

# sheet N° 13- 1/2- Low carbon methanol production unit: E-methanol

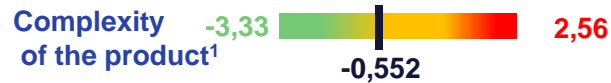
## Description



Production of E-Methanol based on green hydrogen and CO<sub>2</sub> captured from industry. Unit with a production capacity of **70 kt**. Project does not include the production of green hydrogen. Final product mainly used in the chemical industry and as a synthetic fuel

**Main customers:** maritime transport, air transport, urban mobility, plastics industry, refinery

**Sector and sub-sector:** Green hydrogen and its derivatives /



HS Code: 290511

## Key facts

- Major potential for the development of e-methanol allowing the decarbonisation of industry (CO<sub>2</sub> capture) in the context of the global tightening of regulations in terms of SAF (sustainable aviation fuel) and SMF (sustainable maritime fuel)
- Synthetic product now considered low-carbon and not green (debates around the regulation in progress to respond to carbon taxes)

## Prerequisites (2)

- Securing premium purchase contracts upstream of the project
- Need for industry to invest in CO<sub>2</sub> capture units beforehand
- Need to wait for the "green" definition of e-methanol in order to know the profitability and to quantify the carbon taxes to be paid at European borders

## Market indicators

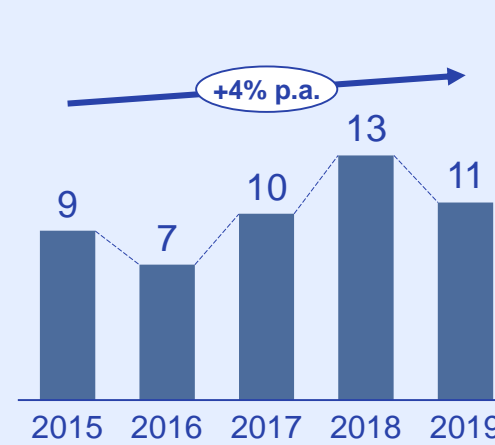
### Target market(s) :

### Target market(s), (from highest to lowest priority) to be addressed :

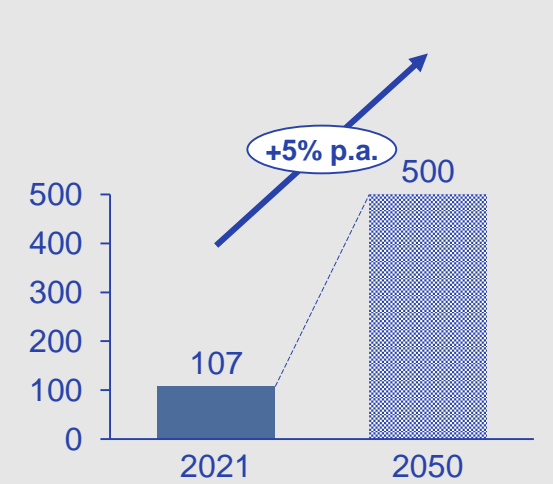
- +** **Export:** Mainly to Europe, USA and Canada to serve the need for sea and air mobility
- **National:** To replace fossil-based methanol imports from Germany, Spain and Russia

### Market size and development (3)

#### European methanol imports (USD billion)



#### World methanol production to 2050 (MT)



(1) Product Complexity Index: Diversity and sophistication of the know-how required to produce a product. The PCI is calculated according to the number of countries that produce the product and the economic complexity of these countries. The most complex products, those that only a few countries can produce, have the highest PCI (e.g. electronics, chemicals) vs. the least complex products (e.g. raw materials, agricultural products) - Source: TradeMap, Harvard economic complexity

(2) Sources: Office des Changes, IRENA, Press articles



# Sheet N° 13- 2/2- Low carbon methanol production unit - E-methanol

## Financial indicators (indicative) :

<b>Potential investment</b>	1.5 billion MAD
<b>Turnover</b>	660 Mn MAD
<b>Estimated selling price</b>	10.5 - 12.5 MAD/kg
<b>ROI</b>	~10 years
<b>EBITDA (as % of sales)</b>	22 %
<b>Jobs</b>	100

## Human resources

### HR skills needed

- Chemical engineering, process engineering, laboratory technicians, quality control, project managers

### Training offers

- Multidisciplinary Faculty (Ouarzazate) : Materials and energy
- EST (Agadir) : Bio-industrial engineering

## Raw materials and suppliers

### Main inputs

- CO2 from industrial sources
- Green hydrogen

### Main suppliers

- Morocco: Green H2 and Co2

## Investment elements

### Potential land

#### Priority provinces

- ✓ Laayoune ✓ Es Smara ✓ Boujdour ✓ Tarfaya

#### Type of land

Private state domain (e.g. the Akhfenir tarfaya-foum el oued lamssid-jraifia coastline)

#### Area

5 ha

#### Average land price

Unified Regional Investment Commission (CRUI)

#### Mode of mobilisation

Unified Regional Investment Commission (CRUI)

### Main investment benefits

#### Grant

Investment Charter

#### Support for training

greenh2 cluster, "TATWIR green growth" programme, UM6P Green H2A TAMWILCOM "Green INVEST" programme

#### Other

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