

# 24th National Energy Conference

## "Energy and Development 2019"

### *The Refining sector at a turning point*

## **The potential of Low Carbon Fuels**

Liana Gouta

Group Director, Energy Policy and International Affairs, HELPE

Chairman Downstream Committee, IENE

**For the world to get onto a sustainable path, the way we travel has to change  
Energy Transition as well as a revolution in mobility are already under way  
For the Industrial sectors there is no room for business as usual**

- ❖ What is the scene of today?
- ❖ What is the role of the refining sector in the Energy Transition?
- ❖ What are the opportunities offered by Low Carbon Liquid Fuels?

1.

---

**Setting the scene**

**“From climate action to climate crisis”**

---

## Setting the scene: “it is a crisis, not a change”

### Shift of the public narrative “It is a climate crisis, not a change”

Scientists, Society, Media, Activists, EU Institutions & Policy Makers

Climate crisis: 11,000 scientists warn of ‘untold suffering’

Economics

## Europeans Are More Worried About Climate Change Than the Economy

93% of Europeans see climate change as a serious risk

### NewScientist

DAILY NEWS 6 August 2018

Global warming may become unstoppable even if we stick to Paris target

#Friday4Future

## Greta Thunberg is leading kids and adults from 150 countries in a massive Friday climate strike

The international protest comes ahead of the UN Climate Action Summit.





## Setting the scene: the call for inclusive transition



### Before Fridays4future...there was the Yellow Vests

Movement against the economic impact of climate measures on low-income families



"It's well and good to tell people who are making €1000 a month to change their car, but they can't," says Elsa, a thirty-three-year-old translator. (Photo by Colin Kinniburgh)



**THE GREEN  
NEW DEAL  
FOR EUROPE**

*I have been inspired by the passion, conviction and energy of the millions of our young people making their voice heard on our streets and in our hearts. It is our generational duty to deliver for them.*

Ursula von der Leyen

2050 → Climate Neutrality target adopted by Law

2030 → ~~-40%~~ - 50-55% GHG vs 1990



Revision upwards of the 2030 targets in RED II, EED, CO2 standards for transport, etc.

+

Fund for a Just Transition

+

Measures to address emissions in aviation and maritime

3.

---

***The journey towards Climate neutrality***  
*Is there any role for the Refining Sector?*

---

# The journey towards climate neutrality; the role of the refining sector

## Increased climate ambition has led many to question whether refineries have a place in a climate neutral Europe

Oil



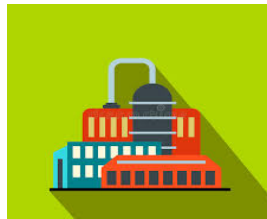
Will we still **need oil** in the next decades?

Liquid Fuels



What will the **role of liquid fuels** be in the future?

Refining Industry



Will we still need **refineries in the future**, and what the refinery of the next decades will look like?

Innovation towards  
Low Carbon Economy



Is **petroleum technology** an “old, fading technology” or does it have a crucial role to play in the **transition** to low carbon economy?



## Refining sector's footprint

### A1. EU ECONOMY



### A2. EU SECURITY OF SUPPLY



### A3. ENVIRONMENT

**+35%**

Every 100 units of CO<sub>2</sub> emissions reduced in the EU are replaced by 135 units increased outside the EU\*

### B1. GR ECONOMY

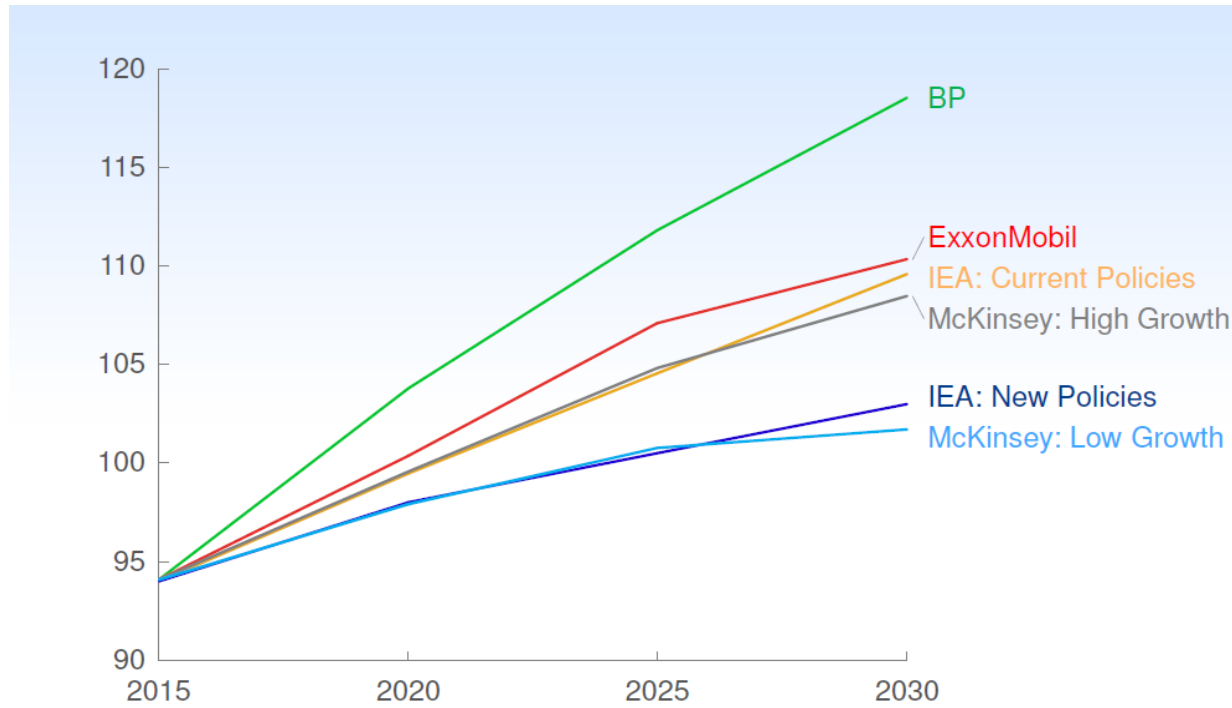


Source: IOBE Study, Reference year 2015

## Oil Demand Forecast

- Upward trend in global oil demand projections up to 2040, albeit at different rates, depending on analysis source.
- RES : the fastest growing source of energy but with a share of only 14% in 2040 (BP Outlook)
- Gas is also growing fast, becoming the bridging fuel

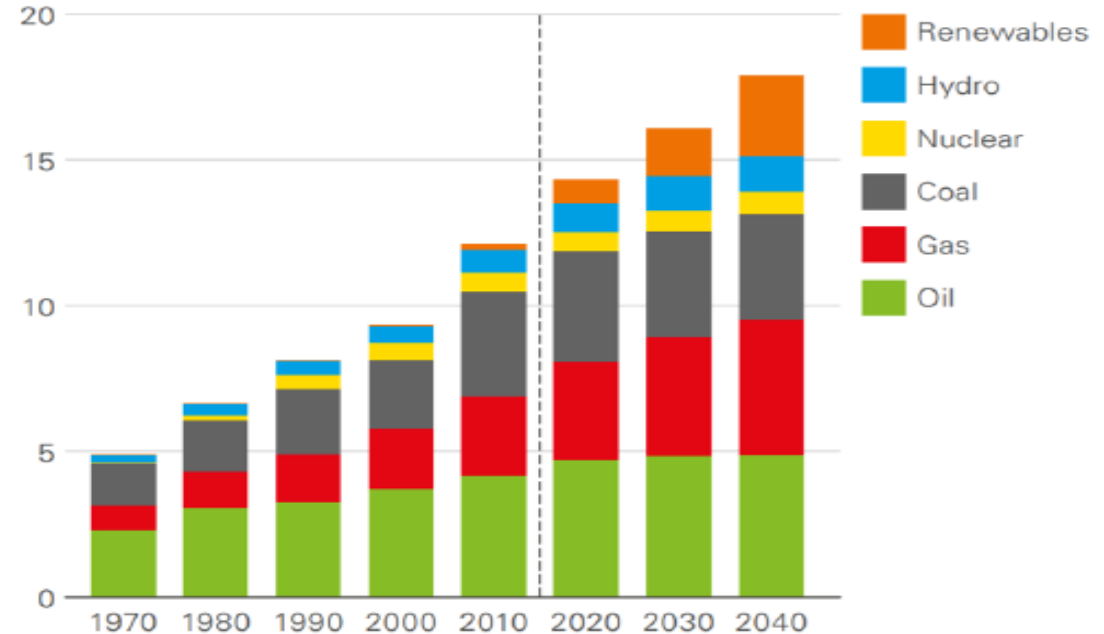
### Global Oil Demand 2015-2030 (mbpd)



Source: McKinsey & Company (2016)

### Primary energy consumption by fuel

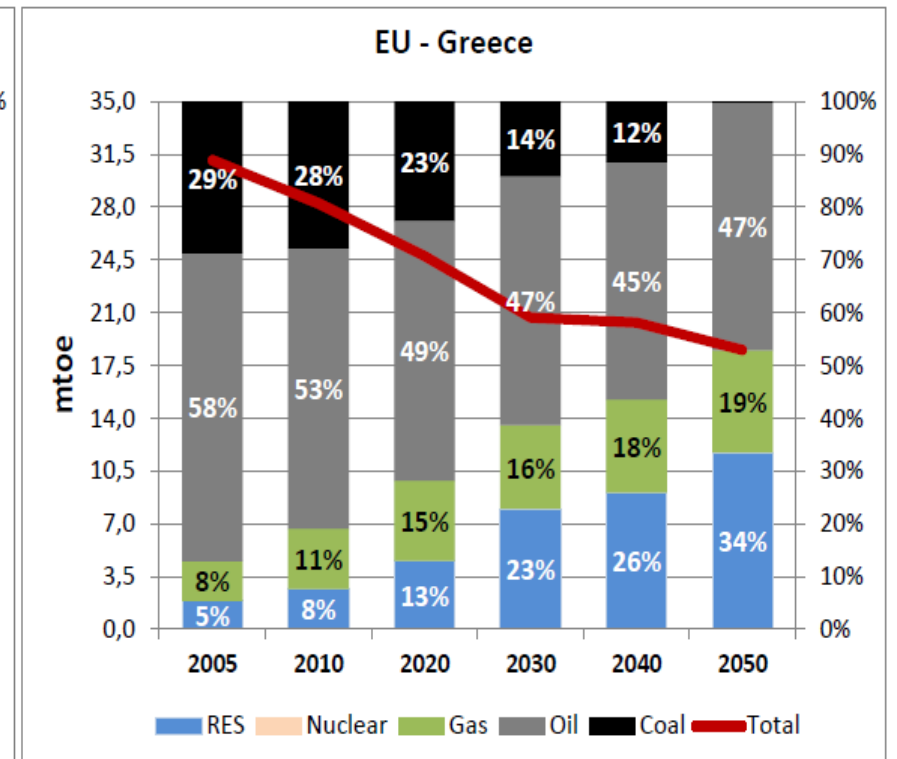
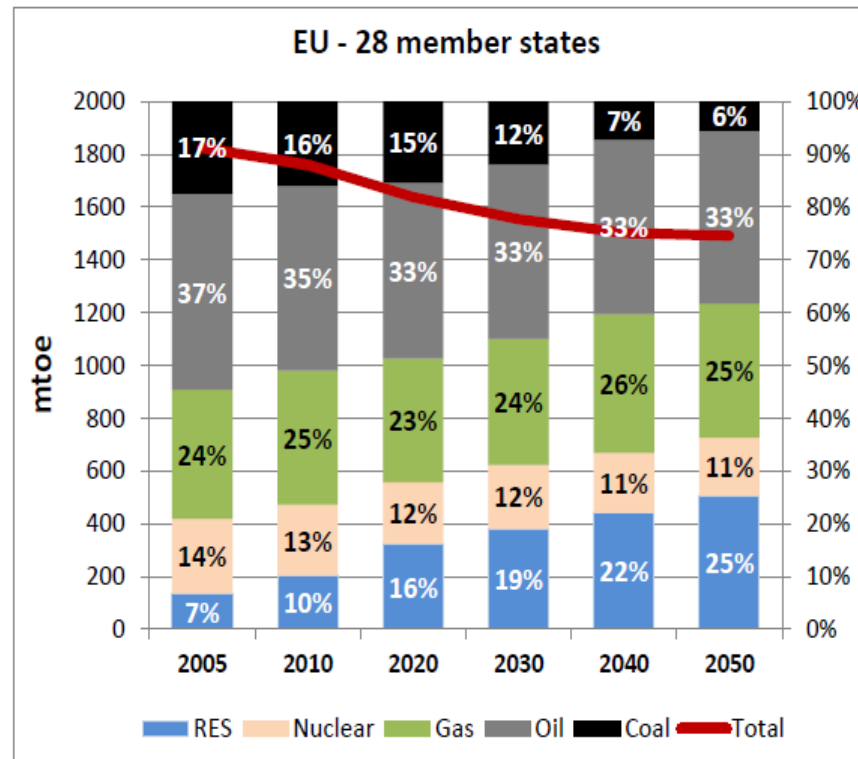
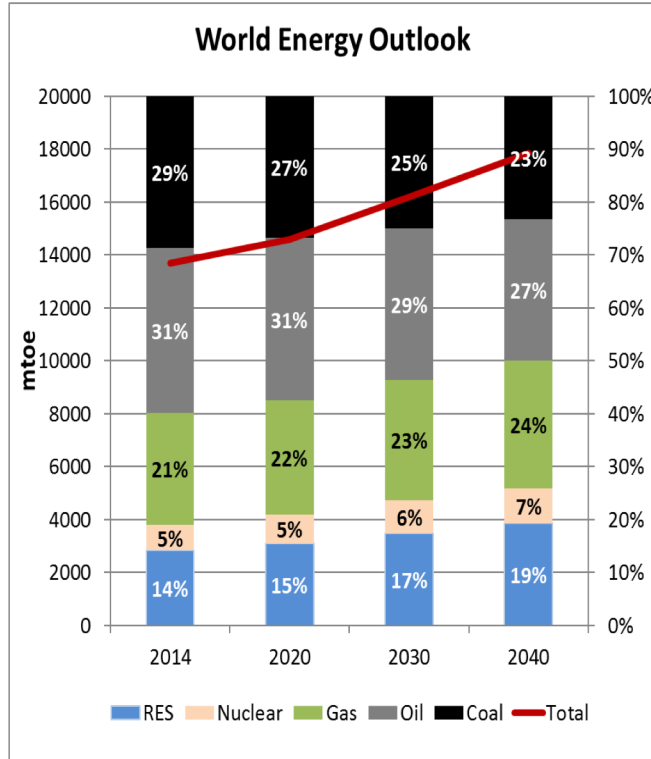
Billion toe



Source: BP Energy Outlook 2019

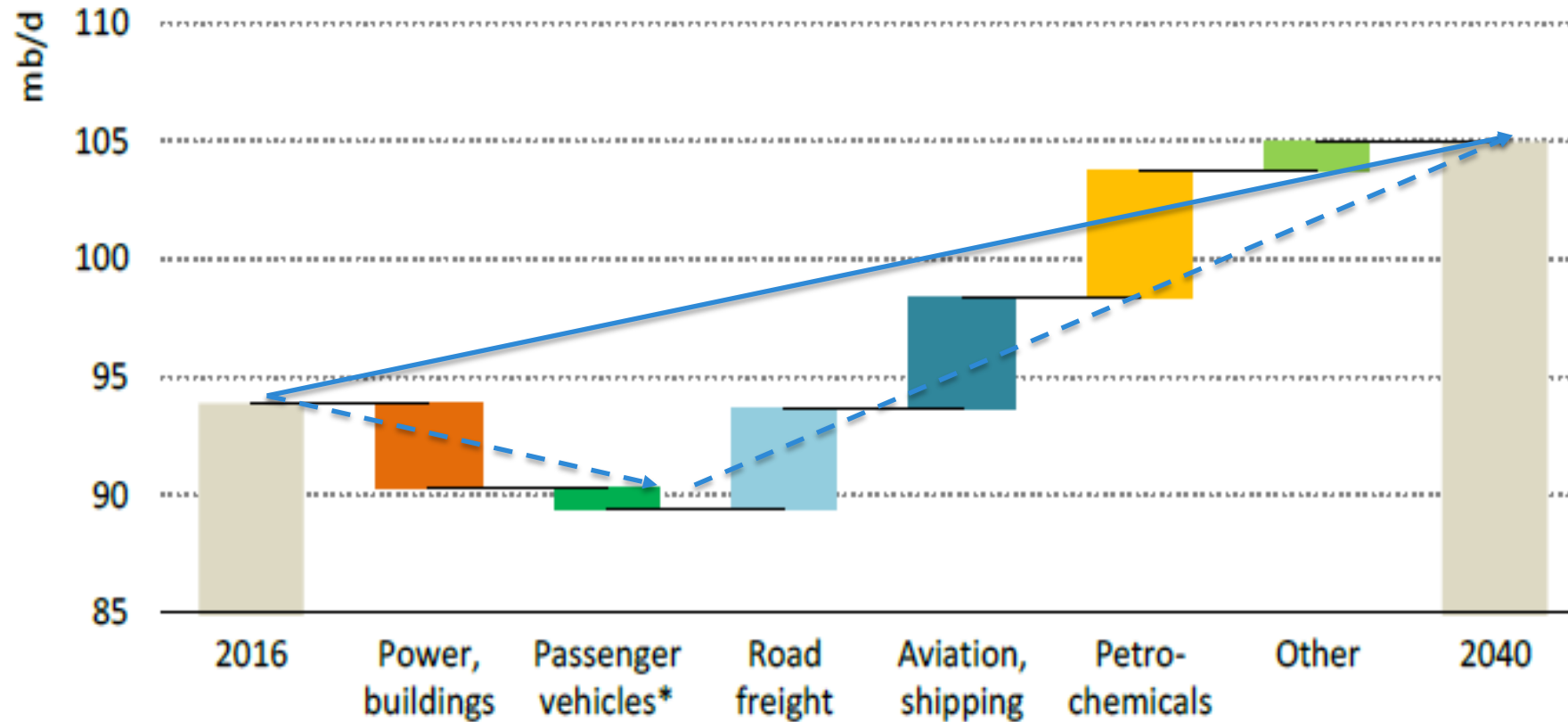
## Energy Demand and Energy Share forecast

- World Primary Energy Demand is expected to increase by +31% in between 2014-2040
- EU projections show significant decline in energy demand (-18%) and switch of energy mix
- Greece projections point to the same conclusion but more aggressively (-27%)
- Main trend is the increase of renewables at the expense of coal / Oil retains its dominant position



Source : EU Reference Scenario 2016

## World Oil Demand by sector



*While the outlook for oil in power generation, buildings and passenger vehicles hints at a peak in oil demand, this is more than offset by rising demand in other sectors*

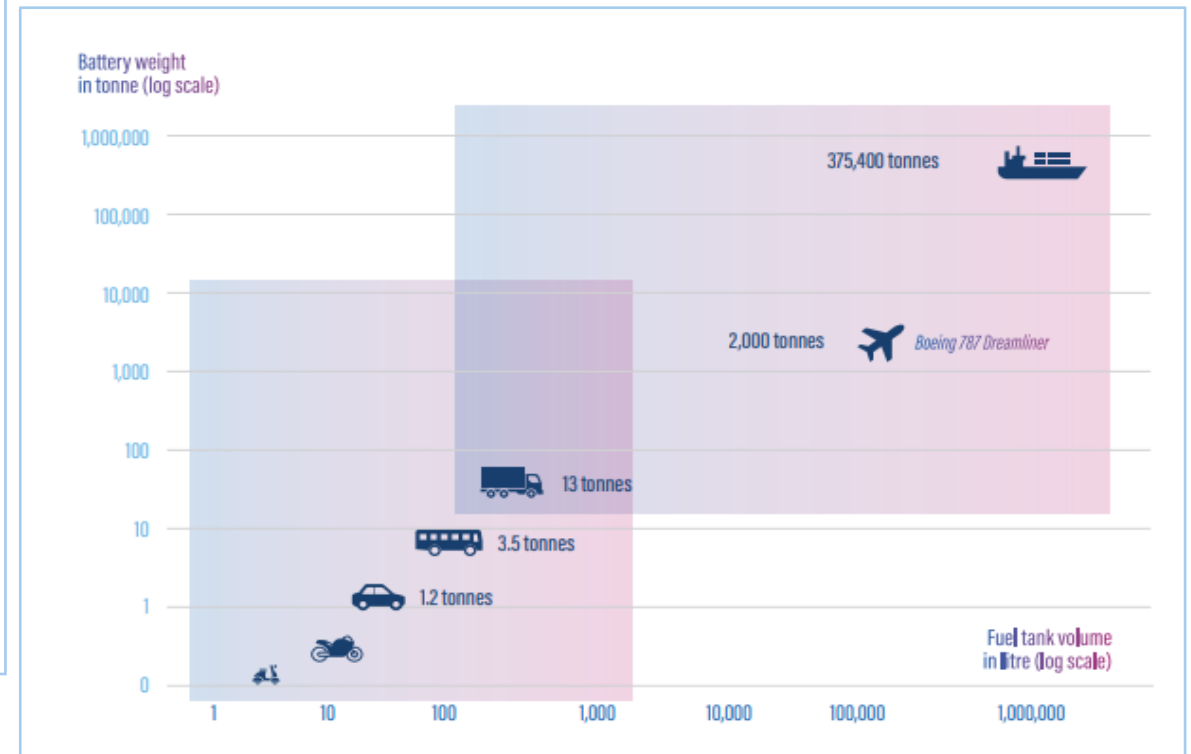
\* Includes passenger cars, two/three wheelers and buses.

## The wide range of the EU Refining Products



Source: IEA WEO 2017

Limited electrification beyond light duty vehicles  
LCLF is the only solution to reduce CO<sub>2</sub> emissions  
in those sectors





3.

---

## ***The role of low carbon liquid fuels***

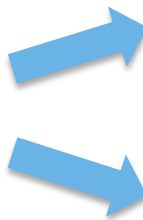
*Advancing energy transition beyond cars, vans and scooters*

---

## Vision 2050 : the Proposal for Low Carbon Liquid Fuels

Describing how the refining industry can contribute to the transition to a low carbon economy (Paris agreement & EU 2050 Climate targets)

By:



Gradually transitioning to new feedstocks, reducing product-related GHG emissions (combined with more efficient vehicles)

Further increasing GHG efficiency in refineries

HVO

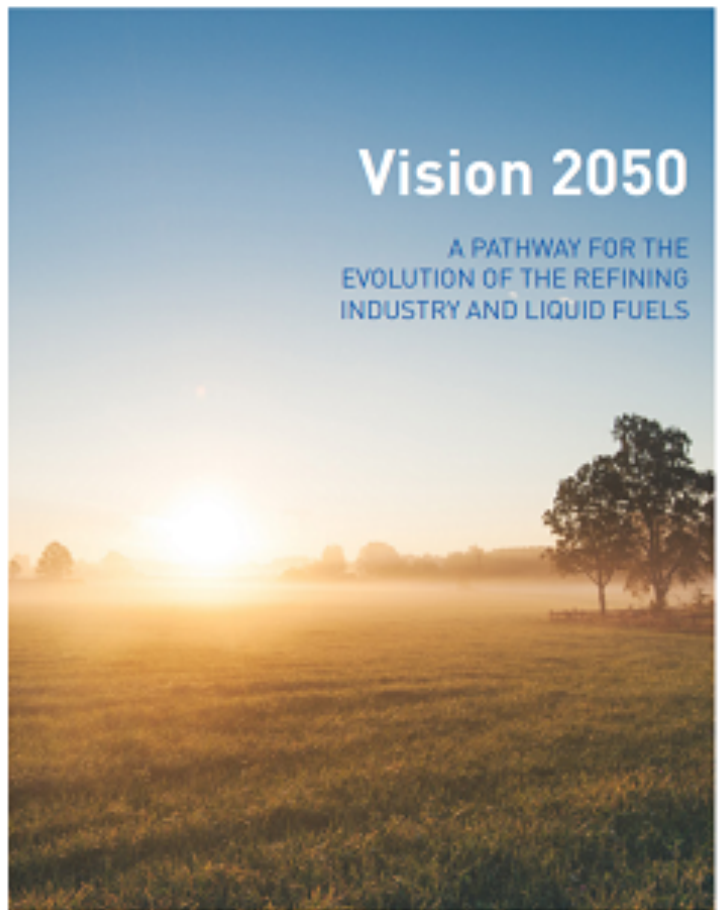
Biofuels & Algae

Synthetic Fuels

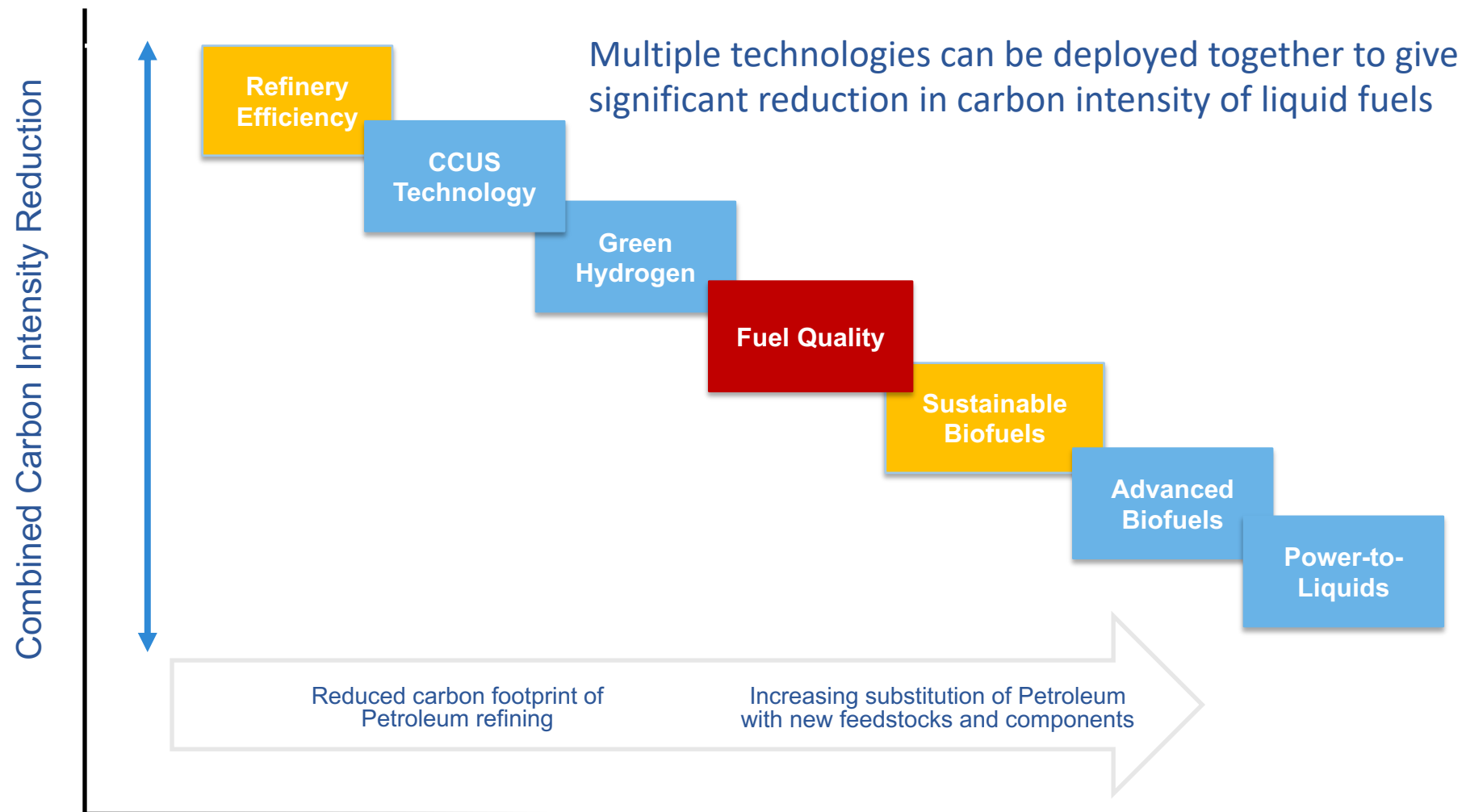
Hydrogen

Waste\*-to-Fuel

CCS & CCU

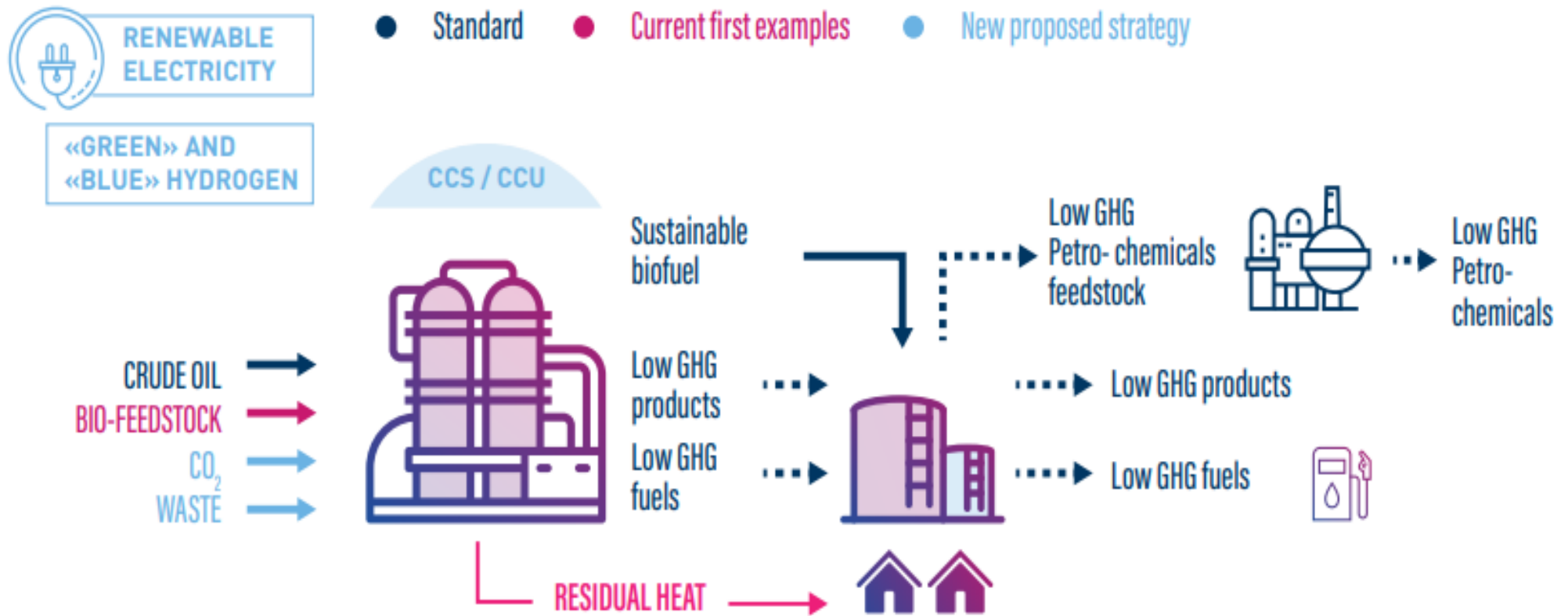


## We have the technologies...



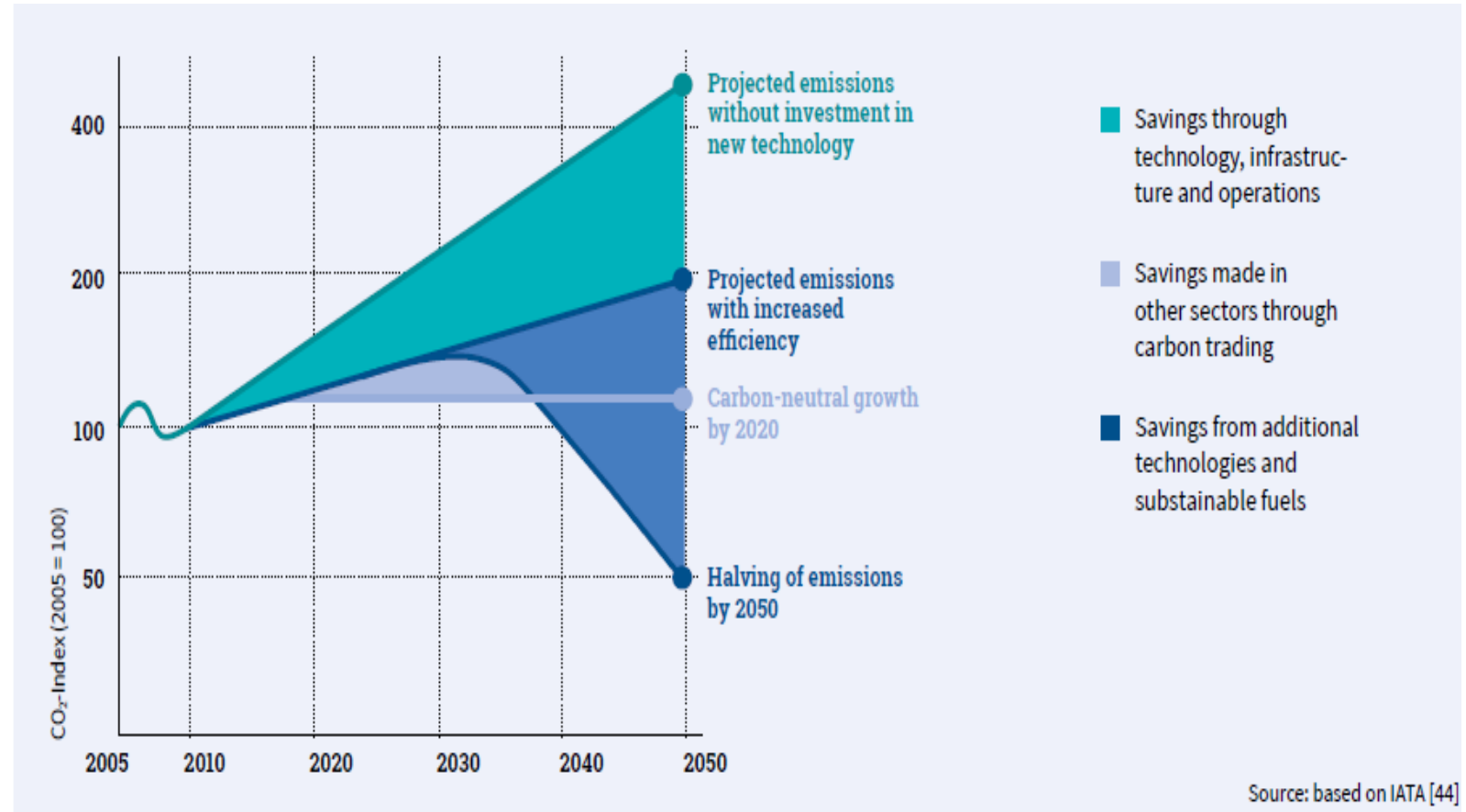
## The Refinery of the future

an energy provider, a part of a wider industrial cluster



### The example of Sustainable Aviation Fuels (SAF)

- CO<sub>2</sub> emissions from global aviation account for around 2.8% (12% from the transport sector)
- Aviation has no immediate option to dispense with liquid fuels
- Carbon trading, improvements in technology and operations, and Sustainable Aviation Fuels (SAF) are among the measures considered
- IATA goal of 2.5% SAF by 2025
- IATA's long-term goal to reduce CO<sub>2</sub> to half of 2005 levels by 2050





4.

---

***Risks and Requests***  
*on our way towards Carbon Neutrality*

---

### Risks and Concerns

- New ambitious targets for 50-55% CO<sub>2</sub> reduction. How and at what cost?
- Going Climate Neutral will cost a lot of money
- Just and inclusive transition must be secured
- Europe cannot fight climate change alone
- “The Green Deal is above all an Industrial Policy” (Timmermans)
- Cutting transport emissions is a top priority
- Very strict CO<sub>2</sub> standards push carmakers to announce large-scale electrification (EVs considered as zero emissions vehicles). Huge pressure and risk of huge fines if they do not comply\*
- Electrification is considered as the only solution for light duty vehicles by EU policy makers & NGOs (Evs considered as zero CO<sub>2</sub> emissions vehicles, while no CO<sub>2</sub> credits are given to vehicles using biofuels).
- Transport policies and EVs enthusiasm may impact other policies, with the risk of exclusion of other important technologies from policies, measures, funding, support on our way towards the Carbon Neutrality target (i.e. Sustainable Funding-Taxonomy)
- Exclusion measures would restrict the potential of new technologies like the Low Carbon Fuels, leaving entire energy sectors without a solution towards Carbon neutrality

\* If the EU auto industry makes no progress towards meeting the EU's 2020/21 regulations, it faces fines totalling 32 billion euros, twice its estimated profits!

**Carbon Neutrality :**

**Need for policies for a truly sustainable, socially just and economically competitive European society, leading the world in achieving the climate objectives agreed at COP 21 in Paris.**

**CALL FOR ACTION - Policy principles**

- Turn EU's climate leadership into an **industrial opportunity**
- Maintain the **competitiveness** of the current industrial fabric to enable its sustainable transition
- New policies will have to rely on a **robust scientific and technical base** which will ensure that they are environmentally, socially, and economically sustainable in the long term.
- **All sectors** must be part of the solution and should play a role in the Energy Transition
- No fit-for-all solution. **Many new technologies** will be needed to move towards Climate Neutrality
- A technology-inclusive approach based on the **technology neutrality** principle, to allow **all low-carbon technologies** to contribute to CO2 reduction

**The EU refining industry is committed to contribute to these objectives.**

## **CALL FOR ACTION - Regulatory support is necessary to unlock innovation**

- **Low Carbon Liquid Fuels (Renewable Hydrocarbons) will be needed for Energy Transition beyond scooters, cars and vans**
- **Recognize the role of the Refining Sector and that of Low Carbon fuels in the European and National Plans towards climate neutrality**
  - **Account the contribution of low-carbon fuels in the CO<sub>2</sub> performance standards for cars and for trucks, through the adoption of a holistic, Well-to-Wheel (and eventually Life-Cycle) approach.**
- **A sustainable finance framework for all sectors engaged in the energy transition**
  - **Low-carbon investments in refineries and in their products are conducive to a sustainable energy transition.**
- **Establish lower taxes for Low Carbon Liquid Fuels (taxation of energy products on the basis of their CO<sub>2</sub> content)**
- **Set a mandate for the use of low carbon liquid fuels in transport**

**Low Carbon Liquid Fuels should benefit from regulatory support similar to the one given to other technologies, i.e. electromobility**



Thank you!

Liquid fuels move  
people & goods everyday...

...and they can  
be low-carbon