

Strategy Report

Argus Low Carbon Hydrogen

Part Two: Europe and Africa

Table of contents



Table of contents

Executive summary

- Overview of the study
- Key takeaways
- Potential low-carbon hydrogen supply in Europe and Africa
- Firm low-carbon hydrogen supply in Europe and Africa
- Low-carbon hydrogen supply and demand in Europe
- Low-carbon hydrogen demand in Europe (excluding maritime and aviation)
- Low-carbon hydrogen demand in maritime in EU and Africa
- Low-carbon hydrogen demand in aviation in EU
- Low-carbon hydrogen supply vs total transport demand in EU
- Hydrogen breakeven prices and the role of subsidies
- Hydrogen breakeven prices and the role of subsidies

Introduction to hydrogen

- Hydrogen specification and definitions (grey, blue, and green)
- Hydrogen potential end-uses and advantages
- Countries with hydrogen strategy (global perspective)
- Current use of hydrogen
- Different hydrogen production routes
- Existing and new application of hydrogen in different sectors

Country level analysis

Europe

- Country Overview: key macro indicators, emissions
- Policies: key hydrogen policies, Fit for 55, REPowerEU, Renewable Energy Directive, EU Emissions Trading System, Carbon Border Adjustment Mechanism
- Hydrogen strategy and assessment: country scorecard, timeline, recent hydrogen developments, hydrogen targets
- Funding: Important Project of Common European Interest, European Hydrogen Bank
- Infrastructure: European Hydrogen Backbone, ammonia cracking projects
- Supply: current hydrogen production, hydrogen production targets, electrolyser orders, low-carbon hydrogen supply by country
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, power generation, gas blending, road transport and steel sectors

Table of contents

Germany

- Country Overview: key macro indicators, emissions, decarbonisation targets
- Hydrogen strategy and assessment: country scorecard, hydrogen targets, hydrogen development timeline, hydrogen strategy
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans, ammonia cracking facilities
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, power generation, gas blending, road transport and steel sectors

Netherlands

- Country Overview: key macro indicators, emissions, decarbonisation plans and targets
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy summary
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans, hydrogen import infrastructure and initiatives
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, power generation, gas blending, road transport and steel sectors

Belgium

- Country Overview: key macro indicators, emissions
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy timeline, targets and end-uses
- Funding: Funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans, hydrogen import initiatives
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects

Table of contents

- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, road transport and steel sectors

France

- Country Overview: key macro indicators, emissions, decarbonisation policies
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy summary
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, road transport and steel sectors

United Kingdom

- Country Overview: key macro indicators, emissions, decarbonisation policies
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy targets, hydrogen timeline
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, power generation, gas blending, road transport and steel sectors

Table of contents

Denmark

- Country Overview: key macro indicators, emissions
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy timeline, summary of hydrogen strategy
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Long-term breakeven price analysis for road transport sectors

Spain

- Country Overview: key macro indicators, emissions, decarbonisation policies
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy targets, hydrogen timeline
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans
- Supply: announced low-carbon hydrogen production capacity by status and online date, advanced low-carbon hydrogen projects
- Demand:
 - Country assessment
 - Demand summary
 - Sector specific overview and corresponding sector hydrogen development plans
 - Comprehensive long-term hydrogen demand analysis for refining, ammonia/fertilisers, road transport and steel sectors
 - Long-term breakeven price analysis for refining, ammonia/fertilisers, gas blending, road transport and steel sectors

Africa

- Country Overview: key macro indicators, emissions, decarbonisation targets
- Hydrogen strategy and assessment: country scorecard, hydrogen strategy targets, hydrogen timeline
- Funding: funds/support scheme related to development of hydrogen economy
- Infrastructure: hydrogen pipeline plans
- Supply: announced low-carbon hydrogen production capacity by status and online date, announced low-carbon hydrogen projects by country (Egypt, Morocco, Tunisia, Mauritania, Kenya, Namibia, Angola and South Africa)

Table of contents

Sustainable Aviation Fuel (SAF)

- Introduction to SAF
- Europe and Africa SAF policies
- Europe aviation fuel and hydrogen demand analysis

Marine fuel

- Introduction to marine bunker fuel
- Marine fuel decarbonisation policies
- Analysis of potential low carbon bunker fuels (ammonia, methanol, and hydrogen)
- Demand:
 - Hydrogen demand assessment
 - EU long-term marine fuel demand forecast
 - Long-term Europe and Africa e-fuel demand
 - Long-term hydrogen demand in marine sector
 - Long-term breakeven price analysis for marine (ammonia and e-methanol)