

# Refining in the Iberian Peninsula- Challenges and Opportunities

---

Oil Conference by Diário Económico & Apetro

# AOP: THE SPANISH OIL DOWNSTREAM INDUSTRY ASSOCIATION

- Integrated downstream oil companies which market oil products in Spain with refining capacity in the EU.
- Its main objective is to defend its Associates' general interests.
- AOP follow up legislation, advise and co-operation with Spanish Central Administration and regional governments, europeans institutions and oil industry in general.



## 1. Refining in Iberia:

- The hardware
- Logistics
- Recent investments

## 2. Challenges

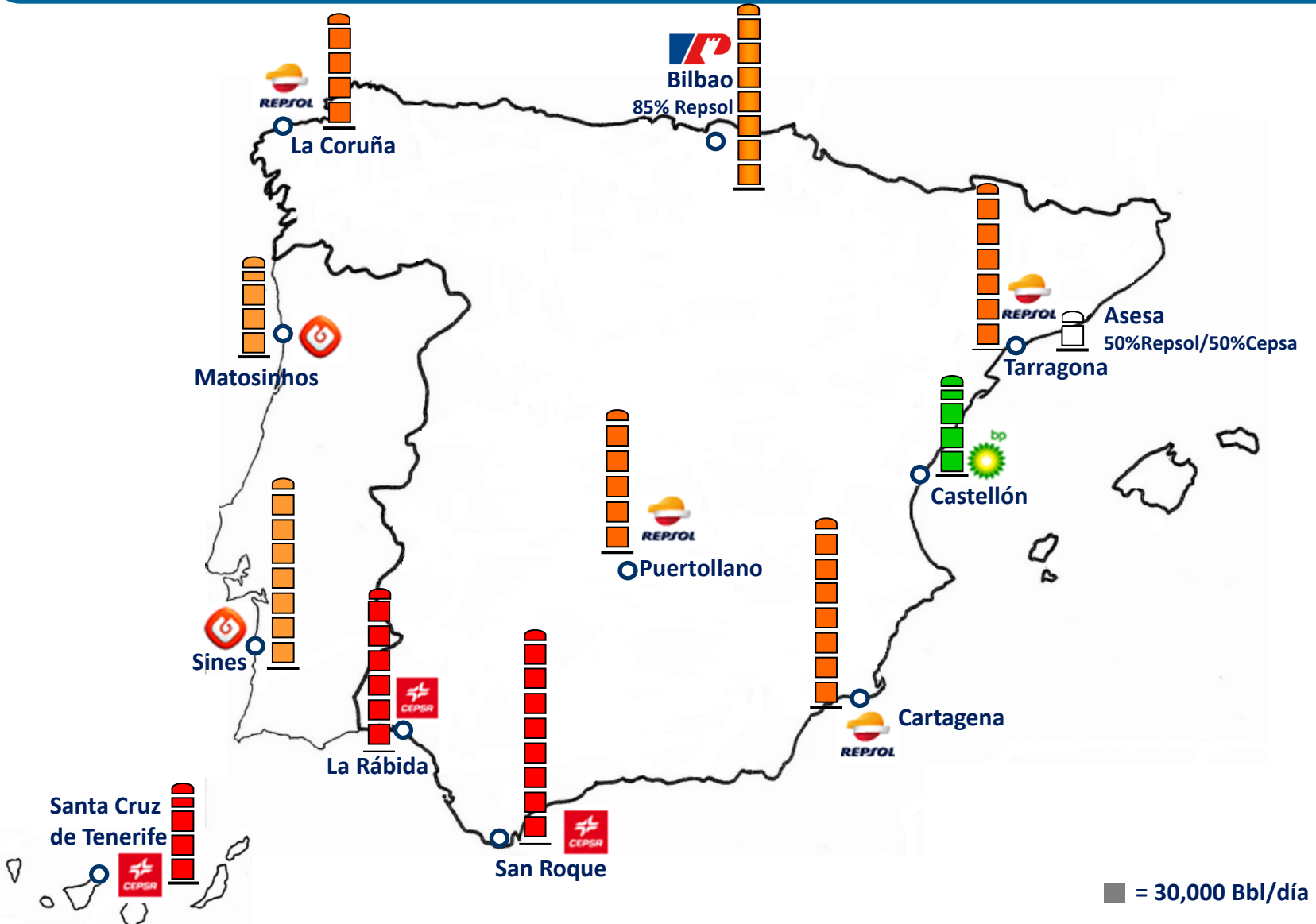
- Internal demand drop
- Competition from refineries in USA, Asia, Middle East & Russia
- Over regulation burden in the EU. High taxation environment

## 3. Opportunities

- Delivering products that are needed
- Strategic location for exports
- Flexible & cost competitive crude diet
- Innovation

## 4. Conclusions

# IBERIAN REFINERIES, LOCATION



## IBERIAN REFINING CAPACITY, 2013

### PORTUGAL

Refinery	Atmos. Desti. Mt/year	Atmos. Desti. Bbl/d	Nelson Complexity Index
Matosinhos	5.5	110,000	10.7
Sines	11.0	220,000	7.7
<b>TOTAL</b>	<b>16.5</b>	<b>330,000</b>	<b>8.7</b>

### SPAIN

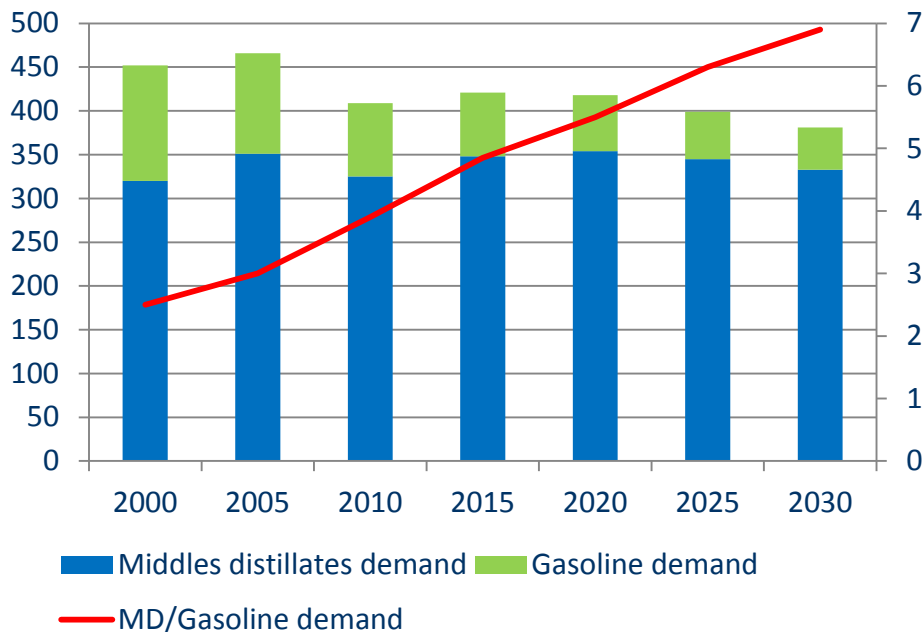
			FCC Equiv. Mt/y	Processing Units	Capacity Mt/y	Capacity Kbbl/day
Cartagena	11.0	220,000	8.4	Atm. Dest.	76.8	1,536
A Coruña	6.0	120,000	4.0	Vacuum Dest.	30.52	540
Puertollano	7.5	150,000	4.9	Vacuum Lubs. Dest.	2.77	50
Tarragona	9.0	180,000	3.9	FCC	10.41	197
Bilbao	11.0	220,000	7.0	Hydrocracking	9.20	176
Tenerife	4.6	92,000	0.6	Visbreaking	8.82	153
San Roque	12.0	240,000	2.6	Coquer	8.70	150
La Rábida	9.2	184,000	4.6	Reforming	9.10	214
Castellón	5.4	108,000	3.6	HDS/HDT	51.56	1,087
Asesa	1.1	22,000				
<b>TOTAL</b>	<b>76.8</b>	<b>1,536,000</b>	<b>39.6</b>			

# EFFICIENT AND VERY FLEXIBLE SUPPLY SYSTEM FOR THE LOCAL MARKET & FOR EXPORT. SECURITY OF SUPPLY IS GUARANTEED

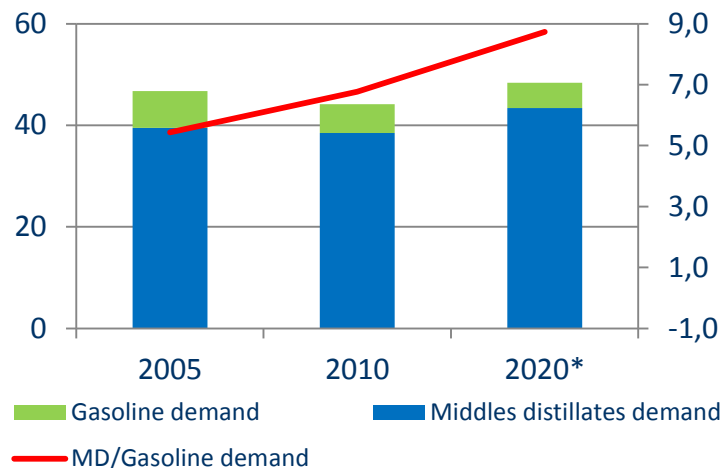


# DIESELIZATION OF EU DEMAND, EVOLUTION OF THE MIDDLE DISTILLATE/GASOLINE DEMAND RATIO, THE RATIO IS EVEN HIGHER IN PORTUGAL AND SPAIN

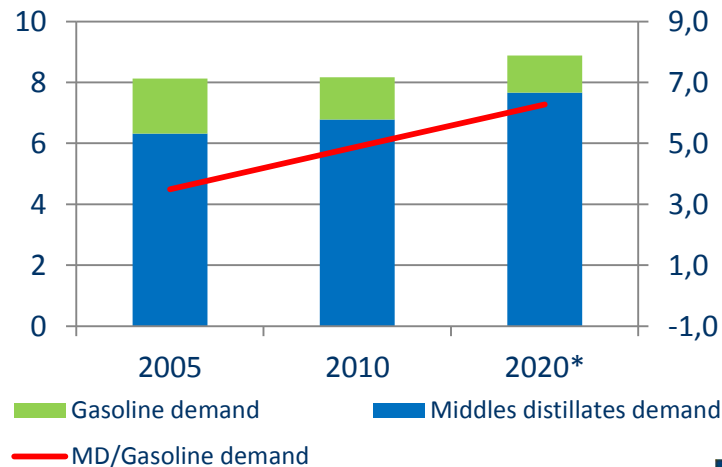
**Total demand for Gasoline & MDs in EU27+2 (Mt/a)**



**Total demand for Gasoline & MDs in Spain (Mt/a)**



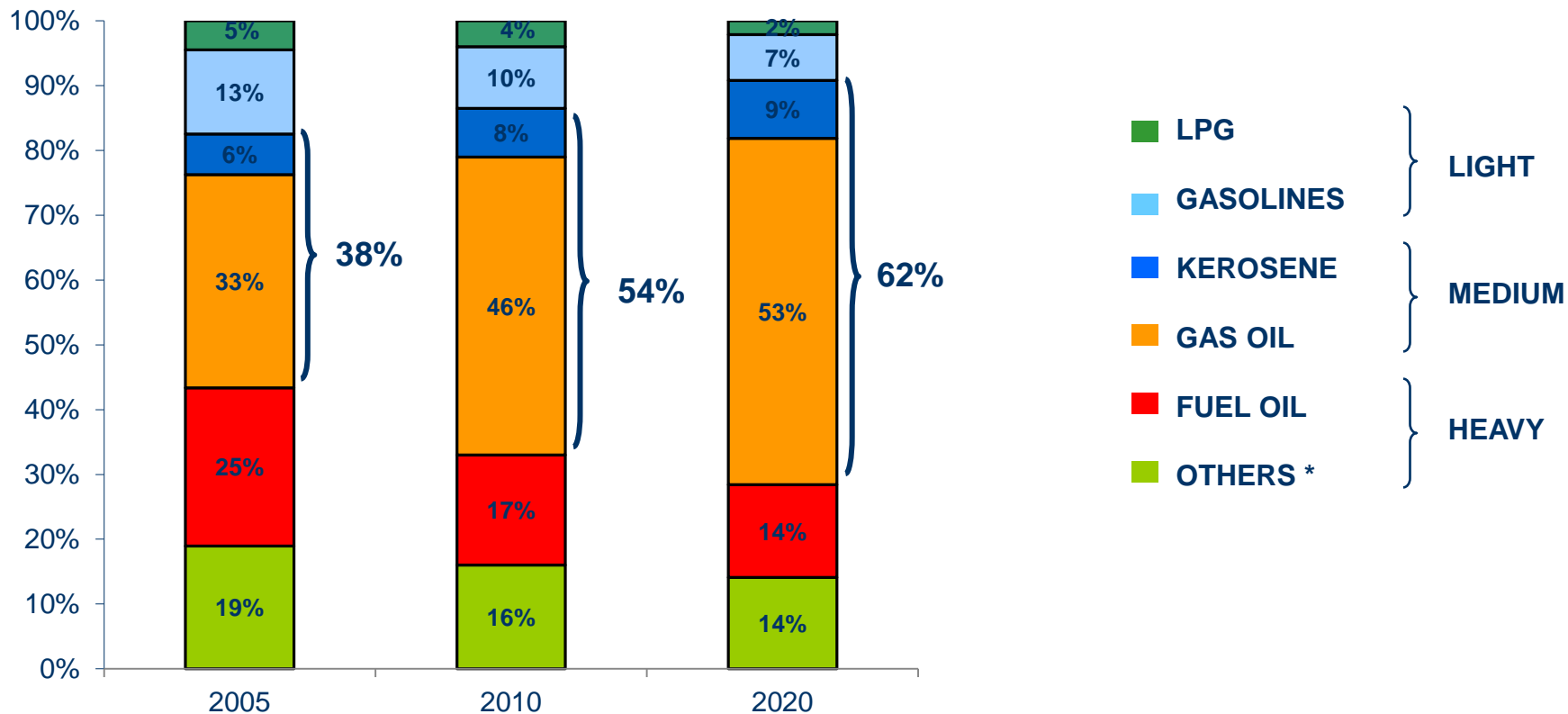
**Total demand for Gasoline & MDs in Portugal (MT/a)**



Sources: CONCAWE (WoodMackenzie), DGEG Portugal, CORES and AOP

# GROWING MIDDLE DISTILLATES WEIGHT IN THE DEMAND, HEAVIER AND LIGHT PRODUCTS WILL CONTINUE LOOSING GROUND

## IBERIAN DEMAND STRUCTURE



\* Others include heavy (coke, asphalt, lubes) and light (naphthas & petrochemistries raw material)

Sources: APETROL, CORES and AOP



# POOLE POSITION FOR IBERIAN REFINERS IN ADAPTING TO MARKET DEMAND REQUIREMENTS, ENVIRONMENTAL IMPROVEMENTS AND ENERGY EFFICIENCY

- More than 8,100 millions € investment in the period 2008-2012
- 9.5 millions of ton additional middle distillates production

## Growth in the capacity of crude processing

- Atmospheric and vacuum distillation units at La Rábida, Cartagena, San Roque, Matosinhos & Sines

## Transformation of fuel-oil & heavy gas oil into diesel

- Cokers at Castellón, Cartagena and Bilbao
- Hydrocrackers at Huelva, Cartagena and Sines

## Cleanest products

- Hydrogen plants and HDS

## Improved energy efficiency

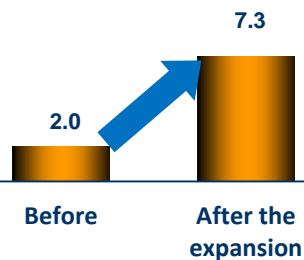
- New CHP (cogeneration) units at Bilbao, Castellón, Huelva and Matosinhos

**Security of supply, employment & gross added value has improved.  
Positive contribution to current account balance**

# MIDDLE DISTILLATES PRODUCTION GROWTH, SPAIN

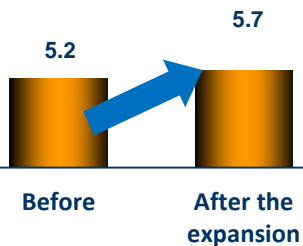
## Cartagena

+ 5.3 Mm<sup>3</sup>/año



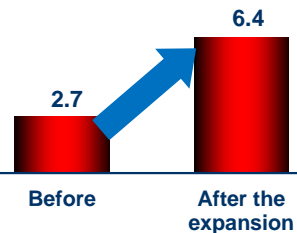
## Bilbao

+ 0.5 Mm<sup>3</sup>/year



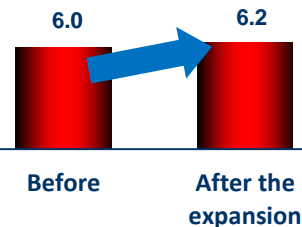
## La Rábida

+ 3.7 Mm<sup>3</sup>/year



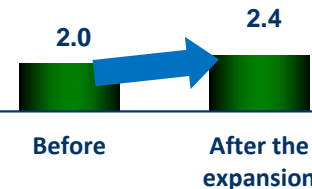
## S. Roque

+ 0.2 Mm<sup>3</sup>/year



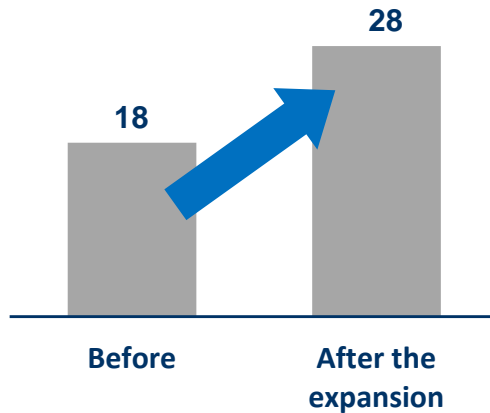
## Castellón

+ 0.4 Mm<sup>3</sup>/year



## SPAIN

+ 10 Mm<sup>3</sup>/year (~8 Mt/y)

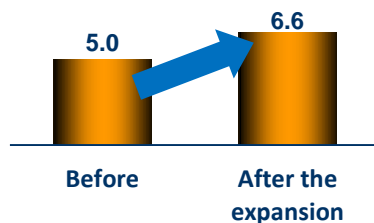


Source: AOP

# MIDDLE DISTILLATES PRODUCTION GROWTH, PORTUGAL

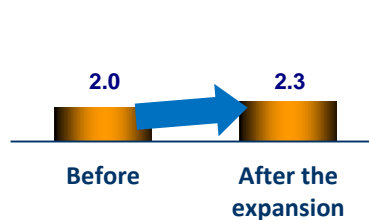
Sines

+ 1.6 Mm<sup>3</sup>/año



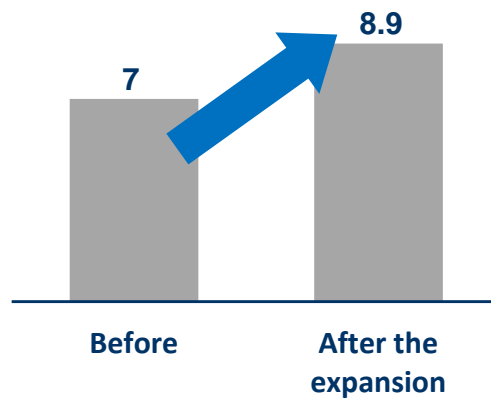
Matosinhos

+ 0.3 Mm<sup>3</sup>/year



PORTUGAL

+ 1.9 Mm<sup>3</sup>/year (~1.5 Mt/y)

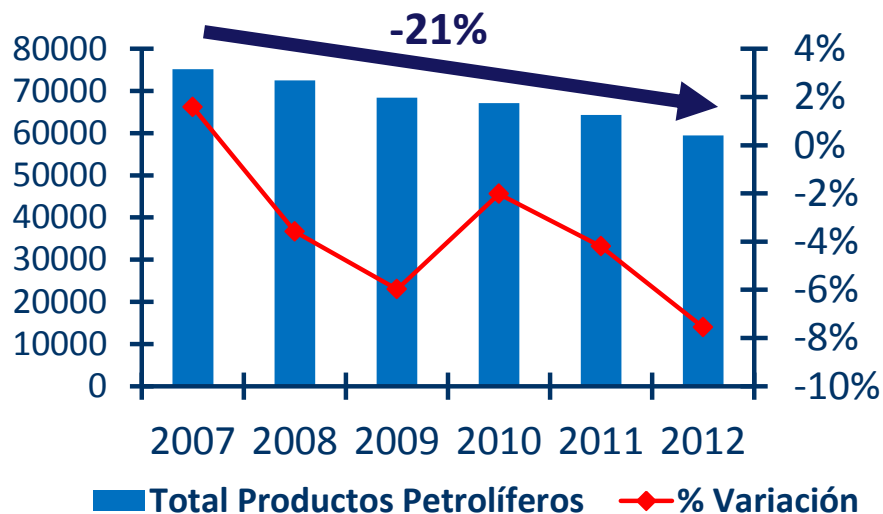


Source: Galp

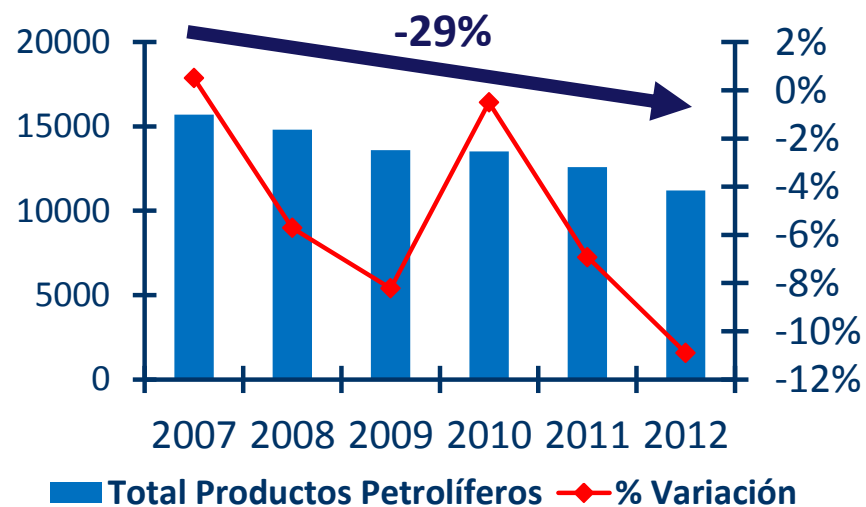
# OIL PRODUCTS CONSUMPTION BADLY AFFECTED BY THE ECONOMIC CRISIS IN BOTH COUNTRIES

## Total demand evolution

### Spain (kt)



### Portugal (kt)



Sources: DGEG Portugal, CORES and AOP

## EU WILL BE EXPOSED TO A STRONG COMPETITION FROM REFINERIES BASED IN USA (GC), ASIA, MIDDLE EAST & RUSSIA

### USA:

- Decline in gasoline demand is leading to a reduction of imports from Western Europe.
- Overcapacity, cheap energy cost (20 % of refinery cost vs 60 % in Europe) has reversed the closure of East Coast refineries.
- Gulf Coast: deep conversion refineries, heavier crudes and shale oil (Bakken & Eagle Ford) are substituting more expensive light/sweet crudes. Exports to Europe, Latin America and West Africa.

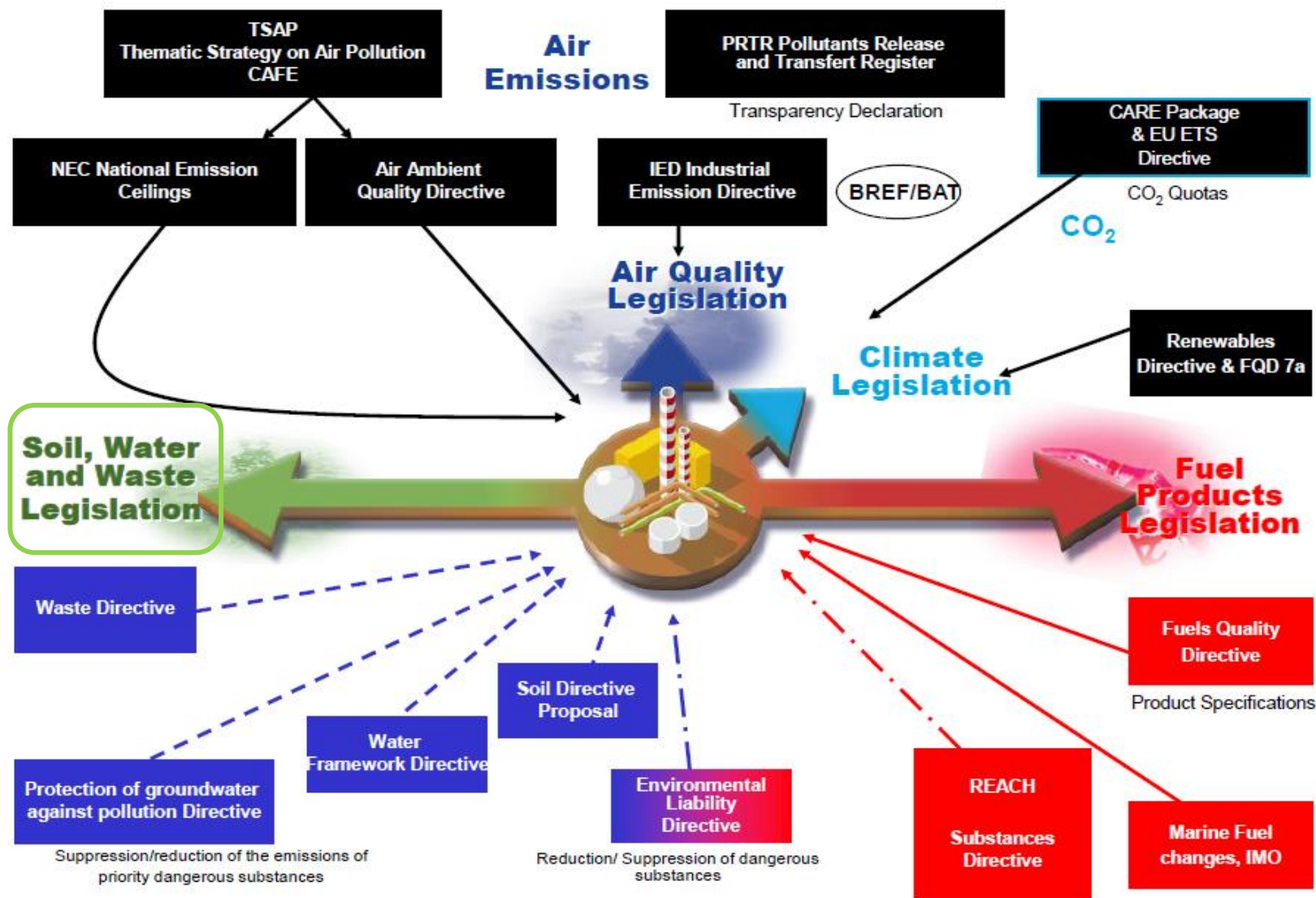
### ASIA & MIDDLE EAST:

- India mega hubs exporting oil products, fiscal advantages.
- Saudi Arabia will reduce by 50 % their gasoline imports in one year. UAE, Kuwait, Qatar, Oman also expanding refineries.

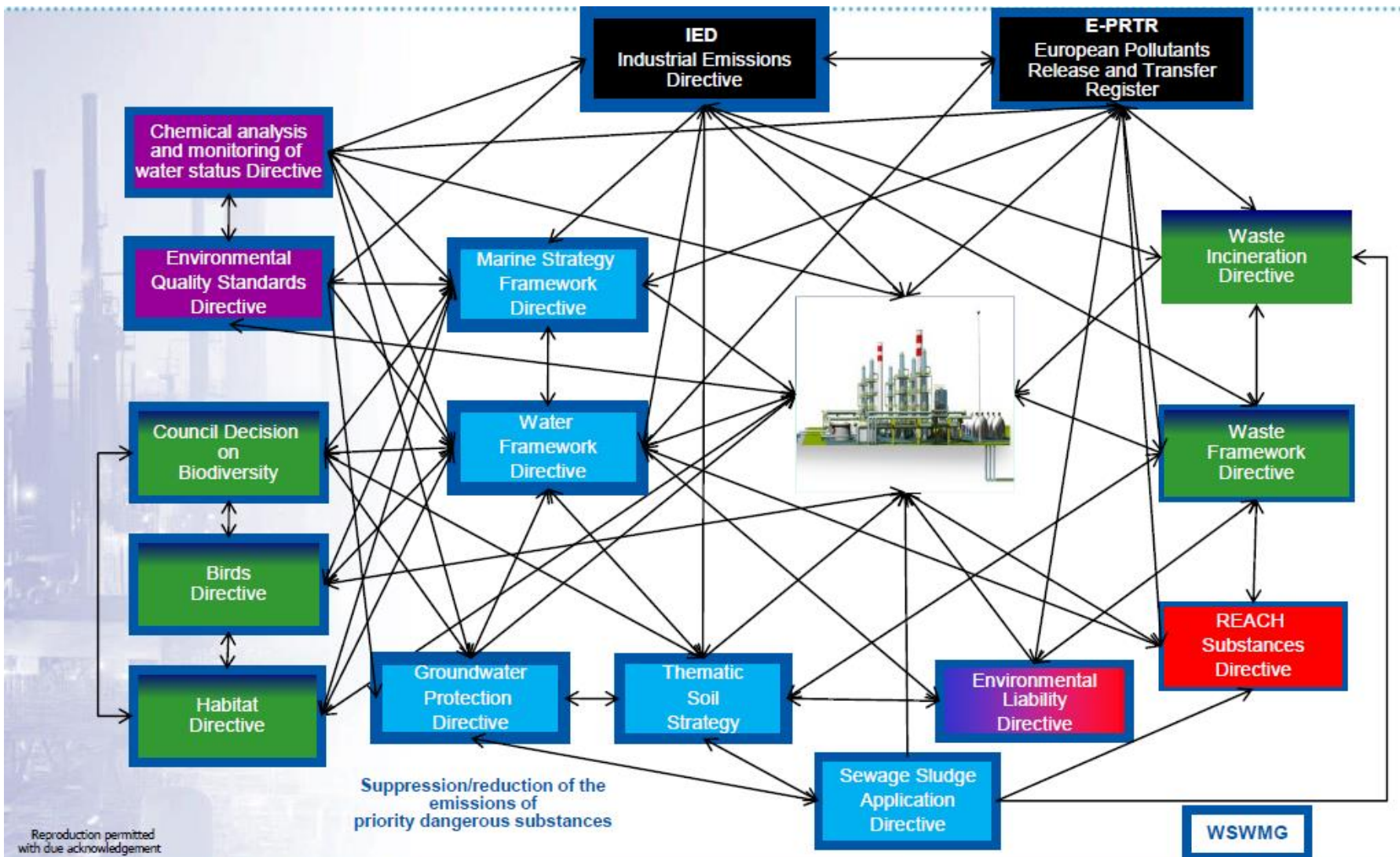
### RUSSIA:

- VGO exports due to disappear, upgrading refineries will be able to export finished products.

# LEGISLATIVE REGULATION IN EUROPE, COMPLEX AND BURDENSOME. PARLIAMENT, COMMISSION & COUNCIL NO CLOSE ENOUGH TO THE INDUSTRY, DIFFICULT AND EXPENSIVE TO FOLLOW UP THE PROCESS



# EXAMPLE: SOIL, WATER and WASTE LEGISLATIVE ENVIRONMENT. INVESTORS ARE HEROES



Reproduction permitted with due acknowledgement



# THREE DIRECTIVES WILL HAVE A SUBSTANCIAL IMPACT ON OUR INDUSTRY , WE REQUEST THE SUPPORT OF THE PORTUGUESE AND SPANISH GOVERNMENT TO DEFEND NATIONAL INTEREST

## FQD, Art. 7 A:

- DG CLIMA is intending to descriminate crude by its relative emisions of CO<sub>2</sub>, that would penalize heavier crudes and badly affect the competitiveness of our business without any gain to global CO<sub>2</sub> emissions.
- Our impact analisis , we estimate an income loss for spanish refiners of 460 millions € per year in case that non conventional oils will be discriminated. In order to avoid that loss we should blend more biofuels that are more expensive that mineral fuels.

## EID:

- Our estimates for Spain is that the total investment in order to reduce emmissions will be in the range of 500 million € in the next years.
- Industry is defending the bubble concept in order to optimize investments and grant operation flexibility.

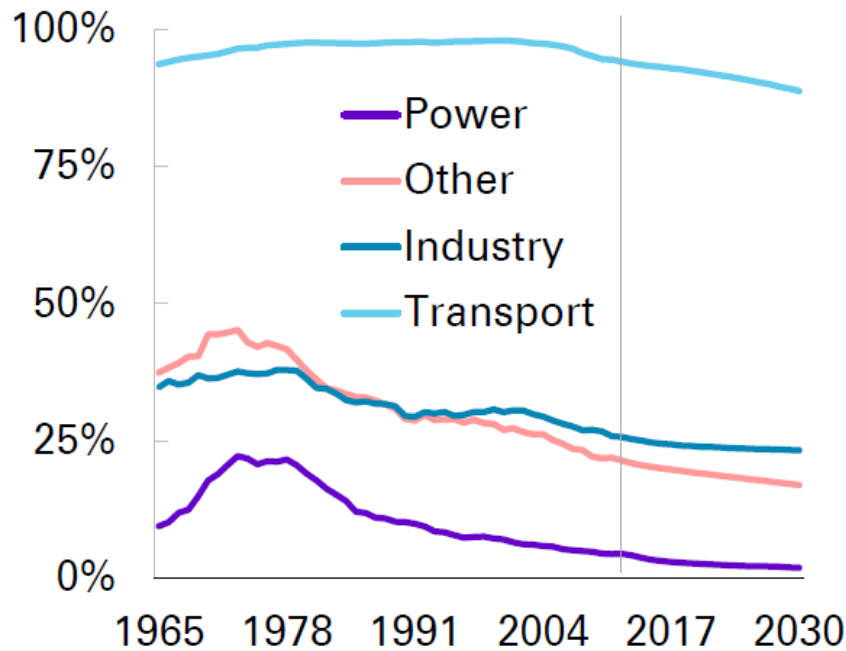
## MARINE FUEL D:

- Marine Fuel Oil will have to have less than 0.5 % Sulphur content by 2020. Again, the EU has gone further than what it was agreed at the IMO. It is questionable product availability which may affect security of supply to shipping.

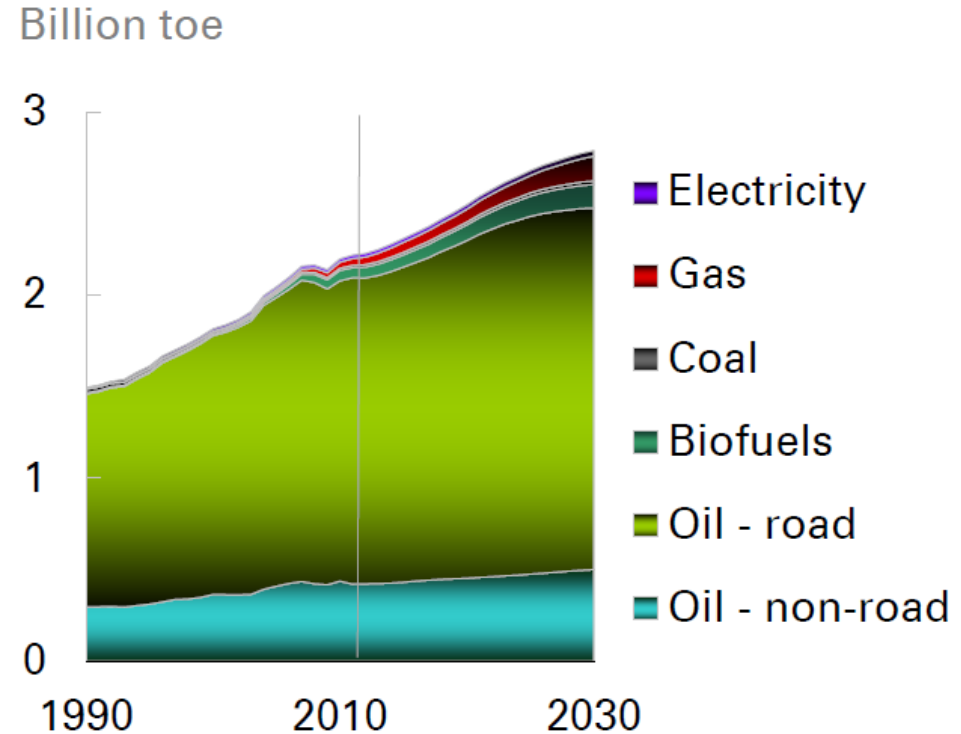


# IN THE MEDIUM TERM OIL PRODUCTS WILL BE ESSENTIAL FOR TRANSPORT REQUIREMENTS AND AS FEEDSTOCK FOR THE PETROCHEMICAL INDUSTRY

OIL SHARE IN SECTOR

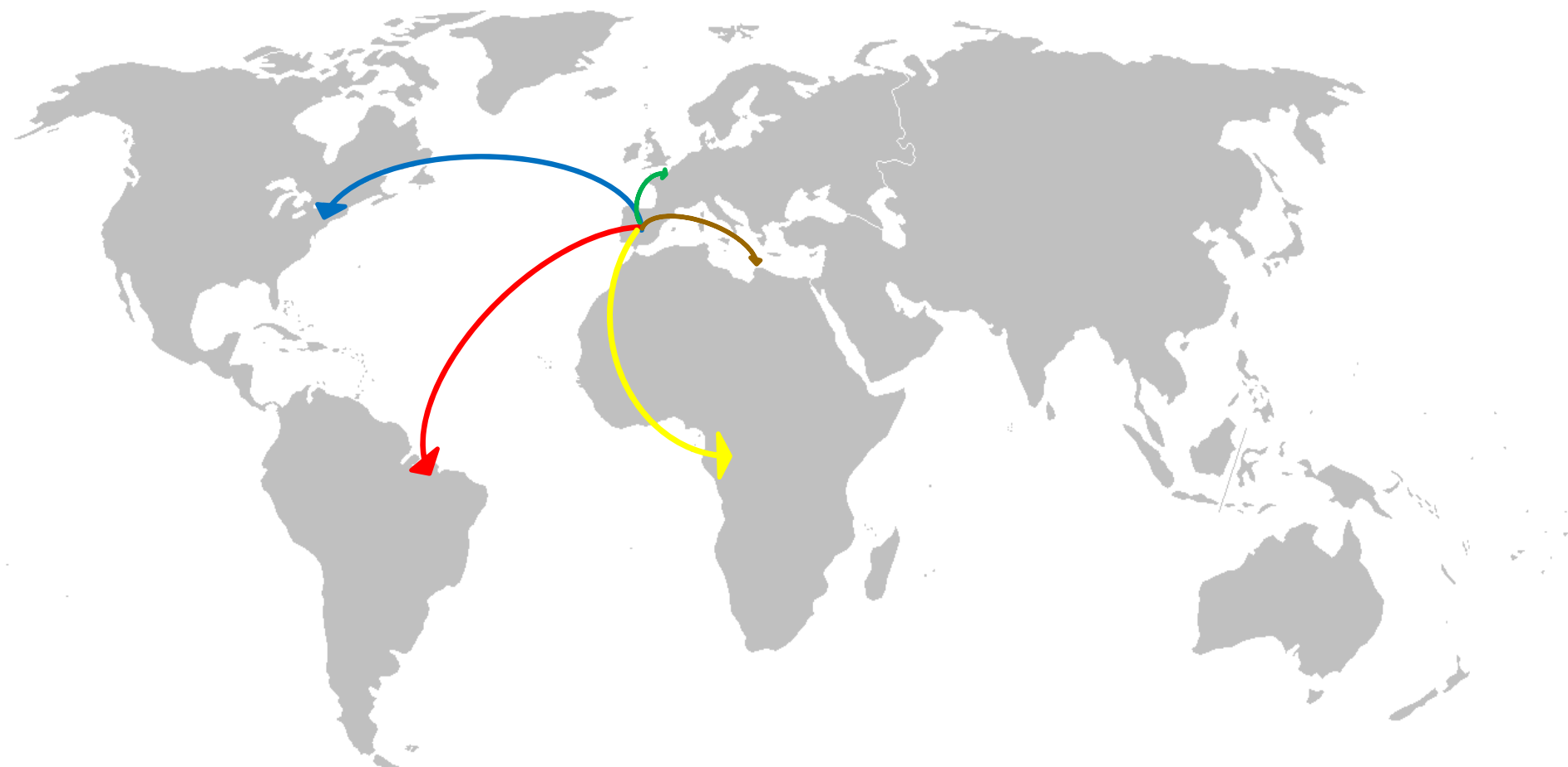


TRANSPORT DEMAND BY FUEL



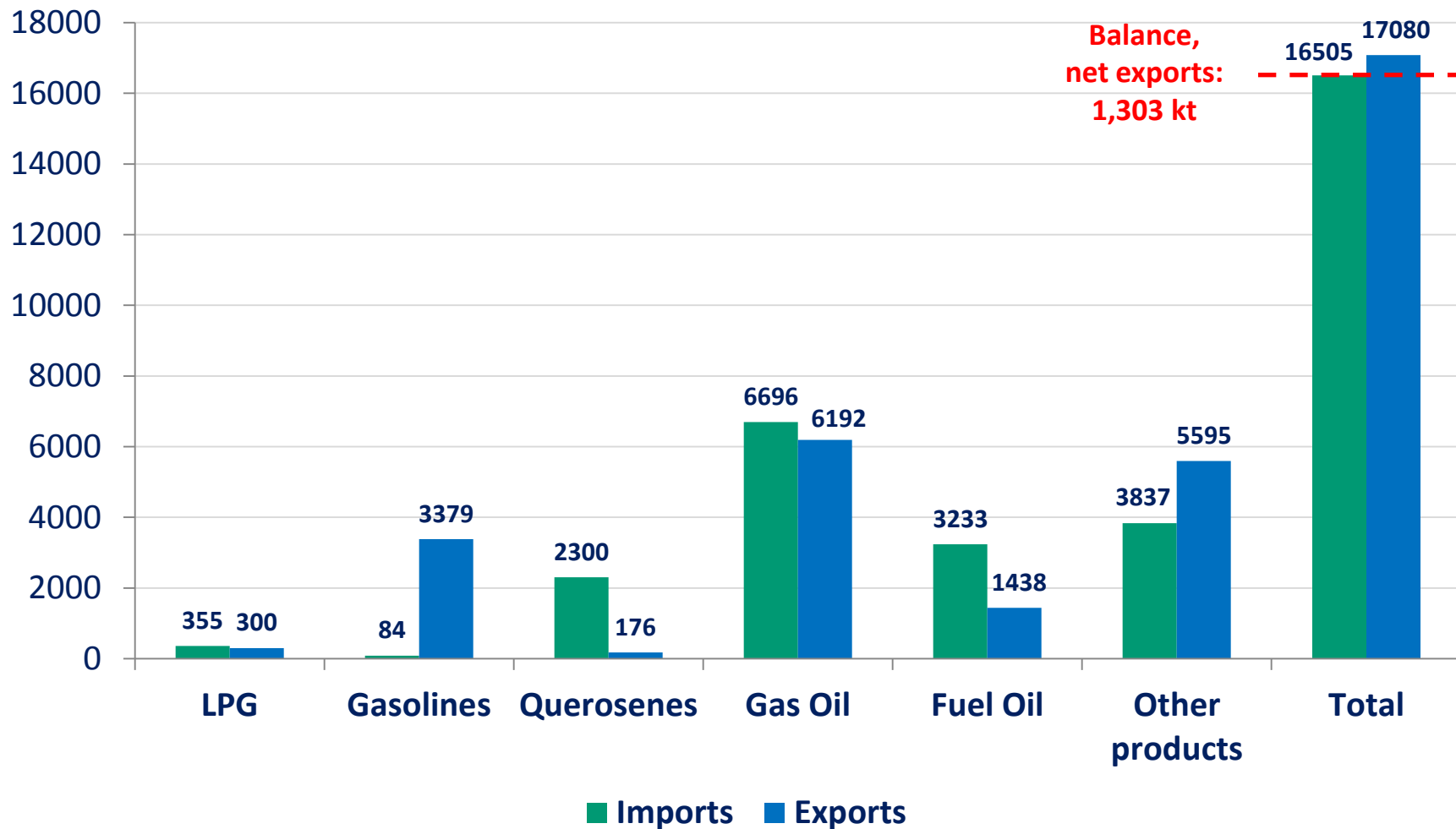
Source: BP Energy Outlook 2030

## ESTRATEGIC LOCATION FOR EXPORTS TO NORTH AND LATIN AMERICA, AFRICA, NWE, EAST MEDITERRANEAN



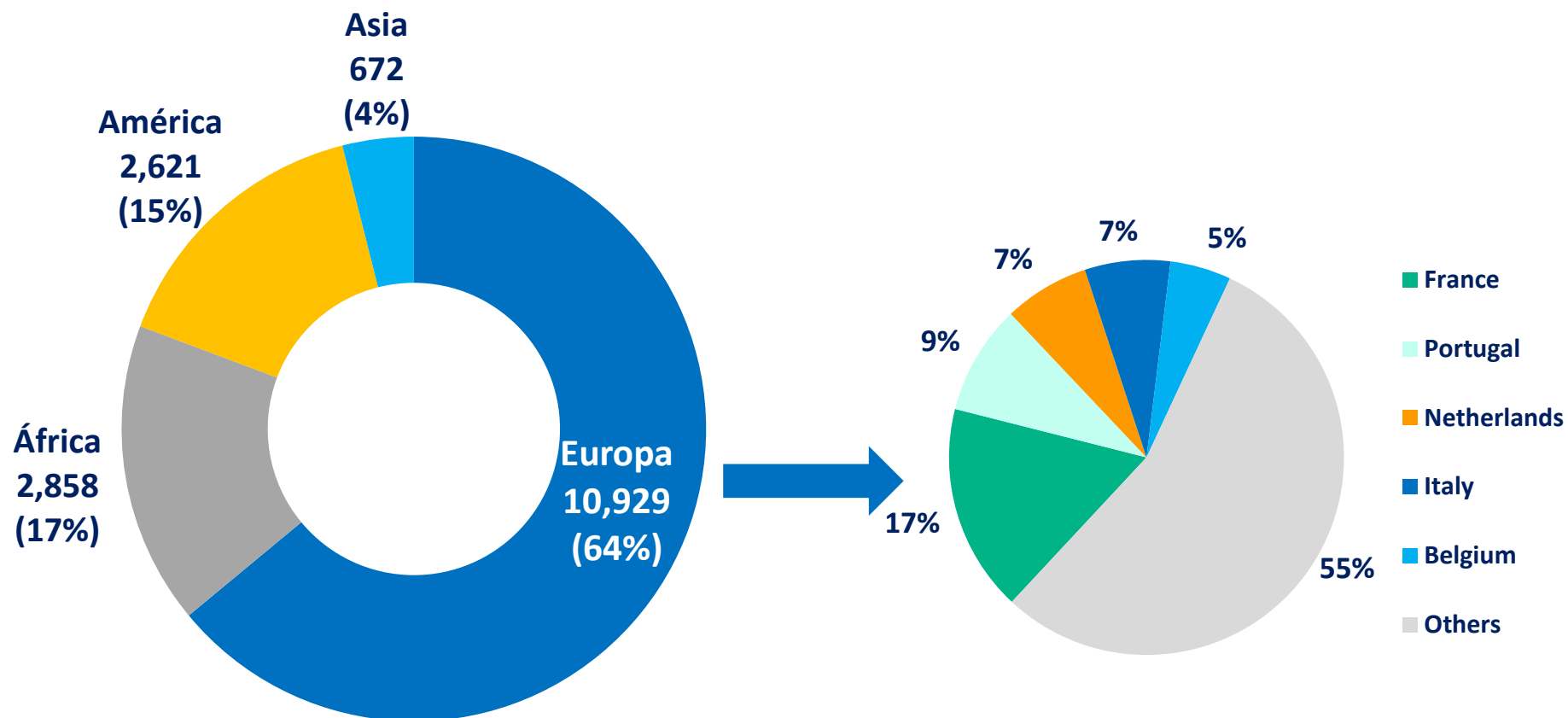
# STRUCTURAL CHANGE IN 2012: FROM BEING NET PRODUCT IMPORTERS THE INTERNAL DEMAND DROP HAS OBLIGED IBERIAN REFINERS TO EXPORT. POSITIVE CONTRIBUTION TO CURRENT ACCOUNT BALANCE

Thousands tonnes



Source: CORES

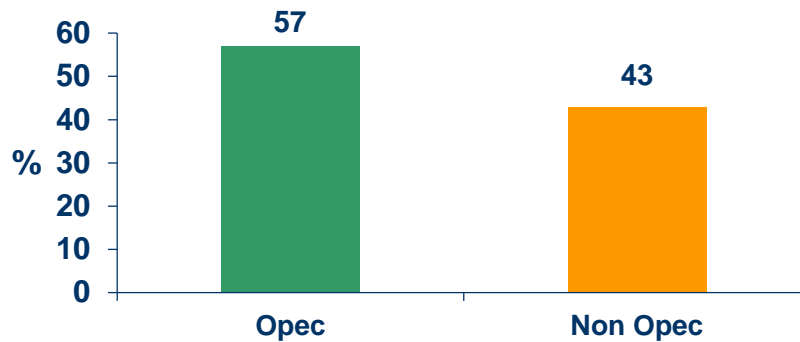
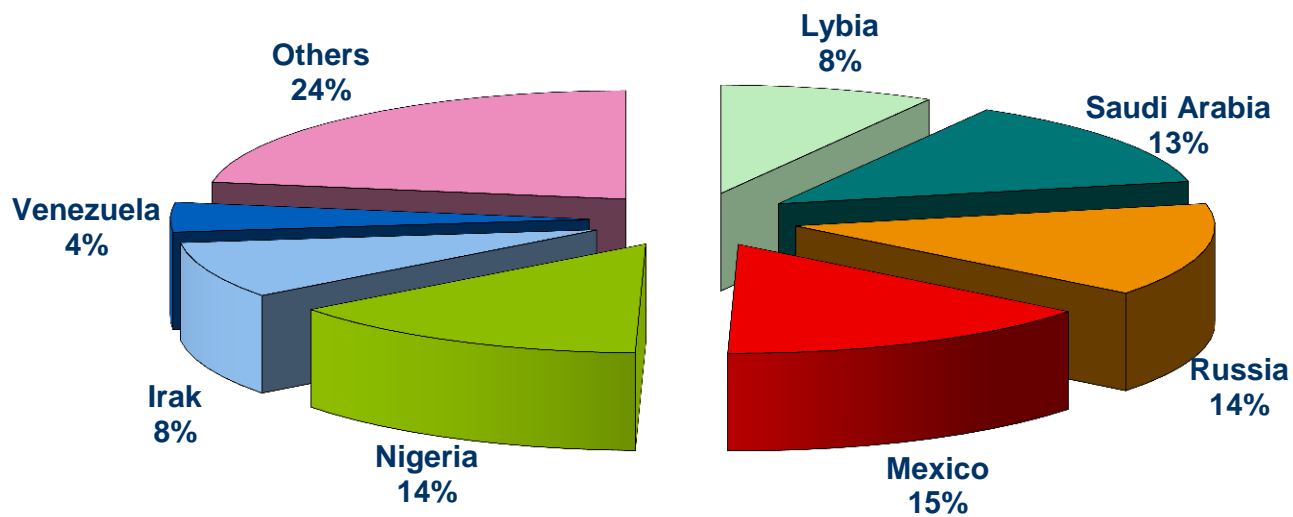
## SPANISH EXPORTS BY DESTINY (thousand mt)



Source: CORES

# WELL DIVERSIFIED CRUDE SUPPLY, IBERIAN REFINERS ARE ABLE TO PROCESS HEAVY AND SOURER CRUDES WHICH GIVES THEM A COMPETITIVE EDGE

OIL IMPORT SOURCES, SPAIN 2012



Source: CORES

## OIL INDUSTRY IS CONTINUOUSLY INNOVATING, VERY DINAMIC, WE HAVE BECOME AN ENERGY INDUSTRY

- Innovation is playing an important role in our industry. Technological research centres for investigating new processes, new sources and alternative fuels. Upstream (Deep water, unconventional crude and gas, CCS), GTL, BTL, HVO and other biofuels.
- Advanced Biofuels are being investigated, when viable economically they will be developed at a industrial scale . The process of UCO through hydrogenation to get biodiesel in our refineries is already a reality, most sustainable. Hydrotreated Vegetable Oil (HVO) biodiesel is the best biofuel quality wise, produced and blended by refiners.
- Our industry is able to attract skilled scientists and engineers that are working for the future and trying to find the best energy solutions.

## CONCLUSIONS

- Portugal & Spain, like the rest of the countries, are going to depend on oil products for transport and as petrochemical industry feedstocks for several years.
- Refining is a strategic industry in order to make possible an easy transition toward a low carbon economy. This transition is going to be gradual and long, our industry will play a key role.
- Efficient and competitive production in Iberia of oil products is essential to guarantee the security of supply. Investments have been made to adapt local production to market demand, improve energy efficiency and environmental standards.
- Refining industry contributes to the added value of the oil marketing and petrochemical industries, its suppliers and contractors, engineering firms and the service activities linked with them. High quality employment generator.
- Oil industry is committed to decrease its carbon foot print, and is proved by the progressive blending of biofuels, the energy efficiency and reduction of CO<sub>2</sub> emissions in their processes and the production of cleanest fuels.



[www.aop.es](http://www.aop.es)