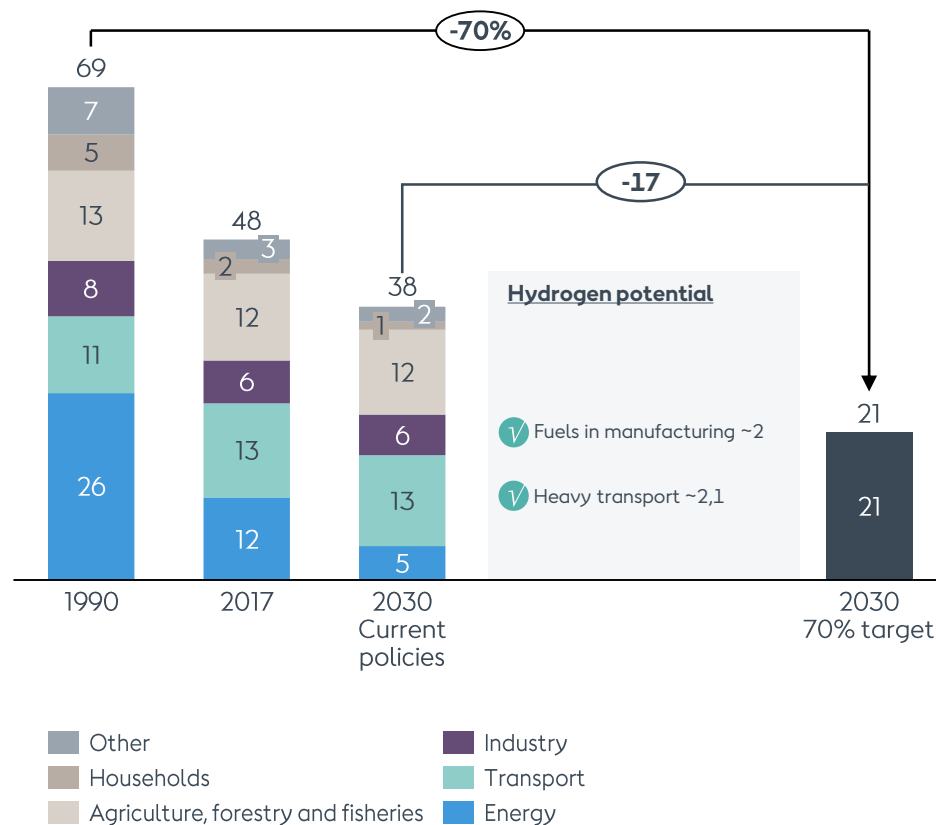
70% CO₂ reduction requires new tools

Wind Energy Denmark 2019

The starting point: 70% CO₂ emissions reduction

- Current policies and trends are not sufficient to reach the 70% target
- Current policies and trends are not expected to lead to any improvement in the transport sector
- There is a gap of ~17 MtCO₂e between what current policies and trends are expected to achieve, and what the 70% target aims at
- Direct electrification, where possible, is most often the most efficient solution; in harder-to-abate sectors, however, indirect electrification will be needed

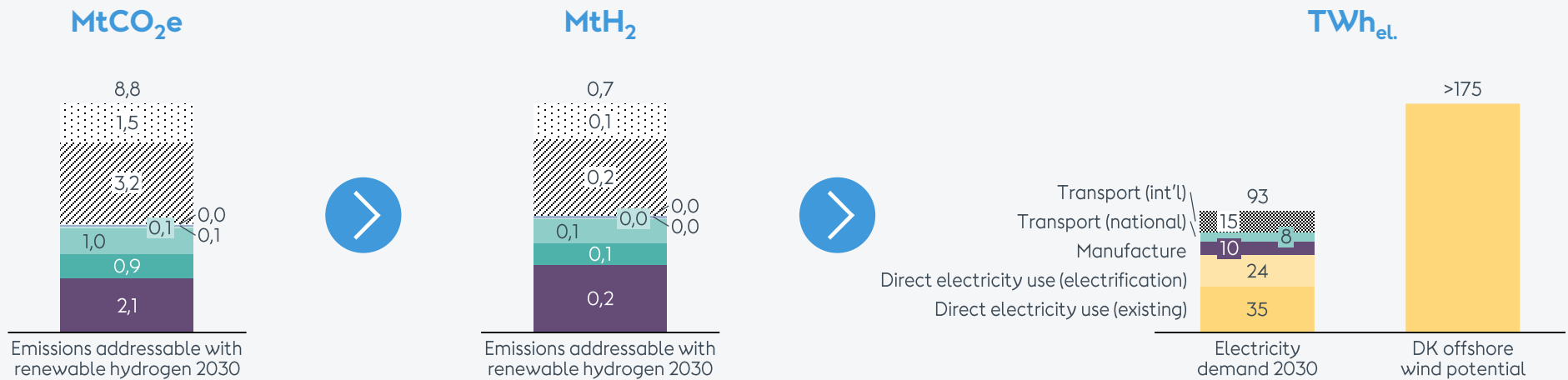
Emissions in Denmark¹, MtCO₂e



1. Source: Energistyrelsen's [Basisfremskrivning 2019](#); and transport modes breakdown from [EEA](#).

Decarbonisation challenge: Denmark's potential in an international context

- Towards 2030, renewable hydrogen can address a minimum of 4 MtCO₂e emissions from heavy transport and manufacturing in Denmark
- Additionally, it can address almost 5 MtCO₂e of “exported” emissions from fuelling in Denmark of international aviation and navigation
- This still leaves a significant share of Denmark's offshore wind potential “free” for more renewable direct electrification nationally and electricity exports to Europe



⋯ Int'l navigation ▨ Int'l aviation □ Domestic aviation □ Domestic navigation □ Railways □ Road (heavy) □ Road (light) □ Manufacture

Assumptions:

MtCO₂e to MtH₂e: transport factor = 14.2; industry factor = 10.64

Electrolyser efficiency = 65%

Direct electricity use figure is a proxy from Energinet's "Systemperspektiv 2035" – 35 TWh 'klassisk forbrug' + 8 TWh of electricity for heating + Ørsted's assumption of electricity in transport with new policies (58.8 PJ = 16.33 TWh)