

# LET'S GET ITALY MOVING



ANNUAL REPORT 2016



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**ANNUAL**  
**REPORT** 2016

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(May 30, 2016)

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(May 30, 2016)

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ATTILIO CARMAGNANI "AC"	PETROLIG
BP ITALIA	PETRONAS LUBRICANTS ITALY
COSTIERI D'ALELIO	PETROVEN
DECAL	RAFFINERIA DI MILAZZO
DEPOSITI COSTIERI DEL TIRRENO	RAFFINERIA DI ROMA
DISMA	SARAS
ENI REFINING & MARKETING	S.A.R.P.O.M.
ERG SPA	SERAM
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GAZPROM NEFT LUBRICANTS	SIGEMI
IES- ITALIANA ENERGIA E SERVIZI	S.I.O.T.
IPLM	SUPERBA
ISAB	TAMOIL ITALIA
KRI	TOSCOPIETROL
KUWAIT PETROLEUM ITALIA	TOTALERG
LA PETROLIFERA ITALO-RUMENA	VISCOLUBE



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# THE INTERNATIONAL MARKET

## The international economic context

**2015 was another very uncertain year for the global economy** which on the whole **showed signs of improvement**, above all in the advanced economies, though this was offset by a weakening – for the fifth straight year– in the emerging and developing Countries.

Indeed, global GDP grew by 3.1 per cent in 2015. This was, however, a smaller increase than the 3.4 per cent recorded the previous year, though it occurred in a **definitely more favourable context**, not only in exchange markets because of expansive monetary policies, but also in raw materials markets where oil and other commodity prices, after dipping to all time lows, gave **hope for a much more robust recovery than actually took place**.

2015 was also marked by **concerns over the economic situation in China**, which for the first time in history failed to meet the growth targets it had set, so that it was forced to lower its growth estimates for the next years **with the risk of triggering a “drag” effect on other economies as well**.

The sharp drop in crude oil prices, which began during the second half of 2015, had fuelled a certain climate of optimism over the impact this could have on domestic consumption, which was partly disappointed: in the first place because of **declining demand in producing Countries**, then due to **reduced investments and global trade** and finally because of **the impossibility of many Countries to deploy financial leverage**<sup>1</sup>.

The International Monetary Fund (IMF) itself stated in a recent report<sup>2</sup>: *“the widely anticipated “shot in the arm” for the global economy has yet to materialize.”* It added that, *“paradoxically, global benefits from low prices will likely appear only after prices have recovered somewhat, and advanced economies have made more progress surmounting the current low interest rate environment.”*

According to the IMF, this is because the increased positive correlation between equity markets and oil prices, that is, when both variables move in the same direction, makes it harder to apply monetary policy which, in order to deal with deflationary pressures, cannot act counter-cyclically.

Indeed, **monetary policies in the leading advanced Countries continued to be strongly oriented towards expansion**, except in the United States, which in

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<sup>1</sup> See Focus “Drop in crude oil prices and its effects on economic growth” on page 20.

<sup>2</sup> IMF, “Oil prices and the global economy: it’s complicated”, March 24, 2016.

## The industrialized Countries Macroeconomic data

	Gross domestic product		Consumer price index <sup>(1)</sup>		Unemployment		Public deficit <sup>(2)</sup>	
	(% change from previous year)				(% of the labour force)		(% of the GDP)	
	2014	2015 <sup>(3)</sup>	2014	2015 <sup>(3)</sup>	2014	2015 <sup>(3)</sup>	2014	2015 <sup>(3)</sup>
France	+ 0.2	+ 1.2	+ 0.5	—	10.3	10.3	- 4.0	- 3.7
United Kingdom	+ 2.9	+ 2.3	+ 1.5	—	6.2	5.4	- 5.5	- 4.3
Germany	+ 1.6	+ 1.4	+ 0.9	+ 0.2	6.7	6.4	+ 0.3	+ 0.7
<b>ITALY</b>	<b>- 0.3</b>	<b>+ 0.8</b>	<b>+ 0.2</b>	<b>+ 0.1</b>	<b>12.7</b>	<b>11.9</b>	<b>- 3.0</b>	<b>- 2.6</b>
Euro Area	+ 0.9	+ 1.6	+ 0.5	+ 0.1	12.1	11.4	- 2.5	- 2.1
United States	+ 2.4	+ 2.4	+ 1.6	+ 0.1	6.2	5.3	- 3.8	- 3.4
Japan	- 0.1	+ 0.6	+ 2.7	+ 0.8	3.6	3.4	- 5.4	- 5.3
Oecd Countries	+ 1.8	+ 2.0	+ 1.6	+ 0.5	7.5	6.9	- 3.1	- 3.0

<sup>(1)</sup> Harmonized index. Private consumption deflator for combined Oecd Countries. <sup>(2)</sup> Net debt incurred during the course of the year.

<sup>(3)</sup> Provisional data.

Source: IHS Global Insight

## World Energy consumption

(Millions of toe's)

	1990	2000	2005	2010	2011	2012	2013	2014 <sup>(*)</sup>
Solid fuels	2,221	2,342	2,950	3,506	3,672	3,741	3,928	3,974
Natural gas	1,663	2,067	2,352	2,736	2,788	2,838	2,902	2,909
Oil	3,231	3,658	4,005	4,130	4,137	4,207	4,217	4,241
Nuclear	526	676	722	719	674	642	646	662
Hydro	184	225	252	296	301	316	326	333
Geothermal, Wind and Solar	36	60	70	112	127	142	161	169
Biomass and wastes	905	1,025	1,127	1,287	1,311	1,340	1,377	1,398
<b>TOTAL</b>	<b>8,766</b>	<b>10,053</b>	<b>11,478</b>	<b>12,786</b>	<b>13,010</b>	<b>13,226</b>	<b>13,557</b>	<b>13,686</b>

<sup>(\*)</sup> Estimates.

Source: ENI's estimates

## World Crude oil production

	1990	2000	2005	2010	2011	2012	2013	2014	2015 <sup>(*)</sup>
(Millions of tons)									
Opec Countries	1,233	1,511	1,680	1,668	1,704	1,776	1,740	1,730	1,785
Oecd Countries	891	1,014	913	857	859	903	951	1,040	1,080
Other Countries	1,048	1,093	1,323	1,453	1,448	1,441	1,442	1,451	1,475
<b>TOTAL</b>	<b>3,172</b>	<b>3,618</b>	<b>3,916</b>	<b>3,978</b>	<b>4,011</b>	<b>4,120</b>	<b>4,133</b>	<b>4,221</b>	<b>4,340</b>
(Percentages)									
Opec Countries	38.9	41.8	42.9	41.9	42.5	43.1	42.1	41.0	41.1
Oecd Countries	28.1	28.0	23.3	21.6	21.4	21.9	23.0	24.6	24.9
Other Countries	33.0	30.2	33.8	36.5	36.1	35.0	34.9	34.4	34.0
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>(\*)</sup> Provisional data.

Source: Bp Statistical Review; for 2015 estimates Unione Petrolifera on IEA data

December 2015, decided to end its longstanding policy of zero interest rates by hiking its interest rate on Federal funds by 25 basis points, which was motivated by an improving labour market.

It was a decision many observers feared because of the repercussions it could have on financial markets and global currencies, but which actually **had a limited impact thanks to assurances that monetary policies would remain accommodating.**

**In the Eurozone, the Central Bank repeatedly reinforced this monetary stimulus** injecting further liquidity into the system, so that by the early months of 2016 interest rates were negative in an attempt to counter deflationary pressures afflicting Europe.

**Nonetheless, all indicators are pointing to a gradual acceleration of global economic activity.** According to the latest IMF estimates in 2016 the global economy is expected to grow by 3.2 per cent and in 2017 by 3.5 per cent. In particular, in the **Eurozone**, which grew by 1.6 per cent in 2015 (compared to 0.9 per cent in 2014), **growth is forecast to be 1.5 per cent in 2016 and 1.6 per cent in 2017.**

**The growth however remains weak, subject to risks like persistent uncertainty** of demand conditions in **important market outlets** and the increase of **geopolitical tensions** in wide areas of North Africa and the Middle East which may exacerbate the unresolved **question of “migrants”**, on which the cohesion of Europe appears to depend.

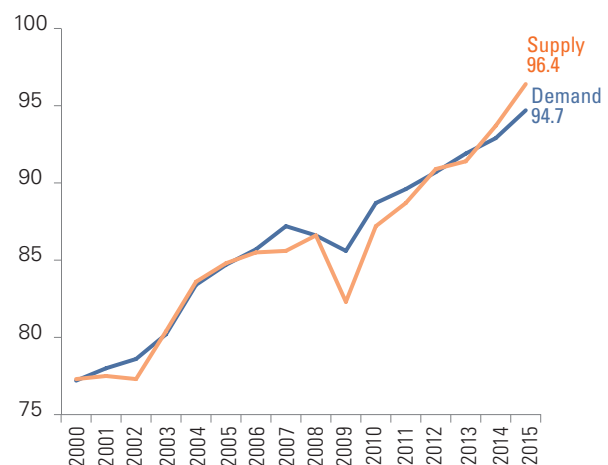
## Oil supply and demand

The year that has just concluded will be remembered for the **sharp increase in world oil production**, which grew by around 2.7 million barrels/day compared to 2014, 63 per cent more than the average of the past four years. Total supply **in 2015 was 96.4 million barrels/day**, of which 40 per cent was covered by OPEC Countries, which with an increased output of 1.25 million barrels/day (+3.3 per cent), continued their policy of **defending market share rather than price.**

Saudi Arabia, Opec’s leading producer with a share of 26 per cent, again produced more than 10 million barrels/day followed immediately **by Iraq which at 4 million barrels/day returned to production levels that were higher than those under the years of Saddam Hussein.**

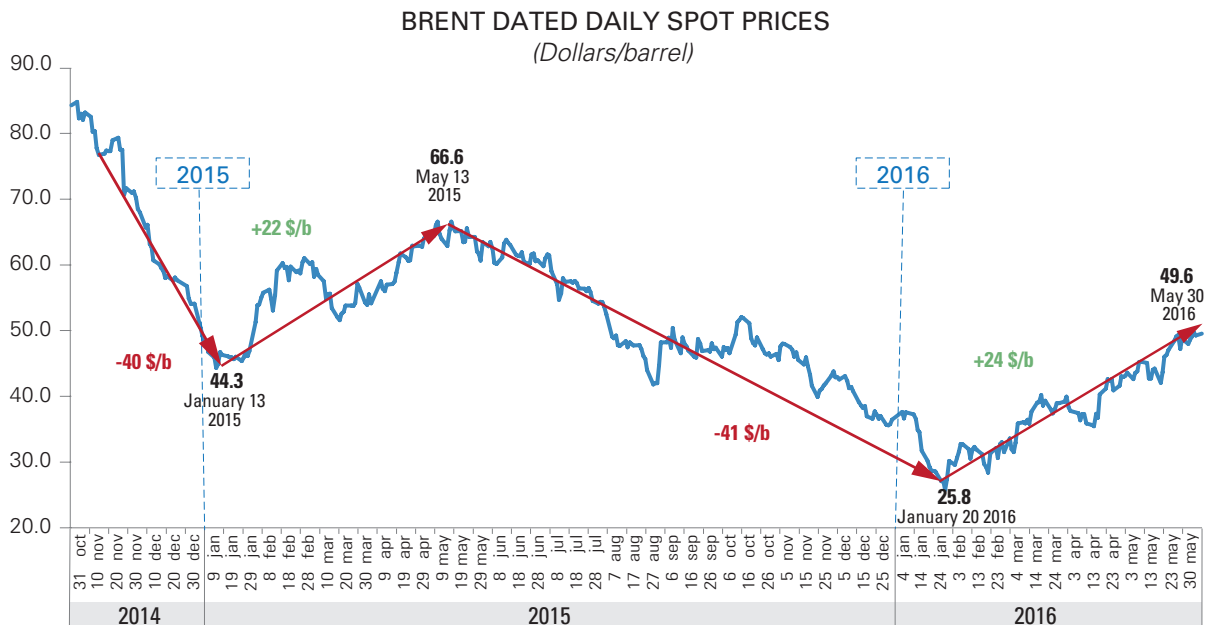
**Iran** was a different story. Only after the lifting of the

**World - Supply and demand of crude oil**  
(Millions of barrels/day)



Source: IEA

## Oil - International quotations



Source: UP on Platts data

sanctions<sup>1</sup>, did it record a **sizeable increase in production**, surpassing 3 million barrels/day in the first quarter of 2016 (+260,000 barrels/day more than in the last quarter of 2015).

**A similar dynamic occurred in other leading non-Opec producers**, beginning with the **United States and Russia**, which **again confirmed their number one and number two rankings as world oil producers** with an output of 12.9 and 11.06 million barrels/day respectively. For the United States, thanks to the veritable boom of shale oil, the increase was around 1 million barrels/day more than 2014, while for Russia, grappling with a serious economic crisis, production increased by only 150 thousand barrels.

This led to a **persistent production surplus** which, after topping 2 million barrels/day in the second quarter of 2015, levelled off at **an annual average of 1.7 million**, a figure which is nonetheless **historically the highest in the last 40 years**.

**Over the past decade supply by non-Opec Countries increased by a total of 7.7 million barrels/day**, almost double that of the Opec Countries (+3.9 million).

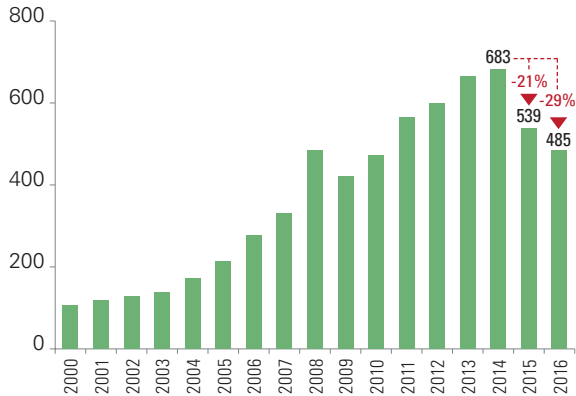
Latest estimates by the International Energy Agency (IEA) **for 2016 return to a scenario in which this surplus is destined to shrink**. In the light of lower production in the United States, which despite showing considerable resilience to prices that

<sup>1</sup> The announcement of the end of the sanctions was made in Vienna on January 16, 2016 by the Representative of European foreign affairs, Federica Mogherini, in a joint press conference with the Iranian foreign minister, Javad Zarif.

## Oil - Factors impacting quotations

### UPWARD PRESSURE

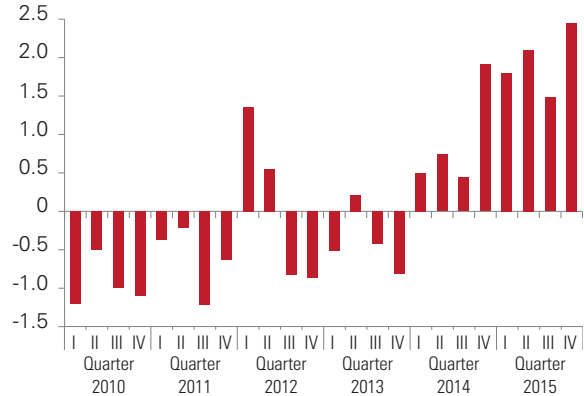
**REDUCED GLOBAL INVESTMENTS IN E&P**  
(Billions of dollars)



Source: IFP, January 2016

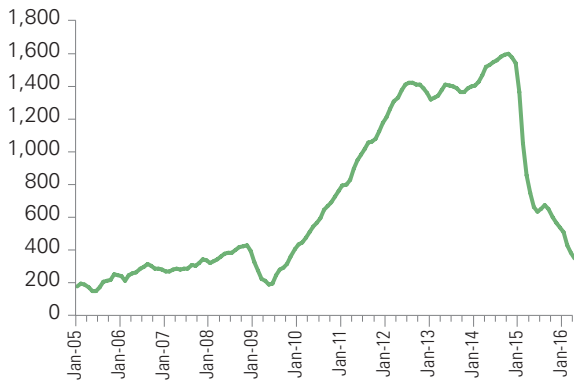
### DOWNWARD PRESSURE

**HIGH STOCK LEVELS**  
(Variations in global crude oil stocks)



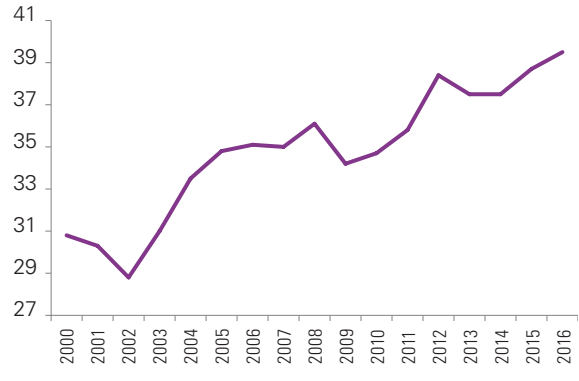
Source: US Energy Information Administration

**REDUCED US SHALE OIL PRODUCTION**  
(Number of producing wells)



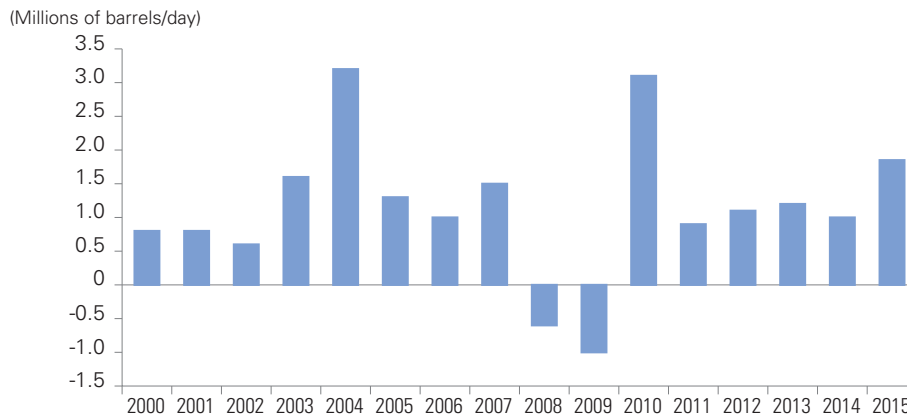
Source: US Energy Information Administration

**OPEC COUNTRIES' INCREASED PRODUCTION**  
(Millions of barrels/day)



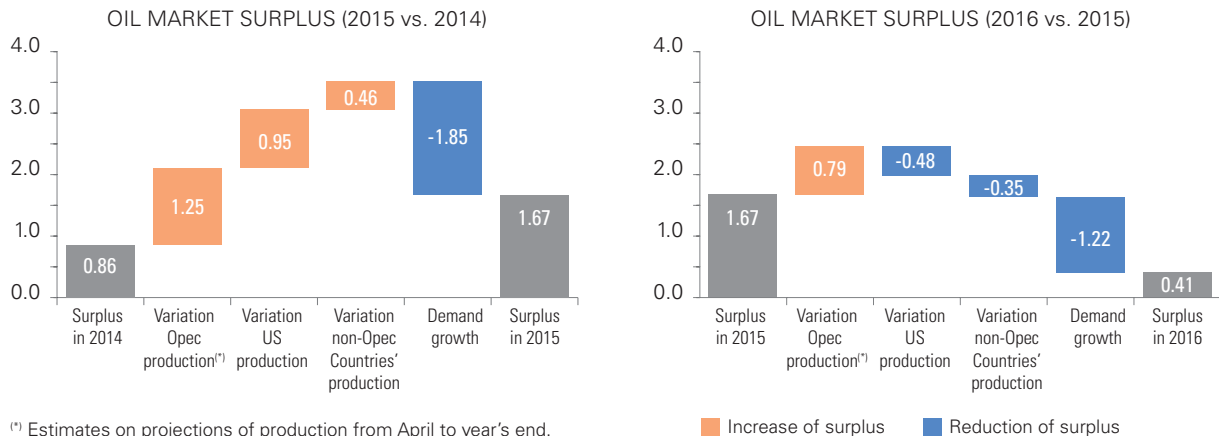
Source: IEA

**TRENDS IN WORLD DEMAND**  
(Absolute variation over the previous year)



Source: IEA

## World - Oil market surplus in 2015 and 2016 (Millions of barrels/day)



<sup>(\*)</sup> Estimates on projections of production from April to year's end.

Source: UP on IEA data

were at 10 year lows, gradually reduced their production levels during the early part of this year.

In 2016 this process should lead them to cut production by around 500,000 barrels/day and so help **restore balance to the fundamentals. The decision will also depend on the line taken by Opec and will take time, presumably not before the end of 2016, also in view of the high levels of stocks.**

**In 2015 world oil demand was 94.7 million barrels/day** (more than 1.8 million higher than in 2014, +2 per cent). 51 per cent of demand came from non-Oecd Countries.

This is the **largest increase in the past 10 years**, second only to that of 2010 and it occurred **in spite of the slowdown in the world economy**, which continued into the first months of 2016.

**Demand also rose again in the Oecd Countries**, including Europe with an increase of 450,000 barrels/day, which **more than made up for the drop observed the previous year.**

**Over the past decade, oil demand in Oecd Countries has declined by 4.2 million barrels/day, while in non-Oecd Countries it has risen by 14.3 million.**

Again according to IEA estimates, **in 2016 oil demand is expected to grow by 1.2 million barrels/day, less than the forecasts made at the end of 2015** and still very sensitive to potential changes in prices and the economic situation in China, the world's second largest oil market.

In conclusion: all the **signs are pointing to a restoration of balance in the fundamentals, though they are not yet so solid.**



## The prices of crude oil and refined products

The strong increase in production and record levels of stocks further contributed to the other phenomenon that characterized 2015: **the collapsing of oil prices**. Indeed over the course of the year prices again began to lose ground: after the slump during the second half of 2014 - from 110 dollars/barrel to 45 dollars (-60 per cent) - they rebounded again to a new high of 67 dollars (+49 per cent) in May 2015, followed by another slide down to 36 dollars (-46 per cent) in mid-December.

**A downward trend that gathered speed in the first two months of 2016**, sinking as far as 26 dollars in mid-January (with a dip of more than 7 per cent occurring during a single trading session) following the announcement of the so-called “implementation day”, which saw the removal of sanctions against Iran, **a reaction which in many respects was dictated by speculative movements**.

Only rumours of a possible understanding between Russia and Opec for a 5 per cent production cut, which on February 16 turned into a possible agreement in Doha among several producing Countries (Russia, Saudi Arabia, Venezuela, Qatar) **to “freeze” their production to the levels of January** resulted in prices moving back up to 33-36 dollars/barrel, before rising to around 50 dollars/barrel at the end of May. The Opec summit that followed in the early days of June 2016 confirmed the policy, hitherto adopted by producing Countries, to keep their production ceilings unvaried.

The collapse of prices in 2015 had serious repercussions on the oil companies' financial balance sheets. In many cases companies had to revise investment plans and organisational structures, downsizing their total investments in 2015 by more than 200 billion dollars and an estimated 300 billion for 2016. **2016 looks like it is going to be another year of low prices** and it is hard to say how and when the current downward trend will bottom out. Estimates by the leading Institutes vary in a range from 30 to 50 dollars/barrel, with **an annual average of around 44 dollars which should rise to 54 in 2017**.

As regards **refined products quoted on international markets**<sup>1</sup>, in 2015 the average price of **petrol** was around 39 eurocents/litre, **down 13 cents** from the previous year (-25 per cent); **gasoil** was the same price but **down 16 cents** (-29 per cent). **In the first four months of 2016 these averages declined even further to 29 cents for petrol and 26 for gasoil**, though recently they have begun to rebound again.

## Developments in refining

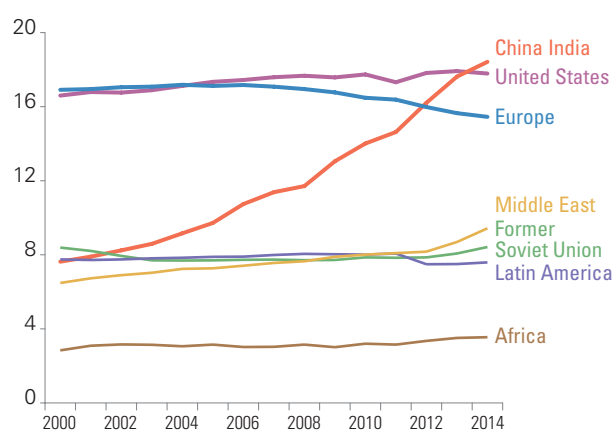
**2015 was a year that by and large confirmed the fundamental trends** that have beset the refining industry over the past few years: non-Oecd Countries were **again protagonists and it is among these regions that most investments in new capacity are concentrated (84 per cent)**, while **a structural crisis persists in the Oecd Countries, mostly in Europe**. In spite of European **refining margins rising**

<sup>1</sup> Platts Cif Med quotations.

for the first time since 2010, with utilization rates back to around 83 per cent compared to 79 per cent of the previous year, **many of the problems that afflict the European market remain unsolved.**

Since 2008, 24 out of 101 European refineries have been shut down, equivalent to a loss of more than 2 million barrels/day of capacity, 17 per cent in Italy alone, and it has been estimated that **another 2 million barrels/day will be cut by 2020.**

**World - Refining capacity by geographic area**  
(Millions of barrels/day)



Source: Unione Petrolifera on BP Statistical Review data

The situation in the **United States** is very different, which is **expected to create new capacity by 2020**, where refineries are working at full speed and last year North Dakota saw its first new refinery built since 1976.

While they retained their undisputed role as leaders in investments in new capacity, **investment plans in several Countries of Asia were also revised** and timetables were pushed back to after 2019. The same occurred in the Countries of the Middle East where perhaps the most significant projects are concentrated. All of this, however, does not look like **it will be enough to reduce excess global capacity**, which according to the IEA is expected to be around 6 million barrels/day in 2020 and around 15 million in 2040 of which 2.2 and 5 million respectively will be in Europe.

**World Refining capacity and refinery runs to 2040, according to the International Energy Agency's New Policies Scenario** (Millions of barrels/day)

	Capacity	Capacity additions	Refinery runs			Capacity at risk <sup>(*)</sup>	
	2014	2040	2014	2020	2040	2020	2040
Europe	16.9	-1.7	13.2	12.1	9.7	2.2	5.0
North America	20.9	-0.2	18.6	19.0	15.6	0.1	3.9
China	12.8	5.0	10.2	11.9	14.6	0.6	1.1
India	4.4	3.4	4.5	4.9	7.6	—	—
Oecd Asia	7.6	-0.9	6.2	5.5	4.7	0.8	1.7
Other Asia	6.7	2.6	4.9	5.7	7.9	0.2	0.3
Russia	6.2	-0.3	5.6	5.5	4.5	0.1	0.9
Middle East	8.2	4.4	6.5	8.2	11.4	0.8	0.3
Brazil	2.0	0.9	2.1	2.3	2.7	—	—
Africa	3.3	1.2	2.2	2.5	3.6	0.7	0.5
Other	5.1	0.1	3.9	4.0	3.9	0.4	0.9
<b>TOTAL</b>	<b>94.1</b>	<b>14.5</b>	<b>77.9</b>	<b>81.6</b>	<b>86.2</b>	<b>5.9</b>	<b>14.6</b>

(\*) "Capacity at risk" is defined for each region as the difference between refinery capacity, on one hand, and refinery runs, on the other, with the latter including a 14 per cent allowance for downtime.

Source: IEA, World Energy Outlook 2015

# THE ITALIAN ECONOMY AND ENERGY

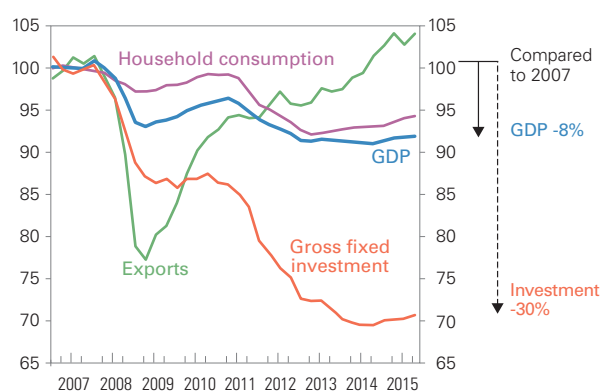
## The macroeconomic context

Driven by higher consumption and renewed investments, Italy's cyclical recovery continued in 2015, even if it gradually weakened over the course of the year.

After three years of recession Italy's GDP was up again, with an average annual recovery of +0.8 per cent: while this growth rate was only modest and practically half of that in other Eurozone Countries, and while Italy's GDP continues to be more than 8 per cent lower than before the 2007 crisis, it nonetheless suggests the trend may be about to reverse.

There were positive signs not only from imports of goods and services (+4.3 per cent), but from domestic consumption (+0.9 per cent) and finally from gross fixed investments (+0.8 per cent), stemming

**Italy - GDP and the main components of demand<sup>(1)</sup>**  
(Quarterly data; indices 2007=100)



<sup>(1)</sup> Chain-linked volumes adjusted for seasonal and calendar effects.  
Source: Bank of Italy on Istat data

## Italy GDP, national demand, foreign trade

(Chained linked volumes; percentage changes on previous period; seasonally and working-day adjusted for quarterly data)

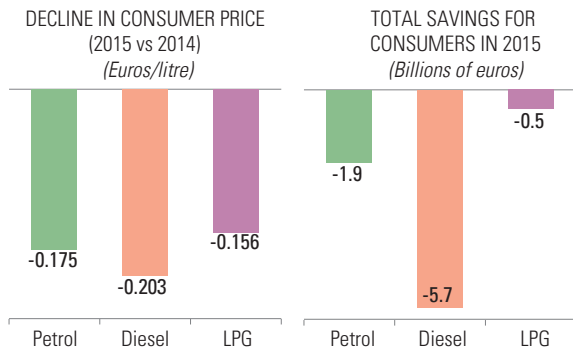
		Gross domestic product	Gross fixed investment	Resident household and no-profit institution consumption	Government consumption	Total national demand <sup>(1)</sup>	Exports of goods and services	Imports of goods and services
	2012	-2.8	-9.3	-3.9	-1.4	-5.7	2.3	-8.1
	2013	-1.7	-6.6	-2.5	-0.3	-2.6	0.6	-2.3
	2014	-0.3	-3.4	0.6	-1.0	-0.4	3.1	3.2
	2015	0.8	0.8	0.9	-0.7	1.1	4.3	6.0
2015	I	0.4	0.6	0.1	-0.6	0.9	1.2	2.9
	II	0.3	—	0.4	-0.3	0.3	1.4	1.6
	III	0.2	0.2	0.5	0.2	0.5	-1.3	-0.2
	IV	0.1	0.8	0.3	0.6	—	1.3	1.0

<sup>(1)</sup> Includes the change in stocks and disposal of valuables.

Source: Bank of Italy on Istat data

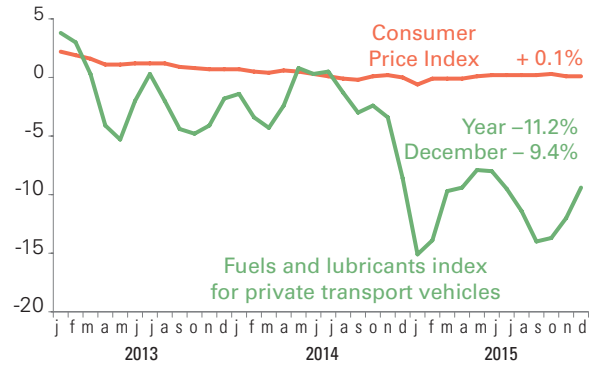
## The “Oil effect” on the Italian economy in 2015

### FUEL PRICES AND SAVINGS FOR DRIVERS



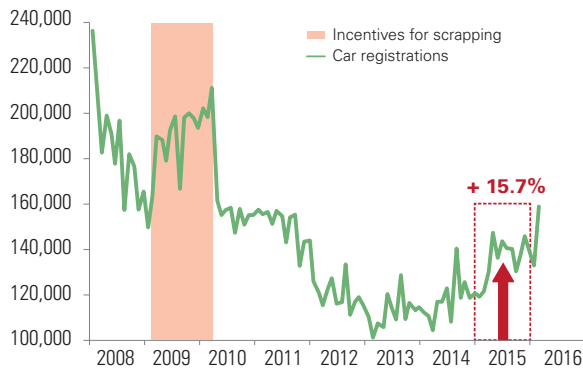
Source: Unione Petrolifera on Ministry of Economic Development data

### PRICE TRENDS (Per cent variations)



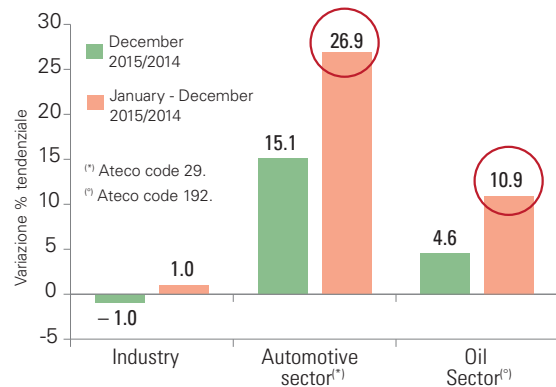
Source: Unione Petrolifera on Istat data

### NEW CAR REGISTRATIONS (ACI)



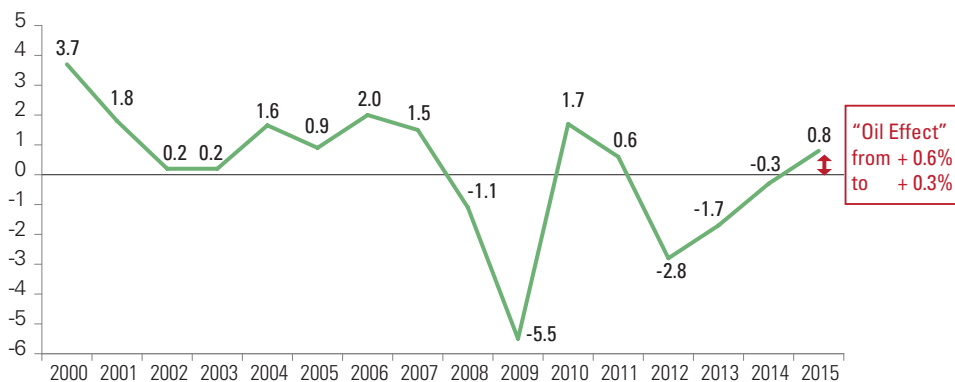
Source: Ministry of Economic Development, La dinamica dell'economia italiana, March 2016

### INDUSTRIAL PRODUCTION (Calendar adjusted data, base 2010=100)



Source: Anfia and Unione Petrolifera on Istat data

### GDP TRENDS 2000-2015 (Per cent variations, chain linked volumes)



Source: Istat and Bank of Italy estimates (see Focus “The decline of crude oil prices and its effect on economic growth” on page 20)

the repeated declines that persisted after the beginning of the financial crisis (they are still 30 per cent lower than levels before the crisis).

Stronger domestic consumption was sustained by a moderate recovery in disposable income: the first increase in real terms since 2008.

The improvement in consumers' purchasing power (+0.8 per cent), encouraged by the general decline in prices, in particular for oil products, acted as an additional motor for the economy, stimulating the acquisition of those durable goods, like automobiles, which consumers had postponed because of the lingering effects of the crisis, but which are essential for daily life.

The revival of manufacturing activities, which fluctuated during the course of the year was certainly in part thanks to sectors connected to oil.

The two **sectors that stimulated industrial production**, which was up for the first time after three years of decline (+1.7 per cent on the raw index and +1 per cent when calendar adjusted), were, indeed, the sector connected to automobiles: **manufacture of vehicles for transportation**, which recorded a substantial rise (+26.9 per cent), and **the refining of oil products** (+10.9 per cent).

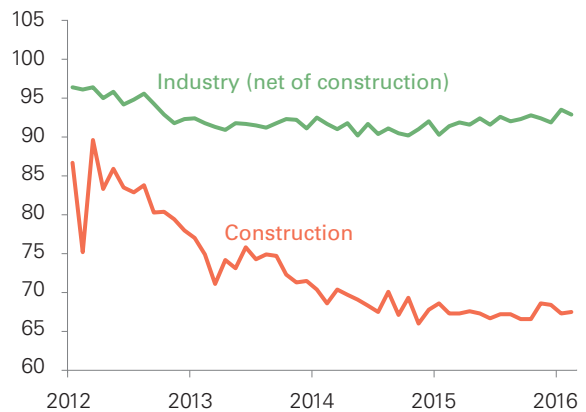
After stalling temporarily at the end of 2015, industrial production began rising again during the first months of this year, just like the moderate expansion currently continuing in service activities and growing signs of recovery in construction.

However, going forward, the growth of the manufacturing cycle might suffer from uncertain foreign demand. Indeed, in 2015 the global economy grew more moderately (+3.1 per cent) than the previous year (+3.4 per cent), mainly because the emerging economies are cooling down, in particular the oil producing Countries, as well the Asian economies. The process is still underway and this will make it harder for our products to be absorbed.

Contributing to the increase in families' disposable income were also more favourable conditions in the labour market, which led to an improved climate of consumer confidence: rising employment levels which began in 2014 continued in 2015.

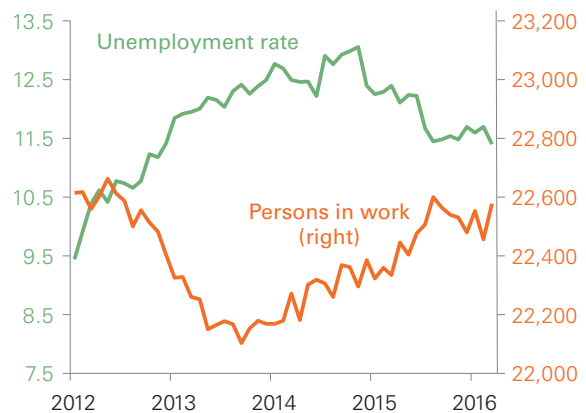
Lower payroll deductions and new regulations (decon-

Italy - Production indices (Base 2010=100)



Source: Istat

Italy - Persons in work and unemployment rate (Millions of persons and percentages)



Source: Istat

## FOCUS

## THE DECLINE OF CRUDE OIL PRICES AND ITS EFFECTS ON ECONOMIC GROWTH

### Observations by the International Monetary Fund and the Bank of Italy<sup>(\*)</sup>

Oil is both a source of energy as well as a commodity and it has an extraordinary importance in the world. The fact that the remarkable slump in prices that occurred from June 2014 to March of this year resulted in slower than expected economic growth is one of the most surprising phenomena of 2015, which leading economic analysts have sought to explain.

The International Monetary Fund (IMF) itself realized that it had overestimated the degree of stimulus low crude oil prices would provide to the global economy, in the belief that savings benefiting importing Countries would have compensated for losses sustained by exporters<sup>1</sup>. And yet contrary to expectations, equity markets declined at the same time as oil prices did.

The roughly 70 per cent slump in oil prices between June 2014 and March of this year led to an enormous transfer of resources from exporting Countries to net importers of oil. According to estimates of the Bank of Italy in 2015, this amounted to an equivalent of 0.5 per cent of the United States' GDP and 1 per cent of GDP in the Eurozone's four most important economies<sup>2</sup>. According to

historical experiences, this redistribution of resources should have provided a significant stimulus to global demand: lower energy expenditures were supposed to have translated into higher demand in importing Countries, while among exporters, lower consumption and investments should have been partly offset by reduced savings.

Data from the past two years, however, do not appear to support this thesis. On the contrary, between October 2014 and April 2016 every drop in crude oil prices, real or forecast, was accompanied by a deteriorating outlook for global growth.

The impact on exporting Countries' resource was negative, as expected, but even in importing Countries growth forecasts were lowered or did not change.

For the United States forecast GDP growth for 2015-2017 was revised downward by 0.5 percentage points; forecasts for growth in the Eurozone remained nearly stable. On the whole, the main cause for these downward corrections in all time limits was a different evaluation of the impact investments would have on different areas of the world.

The determining reasons are:

1. **the most of the decline in crude oil prices** from June 2014 (one third according to the Bank of Italy) **was due to flagging demand**, and above all to the sharp slowdown in the Chinese

<sup>(\*)</sup> Bank of Italy, "Il calo dei corsi del greggio e la crescita globale" *Bollettino economico* n. 2/2016.

<sup>1</sup> The IMF estimates a loss of 390 billion dollars alone in the oil dependent economies of the Middle East just in 2015.

<sup>2</sup> Estimates are based on the difference between the average price of oil in the second half of 2015 (47 dollars/barrel) and in 2014 (98.9 dollars/barrel) and on net imports of crude in 2014 of each of the considered Countries.

### World Revised forecasts of the International Monetary Fund

(a) OIL PRICE (Annual average data; dollars/barrel)		(b) GDP AND INVESTMENTS (Annual data; per cent variations and differences in percentage points)					
		GDP			Investments <sup>(1)</sup>		
		2015	2016	2017	2015	2016	2017
	October 2014	99.4	97.3	95.4			
	April 2015	58.1	65.7	69.7			
	October 2015	51.6	50.4	55.4			
	April 2016	50.8	34.8	41.0			
<b>World</b>	October 2014	3.8	4.0	4.1	5.1	5.5	5.2
	April 2016	3.1	3.2	3.5	2.3	3.8	4.6
	difference	-0.7	-0.8	-0.6	-2.8	-1.7	-0.6
<b>United States</b>	October 2014	3.1	3.0	2.9	6.9	6.6	5.9
	April 2016	2.4	2.4	2.5	3.7	3.6	4.4
	difference	-0.7	-0.6	-0.4	-3.2	-3.0	1.5
<b>Eurozone</b>	October 2014	1.4	1.7	1.7	2.2	3.1	3.0
	April 2016	1.6	1.5	1.6	2.7	2.5	2.8
	difference	0.2	-0.2	-0.1	0.5	-0.6	-0.2
<b>Crude oil exporting Countries</b>	October 2014	3.2	3.9	3.9	2.5	3.2	3.3
	April 2016	0.1	0.8	2.1	-6.1	1.7	3.7
	difference	-3.1	-3.1	-1.8	-8.6	-1.5	0.4

<sup>(1)</sup> World and crude oil exporting countries, latest available forecast October 2015.

Source: Bank of Italy on IMF, World Economic Outlook, various years

economy, particularly in sectors that consume large quantities of oil. Low prices, therefore, were a **reflection of economic weakness**;

2. unlike in the past, **the closer integration between advanced and emerging Countries** led to a particularly severe indirect negative effect on importing Countries. Indeed, slumping oil prices of the past two years significantly **impacted oil exporting economies which reduced their foreign demand**.

Among other causes that may have dampened the effects of lower crude oil prices on the economies of importing Countries:

3. **lower dependence on crude oil** than in the past;
4. the fact that the declining prices **strengthened deflationary pressures** and drove effective interest rates upwards in a situation in which official rates were already near zero;
5. the increased importance of the energy and energy extraction sectors in Countries like the United States, which **felt the effects of a sharp and sudden reduction of investments**.

The severe slowdown of the oil industry in the United States and the rest of the world also had repercussions on the financial system.

According to data from the Bank for International Settlements (BIS), between 2006 and 2014, debt levels of the Oil and Gas industries tripled in order to support investments in new extraction technologies for *shale*, reaching 3 trillion dollars.

Later, the prolonged phase of low prices led to increasingly larger

losses for a constantly rising number of small and medium sized energy companies which were either in insolvency or in serious difficulty and whose credit rating in nearly every case had deteriorated.

According to the IMF, in the Oil and Gas sector alone, slumping oil prices were responsible for a reduction of global investments of 215 billion dollars between 2014 and 2015, equivalent to 1.2 per cent of global fixed investments, slightly less than 0.3 per cent of world GDP.

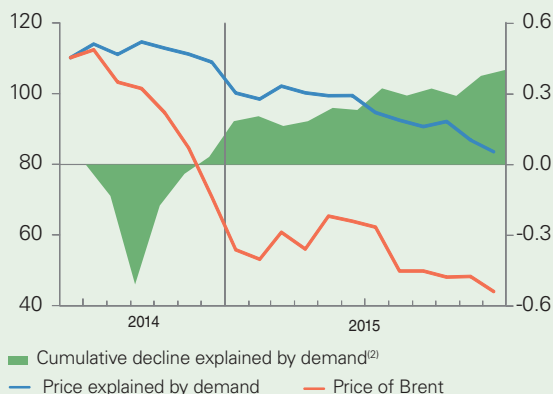
Estimates made by the Bank of Italy **on the effects of the reduced quotations of Brent for our Country** suggest that, when compared to forecasts made in July 2014, **the lower price contributed six tenths of one per cent to Italy's GDP growth in 2015**.

This effect was made possible thanks to the resources freed up by lower energy expenditures which families and industries could redirect to consumption and investments.

In any case, world trade levels that were less dynamic than forecast in 2014 had the effect of reducing GDP growth by three tenths of one per cent in 2015.

**Thus, weakness in global economic demand reduced the favourable effects of lower crude oil prices on Italy's economy by roughly one half.**

**Oil price - Historical trend and contribution of demand factors<sup>(1)</sup>**  
(Dollars/barrel and share over total)



<sup>(1)</sup> Obtained from a regression of variations of Brent price over the price of copper, of world demand and of electricity consumption in China. <sup>(2)</sup> Right hand scale.

Source: Elaboration of data from CEIC and Thomson Reuters Datastream

**United States - Share of investments in the energy sector<sup>(1)</sup>**  
(Quarterly data; percentage share)



<sup>(1)</sup> Share of investments in the mineral and extraction sectors over total industry investments in machinery and equipment in industry net of constructions.

Source: Bank of Italy on Bureau of Economic Analysis data

FOCUS

**AUTOMOBILES AND WELL-BEING**

**The importance of purchasing a car in the well-being of citizens**

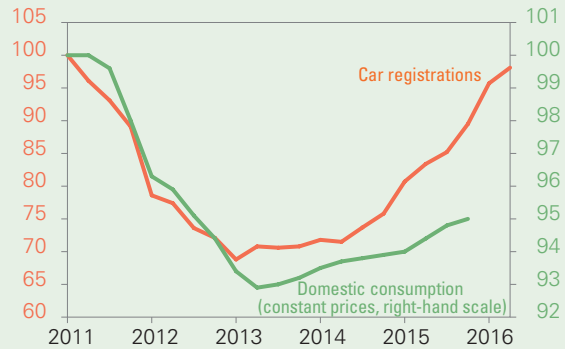
At the same time that oil prices were declining and the economy was improving, the number of cars registered in Italy showed clear signs of a reversing trend, with a strong recovery from the minimums recorded during the crisis. From 2012-2014 the share of expenditures spent on purchasing an automobile over total domestic consumption by families declined to an average of 2.3 per cent, compared to 4 per cent in 2000, with the overall consumption expenditure going down to 23 billion euros per year as compared to 35.5 billion in 2007. And yet being able to afford to buy a car is certainly important for the well-being of citizens: ISTAT evaluated this and included it as a factor in its new index “Equitable and sustainable well-being” (BES<sup>1</sup>).

Unlike the GDP, this new indicator which is composed of a set of parameters, does not measure earning capacities and economic resources, but is part of the international statistical debate about “getting beyond the GDP”, in the awareness that parameters measuring social progress cannot be exclusively economic.

The BES adopts a multi-dimensional approach combining the GDP, the measure of economic activity, with assessments of the fundamental social and environmental aspects of well-being, and with dimensions of inequality and social, economic and environmental sustainability.

At the end of 2015 ISTAT published the third edition of the “Report on Equitable and Sustainable Well-Being” (BES), which provides a comprehensive assessment of the main social, economic and environmental conditions that have characterized

**Italy - Domestic consumption and car registrations**  
(Base 1<sup>st</sup> quarter 2011 = 100, seasonally adjusted quarterly data)



Source: Centro Studi Confindustria on ISTAT, ANFIA data

development in Italy in recent years. Its analysis is aimed at making the Country more aware of its strengths and of the difficulties that still need to be overcome in order to improve citizens’ quality of life. Being unable to afford to buy a car is considered one of the various economic hardships that imply a “severe material deprivation”. This disadvantage is then evaluated as part of the **Severe Material Deprivation Rate**, which according to Eurostat’s methodology, measures the share of population living in households lacking at least 4 of the 9 items. **An automobile is, therefore, not just a means of transportation with a more or less wide range of alternatives. It is also an important factor in the material well-being of our every day lives.**

<sup>1</sup> Italian acronym: BES - Benessere equo e sostenibile.

**Italy - Share of people in families who present symptoms of deprivation**  
(Years 2013-2014, per cent values)

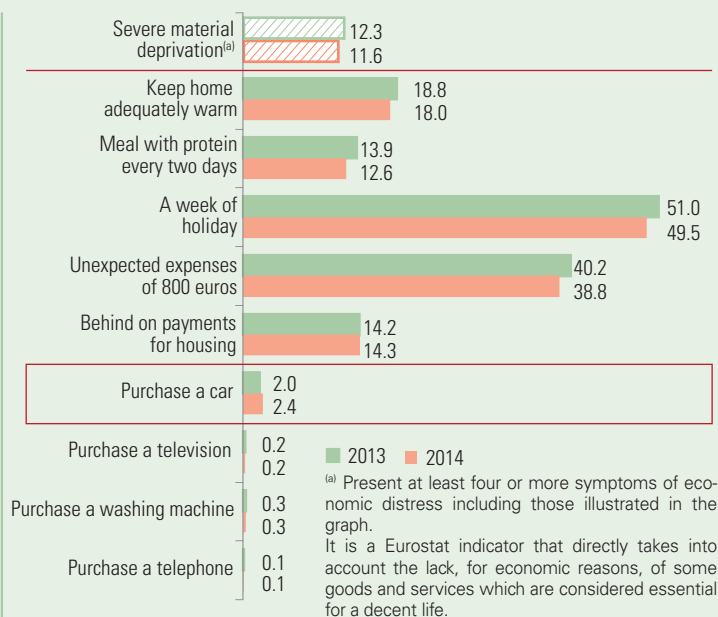
**THE PROBLEMS CONSIDERED AS “SEVERE MATERIAL DEPRIVATION”**

**ARE:**

- I) unable to keep home adequately warm;
- II) unable to eat meat, fish or a protein equivalent every second day;
- III) unable to afford a week holiday away from home;
- IV) unable to face unexpected expenses (of 800 euros);
- V) be behind on the mortgage, rent, utilities or other debts e.g instalment payments;

**Unable to afford:**

- VI) a car;
- VII) a colour TV;
- VIII) a washing machine;
- IX) a telephone





tribution, Decreto Poletti<sup>1</sup> and the Jobs Act<sup>2</sup>) encouraged an **increase in the number of persons employed** both with permanent and fixed term contracts. In 2015 the **unemployment rate** fell to an annual average of 11.9 per cent compared to 12.7 per cent in 2014 thanks to the creation of 186 thousand jobs (+0.8 per cent).

With a rise of +0,1 per cent, the **Consumer Price Index for the whole nation (Nic)**, slowed down for the third consecutive year, reaching the lowest rate since 1959. This dynamic was mainly the result of price trends of non – regulated energy goods with **fuels recording an average drop of 10.3 per cent in 2015**, considerably more than the -2.1 per cent of the previous year.

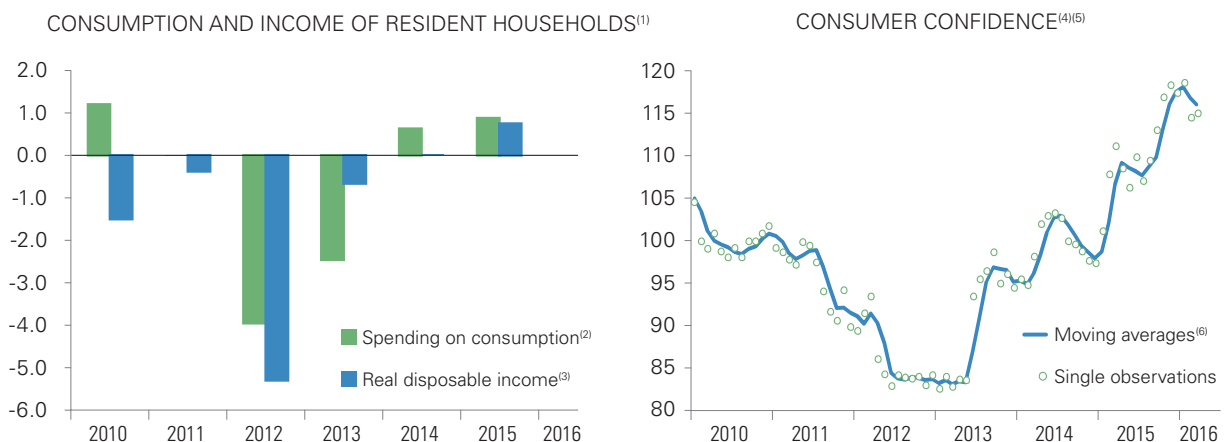
This downward trend, though growing weaker, continued on in the early months of the current year: the persistence of historically low levels of the core inflation led to the current phase of negative inflation, which is also present in other Countries of the Euroarea (France, Spain). The general weakness of prices and salaries are largely reflecting the wide margins of excess productive capacity and unused labour force.

In 2015 the **net Public Administration deficit** (-42.338 billion euros) fell to 2.6 per cent of the GDP representing a reduction of more than 6.5 billion euros compared to 2014 (-48.936 billion euros or 3.0 per cent of the GDP). On the other hand Italy's **public debt** rose to 2.172 billion euros and as a percentage of GDP it rose slightly by 0.2 percentage points: it now stands at 132.7 per cent compared to 132.5 per cent the previous year.

<sup>1</sup> Law n. 78, May 16, 2014.

<sup>2</sup> Jobs Act – Law n. 183, December 10, 2014.

**Italy - Consumption, disposable income and consumer confidence**  
(Percentage changes and indices)



<sup>(1)</sup> Percentage changes on the previous year. <sup>(2)</sup> Chain-linked volumes. <sup>(3)</sup> Obtained using the consumption deflator for resident households. (Chain-linked values, reference year 2010). <sup>(4)</sup> Monthly data seasonally adjusted. Indices 2010=100. <sup>(5)</sup> In June 2013 methodological innovations were introduced that make it incorrect to directly compare previous figures with data published after that date. <sup>(6)</sup> Monthly data; moving averages for the 3 months ending in the reference month.

Source: Bank of Italy on Istat data

## Italy Macroeconomic data

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 <sup>(*)</sup>
PERCENTAGE CHANGE FROM THE PREVIOUS YEAR													
Gross Domestic Product <sup>(a)</sup>	+0.2	+1.6	+0.9	+2.0	+1.5	-1.1	-5.5	+1.7	+0.6	-2.8	-1.7	-0.3	+0.8
Industrial production <sup>(b)</sup>	-1.0	+0.9	-1.8	+3.1	+2.5	-3.2	-18.7	+6.9	-0.4	-6.0	-3.2	-1.0	+1.6
Inflation	+2.8	+2.1	+2.1	+2.1	+1.7	+3.4	+0.8	+1.5	+2.8	+3.0	+1.2	+0.2	+0.1
Gross fixed investment <sup>(a)</sup>	-0.3	+2.1	+1.7	+3.2	+1.6	-3.1	-9.9	-0.5	-1.9	-9.3	-6.6	-3.4	+0.8
PERCENTAGE OF THE LABOUR FORCE													
Unemployment <sup>(c)</sup>	8.4	8.0	7.7	6.8	6.1	6.7	7.7	8.4	8.4	10.7	12.1	12.7	11.9
BILLIONS OF EUROS													
Trade balance	+2.9	-2.3	-9.6	-20.8	-9.4	-13.1	-6.4	-31.2	-25.6	+9.3	+29.2	+41.9	+45.2
Public borrowing requirements in the year	47	52	62	56	25	44	83	68	57	48	47	49	42
Public debt <sup>(d)</sup>	1,397	1,450	1,519	1,588	1,606	1,671	1,770	1,851	1,907	1,989	2,070	2,136	2,172
GDP at current euros	1,391	1,448	1,490	1,548	1,610	1,632	1,573	1,605	1,637	1,613	1,604	1,612	1,636

(\*) Provisional data. (a) According to chain-linked values with 2010 as base reference. (b) Unadjusted index 2010 = 100. (c) Revised data based on the Continuous Labour Force Survey, begun in January 2004. (d) At year end.

Source: ISTAT, Bank of Italy

Italy Energy consumption  
(Millions of toe's)

	2000	2005	2008	2009	2010	2012	2013	2014	2015 <sup>(*)</sup>	% change 2015 vs. 2014	% weight on total 2015
Solid fuels	12.8	17.0	16.7	13.0	14.9	16.6	14.2	13.7	13.5	-1.7%	7.9%
Natural gas <sup>(*)</sup>	57.9	70.7	69.5	63.9	68.1	61.4	57.4	50.7	55.3	+9.0%	32.3%
Net imports of electricity	9.8	10.8	8.8	9.9	9.7	9.5	9.3	9.6	10.2	+6.0%	5.9%
Oil <sup>(*)</sup>	92.0	85.2	79.3	73.3	72.2	62.2	58.3	57.3	59.2	+3.4%	34.6%
Renewable sources	12.9	13.6	17.0	20.2	22.9	26.6	33.8	34.7	33.1	-4.5%	19.3%
<b>TOTAL</b>	<b>185.4</b>	<b>197.3</b>	<b>191.3</b>	<b>180.3</b>	<b>187.8</b>	<b>176.3</b>	<b>173.0</b>	<b>166.0</b>	<b>171.3</b>	<b>+3.2%</b>	<b>100.0%</b>

(\*) Provisional data. Variations calculated to three decimal points.

(\*) Historical series revised on the coefficient of 8.190 used to convert toe's and adopted from 2008 by the Ministry of Economic Development according to international statistics (Eurostat, IEA).

(\*) The figures after 1997 include Orimulsion used for electricity production. Since 1998 a different method has been used to survey Petroleum Coke imports.

Source: Ministry of Economic Development

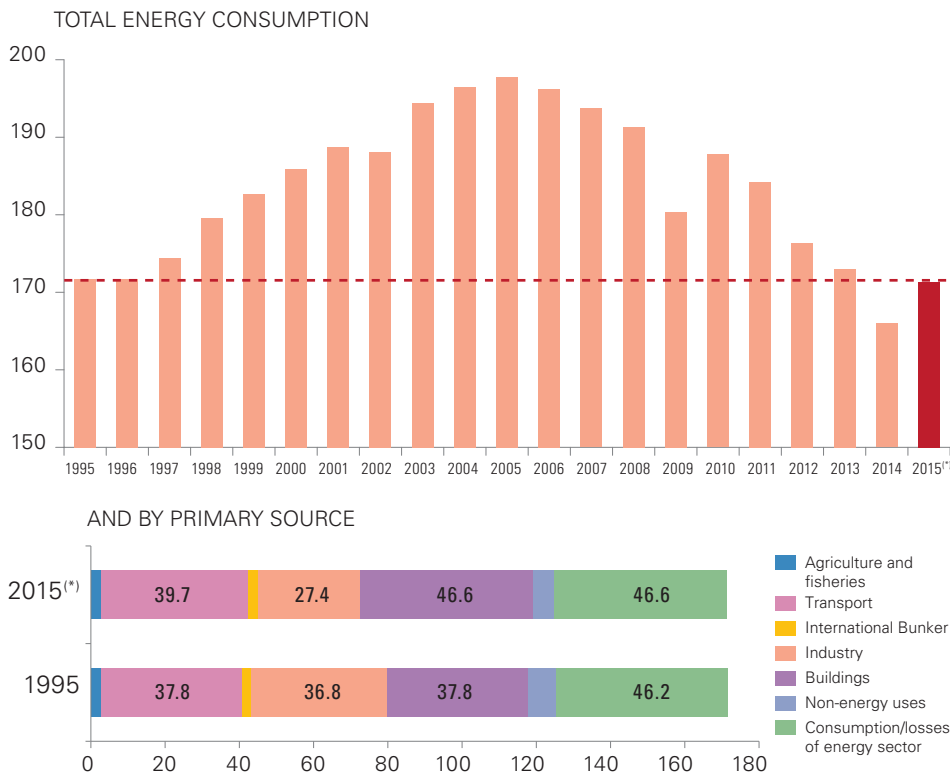
## Energy consumption

After shrinking for 9 years, with the exception of 2010 when demand increased (+4.2 per cent), Italy's energy consumption in 2015 grew by 5.3 Mtoe's, rising from 166 to 171.3 Mtoe's (+3.2 per cent): this figure close to that of the mid Nineties, though today the Country's industrial and economic profile is profoundly different. Compared to then, there are 7 million more cars on Italy's roads, we consume over 54 TWh more electricity, but our industrial production is nearly 17 per cent less.

In 2015 **demand for the main fossil fuels increased** (gas +9.1 per cent and oil +3.4 per cent), as well as **net electricity imports** (+6.0 per cent), while **the share of solid fuels fell** (-1.7 per cent) and above all, in reversal of a trend, that of **renewable energy sources** (-4.5 per cent) which saw a return of hydroelectric production to historical levels (approximately 44 TWh), 25 per cent less than in 2014, when its production reached a record of 58.5 TWh.

**Lower domestic energy production**, including that of crude oil and natural gas, increased Italy's dependence on foreign energy to 75 per cent as compared to 73 per cent in 2014.

### Italy - Energy consumption (Millions of toe's)



(\*) Provisional data.

Source: UP on Ministry of Economic Development data

## Solid fuels

In 2015 demand for **solid fuels** estimated at 13.5 Mtoe's fell by -1.7 per cent compared to 2014: since 2012 this is the third year in a row that demand for this energy source has declined. Its main sectors of use – the steel industry and thermoelectric production are reflecting the effects of an economy that has not yet recovered<sup>1</sup>, and also the growing difficulties faced by coal-fired plants whose operations, in spite of their low costs and high efficiency, are in conflict with decarbonisation scenarios.

2015 saw a continuation of the decommissioning of several plants<sup>2</sup> which will already be completed by 2017-2019, as well as environmental assessments that already in March 2014 led to the suspension of activities of two 300 MW units in the Vado Ligure plant (Tirreno Power), and the postponement of plans to build the new 460 MW unit involving investments of 1.2 billion euros.

The situation also remains critical for the Edipower plant in Brindisi (closed for more than 2 years). In 2015 the Conference of Services planned to reduce the plant's installed capacities by half (from 640 MW to 300 MW) and to partly replace the use of coal with Secondary Solid Fuels (CSS<sup>3</sup>) produced in the Region, a project which is meeting with the opposition of local Authorities.

Finally, with regard to Sulcis, the Decree Destination Italy<sup>4</sup> provides incentives to produce up to 2,100 GWh/year of electricity from an innovative coal plant which will have significantly lower atmospheric emissions. At present, no choices have yet been made on the question, and decisions are still being awaited by the Region Sardinia, whether it intends to go ahead with the project or whether it will change strategy, also in the light of the Paris Climate Conference<sup>5</sup>.

Research activities are nonetheless underway with the aim of developing innovative technologies as part of the “*Protocol of Understanding to Develop a Technology Research Hub*”, signed in 2013 between the Region Sardinia and the Ministry of Economic Development.

## The energy and oil bills

One further effect of lower oil prices (-46.7 per cent) on the Italian economy in 2015 was another **sizeable reduction in the energy bill**, in spite of higher energy consumption (+3.2 per cent) and a weaker euro against the dollar.

National expenditures on foreign energy (the net difference between expenditures

<sup>1</sup> According to FederCostruzioni, in 2015 the steel sector suffered a 4 per cent production decline and, according to ISTAT, the construction sector, the main destination for steel products, shrank by a further 1 per cent. In addition, operations are underway to transfer Ilva's complex of companies under administrative receivership.

<sup>2</sup> Among the 23 plants whose closure has been announced by Enel, there are the coal plants of Genoa, Bastardo and Marghera. In the other plants evaluations are underway to improve their efficiency and reduce their environmental impact.

<sup>3</sup> Italian acronym: CSS – Combustibile Solido Secondario.

<sup>4</sup> Decree-Law December 23, 2013 n. 145, converted with amendments by Law February 21 2014, n. 9.

<sup>5</sup> Twenty-first annual session of Members of the United Nations Framework Convention of Climate Change (UNFCCC) held in Paris from November 30 to December 12, 2015. On the effects for the oil sector see also chapter “The Paris Agreement (COP 21) and its impact on the sector” on page 83.

### Italy Estimated “national energy bill” (Millions of euros)

	1990	2000	2005	2008	2010	2012	2013	2014	2015 <sup>(1)</sup>
Solid fuels	731	1,009	1,892	2,927	2,270	2,775	1,812	1,404	1,315
Natural gas	1,859	7,835	12,194	22,253	18,998	24,189	20,421	15,524	14,185
Oil <sup>(2)</sup>	8,561	18,653	22,412	32,474	28,432	33,908	30,450	24,912	16,080
Biofuels and biomass	—	67	135	463	1,129	1,616	1,366	1,017	837
Others <sup>(3)</sup>	867	1,523	2,135	1,948	2,409	2,389	2,044	1,780	2,065
<b>TOTAL</b>	<b>12,018</b>	<b>29,087</b>	<b>38,768</b>	<b>60,065</b>	<b>53,238</b>	<b>64,877</b>	<b>56,093</b>	<b>44,637</b>	<b>34,482</b>

<sup>(1)</sup> Provisional data.

<sup>(2)</sup> Figures after 1995 are not homogeneous with those from the previous years because of changes in criteria used in international classification (Ateco 91), the most important of which consists in not considering “on board supplies” as exports.

<sup>(3)</sup> Includes: electricity, nuclear and other fuels.

Source: Unione Petrolifera on data from ISTAT

on imports less revenues derived from exports) **went down to 34.482 billion euros, compared to 44.637 in 2014** (-22.7 per cent) and translated into **savings of more than 10.1 billion euros**.

**As a percentage of the GDP, the 2015 energy bill** was 2.1 per cent as compared to 2.8 per cent in 2014 and 4 per cent in 2012: the year when it was at its highest level in the past 10 years<sup>1</sup>. With the exception of expenditures for net electricity imports, which were again over 2 billion euros, spending for all the energy sources was less than the previous year. In particular, net expenditures for **natural gas** fell from 15.5 to slightly less than 14.2 billion euros (-8.6 per cent). **The over 1.3 billion euro reduction contributed to the second largest share of energy savings after oil.**

Indeed **in 2015 the oil bill accounted for 84 per cent of energy savings, falling from 24.912 billion euros to 16.080** (over 8.5 billion less or -34 per cent).

**The average annual cost of a ton of crude oil** was 345.6 euros compared to 548.1 in 2014, **with a decrease of 36.9 per cent**, the result of a lower cost of imported crude oil (-47.5 per cent in dollars), eroded by a weaker euro against the dollar (-16.8 per cent).

**When calculated as a percentage of GDP, the oil bill fell to 1.0 per cent**, compared to 1.5 per cent in 2014 and 2.1 per cent in 2011-2012, thus representing the lowest value since 2000. At its peak (1980-1983) the average annual oil bill was 4.6 per cent of the GDP.

<sup>1</sup> In the Nineties the average was 1.4 per cent, while the highest figures were recorded in the period 1980-85 when the average was 5.2 per cent.

## The growth of renewables and the electricity market

After a decade of constant growth, **the upward trend for renewable sources held back** in 2015. Total production was down by -4.5 per cent (electricity production alone was -11.6 per cent less) and fell to 33.1 Mtoe's, providing slightly more than 19 per cent of domestic energy demand, after touching 21 per cent in 2014.

The contraction was the result of a short term decline in gross electricity generation which represents nearly all domestic renewables consumption and which went down from 120.7 TWh in 2014 to 106.7 TWh (-11.6 per cent). The temporary drop was due to the **significantly lower contribution of hydroelectricity** (43.9 per cent TWh, -25 per cent), which returned to its historical average after the record set in 2015.

Demand for **wind power** was also down (14.9 TWh, -1.9 per cent) as a result of problems arising from delays in building new plants, while demand for **geothermal** (+4.1 per cent) and **photovoltaic** production (+2.4 per cent) continued to rise. On the other hand, installed capacity from Renewable Energy Sources (RES) is also still going up and surpassed 51 GW (+1.7 per cent), even if at a much slower pace than in the past, because of uncertainty over the incentive mechanisms.

In 2015 the cost of the RES incentives, which rose from 3 billion in 2009 to 13.4 billion in 2014, declined for the first time: the A3 component fell to 12.6 billion euros as a result of the expiry of the incentivization period for many beneficiaries of the CIP6, as well as the "Spalma Incentive" measures<sup>1</sup>.

For 2016 the GSE<sup>2</sup>'s forecasts regarding the A3 component (14.4 billion euros)

<sup>1</sup> Implementing decrees contained in article 26 of the Draft Law on Competitiveness (Law August 11, 2014, n. 116), also known as the "Spalma-Incentive Fotovoltaico" (Spreading Incentives PV Decrees) (Ministerial Decree, October 16, 2014 which approves the operational procedures for the disbursement of feed-in tariffs by the GSE for electricity produced by PV plants, in implementation of par. 2 of the aforementioned article 26 and Ministerial Decree October 17, 2014, which establishes the terms and condition in which feed-in tariffs assigned to PV plants shall be modified) and on incentives for non-photovoltaic renewable sources, Ministerial Decree November 6, 2014 in implementation of art. 1, par. 3 to 5 of Decree-law 145/13 (aka. Decree-law Destination Italy, Law of February 21, 2015, n. 9).

<sup>2</sup> Italian acronym: GSE - Gestore Servizi Energetici.

### Italy Renewable sources in 2015

	INSTALLED CAPACITY (MW)			ELECTRICITY PRODUCTION (GWh)		
	2014	2015 <sup>(1)</sup>	% variation	2014	2015 <sup>(1)</sup>	% variation
Hydro <sup>(1)</sup>	18,418	18,531	0.6%	58,545	43,902	- 25.0%
Wind	8,703	9,126	4.9%	15,178	14,883	- 1.9%
Photovoltaic	18,609	18,910	1.6%	22,306	22,847	2.4%
Biomass and wastes <sup>(2)</sup>	4,044	4,087	1.1%	18,732	18,894	0.9%
Geothermal	821	824	0.4%	5,916	6,160	4.1%
<b>TOTAL</b>	<b>50,595</b>	<b>51,478</b>	<b>1.7%</b>	<b>120,677</b>	<b>106,686</b>	<b>- 11.6%</b>

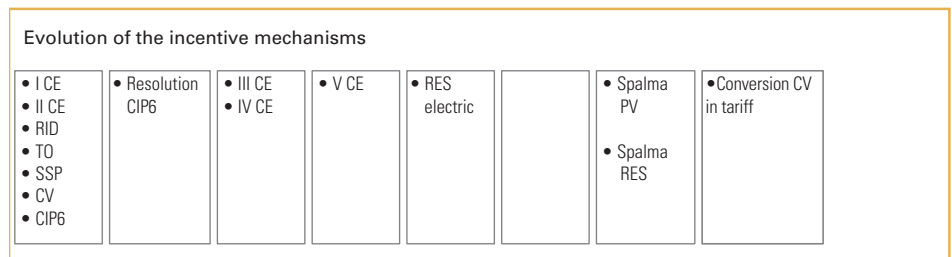
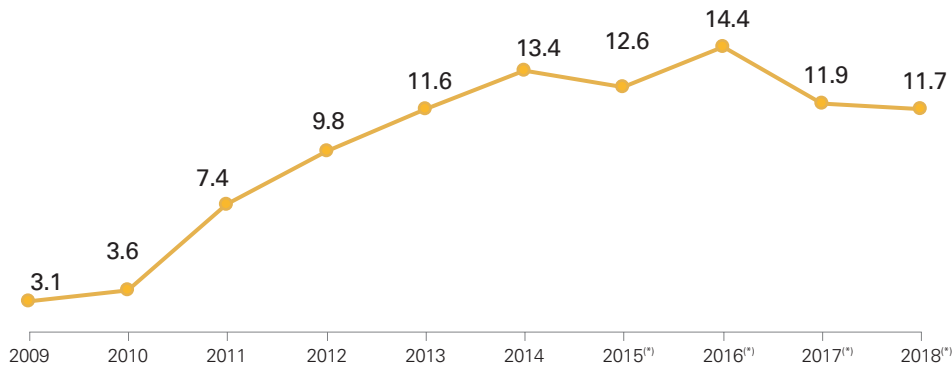
<sup>(1)</sup> GSE estimates for 2015. Provisional data.

<sup>(1)</sup> Production from natural inflows.

<sup>(2)</sup> Solid biomass, biogas and bioliquids.

Source: GSE, Preliminary data, February 29, 2016

**Italy - Economic costs deriving from incentive mechanisms to promote the use of Renewable Energy Sources in the electricity sector**  
*(Billions of euros of the A3 component paid by end users)*



*Legenda:* CE: Conto Energia (Energy Account); RID: Ritiro Dedicato (Dedicated Withdrawal); TO: Tariffa Omnicomprensiva (All Inclusive feed in tariff); SSP: Scambio sul Posto (Net Metering); CV: Certificati Verdi (Green Certificates); RES: Fonti Energetiche Rinnovabili (Renewable Energy Sources); PV: Fotovoltaico (Photovoltaic).

*Source:* GSE, Speciale Energia Rinnovabile. Principali indicatori relativi ai diversi meccanismi di incentivazione delle fonti rinnovabili 2013-2018, Rome, January 20, 2016

should turn out to be overestimated, as a result of the new tariff payment modalities, which will replace the Green Certificates on the basis of art. 19 of Ministerial Decree of July 6, 2012. Later they are expected to continue to shrink after the expiry of the incentive period for some large scale plants.

With regard to sources other than photovoltaic, in the first months of this year, the European Commission approved a new regime of incentives to support electricity production, which will make it possible to increase capacity by around 1,300 MW and which will be in force until 2016<sup>1</sup>.

In the area of **changes in operators' structure** during the course of 2015, ERG Renew (ERG) completed closing for the acquisition of the Macquarie European Infrastructure Fund's equity interest in four French companies, which control six wind farms in France: through this acquisition ERG Renew doubles its installed capacity on the French market from 64 MW to 127 MW.

The joint venture Lukerg Renew, created in 2011 with a view to investing in the wind sector in Bulgaria and Romania was dissolved in June 2015. In addition, earlier this

<sup>1</sup> Plants more than 5 MW will take part in an auction procedure on the incentive level; those between 0.5 and 5 MW will be included on a specific list for technology and supported with targeted criteria; those less than 0.5 MW will have direct access to incentives upon request.

year ERG Renew acquired from TCI Renewables a 100 per cent equity interest in Brockaghboy Windfarm Ltd, company holding authorizations to build a wind farm in Northern Ireland in the county of Londonderry, with a capacity of approximately 45 MW. The overall investment for implementation of the Wind Farm is estimated at around 60 million pounds (80 million euros).

In Italy of note the following transactions:

- the API Group sold to its Spanish partner Iberdrola 50 per cent of its stake in the joint venture owning 275 MW of wind farms in Apulia and Sicily, while it continues its activities in the photovoltaic sector (11 MW in the Marche) and in biomass (70 MW);
- ERG Power Generation (ERG) reached an agreement with E.ON Italia and completed the closing for the acquisition of E.ON Produzione's hydroelectric plants situated in Umbria, Marche and Latium, with an overall installed capacity of 527 MW.

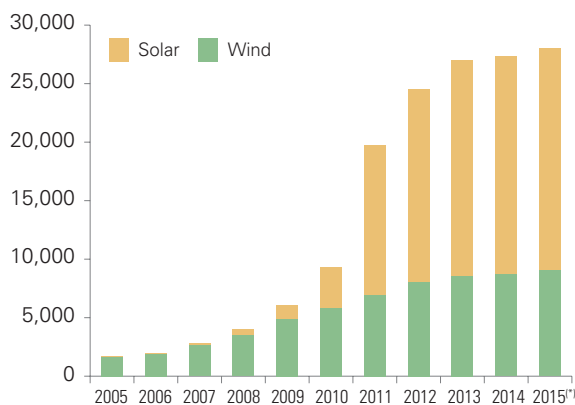
In 2015 **electricity demand returned to growth (+1.5 percent) after 3 years of decline** in which consumption fell by an average of 2.5 per cent per year. The increase of 4.7 TWh was above all the result of record heat during the month of July, in other words, of the exceptional weather conditions (temperatures more than 5 degrees above the seasonal average) which sent consumption soaring: indeed, demand in July 2015 was 3.8 TWh higher than in the same month the previous year, with an increase of 13.4 per cent.

15 per cent of the 315.2 TWh of electricity supplied to the Italian network were covered by **net electricity imports** (rising by 6.1 per cent from 2014), 33 per cent by **renewables**<sup>1</sup> and 52 per cent by **fossil fuels** in thermal plants.

Climatic factors, besides influencing demand are having an increasing effect on

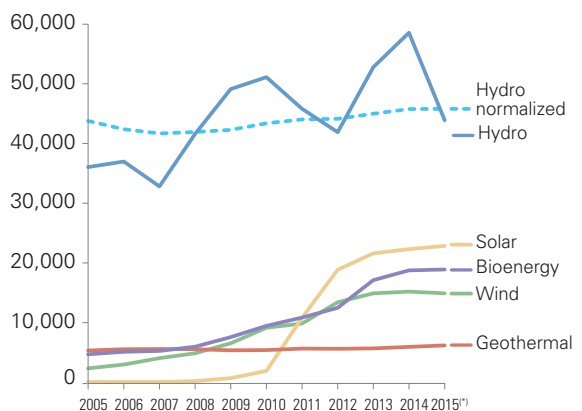
<sup>1</sup> Calculated on the total gross production.

**Italy - Installed capacity of non-schedulable Renewable power plants (GW)**



<sup>(1)</sup> Provisional estimates.  
Source: GSE, Terna

**Italy - Green electricity production from Renewable sources (GWh)**



<sup>(1)</sup> Provisional estimates.  
Source: GSE, Preliminary data, February 29, 2016



supply: the sudden slowdown in electricity production from renewables gave a boost, if only temporarily, to thermal generation, which recorded a more than 8 per cent increase. While on the one hand, imports and renewables cover half of Italy's electricity demand, the remaining 50 per cent comes from thermal generation. Even if in a situation of persisting overcapacity, it ensures a reserve function, or backup, for the electricity system.

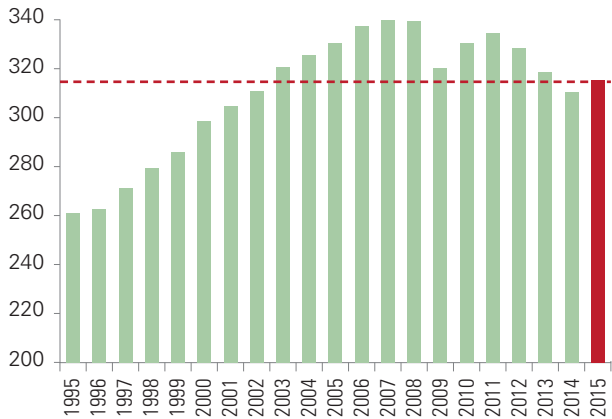
The outlook for these plants is not yet very clear, with a plan currently underway to consolidate the sector (through the closure and conversion of more than 20 plants, already announced last year) as well as the launching of the capacity market<sup>1</sup>, which is the subject of a European inquiry being carried out in 11 European Countries in order to examine the question of their compatibility with rules on State aid and which should conclude this year.

Increasing electricity production from non-schedulable renewables (solar, wind) has drastically reduced the number of operating hours of conventional power plants, causing critical problems for Combined Cycled Gas Turbine (CCGT) plants, which can produce in a flexible way, but whose operating costs have risen compared to the less flexible coal plants.

The closure of flexible plants or the situation in which it is not economical to in-

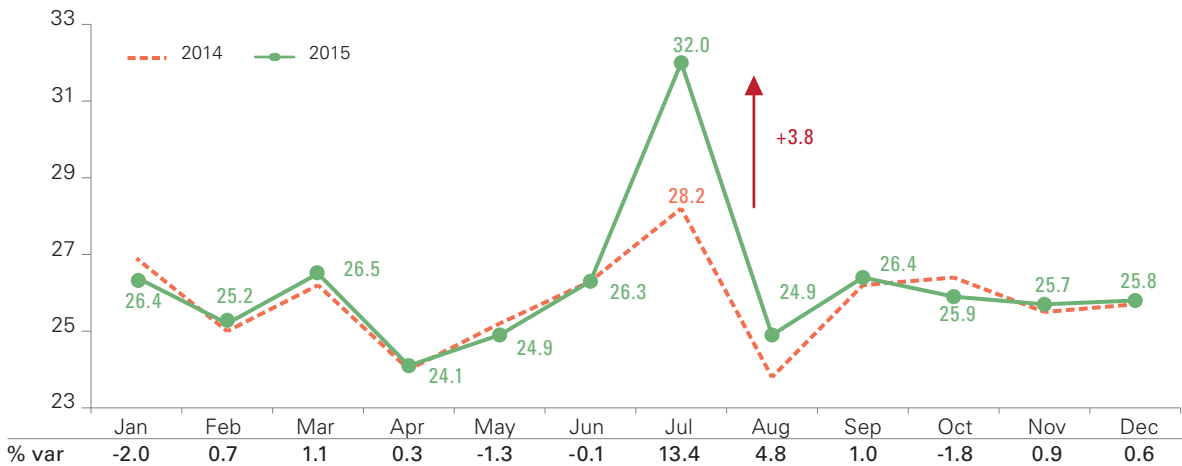
<sup>1</sup> Mechanism to remunerate electricity production capacity.

Italy - Electricity demand over the grid (TWh)



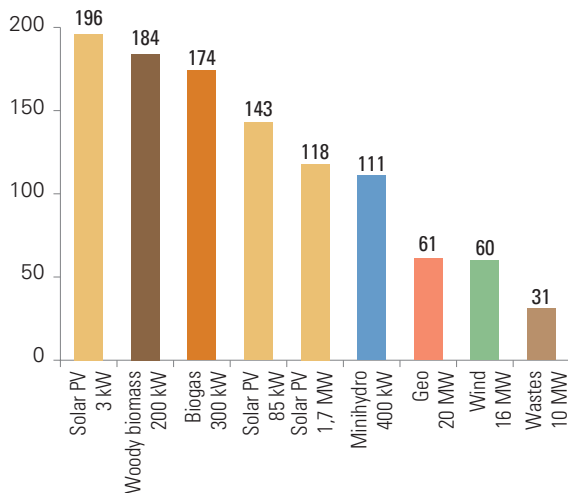
Source: Terna

Italy - Monthly electricity demand (TWh)



Source: Terna

### Italy - Estimated average cost of generation by Renewable source in 2014 (€/MWh)



Source: GSE, Rapporto delle attività, March 16, 2016

invest in them put the electrical system at risk since these plants are necessary to ensure sufficient supply for the intermittent production of some renewables. Moreover, the presence of incentives for renewables distorts price signals that are required to stimulate investments.

With the capacity market, producers will not only be paid for electricity produced but also for their capacity to produce it. Its adoption in Italy is currently being defined: based on Ministerial Decree of June 30, 2014 which approved the regulatory framework proposed by Terna and compatible with the timeline required for approval by the Commission, the market should begin operating from 2017 with the first auction to be held at the end of 2016.

In addition, the Italian Regulatory Authority for Electricity Energy and Water (AEEGSI) proposed (Ruling 95/2015/eel) anticipating the capacity market in order to organize the first auctions for the delivery period (2017-2020) ("first implementation phase").

## The contribution of natural gas

In 2015 natural gas was the energy source which recorded the highest rise in demand. With an increase of 5.6 billion cubic metres (+9.1 per cent) its consumption again surpassed 67.5 billion cubic metres: the same volume as in 1999. However, gas demand is 17 billion cubic metres less than it was in 2008 (-20 per cent).

Factors which favoured gas consumption in 2015 were:

- winter temperatures that were colder by 1°C/day, which drove up consumption by **households** by approximately 3 billion cubic metres (+11.8 per cent);
- increased electricity demand (+1.5 per cent) associated with the need to compensate for less hydroelectric production (-25 per cent) returned to normal levels after the record of 2014 and resulted in a more than 3 billion cubic metre increase for **power generation** (+16.8 per cent).

Thus, gas showed its capability to swiftly compensate for potential RES electricity production shortages.

With regard to **industrial consumption**, gas demand contracted for the fifth year in a row (-3.4 per cent): the 14 billion cubic metres consumed in 2015 were 27 per cent less than the 19.2 billion of 2007.

On the other hand, demand from the **transport sector** continued to grow, surpassing 1.15 billion cubic metres (+9.3 per cent).

Like elsewhere in Europe, natural gas in Italy is facing a series of critical problems like:

- uncertainties about its role in domestic and international environmental policies, with potential demand growth cooling off;
- a growing dependence on imports;
- the development of LNG<sup>1</sup>;
- the gradual decline of imports based on take or pay contracts which is forcing operators to short term plans.

Industrial activities **in Italy** not only tend to push gas consumption towards end uses (LNG, road and maritime) that are less developed than the traditional sectors (households, industry and power generation), but **internationally** Italian gas operators are also looking for opportunities for infrastructure connections among the European networks.

From being a **destination Country** (3<sup>rd</sup> largest gas market in Europe for volumes consumed), Italy is aiming to become **a transit Country for gas**, a European hub<sup>2</sup>, a role for which it possesses all the potential features, both because of its geographic location and existing infrastructures: it is supplied by a highly diversified range of Countries, as well as an integrated market with sufficient bidirectional capacity, which is liquid and in line with European standards.

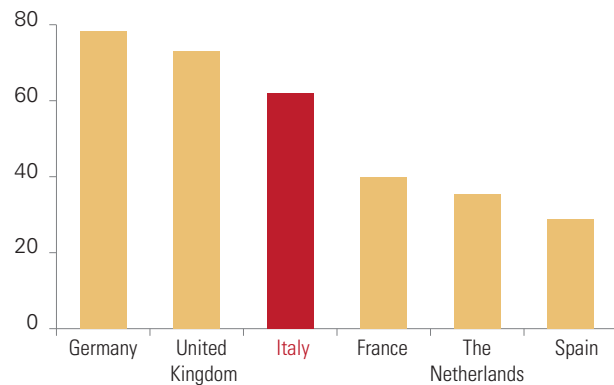
The national gas network functions like a single balancing zone, without internal congestion. The Virtual Trading Point (PSV<sup>3</sup>), the Italian exchange, in operation since 2003, has constantly increasing liquidity. An integrated gas system in Europe, with sufficient interconnections and storage capacity would make it possible to increase flexibility and diversify supply sources while enhancing supply security and creating the conditions for greater alignment of prices quoted at the hubs.

In July 2015 the European Commission approved funds for over half a billion euros destined for infrastructure in the energy sector to create a single market. The projects under consideration for funding also included **storage facilities**.

Intended by the Union to face possible supply crises, their use may also be envisaged commercially, allowing gas to be purchased when the price is more competitive.

In Italy the profile for developing new storage capacity is beginning to be defined, also thanks to the intervention of the AEEGSI (Ruling 182/2015/R/gas) which was

**Europe - Gas consumption of leading Countries in 2014 (Billions of cubic metres/year)**



Source: Eurostat

<sup>1</sup> LNG - Liquefied Natural Gas.

<sup>2</sup> See Focus - "Italy's potentials as a European hub" on page 35.

<sup>3</sup> Italian acronym: PSV - Punto di Scambio Virtuale.

approved in July 2015 to regulate incentives for new peak capacities.

With regard to **gas pipeline** activities:

- in September 2015 the agreement was signed to double the capacity of the **Nord Stream** gas pipeline, which will increase the volumes of gas imported into Germany from Russia via the Baltic from 55 to 110 billion cubic metres, thus thwarting the hopes of Poland, Slovakia and Ukraine of freeing up Russian gas;
- the development of **Turkish Stream**, the gas pipeline between Russia and Greece, has been suspended in the absence of an agreement between Russia and Turkey;
- in the first months of this year a memorandum of understanding was signed between Gazprom, Edison and Depa for the transport of Russian gas through the **ITGI** pipeline. The project is already complete in Greece and its offshore connection with Italy (**Igi Poseidon**) has already been approved and declared a European Project of Common Interest;
- with regard to the **TAP** – Trans Adriatic Pipeline, developments concerning it during the first months of the current year indicate that among the planned gas import infrastructures, it is the one most likely to be built. TAP will directly link Italy and Europe opening the so-called “*Southern Corridor*”. The beginning of the operational procedures is expected just in these months.

In 2020 the gas pipeline will bring gas to Europe from the Shah Deniz fields in Azerbaijan. The consortium of Companies<sup>1</sup> promoting the project (including we might mention, Snam’s acquisition of Norway Statoil’s stake in December 2015) will invest 5.6 billion euros, of which 2.3 billion in Greece and 400 million in Italy. Snam has also included the TAP’s landing point in the national gas transportation network.

With regard to **re-gasification terminals**:

- 2015 was a positive year for the terminal **Adriatic LNG** (ExxonMobil 71 per cent, Qatar Petroleum 22 per cent, Edison 7 per cent). The terminal has a maximum re-gasification capacity of 8 billion cubic metres/year (of which 80 per cent is exempt from the TPA<sup>2</sup> obligation) and recorded a 70 per cent utilization rate, compared to 54 per cent of the previous year.

In six years of activity the terminal has re-gasified more than 35 billion cubic metres of gas – of which 5.6 in 2015 (+30 per cent from 2014) - receiving 430 LNG loads from 5 Countries: Qatar, Egypt, Trinidad and Tobago, Equatorial Guinea and Norway;

- on the other hand, the re-gasification terminal **OLT Offshore LNG Toscana** was scarcely used. The offer of peak shaving service<sup>3</sup> and, from this year through a bidding procedure, of integrated storage and re-gasification services, only

<sup>1</sup> BP, Socar and SNAM, each with 20 per cent, FLUXYS (19 per cent), Enagas (16 per cent) and Axpo (5 per cent).

<sup>2</sup> TPA – Third Party Access.

<sup>3</sup> Peak Shaving is one of the measures provided for by the Ministry of Economic Development’s Emergency Plan for the thermal year 2014-2015. The plan aims to supply a temporary storage service making available, from January 1<sup>st</sup>, 2015, the previously stored gas, in order to face a possible excess request.

### ITALY'S POTENTIAL AS A EUROPEAN HUB

In a context in which gas demand in Italy and in Europe is expected to remain almost flat over the next 15 years, but with a growing dependency on foreign supplies<sup>1</sup>, in order to guarantee gas<sup>2</sup> supply security, it is essential to consolidate European infrastructures by developing new interconnections, LNG terminals and storage facilities.

Potential medium term risks for the conditions and security of gas supply may be recognized in the expiry dates of long term import contracts.

Indeed, in Europe half of the 400 billion cubic metres of gas consumed is purchased through Take or Pay contracts and more than 200 million cubic metres come from Russia: the lack of security for such large volumes can be overcome by diversifying supplies through interconnected infrastructures.

Constructed according to volumes available on the basis of Take

<sup>1</sup> In 2000 Europe produced 58 per cent of the gas it consumed. Today this figure is 35 per cent and in the next 7-8 years it is expected to fall to 15-18 per cent.

<sup>2</sup> Based on the results of stress tests, in the event that supplies were interrupted from Russia, the European gas system would not be able to completely make up the shortfall but would be in deficit for at least 4.5 per cent.

or Pay contracts and with a capacity of nearly 700 billion cubic metres/year<sup>3</sup>, European infrastructures are already adequate, but are only being used at half of their capacity just because they are not interconnected.

To achieve an efficient and integrated European gas market, that is more open and flexible, it is also necessary to harmonize regulations, to integrate and make available storage facilities, as well as introduce new services and rules. Italy can play a central role in this and has all the necessary characteristics.

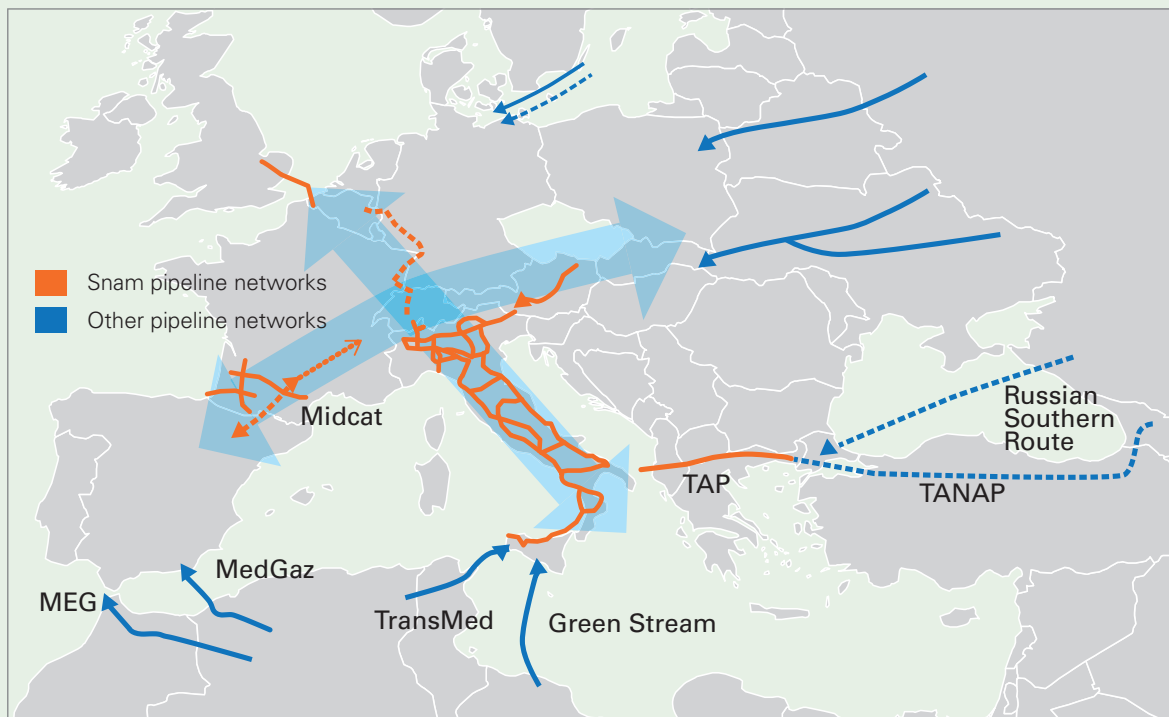
A recent study<sup>4</sup>, evaluated the various European gas hubs using five key parameters: active market participants, treated products, treated volumes, tradability index, churn rate (percentage of physical volumes over total volumes exchanged). Based on these results Italy is in a good position to be a future gas hub.

Italy's potential as a gas hub also lies behind the agreement signed at the end of 2015 between Snam and Statoil to acquire a

<sup>3</sup> Only 20 per cent of the 190 billion cubic metres of LNG import capacity is utilized; of the gas pipeline capacity of 460 billion cubic metres only 50 per cent is utilized.

<sup>4</sup> Oxford Institute for Energy Studies, "The evolution of European traded gas hubs", December 2015.

#### Italy - Infrastructures involved in integration processes of European gas markets



Source: SNAM, Presentation by Dr. Alverà before the 10<sup>th</sup> Senate Commission, May 3, 2016

# FOCUS

## Europe Evaluation of the potential traded gas hubs development

2014						
5 KEY ELEMENTS						
HUB	Active Market Participants	Traded Products <sup>(1)</sup>	Traded Volumes	Tradability Index (Q4)	Churn Rate	Score /15 <sup>(2)</sup>
NBP	40	46	20,505	19	26.2	15
TTF	30	45	13,555	19	36.0	15
NCG	25	24	1,750	16	3.7	10
GPL		21	1,000	13		9
ZEE	15	17	850	7	4.9	7
PEG Nord	10	17	435	9	1.6	7
CEGH/VTP	10	11	400	10	4.6	6
PSV	12	11	525	9	0.8	6
PEG Sud	5	13	80	n.a.	1.0	4
VOB	<10	n.a.	35	8	0.4	4
PEG TIGF	0	4	5	n.a.	0.1	3
AOC	<5	n.a.	(165)	n.a.	(0.6)	2/3

<sup>(1)</sup> Score/64 derived from the OTC and Exchanges products categories in the Traded Products Table.

<sup>(2)</sup> Score based on each of the Key Elements scoring a zero for Grey; 1 point for Red; 2 points for Yellow; 3 points for Green.

NBP	National Balancing Point - Great Britain:1996
ZEE/ZTP	Zeebrugge Hub/Zeebrugge Trading Point - Belgium: 2000/2012
TTF	Title Transfer Facility - Netherlands: 2003
PSV	Punto di scambio virtuale (Virtual Trading Point) - Italy: 2003
PEG (N.S.T.)/TRS	Point d'Echange de Gaz (Nord, Sud, TIGF) Trading Region South - France: 2004/2015
AOC	Almacenamiento Operativo Commercial - Spain: 2004
GTF	Gas Transfer Facility - Denmark: 2004
CEGH/VTP	Central European Gas Hub /Virtual Trading Point - Austria: 2005/2013
GPL	Gaspool - Germany: 2009
NCG	NetConnect Germany - Germany: 2009
VOB	Virtuální Obchodní Bod - Czech Republic: 2011
VPGS	Virtual Point Gaz-System - Poland: 2014

Source: Oxford Institute for Energy Studies, The evolution of European traded gas hubs, December 2015

20 per cent stake in the consortium owning the TAP gas pipeline (Trans Adriatic Pipeline), signed at the end of 2015 and more recently, in April of this year, also for the launch of Midcat<sup>1</sup>, the new gas pipeline between France and Spain, which will double transport capacity. Snam is participating in the construction through its French subsidiary Tigf, with investments of 400 million euros: by freeing up the connection between Spain and France 10 billion cubic metres could be transferred from West to East. Activity is also underway to increase Transit gas's reverse flow capacity<sup>2</sup> which will allow Italy to export LNG, Algerian and Libyan gas and, later, gas from the Southern Corridor towards northern Europe.

In 2018 Italy's reverse flow capacity will be 6 billion cubic metres and in 2020 will be able to transport Azeri gas through the TAP pipeline.

In addition, it could already transport 6 billion cubic metres of gas to eastern Europe and reduce dependence on Russia. In the project to transform Italy into a gas hub, 2 billion cubic metres of export capacity are already available on the South-North corridor which will reach 13 billion in 2018; Tag's East-West corridor already has a 6 billion cubic metre capacity.

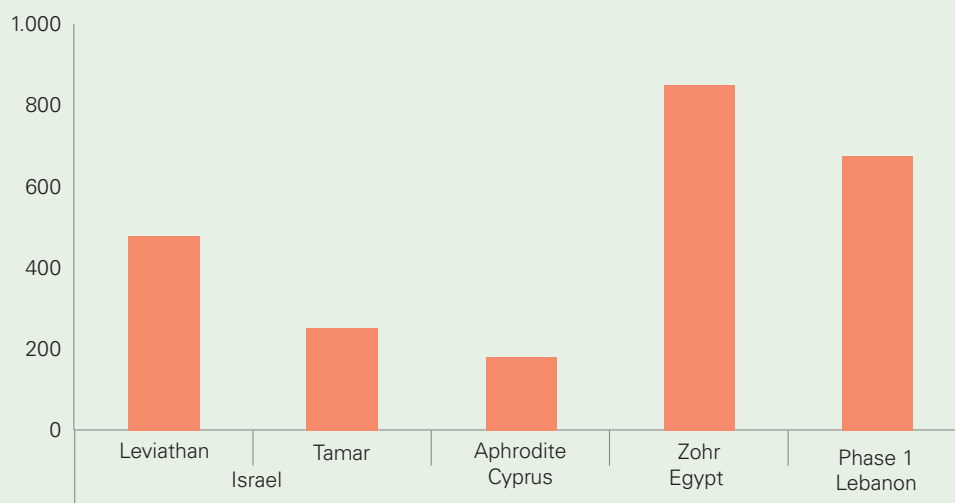
As a gas hub, Italy could facilitate imports from the Mediterranean, thanks to Eni's recent discoveries of the large gas field Zhor<sup>3</sup> in the Egyptian Mediterranean, the coast of Israel and Cyprus and it could route the gas storage capacities from one Country to another. Privileging the South- North corridor would allow Europe to diversify sources of supply that are not available by relying on Nord Stream alone. In addition, the Italian hub could become essential after 2019 if the transit contract between Ukraine and Russia is not renewed after it expires.

<sup>1</sup> The gas pipeline (the European Commissioner for Energy and Climate signed a contract to fund a 5.6 million euro preparatory study) aims to end Spain's energy isolation and integrate it with the rest of Europe thanks to 170 kilometres of tubes with a capacity of 8 billion cubic metres a year.

<sup>2</sup> At the end of 2015 the European Investment Bank (EIB) granted Snam Rete Gas a 373 million euro loan in support of total investments of 750 million euros. Much of this money is destined for reverse flow capacity and has been included in Europe's list of Projects of Common Interest (PCI) in the energy sector.

<sup>3</sup> In August 2015 Eni discovered a world class supergiant gas field in the Egyptian offshore at its Zohr Prospects. The discovery well Zohr 1X lies at a depth of 1,450 metres. According to the well and seismic information available, the supergiant field has potential reserves of 850 billion cubic metres of gas (5.5 billion barrels of oil equivalent) and an area of around 100 square kilometres. Zohr is the largest gas discovery ever made in Egypt and in the Mediterranean Sea and may turn out to be one of the world's largest natural gas discoveries.

**Natural gas - Discovered and expected reserves in the Mediterranean basin**  
(Billions of cubic metres)



Source: Fondazione Enrico Mattei based on US geological survey, in Confindustria Poyry, November 2015

allowed the partial allocation its of re-gasification capacity. Official recognition of the terminal's strategic importance means the operator is partially covered for the missing revenue which in 2015 involved the application of surcharges to the tariff components covering transport fees amounting to 80 million euros.

For **planned re-gasification terminals**, it currently appears that construction of the following will not be realized in the short term:

- the Api Nova Energia offshore project in Falconara obtained an extension of the deadline to 2019 for its Environmental Impact Assessment (EIA);
- in Panigaglia studies are underway to add small-scale services to those already offered, thus adapting the terminal for the direct distribution of LNG;
- the terminal in Porto Empedocle (AG) is considered to be of less strategic importance for the parent company (Enel);
- last December the new project for the Edison terminal was presented, which is to be built in the industrial complex of Solvay in Rosignano;
- for the Zaule project (TS) the Ministry of Economic Development recently decided to reopen authorization procedures following the confirmation by the Ministry of the Environment that its EIA authorization was still valid.

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<sup>1</sup> Italian acronym: VIA - Valutazione di Impatto Ambientale.



# OIL IN ITALY

## Domestic production of hydrocarbons

After five consecutive years of growth Italy's **crude oil production declined** by 5.1 per cent in 2015, going down to 5.5 million tons; **natural gas** production also fell again to less than 6.9 billion cubic metres (-5.6 per cent).

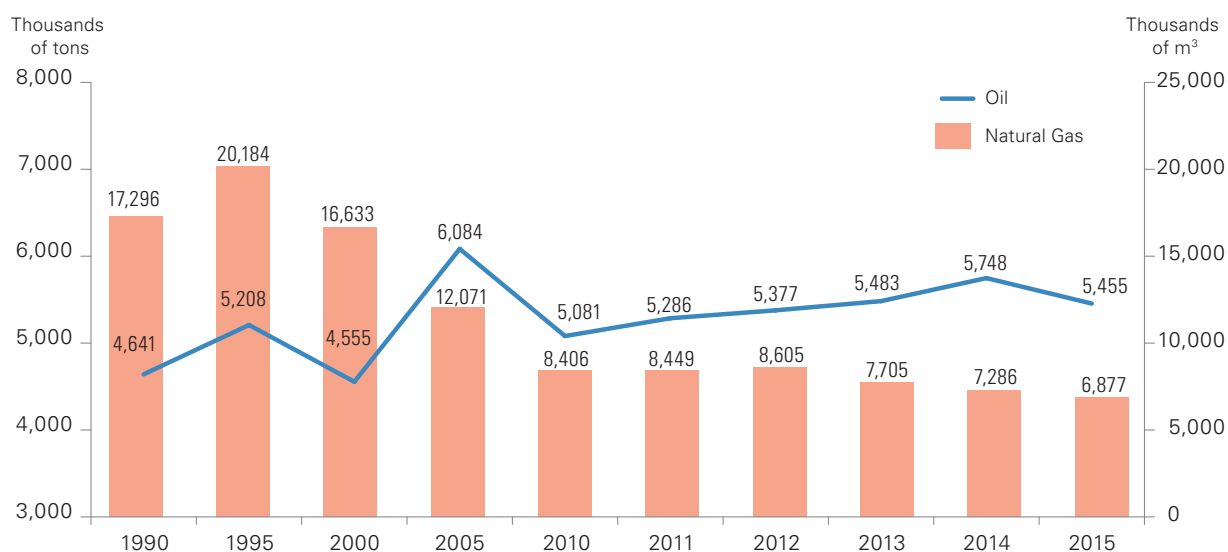
Currently **domestic oil production covers 9.4 per cent of national demand**, while **gas contributes 10.2 per cent**. At the moment there are a total of 867 producing wells, 91 onshore processing plants and 135 offshore wells.

In 2015, around **66 per cent of the gas and 14 per cent of the crude oil was extracted from the offshore wells**.

The **leading Region in the Italian productive context continues to be Basilicata**, which contributed 69 per cent of total crude oil production (equal to 3.8 million tons, -5.3 per cent) and around 22 per cent of natural gas (1.5 billion cubic metres; +3.8 per cent).

Considering the quotations of crude oil and natural gas in 2015 total domestic production, equivalent to 11.1 Mtoe's, translated into a **savings of 3.2 billion euros** in our energy bill.

Italy - Domestic production of hydrocarbons



Source: Ministry of Economic Development

### *Regulatory uncertainty and risks for E&P in Italy*

According to the 2015 Annual Report of the Ministry of Economic Development's Directorate for Safety of Mining and Energy Activities "*in over 60 years of activity the hydrocarbons exploration and production industry has been a reference model in Italy for its overall safety and performance standards*". This statement has been further confirmed by the safety indicators illustrated in the 2<sup>nd</sup> Environmental Report of the Italian Exploration and Production Sector (E&P), presented in November 2015.

And yet it was just in 2015 and during the current year that the industry became an unwilling protagonist in a series of challenges and disputes which produced significant impacts on investments and production activities planned at the end of 2014:

- article 38 of Decree-law n. 133/2014 "*Sblocca Italia*" had led to hopes of renewed impetus for the exploration, development and production activities, as well as for the underground storage of natural gas, since it described these activities as being "***of strategic interest, of public utility, urgent and no longer deferrable***", aligning Italy's authorization procedures with other European Countries' standards, without impairing the rights of Regions and local Authorities;
- nevertheless, divergent views on energy strategies between the Regions and the central Government, often fuelled by local opposition, culminated in July 2015 in a request for a referendum submitted by a number of Regions<sup>1</sup> to oppose changes to onshore permitting (art. 38 "*Sblocca Italia*") and to block offshore activities within 12 nautical miles (22.2 kilometres from the coast) as per art. 35 of the Decree-law on Development;
- aiming to find a position that both central and local Authorities could agree upon, at the end of 2015 the Stability Law<sup>2</sup> reintroduced the ban on Exploration and Production of hydrocarbons within 12 nautical miles and removed the measures in the "*Sblocca Italia*" Decree-law, thus deeply affecting a number of submitted projects;
- as a result of this measure, already at the beginning of this year 27 submissions planned within-or partially within-12 miles from the coast were rejected or relocated. This has had a serious impact on planned investments of many international companies originally allocated for E&P activities in Italy.

Ultimately, the continuous changes to the regulatory framework that have occurred over the past ten years have significantly reduced the interest of a lot of foreign investors, and seriously damaged Italy's reputation. In addition to the recent fluctuations in oil prices, this element of uncertainty is having a deeply depressive effect on investments, with the risk of notable consequences on employment and economic development.

<sup>1</sup> The Referendum was initially promoted by 5 Regions (Marche, Molise, Apulia, Basilicata and Calabria) and later included 5 more (Abruzzo, Campania, Liguria, Sardinia and Veneto).

<sup>2</sup> Law n. 208 December 28, 2015.

### *The strengths of E&P*

The domestic production of hydrocarbons in Italy has a great energetic and socio-economic importance for our Country. It has been estimated that in 2015 alone, the domestic production of hydrocarbons guaranteed over 340 million euros revenue to the Public Administrations, as royalties and fees, plus 630 million euros in taxes.

2015 also marked the restart of upstream activities in Emilia-Romagna after the 2012 earthquake. Following in-depth international investigations and the publication of studies that ruled out any correlation between the seismic event and hydrocarbon exploration and production, the Region Emilia-Romagna and the Ministry of Economic Development signed an “Operative Agreement”, which revoked the suspension of activities that had been in effect since the previous year.

Finally, over the last year huge investments were made especially in Italy’s two main onshore fields – both located in the Region Basilicata – as well as for the development of the offshore project known as Ibleo.

- ◆ 250 million euros were invested in the **Val d’Agri Oil Center** (joint venture Eni and Shell). In the second half of 2015 the fifth gas treatment line with SO<sub>2</sub> reduction technologies was tested and set in operation.
- ◆ The **Tempa Rossa field** (Total operator 50 per cent, Mitsui 25 per cent, Shell 25 per cent) received more than 300 million euros of investment in 2015. However, production will not get underway until beginning of 2018. Production amounts to 50,000 barrels/day of crude oil and 230,000 cubic metres of gas. Crude will be transported through the Viggiano pipeline to the Raffineria di Taranto, where two storage tanks and a new vapour recovery system will be built.
- ◆ The **Ibleo** project, also favoured by the Protocol of Understanding signed in 2014 between the Region Sicily and the operators, calls for a total investment of around 900 million euros. This is the most important offshore initiative in Italy and is also closely connected to the reconversion project at the Raffineria di Gela. Sicily will significantly benefit in terms of employment, as the project will produce more than 10 billion cubic metres of gas in around 14 years.

At the end of March an investigation led to the suspension of the activity of the Val d’Agri Oil Center located in Viggiano. For the time being, the production shut down has generated significant financial and employment losses. The temporary closure has also impacted crude oil supplies to the Raffineria di Taranto which is usually supplied by Viggiano.

The agreements signed with the Regions Sicily and Emilia-Romagna and the potential for development confirmed by the investments decided by the Oil Companies operating in Italy – in spite of adverse market conditions and conflicts that emerged and culminated in the referendum initiative – emphasize the importance of the Oil & Gas industry for the Italian industrial context. Its relevance becomes even more evident if we consider the vast number of spin off and related activities associated with the upstream sector in Italy: a chain of Companies supplying goods and services to E&P operators, which have been recognized as world leaders both

### Italy Oil products demand (Millions of tons)

	2000	2005	2010	2013	2014	2015	% change <sup>(1)</sup> 2015 vs. 2014
LPG	3.9	3.5	3.4	3.3	3.1	3.3	+ 5.6%
Leaded petrol	4.6	—	—	—	—	—	...
Unleaded petrol	12.2	13.5	10.0	8.0	7.9	7.8	- 1.0%
<b>TOTAL PETROL</b>	<b>16.8</b>	<b>13.5</b>	<b>10.0</b>	<b>8.0</b>	<b>7.9</b>	<b>7.8</b>	<b>- 1.0%</b>
Jet fuels	3.6	3.8	3.9	3.7	3.8	3.9	+ 2.9%
Diesel gasoil	18.3	24.4	25.3	22.4	22.8	23.2	+ 1.9%
Heating oil	3.6	2.9	1.9	1.4	1.1	1.2	+ 3.2%
Gasoil other uses	2.6	2.6	2.4	2.1	2.2	2.2	+ 0.9%
<b>TOTAL GASOIL</b>	<b>24.5</b>	<b>29.9</b>	<b>29.6</b>	<b>25.9</b>	<b>26.1</b>	<b>26.6</b>	<b>+ 1.9%</b>
Fuel oil for power generation	13.7	5.6	1.0	0.5	0.5	0.6	+ 30.3%
Fuel oil for other uses	3.0	2.5	1.2	1.0	0.9	1.3	+ 46.3%
<b>TOTAL FUEL OIL</b>	<b>16.7</b>	<b>8.1</b>	<b>2.2</b>	<b>1.5</b>	<b>1.4</b>	<b>1.9</b>	<b>+ 40.8%</b>
– of which low sulphur	10.7	6.4	1.4	1.2	0.6	0.7	+ 18.9%
Bitumens	2.4	2.8	2.0	1.4	1.5	1.5	+ 1.1%
Other products <sup>(2)</sup>	6.5	4.7	3.6	2.6	2.4	2.4	+ 1.0%
Petrochemicals (net load)	7.0	6.5	5.8	4.1	2.7	3.4	+ 24.7%
Bunkers	2.8	3.5	3.5	2.5	2.3	2.6	+ 13.3%
<b>TOTAL DELIVERIES TO MARKET</b>	<b>84.2</b>	<b>76.3</b>	<b>64.0</b>	<b>53.0</b>	<b>51.2</b>	<b>53.4</b>	<b>+ 4.4%</b>
Refinery consumptions and losses	9.1	10.0	9.4	6.9	6.2	6.3	+ 1.2%
Stock reduction (increase)	0.2	0.4	0.3	0.3	0.2	0.3	...
<b>TOTAL CONSUMPTION</b>	<b>93.5</b>	<b>86.7</b>	<b>73.7</b>	<b>60.2</b>	<b>57.6</b>	<b>60.0</b>	<b>+ 4.1%</b>

<sup>(1)</sup> Calculated on thousands of tons.

<sup>(2)</sup> Includes Petroleum Coke, Kerosene, Lubricants and others.

Source: Ministry of Economic Development

### Italy Costs of imported crude

	1990	1995	2000	2005	2010	2013	2014	2015	% change 2015 vs. 2014
\$/barrel Fob	22.5	16.3	26.9	50.4	78.0	108.6	98.2	50.7	- 48.4
\$/ton Cif	172.2	125.0	205.0	379.9	581.0	806.8	730.4	383.3	- 47.5
Exchange rate \$/euro <sup>(1)</sup>	1.2887	1.2953	0.9174	1.2359	1.3246	1.3281	1.3326	1.1089	- 16.8
Euro/ton Cif	133.6	96.5	223.5	307.4	438.6	607.5	548.1	345.6	- 36.9

<sup>(1)</sup> Exchange rate weighted average on monthly imported volumes. Not exactly corresponding to the Italian Foreign Exchange Office (UIC) average.

Source: Ministry of Economic Development and Unione Petrolifera

for their high level of solid know-how and the size of their revenues - 20 billion euros- recorded last year.

The size of investments in natural hydrocarbon resources further confirms the potential of an asset that belongs to the whole nation, where Oil companies act as a vehicle.

## Demand for oil products

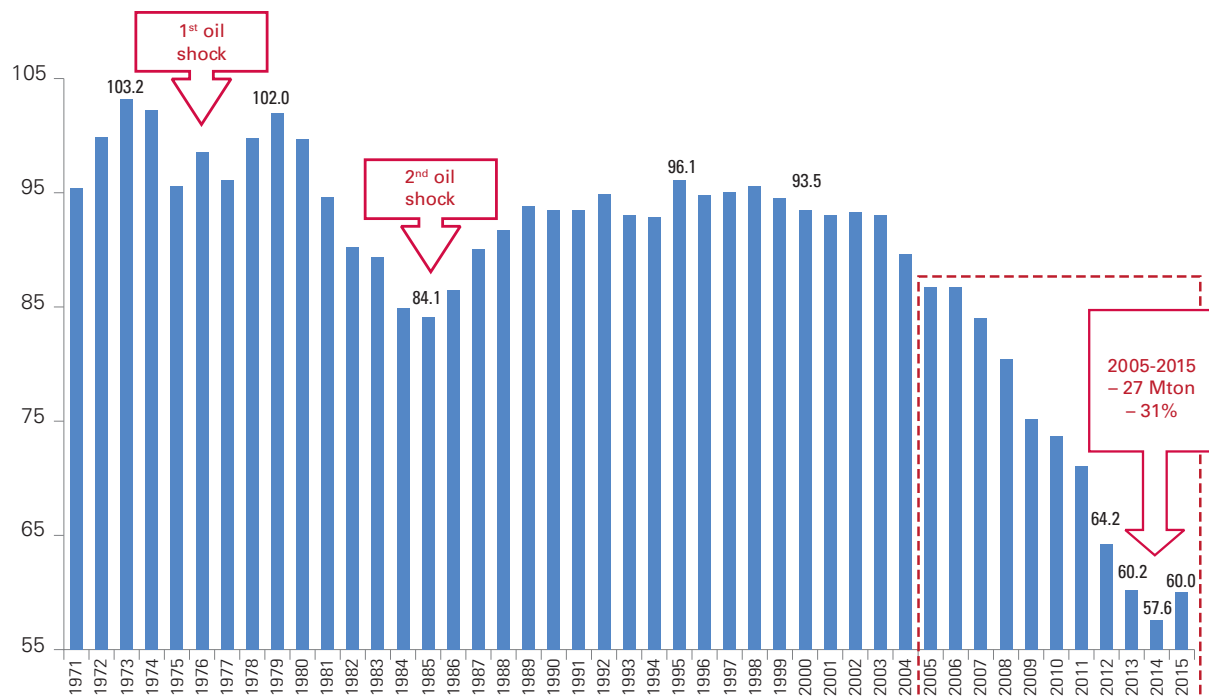
After 12 years of continuous decline, in 2015 **demand for oil products** increased by 4.1 per cent<sup>1</sup> and was back to 60.0 million tons.

These are certainly quite far from past levels. Only 10 years ago, in 2005 domestic consumption was 86.7 million tons: with a 31 per cent decline, some 26.7 million tons were eliminated, not only because oil products were replaced by gas in power generation, but also because of the long period of economic crisis and especially the second phase of the recession, which in 2012 produced the largest single drop in the history of Italian oil products consumption (-6.8 million tons, of which 3.7 were only for petrol and gasoil).

The approximately 2.4 million tons more than in 2014 were mainly the consequence of a **higher demand from Petrochemicals net load (+0.7 million tons) and Re-**

<sup>1</sup> According to the provisional data, the increase when measured in Mtoe (million of tonnes of oil equivalent) was +3.4 per cent due to each product's different calorific power.

### Italy - Consumption of oil products (Millions of tons)



Source: Unione Petrolifera on data from the Ministry of Economic Development

### Italy Oil supply (Millions of tons)

	1990	1995	2000	2005	2010	2013	2014	2015 <sup>(1)</sup>
Imports of crude	74.7	73.6	83.7	89.3	78.6	58.4	53.8	62.5
– of which on “own account”	63.1	70.4	77.1	85.3	72.2	52.5	53.8	62.5
– of which for “foreign clients”	11.6	3.2	6.6	4.0	6.4	5.9	—	—
Imports of semi-finished products	12.1	8.6	6.6	5.9	6.9	8.1	5.9	6.1
Imports of products <sup>(2)</sup>	23.5	25.1	22.3	14.0	12.7	12.9	12.5	13.0

<sup>(1)</sup> Provisional data.

<sup>(2)</sup> From 1999 until 2004 they include both imports of low cost fuels (heavy oil emulsion with a high sulphur content) and Petroleum Coke.

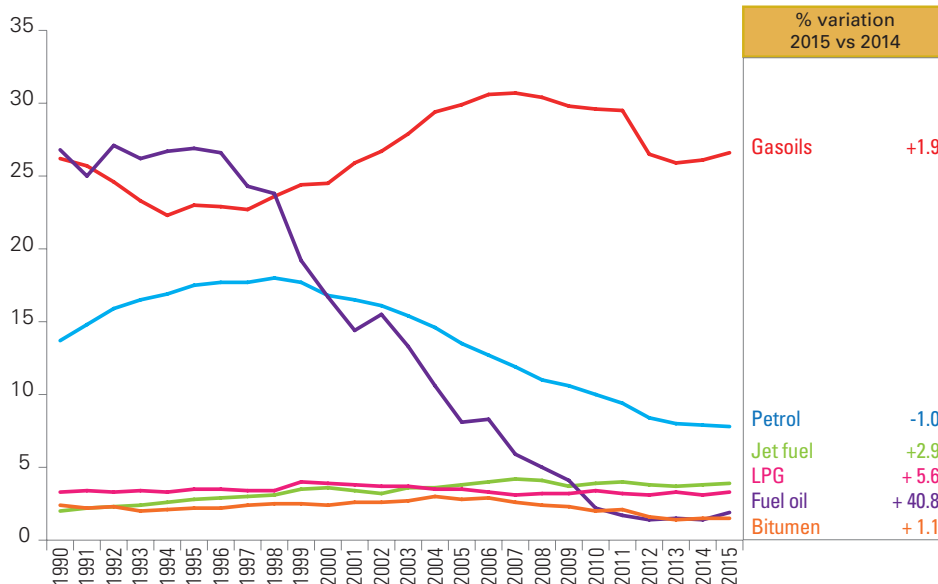
Source: Ministry of Economic Development and Istat

### Italy Crude imports by area of origin

	Millions of tons							Percentage weight						
	1990	2000	2005	2010	2013	2014	2015	1990	2000	2005	2010	2013	2014	2015
MIDDLE EAST	26.8	30.6	30.8	25.9	13.3	12.8	17.3	35.9	36.6	34.5	32.9	22.7	23.8	27.7
– of which: Saudi Arabia	8.1	8.4	12.6	5.6	8.1	5.8	5.4							
Iran	9.5	10.4	9.6	10.4	—	0.4	—							
Iraq	3.4	8.2	5.9	7.4	4.9	6.3	11.6							
AFRICA	40.4	32.2	30.6	24.6	16.8	13.4	18.1	54.1	38.5	34.2	31.3	28.9	24.9	28.9
– of which: Libya	24.5	21.9	23.3	18.2	8.2	4.2	3.9							
Algeria	4.6	3.2	2.9	0.7	1.7	1.3	1.3							
Egypt	6.2	3.3	0.7	1.4	1.2	1.5	2.7							
Angola	—	0.1	0.2	0.6	0.9	1.8	2.8							
Nigeria	1.3	1.1	1.6	0.8	3.1	1.4	1.9							
FORMER USSR	6.2	16.1	24.5	25.9	26.3	22.3	24.6	8.3	19.2	27.4	33.0	45.0	41.4	39.4
– of which: Russia	n.a.	13.9	18.4	11.9	11.2	8.9	8.2							
Azerbaijan	n.a.	1.8	2.9	11.0	10.8	9.2	11.2							
LATIN AMERICA	0.5	0.5	0.1	0.3	0.6	3.8	1.6	0.7	0.6	0.2	0.4	1.0	7.1	2.6
EUROPE	0.6	4.3	3.3	1.9	1.4	1.5	0.9	0.8	5.1	3.7	2.4	2.4	2.8	1.4
OTHER ORIGINS	0.2	—	—	—	—	—	—	0.2	—	—	—	—	—	—
<b>TOTAL</b>	<b>74.7</b>	<b>83.7</b>	<b>89.3</b>	<b>78.6</b>	<b>58.4</b>	<b>53.8</b>	<b>62.5</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
– of which: Opec	55.5	55.0	56.1	43.7	27.1	21.6	27.2	74.3%	65.7%	62.8%	55.6%	46.4%	40.1%	43.5%

Source: Ministry of Economic Development

### Italy - Trends in the main oil products (Millions of tons)



Source: Unione Petrolifera on data from the Ministry of Economic Development

fineries consumption and losses (+0.3 million tons) and Bunkers (+0.3). Also consumption of fuels was slightly up (petrol, diesel gasoil, LPG for transportation), which rose by +1.3 per cent and together recovered more than 420 thousand tons, supported by lower consumer prices.

Trends for the various products were as follows:

- ❑ demand for **petrols** (around 7.8 million tons) continued to contract but with a **smaller negative variation than in the past (-1.0 per cent compared to -1.6 per cent in 2014)**;
- ❑ demand for **diesel gasoil** (23.2 million tons) recorded an **increase of 1.9 per cent** (430 thousand tons more), also reflecting the recovery in industrial activities;
- ❑ demand for **gasoils** for other purposes **increased**: in particular, **heating gasoil** consumption rose by +3.2 per cent as a result of colder temperatures, while demand for **gasoil for farms** rose by 1.6 per cent;
- ❑ **total demand for gasoils** stood at 26.6 million tons, an increase of 0.5 million tons compared to 2014 (+1.9 per cent);
- ❑ total **LPG** demand rose by 5.6 per cent, with the transport sector rising by 5.4 per cent;
- ❑ demand for **fuel oil** rebounded strongly (1.9 million tons + 40.8 per cent compared to 2014) as this product again became economically competitive. In particular, of the approximately 600 thousand tons of fuel oil destined for power generation (excluding quantities used by industrial autoproducers) nearly all had

- a sulphur content less than 1 per cent and came from the domestic market;
- positive trends were also recorded for: **jet fuels** (+2.9 per cent), **other products** (+1.3 per cent) and **bitumens** (+1.1 per cent);
  - demand was slightly down for **lubricants** (-0.3 per cent); **consumption for electric and thermal power generation** was down by 8.6 per cent.

## The prices of oil products

The prices of oil products were a key factor in transmitting the positive effects of the plunge of international crude oil prices to Italy's real economy in 2015.

International quotations of oil products were indeed marked by a downward trend especially during the second half of the year. Compared to 2014, the average price in dollar values was down by 37.8 per cent for petrols and 41.0 per cent for diesel gasoil.

During the year prices, after having peaked in the month of June, began to come down sharply. In line with trends in international quotations and European averages, **industrial prices** (retail price minus tax) of the main oil products, expressed as 2015 averages compared to the previous year, recorded the following percentage variations:

unleaded petrol	-21.0%
diesel gasoil	-23.5%
heating oil	-22.6%
fuel oil (low sulphur)	-36.8 %

following average variations in **international prices expressed in euros**, which were **substantially similar**.

**Average consumer prices for 2015 were 1.538 euros/litre for petrol and 1.406 euros/litre for diesel gasoil.**

The decreases of 10 per cent for petrol and 13 per cent for gasoil were less

### Italy Average prices of main oil products

		Price including taxes			Taxes			Price net of taxes		
		2013	2014	2015	2013	2014	2015	2013	2014	2015
Premium petrol	euro/litre	1.749	1.713	1.538	1.035	1.039	1.006	0.714	0.674	0.532
Diesel gasoil	euro/litre	1.659	1.609	1.406	0.908	0.910	0.871	0.750	0.700	0.535
LPG motorfuel	euro/litre	0.806	0.769	0.613	0.288	0.286	0.258	0.517	0.483	0.355
Heating oil	euro/litre	1.421	1.367	1.169	0.652	0.650	0.614	0.768	0.718	0.555
Heavy fuel oil low sulphur	euro/kg	0.632	0.594	0.388	0.089	0.085	0.066	0.543	0.508	0.322

Source: Unione Petrolifera on data from the Ministry of Economic Development



significant in terms of percentage, given their considerable fiscal component: **in total, taxes amount to 65 per cent of the end price of petrol and 62 per cent of gasoil.**

In 2015 taxes on petrol fell to 1.006 euros/litre compared to 1.039 in 2014 (-3.2 per cent), while for gasoil they fell from 0.910 to 0.871 euro/litre (-4.2 per cent): these decreases were connected to lower industrial prices which had the effect of reducing the amount of VAT charged.

## Imports and exports

**Italy imported 62.5 million tons of crude oil** in 2015, an increase of 16.0 per cent from the previous year: although this figure is higher than the minimums of the past two years, it is still far from previous import levels. Again in 2015 there were no imports of oil for “foreign clients”.

Imports were up **both of finished products** (13.0 million tons, +4.0 per cent) and **foreign semi-finished products** (6.1 million tons, +3.8 per cent).

2015 saw a **significant rise in exports** of crude, semi-finished and finished products, which stood at 28.1 million tons (+33.7 per cent from 2014). Compared to 2007 when exports were 31.2 million tons, this represents a 3.1 million tons decline.

The flare up of tensions in Libya during 2015 led to a further reduction of flows from the Country that historically was our main oil supplier.

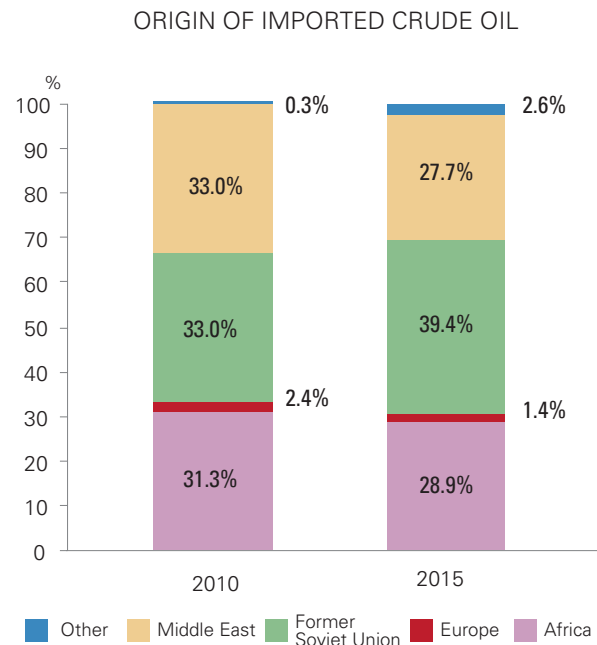
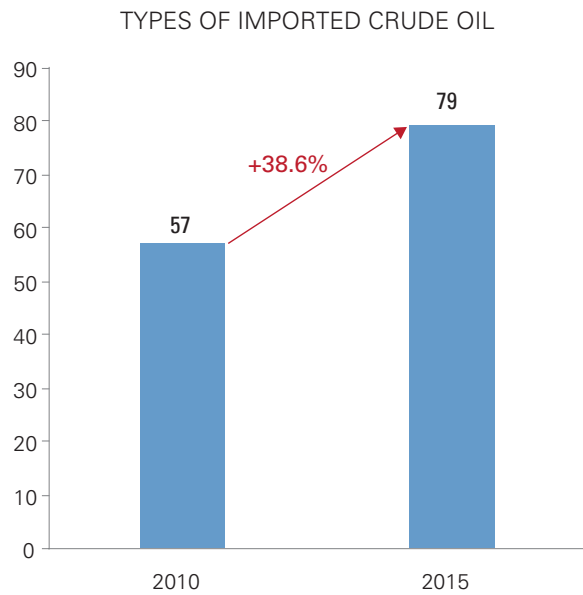
The missing volumes were made up by the **area of the former Soviet Union, which took Libya’s place, with Azerbaijan (17.9 per cent), Russia (13.1 per cent), and Kazakhstan (8.4 per cent), contributing to more than 39 per cent** of the crude oil imported into Italy.

Finally, volumes coming from **Iraq** at 11.6 million tons were up significantly by 85 per cent, making Iraq our main oil supplier in 2015.

Compared to 2010, when the level of imports from our three main supply areas (Africa, former Soviet Union and Middle East) was absolutely balanced (around 33 per cent each), **geopolitical turmoil has reduced both Africa’s share (28.9 per cent) and the Middle East (27.7 per cent).**

However, the number of our crude oil supplier Countries has risen (29 in 2015 compared to 25 in 2010) thus increasing Italy’s oil supply diversification.

Italy - Types and origins of imported crude oils



Source: Unione Petrolifera

# THE ITALIAN DOWNSTREAM

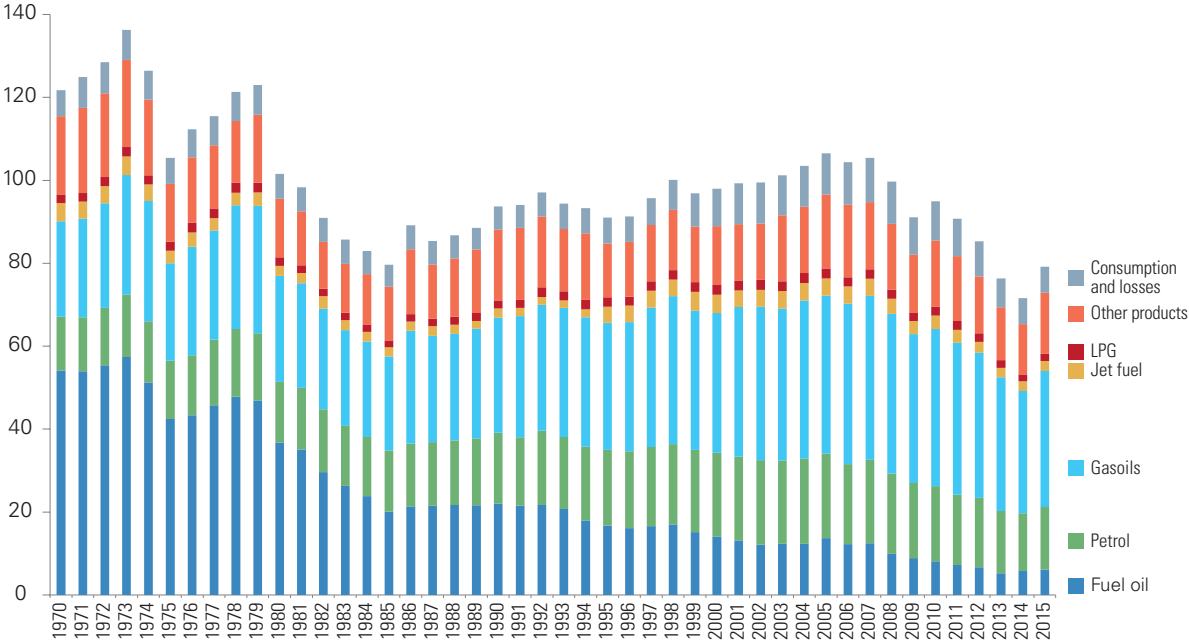
## Refining: a positive 2015 doesn't get rid of the structural problems

In 2015 installed refining capacity was 87.5 million tons compared with total refining activities of around 72.7 million tons, an increase of 9.8 per cent. The **utilization rate was 83 per cent, which goes down to 69 per cent** if calculated on the basis of domestic consumption alone and it appears it will improve only marginally over the short term. While somewhat better than the low of 2014, the 72.7 million tons refined **are more than 28 million less than 10 years ago, when refineries were operating at full capacity.**

On January 1<sup>st</sup>, 2016 available refining capacity was **87.2 million tons**. Thus, not withstanding plant capacity reductions **the situation of overcapacity is anything but resolved.**

The **desulphurization capacity of the refining system**, that is plants able to produce fuel qualities in compliance with the specifications for low sulphur was on January 1<sup>st</sup>, 2016, 40.8 million tons, slightly higher than in 2014 (+0.8 per cent), but

Italy - Trends in refineries production (Millions of tons)



Source: Unione Petrolifera

## FOCUS

## INVESTMENTS AND INDUSTRIAL ACTIVITIES

In response to market changes and ever stricter standards, the technological innovation of products and processes continues to be the main strategy of Italy's oil industry.

With regard to **refineries**:

- in 2015 the **Raffineria Api** began preliminary activities for the production of low sulphur Marine fuel oil, as well as the plant to produce nitrogen, which will be used to continuously feed the refineries networks, together with a project for the internal production of oxygen. Studies have also begun for the creation of components needed for the production of diesel from second generation vegetable oil and for an improved use of ethanol in petrol production;

- after investing 120 million euros in 2015, this year the **Raffineria di Milazzo** will invest around 100 million euros for the revamping of the Hds1 plant and of the Topping and Vacuum furnaces and the completion of the new fire prevention depot. Current investment activities also include work on the new sulphur plant and a third vapour recovery unit, the cover of the waste water treatment tanks and interventions to upgrade the piers.

It was just in these months that the refinery was able to obtain 110 million euros of financing from the European Investment Bank (EIB) as part of the Juncker project introduced by the Commission in 2014 to relaunch the economy and it has been included in the list of strategic infrastructures of national interest (art. 57 of Law n. 35/2012).

The European Investment Bank funds<sup>1</sup>, which will be disbursed over a multiyear period, amount to a total of 236 million euros. They aim to:

- reduce environmental impact (with the construction of an additional sulphur recovery unit to process crude oil with a higher sulphur content),
- increase energy efficiency (improving operational stability, heat recovery and the plants' performance),
- increase environmental protection (with improvement of preventive controls over potential events that could contaminate the subsoil and aquifers);
- in 2015 **Saras** invested 86.2 million euros, of which 85 per cent went to its refining segment, mostly for interventions aimed at energy efficiency and improving heat recovery processes. In particular, changes were made to allow a greater heat integration between the *Mild Hydro Cracking* plants and atmospheric distil-

lation units (Toppings) and desulphurization units. In addition, the first investments were made to integrate the new "Nord Plants" acquired from Versalis in 2014 with the aim of optimizing and enhancing their functioning.

Finally, investments for environmental protection, regarded the installation and restoration of the double bottoms of some of the hydrocarbon tanks and interventions on the flooring of tank basins and pipings; investments in safety included improving fire prevention and detection systems and the segregation of zones in the plant;

- **Total** acquired from Eni the licence to use its EST-Eni Slurry Technology, which allows the conversion of up to 95 per cent of residual fuel oils, while in the current refining techniques this is not higher than 70 per cent. The EST technology is the result of 15 years of research by Eni and was experimented for two years in the Raffineria di Sannazzaro;

- in the **Viscolube** plant in Pieve Fissiraga (LO) an investment of around one million euros went to constructing a new thermodesalination column which began operating in September 2015. It is 34 metres long and able to separate previously dehydrated oil into its lubricant components, gasoil and bitumens, allowing improvements in quality and performance.

With regard to developments in **transportation infrastructure** for crude oil and products:

- in September 2015 the Società Italiana per l'Oleodotto Transalpino (**Siot**) obtained a renewal of its concession from the Harbour Authority of Trieste for another 50 years. At the Trieste oil terminal which Siot has been managing since 1964 more than 500 vessels a year dock, discharging 41.5 million tons of crude oil (equivalent to 75 per cent of the port's traffic and with the TAL pipeline guaranteeing 90 per cent of Austria's oil demand, 40 per cent of Germany's and 50 per cent of the Czech Republic's.

Siot's Development Plan provides for 20 million euros of investments to be made from 2015-2017;

- in the first months of this year the Harbour Authority of Genoa evaluated the project proposed by the **Attilio Carmagnani company** (active since 1904 in the handling and storage of petrochemicals via ship, rail and tanker lorry) and **Superba** (the company that manages the coastal depot connected to Multedo Oil Port in Genoa) to relocate their own coastal depots situated at the current headquarters of Multedo di Pegli inside the Port's water airport in an area of more than 30 thousand square metres currently occupied by Enel's coal power plant, but which will be vacated by the end of next year. Concentrating the two depots could reduce the risks associated with the movement of stored products and the area of Multedo would in any case be remediated by the two Companies.

<sup>1</sup> From the technical point of view 30 million will be disbursed directly by the EIB, another 40 million by the EIB but guaranteed by the Cassa Depositi e Prestiti (CDP) and the final 40 million through an Italian banking institute.

## Italy Refineries activities (Millions of tons)

	2000	2005	2010	2012	2013	2014	2015
Runs	94.2	101.0	90.3	80.5	70.9	66.2	72.7
– Italian crude	4.5	5.5	5.0	4.9	5.0	5.2	4.8
– foreign crude	82.9	88.7	78.5	68.8	57.9	54.4	61.9
– semi-finished imported	6.8	6.8	6.8	6.8	8.0	6.6	6.1
Other semi-finished, additives/oxygenates, methane	3.8	5.5	4.6	4.8	5.4	5.4	6.5
Total raw materials	98.0	106.5	94.9	85.3	76.3	71.6	79.1
– of which for “foreign clients”	6.7	3.9	6.9	8.4	8.2	—	—
Refining capacity <sup>(1)</sup>	100.2	100.2	106.6	103.1	99.1	98.1	87.5
% plants utilisation <sup>(2)</sup>	94%	100%	85%	78%	72%	68%	83%

<sup>(1)</sup> Capacity supported by secondary processing plants to produce petrol and gasoil according to specification, on January 1<sup>st</sup>.

<sup>(2)</sup> With regard to total runs, excluded other semi-finished, additives, oxygenates and methane.

Source: Ministry of Economic Development and ISTAT

more than 17 per cent lower than what it was in 2011, before the downsizing of plant capacities.

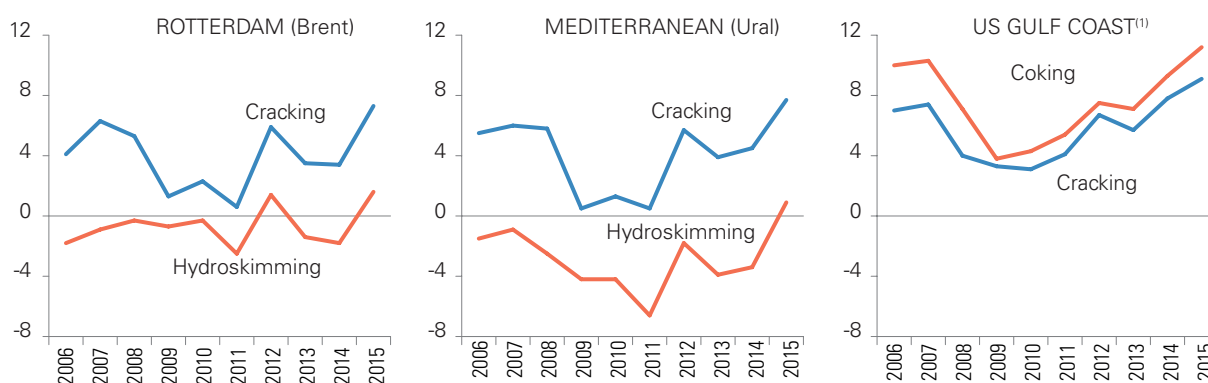
In 2015 **average refining margins** in Europe made a significant improvement compared to 2014, to some extent containing the sizeable losses the sector has sustained through this long recession period. Even less complex operations recorded positive results.

In Europe, compared to averages for the period 2005-2008, **cracking margins for Brent rose from 5.2 to 7.3 dollars/barrel** (+39 per cent), while for **Ural they increased from 6.0 to 7.7 dollars/barrel** (+29 per cent).

The substantial recovery of refining margins was supported by a decline in oil prices and the relatively higher price of products (especially petrol whose crack spread reached record levels in 2015). This occurred in a context of rebounding oil product consumption, but with lower product availability due to simultaneous maintenance

## Northern Europe/Mediterranean/ US Gulf Coast

Incremental margins for the refining of a barrel of crude oil (Dollars/barrel)



<sup>(1)</sup> Mix of crude HLS/LLS.

Source: IEA, 2015

## FOCUS

## CHANGES IN MARKET SHARE AND OPERATORS' STRUCTURE

In 2015 and in the early months of this year the profile of the operators' assets changed only slightly. These included the following:

- the merger by incorporation of Erg Supply & Trading into **Erg Spa** effective from July 1<sup>st</sup>, 2015 (for accounting and tax purposes from January 1<sup>st</sup>, 2015);
- in October 2015, Rosneft JV Progetti, an indirect subsidiary of **Rosneft Oil Company** sold its 8.99 per cent interest in Saras to institutional investors for a total of 162.4 million euros. With this deal Rosneft's interest in Saras went down

from 21 to 12 per cent.

With the acquisition of this 9 per cent stake from Rosneft, the Swiss institute UBS through UBS AG and UBS Switzerland AG, becomes an important shareholder in Saras owning 2.189 per cent of the Group;

- in September 2015 **Saras** established a new subsidiary in Geneva, "Saras Trading SA", which began its activities in January of this year and which according to the Group's industrial Plan for 2016-2019 will aim to pursue new commercial opportunities.

## FOCUS

## AWARDS AND SPECIAL OCCASIONS FOR THE OIL SECTOR IN 2015

In spite of the difficulties and uncertainty besetting an economy not yet completely out of a crisis, that caused profound changes in industrial structures, last year the oil sector again confirmed its excellence among national industries.

Among the events of 2015 and recognitions obtained by the oil sector the following anniversaries are of note:

- 40<sup>th</sup> year of activity for the Raffineria **Isab** di Priolo Gargallo (SR) and
- the 50<sup>th</sup> anniversary of the Raffineria **Saras** in Sarroch (CA), which are among the largest and most complex refineries in the Mediterranean.

In addition, the following awards were conferred on **Eni**:

- "Exploration Company of the Year" by the Petroleum Economist, for having implemented an innovative approach in exploration activities and a unique capacity to successfully pursue its own business interests often in challenging environments;
- the National Prize for Innovation ("Prize of Prizes") instituted

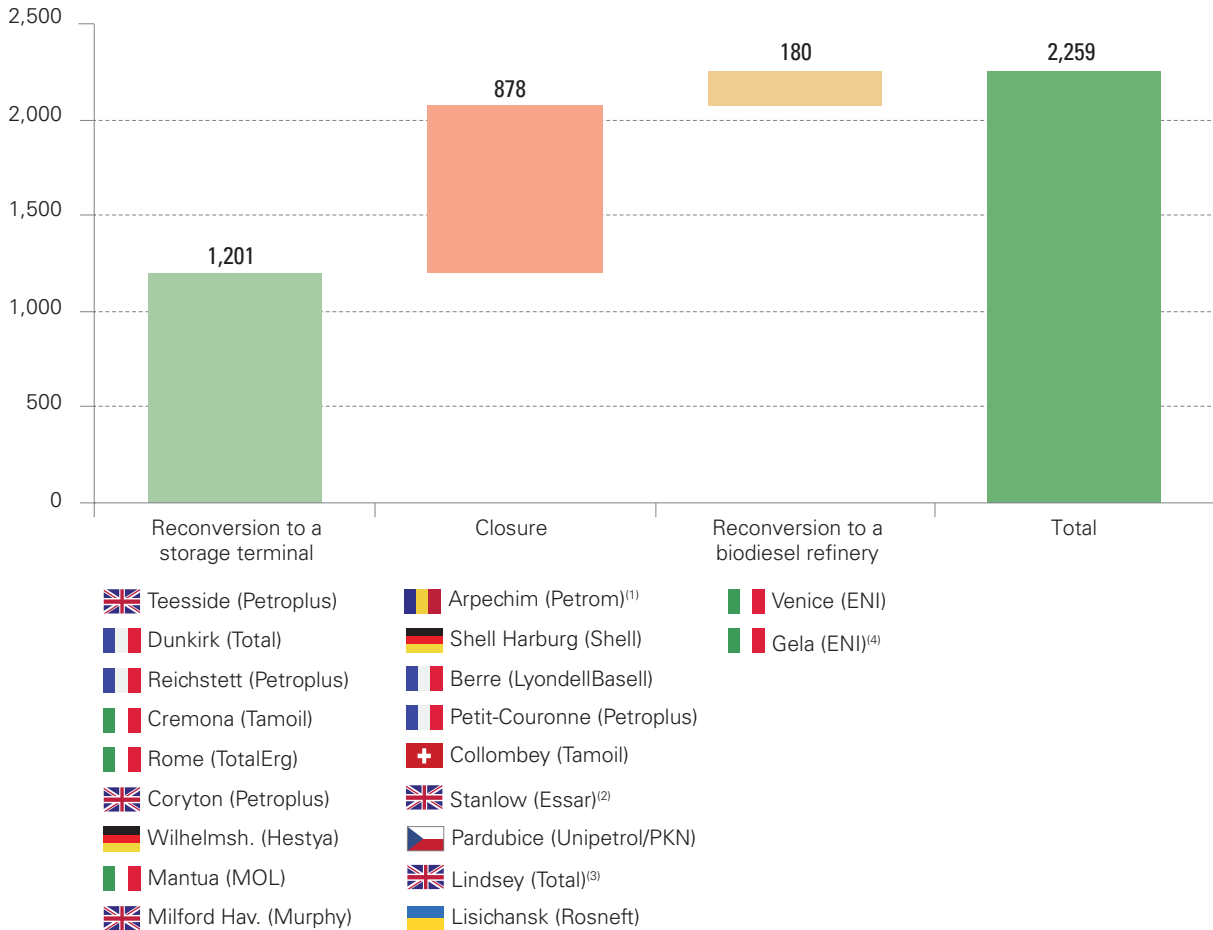
under the auspices of the President of the Republic and awarded by Cotec, the National Foundation for Technological Innovation (Eni won the prize for the seventh straight year).

And in the following rankings:

- the highest ranking on the CDP "Italy Climate Disclosure Leadership Index" (CDLI), which includes Italy's best publicly listed Companies for the completeness of information they provide on questions of climate change and greenhouse gas emissions;
- the top place on Comprend's Webranking list for online Financial communication by publicly listed Companies (followed by **Erg** in 13<sup>th</sup> place);
- the inclusion among the 20 "Capex Top Spenders", Standard & Poor's capital expenditure survey of investments by non-financial Companies in Europe and the among the first 60 globally.

Also in 2015 Chairman & CEO of **Exxon Mobil Corporation** Rex W. Tillerson was given the "Petroleum Executive of the Year Award".

**OECD Europe - Refineries closed and reconverted between 2009 and 2015**  
(Thousands of barrels/day)



<sup>(1)</sup> After the shutdown the refinery was partially converted into crude and fuel storage.

<sup>(2)</sup> Shutdown 1 CDU only.

<sup>(3)</sup> 50% capacity reduction.

<sup>(4)</sup> Under conversion: effective starting from 2018.

Source: The Boston Consulting Group

shutdowns in plants as well as the rationalization of the European refining system, which in 2015 continued to reduce global spare capacity.

**Investments made in Italy in 2015 amounted to around 900 million euros.** 55 per cent of this went to modernizing plants and maintaining safety and reliability standards as well as to improving energy and environmental efficiency.

While 2015 did mark an improvement in profitability for Italian refineries, thanks especially to low oil prices and the slight recovery of consumption, **the structural problems of our industrial system remain to a large extent unresolved**, characterized as it is by an ongoing situation of overcapacity.

## FOCUS

## GREEN REFINERIES AND NEXT GENERATION DIESEL

Eni applied the results of its research investments to the conversion of some of its industrial sites: Porto Marghera and Gela.

**Porto Marghera** which was opened in 1926 is the world's first bio-refinery to be converted from a conventional refinery using Eni's proprietary Ecofining™ technology, a system developed in 2005 in partnership with the U.S. company Honeywell-UOP.

Ecofining™ which is based on the complete hydrogenation of vegetable oils can process a more flexible range of bio-feedstocks: vegetable oils, second generation feedstocks (animal fats, exhausted oils) and advanced feeds (oil from algae and wastes, ligno-cellulose oils, etc.).

In the 1<sup>st</sup> phase of the plan, until mid 2017, the plant's production capacity will be 360 thousand tons (in 2014 the plant produced 90 thousand tons of biodiesel). In the 2<sup>nd</sup> phase which will begin in 2017, capacity will rise to 560 thousand tons a year of fuel produced from vegetable oils with a production of 140 thousand tons/year of biodiesel, after a further upgrading with the construction of a plant that will produce hydrogen from biogas and one that will refine palm oil and other raw vegetable oils, involving an investment of 110 million euros, in addition to the 70 million already disbursed.

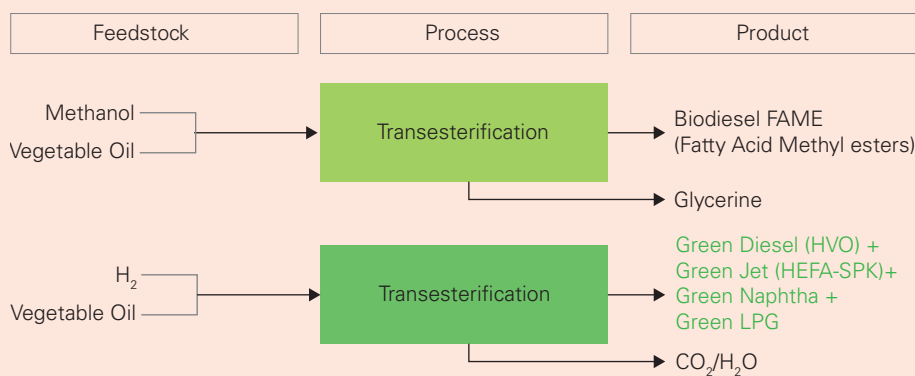
The other traditional refinery which is being reconverted is **Gela** (Caltanissetta), where construction work is planned to begin in the first half of this year after having obtained the necessary authorizations. In 2016 all the activities of dismantling the present plants and lines will be completed, existing materials will be reused and the installation of prefabricated modules will be pursued. In the meantime, Eni announced the tender process for the construction of a new Steam Reforming unit to produce hydrogen and vapour, whose authorization application will be submitted by the end of April.

**Investments provided for in the Protocol of Understanding of November 2014, including those for the plant are an important part and amount to a total of 2.2 billion euros.**

Through an optimization of the plants and by implementing proprietary technologies the project aims to convert first generation non-conventional raw materials (palm oil) and second generation (animal fats, fried oils) into Green Diesel, Green LPG and Green Nafta. A supply hub will be created to distribute crudes of domestic production and green fuels.

The plant will have the capacity to process around 710 thousand tons of vegetable oil a year, with an output of 530 thousand tons of Green Diesel.

Comparison between processes to produce traditional Biodiesel and Ecofining™





## OIL AND GAS CLIMATE INITIATIVE

### The Oil Industry's commitment to reducing climate change

The Oil and Gas Climate Initiative was established following discussions during the 2014 Davos Meeting of the World Economic Forum, and was officially launched at the UN Secretary General's Climate Summit in New York on September 23, 2014.

It is a voluntary initiative involving the sector's leading Oil and Gas Industries working together to catalyze meaningful action on climate change through best practice sharing and collaboration within the industry.

Current members of the initiative are BP, CNPC, Eni, PEMEX, Reliance Industries, Repsol, Saudi Aramco, Shell, Statoil and Total. OGCI members produce over one-fifth of global oil and gas production and over 10 per cent of energy supply.

In October 2015, before COP21 in Paris, members signed a collaborative declaration on climate change to strengthen actions and investments aimed at reducing GHG emissions.

Efficiency, natural gas, renewables, R&D and CCS (Carbon Capture and Storage) are the various areas where the companies intend to collaborate with the aim of going beyond the sum of individual efforts:

- on the **efficiency** front collaboration will work to optimize production and improve the end use efficiency of fuels in road vehicles;
- with regard to **gas** collaborative action will be taken to increase the role of natural gas in the global energy mix and reduce gas flaring;

among the long term solutions investments are planned in:

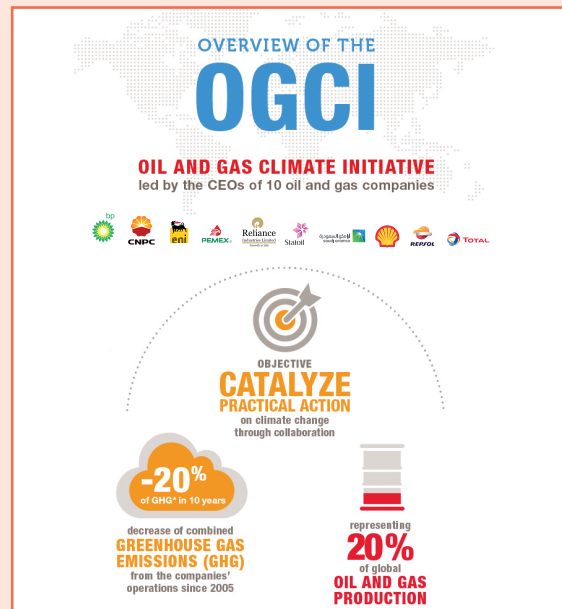
- **R&D** to reduce GHG emissions;
- participating in partnerships to progress **CCS** (carbon capture and storage);
- helping to increase the share of renewables in the global energy mix.

While repeating their interest in remaining "major Oil Companies" the Companies' commitments are already translating into concrete results:

- in November 2015 **Eni** established the division "Energy Solution", with the aim of supporting the company's activities, improving energy access conditions in the Countries, especially in Africa and the Far East, where the Group operates, and ensuring the maximum contribution to reducing direct CO<sub>2</sub> emissions.

Since 2007 Eni has been working in a Research and Development programme on Renewable Energy Sources (RES) in collaboration with the Massachusetts Institute of Technology (MIT), which is focusing on solar energy and on the production of biofuels from non-food biomass. In the first months of this year it launched a strategy in renewables, which aims to develop 440 MW renewables capacity in Italy and abroad by 2022. The Eni Plan for renewable energy sources calls for the launching of 200 MW solar capacity<sup>1</sup> in Pakistan and Egypt by the end of 2017 and in Italy the "Progetto

<sup>1</sup> Five projects comprising a total of around 70 MW of photovoltaic capacity will be developed in Assemini, Porto Torres, Manfredonia, Priolo and Augusta and another 150 MW in Porto Torres, Assemini, Priolo, Ferrandina, Portoscuso, Cengio, Crotone, Brindisi, Belvedere and Spinello.



*Italia*" aims at installing a further 220 MW of new capacity by 2022 involving a total investment of between 200 and 250 million euros.

In addition, more than 4 thousand hectares of remediated industrial sites, which are not useable or of little economic interest, will be devoted to large scale initiatives for RES plants (above all photovoltaic, biomass and concentrated solar power system).

Over the next 3 years a total amount of 500 million euros of investments have been planned for activities and development of projects and 500 million for research;

- **Shell** during the first months of this year officialised its return to the offshore wind power sector, which it had nearly left in 2008, making a bid in a consortium with Eneco and Van Oord for the Dutch Government tender to build a first phase of 3,500 MW<sup>2</sup>. Currently the British Group owns a 500 MW stake in offshore wind-farms (8 in North America, 2 in Europe);

- **Statoil**, while continuing its E&P activities in the North Sea, will invest 20 billion crowns in offshore wind power projects, with the aim of exploiting wind potential along Norway's coasts, it has also acquired with E.On a 50 per cent interest in one of Germany's largest windfarms for 1.2 billion euros;

- **Total**, which in 2011 already diversified its activities into the electricity and renewable energy sector by acquiring Sun Power, at the end of April 2016 established the division "Gas Renewable & Power" and for 950 million euros acquired Saft, a French company that produces lithium-ion batteries and employs more than 4,100 people in 19 Countries, including Italy.

<sup>2</sup> The tender was announced by the Dutch Government to build and operate two offshore windfarm sites called Borselle I and II located 22 km from the coast of Zeeland. This is the first tender of the plan launched by the Netherlands in 2013 to increase the Country's offshore wind power from the current 1,000 to 4,500 MW by 2023.

For some years refining in Italy and more general in Europe has been affected by a structural decline in domestic oil consumption, by excessive costs of European legislation and by a growing unequal competition from exporting Countries, especially Asia and the Middle East, which can rely on various forms of internal subsidies, on a booming domestic demand and far less stringent environmental regulations than in Europe.

These are clear competitive advantages and they have **made international competition so asymmetric** that the structural outlook for the near future remains bleak. This scenario was debated at length last March 1<sup>st</sup> in Brussels during the Refining Forum, which for the first time included the participation of the European Commissioner for Climate/Energy Miguel Arias Cañete. During the meeting the results of the Fitness Check conducted by the European Commission in the past three years were illustrated.

On this occasion **the strategic importance of the refining industry** was again stressed, not only for supply security but also for the **contribution to energy security European refining can make in the transition towards a low carbon economy**, in keeping with the targets of COP21 in Paris.

It is therefore important **that the European Institutions continue to monitor the impact of future legislation on the sector**, since the results of the Fitness Check (tested under only the pre-2012 regulations) show that higher costs due to legislation accounted for **25 per cent of the loss of competitiveness** in the period considered.

These are very high figures for an intensely competitive global market like refining and **hence every new piece of legislation needs to be carefully evaluated**; all the more so for the **Industrial Emissions Directive** and the Directive on **Emission Trading (ETS II)** covering the period 2020-2030.

Only by removing all those measures that severely damage the sector's competitiveness and which **have no real justification in terms of cost and benefit, will it be possible to keep this industrial activity in Europe**, rather than relocating it in other regions of the Planet which will bring no environmental benefits but **will certainly lead to economic, social and security disadvantages**.

## The fuel distribution network: changes in the regulatory framework and critical issues

Despite great economic difficulties with margins practically at zero, **in 2015 Italy's fuel distribution network continued its efforts of rationalization**, which led to the closure of around 300 sales points. **On January 1<sup>st</sup>, 2015 Italy's fuel distribution network was estimated at 21,000 sales points, compared to 21,300 at the beginning of 2015. The decline was above all due to fewer company-owned service stations**, while the number of **other operators** increased and now represents **50 per cent of the market**.

From 2007 until today, the number of sales points owned by **independent oper-**

ators under their own brands has risen from nearly 1,200 to more than 3,400 (+200 per cent), the number of dealer owned operators displaying the brand of an oil company fell from 8,800 to 7,700 (-20 per cent), while the number of oil company owned sales points went down from 12,600 to 10,600 (-15 per cent).

During the same period the average throughput declined by 18 per cent and in 2015 this was slightly more than 1,300 cubic metres/year, which is less than half the European average.

Profit margins on distribution over the retail sales network in 2015 were even lower than in 2014, indicating a worsening of the sector's already low profitability, aggravated by high taxation on fuels, even if there was a weak upward trend in consumption.

It appears that the only pathway open is to proceed vigorously with the reduction of the number of sales points, beginning with those that are unsustainable in order to restore economic sustainability, and reconfigure the distribution system also from the standpoint of safety and urban decorum.

This situation led to the measures initially contained in the Draft Law connected to the Stability Law 2014<sup>1</sup> and later inserted in the Annual Draft Law on Competition<sup>2</sup> which is currently under examination by Parliament. These measures can represent

<sup>1</sup> Amendments and additions to annex A to the Decree by the President of the Republic, October 24, 2003, n. 340, regulating the safety of road distribution sales points of LPG for transport.

<sup>2</sup> Senate Act 2085.

### Europe The fuel distribution network on January 1<sup>st</sup> 2015

	Total sales points	% of self service post pay	Average throughput <sup>(*)</sup>
Austria	2,622	80	2,430
Belgium	3,386	n.a.	2,100
Denmark	2,007	100	1,650
France	11,356	n.a.	3,780
Germany	14,562	99	3,300
Greece	6,127	3	825
<b>ITALY</b>	<b>21,300</b>	<b>44</b>	<b>1,311</b>
The Netherlands	4,198	92	1,800
Norway	1,892	100	2,015
Poland	6,486	100	2,530
Portugal	2,944	57	2,040
United Kingdom	8,609	99	4,200
Czech Republic	3,792	98	1,800
Spain	10,712	73	2,310
Sweden	2,723	100	2,440
Switzerland	3,480	96	1,445
Hungary	1,537	84	2,700

(\*) Value in cubic metres of petrol and diesel gasoil.

Source: Results of the NOIA (National Oil Industries Associations) survey, conducted by Unione Petrolifera

an important first step in this direction and they provide **for a Registry of all existing sales points, the closure of those that are clearly incompatible** with road safety and also interventions with regard to remediation of sites in order to facilitate the process of requalification.

The proposal contained in the Draft Law on Competition<sup>1</sup> is the outcome of a consultation the Ministry of Economic Development had with the Regions, ANCI<sup>2</sup> and all the representative Associations of the sector. Its **main aim was the closure of fuel sales points that are incompatible with road safety.**

At the operational level, **the fuel distribution network restructuring Committee, which operates at the Cassa Conguaglio GPL (Equalization Fund), pursued its activities** for the disbursement of the grant for dismantling operations and the remediation, if necessary, of sales points sites that closed in the three year period between 2012-2014, pursuant to Ministerial Decree, April 16, 2013 and later amendments.

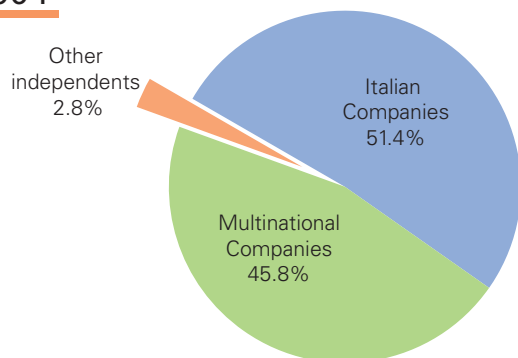
At the beginning of 2016 a total of 920 requests had been received, some of

<sup>1</sup> Art. 36 Senate Act 2085.

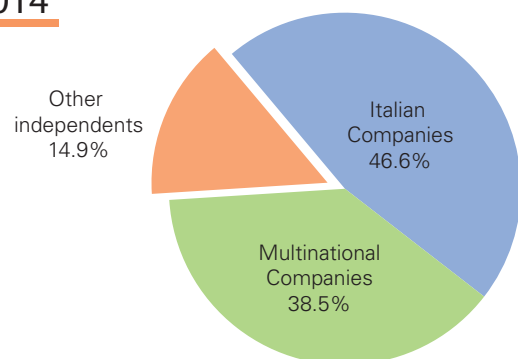
<sup>2</sup> National Association of Italian Municipalities. Italian acronym: ANCI – Associazione Nazionale Comuni Italiani.

### Italy - The role of different groups of operators in the domestic sales of petrol and diesel

#### 2004



#### 2014



### Italy The market share of main operators in 2014

	% of sales to the market of all products	Sales points for motorfuels distribution at year end
Eni R&M Div.	29.1	4,591
Esso	13.0	2,640
TotalErg	8.1	2,658
IP Gruppo API	6.8	2,978
KPI <sup>(*)</sup>	6.5	2,731
Tamoil	5.4	1,509
les Italiana	3.0	196
Shell/Kri	2.7	561
Others	25.4	3,436
<b>TOTAL</b>	<b>100.0</b>	<b>21,300</b>

<sup>(\*)</sup> Data refers only to UP Member Companies.

Source: Unione Petrolifera

them already paid out, while the others will have to wait for the conclusion of the proceedings.

In this regard, **a number of procedural and operational difficulties remain in the preliminary procedures**, in spite of the streamlining measures adopted by the Ministry. It is hoped that the process of examining the applications can be speeded up, in view of the pledge made by the Offices assigned to the task and in consideration of the concern the operators expressed **over how slowly they are proceeding and also of the considerable economic costs** the sector had to sustain in 2015 to make the final payment to the Fund, which was paid to the Cassa Conguaglio GPL.

Another problem to resolve is **the recovery of missing contributions to the Fund itself**, a phenomenon which was already noticeable when a number of advance deposits due were not paid and which the Cassa Conguaglio GPL is still working on.

Finally, there is the issue of **managing the Rationalization Fund after December 31, 2016**, the last date for the reorganization of the Cassa Conguaglio GPL. One possible solution could be the proposal made in the Draft Law on Competition to transfer the Fund's responsibilities to the GSE or its parent companies.

The Draft Law on Competition<sup>1</sup> also delegates to the Ministry of Economic Development, after consulting with the Regions and the Antitrust Authority, the task of **defining "technical obstacles and economic costs" so that there would be no obligation to install LPG or methane at the new sales points.**

It is hoped that this measure will make it possible **to define a certain framework** that reconciles the need to develop the market of alternative fuels in line with the terms of DAFI Directive 2014/94/EU<sup>2</sup>, with that of safeguarding competition, while eliminating reasons for disagreement between the State and the Regions. Indeed, in 2015 the absence of nationwide homogeneous criteria led the Presidency of the Council of Ministers to contest before the Constitutional Court the validity of several regional laws making it compulsory to install LPG or methane in new sales points.

Such disputes do not help operators, who need a **certain and stable legal framework** in order to invest.

In order to promote the use of these alternative fuels it is also essential to permit their distribution through self-service facilities. In this regard, we are waiting for the **Italian Gas Committee, federated UNI<sup>3</sup> to issue the technical standards regulating the prohibition to distribute LPG** in tanks not destined for motor vehicles. This regulation is needed in order to implement the amendments made by Ministerial Decree on March 31, 2014<sup>4</sup> to the Decree by the President of the Republic n. 340/2003 concerning the sale of LPG in unattended self-service facilities.

<sup>1</sup> Art. 35 Senate Act 2085.

<sup>2</sup> Directive 2014/94/EU of the European Parliament and Council of October 22, 2014. DAFI - Deployment of Alternative Fuels Infrastructure.

<sup>3</sup> Italian acronym: CIG - Comitato Italiano Gas. It is federated the Italian Organization for Standardization. Italian acronym: UNI - Ente Italiano di Unificazione.

<sup>4</sup> Amendments and additions to annex A to the Decree by the President of the Republic, October 24, 2003, n. 340, containing measures regulating the safety of road distribution plants of LPG for transport.

### Italy Fuel sales points on January 1<sup>st</sup> 2015 by Region

	Total sales points <sup>(*)</sup>	of which: Motorway	of which: with Diesel	of which: with LPG
Piedmont	1,458	61	1,454	169
Valle d'Aosta	58	5	58	3
Liguria	466	32	463	16
Lombardy	2,470	56	2,453	219
Trentino	303	9	303	25
Friuli Venezia Giulia	433	11	432	47
Veneto	1,256	37	1,255	161
Emilia Romagna	1,383	37	1,378	147
Tuscany	1,297	32	1,296	177
Umbria	342	4	342	51
Marche	560	12	559	67
Latium	1,837	40	1,821	218
Molise	133	4	133	15
Abruzzo	480	18	480	49
Campania	1,454	36	1,444	64
Apulia	1,193	21	1,187	142
Basilicata	203	3	203	25
Calabria	714	15	713	55
Sicily	1,484	22	1,471	76
Sardinia	559	—	559	40
<b>TOTAL</b>	<b>18,083</b>	<b>455</b>	<b>18,004</b>	<b>1,766</b>

<sup>(\*)</sup> Data refers to operating service stations of the UP sample including: Eni R&M Div., Erg Spa, Esso, IES Italiana Energia e Servizi Spa, IP Gruppo Api, Q8, Shell, Tamoil and TotalErg. The total fuel distribution network at the end of 2014 was estimated at 21,300 sales points.

Source: Unione Petrolifera

### Italy Growth of the CNG distribution network

(Number of filling stations operating at year end)

	2002	2004	2006	2008	2010	2012	2014	2016 <sup>(1)</sup>
Piedmont	12	23	30	43	54	60	75	77
Valle d'Aosta	—	—	—	—	1	1	1	1
Liguria	7	7	7	7	7	7	7	8
Lombardy	29	45	53	67	101	123	141	158
Trentino Alto Adige	3	4	10	8	11	15	16	17
Friuli Venezia Giulia	4	4	4	3	3	3	4	4
Veneto	68	73	80	81	112	123	134	139
Emilia Romagna	81	85	96	112	135	154	180	192
Marche	44	54	65	71	74	80	88	93
Tuscany	51	57	61	67	78	85	98	108
Umbria	16	18	20	22	24	26	31	33
Latium	13	19	28	32	41	46	48	55
Abruzzo	12	13	15	16	17	20	23	26
Molise	3	3	3	3	3	3	3	4
Apulia	20	28	33	39	46	50	62	65
Campania	19	27	41	43	48	53	65	72
Basilicata	3	4	3	5	6	7	8	9
Calabria	1	3	4	6	6	7	9	9
Sardinia	NO METHANE STATIONS							
Sicily	6	10	14	17	20	21	28	31
<b>ITALY</b>	<b>392</b>	<b>477</b>	<b>567</b>	<b>642</b>	<b>787</b>	<b>884</b>	<b>1,021</b>	<b>1,101</b>

<sup>(1)</sup> Data referred to May, 2016.

Source: FEDERMETANO

However, there still is **the obstacle of a national law**, both for LPG and CNG<sup>1</sup>, methane, which requires the purchaser of these products in an unattended self-service facility to have an electronic identification card, though it is not clear who will be responsible for issuing this card.

This requirement is peculiar to Italy, **as in other Countries of Europe LPG and CNG may be freely distributed** 24 hours a day without any restrictions.

In implementation of Directive 2014/94/EU's aims, the **National Infrastructure Plan for Charging of Vehicles fuelled by Electricity (PNIRE<sup>2</sup>)** was adopted. As part of Law n. 134/2012<sup>3</sup> the PNIRE is subject to annual revision and provides for **a State copayment for the installation of electric vehicles charging infrastructures** at various sites, such as parking areas, pavements, areas of large hypermarket retailers and fuel pumps.

Before State disbursement can occur, it is **essential** that the Regions issue **Guidelines that better specify the way electric charging infrastructures can be developed on the territory**: so far, only some Regions including Lombardy, Veneto and Piedmont, have issued these Guidelines.

<sup>1</sup> CNG - Compressed Natural Gas.

<sup>2</sup> Italian acronym: PNIRE - Piano Nazionale Infrastrutture per la Ricarica dei veicoli alimentati ad energia Elettrica.

<sup>3</sup> Conversion into law with amendments of Decree-law 22, June 2012 n. 83, containing "Urgent measures for the Country's growth".

### Italy Regions with service stations under large hypermarket retailers brands<sup>(1)</sup>

	Auchan	Carrefour	Conad Leclerc	Coop	Iperstation	Simply	Other brands	TOTAL
Valle d'Aosta	—	1	—	—	—	—	—	1
Piedmont	3	9	5	2	—	—	2	21
Liguria	—	—	1	1	—	—	—	2
Lombardy	11	7	—	3	8	5	4	38
Veneto	2	2	—	1	2	1	1	9
Friuli Venezia Giulia	—	1	2	—	—	—	—	3
Emilia Romagna	—	—	7	15	—	—	—	22
Tuscany	—	2	8	—	—	—	—	10
Marche	2	1	—	1	—	3	—	7
Umbria	—	—	4	1	—	—	—	5
Latium	1	2	1	—	—	—	—	4
Abruzzo	3	—	2	—	—	—	—	5
Molise	—	—	—	—	—	—	—	—
Campania	2	—	2	—	—	—	—	4
Basilicata	—	—	1	—	—	—	—	1
Apulia	1	—	—	5	—	—	—	6
Calabria	1	—	—	—	—	—	—	1
Sicily	1	—	—	—	—	—	—	1
Sardinia	—	1	2	—	—	—	—	3
<b>TOTAL</b>	<b>27</b>	<b>26</b>	<b>35</b>	<b>29</b>	<b>10</b>	<b>9</b>	<b>7</b>	<b>143</b>

<sup>(1)</sup> So-called "co-branding stations" are included.

Source: Estimates by Unione Petrolifera updated to April 2016

While this is a no doubt an excellent initiative, it raises **a number of questions that still need to be resolved**. First of all, it is not yet clear how to **go beyond the current rules that only allow those who produce electricity to sell it**, a requirement that cannot always be met by the operator of fuel service station.

Moreover with regard to State financing, **it is not clear if the funds allocated are compatible with art 107 of the Treaty** on the Functioning of the European Union in matters of **State Aid**.

### The crisis of the fuel distribution network along motorways

After a lengthy wait, Ministerial Decree August 7, 2015, signed by the Ministries of Economic Development and Transport, **approved the Plan to restructure service station areas along motorways**.

The Plan, which was examined by the Conference of Regions and Autonomous Provinces, had been touted as a useful instrument to restore economic viability and efficiency of motorway services. Unfortunately, it **proved to be disappointing and confusing**.

As Unione Petrolifera pointed out to the Antitrust Authority, the Interministerial Decree, besides not at all contributing to the hoped for restructuring of the motorway network, **intervenes heavily in private relationships between company and retailers**.

For these reasons, and in view of the deterioration of the already critical situation faced by motorway service stations, whose volumes sold continued to decline in 2015 (-7 per cent; since 2007 the decline is 55 per cent) while traffic increased by more than 3 per cent, **the oil sector submitted an appeal to the Regional Administrative Court<sup>1</sup> of Latium against the Decree approving the Plan**.

Among the elements behind the appeal are the requirements motorway concessionaires need to respect in performing procedures when assigning fuel-lubricant or restaurant services along motorways **and which make it difficult for competitors to prepare competitive bids**, above all **because they include burdensome conditions for the assignees**.

Earlier, Unione Petrolifera had also drawn attention to the **critical aspect of the scheduling of the tenders**, which prevent interested parties from consciously and rationally participating, thus damaging competition and, consequently, the quality of services to consumers.

This critical problem was **resolved with the note of December 2015**, in which the competent Ministries **rescheduled the tender process**, which expired on December 31, 2015, and set the new deadline of June 30, 2016 for the bidding to close.

This dispute which also saw the Retailers Associations file a lawsuit with the TAR,

<sup>1</sup> Italian acronym: TAR – Tribunale Amministrativo Regionale.



drew the attention of the Parliament which after making enquiries, invited the Ministry of Economic Development and the Ministry of Transport to diffuse the tense situation that had been created.

In April 2016, TAR examined arguments in the appeals of both the companies and the retailers and after having rejected the request to suspend the Ministerial Decree, favoured the public interest of service in the motorway network.

## Illegality and contraband

The prolonged economic crisis and high taxation on oil products have given rise these past years to phenomena of widespread illegality in the market as well as an exponential growth of crimes directed against the structures of the oil industry and of its product distribution network. **Fiscal crime** and **attacks against the physical security of structures** (known as “security” crimes) are separate phenomena, but they both are in violation of the Law and harm the national Treasury, operators and consumers themselves.

**The impact of illegal activities on the market**, which is considerable and growing rapidly, first of all, **damages free competition because it distorts competitive conditions, penalizes law abiding operators and results in a considerable loss of revenue to the national Treasury.**

But it also **harms consumers**: because though it may appear that illegal activities have the effect of lowering prices through a sort of dumping, **it actually forces players operating legally to go out of the market and introduces qualitatively inferior products, that are harmful for the environment.**<sup>1</sup>

Events related to the **parallel market of contraband oil products** have seen a growth in criminal phenomena which not infrequently **involve organized crime associations, even across national borders.**

Some of the most recent and worrisome cases include the **arrival of small sized**

<sup>1</sup> 83 per cent of revenue ascertained from excises on energy sources in Italy are generated by oil products: in 2015 this amounted to 26.7 billion euros (see table on page 75).

### Italy Actions against contraband of oil products by Revenue Guard Corps

Actions involving excises		2010	2011	2012	2013	2014	2015
Interventions carried out	n.	3,740	3,714	4,006	3,681	3,409	3,854
Refined products confiscated	Kg	8,306,624	1,746,102	2,053,267	9,262,742	4,377,523	4,595,693
Refined products fraudulently consumed	Kg	70,782,586	57,926,808	72,265,710	50,410,862	100,474,590	191,655,794

## FOCUS

### FIGHTING BACK AGAINST ILLEGALITY IN THE TRADE OF OIL PRODUCTS. THE PROTOCOL WITH ASSOPETROLI

Unione Petrolifera together with Assopetroli prepared a document with the aim of providing the competent Authorities with possible proposals regarding intervention in the area of taxation. If these are appropriately implemented in procedure and timing they would be a useful instrument to counteract a rapidly growing phenomenon.

- It has been observed that there are too many fiscal warehouses, which are the logistical facilities for the distribution system of oil products exempt from excises. Currently, there are some 400 warehouses, often of modest size, which are not justifiable in terms of operational needs or supplying the market. Frequently they are also **associated with the VAT storage warehouses, so that they present an elevated risk from the fiscal point of view.**

**For these reasons measures need to be taken to ensure that the new warehouses be limited to** facilities that are re-supplied mainly via sea/pipeline and to small warehouses only if they are considered of strategic importance for the logistics and distribution of incentivized products. In relation to the currently operating fiscal warehouses, enforcement Authorities need to perform regular inspections to determine compliance with the objective and subjective criteria indicated by the Customs Agency in Circular 16/D of April 28, 2006.

- Also for **registered receivers**, that is, **operators who are authorized to receive excise-exempt products**, a special regulation would need to define the requirements of access to this suspension, in view of the fact that fuel distribution sales points have also been given the suspension, when under the current rules they should only be allowed to receive products on which the tax has already been paid.
- Other critical issues derive from the movement **of products within other States in the European Union.** The circulation system for lubricants is simpler than that of other fuels, since the terms of Directive on the taxation of energy products do not apply to them. As a result, the movement of lubricants

from other European member States to Italy are not traceable. This system favours a **double system of tax evasion** (evasion of the excise on lubricants; their use as gasoil and, hence, an evasion of the excise on fuels). In order to counter these behaviours it was suggested that an extension of the intra-community circulation system of suspended duty for fuels (EMCS – Excise Movement Control System) should be promoted at the European Commission, to cover the transport of lubricants as well.

- It has also been observed that **fuels being passed through Italy towards other members States from eastern Europe** are rerouted in order to supply Italy's network of clandestine storage facilities. A valid instrument to counter these particular cases could be the compulsory adoption of an electronic system that can trace the route tanker lorries really take. This proposal is currently under study also for the purpose of road safety.
- Fiscal fraud involving fuels also occurs in the **wilful and fraudulent use of the declaration of habitual exporter for the purpose of purchasing goods in exception of VAT.**

In order to repress the phenomenon, it was proposed that the acquisition of fuels through use of the *plafond* mechanism only apply to those habitual exporters, who during the previous year made exports or conducted intra-community trade of the same products.

These operators will also have to obtain, upon special request, an anticipatory certificate from the Customs Agency which declares the amount of the above mentioned trading operations that were conducted the previous year.

The Revenue Agency will then only issue the receipt for the electronic declaration of habitual exporter, with specific reference to the oil products involved, after they have received from the Customs Agency the abovementioned certificate stating the amount of the export and/or community operations carried out in the reference year, above a value of one million euros.

**ships (4-6 thousand tons)** in Italy's ports carrying loads of fuels from several States of the European Union (Cyprus, Malta, Slovenia, Greece), but which originated in States where there is great political instability (Libya, Syria, Iraq) and at prices that are unjustifiably lower than those of the international market.

The other type of criminal activity that is reason for great concern are attacks on oil infrastructures: in this case the phenomena, which are no less serious, include attacks on cash acceptors, for the purpose of stealing cash from the **retail network**, as well as the theft of products from **oil pipelines**. On this front too, Unione Petrolifera is implementing appropriate precautionary action.

### *Fraud and illicit appropriation of oil products in distribution*

2015 was another very busy year for Law Enforcement Agencies in the struggle against the **rising phenomenon of fraud and contraband in fuel distribution**.

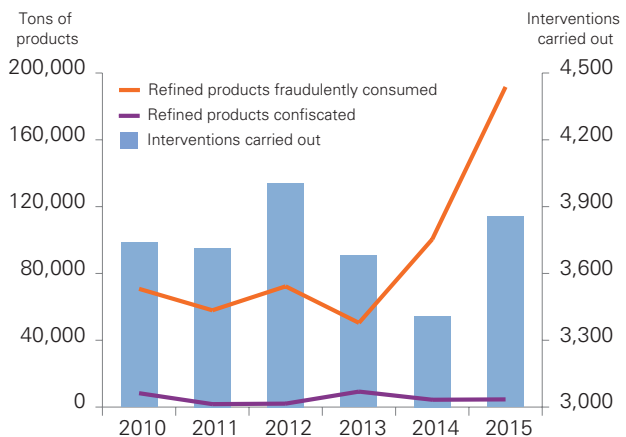
We believe that this struggle needs to be carried out through distinct parallel actions, beginning with enforcement actions **aimed at repressing each situation of illegality**. During 2015 and the beginning of 2016 this activity was particularly intense for the High Command of the Revenue Guard Corps to whom praise is due for their extensive efforts and the growing results they have obtained, in spite of fewer human and financial resources at their disposal.

**Inspections took place in the different segments of the commercial distribution chain.** They were carried out in particular by means of a careful risk assessment, which was aimed not only at safeguarding the interests of the public Treasury, but also with a view to market correctness by measuring quantities of fuels distributed, their quality and merceological characteristics, and by monitoring compliance with the commitment to correct and transparent practiced prices exposed to the public.

Unione Petrolifera hopes that the number of inspections will increase, given that the quantity of fraudulent products consumed has doubled over the past year, believing that these checks are extremely important for their strong deterrent effect.

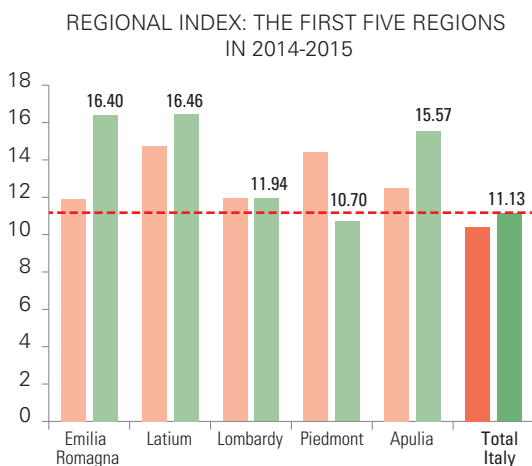
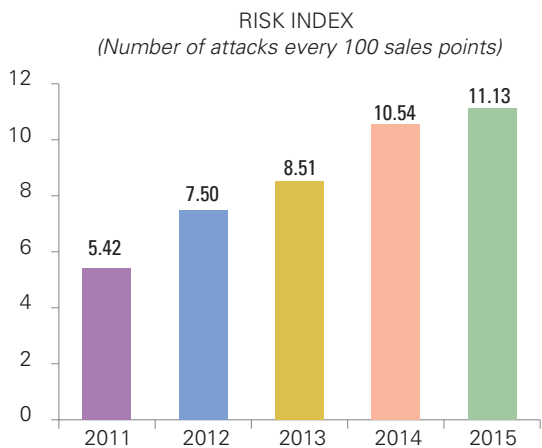
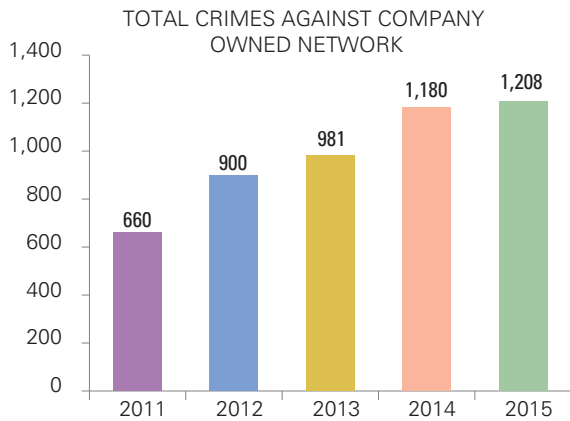
Moreover, it is essential that European Directives be issued revising the regulatory framework on the taxation of fuels and valued added tax **under the European Directives** to fill in the gaps due to outdated rules and practices that are not compatible with the efficiency levels of today's Information technology/electronic systems.

### Italy - Interventions and results involving excises obtained by the Revenue Guard Corps between 2010 and 2015



Source: High Command of the Revenue Guard Corps – III Section Operations – Revenue Office – Section Excises and Taxes on Consumption

**Italy - Crimes on self-service facilities in the Company owned network<sup>(1)</sup>**



(1) Data refers to sales points owned by UP Associated Companies.  
Source: UP Survey 2015

Among the actions that have been proposed, also together with Assopetroli, is that the whole oil distribution supply chain should **be required to electronically transmit the data on invoices** issued and received and any variations to the computer systems of the Fiscal Revenue Authorities who will be able automatically to cross the information received and identify any discrepancies. In this way, the gap of time between crime committed and verification would be far shorter than currently it is and would reduce the risk of the crime being repeated.

Other proposals, many of which were already presented during consultations with Fiscal Revenue Agencies, in implementation of the Proxy Law for fiscal reform, are being examined by the competent Authorities within the Ministry of the Economy and Finance and are aimed at revising the regulatory framework on excises with particular regard to the issue of inspections.

In any case, regarding the fight against illegality, the sector continued its consultation with the Institutions and started an in depth strategy with the Revenue and Customs Agencies and with the High Command of the Revenue Guard Corps to identify targeted and incisive actions, both in the area of regulations and product traceability. In order to prevent mafia style organizations from infiltrating the fuel distribution network, it was proposed to define a **Legality Protocol specific for dealers** and this is currently being examined by the Ministry of the Interior.

**The security of oil structures**

Over the past few years a growing number of attacks have been reported against the infrastructures of the oil industry and those of the distribution of refined products. The most worrisome of these phenomena have to do with cash thefts from bill acceptors located at sales points and pipeline spillages that transport oil products.

The aim of the attacks is to remove refined products (up to several thousand litres), but along with the theft of the product and the damage to the structures, there may also be serious consequences for the environment (water, soil, subsoil); moreover, as these are highly inflammable

substances, they represent a public safety risk in addition to potential service interruptions.

To address these problems, **a monitoring table was set up** with the task of gathering precise information about the events that have transpired in recent years, in order to come up with concrete proposals.

Of foremost importance is tougher penalties against those who attack oil infrastructures, boosting investigation activities by centralizing all the available information, implementing local prevention plans and countermeasures by Law Enforcement.

**Attacks against cash acceptors** also increased in 2015, with 10.5 incidents for every 100 sales points compared to a risk index<sup>1</sup> of 8.5 last year as reported in the OSSIF 2015 Report on predatory crime.

With the aim of defining possible technical-executive interventions to improve the security of self-service cash acceptor terminals from physical attacks and fraud, UP, Assopetroli, Grandi Rete and ANIMA/ACIS<sup>2</sup> prepared the Guidelines “**Technical security standards for self-service payment terminals**”, which are an instrument to make informed choices on the technical solutions that are currently available or being implemented.

The Guidelines list the **countermeasures thought to be the most effective** for each type of attack, either known or potential, against equipment. The measures are oriented towards physically strengthening cash acceptors in order to increase the time needed to break into them and to discourage theft.

Another line of action to reduce cash theft is to **incentivize electronic payment**

<sup>1</sup> Risk index: number of attacks for every 100 sales points.

<sup>2</sup> ANIMA (Federazione delle Associazioni nazionali dell'Industria Meccanica Varia ed Affine) – Federation of the Italian Associations of Mechanical and Engineering Industries. ACISM (Associazione Costruttori Italiani di Strumenti di Misura) – Measuring Instruments Producers' Association.



## SECURITY INITIATIVES OF PRIORITY IMPORTANCE FOR THE OIL SECTOR

### Oil Pipelines

- tougher penalties for those attacking oil structures (amending art. 433 of the Penal Code), as was already done for copper theft. In addition, criminals could be subject to the penalties contained in the recent Law on Environmental Crime (Law 68/2015);
- boosting investigative activities by centralizing all the available information on attacks against oil pipelines;
- implementing local prevention plans and countermeasures by Law Enforcement.

### Fuel Distribution Network

- systemic synergies with Law Enforcement Agencies to help prevent criminal attacks;
- incentivizing electronic payment, making it attractive for both oil and non-oil purchases, and removing the obstacles that still exist in the payment chain;
- Legality Protocol specific for dealers, with the Ministry of Interior for the prevention of Mafia style crimes, by also involving retailers' Associations and independent operators of the distribution network.

# FOCUS

## OSSIF INTERSECTOR REPORT ON PREDATORY CRIME IN 2015

The OSSIF Report 2015 on predatory crime, which was prepared by ABI and the Ministry of the Interior, and which Unione Petrolifera also collaborated on, contains data on thefts and robberies in banks and in other vulnerable sites such as: post offices, tobacconists, pharmacies, supermarkets, shops, fuel sales points and transport of valuables.

The data in the report show the following trends for the year 2014:

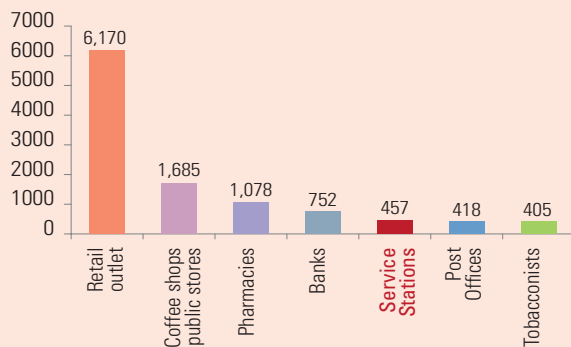
- 39,191 **robberies** reported by Law Enforcement Agencies to Judicial Authorities (-10.4 per cent compared to 2013);
- 1,572,165 **thefts** reported by Law Enforcement Agencies to

Judicial Authorities (+1.1 per cent compared to 2013).

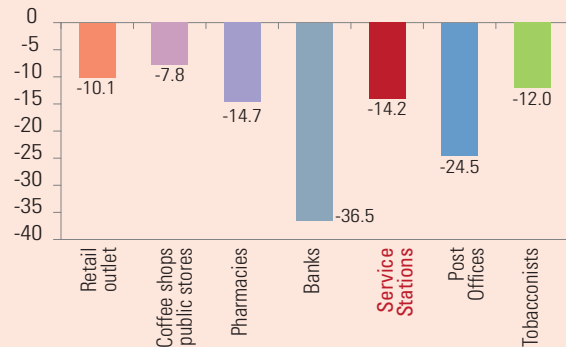
From a comparison of sectors the following figures emerged for the **fuel distribution network**:

- a **14.1 per cent decline in the number of robberies** from 2013 (457 robberies in 2014);
- a **20.3 per cent increase in thefts** (mostly attacks on self-service cash acceptors) (1,180 cases reported in the company owned sales points network);
- **risk index** (thefts every 100 sales points) much higher for the fuel distribution network (10.5) than for the other exposed sectors except for Modern Organized Distribution (MOD).

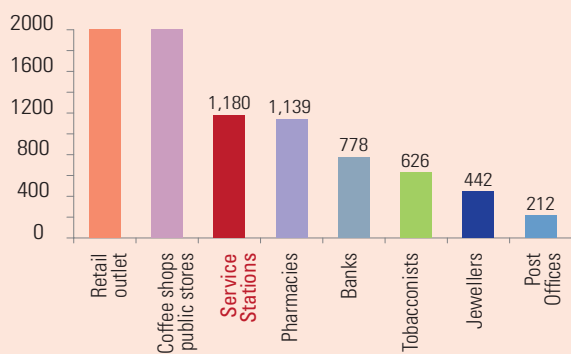
**Robberies committed in 2014**



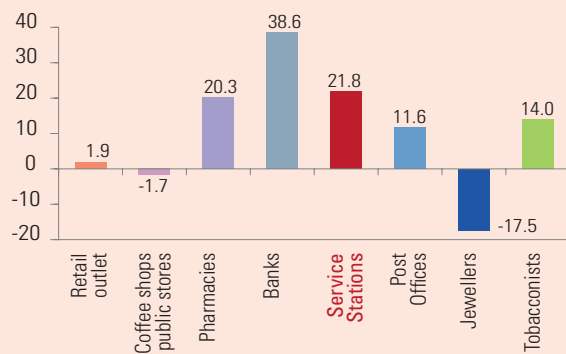
**% variation 2014 compared to 2013**



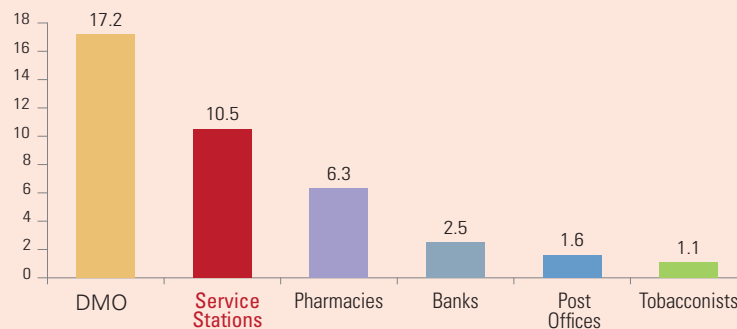
**Thefts committed in 2014**



**% variation 2014 compared to 2013**



**Thefts every 100 public facilities in 2014**



Source: OSSIF on data by Ministry of the Interior, Poste Italiane, Federazione Italiana Tabaccai and Unione Petrolifera

(credit/debit card). This is the direction taken by Regulation (EU) 2015/751 of April 29, 2015 regarding interchange fees for card-based payment transactions, which provides for an interchange fee cap of 0.2 per cent on debit card transactions and 0.3 per cent on credit cards (interchange fees are part of the total commission paid by the dealer) and introduces a series of rules to ensure fair competition and market transparency. The Regulation will enter fully into force in June 2016 but it is still insufficient to incentivize the use of electronic payment.

### Adaptation of equipment at sales points to European standards

The work goes on to modify self-service cash acceptors so that they can accept the new “**Europa series**” banknotes. The new 20 euro banknote was introduced in 2015 and has been in circulation since November 25.

The oil sector has **actively taken part in the monitoring efforts** together with the European Central bank (ECB) and the Bank of Italy (BI) on the state of progress in adapting equipment that accepts these new banknotes.

**90 per cent of the company owned network has been modified on schedule**, in spite of technical problems in the new reading software.

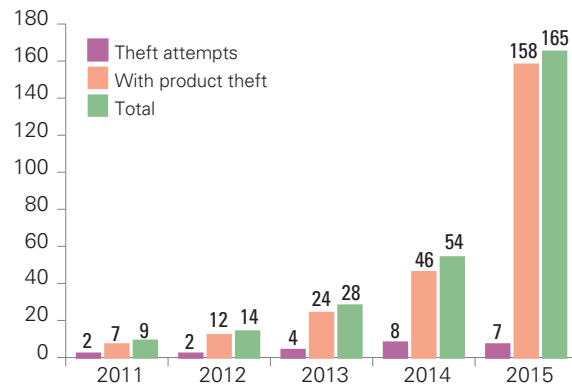
In 2015 the question again arose over the transition period pursuant to the **MID Directive<sup>1</sup> on Measuring Instruments (2004/22/EC)**, which from next October 30, 2016 provides for the installation on the retail network of fuel distributors and apparatus associated with them (self-service terminals and management systems) that comply exclusively with European rules. The Directive does however allow instruments that were issued in compliance with national metrological standards to continue to be used after that date, as long as they are not removed from the place of utilization.

The current stock of fuel measurement instruments installed at service stations and the payment and management systems associated with them are mainly composed of Italian self-service devices (approximately 70 per cent of the total), because of the average life expectancy of the distributors (15/20 years).

The sector would like to obtain a formal confirmation of the possibility to continue using currently operating fuel measurement systems, which are nationally approved alongside self-service devices in compliance with the Directive, inasmuch there is no compromise to their functions nor to the legal reliability of the measurement produced and, hence, to consumers’ interests. In this regard the sector requested that the implementing Legislative Decree clarify whether this will be possible.

<sup>1</sup> MID - Measuring Instruments Directive.

### Italy - Oil pipeline spillages third party activity



Source: UP Survey 2015

## Road haulage: after the judgment by the European Court of Justice

Following the Sentence of the European Court of Justice issued in September 2014 overturning Italian legislation on haulage, **a series of measures were made that radically changed the legislative environment in which the players are operating.**

Law n. 190/2014<sup>1</sup> and the Sentence of the TAR of Latium of February 20, 2015 restored the principle of the autonomous negotiation between contracting parties when determining the price of haulage services. The only function the Ministry of Infrastructures and Transport continues to retain on this issue is the power to publish “*suggested reference figures of hauliers’ operating costs for third parties*”. The numbers are updated monthly online and specifically refer to the cost of diesel for hauliers. The problem however remains that this publication **might in the future be used for a surreptitious reintroduction of minimum costs.**

## Port Reform

**Of great current and strategic interest for Italy was the reform of the port and logistic system**, which was launched during 2015. With the aim of stimulating growth in the traffic of freight and passengers, with particular attention to multi-modality, the “Unblock Italy” Decree<sup>2</sup> known as “*Sblocca Italia*” (Law n. 164/2014) delegated authority to the President of the Council of Ministers to issue a Decree of the President of the Republic containing a **Strategic Plan for Ports and Logistics.**

**The Plan was approved in August 2015 and defines a strategy of actions.** It is based on an analysis of the current situation in ports understood as “*exchange gateways for territorial economic-productive systems and consumptions*”, of trends in traffic demand, of supply in terms of available infrastructure and services, of administrative problems and inspections.

The decision to **define a set of new port strategies for Italy was also welcomed** by the business world, which agrees with the need to create an integrated and multimodal system of infrastructure, to simplify dredging and excavating procedures, to improve and streamline inspections, especially in the area of customs and health.

Following the Region Campania’s appeal against the Plan, the Constitutional Court, with Sentence n. 261/2015, declared the **delegatory measure issued to the Government to be illegitimate**, since it did not require a review by the Conference of State-Regions. The Government however believes this problem can be overcome, as the overlying structure of the delegatory measure is intact.

In relation to the question of port governance, the Plan calls for the establishment of a **Port Systems Authority**, whose creation, in replacement of the current Port

<sup>1</sup> Measures for the statement of the State’s annual and multi-year budget (Stability Law 2015).

<sup>2</sup> Converted into Law with amendments by Decree-law of September 12, 2014, n.133 containing urgent measures for the opening of construction sites, the creation of public works, the digitalization of the Country, administrative simplifications, the emergency of hydrogeological instability and to encourage the recovery of productive activities.



Authorities, is the object of a draft Legislative Decree, which received a preliminary approval by the Council of Ministers in December 2015, on the basis of the delegatory authority pursuant to the so-called “*Legge Madia*” (Law n. 124/2015<sup>1</sup>), which was submitted to review by the unified Conference of State-Regions which gave its go ahead after making a few observations last March 31. The opinion of the Parliamentary Commissions is still being awaited.

While in its current version, the **outlined Legislative Decree** significantly restructures the national port system it **does not appear to be incisive enough to effectively restore the sector’s competitiveness.**

On the contrary, the creation of publicly appointed offices and the exclusion of stakeholders, who are relegated to an advisory role on a few questions, is reason for considerable concern. The 15 Authorities provided for in the Plan would be structured on a **pyramidal model centred on the plenipotentiary figure of the President**, appointed by the Ministry.

The strategy lines, ought rather to be decided at a national level, by a table composed of the individual Presidents of the Port Authorities and of the Ministry of Infrastructure and Transport.

The only positive feature is the establishment of an Administrative single window and a single window for Customs and Inspections located at every Port System Authority, with **the aim of streamlining procedures, but whose real effectiveness will have to be evaluated over time.**

Moreover, the Legislative Decree does not intervene on the **regulations regarding the concession of State owned areas and docks**, whose criteria based on Law n. 84/1984<sup>2</sup> should be dealt with by a specific Interministerial Decree, whose contents are not yet known, but which it is hoped **will take into due consideration the strategic importance of oil logistics in supplying Italy’s energy needs and a sufficient level of planned investments.**

## Compulsory stocks: changes in the law and implementation

Italian operators pointed out several times the **rigidities of national law with regard to foreign held stocks** and this drew the attention of the European Union, which issued an **Infringement Procedure** n. 4014/2015 against Italy.

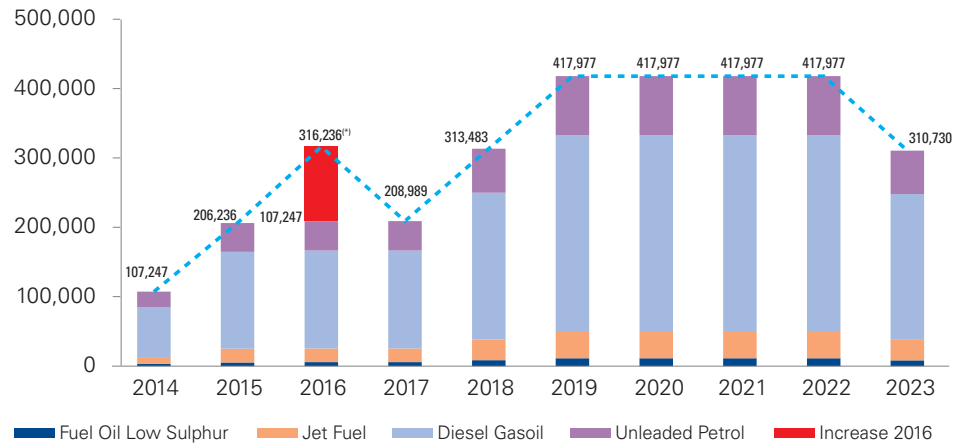
This intervention by the European Union led the Italian Government to amend Legislative Decree n. 249/2012<sup>3</sup> through the measure known as “*European Law 2014*” (Law n. 115/2015), which provided **the possibility for those operators under stockholding obligations to maintain at least 30 per cent of their total stocks abroad** at their own expense, regardless of whether the stocks are products or “any oil”. This flexibility was increased in the annual Decree that determines the

<sup>1</sup> Proxy to the Government on the issue of reorganizing the Public Administrations.

<sup>2</sup> Revision of legislation concerning ports.

<sup>3</sup> Implementation of Directive 2009/119/EC, which obliges member States to maintain a minimum quantity of stocks of crude oil and/or oil products.

### Italy - Forecast OCSIT industrial plan in November 2015 (Tons)



<sup>(\*)</sup> Precautionary estimate based on data from the industrial plan.

Source: Acquirente Unico, OCSIT

stockholding obligations. In 2016 on an experimental basis, the Decree allowed for the **possibility of holding up to 100 per cent of compulsory stocks, including products, in other European member States.**

At the same time, **the Ministry intervened with regard to the way stocks may be held abroad**, amending with Ministerial Decree, November 23, 2015 the earlier Decree of May 2013 on the topic. On the basis of the **new regulation**, it will be possible to hold stocks of products abroad only in Countries with which there exists a **Memorandum of Understanding or bilateral agreements**, unless the stocks in products are not held in Central Stockholding Entities.

In 2016, the Italian Central Stockholding Entity (OCSIT<sup>1</sup>) **further increased its reserve stocks of products from 3 to 6 days**, instead of the previously planned 5 days. This increase arose from the need to optimize the use of OCSIT's financial resources, at a time when international prices of products are favourable.

**Total stocks held by OCSIT for 2016 were equivalent to 754,800 toe's.**

At the European level, moreover, work began on **revising Directive 2009/119/EC, which specifically regulates compulsory stocks.** The European Union through a consulting company sent the member Countries, Stockholding Entities, companies under stockholding obligations and other stakeholders, a **questionnaire asking for a medium term evaluation** of Directive 2009/119/EC.

The survey concluded in December 2015.

Among the issues the European Union will very likely have to examine in depth, during this revision process is the critical **problem of holding stocks of products**

<sup>1</sup> Italian acronym: OCSIT - Organismo Centrale di Stoccaggio Italiano.

**also of secondary importance**, like Petroleum Coke, and whether to use a standardized model for the Memorandum of Understanding (MoU).

Still with regard to the implementation of this Legislative Decree n. 249/2012, the **GME's annual survey of existing stockholding capacities** and their reception and dispatch infrastructures is now going on regularly.

Consultations also proceeded with the aim of finalizing **the Oil Logistics Market Platform, that brings together supply and demand of storage**, as well as the **wholesale oil product Platform, which is a venue for supply and demand of wholesale oil products** and also extended to biofuels. These platforms are to be set up at the GME.

With the aim of promoting the use of these Platforms before their approval, Unione Petrolifera expressed the need for the GME to obtain a prior evaluation by the Antitrust Authority (AGCM<sup>2</sup>) on whether the Platforms will be in compliance with antitrust regulations.

The consultations with the GME and the Ministry of Economic Development were also aimed at **defining the methods used to measure available stockholding and transit capacity**, whose implementation will require the complex activities in warehouses adapt themselves in spite of the uncertainties of the rules.

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<sup>1</sup> Italian acronym: GME - Gestore Mercati Energetici.

<sup>2</sup> Italian acronym: AGCM – Autorità Garante della Concorrenza e del Mercato. Italian Competition Authority.

# TAXATION

**Italy - Breakdown of revenues by taxation sector**  
(Millions of euros)



Source: Ministry of the Economy and Finance

## Fiscal revenues

Legally ascertained **revenues into the Italian treasury** for the period January- December 2015 amounted to **436 billion euros**, an increase of 4 per cent (+ 16.891 billion euros) compared to the previous year.

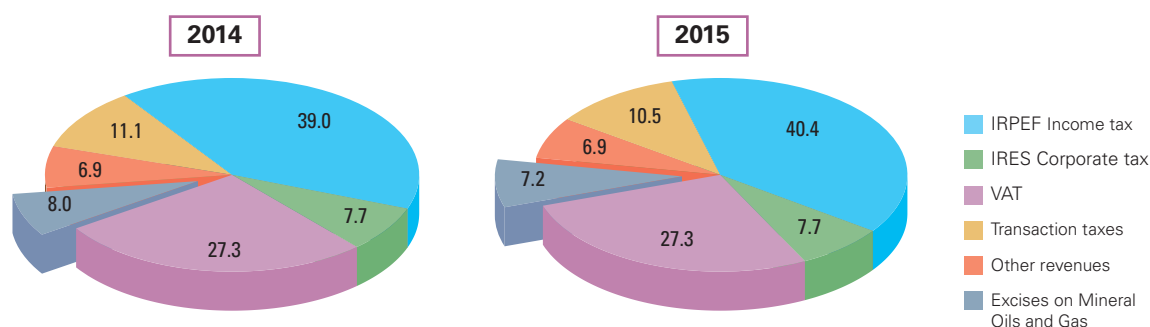
In particular, revenues from **direct taxes** stood at **240 billion euros**, a 6.5 per cent increase from 2014. **Indirect taxes**, on the other hand, rose by 1.1 per cent providing a total revenue of **197 billion euros**.

According the Ministry of the Economy and Finance's Bulletin<sup>1</sup>, **revenues from excises on mineral oils, electricity and natural gas** in 2015 were around **31.3 billion euros** -2.2 billion compared to 2014 (33.305 million euros).

As a result, **taxation on energy products** represented a share of 7.2 per cent of total tax revenues, compared to 8.0 per cent of the year before.

<sup>1</sup> *Bollettino Entrate Tributarie* n. 166, published in March 2016.

**Italy - Percentage share of fiscal revenues by main group of taxes**



Source: Ministry of the Economy and Finances

**Italy** Ascertained revenues from excises and energy sources  
(Thousands of euros)

SOURCE	2013	2014	2015	Weight %
<b>OIL</b>	<b>26,589,892</b>	<b>25,966,371</b>	<b>26,654,245</b>	<b>83.2%</b>
Excise on energy products, their derivatives and similar products	24,444,632	25,088,606	25,752,160	
Excise on liquefied petroleum gases	597,913	577,076	602,562	
Consumer tax on lubricants and bitumens	296,210	300,643	299,524	
Excise on gasoil Law 244/2007 <sup>(1)</sup>	187,523	20	0.254	
Excise on petrol reserved for Ordinary Statute Regions <sup>(1)</sup>	1,063,313	27	—	
<b>BIOFUELS</b>	<b>1,393</b>	<b>2,259</b>	<b>4,249</b>	<b>0.01%</b>
Excise on animal and vegetable oils and fats used for fuel or combustion	1,393	2,156	4,189	
Excise on methyl alcohol used for fuel or combustion	—	103	60	
<b>ELECTRICITY</b>	<b>2,190,643</b>	<b>2,433,565</b>	<b>2,351,626</b>	<b>7.3%</b>
Excise on electricity	2,172,875	2,426,973	2,347,905	
Surcharge on electricity Leg. Decree 28/11/1988 n. 511 <sup>(2)</sup>	17,766	6,589	3,720	
Surcharge on electricity Leg. Decree 30/09/1989 n. 332 <sup>(2)</sup>	2	3	1	
<b>NATURAL GAS</b>	<b>3,696,580</b>	<b>4,146,506</b>	<b>2,970,308</b>	<b>9.3%</b>
Excise on natural gas for transport	3,495	3,632	4,852	
Excise on natural gas for combustion	3,693,085	4,142,874	2,965,456	
<b>COAL</b>	<b>52,484</b>	<b>41,171</b>	<b>43,913</b>	<b>0.2%</b>
Excise on coal, lignite and carbon fossil coke used for fuel or combustion	52,376	41,164	43,912	
Consumption tax on coal, petroleum coke, bitumen denominated orimulsion	109	7	1	
<b>TOTAL EXCISE REVENUES FROM ENERGY SOURCES</b>	<b>32,530,993</b>	<b>32,589,872</b>	<b>32,024,342</b>	<b>100.0%</b>
ENVIRONMENTAL TAX ON SULPHUR DIOXIDE AND NITROGEN OXIDES	12,999	8,186	7,888	

<sup>(1)</sup> Art. 1 par. 301 Law 24 December 24, 2012 n. 228 repealing par. 12 art. 3 Law 549/95 on petrol and par. 295ff art. 1 Law 244/2007 on diesel. Effective from January 1<sup>st</sup>, 2012.

<sup>(2)</sup> Legislative Decree March 2, 2012 n. 16 converted into Law April 26, 2012, n. 44 repealing art. 6 of Legislative Decree 511/88. Effective from January 1<sup>st</sup>, 2013.

Source: Customs Agency, Organizzazione, attività e statistica Anno 2015, May 2016

According to data published by the Customs Agency<sup>1</sup>, at around 26.7 billion euros, **oil products represented 83 per cent of ascertained revenue from excise on energy sources.**

Natural gas and electricity contributed 9 and 7 per cent respectively with revenues for both declining compared to 2014: from 4.1 to less than 3 billion for gas (-28.4 per cent) and around 2.4 billion for electricity (-3.4 per cent).

## Tax revenues from oil products

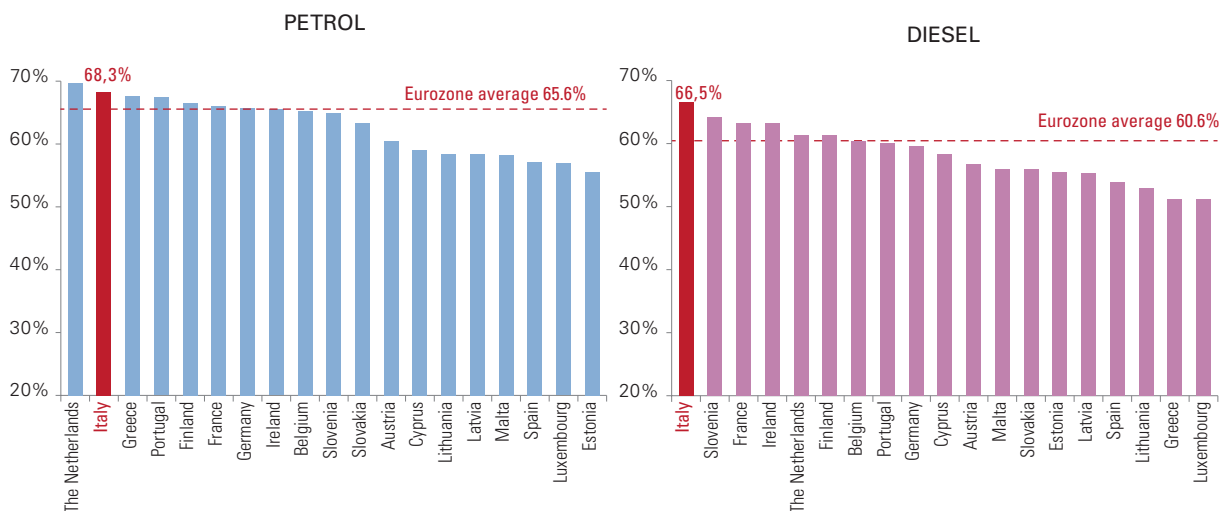
In 2015 **total revenues (excises + VAT) from oil products were estimated at 40.2 billion euros<sup>2</sup>**, a decrease of 2.5 per cent from the previous year (1 billion 45 million euros less).

The variation is the result of an increase in excise revenue of approximately 300 million euros (thanks to larger quantities of gasoils), which only partly made up for the sharp loss of VAT revenue, more than 1.3 billion less, as a result of considerably lower oil products prices (on average -10.2 per cent for petrol and -12.6 per cent for gasoil).

<sup>1</sup> Agenzia delle Dogane e dei Monopoli, Organizzazione, attività e statistica Anno 2015, May 2016.

<sup>2</sup> UP estimate based on consumption trend of oil products which does not consider excise reductions and exemptions for particular uses and includes estimates of excises and taxes on non-condensable gases, lubricants and bitumens.

### Euro area - Fiscal component on final price of fuels (Taxes as a percentage of final price per litre on May 9, 2016)



Source: Unione Petrolifera on European Commission data, DG Energy

### Italy Estimated fiscal revenues on oil products (Billions of euros)

	Excise Tax					Total	Customs duty on all products	VAT on all products	TOTAL on all products
	on Petrol	of which "Region's Share" <sup>(1)</sup>	on Gasoil	on Fuel oil	on other products				
1970	0.658		0.123	0.058	0.064	0.903	0.009	0.088	1.000
1975	1.286		0.159	0.023	0.089	1.557	0.010	0.542	2.109
1980	2.957		0.325	0.033	0.173	3.488	0.039	1.963	5.490
1985	5.268		1.669	0.097	0.195	7.229	0.076	4.028	11.333
1990	8.054		7.186	0.400	0.679	16.319	0.300	5.010	21.629
1995	12.586		8.862	0.724	0.738	22.910	0.374	6.972	30.256
1996	12.425	3.961	8.886	0.405	1.170	22.886	0.376	7.489	30.751
1997	13.082	4.032	9.194	0.349	1.040	23.665	0.238	7.850	31.753
1998	13.091	2.946	9.575	0.306	1.070	24.042	0.204	7.902	32.148
1999	13.613	2.930	10.350	0.300	1.150	25.413	0.178	8.367	33.958
2000	11.650	2.794	9.900	0.245	1.186	22.981	0.170	9.813	32.964
2001	11.350	2.530	10.700	0.230	1.955	24.235	0.134	9.658	34.027
2002	11.370	2.648	11.255	0.235	1.383	24.243	0.153	9.813	34.209
2003	11.000	2.379	11.800	0.230	1.527	24.557	0.126	10.050	34.733
2004	10.600	2.174	12.450	0.160	0.683	23.893	0.098	10.650	34.641
2005	9.950	2.032	13.050	0.150	1.186	24.336	0.081	11.630	36.047
2006	9.350	1.921	13.500	0.160	1.477	24.487	0.084	12.300	36.871
2007	8.770	2.084	14.000	0.120	1.310	24.200	0.061	12.100	36.361
2008	8.130	1.942	14.070	0.110	1.290	23.600	0.060	13.200	36.860
2009	7.900	2.019	13.900	0.110	1.090	23.000	0.069	10.850	33.919
2010	7.450	2.034	13.750	0.100	1.650	22.950	0.047	11.750	34.747
2011 <sup>(2)</sup>	7.480	1.915	14.950	0.070	1.750	24.250	0.047	13.600	37.897
2012	8.030	1.728	17.550	0.050	1.770	27.400	0.048	14.400	41.848
2013	7.800	1.252	17.400	0.050	1.944	27.194	0.056	13.880	41.130
2014 <sup>(3)</sup>	7.750	—	17.590	0.050	1.910	27.300	0.055	13.840	41.195
2015 <sup>(4)</sup>	7.680	—	18.000	0.050	1.860	27.590	0.060	12.500	40.150

<sup>(1)</sup> Sharing of excise extended to diesel beginning from 2007.

<sup>(2)</sup> Figure changed, since compared to last year an amount of more than 800 million euros of tax on mineral oils, assessed but not collected, was first assigned to 2011 and later removed from that year.

<sup>(3)</sup> Difference with the Ministry of Finance's pre-consumption data is because the amount destined for the ordinary statute Regions was entered as Treasury revenue from December 2013, which is the standard procedure for UP estimates.

<sup>(4)</sup> Provisional data.

Source: Ministry of the Economy and Finance, estimates by Unione Petrolifera from 2001

## Tax trends on energy products

From January 1<sup>st</sup> 2015, **the taxation rate on fuels remained unvaried thanks to the deactivation of the safeguard clause** pursuant to Law 190/2014<sup>1</sup>, which was first suspended by Law n. 187/2015 and later repealed by Law of December 28, 2015, n. 208 (Stability Law for 2016).

During the course of the year, application of the safeguard clause was also postponed, again pursuant to the 2016 Stability Law, connected to expected revenue from the voluntary disclosure measure.

As of today, the provisions that call for increases over the next years are the following:

Provision	Type of Measure	Implementation	Increase effective from	Amount
Law n. 228 of December 28, 2015: increase of excise on products pursuant to Directive 2008/118/EC	<b>safeguard clause</b>	The increase was supposed to be implemented through a Decree of the Ministry of Economy and Finance by March 30, 2016. As of today this Decree has not been issued and so the planned increase from May 1 <sup>st</sup> , 2016 will not take place	<b>May 1<sup>st</sup>, 2016</b>	The clause is connected to the expected revenue flows from the so-called "voluntary disclosure". The measure does not exactly quantify the higher tax revenue max 2 billion euros
Law n. 147 of December 27, 2013 –Stability Law 2014 – par. 626: increase of excise on fuels	<b>coverage</b>	To be implemented with a provision of the Customs Agency by December 31 <sup>st</sup> , 2016	<b>from January 1<sup>st</sup>, 2017 to December 31<sup>st</sup>, 2018</b>	<b>220 million euros</b> for the year 2017 and <b>199 million</b> for 2018
Law 190 of December 23 2014 –Stability Law 2015 – art. 1 par. 718 letter c) increase of excise on fuels	<b>safeguard clause</b>	To be implemented with provisions of the Customs Agency	<b>January 1<sup>st</sup>, 2018</b>	REDUCED BY THE DRAFT STABILITY LAW 2016 from the initial 700 million euros to 350 million euros (art. 1 par. 6)
Law n. 116 of August 11 2014 – Draft Law on Competitiveness –art. 19 par.3 letter b) increase of excise on fuels	<b>coverage</b>	To be implemented with a provision of the Customs Agency by November 30, 2018	<b>from January 1<sup>st</sup>, 2019 to December 31<sup>st</sup>, 2021</b>	<b>140.7 million euros</b> in 2019 <b>146.4 million</b> in 2020 and <b>148.3 million</b> beginning from 2021
<b>VAT Increases under art. 1, par. 6 of the "Stability Law 2016"</b>				
VAT rate 10% (current)			2017	2018
VAT rate 10% (current)			13%	
VAT rate 22% (current)			24%	25%

<sup>1</sup> See note on page 70.



**Italy** The current excise rates*Taxes on the production and consumption of mineral oils in effect from May 1<sup>st</sup> 2016*

Products	Excise	Unit of measurement
a) Premium unleaded	728.40000	1000 lt
b) Gasoil as fuel as heating oil	617.40000 403.21000	1000 lt 1000 lt
c) Kerosene as fuel as heating oil	337.49064 337.49064	1000 lt 1000 lt
d) Liquefied Petroleum Gas (LPG) as fuel for heating	267.76364 189.94458	1000 kg 1000 kg
e) Natural gas 1) for transportation 2) for industrial purposes 3) for household purposes <sup>(*)</sup> : a) for consumption of up to 120 m <sup>3</sup> /year b) for consumption from 120 to 480 m <sup>3</sup> /year c) for consumption from 480 to 1560 m <sup>3</sup> /year d) for consumption of more than 1560 m <sup>3</sup> /year	0.00331 0.01250 0.04400 0.17500 0.17000 0.18600	m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup> m <sup>3</sup>
f) Heating fuel oil high-sulphur content oil low-sulphur content oil	128.26775 64.24210	1000 kg 1000 kg
g) Industrial fuel oil high-sulphur content oil low-sulphur content oil	63.75351 31.38870	1000 kg 1000 kg
h) Lubricants	787.81000	1000 kg
i) Bitumens	30.99000	1000 kg

(\*) Excise levels different in territories of the former Cassa del Mezzogiorno ex art. 1 DPR n. 218/788.

Europe Excise in effect on May 1<sup>st</sup> 2016

	(Euro/000 litres)				(Euro/000 kg)
	Petrol Eurosuper 95	Diesel Gasoil	Heating oil	LPG automotive	Fuel oil low sulphur
Austria	493.36	409.64	109.18	—	67.70
Belgium	619.10	464.83	18.65	—	16.35
Bulgaria	363.02	330.30	330.30	93.96	—
Cyprus	489.70	460.70	135.43	—	17.70
Croatia	516.09	409.13	45.86	7.41	21.39
Denmark	618.88	423.56	332.42	—	409.04
Estonia	422.77	392.92	110.95	69.92	—
Finland	652.78	493.38	214.00	—	—
France	647.60	510.60	96.30	77.80	68.80
Germany	654.50	470.40	61.35	91.80	—
Greece	679.39	338.55	—	—	41.81
Ireland	607.72	499.00	122.28	—	101.84
<b>ITALY</b>	<b>728.40</b>	<b>617.40</b>	<b>403.21</b>	<b>147.27</b>	<b>31.39</b>
Latvia	444.69	350.49	30.83	119.55	—
Lithuania	434.43	330.17	21.14	161.17	15.06
Luxembourg	462.09	335.00	10.00	54.07	—
Malta	549.38	472.40	232.09	—	—
The Netherlands	777.90	492.47	492.47	185.25	36.33
Poland	378.19	330.54	52.56	105.60	14.50
Portugal	681.10	465.92	346.51	137.82	36.30
United Kingdom	733.56	733.56	141.02	—	—
Czech Republic	475.17	405.23	87.89	79.93	17.47
Romania	453.27	422.47	422.47	68.34	15.83
Slovakia	570.17	406.05	—	98.28	131.15
Slovenia	563.70	488.66	244.11	114.56	111.30
Spain	461.92	367.98	87.56	32.41	16.63
Sweden	680.51	601.85	436.75	—	473.96
Hungary	385.65	354.72	354.72	109.47	18.82

Source: European Union, DG Energy

## New fiscal developments in the 2016 Stability Law

Article 1, paragraph 21 of the 2016 Stability Law introduced important new developments with regard to **determining cadastral revenues from urban properties destined for special use** and those destined for particular use as listed in the cadastral registry under category D (refineries and warehouses) and E (fuel distribution sales points E/3). The Law established which real estate facilities must be considered with a view to determining cadastral revenues.

In this regard, legislators established that for these categories of buildings, **machinery, devices and equipment specifically related to production process are to be excluded from the direct estimate**. Indeed, as an example, the instructions contained in Circular 2/E issued to the refineries by the Revenues Agency on February 1<sup>st</sup>, 2016, specifically refer to the exclusion of pre-heating furnaces, atmospheric and vacuum refining units and those used for conversion processes or product quality improvement, as well as to treatment units for flue gases and waste waters.

In addition, cadastral variations aimed at applying the measures under examination must be submitted by June 15, 2016, in order to be effective for the purpose of reducing the taxable base for the determination of the Municipal Property Tax (IMU<sup>1</sup>).

### *Reduction of the IRES rate*

The IRES rate of 27.56 per cent will go down to 24 per cent on January 1<sup>st</sup>, 2017.

### *Super depreciation benefit*

The 2016 Stability Law provided for the possibility of an extra depreciation benefit operating a cost re-evaluation equal to 140 per cent for investments in depreciable assets carried out between October 15, 2015 and December 31, 2016.

The measure is aimed at incentivizing investments in new instrumental capital goods by increasing the percentage of the fiscally recognized cost of the assets themselves (140 per cent), in order to allow the deduction of higher amortization rates and finance leases to the taxable period for the purpose of determining IRES and IRPEF.

The benefit regards both purchased instrumental assets and those acquired through leasing.

<sup>1</sup> Italian acronym: IMU - Imposta Municipale Unica.

## Customs Agency's circular on transit losses

With circular 6/D of June 18, 2015 the Customs Agency provided important indications in the area of fuel transit losses. In particular they regarded:

- 1) differences attributable to **thermal variations**, when transporting fuels on which excises have been paid, during commercial activities, are not fiscally justifiable for the purpose of reducing excise payments whenever these differences may be ascribed to variations occurring between the time of loading and unloading and to the precision limits of the measuring instrument.

Thus, without prejudice to the provisions of Legislative Decree 504/95<sup>1</sup>, volumetric variations of fuels subject to excises, which resulted from temperature changes during transportation, may not be cause for lower excise exaction nor do they affect the level of the excises already paid.

With regard to keeping the **charge and discharge registry of fuel distribution facilities**, the Circular specified that during verifications at the abovementioned facilities, the inspecting unit, for the purpose of correct record keeping, must necessarily take into account the total amount of discharges the companies enter in the registry, including all the discrepancies recorded, even if these exceed the permitted limits;

- 2) with regard to **determining the difference between real quantities stored and accounting stocks** in commercial gasoil warehouses the Circular clarifies that the reference text to be used is article 50, paragraph 2 of Legislative Decree 504/95 (tolerance of 3 per thousand of quantities received) and not the figure given by Ministerial Decree 55/2000<sup>2</sup> (1 per cent in volume at 15 °C calculated on the effective days of storage);
- 3) the **principle of presumption of acquisition does not apply** for the purpose of applying VAT for energy products that exceed the declared quantity limits so that additional excises may not be recovered from them as established by Legislative Decree 441/97<sup>3</sup>.

<sup>1</sup> Single Text on Excises..

<sup>2</sup> Regulation on the natural and technical losses of merchandise subject to customs duties and excise taxes.

<sup>3</sup> Law containing provisions for the reorganization of rules on the presumption of cessions or acquisition.

# OIL AND THE ENVIRONMENT

## The Paris Agreement (COP 21) and its impact on the sector

The Agreement reached in Paris last December is aimed at strengthening global response to the threat of climate change and engages the international Community to limit the average increase of global temperature to below 2°C compared to pre-industrial levels. The Agreement has been variously defined as *“historic, ambitious, fair, sustainable, dynamic, balanced and legally binding”*.

Besides a commitment to containing land temperature increases to **“well”** below 2°C, the agreement also pledged to make every effort **to limit this increase to a maximum of 1.5°C**.

The reduction strategy is based on national commitments called “INDCs – Intended Nationally Determined Contributions”, **or voluntary and specific commitments that each Country promised to reach**. These commitments will be subject to review every 5 years with the first stocktaking set for 2023, **but with no planned sanctions in case of non-compliance and without any rigorous mechanism to measure and control**.

To take effect, the Agreement must be ratified by 55 per cent of the Parties representing at least 55 per cent of global CO<sub>2</sub> emissions and it will be open for the Parties to sign from April 21, 2016 until April 21, 2017. The hope is **that zero net greenhouse gas emissions will be reached during the second half of the century**.

**The European Union played an important role in raising the bar in the Paris negotiations**, confirming its own commitment to reduce its CO<sub>2</sub> emissions in 2030 by 40 per cent compared to 1990 levels and to reach other targets on renewables and energy efficiency.

Nonetheless, according to studies of numerous research Institutes, even if all the Countries did their part based on voluntary commitments, this would not be enough to limit the temperature increase to 2°C, **trusting, as it were, in the “good will” of individual States to further cut their emissions**, in spite of the lack of sanctions in case targets are not met.

Given this situation, it should be mentioned that China, one of the Countries with the highest emissions with a **share of 26 per cent**, pledged to begin reducing emissions only after 2030, while India, having declared it would not renounce the use of coal, will not be in a position to make a significant contribution.

This again demonstrates the **high degree of asymmetry characterising international competition**, which ends up falling on the shoulders of the Countries of Europe who are called on to make greater efforts and bear most of the environmental costs.

## FOCUS

## THE NEW EMISSION TRADING SCHEME AFTER 2020

The European Council confirmed that a functional Emission Trading System will be Europe's main instrument to attain the goal of reducing CO<sub>2</sub> emissions to 2030. On July 15, 2015 the European Commission presented a proposal for a Directive to revise the ETS scheme post 2020 and there are a number of critical problems in it.

First of all, there is a risk connected to **direct Carbon Leakage**, and to the cost industries will have to bear to acquire allowances that will not be allocated for free. The new proposed Directive reduces the amount of free allowances from 2021, the year when the new trading period begins and later free allowances will be further reduced every year by 2.2 per cent in application of the linear reduction factor. This is because the community targets for 2030 provide for a 43 per cent reduction of CO<sub>2</sub> emissions in 2030 compared to 2005.

In this regard, the Directive calls for stricter criteria for the recognition of a risk of Carbon Leakage and, hence, for the allocation of free allowances for those sectors at risk of relocating industrial production outside Europe to Countries without CO<sub>2</sub> emissions limits. Even with the recognition of a sector at risk of Carbon Leakage, the proposed Directive makes the benchmarks stricter, through a reduction set at 1 per cent compared to 2007-2008 on an annual basis until 2025. It is worth remembering that benchmark is the parameter based on which the exact number of free allowances is established for allocation to a given business.

No less relevant are the problems connected to **indirect Carbon Leakage** and the higher costs industries have to bear to purchase electricity at higher prices precisely because of Emission

Trading. This phenomenon, besides contributing to the loss of competitiveness of European industry compared to Countries outside Europe, also distorts competitiveness among the Countries inside Europe.

Community regulations indeed **provide the possibility for member States to grant State Aid in order to compensate for the higher costs their businesses are forced to bear** due to increased electricity prices resulting from the ETS. Currently, several Countries are providing this aid (Germany and the United Kingdom in particular), but not Italy because of budgetary difficulties our Country is facing. This leads to a competitive disadvantage of our industries when facing those in our main competitor Countries.

Other elements in the Proposal concern the institution of an **Innovation Fund** to support investments in renewable energy sources, carbon capture and storage (CCS) and to develop low carbon emissions technologies in high energy intensity sectors. A large number of allowances will be set aside from 2021 which, together with those not assigned during the period 2013-2020, will serve to finance the activities provided for in the Fund, which will be launched from 2021.

Further allowances will be set aside for the purpose of financing the **Modernisation Fund**, whose aim is to help member States whose development is lagging (Italy is excluded) to make investments in energy efficiency and modernize their energy systems. The Countries allowed to benefit from this are: Bulgaria, Croatia, Estonia, Latvia, Lithuania, Poland, the Czech Republic, Romania, Slovakia and Hungary.

### Europe Compensation of indirect costs deriving from CO<sub>2</sub> emissions in some member States

	Percent of cost compensated	Total reimbursed	Years	Millions of euros per year
United Kingdom <sup>(*)</sup>	85%	161	3	53.9
Greece	85%	128	7	18.3
Germany	85%	756	3	252.0
Spain	85%	5	3	1.7
The Netherlands	85%	156	3	52.0
Belgium	85%	304	8	38.0

(\*) Exchange rate €/pound 0.70.

Source: Official position of the Italian Government on the reform of the Emission Trading Scheme (EU ETS) post-2020, April 2016.

On the proposed Directive for the reform of the Emission Trading System, the Italian Government recently officialised its position in which it formulates proposals to make changes to the Commission's text, that are necessary to deal with the critical issues illustrated above.

On the question of **direct Carbon Leakage**, Italy is asking to change the revision criteria for the threshold between allowances to be auctioned and allowances allocated freely, in order to increase the latter while guaranteeing that they will be allocated to all the sectors at risk of Carbon Leakage during the fourth trading phase. In this regard, it is also asking that the benchmarks be revised **on a realistic basis that reflects the real technological development of the sectors** and is **not based on pre-established reduction parameters**. Still on the topic of allocation, it is asking for the elimination of the trans-sectoral reduction factor, the allocation of allowances based on the companies' real production data and less stringent criteria for recognition of a sector exposed to the risk of Carbon Leakage.

With regard to **indirect Carbon Leakage**, Italy is asking for the

system compensating indirect costs to be replaced with **a mechanism harmonized at the European level** to avoid intra-European distortions of competitiveness. Finally, it asks that the Directive's field of application be revised in order to simplify the Emission Trading Scheme and incentivize small emitters by fixing a quota below which they are excluded from the Directive (the figure being discussed is 50,000 tons of CO<sub>2</sub> emitted).

The Italian Government's position, by and large, reflects the views of the oil industry on this proposed measure, whose purpose ought to be to **obtain the targeted reductions** of CO<sub>2</sub> emissions at 2030, at the lowest cost for the population and **without creating unjustified burdens that would heavily penalise European industry's competitiveness in international markets**.

In the coming months the proposed Directive will be discussed in the community Institutions (Council and Parliament) and definitive approval is expected to come during the course of 2017. It is hoped that on this occasion Italy's position will be supported by most of the other member States.

## Reform of the European Union “Emission Trading Scheme”

In 2015 the European Commission presented to the European Parliament and the Council proposed legislation to **reform the ETS Directive for the period 2020-2030**, intending it to be the main instrument to reach the target of at least a 40 per cent reduction of Green House Gas (GHG) emissions by 2030. The other contribution regards non-ETS sectors and will be realised by implementing the Effort Sharing Decision.

The reform of the Directive will concern fundamental aspects of the system's functioning, including the **definition of new measures for sectors at risk of Carbon Leakage**, that is, the methodologies used to allocate free allowances, to compensate indirect costs, the destination of proceeds from auctions, the “opt-out” clause<sup>1</sup> for small facilities. **Many of these measures could give rise to critical problems** for various industrial sectors, especially for refining.

Unione Petrolifera, along with Confindustria, is working actively with the Italian Government in order to make a **substantial revision** of all those measures contained in the proposal, that could further compromise the competitiveness of Italian industry **without leading to any real environmental benefits**. **The commitments required of the refining sector could prove to be particularly burdensome** and

<sup>1</sup> “Opt-out” refers to the possibility for those who emit less than 25,000 tons of CO<sub>2</sub> to exit from the ETS scheme.

the new criteria, rather than protecting the sector from Carbon Leakage, might instead exclude it from that protection. In that case, the consequences this would have for Italian refineries' competitiveness would be very serious and increase the risk that they will disappear altogether.

## Biofuels: changes in the regulatory framework

During 2015 two Directives were adopted implementing and amending Directive 2009/28/EC on renewables and 2009/30/EC on fuels quality.

The first is Directive 2015/652/EU which establishes the **calculation methods and communication obligations** for petrol and diesel and introduces default values for greenhouse gas (GHG) emissions for these products, according to the direction of the oil industry, as reported in the table below:

Raw material source and process	Fuel placed on the market	Weighted life cycle GHG intensity (gCO <sub>2eq</sub> / MJ)
Conventional Crude, Coal to Liquid, Natural Gas to Liquid, Natural bitumen, Oil shale;	Petrol	93.3
Conventional Crude, Coal to Liquid, Natural Gas to Liquid, Natural bitumen, Oil shale;	Diesel or Gasoil	95.1
Natural gas, EU blends	Compressed Natural Gas for spark ignition engines	69.3
LPG	Liquified Petroleum Gas for spark ignition engines	73.6

The other Directive is 1513/2015/EU also known as ILUC<sup>1</sup> which amends both Directive 2009/30/EC and Directive 2009/28/EC.

The **main points of the Directive regard:**

- **limiting use of conventional biofuels** to a threshold of 7 per cent in energy;
- biofuels from new installations **emit at least 60 per cent less greenhouse gas emissions than fossil fuels** on the date the Directive enters into force;
- **promoting the use of advanced biofuels** with the reference value of 0.5 per cent in energy;
- **requirement** for member States and fuel suppliers to **provide data on biofuels emissions** caused by changes in soil use (ILUC);
- **absence of a blending obligation for ethanol in petrol;**
- the possibility for member States to **reduce the 7 per cent limit** of first generation biofuels;
- **biofuels of the second generation** are only those deriving from part A of Annex IX;
- biofuels deriving from part B of Annex IX are not advanced but **only double counting;**

<sup>1</sup> ILUC - Indirect Land Use Change. It is the impact of the indirect change of the soil's load on greenhouse gas emissions from biofuels.



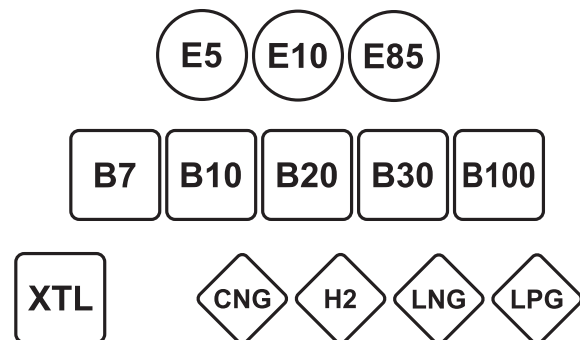
- the Directive must be adopted into national law by **September 10, 2017**.

With regard to **advanced biofuels** it must be remembered that Italy **introduced a minimum obligation in energy of 1.2 per cent beginning in 2018**, which in 2020 and 2022 will rise to 1.6 and 2.0 per cent respectively. Thus, Italy has endowed itself with an **extremely severe obligation and is the only Country in the European Union to do this**. Unione Petrolifera seriously doubts whether it will be possible to have sufficient quantities of advanced biofuels ready by 2018. In this regard it commissioned a specific study on this product aimed at verifying its effective availability and, if this is not the case, to request that the obligation be eliminated or reduced to acceptable levels.

## Labelling of fuels at service stations

A **project** is in the process of finalisation for set of rules on **the labelling of all fuels** that are or will be distributed over the ordinary and motorway networks. The aim of the rules is **to identify the compatibility between fuels and vehicles in compliance with the measures of the DAFI Directive 2014/94/EU<sup>1</sup>**. Compatibility will be established by the correspondence of an “identifier” present on the pump and nozzle with one found on the vehicle and its user manual. The following figure shows the identifiers for petrol, diesel, LPG and natural gas. The rule will enter into force as soon as it is published by CEN<sup>2</sup> and **will have immediate effect for new vehicles registered**, while the fuel distribution network will have two years to adapt.

Italy - Identifying labels for fuels according to prEN16942 standard



Source: CEN

## Air quality in European policies (EU Air Quality Package)

During 2015 work continued in Europe on the drafting of several Directives regarding the package of policies aimed at improved air quality, which updates current legislation with the aim of further reducing emissions from industry, traffic, energy plants and agriculture, as well as the potential risks for human health and the environment.

Of particular interest for the oil sector are the proposal to limit emissions from Medium Combustion Plants (MCPD<sup>3</sup>) and the proposal to amend the current Directive 2003/35/EC on National Emissions Ceilings (NEC) Directive.

**Directive MCPD (2015/2193/EU) published** on November 28, 2015 entered into

<sup>1</sup> DAFI - Directive on the Deployment of Alternative Fuels Infrastructure.

<sup>2</sup> CEN – European Committee for Standardization.

<sup>3</sup> MCPD – Medium Combustion Plants Directive. The Directive is in the process of being transposed in the proxy law being examined in Parliament.

## FOCUS

## “DIESELGATE” – TAMPERING ANTIPOLLUTION SYSTEMS BY THE VOLKSWAGEN GROUP

On September 18, 2015 the Environmental Protection Agency (EPA) issued a notice of violation of the “Clean Air Act” by the Volkswagen Group. The communication concerned several 4 cylinder diesel engines built by the German company (500,000 vehicles in the United States) which, during independent tests conducted by West Virginia University together with the EPA, detected emission levels of  $\text{NO}_x$  up to 40 times more than levels allowed by law.

The term  $\text{NO}_x$  generically refers to the group of the most important polluting nitrous oxides such as nitrogen monoxide,  $\text{NO}$ , and nitrogen dioxide  $\text{NO}_2$ . In order to limit the concentration of these substances the United States has been committed to passing legislation to set ceilings that may not be exceeded: this especially regards the automotive sector.

Every vehicle registered in the United States during the communiqué’s reference period (2009-2015) was required to meet the emissions standards “US EPA Tier 2/Bin 5” or California LEV-II ULEV”; both these standards set  $\text{NO}_x$  emissions at around 0.043g/km (0.07g/mile). These values must be measured during a test cycle that simulates as far as possible real conditions: in the United States the test in force is the FTP.

The software on some control units installed on Volkswagen cars was able to detect the conditions of an emissions test (similar to ideal conditions) and arranged all the reduction devices so as to comply with the required standards: tests carried out on real

road conditions yielded values of  $\text{NO}_x$  that were close to 1.5g/km as compared with 0.022g/km obtained in the lab (emissions 70 times higher than those declared) thus ensuring particularly high engine performance. This led the government to bring legal action against VW having ascertained that behind the “defective” software there was bad faith on the part of the Group which was perfectly aware of the system.

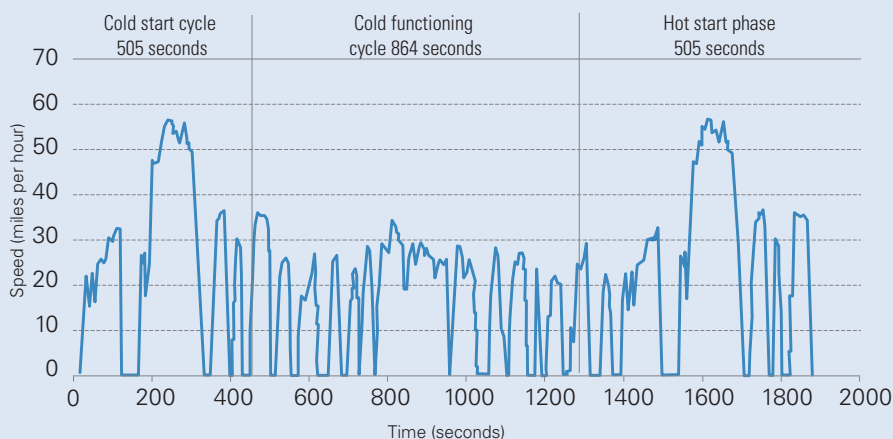
Immediate consequences were the resignation by CEO Martin Winterkorn followed by other pecuniary measures including the EPA requesting a fine of 37,500 dollars for every vehicle in non-compliance with the standards for a total of 18 billion dollars. To this must be added the costs of correcting the software which have been estimated at 7.3 billion dollars and 1000 dollars offered to the owner of every vehicle involved.

In Europe the situation was not very different from the other side of the Atlantic: the norm currently in force (Regulation (EC) n. 715/2007), which EURO 5 and EURO 6 standards are part of, sets limits on the main polluting emissions – carbon monoxide (CO), non-methane hydrocarbons and total hydrocarbons, nitrous oxides ( $\text{NO}_x$ ) and particulates (PM) - with a separate set of limits for diesel engines and spark ignition engines which can be fuelled by Petrol, LPG, Methane, etc.

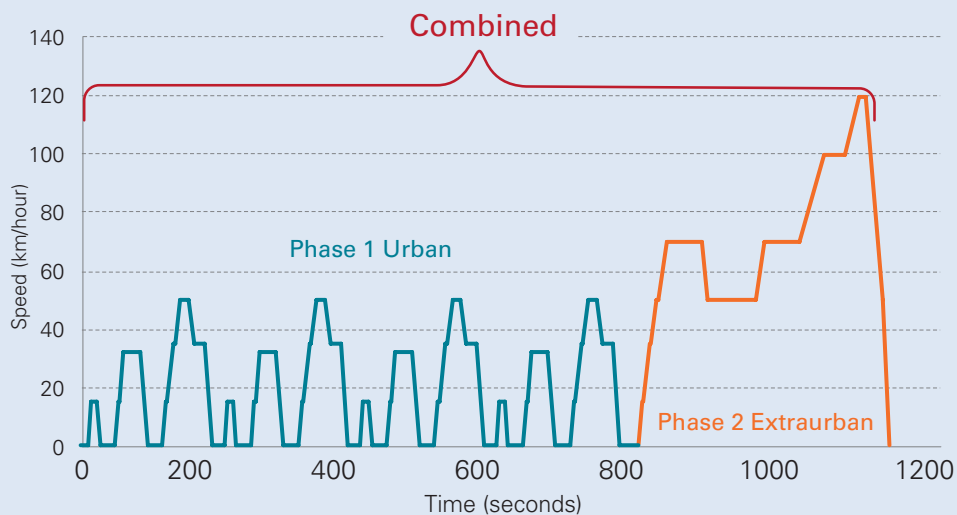
With regard to the first category, the EURO 5 standard sets  $\text{NO}_x$  limits around 0.18 g/km (which is a 20 per cent reduction from

### United States - FTP Cycle (Federal Test Procedure) of the EPA

(Duration = 1874 seconds, distance = 11.04 miles, average speed = 21.19 miles/hour)



## Europe - NEDC Cycle (New European Driving Cycle)



the previous EURO 4), while the more recent EURO 6 applied from September 1<sup>st</sup>, 2014 for the issuance of type-approval for vehicles and from September 1<sup>st</sup>, 2015 for the registration and sale of new types of vehicles, the limit of 0.08 g/km represents a further 50 per cent reduction from the standard EURO 5.

On April 7, 2016 an independent technical commission, established by the French Minister of the Environment Ségolène Royal, presented a dossier which examined 52 automobiles including some that were not from the VW Group (Renault, Peugeot, FCA, Kia, Citroen, Nissan, Mercedes, Toyota, BMW, Ford and Opel). In addition to shedding light on the question of NO<sub>x</sub> emissions, the study also looked at CO<sub>2</sub> considered to be very important because of the greenhouse effect.

The cars examined were subject to three cycles of tests: "D1" (classic NEDC cycle, which until today is still the only official test of European standards used for vehicle type approval), "D2" ("modified" NEDC cycle, whose results should not be alterable by the kind of defeat devices which Volkswagen used in triggering Dieselgate) and "D3" (RDE Real Driving Emissions) to measure real road emissions with a measurement device installed in the vehicle (PEM- Portable Emissions Measurement System).

In the "D1" cycle 12 vehicles (mainly EURO 6) exceeded permitted standards by more than 10 per cent. For the "D2" test both models from the Volkswagen Group presented emissions that were far higher than the standards: these vehicles detected the change of cycle and deactivated their pollution control system during the second part of the test.

The resolution of all this will have a series of collateral effects that cannot be underestimated. The software of the control units in all the vehicles involved will have to be changed, so that pollution reduction systems function correctly during the car's entire life cycle thus avoid cycle beating.

The control units control all the engine's parameters and their aim is to attain maximum performance: the updating will result in a noticeable performance reduction (even if the manufacturer claims the opposite). For this reason, many of clients who acquire the Group's models particularly for their road performance, might find themselves not very concerned about environmental standards and not bring their vehicles to the garage in reply to Volkswagen's recall.

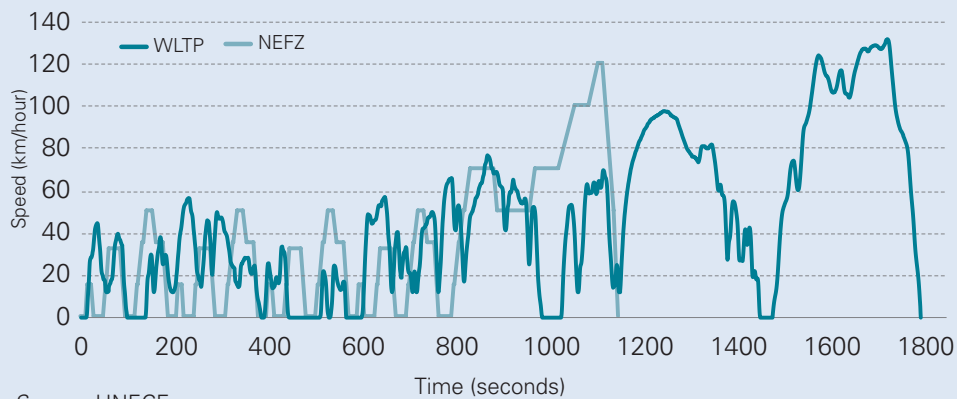
There was also movement on the regulatory front: the European Commission established that from January 2016 emissions from Diesel engines and not only them, will have to be tested using the RDE test (Real Driving Emission), a measure which will accompany the current NEDC. This basically means approval bodies will be required to verify if the emission levels obtained in the laboratory correspond to what the vehicles actually emit under real road conditions and that they respect European NO<sub>x</sub> emission standards.

Since the standards should be the same for everybody, real driving conditions under the new cycle still have to be determined, in order to be, far as possible, repeatable.

The measurement system is the PEMS: this device is installed directly on the vehicle and instantaneously measures the emis-

## FOCUS

## World - Profile of future WLTP Cycle



Source: UNECE

sion values for all the pollutants being tested (expressed in gram/second or from g/km). It is planned, at least in the initial phase, to adopt this new procedure only for the purpose of detecting emission levels and in 2017 to make it obligatory for registration.

In the future, the use of PEMS systems will be regulated by the WLTP (Worldwide harmonised Light vehicles Test Procedures) or the WLCT (Worldwide harmonised Light duty Test Cycle), which is currently being developed by the UNECE (United Nations Economic Commission for Europe) with the aim of setting uniform standards for all the Countries.

These events have forced Europe to review its current regulations and to be more flexible, also in view of the variable conditions of the tests which, in any case, make the EURO 6 norms more stringent.

Essentially, from September 1<sup>st</sup>, 2017 new car prototypes will be allowed to exceed the ceiling of 0.08 g/km for NO<sub>x</sub> by 110 per cent. From September 1<sup>st</sup>, 2019 this threshold will enter into force for all car models. From January 1<sup>st</sup>, 2020, emissions of 50 per cent over the limits will be permitted for new prototypes and from January 1<sup>st</sup>, 2021 for all models.

force on December 18, 2015 and regulates, with the aim of reducing them, emissions of sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and particulates as well as laying down rules for the monitoring of carbon monoxide (CO) emissions.

This **Directive applies to plants with a rated thermal input equal to or greater than 1 megawatt (MW) and less than 50 MW regardless of the type of fuel used**; the limits set for existing plants of between 5-50 MW will have to be applied by 2025 and by 2030 for those with 1-5 MW. For new plants, the limits will have to apply from December 19, 2017 with the possibility of a temporary extension only for some types of plant.

The Directive does not apply to a number of peculiar types of medium combustion

plants including those firing refinery fuels alone or with other fuels for the production of energy within mineral oil and gas refineries as these are already subject to emission levels associated with the Best Available Techniques (BAT) pursuant to Directive 2010/75/EU (IED).

As regards the **amendment of the NEC Directive**, in October 2015 the European Parliament voted for the proposed amendments and later, in December, the Council came to an agreement on its own proposal of a “**General Approach**”, which will serve as the basis for negotiations with the Parliament and the Commission (known as the Trialogue), which should get underway in the first half of 2016.

The Commission’s original proposal contained new national pledges for emissions reductions, applicable from 2020 and from 2030 for the six main atmospheric pollutants: SO<sub>2</sub>, NO<sub>x</sub>, Volatile Organic Compounds, Ammonia, Particulate Matter (fine dust) and Methane.

The European Council’s general attitude is more realistic and flexible than the significantly more restrictive position of the European Parliament on important aspects like:

- **emission limits to 2030, the application of intermediate targets to 2025 (suggested and not binding);**
- **flexibility mechanisms** in case of uncertain future events, like the economic situation and exceptional circumstances;
- **the possibility for ex post legislative adjustments to emissions ceilings (revision clause)**, if the member States are not able to meet their pledges to reduce emissions;
- **the exclusion of methane** from the Directive’s field of application in consideration of potential overlapping with targets to reduce emissions of greenhouse gases.

In view of the upcoming negotiation, Unione Petrolifera, together with the rest of Italian industrial Associations has stressed its strong commitment to reducing its own impacts on air quality, with large investments in innovative technologies for atmospheric emissions reductions, while confirming its willingness to continue in this direction by applying the Best Available Techniques in accordance with the Industrial Emissions Directive (IED).

## Implementation of Directive 2010/75/EU on industrial emissions (IPPC<sup>1</sup>)

In 2015 Italian refineries submitted their applications and obtained decrees for the renewal of Integrated Environmental Authorization (IEA) for the operation of Large Combustion Plants (LCP) based on the new and stricter Emission Limit Values (ELV<sup>2</sup>).

<sup>1</sup> IPPC – Integrated Pollution Prevention and Control.

<sup>2</sup> The new procedures are provided for in Directive 2010/75/EU transposed in Italy by Legislative Decree 46/2014, which requires the LCP technology with the new ELV to take effect January 1<sup>st</sup>, 2016 and in any case until the issuing of the larger EIA review provision of the entire installation and not beyond December 31, 2016.

All the refineries have met the new ELV and obtained, with regard to their authorizations, some flexibilities allowed for in Directive 2010/75/EU and incorporated into the Legislative Decree n. 152/06<sup>1</sup>.

During 2015 the Ministry of the Environment also developed instructions concerning the process of the more detailed review of the existing IEAs of the entire refinery installation based on the BAT Conclusions published with a decision by the European Commission on October 28, 2014 which includes the so-called “Bubble approach” and whose emission limits (ELV) must be met by October 2018<sup>2</sup>. In this regard the Ministry issued:

- in December 2015 a Ministerial Directive to address the most significant aspects of conducting the IEAs review process on the basis of experience acquired over the past decade;
- in March 2016 the forms that refineries operators will have to fill in when presenting their IEA application.

Following the issue of the aforementioned instructions, the Ministry in April 2016 formally communicated to the refineries the start of the application process for IEA review, setting a deadline of 60 days for submission.

As this deadline was not sufficient, in view of the complexity of the documentation required and data needed to prepare an effective submission, Unione Petrolifera and the Companies, requested and obtained an extension of the abovementioned deadline.

It should be pointed out that while the authorization procedure allows refineries to adopt the “Bubble approach”, it limits the flexibility of how it is applied because of the specific stricter emission limits imposed on the LCPs, even if they fall within the installation’s total emissions.

Moreover it is to be noted and hoped that that the new ELV values will coincide with the less strict values of the corresponding BAT-AELs<sup>3</sup> range of the BAT-Conclusions documents that totally guarantee the Directive’s environmental objectives. These limits are, indeed, sustainable even if they will require significant investments.

Stricter limits would result in excessive costs for operators and the potential closure of some plants. Unione Petrolifera, in view of the short time left (October 2018) to comply with the new ELVs, does not exclude the need to request, in some cases, for an extension of the deadline and/or some of the other exemptions provided for in Legislative Decree n. 152/06.

<sup>1</sup> Points 3.3 and 3.4 of Annex II Part V.

<sup>2</sup> BAT Conclusions specify for every sector the best available techniques and performance levels.

<sup>3</sup> The BAT-AELs specify value limits for every sector corresponding to the best available technique.

## Developments in environmental management systems (ISO)

In 2015 activity proceeded at the ISO TC-207 level to develop international standards, aimed at mitigating the greenhouse effect and aligning various environmental management systems of products, operations and quality<sup>1</sup>.

Of particular importance was the publication in September 2015 of the new version of EN ISO 14001:2015 (one the most widely used standards) which specifies the requirements of an environmental management system that an organization may use to improve its own environmental performance.

The standard responds to the trend towards sustainable development as a balance between environment, society and economy and represents a way for the organization to help achieve the intended outcome it sets for its environmental management system. The rule requires the organization to:

- determine the boundaries and applicability of its own management system considering both the internal and external issues (environmental, social, economic) of the context in which it operates;
- determine and face risks and opportunities related to its environmental aspects, to obligations for compliance and other factors identified in the context. This makes it possible to efficaciously manage risks and opportunities by integrating environmental management in its business processes, strategies and decision making, while obtaining financial and operational benefits and improving market position;
- identify the environmental aspects of its activities, products and services which it can control and those which it can influence, and their environmental impacts, in view of the prospect of a life cycle.

A three year transition period after its publication has been set for the standard to enter into force. After this period the former version of ISO 14001:2004, and any certification to it, will be out of date.

The other most significant ISO standards and of particular interest to Unione Petroliera are: ISO 14067 published in 2013 "*Carbon Footprint of Products*" for the quantification and communication of greenhouse gases emitted during the entire life cycle of products and the current revision of ISO 14064-1 "*Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*", which will have to include the quantification of indirect emissions connected to the entire life cycle of products and services.

Unione Petroliera takes an active part in working to develop ISO and UNI standards that concern the oil sector.

<sup>1</sup> All the norms regarding management systems must be developed on the basis of an identical structure, named "High Level Structure", in order to facilitate the most integrated applicative approach possible.

## The Law on environmental crime

Last May the Law “*Measure regarding environmental crimes*” (Law n. 68, May 22, 2015<sup>1</sup>) was published. The Law introduces crimes against the environment into the Penal Code and came at the end of a heated debate in Parliament during which the oil sector emphatically repeated its request to make the measure more amenable to the criteria of equity and realism.

After its initial application phase, the promoters of the new Law themselves judged that there was room for it to be improved.

The industrial sector has always supported the basic premise behind the measure, which aims to strengthen the penal sanctions of crimes committed by criminal organizations, but in its current version, the Law has serious flaws since it does not sufficiently distinguish between negligent and intentional behaviours and conflicts with the specific regulations on contaminated sites (Legislative Decree 152/06 Part IV Title V). Uncertainty about definitions and the absence of a principle of non-punishability for whoever undertakes a site remediation could mean that legal investigations would be initiated every time there was notice of a potential contamination.

Although the measure has already taken effect, we feel it is necessary to intervene as soon as possible either to create incentive mechanisms or drop criminal proceedings as soon the party concerned initiates environmental remediation activities (depending on the case either through safety restoration, remediation), removing the contamination before it can produce further consequences.

<sup>1</sup> *Gazzetta Ufficiale* n. 122, May 28, 2015 “Disposizioni in materia di delitti contro l'ambiente”.

### FOCUS

#### UNIONE PETROLIFERA EVENTS ON HEALTH AND SAFETY

Public events	Date and place	Topic
Workshop with the Ministry of the Environment	Ministry of the Environment Rome, July 21, 2015	Remediation fuel network Decree
Conference with Federchimica and Province of Ferrara	Remtech Fair 2015 Ferrara, September 23, 2015	National Conference IED Directive and simplification of fuel distribution network
Meeting with ANIMA/Acism	Oil and non-Oil Fair Rome, October 30, 2015	Physical security in the fuel distribution network
Initiatives specific for Associated Companies	Date and place	Topic
Workshop with INAIL	UP, May 7, 2015	Occupational risk manual for sites in remediation
Workshop with Studio Butti & Partners	UP, November 10, 2015	Environmental crimes and remediations
Workshop with Exxonmobil	UP, February 18, 2016	The influence of human behaviour in safety processes



## The latest developments on waste management and site remediation

In 2015 various regulatory interventions concerned waste management and site remediation both in Italy and at the community level<sup>1</sup>.

From June 1<sup>st</sup>, 2015, European provisions<sup>2</sup> aligning the **classification of wastes** with the new CPL<sup>3</sup> criteria for substances and mixtures were fully adopted. In the absence of a provision codifying the amendments to the Environmental Code, the Ministry of the Environment repeated several times the need to refer to the Europe-

<sup>1</sup> See Focus "New developments on waste management and site remediation".

<sup>2</sup> Regulation EU 1357/2014 (criteria for the attribution of characteristics of hazard HP of wastes) and the EU Decision 955/2014 (new European list of wastes).

<sup>3</sup> Note from the Ministry of the Environment prot. 11845/RIN of September 28, 2015.



### NEW DEVELOPMENTS ON WASTE MANAGEMENT AND SITE REMEDIATION

#### Local Authorities

*Law August 6, 2015, n. 125 converting Decree-law of June 19, 2015, n. 78*

*"Urgent measures in relation to territorial Authorities"*

#### *Classification of wastes HP Art. 7 par. 9-ter*

New criterion for the attribution of the classification of HP 14 hazard – ecotoxic provided in the ADR Accord for class 9-M6 and M7

#### *Definition of waste producer Art. 11 par. 16-bis*

Confirms amendment of the definition of "waste producer" pursuant to art. 183 par. 1 of Legislative Decree 152/06

#### Milleproroghe

*Law February 25, 2016, n. 21 converting Decree-law December 30 2015, n. 210*

*"Postponement of terms provided for in legislative provisions"*

#### *SISTRI Art. 8*

- Postponement of sanctions concerning the correct use of SISTRI from December 31, 2015 to December 31, 2016  
- 50 per cent reduction of SISTRI sanctions for failure to enrol or failure to pay contribution

- One year deferment of the expiry of the contract with the current concessionaire and anticipation of contract with the current SISTRI concessionaire, as compensation for production costs

#### Collegato Ambientale

*Law December 28, 2015, n. 221*

*"Provisions concerning the Environment to promote measures for the green economy and to limit the excessive use of natural sources"*

#### *Assessment of Health Impact Art. 9*

As part of the IEA, performance of a Health Impact Evaluation (HIE) for projects involving: crude oil refineries

#### *Procedures for remediation and damage Art. 31*

New procedures for transactional proposal by private parties to compensate environmental damage and restore SIN.

#### *Prohibition of processing Art. 46*

Repeals measure containing the prohibition to process wastes in discharges with an LCV (Lower Calorific Value) of more than 13000 KJ/kg

#### *Dredging sediments Art. 78*

Amends art. 5-bis of Law 84/1994 concerning dredging of port and marine coastal areas in remediation sites of national interest

an Regulation and Decision, both in the clarifying note issued last September<sup>1</sup> on the classification of wastes and in the instructions appended to the “Single Environmental Declaration for the Year 2016”.

The sanctions regarding the correct use of the **SISTRI** system were postponed again (from December 31, 2015 to December 31, 2016<sup>2</sup>), while awaiting publication of the Decree that will simplify the current system of traceability by introducing what the industrial system has asked for: interoperability, off line registrations, elimination of USB devices and of black boxes. In the meantime, the traditional management requirements and obligations (registries and forms) continue to apply as well as the old sanctions.

Last July the definition of **waste producer**<sup>3</sup> was modified and now refers to legal entities, whose activity produces waste, and legal subjects to whom the above-mentioned production is legally referable. It is feared that this overlapping could create problems at the time of application, doubling the burdens for initial producers both in terms of fulfilling administrative requirements (charge and discharge registries, forms, etc.) and their responsibilities to correctly begin waste processing or recovery. On this point there is not yet any legal consensus opinion.

**At the European level**, last December 2<sup>nd</sup> the European Commission published its awaited package of proposals on the **circular economy** contained in the communication “*Closing the Loop: a European Union action plan for the circular economy*”, whose contents are expected to be implemented through a series of legislative proposals to amend Directives in the following areas: wastes, packaging, packaging wastes, waste electrical and electronic equipment (WEEE) and discharges.

The industrial sector believes that the proposals to amend the above Directives in question, generally represent an attempt to further qualify the current regulatory framework. In particular, the sector appreciated the alignment of definitions among the various Directives and the methods used to calculate waste reutilization and recycling targets; the gradual limitation of the use of landfill; the reuse of by-products and promoting the conversion of wastes into resources (i.e “end of waste”). It will closely follow European negotiations in the Parliament and Council for the finalization of the abovementioned proposals.

With reference to the **contamination of sites**, the refineries presented their **reference report**<sup>4</sup>, as they are facilities subject to IEA by the State by January 7, 2016. Currently the Ministry of the Environment and Confindustria are meeting to identify the criteria to determine the financial guarantees, to be paid along with submission of the reference report, which take into account the potential risk of future contamination (for ex. areas near hazardous centres).

<sup>1</sup> CLP – Classification, labelling and packaging. Regulation (EC) n. 1272/2008 of the European Parliament and Council of December 16, 2008 on the classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) n. 1907/2006.

<sup>2</sup> Decree-law December 30, 2015, n.210 “Extension of deadline by legislative measures”.

<sup>3</sup> The measure was provided for by Decree-law of July 4, 2015 n. 92 Urgent Measure concerning wastes and integrated environmental authorisation and for the commercial operation of industrial activities of strategic national interest, not converted into law, later inserted in Law n. 125/2016.

<sup>4</sup> Photograph of contamination of the water and soils by hazardous substances related to the activity of the installation.

# HEALTH AND SAFETY

## Implementation of Directive 2012/18/EU (Seveso III)

Directive 2012/18/EU on the control of accident hazards involving dangerous substances integrally repealed, from June 1<sup>st</sup>, 2015, the earlier regulations<sup>1</sup>.

With the exception of a few provisions concerning heavy fuel oils and alternative fuels used for the same purposes, which were transposed by Legislative Decree 48/2014, all the other provisions were transposed by Legislative Decree 2015/105<sup>2</sup>, which entered into force on July 29, 2015<sup>3</sup>.

The Decree, 2015/105 which resembles a sort of “Single Text”, includes in its annexes updates and additions to numerous interrelated implementary technical standards and essentially confirms the approach of the earlier one, even if there are many changes, among which the most significant are:

- changes in the area of application, such as, the elimination of the obligations pursuant to art. 5 par.2 of Legislative Decree 334/99 for certain activities under the threshold, repeal of the Ministerial Decree 293/2001 on port activities, amendments to provisions applicable to railway freight yard terminals;
- new and/or amended definitions: new establishment, pre-existing, adjacent, other establishment, intermediate temporary storage, public, public concerned, inspections;
- new or changed institutional duties (Ministry of the Environment, Regions, Ministry of the Interior, Fire Department) and the creation at the Ministry of the Environment of a “*coordinating body for uniform application in the national territory*”;
- new procedures and time-limits for sending notifications and safety reports. Explicit references to accident evaluation scenarios resulting from natural events;
- public consultation and participation in decision-making processes (for projects involving new establishments and significant modifications to existing ones);
- alignment with the Aarhus Convention (so that the public and non-public organizations have access to administrative and legal decision making on environmental matters);
- stricter inspections (schedules, procedures, inspections and more timely reporting).

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<sup>1</sup> Directives 96/82/EC and 2003/105/EC.

<sup>2</sup> Official Gazette, n. 161 of July 14, 2015.

<sup>3</sup> Repeals Legislative Decree n. 334/1999 and Legislative Decree n. 238/2005, including the related implementing decrees.

Unione Petrolifera, taking part in the usual consultations with institutions and associations, provided its own technical contribution and operational experience. The various Institutions contacted considered useful its numerous recommendations which were then taken into account and adopted.

## Regulations on pressure equipment

For some time now Unione Petrolifera has been drawing the Ministry of Economic Development's attention to the need to update Ministerial Decree n. 329 of 01/12/2004: *"Regulations for putting into service or use of PED equipment and assemblies pursuant to article 19 of Legislative Decree n. 93 of February 25, 2000"*.

The update concerns the need for a simplification of the complex operational and administrative procedures, for clarity and certainty about meeting obligations, about the role of inspections as well as the need to resolve regulatory overlapping and double provisions between Ministerial Decree n. 329 of 01/12/2004 and Legislative Decree n. 81 of April 9, 2008 (Single Text on Health and Safety in the workplace).

The work to update the Ministerial Decree appears imminent and in view of this, Unione Petrolifera would like to stress the importance of being consulted from the earliest stages, so that it can provide its own technical support and consolidated operational experience.

The most important issues and possible solutions have already been raised by the *ad hoc* working group of the Italian Thermotechnical Committee (CTI) during the numerous meetings and activities that were held in 2014 *"National table on problems related the application of Ministerial Decree n. 329/04 and Legislative Decree n. 81/08"*.

## Safety performance in 2015

The oil industry, in pursuing its efforts of continuous improvement in the area of health and safety in the workplace, intensified actions aimed at preventing risks and safeguarding the health of workers through many interventions on equipment and in the area of safety management systems and also aimed at improving the behaviour of the human factor.

With regard to this latter domain, which is an essential component of prevention, the companies and Unione Petrolifera have for some time intensified information initiatives, the training of personnel at every organizational level, through numerous and specially targeted meetings, seminars and workshops on the topics of Safety Human Performance and Safety Leadership intended to create a more widespread safety culture.

This is a policy that derives from the full awareness the oil companies have that they are processing substances classified as hazardous for humans and the environment and, hence, the need to continuously adopt responsible behaviours in order to protect the safety of personnel employed in facilities and the surrounding local communities in which they are operating.

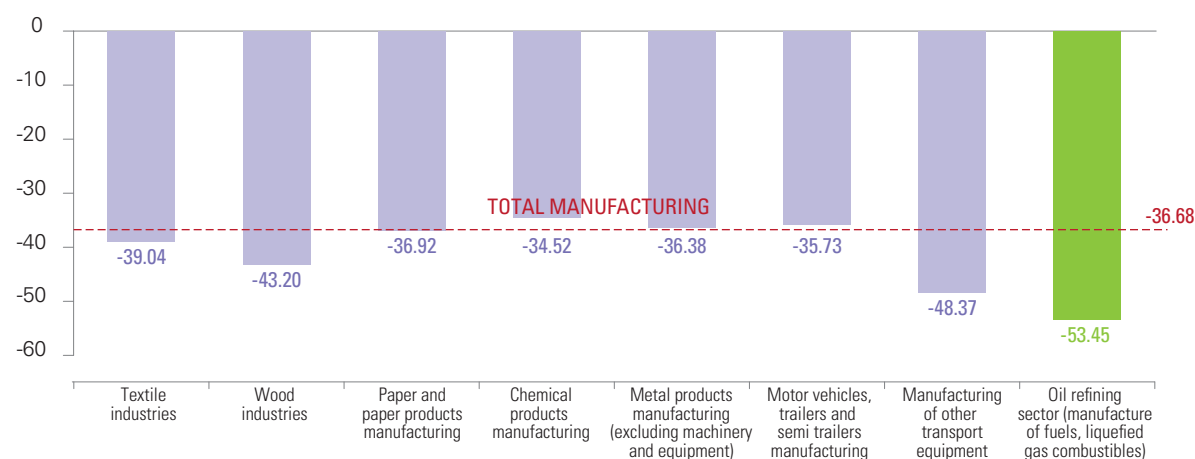
This commitment is measured and continues to be measured, apart from the numerous laws the sector is subject to, in concrete facts as may be seen from the frequency and seriousness of injuries to workers in the oil sector, which continue to be among the lowest in INAIL<sup>1</sup> rankings.

Nevertheless, this commitment needs to be an ongoing one with a constant effort to ensure the goal of “zero accidents”, which some establishments have already reached, setting significant records in terms of durations and millions of hours without accidents.

Of further note is the cooperation between INAIL and the joint Health-Safety-Environment Commission, established as part of the National Collective Labour

<sup>1</sup> INAIL – Italian Workers’ Insurance Authority. Italian acronym: INAIL - Istituto Nazionale Infortuni sul Lavoro.

#### Italy - Percentage reduction of injuries<sup>(1)</sup> 2010-2014 reported to INAIL



<sup>(1)</sup> Injuries when working by economic sector.

Source: INAIL

#### Italy Injury trends among persons employed in UP Associated Companies

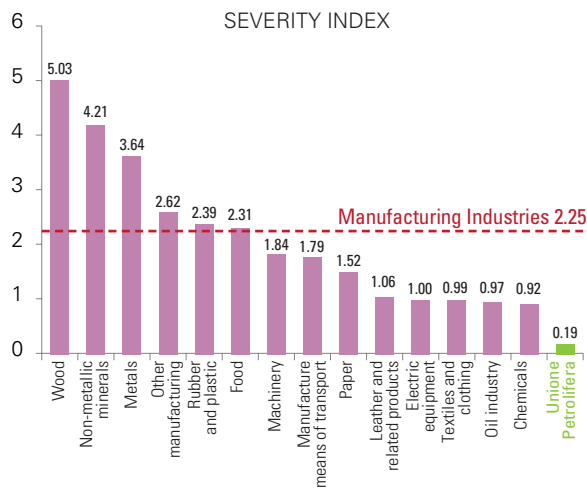
	2008	2009	2010	2011	2012	2013	2014	2015
Number of injuries	73	79	72	47	41	31	38	31
Frequency index <sup>(1)</sup>	4.70	5.10	4.53	3.11	2.76	2.20	2.95	2.60
Severity index <sup>(2)</sup>	0.18	0.19	0.19	0.09	0.08	0.58	0.09	0.12

<sup>(1)</sup> Injuries per thousand employees.

<sup>(2)</sup> Lost workdays per injury and per employee.

Source: Unione Petrolifera

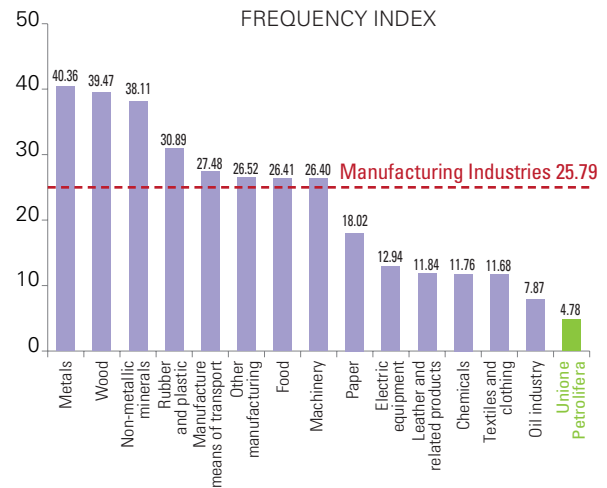
**Italy - Severity index<sup>(1)</sup> in Companies with single or multiple locations. Three year average 2008-2010**



<sup>(1)</sup> Lost workdays per injury per employee.

Source: INAIL and Unione Petrolifera on its Associates' data

**Italy - Frequency<sup>(1)</sup> index in Companies with single or multiple locations. Three year average 2008-2010**



<sup>(1)</sup> Injuries per thousand employees.

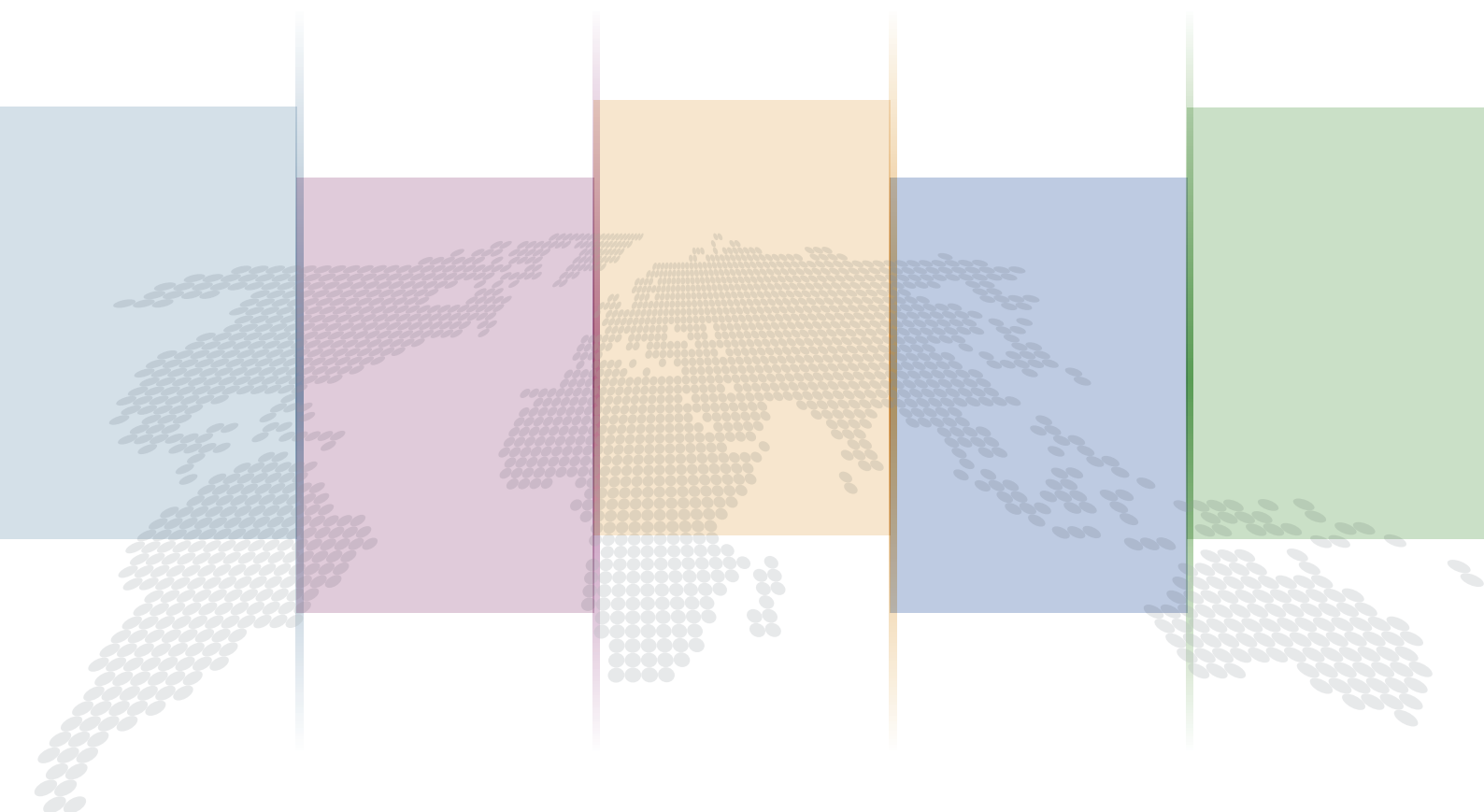
Source: INAIL and Unione Petrolifera on its Associates' data

Agreement Energy and Oil (CCNL) which arose out of an agreement signed in 2006 and attests to the shared commitment by employers and unions on these topics.

As part of the convention signed with INAIL, last February 2016, a joint training course was held that included both workers' representatives for safety and the environment (RSLA) and safety and accident prevention personnel (RSPP) on integrated management systems in continuity with past projects whose aim is to foster accident prevention and spread a safety culture in the oil and energy sector.

One of these was the preparation of the SGI-AE guidelines (Integrated Management System –Oil Companies) which were recently revised as a voluntary reference management model for oil sector companies and as a tool for good practices for the purpose of managing and improving company safety and environmental policies.

# STATISTICAL APPENDIX



2016

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**World/Industrialized Countries** Energy consumption in major Countries (2014)  
 (Millions of toe's)

	Solid fuels	Oil	Natural Gas	Hydro electricity <sup>(1)</sup>	Nuclear <sup>(2)</sup>	Renewable	Total	Toe/capita
World	3,881.8	4,211.1	3,065.5	879.0	574.0	316.9	12,928.4	1.8
OECD Area	1,052.5	2,032.3	1,432.6	315.7	449.8	215.9	5,498.8	4.4
United States	453.4	836.1	695.3	59.1	189.8	65.0	2,298.7	7.2
Former Ussr	162.6	207.0	511.6	55.4	61.4	1.3	999.3	3.5
Japan	126.5	196.9	101.3	19.8	—	11.6	456.1	3.6
China	1,962.4	520.3	166.9	240.8	28.6	53.1	2,972.1	2.2
India	360.2	180.7	45.6	29.6	7.8	13.9	637.8	0.5
EU Area (28 Countries)	269.8	592.6	348.2	83.8	198.3	118.7	1,611.4	3.2
Belgium/Luxembourg	3.8	29.9	13.3	0.1	7.6	3.0	57.7	5.1
France	9.0	76.9	32.3	14.2	98.6	6.5	237.5	3.7
Germany	77.4	111.5	63.8	4.6	22.0	31.7	311.0	3.8
The Netherlands	9.0	39.6	28.9	0.1	0.9	2.6	81.1	4.8
United Kingdom	29.6	69.3	60.0	1.4	14.4	13.2	187.9	2.9
Spain	12.0	59.5	23.6	8.9	13.0	16.0	133.0	2.9
<b>ITALY</b>	<b>13.5</b>	<b>56.6</b>	<b>51.1</b>	<b>12.9</b>	<b>—</b>	<b>14.8</b>	<b>148.9</b>	<b>2.4</b>

<sup>(1)</sup> Figure represents output.

<sup>(2)</sup> Figure significantly different from the official national one, due to calorific power of each kWh produced.

Source: BP Statistical Review

**World/Industrialized Countries** Energy and oil dependency (2014)

	% energy dependence on foreign sources	% oil share in energy requirements
World	—	32.6
OECD Area	24	37.0
United States	13	36.4
Former Ussr	—	20.7
Japan	93	43.2
China	16	17.5
India	43	28.3
EU Area (28 Countries)	54	36.8
Belgium/Luxembourg	81	51.9
France	50	32.4
Germany	65	35.9
The Netherlands	34	48.9
United Kingdom	42	36.9
Spain	70	44.7
<b>ITALY<sup>(*)</sup></b>	<b>74</b>	<b>38.0</b>

<sup>(\*)</sup> Figure not corresponding to the official national one, due to different methodology.

Source: BP Statistical Review

**World** Crude oil output and reserves  
(Millions of tons)

	Output			Reserves <sup>(*)</sup>		
	2014 Quantity	2015 Quantity	2015 %	at 1/1/2015 Quantity	at 1/1/2016 Quantity	at 1/1/2016 %
<b>NORTH AMERICA</b>	730.0	776.6	17.9	33,763	33,000	13.9
– of which: United States	520.0	561.2	12.9	5,888	5,700	2.4
Canada	210.0	215.4	5.0	27,875	27,300	11.5
<b>LATIN AMERICA</b>	528.0	519.1	12.0	52,670	52,000	21.8
– of which: Mexico	137.0	127.0	2.9	1,518	1,518	0.6
Venezuela	139.0	136.0	3.1	46,576	46,000	19.3
Other Countries	252.0	256.1	5.9	4,576	4,482	1.9
<b>MIDDLE EAST</b>	1,339.5	1,405.3	32.4	109,710	109,700	46.0
– of which: Saudi Arabia	543.4	577.6	13.3	36,676	36,800	15.4
Iran	169.2	172.2	4.0	21,676	21,600	9.1
Iraq	160.3	192.0	4.4	20,243	20,243	8.5
Kuwait	150.8	155.0	3.6	13,981	13,981	5.9
U.A.E.	167.3	174.4	4.0	12,976	12,976	5.4
Other Countries	148.5	134.1	3.1	4,158	4,100	1.7
<b>FAR EAST/OCEANIA</b>	396.7	403.2	9.3	5,668	5,700	2.4
– of which: Indonesia	41.2	40.6	0.9	511	511	0.2
China	211.4	215.4	5.0	2,521	2,550	1.1
Other Countries	144.1	147.2	3.4	2,636	2,639	1.1
<b>AFRICA</b>	392.2	388.0	8.9	17,119	17,000	7.1
– of which: Algeria	66.0	65.3	1.5	1,537	1,500	0.6
Libya	23.3	20.3	0.5	6,297	6,200	2.6
Nigeria	113.5	107.6	2.5	5,003	5,000	2.1
Other Countries	189.4	194.8	4.5	4,282	4,300	1.8
<b>EUROPE</b>	157.2	163.7	3.8	1,650	1,600	0.7
– of which: Norway	85.6	88.3	2.0	798	750	0.3
United Kingdom	39.7	43.0	1.0	404	400	0.2
Other Countries	31.9	32.4	0.8	448	450	0.2
<b>EX URSS</b>	677.0	683.6	15.7	19,260	19,250	8.1
– of which: Russia	534.1	541.6	12.5	14,132	14,100	5.9
Azerbaijan	42.0	41.5	0.9	959	960	0.4
Kazakhstan	80.8	80.7	1.9	3,932	3,930	1.7
Other Countries	20.1	19.8	0.4	237	260	0.1
<b>TOTAL</b>	<b>4,220.6</b>	<b>4,339.5</b>	<b>100.0</b>	<b>239,840</b>	<b>238,250</b>	<b>100.0</b>
– of which Opec	1,730.0	1,770.0		170,543	170,500	
<i>% on total</i>	<i>41.0</i>	<i>40.8</i>		<i>71.1</i>	<i>71.6</i>	

(\*) Reserves include tar sand deposits in Canada (province of Alberta) and in Venezuela (area of the Orinoco Belt).

Source: BP Statistical Review for output (Unione Petrolifera estimates for 2014), Oil and Gas Journal for reserves

**World** Oil consumption  
(Millions of tons)

	2014		2015	
	Quantity	%	Quantity	%
NORTH AMERICA	939	22.3	948	22.1
– of which: United States	836	19.9	846	19.7
Canada	103	2.4	102	2.4
LATIN AMERICA	412	9.8	414	9.7
– of which: Brazil	142	3.4	141	3.3
Mexico	85	2.0	84	2.0
MIDDLE EAST	393	9.3	400	9.3
– of which: Saudi Arabia	142	3.4	149	3.5
AFRICA	179	4.2	186	4.3
– of which: Egypt	39	0.9	40	0.9
FAR EAST	1,376	32.7	1,412	33.0
– of which: China	520	12.3	553	12.9
Japan	197	4.7	191	4.5
India	181	4.3	192	4.5
AUSTRALIA	53	1.3	53	1.2
EUROPE	859	20.4	872	20.4
– of which: France	77	1.8	77	1.8
Germany	111	2.6	110	2.6
Italy	57	1.4	59	1.4
The Netherlands	40	0.9	40	0.9
United Kingdom	69	1.6	70	1.6
Russia	148	3.5	146	3.4
<b>TOTAL</b>	<b>4,211</b>	<b>100.0</b>	<b>4,285</b>	<b>100.0</b>

Source: Comité Professionnel du Pétrole (for 2014); Unione Petrolifera on IEA data for 2015

**World Refining capacity**  
(Millions of tons/year)

	On January 1 <sup>st</sup> 2010			On January 1 <sup>st</sup> 2015		
	N. of refineries	Capacity	%	N. of refineries	Capacity	%
<b>NORTH AMERICA</b>	146	989	22.5	140	1,001	22.8
– of which: United States	129	894	20.3	123	901	20.5
Canada	17	95	2.2	17	100	2.3
<b>LATIN AMERICA</b>	72	406	9.2	70	370	8.4
– of which: Argentina	10	28	0.6	10	31	0.7
Brazil	13	95	2.2	13	96	2.2
Mexico	6	77	1.7	6	77	1.8
Venezuela	6	64	1.5	5	64	1.5
<b>MIDDLE EAST</b>	44	362	8.2	44	369	8.4
– of which: Saudi Arabia	7	104	2.4	8	125	2.8
Iran	9	73	1.7	8	58	1.3
<b>FAR EAST/OCEANIA</b>	165	1,243	28.2	158	1,272	29.0
– of which: China	54 <sup>(*)</sup>	340	7.7	56 <sup>(*)</sup>	377	8.6
Japan	30	236	5.4	23	197	4.5
South Korea	6	136	3.1	6	148	3.4
India	21	200	4.5	23	232	5.3
Indonesia	8	51	1.2	7	50	1.1
<b>AFRICA</b>	45	161	3.7	46	164	3.8
– of which: Egypt	9	36	0.8	9	36	0.8
<b>EUROPE</b>	132	842	19.1	119	808	18.4
– of which: France	11	96	2.2	9	75	1.7
Germany	15	111	2.5	13	103	2.3
Italy	17	116	2.6	12	102	2.3
The Netherlands	6	59	1.3	6	60	1.4
United Kingdom	10	89	2.0	9	75	1.7
Spain	9	65	1.5	9	77	1.8
<b>FORMER USSR</b>	59	401	9.1	59	404	9.2
– of which: Russia	40	271	6.2	40	275	6.3
<b>TOTAL WORLD</b>	<b>663</b>	<b>4,404</b>	<b>100.0</b>	<b>636</b>	<b>4,388</b>	<b>100.0</b>

<sup>(\*)</sup>Not included the small independent refineries (so called “teapots”).

Source: Oil & Gas Journal, and others

**World** The “SPOT” prices of main crudes (2015)  
(Fob \$/barrel)

	°API	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Arabian light	34.2	44.47	53.78	52.20	57.73	62.62	60.94	54.95	46.52	45.56	45.37	40.64	33.70
Arabian heavy	28.0	40.25	51.07	49.34	54.26	59.42	58.01	53.55	44.82	43.37	43.01	37.00	30.15
Iranian heavy	31.0	42.84	53.26	51.27	56.26	61.38	59.86	54.86	46.25	44.62	44.55	38.92	31.73
Iranian light	33.9	47.42	55.97	54.79	59.34	63.97	62.28	55.76	45.74	46.16	47.05	43.17	35.98
Kuwait	31.4	42.31	52.25	50.52	55.96	60.92	59.29	53.85	45.28	43.96	43.61	38.39	31.49
Dubai	32.4	45.57	55.85	54.66	58.55	63.54	61.76	56.15	47.87	45.38	45.84	41.79	34.59
Oman	36.3	46.61	56.58	55.12	58.66	63.60	61.77	56.23	47.87	45.65	46.07	42.10	34.61
Bonny light	36.7	48.51	58.46	56.75	60.65	65.31	62.19	56.77	47.07	48.01	49.16	44.81	38.16
Libyan Essider	40.4	46.76	56.83	54.78	58.40	63.22	60.79	55.54	45.82	46.71	47.56	53.30	37.16
Saharan Blend	44.1	47.91	58.18	56.93	59.75	64.12	61.69	56.34	47.17	48.36	49.51	45.30	38.59
Basrah light	30.2	42.58	51.82	50.53	55.61	60.40	58.63	53.10	44.32	43.41	43.50	38.70	32.06
Isthmus	32.8	45.52	52.68	51.41	59.10	63.78	63.48	55.62	46.56	47.71	46.90	43.29	37.68
W.T.I.	40.0	47.29	50.76	47.77	54.43	59.28	59.81	51.17	42.77	45.48	46.26	42.67	37.23
Merey	32.4	37.96	48.41	45.79	49.49	55.09	51.74	44.43	35.26	34.13	35.48	31.87	24.42
Suez Blend	33.0	44.07	54.70	52.05	57.07	61.32	59.36	53.00	43.30	44.53	44.65	40.07	34.07
Brent	38.0	47.86	58.13	55.93	59.50	64.32	61.69	56.54	46.72	47.61	48.56	44.30	38.16
Ekofisk	43.0	48.48	59.22	57.18	60.51	64.86	62.21	57.02	47.53	48.24	49.23	45.10	38.91
Ural <sup>(*)</sup>	36.1	47.03	57.81	55.07	59.70	64.33	62.52	55.84	46.22	47.19	47.49	43.05	36.97
Girassol	32.0	47.98	58.27	56.86	61.12	65.51	63.28	56.46	47.42	48.01	48.45	44.74	37.88
<b>OPEC REFERENCE BASKET</b>		<b>44.38</b>	<b>54.06</b>	<b>52.46</b>	<b>57.30</b>	<b>62.16</b>	<b>60.21</b>	<b>54.19</b>	<b>45.46</b>	<b>44.83</b>	<b>45.02</b>	<b>40.50</b>	<b>33.64</b>

<sup>(\*)</sup> Quotation Cif Mediterranean.

Source: Opec Bulletin

**International market** Barges quotations Fob Rotterdam of main oil products (2015)  
(\$ per tons; average min-max)

	UNLEADED PETROL 10 ppm	VIRGIN NAPHTHA	KEROSENE	DIESEL GASOIL 10ppm	HEATING OIL 0.1% s	FUEL OIL 1% s	FUEL OIL 3.5% s	Rotterdam Bunker 380 CST <sup>(1)</sup>
January	475.16	392.91	524.04	479.24	469.51	238.07	238.07	241.69
February	566.84	498.13	594.98	568.50	553.15	301.09	301.09	304.85
March	602.64	500.86	565.38	543.89	524.07	290.23	290.23	293.32
April	634.34	521.61	581.38	562.40	551.33	314.90	312.74	315.00
May	675.46	546.86	618.37	599.90	592.09	336.47	336.47	339.87
June	700.47	534.07	605.14	578.74	572.99	322.07	322.07	326.32
July	686.41	468.37	535.89	519.80	512.17	285.36	285.36	288.67
August	584.55	399.38	472.99	459.69	448.59	225.55	225.56	231.20
September	520.84	407.66	482.18	465.40	453.96	216.81	216.81	222.05
October	479.44	426.26	469.10	448.81	440.07	216.92	216.92	223.05
November	477.27	415.18	446.27	432.42	415.55	193.30	193.30	198.69
December	428.94	383.41	373.64	345.98	335.19	143.35	143.35	149.36

<sup>(1)</sup> CST - Centistokes (unit of measure of viscosity).

Source: Platts

**International market** Cargoes quotations Cif North Europe of main oil products (2015)  
(\$ per tons; average min-max)

	UNLEADED PETROL 10 ppm	VIRGIN NAPHTHA	KEROSENE	DIESEL GASOIL 10ppm	HEATING OIL 0.1% s	FUEL OIL 1% s	FUEL OIL 3.5% s
January	469.95	396.91	527.39	481.57	473.20	256.21	231.43
February	569.64	502.13	601.05	570.08	555.30	313.36	294.89
March	608.61	504.86	567.44	548.51	528.55	306.50	283.23
April	649.28	525.61	583.75	569.14	553.06	329.53	305.75
May	690.93	550.86	619.07	606.61	595.51	348.91	329.47
June	712.85	538.07	605.93	584.40	574.47	335.50	315.07
July	686.98	472.37	539.58	527.50	516.04	295.95	278.36
August	577.80	403.38	477.13	468.00	456.83	234.99	218.56
September	516.23	411.66	488.64	475.07	464.69	223.06	209.81
October	492.81	430.26	475.15	461.76	450.32	230.07	209.92
November	483.85	419.18	455.41	438.93	423.29	211.17	186.30
December	439.81	387.41	385.10	349.83	338.17	162.01	136.35

Source: Platts

**International market** Cargoes quotations Fob Mediterranean of main oil products (2015)  
(\$ per tons; average min-max)

	UNLEADED PETROL 10 ppm	VIRGIN NAPHTHA	KEROSENE	DIESEL GASOIL 10ppm	HEATING OIL 0.1% s	FUEL OIL 1% s	FUEL OIL 3.5% s
January	467.99	359.26	494.91	466.10	449.45	252.36	239.45
February	572.95	472.81	575.60	556.18	539.09	314.04	294.71
March	592.36	472.93	539.78	531.76	509.47	306.38	289.99
April	622.30	489.81	553.10	552.14	528.91	326.50	312.41
May	669.34	525.37	596.71	599.07	593.68	346.79	332.59
June	688.92	504.48	576.85	571.60	561.82	331.98	324.18
July	643.33	436.30	508.82	512.41	494.77	291.64	282.05
August	538.51	380.96	457.26	464.11	441.75	232.36	225.29
September	502.77	387.01	466.90	466.25	449.25	220.76	215.81
October	485.31	407.26	454.88	448.41	433.11	231.68	220.34
November	469.26	396.54	435.37	426.95	407.13	210.14	189.11
December	437.45	362.18	362.95	341.29	328.74	164.85	139.24

Source: Platts

**International market** Cargoes quotations Cif Mediterranean of main oil products (2015)  
(\$ per tons; average min-max)

	UNLEADED PETROL 10 ppm	VIRGIN NAPHTHA	DIESEL GASOIL 10ppm	HEATING OIL 0.1% s	FUEL OIL 1% s	FUEL OIL 3.5% s	KEROSENE
January	484.55	380.94	525.89	472.36	267.80	254.89	525.89
February	585.60	489.43	571.63	556.34	328.71	309.39	599.55
March	606.27	491.21	548.73	528.64	319.11	302.73	565.94
April	637.88	510.39	571.09	551.39	337.30	323.21	582.25
May	680.22	539.57	612.50	608.71	356.95	342.75	617.57
June	703.60	523.74	589.44	582.06	344.35	336.56	604.43
July	658.95	457.00	531.35	516.01	306.00	296.41	538.08
August	548.08	393.35	475.75	455.19	243.98	236.90	475.63
September	513.36	400.76	479.14	463.92	231.09	226.14	487.14
October	495.13	419.98	460.36	446.98	241.32	229.98	473.65
November	478.91	409.04	438.76	420.54	224.01	202.98	453.91
December	448.31	376.23	354.48	343.67	178.19	152.58	383.60

Source: Platts

### Italy Energy consumption by primary source (Millions of toe's)

	2014		2015 <sup>(1)</sup>	
	Quantity	%	Quantity	%
Solid fuels	13.7	8.2	13.5	7.9
Natural gas <sup>(2)</sup>	50.7	30.6	55.3	32.3
Oil	57.3	34.5	59.2	34.6
Net import of electricity	9.6	5.8	10.2	5.9
Renewable sources <sup>(3)</sup>	34.7	20.9	33.1	19.3
<b>TOTAL CONSUMPTION</b>	<b>166.0</b>	<b>100.0</b>	<b>171.3</b>	<b>100.0</b>
Toe/capita	2.7		2.8	

<sup>(1)</sup> Provisional data. <sup>(2)</sup>For the purpose of uniformity with international statistics (EUROSTAT, IEA) conversion of natural gas into toe's was performed using the lower calorific power of 8.190 and not 8.250 as in the past. <sup>(3)</sup> Includes: a) electricity from hydro, geothermal, biomass, solid urban waste, wind and photovoltaic; b) heat production for household and industrial sectors deriving from biomass, geothermal, sun and solid urban waste.

Source: Unione Petrolifera on data by the Ministry of Economic Development

### Italy Energy consumption by sector of use (Millions of toe's)

	2014		2015 <sup>(1)</sup>	
	Quantity	%	Quantity	%
Agriculture	2.7	1.6	2.8	1.6
Industrial sector	28.0	16.8	27.4	16.0
Transport	38.1	23.0	39.7	23.2
Household	43.4	26.2	46.6	27.2
Non energy use	5.3	3.2	5.6	3.3
International bunker	2.3	1.4	2.6	1.5
<b>TOTAL END USES</b>	<b>119.8</b>	<b>72.2</b>	<b>124.7</b>	<b>72.8</b>
Consumption and losses of energy sector	5.4	3.2	5.3	3.1
Electricity transformation	40.8	24.6	41.3	24.1
<b>TOTAL CONSUMPTION</b>	<b>166.0</b>	<b>100.0</b>	<b>171.3</b>	<b>100.0</b>

<sup>(1)</sup> Provisional data.

Source: Unione Petrolifera on data by the Ministry of Economic Development



**Italy** The production of hydrocarbons

	1990	1995	2000	2005	2010	2012	2013	2014	2015
Crude oil (Thousands of tons)	4,641	5,208	4,555	6,084	5,081	5,377	5,483	5,748	5,455
Condensates (Thousands of tons)	27	28	31	27	25	20	19	17	15
Natural gas (Millions of cubic metres) <sup>(*)</sup>	17,296	20,184	16,633	12,071	8,406	8,605	7,705	7,286	6,877

<sup>(\*)</sup> Value represents cubic metres of 38.1 MJ since 1995, as converted in the National Energy Balance sheet.

Source: Ministry of Economic Development

**Italy** The oil supply-demand balance (2015)<sup>(\*)</sup>  
(Thousands of tons)

Supply		Demand	
Domestic crude and condensates	5,470	Consumption	59,968
Imports of crude <sup>(1)</sup>	62,457	Exports	28,080
Imports of unfinished products	6,136		
Imports of finished products	12,961		
Stock decrease	1,024		
<b>TOTAL</b>	<b>88,048</b>	<b>TOTAL</b>	<b>88,048</b>

<sup>(\*)</sup> Provisional data.

<sup>(1)</sup> Crude oil imports only refer to "own account" in absence of imports for "foreign clients".

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

**Italy** Crude oil imports  
(Thousands of tons)

	2014		2015	
	Total quantity	%	Total quantity	%
Saudi Arabia	5,825	10.8	5,435	8.7
Iran	446	0.8	—	—
Iraq	6,290	11.7	11,613	18.6
Israel	—	—	3	—
Kuwait	211	0.4	186	0.3
U.A.E.	54	0.1	73	0.1
<b>TOTAL MIDDLE EAST</b>	<b>12,826</b>	<b>23.8</b>	<b>17,310</b>	<b>27.7</b>
Algeria	1,316	2.4	1,302	2.1
Angola	1,832	3.4	2,790	4.5
Cameroon	383	0.7	308	0.5
Congo	861	1.6	1,906	3.0
Egypt	1,514	2.8	2,713	4.3
Equatorial Guinea	—	—	630	1.0
Gabon	451	0.8	1,180	1.9
Ghana	1,109	2.1	1,025	1.6
Ivory Coast	—	—	43	0.1
Libya	4,197	7.8	3,852	6.2
Mauritania	74	0.1	140	0.2
Nigeria	1,382	2.6	1,927	3.1
Tunisia	254	0.5	255	0.4
<b>TOTAL AFRICA</b>	<b>13,373</b>	<b>24.8</b>	<b>18,071</b>	<b>28.9</b>
Azerbaijan	9,239	17.2	11,189	17.9
Kazakhstan	4,148	7.7	5,247	8.4
Russia	8,898	16.5	8,181	13.1
<b>TOTAL FORMER USSR</b>	<b>22,286</b>	<b>41.4</b>	<b>24,617</b>	<b>39.4</b>
Albania	397	0.7	281	0.5
Greece	81	0.2	81	0.1
Norway	901	1.7	262	0.4
United Kingdom	165	0.3	248	0.4
<b>TOTAL EUROPE</b>	<b>1,545</b>	<b>2.9</b>	<b>872</b>	<b>1.4</b>
Brazil	64	0.1	94	0.2
Canada	1,994	3.7	—	—
Colombia	1,242	2.3	577	0.9
Mexico	515	1.0	613	1.0
United States	—	—	303	0.5
<b>TOTAL AMERICA</b>	<b>3,814</b>	<b>7.1</b>	<b>1,587</b>	<b>2.6</b>
<b>TOTAL</b>	<b>53,844</b>	<b>100.0</b>	<b>62,457</b>	<b>100.0</b>
- of which: OPEC	21,554	40.0	27,178	43.5

(<sup>1</sup>) Crude oil imports only refer to "own account" in absence of imports for "foreign clients".

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

**Italy** Imports of products and semi-finished products  
(Thousands of tons)

	2014		2015 <sup>(1)</sup>	
	Quantity	%	Quantity	%
LPG	2,204	12.0	2,246	11.8
Unleaded petrol	385	2.1	505	2.6
Virgin naphtha	1,058	5.7	1,463	7.7
Jet fuels/Kerosene	2,216	12.1	2,252	11.8
Gasoil	3,198	17.4	3,092	16.2
Fuel oil	367	2.0	339	1.8
- of which high sulphur	143	0.8	115	0.6
- of which low sulphur	224	1.2	224	1.2
Lubricants	301	1.6	310	1.6
Bitumen	56	0.3	48	0.2
Others <sup>(2)</sup>	2,678	14.6	2,706	14.2
<b>TOTAL PRODUCTS<sup>(3)</sup></b>	<b>12,463</b>	<b>67.8</b>	<b>12,961</b>	<b>67.9</b>
Semi-finished products	5,911	32.2	6,136	32.1
<b>TOTAL PRODUCTS AND SEMI-FINISHED PRODUCTS</b>	<b>18,374</b>	<b>100.0</b>	<b>19,097</b>	<b>100.0</b>

<sup>(1)</sup> Provisional data.

<sup>(2)</sup> They include imports of Petroleum coke.

<sup>(3)</sup> Includes imports by the petrochemical sector.

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

**Italy** Exports of products, semi-finished products and crude  
(Thousands of tons)

	2014		2015 <sup>(1)</sup>	
	Quantity	%	Quantity	%
LPG	216	1.0	235	0.8
Petrol	7,033	33.5	8,532	30.4
Virgin naphtha	833	4.0	1,210	4.3
Jet fuel/Kerosene	276	1.3	338	1.2
Gasoil	5,498	26.2	8,923	31.8
Fuel oil	2,818	13.4	4,071	14.5
- of which high sulphur	2,095	10.0	1,158	4.1
- of which low sulphur	723	3.4	2,913	10.4
Lubricants	1,106	5.3	1,062	3.8
Bitumen	1,304	6.2	1,514	5.4
Others	617	2.9	891	3.2
<b>TOTAL PRODUCTS<sup>(2)</sup></b>	<b>19,701</b>	<b>93.8</b>	<b>26,776</b>	<b>95.4</b>
<b>SEMI-FINISHED PRODUCTS AND CRUDE</b>	<b>1,299</b>	<b>6.2</b>	<b>1,304</b>	<b>4.6</b>
<b>TOTAL PRODUCTS, SEMI-FINISHED AND CRUDE</b>	<b>21,000</b>	<b>100.0</b>	<b>28,080</b>	<b>100.0</b>

<sup>(1)</sup> Provisional data.

<sup>(2)</sup> Includes exports by the petrochemical sector.

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

**Italy** Crude arrivals by ports  
(Thousands of tons)

	1990	1995	2000	2005	2010	2012	2013	2014	2015
Augusta (Syracuse)	11,010	12,390	14,200	14,530	11,320	9,875	7,820	7,160	8,180
Cagliari	12,050	12,130	13,200	14,605	14,345	13,005	12,240	12,120	14,600
Falconara (Ancona)	2,850	3,340	3,300	3,365	3,250	3,065	1,575	3,250	3,300
Fiumicino (Rome)	3,310	3,680	3,580	4,030	3,330	2,230	—	—	—
Gela (Caltanissetta)	3,570	3,840	2,590	2,050	2,110	720	305	125	—
Genoa - Multedo <sup>(*)</sup>	20,320	18,600	14,160	15,605	13,700	11,260	10,770	11,370	11,000
La Spezia	130	5	—	—	—	—	—	—	—
Livorno	3,700	3,175	3,710	4,240	4,550	4,000	3,890	3,530	4,220
Milazzo (Messina)	4,400	4,730	6,910	7,385	7,760	7,970	7,400	7,110	8,060
Naples	3,620	—	—	—	—	—	—	—	—
Priolo Melillli (Syracuse)	6,600	8,550	8,850	11,145	7,570	7,440	6,510	7,010	7,230
Ravenna	270	235	60	40	165	105	90	115	90
Savona - Vado Ligure	5,050	5,790	6,490	7,235	5,955	5,940	5,945	5,230	6,260
Taranto	3,305	3,405	2,530	1,420	1,480	680	255	165	1,040
Trieste <sup>(*)</sup>	25,865	27,190	34,520	36,990	34,500	34,900	41,930	41,495	41,100
Venice Porto Marghera	4,210	4,940	5,600	5,760	5,630	4,610	3,575	—	—
<b>TOTAL</b>	<b>110,260</b>	<b>112,000</b>	<b>119,700</b>	<b>128,400</b>	<b>115,665</b>	<b>105,800</b>	<b>102,305</b>	<b>98,680</b>	<b>105,080</b>

<sup>(\*)</sup> Crude for the CEL pipeline included until 1996 (starting from 1997 the Genoa-Ingolstadt section is out of service).

<sup>(\*)</sup> Crude of the TAL pipeline included.

Source: Unione Petrolifera

### Italy Refineries activities (Thousands of tons)

Raw material processed	2014		2015	
Domestic crude	5,248		4,828	
Imported crude	54,397		61,944	
Semi-finished products	10,758		11,090	
Biofuels/Additives/Oxygenates	1,149		1,286	
<b>TOTAL</b>	<b>71,552</b>		<b>79,148</b>	

Products obtained	Quantity	%	Quantity	%
LPG	1,608	2.2	1,725	2.2
Petrol	13,964	19.5	15,029	19.0
Virgin naphtha	3,333	4.7	4,494	5.7
Jet fuel/Kerosene	2,355	3.3	2,417	3.0
Gasoil	29,476	41.2	32,828	41.5
Fuel oil	5,770	8.1	6,172	7.8
- of which low sulphur	1,573	2.2	1,532	1.9
Lubricants	1,216	1.7	1,251	1.6
Bitumen	2,660	3.7	2,931	3.7
Other products	1,150	1.6	1,265	1.6
Semi-finished products	3,812	5.3	4,754	6.0
Consumption and losses	6,208	8.7	6,282	7.9
<b>TOTAL</b>	<b>71,552</b>	<b>100.0</b>	<b>79,148</b>	<b>100.0</b>

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

### Italy Capacities of major refinery plants

On 1 <sup>st</sup> January	Atmospheric distillation	Thermal processes	Catalytic processes		Isomeriz. naphtha <sup>(*)</sup>	Alkylation <sup>(*)</sup>	Mtbe <sup>(*)</sup>	Hydrogen	Desulph. middle distillates
			Cracking	Reforming					
	Millions of tons/year				Thousands of tons/year				
2009	123.3	26.04	39.17	13.38	3,369	1,730	230	298.8	49,371
2010	123.3	26.03	38.03	13.38	3,245	1,820	230	324.6	47,524
2011	124.1	25.74	38.31	13.39	3,263	2,152	244	329.8	49,204
2012	118.7	23.41	39.69	12.33	2,782	2,165	246	386.0	47,916
2013	112.5	21.16	39.27	11.71	2,482	2,137	256	336.4	46,843
2014	112.4	21.16	37.25	11.04	2,482	1,729	179	351.0	46,150
2015	100.4	15.23	36.21	11.05	2,371	1,697	182	390.6	40,470
<b>2016</b>	<b>100.4</b>	<b>15.23</b>	<b>36.29</b>	<b>11.05</b>	<b>2,371</b>	<b>1,677</b>	<b>182</b>	<b>390.6</b>	<b>40,799</b>

(\*) Output capacity.

Source: Unione Petrolifera

**Italy Refining capacity and raw material processed**

	Location	Effective refining capacity <sup>(1)</sup> on January 1 <sup>st</sup> 2015 (Millions of tons/year)	Raw material processed <sup>(2)</sup> (Thousands of tons)	
			2014	2015
Eni Refining & Marketing Div.	Sannazzaro (PV)	10.0	9,246	—
Sarpom	Trecate (NO)	9.0	5,405	—
Eni Refining & Marketing Div.	P. Marghera (VE)	—	1,565	—
IES	Mantova	—	142	—
Eni Refining & Marketing Div.	Livorno	4.2	4,578	—
Iplom	Busalla (GE)	1.9	1,794	—
<b>NORTH AND TYRRHENIAN</b>			<b>22,730</b>	<b>25,705</b>
Api	Falconara M.(AN)	3.9	3,411	—
Alma	Ravenna	—	311	—
Eni Refining & Marketing Div.	Taranto	5.2	4,157 <sup>(3)</sup>	—
<b>ADRIATIC</b>			<b>7,879</b>	<b>8,780</b>
Raffineria Isab	Priolo G. (SR)	19.4	9,228 <sup>(4)</sup>	—
Esso	Augusta (SR)	8.0	8,041 <sup>(5)</sup>	—
Raffineria di Gela	Gela (CL)	—	706 <sup>(4)</sup>	—
Raffineria di Milazzo	Milazzo (ME)	10.6	9,101	—
Saras	Sarroch (CA)	15.0	13,867 <sup>(4)</sup>	—
<b>ISLANDS</b>			<b>40,943</b>	<b>44,663</b>
<b>TOTAL</b>			<b>87.2</b>	<b>71,552</b>

<sup>(1)</sup> Capacity defined “technically-balanced” supported by secondary processing plants to produce petrol and gasoil according to specification. The introduction of this concept of capacity, as the most realistic one for the purpose of calculating plant utilisation, is the result of a detailed analysis of the situation in every single refinery.

<sup>(2)</sup> Crude, semi-finished products, additives, oxygenates and methane.

<sup>(3)</sup> Includes imported semi-finished products as input for visbreaking plants.

<sup>(4)</sup> Includes semi-finished products from petrolchemicals.

<sup>(5)</sup> Includes imported residuum as input for vacuum plants.

Source: Unione Petrolifera on data by the Ministry of Economic Development and Istat

**Italy** Sales to local market and consumption of oil products  
(Thousands of tons)

	2014	2015 <sup>(1)</sup>		% change 2015 vs. 2014
	Quantity	Quantity	%	
LPG	3,079	3,250	6.4	+ 5.6
- of which "retail"	1,564	1,648	3.2	+ 5.4
PETROL <sup>(2)</sup>	7,901	7,822	15.4	- 1.0
- of which "retail"	7,652	7,601	15.0	- 0.7
JET FUELS	3,775	3,885	7.6	+ 2.9
Kerosene	5	5	—	+ 6.5
DIESEL GASOIL	22,784	23,226	45.7	+ 1.9
- of which "retail"	14,621	14,952	29.4	+ 2.3
Heating oil	1,138	1,174	2.3	+ 3.2
Gasoil for farms	1,868	1,897	3.7	+ 1.6
Marine gasoil	280	272	0.5	- 2.9
Gasoil for power generation	36	23	0.1	- 36.1
TOTAL GASOIL <sup>(3)</sup>	26,106	26,592	52.4	+ 1.9
Fuel oil high sulphur	785	1,235	2.4	+ 57.3
Fuel oil low sulphur	592	704	1.4	+ 18.9
TOTAL FUEL OIL	1,377	1,939	3.8	+ 40.8
- of which for power generation	472	615	1.2	+ 30.3
LUBRICANTS	387	386	0.8	- 0.3
- of which "retail"	3.7	3.0	—	- 18.9
BITUMEN	1,485	1,501	3.0	+ 1.1
Other products <sup>(4)</sup>	1,993	2,019	4.0	+ 1.3
Petrochemical net feedstock	2,718	3,388	6.7	+ 24.7
<b>TOTAL INLAND SALES</b>	<b>48,825</b>	<b>50,786</b>	<b>100.0</b>	<b>+ 4.0</b>
Bunker gasoils	452	487		+ 7.7
Bunker fuel oils	1,845	2,116		+ 14.7
Bunker lubricants	34	38		+ 11.6
TOTAL BUNKERS	2,331	2,641		+ 13.3
CONSUMPTION AND LOSSES	6,207	6,282		+ 1.2
- of which proper refinery consumption and losses	3,491	3,800		+ 8.9
- of which consumption, in refinery, of semi-finished production for gasification and production of electricity	2,249	1,872		- 16.8
- of which consumption, in refinery, for direct production of electric and thermal energy	467	610		+ 30.6
Stock change <sup>(5)</sup>	+221	+259		...
<b>TOTAL CONSUMPTION</b>	<b>57,584</b>	<b>59,968</b>		<b>+ 4.1</b>

<sup>(1)</sup> Provisional data.

<sup>(2)</sup> Includes ETBE and Bioethanol.

<sup>(3)</sup> Includes Biodiesel.

<sup>(4)</sup> Includes Petroleum coke.

<sup>(5)</sup> The "+" sign refers to stock reduction, the "-" sign refers to stock increase.

Source: Ministry of Economic Development

**Italy** The estimated number of sales points for motorfuels distribution and of the average throughput at year's end

	2000	2005	2010	2013	2014
Motorway points	465	457	466	465	455
Service stations	8,150	8,628	9,419	9,328	9,023
Filling stations	7,001	6,250	6,429	5,695	5,284
Kiosks/Isolated points	7,398	5,963	4,806	3,769	3,321
<b>TOTAL "SAMPLE"<sup>(1)</sup></b>	<b>23,014</b>	<b>21,298</b>	<b>21,120</b>	<b>19,257</b>	<b>18,083</b>
of which: – with gasoil	20,140	20,647	20,854	19,076	18,004
– with LPG	1,252	1,357	1,537	1,775	1,766
– with unleaded petrol	22,725	21,174	21,023	19,193	18,024
– with self-service/pre-pay <sup>(2)</sup>	7,717	11,649	14,789	16,561	15,291
– with self-service/post-pay <sup>(2)</sup>	3,998	6,162	8,356	8,956	9,381
<b>TOTAL ITALY<sup>(3)</sup></b>	<b>23,900</b>	<b>22,400</b>	<b>22,900</b>	<b>21,800</b>	<b>21,300</b>
Average throughput <sup>(4)</sup>	1,479	1,621	1,486	1,301	1,311

<sup>(1)</sup> The sample includes Eni R&M Div., Erg SpA, Esso, IES, IP Gruppo Api, Lukoil, Q8, Kri (ex Shell), Tamoil and TotalErg.

<sup>(2)</sup> Pre-pay and post-pay services are separately indicated when both present at the same outlet. For years 2005-2011 it is the sum of sales points only with post-pay and with post-pay and service.

<sup>(3)</sup> Estimated.

<sup>(4)</sup> Petrol and diesel gasoil, in cubic metres.

Source: Unione Petrolifera



**Italy** The Cif cost of imported crude “Own account” by Country of origin in 2015

	°Api	% sulphur	Thousands of tons	Cif cost \$/ton
Saudi Arabia	33.1	1.9	5,435	386.7
Kuwait	30.7	2.7	186	310.3
Iraq	29.9	2.7	11,613	329.3
Israel	32.8	2.5	3	265.0
U.A.E.	30.4	2.3	73	310.0
<b>TOTAL MIDDLE EAST</b>	<b>30.9</b>	<b>2.4</b>	<b>17,310</b>	<b>347.0</b>
Algeria	44.7	0.1	1,302	407.1
Angola	29.2	0.4	2,790	371.7
Cameroon	23.7	0.3	308	378.4
Congo	37.1	0.2	1,906	395.7
Equatorial Guinea	31.5	0.3	630	405.5
Egypt	33.6	1.2	2,713	385.8
Gabon	34.0	0.4	1,180	401.5
Ghana	37.3	0.2	1,025	403.8
Ivory Coast	31.5	0.3	43	352.5
Libya	33.9	1.0	3,852	394.2
Mauritania	27.0	0.5	140	346.6
Nigeria	31.6	0.2	1,927	400.0
Tunisia	32.4	0.9	255	419.8
<b>TOTAL AFRICA</b>	<b>33.9</b>	<b>0.6</b>	<b>18,071</b>	<b>392.2</b>
Azerbaijan	36.9	0.2	11,189	405.4
Kazakhstan	46.5	0.6	5,247	431.9
Russia	31.4	1.2	8,181	383.0
<b>TOTAL FORMER USSR</b>	<b>37.1</b>	<b>0.6</b>	<b>24,617</b>	<b>403.6</b>
Albania	9.8	5.0	281	266.9
Greece	29.2	3.1	81	332.5
Norway	32.5	0.4	262	373.6
United Kingdom	32.9	0.4	248	437.3
<b>TOTAL EUROPE</b>	<b>25.0</b>	<b>2.1</b>	<b>872</b>	<b>353.5</b>
Brazil	19.0	0.7	94	382.0
Colombia	24.7	1.0	577	353.7
Mexico	37.7	0.9	613	368.5
United States	53.5	0.4	303	448.1
<b>TOTAL AMERICA</b>	<b>34.9</b>	<b>0.8</b>	<b>1,587</b>	<b>379.1</b>
<b>TOTAL</b>	<b>34.2</b>	<b>1.1</b>	<b>62,457</b>	<b>383.3</b>

Source: Unione Petrolifera

**Italy** The Cif monthly cost of imported crude “Own account”

	Year 2014			Year 2015		
	Thousands of tons	Cif cost		Thousands of tons	Cif cost	
		\$/ton.	Euro/ton.		\$/ton.	Euro/ton.
January	4,892	811.57	596.29	5,141	368.15	316.79
February	3,850	800.66	586.20	4,319	407.59	359.12
March	4,300	790.77	572.09	5,176	425.20	392.33
<b>1<sup>ST</sup> QUARTER</b>	<b>13,042</b>	<b>801.49</b>	<b>585.33</b>	<b>14,636</b>	<b>399.96</b>	<b>356.00</b>
April	3,785	786.02	569.06	4,898	428.64	397.65
May	5,085	813.00	592.04	5,474	460.26	412.81
June	3,882	817.36	601.33	5,037	459.08	409.41
<b>2<sup>ND</sup> QUARTER</b>	<b>12,752</b>	<b>806.32</b>	<b>588.05</b>	<b>15,409</b>	<b>449.82</b>	<b>406.88</b>
July	4,656	796.54	588.32	5,476	417.95	380.10
August	5,074	757.05	568.52	5,294	360.32	323.46
September	4,174	715.59	554.66	5,191	343.55	306.16
<b>3<sup>RD</sup> QUARTER</b>	<b>13,904</b>	<b>757.83</b>	<b>570.99</b>	<b>15,961</b>	<b>374.64</b>	<b>337.27</b>
October	4,950	634.30	500.53	5,203	349.85	311.39
November	4,643	584.11	468.33	5,381	321.28	299.25
December	4,553	483.89	392.41	5,867	277.07	254.73
<b>4<sup>TH</sup> QUARTER</b>	<b>14,146</b>	<b>569.42</b>	<b>455.16</b>	<b>16,451</b>	<b>314.55</b>	<b>287.21</b>
<b>YEAR</b>	<b>53,844</b>	<b>730.39</b>	<b>548.07</b>	<b>62,457</b>	<b>383.30</b>	<b>345.65</b>
<i>% change 2015 vs. 2014</i>				+16.0	-47.5	-36.9

Source: Unione Petrolifera

**Italy** The Fob and Cif monthly cost of imported crude “Own account”  
(Euro/ton)

	Year 2014			Year 2015		
	Fob	Freight	Cif	Fob	Freight	Cif
January	589.05	7.24	596.29	308.73	8.06	316.79
February	578.65	7.55	586.20	349.43	9.69	359.12
March	567.88	4.21	572.09	378.32	14.01	392.33
April	563.85	5.21	569.06	387.40	10.25	397.65
May	586.52	5.52	592.04	402.73	10.08	412.81
June	594.34	6.99	601.33	401.95	7.46	409.41
July	581.21	7.11	588.32	371.95	8.15	380.10
August	561.55	6.97	568.52	313.32	10.14	323.46
September	550.42	4.24	554.66	298.80	7.36	306.16
October	494.19	6.34	500.53	301.30	10.09	311.39
November	462.15	6.18	468.33	288.83	10.42	299.25
December	384.66	7.75	392.41	244.82	9.91	254.73
<b>YEAR</b>	<b>541.77</b>	<b>6.30</b>	<b>548.07</b>	<b>336.93</b>	<b>8.72</b>	<b>345.65</b>

Source: Unione Petrolifera

**Italy** The monthly average prices of major products (2015)

	Unleaded petrol (Euro/litre)	Diesel gasoil (Euro/litre)	LPG automotive (Euro/litre)	Heating oil (Euro/litre)	Fuel oil low sulphur (Euro/kg)
CONSUMER PRICE <sup>(*)</sup>					
January	1.476	1.390	0.632	1.180	0.371
February	1.489	1.400	0.620	1.194	0.409
March	1.565	1.462	0.642	1.230	0.435
April	1.582	1.451	0.655	1.230	0.446
May	1.613	1.479	0.642	1.274	0.465
June	1.623	1.478	0.621	1.260	0.447
July	1.626	1.452	0.603	1.236	0.428
August	1.569	1.400	0.598	1.177	0.372
September	1.496	1.359	0.586	1.154	0.337
October	1.474	1.349	0.582	1.142	0.339
November	1.458	1.341	0.584	1.133	0.341
December	1.450	1.310	0.597	1.083	0.303
<b>YEAR</b>	<b>1.538</b>	<b>1.406</b>	<b>0.613</b>	<b>1.169</b>	<b>0.388</b>

	Unleaded petrol (Euro/litre)	Diesel gasoil (Euro/litre)	LPG automotive (Euro/litre)	Heating oil (Euro/litre)	Fuel oil low sulphur (Euro/kg)
INDUSTRIAL PRICE <sup>(*)</sup>					
January	0.481	0.522	0.371	0.564	0.306
February	0.492	0.530	0.361	0.575	0.340
March	0.555	0.581	0.379	0.605	0.364
April	0.568	0.572	0.390	0.605	0.374
May	0.594	0.595	0.379	0.641	0.391
June	0.602	0.594	0.362	0.630	0.375
July	0.604	0.573	0.347	0.610	0.357
August	0.558	0.530	0.343	0.562	0.307
September	0.498	0.496	0.333	0.543	0.275
October	0.480	0.488	0.330	0.533	0.277
November	0.466	0.481	0.332	0.525	0.279
December	0.460	0.456	0.342	0.484	0.244
<b>YEAR</b>	<b>0.532</b>	<b>0.535</b>	<b>0.355</b>	<b>0.555</b>	<b>0.322</b>

<sup>(\*)</sup> Data deriving from the weekly survey carried out by the Ministry of Economic Development and communicated to the European Union. The yearly value is the average of the 12 months weighted on the sales.

<sup>(\*)</sup> The industrial price corresponds to the consumer price less taxes.

Source: Unione Petrolifera on data from the Ministry of Economic Development

**Europe** Pump prices and taxes on motorfuels on May 1<sup>st</sup> 2016

	UNLEADED PETROL (Euro/litre)			DIESEL GASOIL (Euro/litre)		
	Pump price	Taxes	% share of taxes	Pump price	Taxes	% share of taxes
Austria	1.125	0.681	60.5	1.024	0.580	56.7
Belgium	1.293	0.843	65.3	1.079	0.652	60.4
Bulgaria	0.942	0.520	55.2	0.896	0.480	53.5
Cyprus	1.136	0.671	59.1	1.087	0.634	58.3
Croatia	1.208	0.758	62.7	1.083	0.626	57.8
Denmark	1.424	0.904	63.5	1.141	0.652	57.1
Estonia	1.088	0.604	55.5	1.013	0.562	55.5
Finland	1.386	0.921	66.5	1.175	0.721	61.3
France	1.314	0.867	66.0	1.094	0.693	63.3
Germany	1.317	0.865	65.7	1.078	0.643	59.6
Greece	1.390	0.939	67.6	1.045	0.534	51.1
Ireland	1.299	0.851	65.5	1.119	0.708	63.3
Latvia	1.084	0.633	58.4	0.923	0.511	55.3
Lithuania	1.058	0.618	58.4	0.929	0.491	52.9
Luxembourg	1.090	0.620	56.9	0.917	0.468	51.1
Malta	1.280	0.745	58.2	1.160	0.649	56.0
The Netherlands	1.487	1.036	69.7	1.117	0.686	61.4
Poland	1.000	0.565	56.5	0.916	0.502	54.8
Portugal	1.398	0.943	67.4	1.128	0.677	60.0
United Kingdom	1.370	0.962	70.2	1.380	0.964	69.8
Czech Republic	1.051	0.658	62.5	0.986	0.576	58.5
Romania	1.089	0.635	58.3	1.058	0.599	56.6
Slovakia	1.219	0.773	63.4	1.035	0.579	55.9
Slovenia	1.202	0.780	64.9	1.059	0.680	64.2
Spain	1.160	0.663	57.2	1.006	0.543	53.9
Sweden	1.418	0.964	68.0	1.338	0.869	65.0
Hungary	1.075	0.614	57.2	1.042	0.576	55.3
<b>ITALY</b>	<b>1.449</b>	<b>0.990</b>	<b>68.3</b>	<b>1.274</b>	<b>0.847</b>	<b>66.5</b>

Source: Unione Petrolifera based on European Union, DG Energy data

**Europe** Consumer prices and taxes on heating and fuel oils on May 1<sup>st</sup> 2016

	HEATING OIL (Euro/litre)			FUEL OIL LOW SULPHUR (industrial use) (Euro/kg)		
	Pump price	Taxes	% share of taxes	Pump price	Taxes	% share of taxes
Austria	0.607	0.210	34.6	0.340	0.124	36.5
Belgium	0.474	0.101	21.3	0.253	0.060	23.8
Bulgaria	0.831	0.469	56.4	—	—	—
Cyprus	0.653	0.240	36.7	0.546	0.105	19.2
Croatia	0.548	0.155	28.4	0.407	0.103	25.3
Denmark	1.143	0.561	49.1	0.891	0.587	65.9
Estonia	0.603	0.212	35.1	—	—	—
Finland	0.765	0.362	47.3	—	—	—
France	0.622	0.200	32.2	0.385	0.133	34.6
Germany	0.512	0.143	27.9	—	—	—
Greece	0.755	0.377	50.0	0.370	0.111	30.0
Ireland	0.570	0.190	33.4	0.656	0.180	27.4
Latvia	0.536	0.124	23.1	—	—	—
Lithuania	0.450	0.099	22.0	0.363	0.078	21.5
Luxembourg	0.450	0.065	14.5	—	—	—
Malta	1.000	0.385	38.5	—	—	—
The Netherlands	0.884	0.646	73.1	0.598	0.140	23.4
Poland	0.586	0.162	27.7	0.369	0.084	22.6
Portugal	0.953	0.525	55.1	0.517	0.096	18.5
United Kingdom	0.514	0.166	32.2	—	—	—
Czech Republic	0.540	0.182	33.6	0.229	0.057	25.0
Romania	0.674	0.535	79.4	0.334	0.071	21.4
Slovakia	—	—	—	0.423	0.202	47.7
Slovenia	0.708	0.372	52.5	0.486	0.199	40.9
Spain	0.545	0.182	33.4	0.287	0.047	16.5
Sweden	1.036	0.644	62.2	0.933	0.660	70.8
Hungary	1.042	0.576	55.3	0.379	0.099	26.2
<b>ITALY</b>	<b>1.080</b>	<b>0.598</b>	<b>55.4</b>	<b>0.305</b>	<b>0.059</b>	<b>19.4</b>

Source: Unione Petrolifera based on European Union, DG Energy data

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Graphic layout and printed by Saro Italia Srl (Rome)  
July 2016





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