Nordic Energy Technology Perspectives

Pathways to a Carbon-Neutral Energy Future

Nordic Energy Research

International Energy Agency


Energy Technology
Perspectives 2012
Pathways to a Clean Energy System
International
Energy Agency

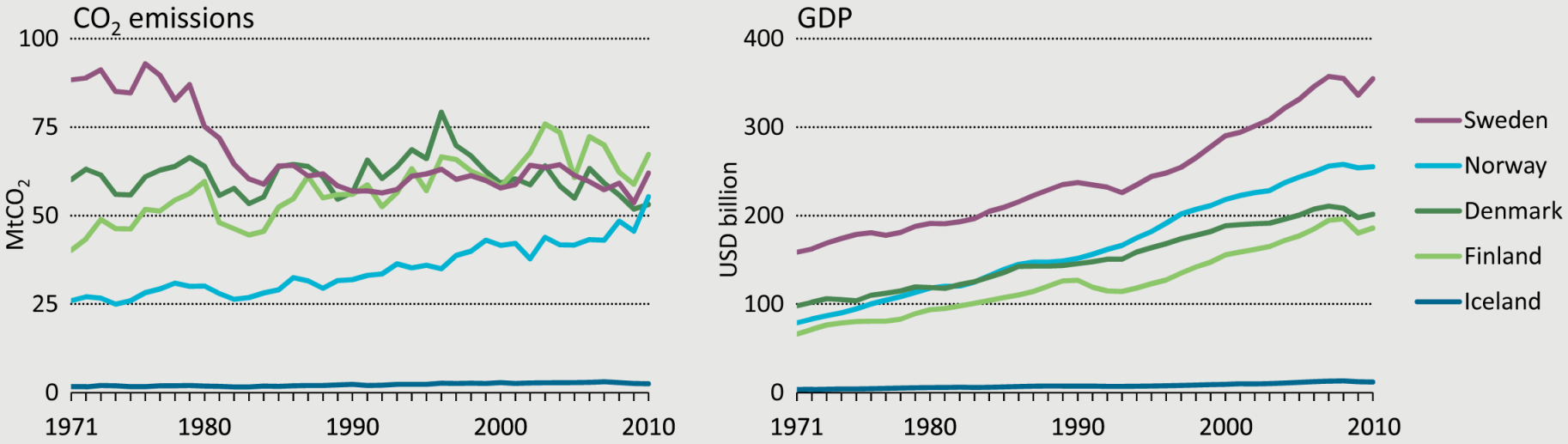
Project participants

Project management

Working Group

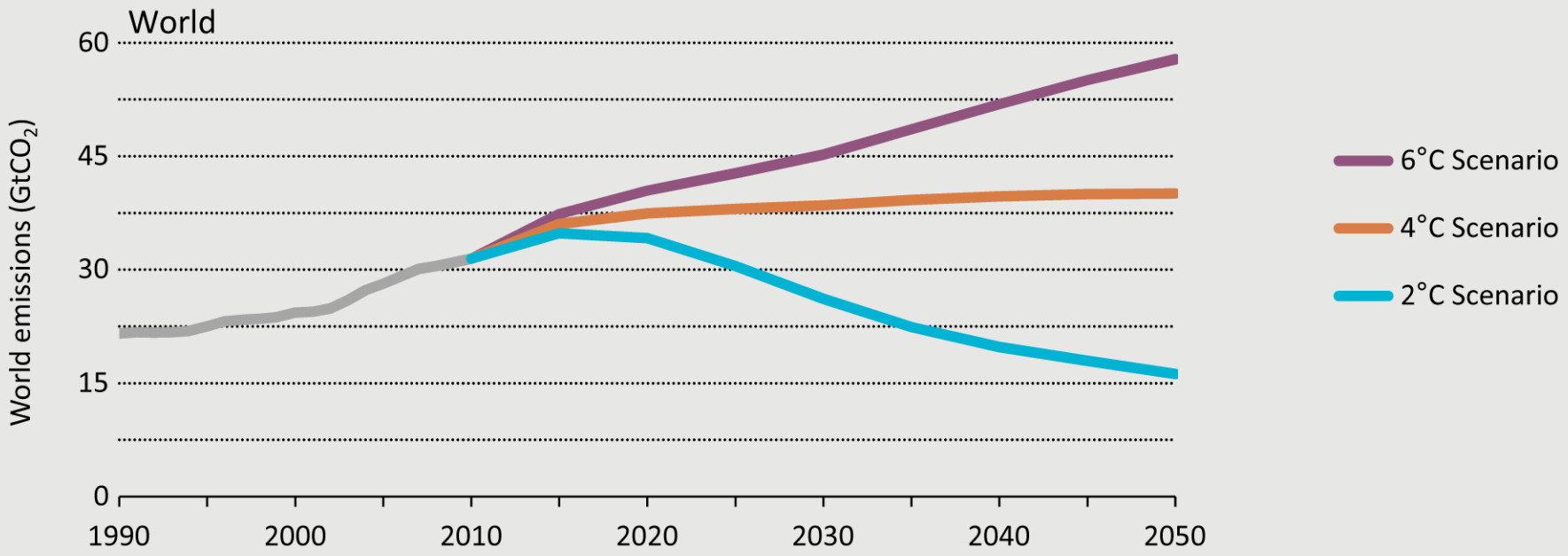
Reference Group

Decoupling of Nordic CO_2 emissions and GDP

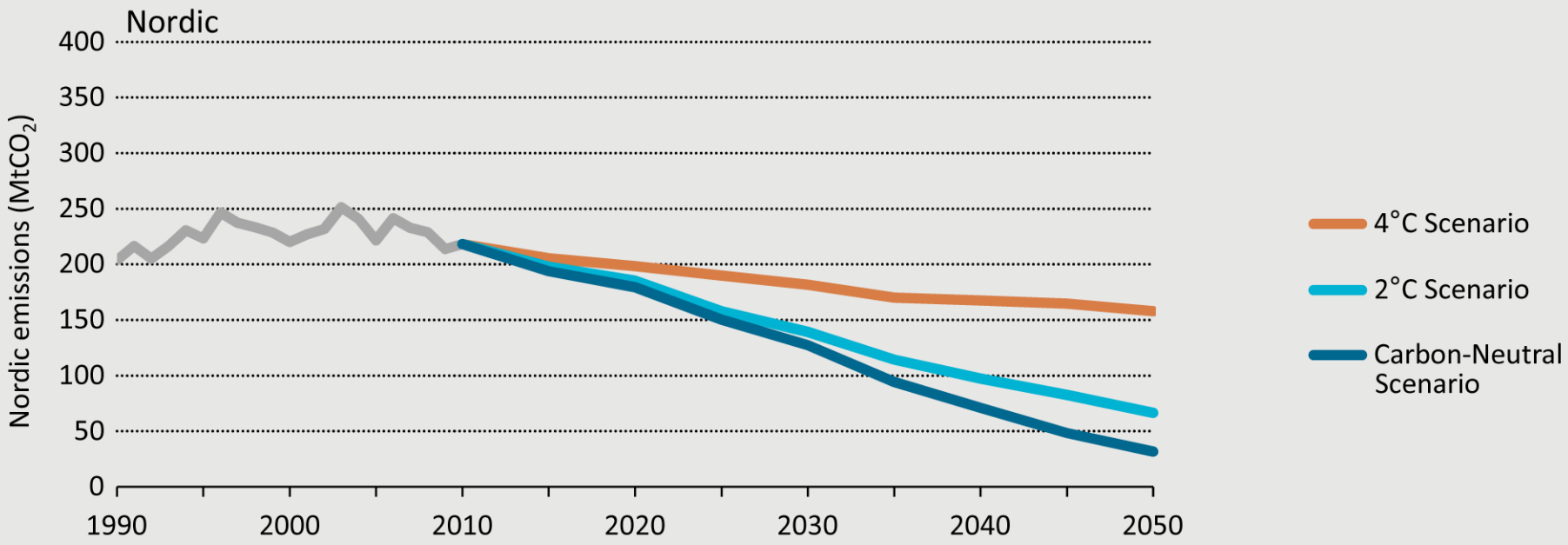


The Nordic region has seen a steady increase in GDP while limiting CO_2 emission growth

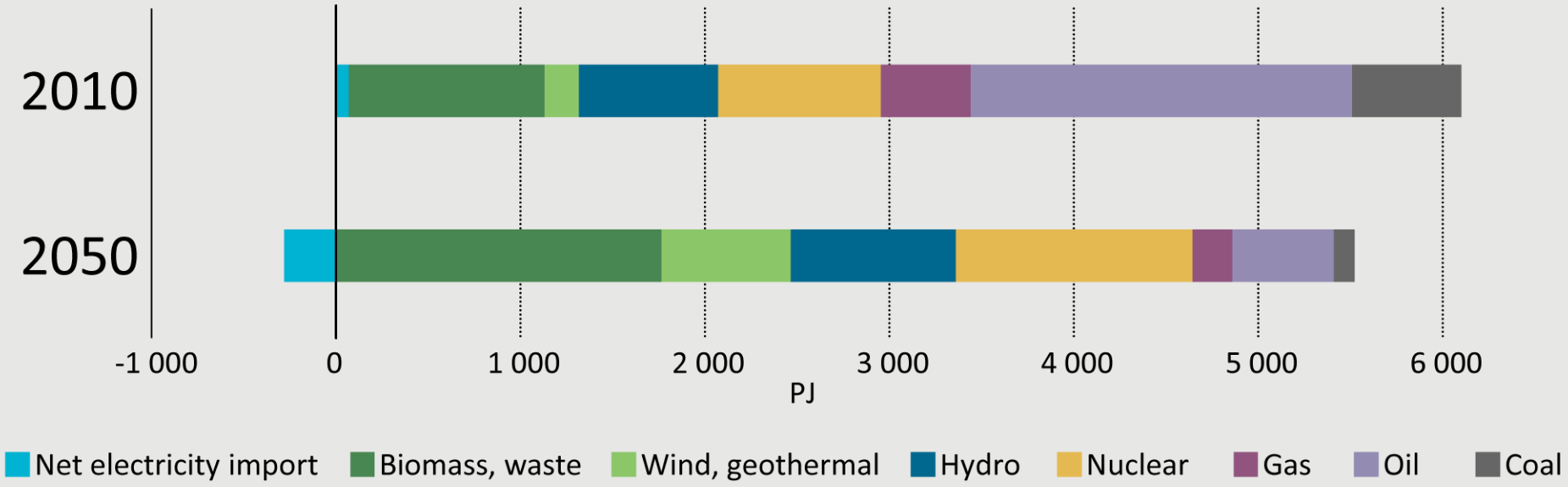
Global energy-related CO_2 emissions



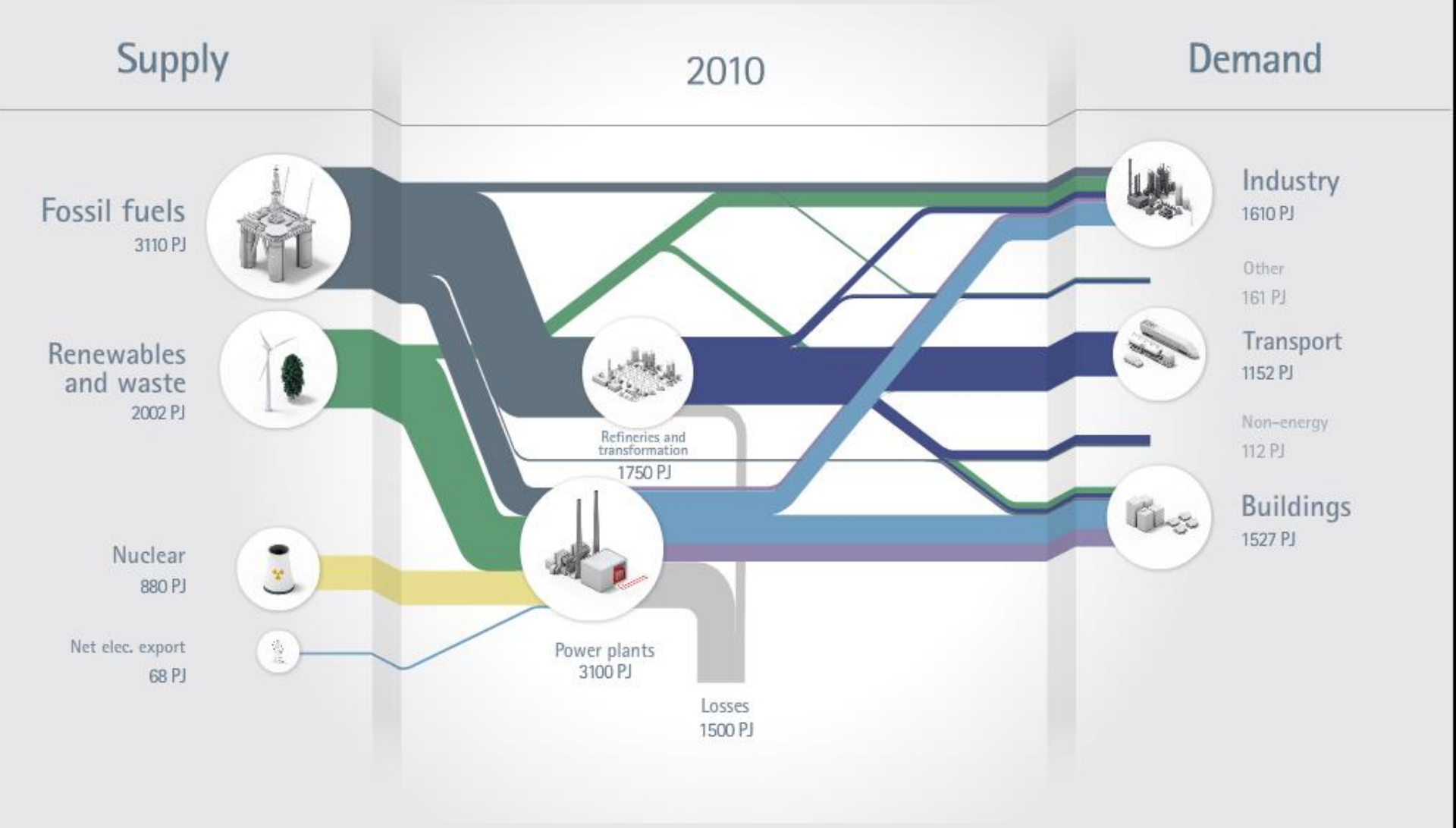
Nordic energy-related CO_2 emissions



Nordic total primary energy supply



Nordic energy flows



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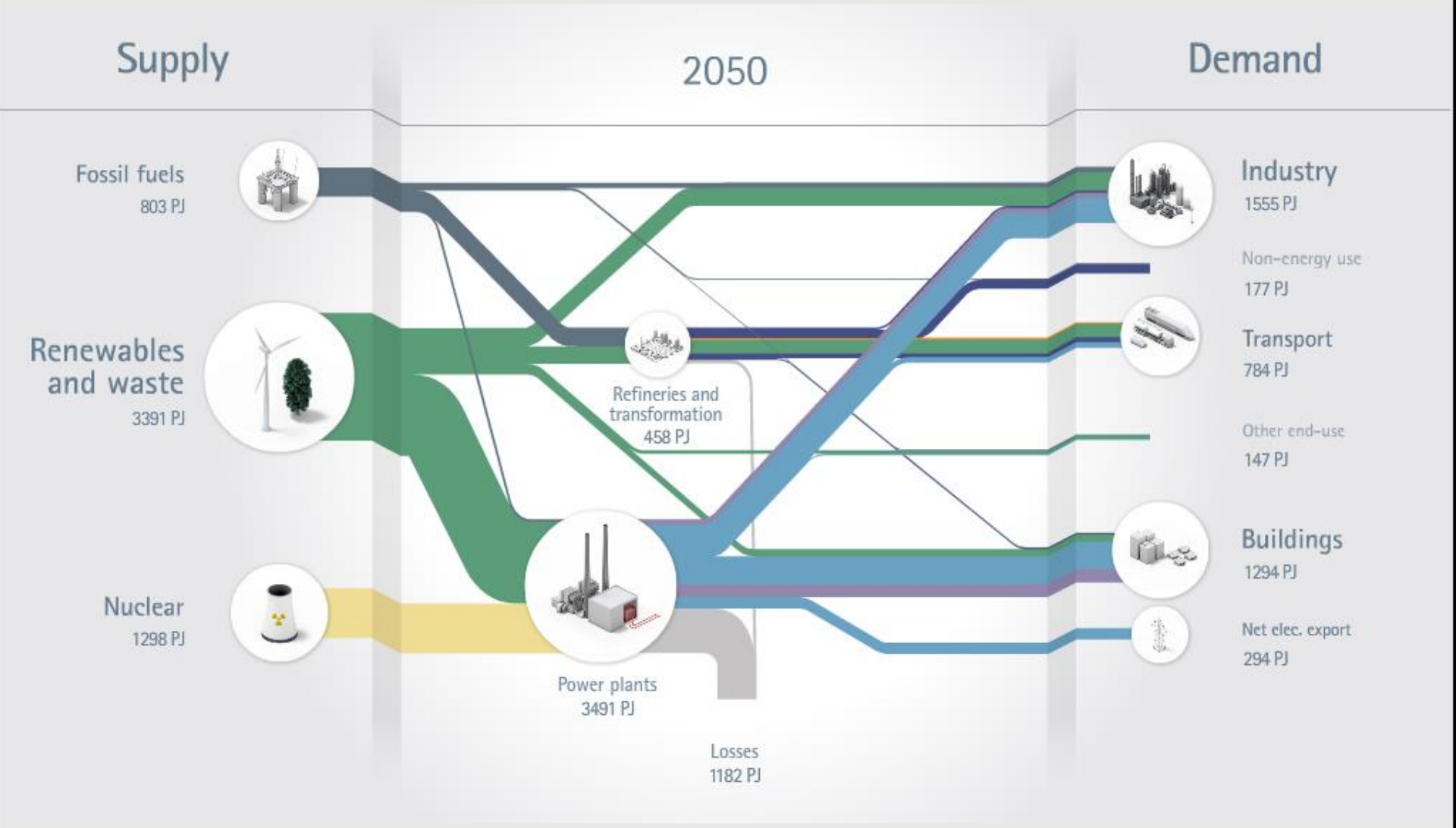
Nordic energy flows



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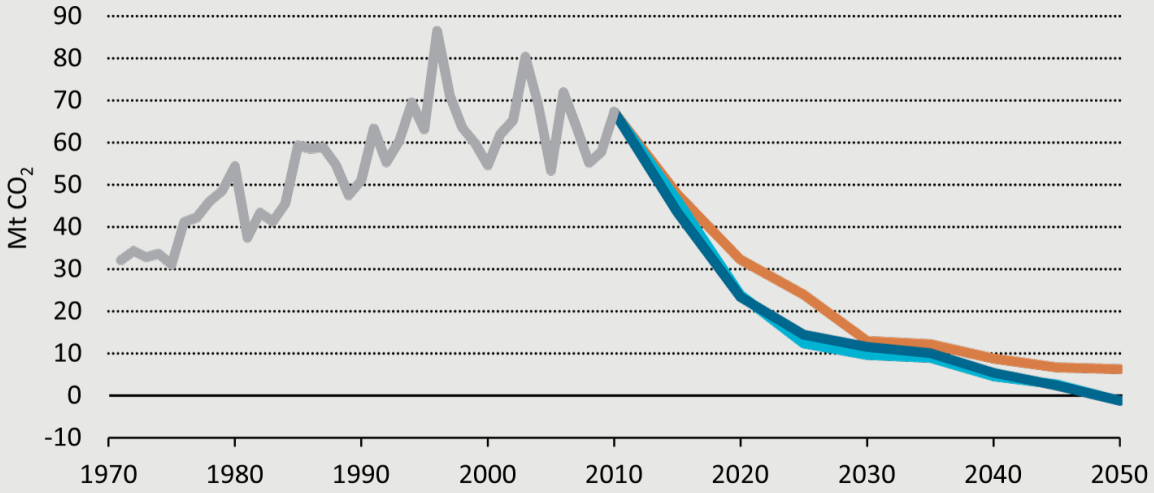
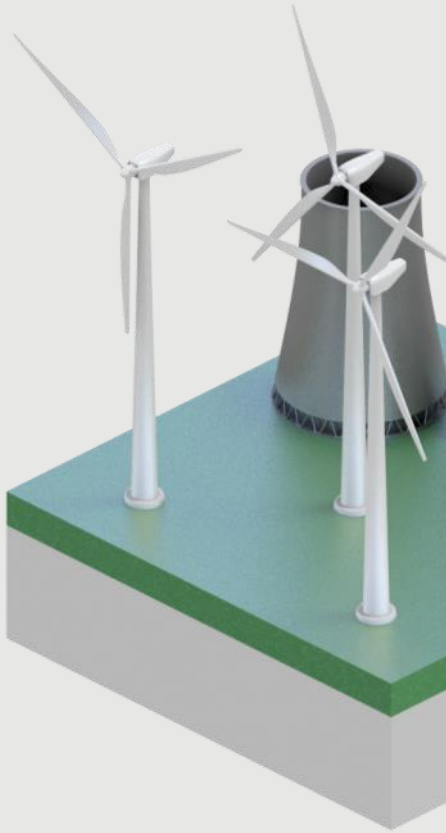
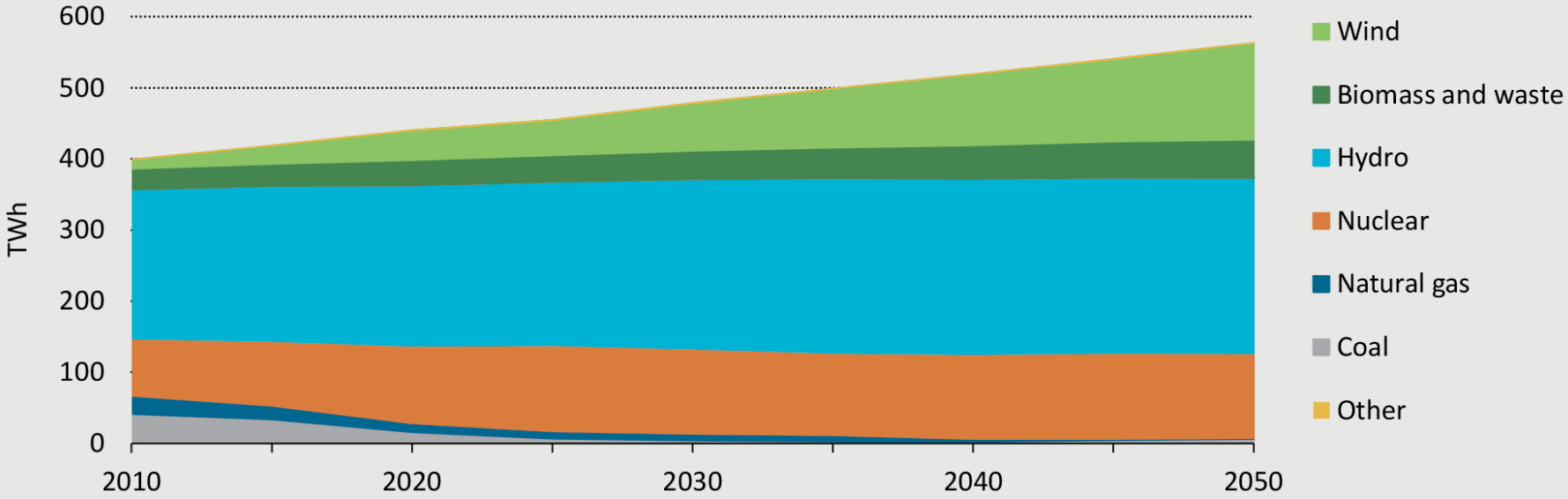
Nordic CO_2 emissions from power and heat generation

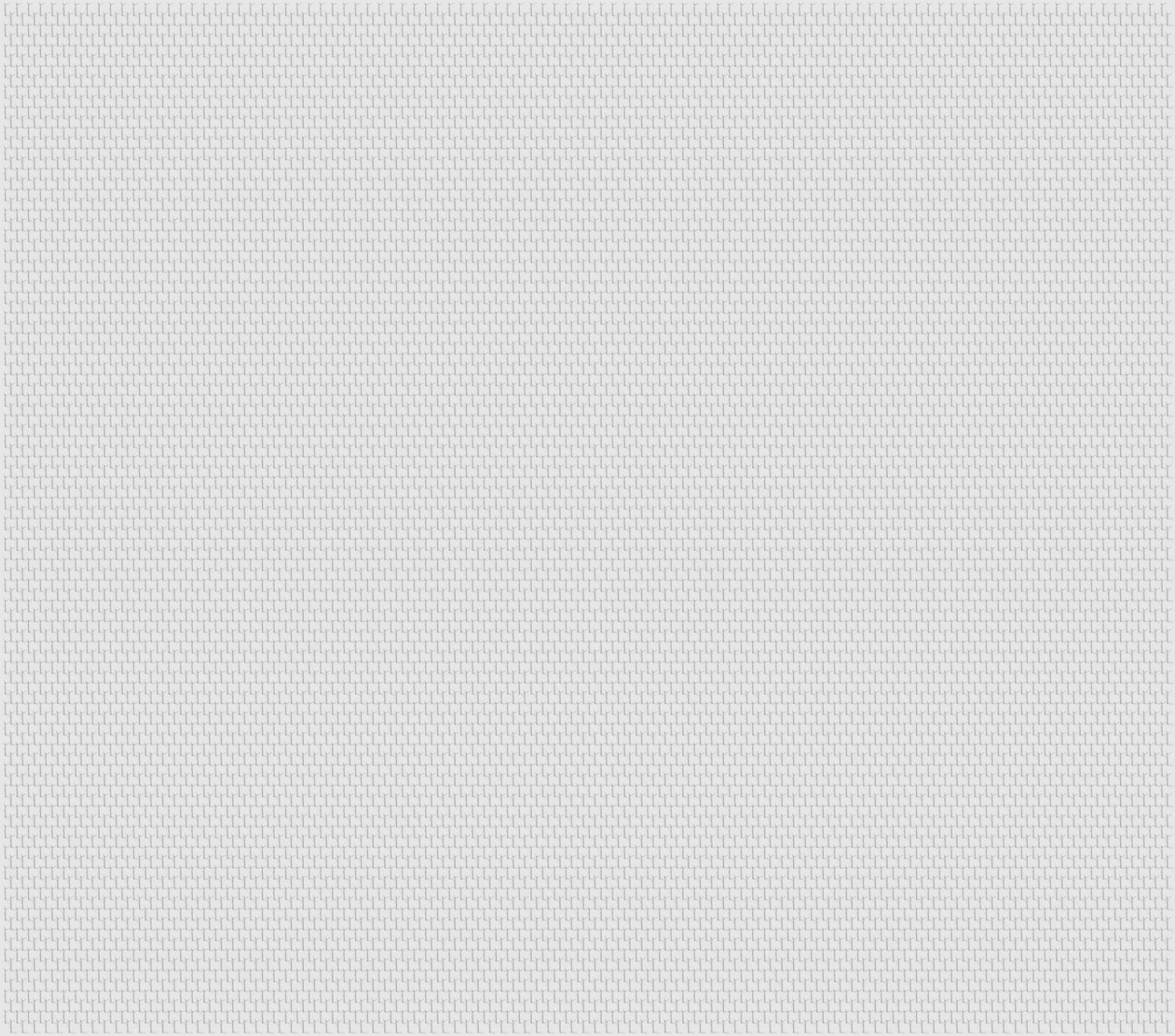




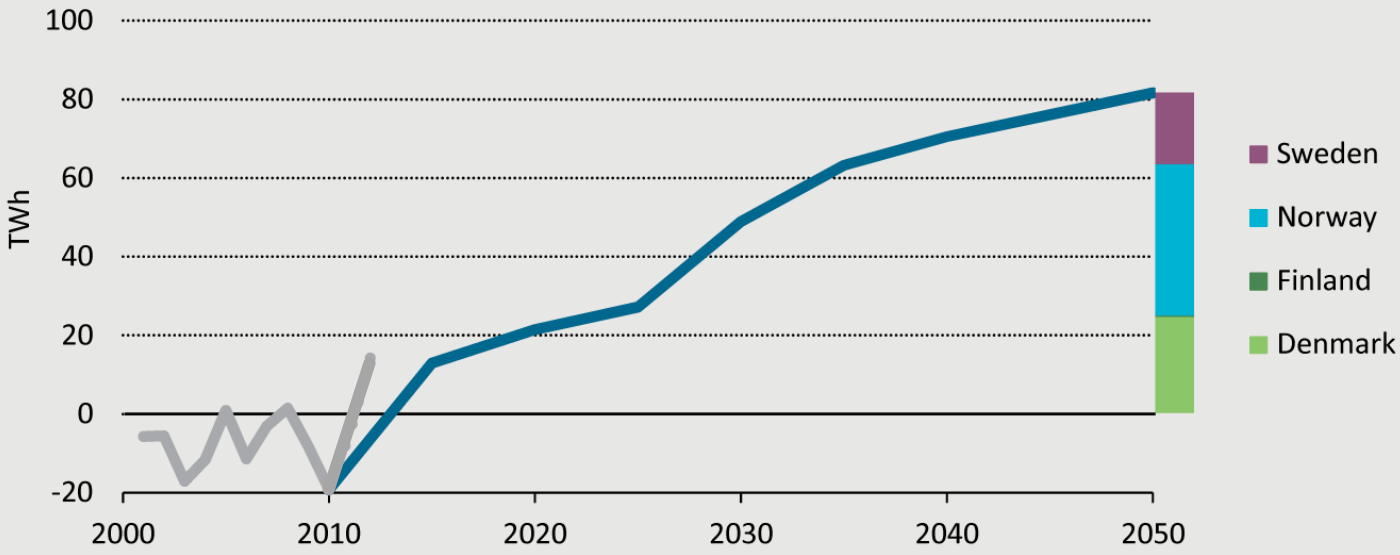
Power and heat is decarbonised in all scenarios

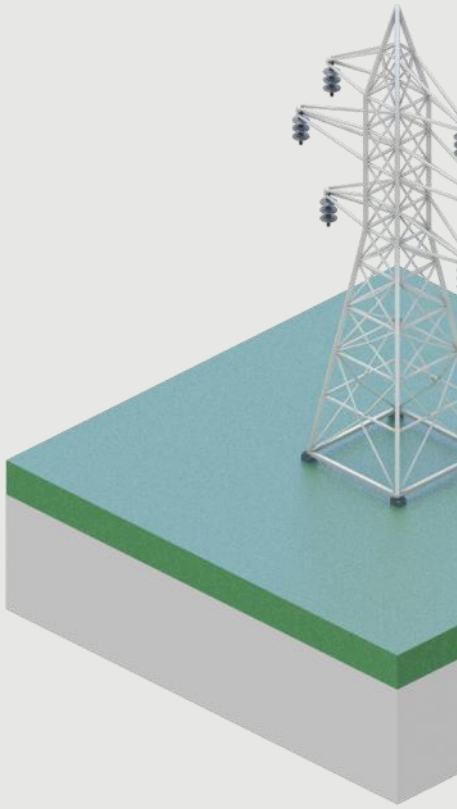
Nordic electricity generation in the Carbon-Neutral Scenario



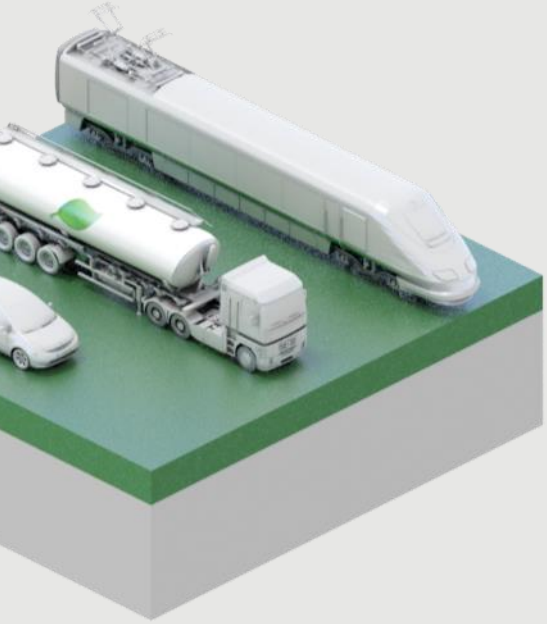


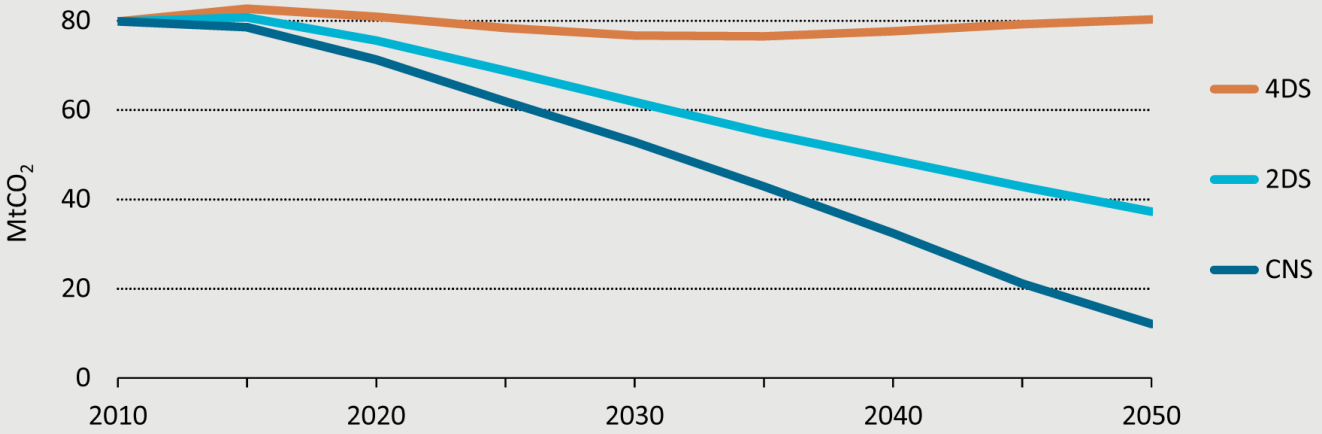
Nordic net electricity export in the Carbon-Neutral Scenario



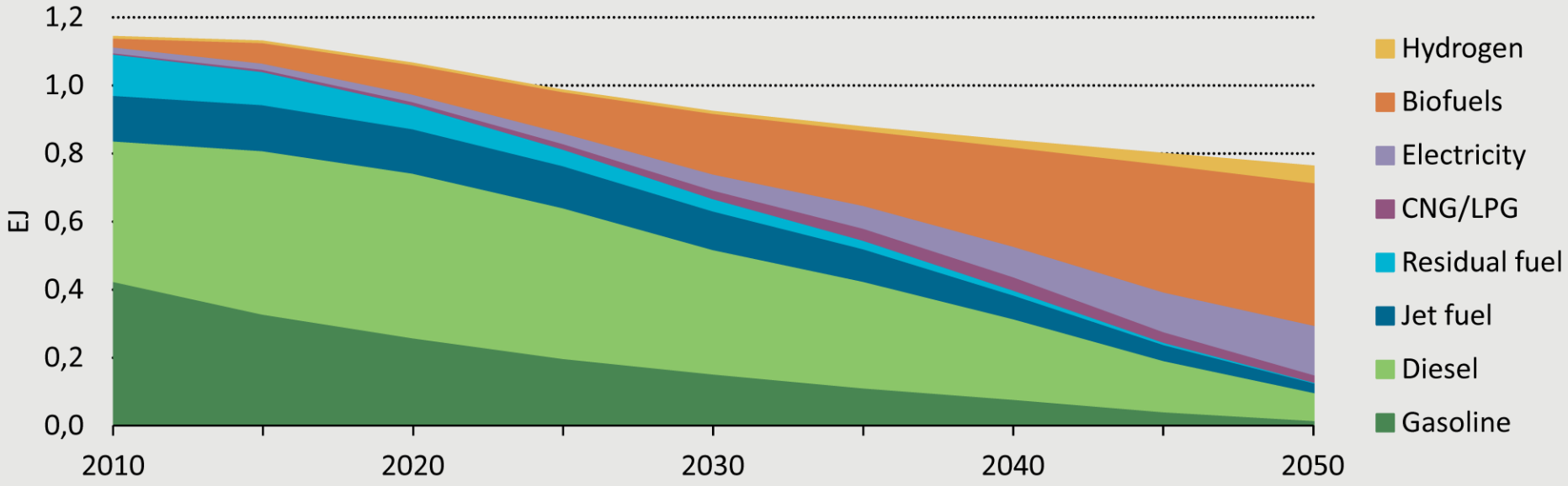


Nordic CO_2 emissions from transport

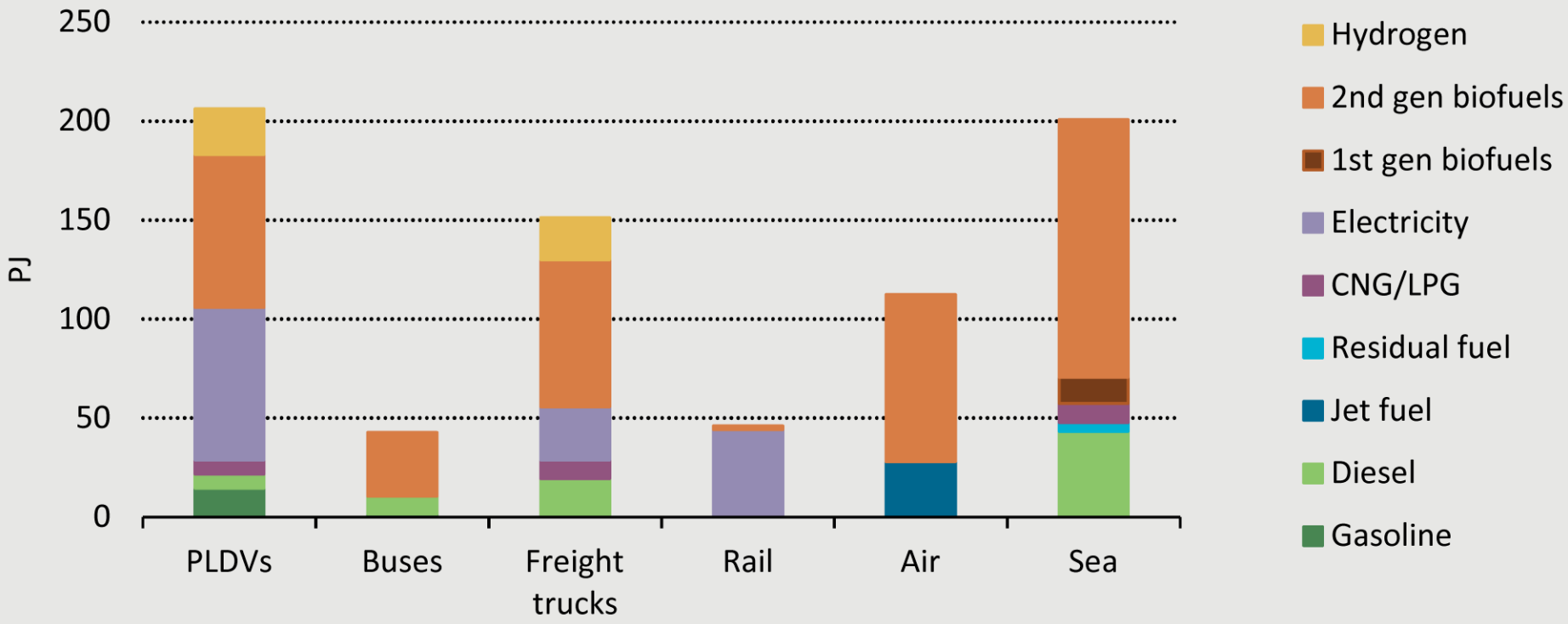




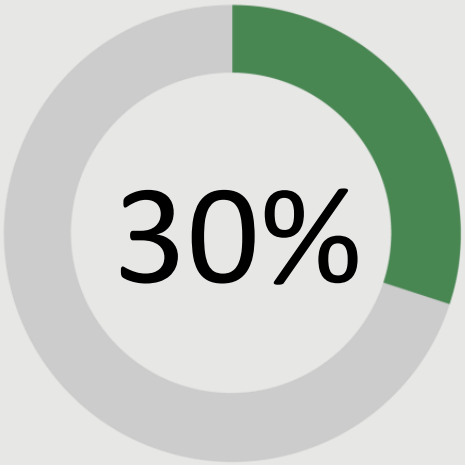
Nordic energy use in transport



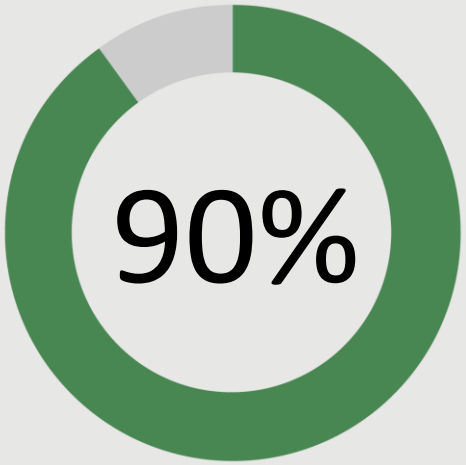
2050 energy use in transport



EV share of total Nordic car sales

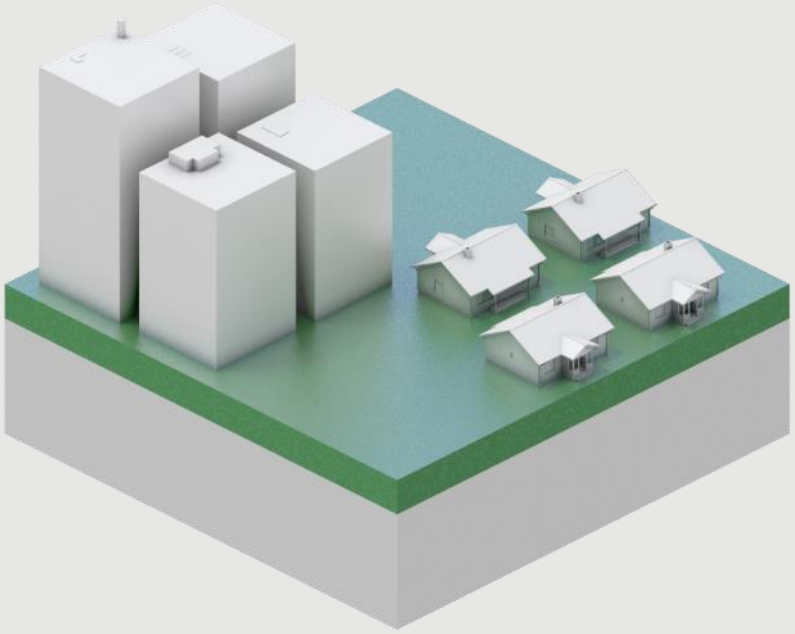


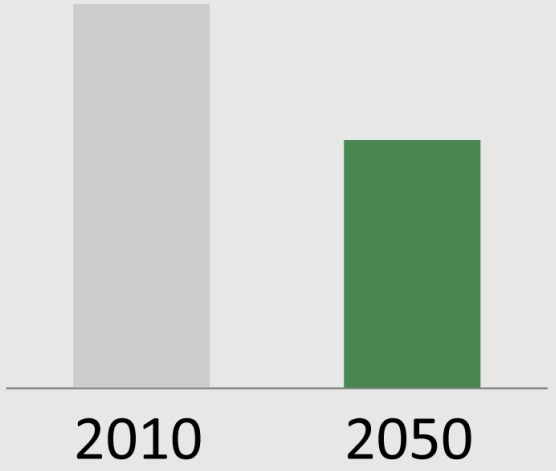
in 2030



in 2050

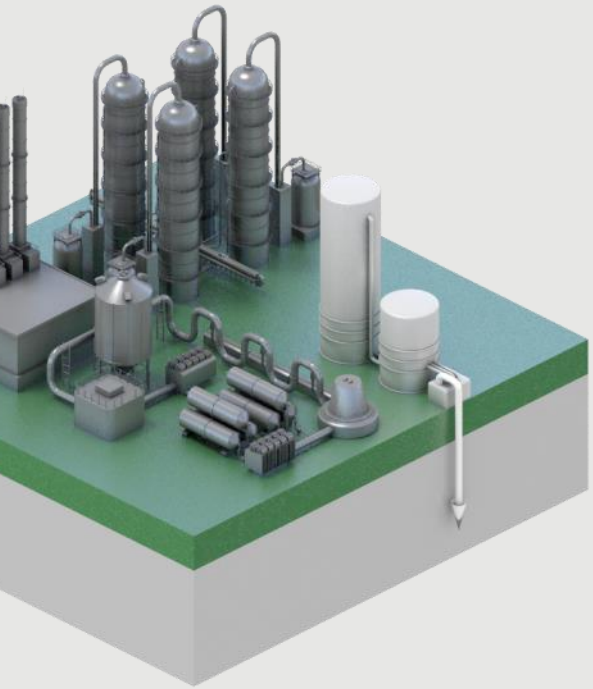
Buildings: Energy efficiency improvements in the Carbon-Neutral Scenario

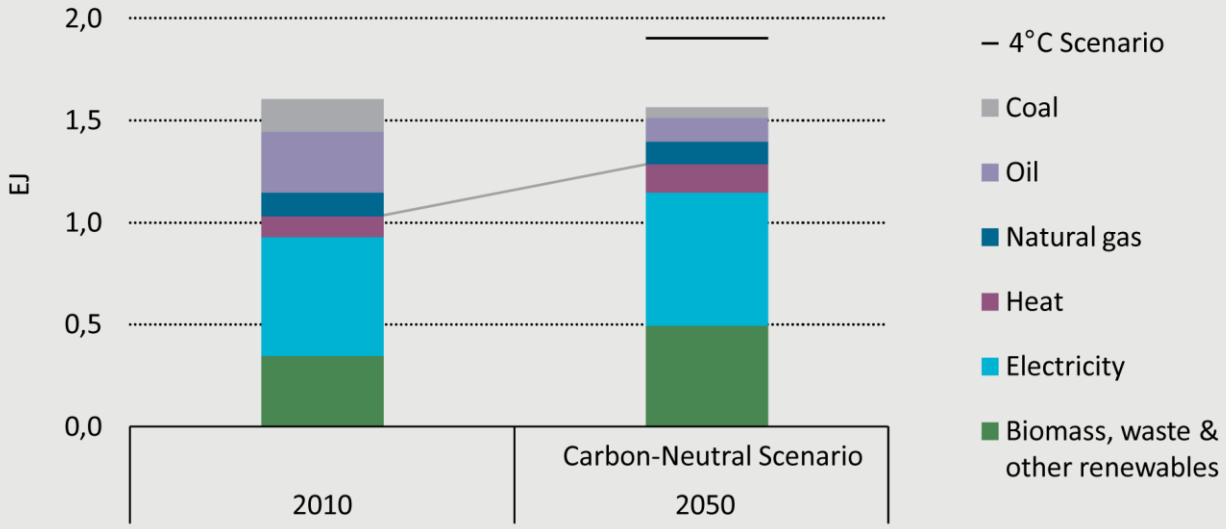




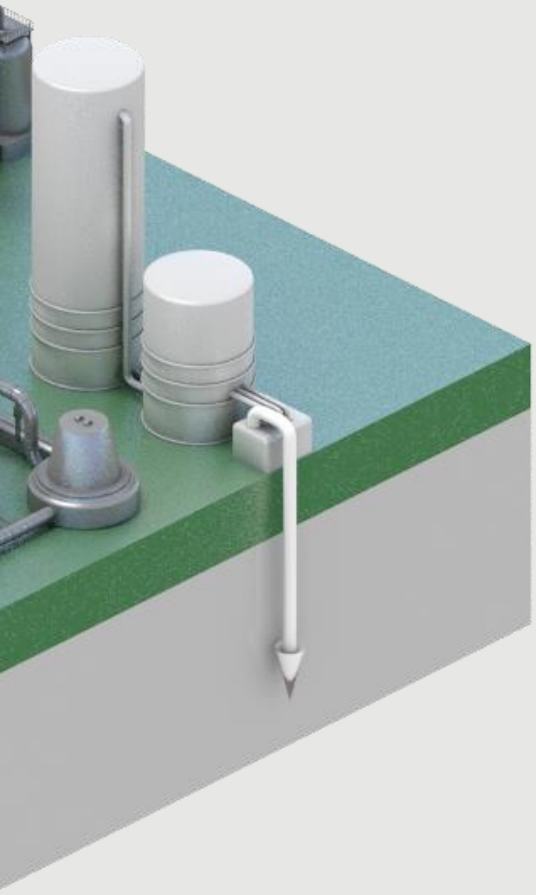
35% drop in residential energy use per m^2

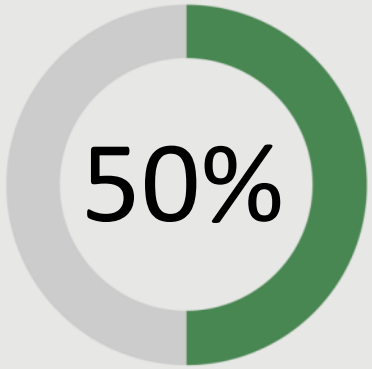
Final energy consumption in Nordic industry



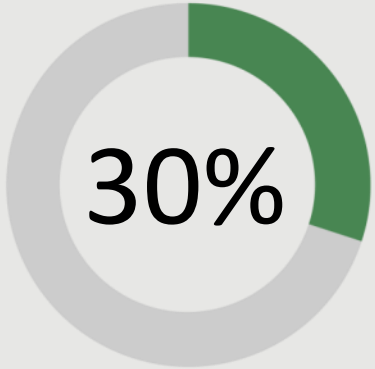


CCS utilisation in industry in 2050



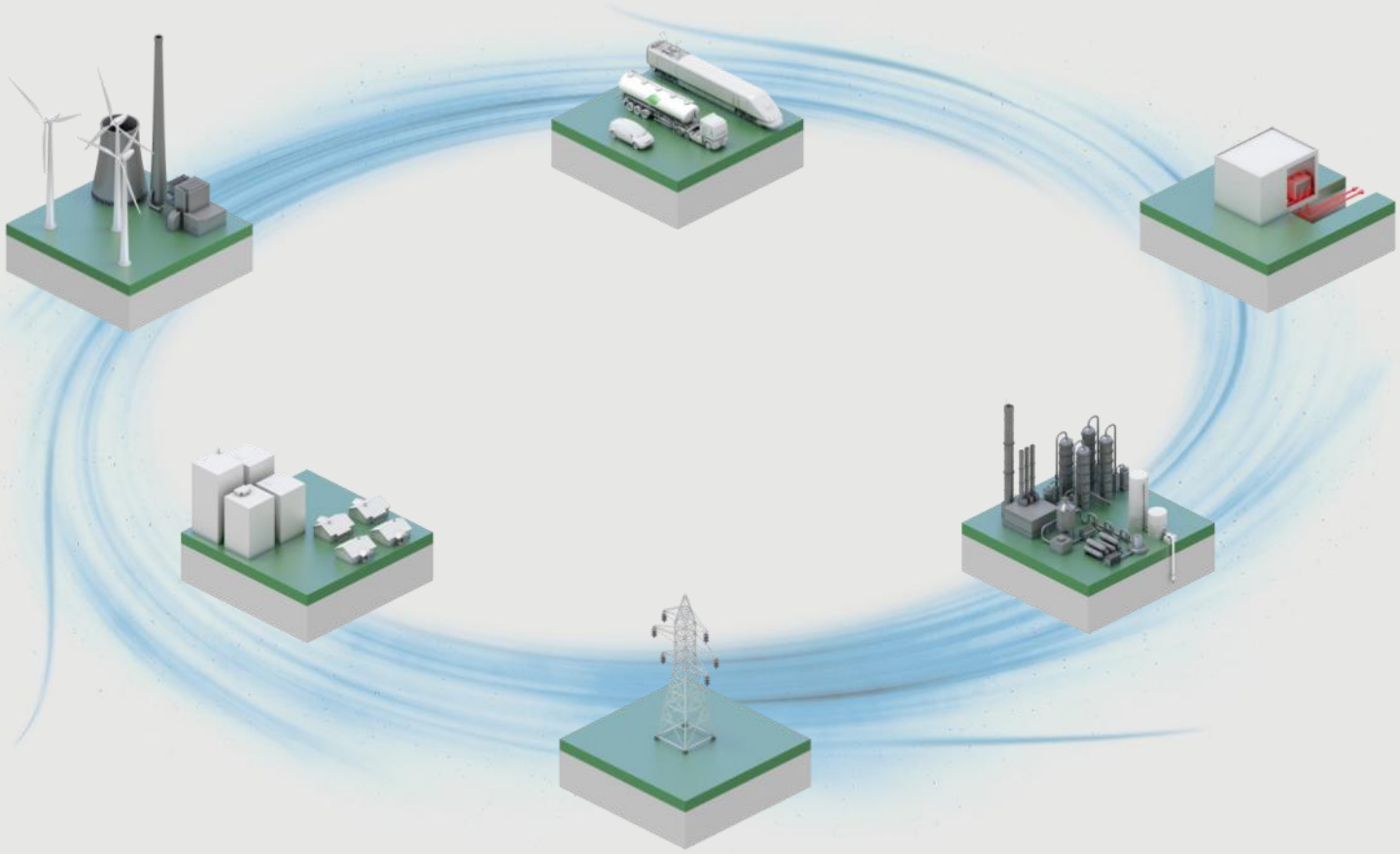


of cement plants



of iron & steel, chemical plants

System integration



Key challenges

Energy Efficiency

CCS

Infrastructure

Biomass Supply

www.nordicetp.org