

ITALY

Presentation to Oil Barrel.com

3rd April 2008

Barry Lonsdale





**Idrocarburi
made in Italy**



L'ITALIA, PAESE DI IDROCARBURI



ITALIAN OVERVIEW

- Italy is the world's fifth largest economy and the third greatest consumer of hydro carbons in western Europe. Of its total energy consumption - 50% is oil and 32% is gas. The remaining is satisfied by solid fuel and hydro electricity.
- Natural gas represents the emerging fuel of Italy and it consumes 70 billion cm of natural gas per year
- Imports represent 81% of Italy's total energy consumption
- Gas demand has increased by 40% in the last 10 years
- Italy has practically no indigenous coal resources and nuclear energy generation is banned following a referendum
- Italy has produced 2.5 billion barrels of oil equivalent in the last 40 years – estimates vary but it is likely that in excess of this figure remain to be discovered
- Italian annual production, Europe's third largest, is 20 billion cm of natural gas which is one third of domestic consumption and 80 million barrels of oil per year which is roughly 10 % of oil demand
- With application of new technologies in seismic and directional drilling etc exploration and production has had a strong impulse in the last decade
- In contrast to expectations of 20 years ago Italy has now become the fourth European country for production and reserves – right behind the North Sea producers and is the number one for onshore production in Europe

ITALIAN OVERVIEW - continued

- In the Southern Adriatic the Aquila oilfield development contributes a European record it is in 850 meters of water and uses a whole set of innovating technologies and remote control systems
- The Po Valley basin was opened up in 1998 in order to attract foreign exploration companies in deep oil plays and anticlinal flank gas traps adjacent to major structurally controlled gas fields

HISTORIC SUMMARY OF ITALIAN UPSTREAM OIL INDUSTRY

- Italian oil exploration dates back to Eighteen hundreds - first well being drilled at Tocco Casauria (near Pescara) in 1863 on a surface oil seep. Just five years after Drake's Titasville well in Pennsylvania USA
- Italy was the third nation in the world after the USA and Romania to develop an oil industry and between 1860 and 1910, 1225 very shallow wells (50-200m) were drilled in Emilia, Northern Apennines producing a very modest 50,000 barrels per year by 1910
- Up to 1925 Italian exploration was carried out by small, local pioneering but poorly financed companies S.P.I. produced 80% of Italian oil largely from the Emilian Apennines was most important of these
- During 1926 a wave of Nationalism overturned a parliamentary decree that was about to give an exclusive monopoly concession to all of Emilia and Sicily to US company Sinclair
- On May 19, 1926 AGIP was formed Azendia, Generale Italiana Petroli
- During 1930 successful exploration was carried out in Lombardia, Emilia, Abruzzo and Lucania utilising field geology gravity and magnetics. In 1935 Rotary drilling equipment was introduced allowing drilling to depths of 2000 meters
- In 1938 two seismic reflection crews were imported from the USA from Western Geophysics. The first time such surveys were conducted in Europe
- 1944 – First major gas discovery in Po Basin at Caviaga using seismic. Po Basin exclusive area created for ENI 1953. Mattei president 1946
- Between 1943-53 – 12 seismic crew and 15 rigs found major gas fields in Po Basin transforming Italy into an industrial nation based on gas power



HISTORIC SUMMARY OF ITALIAN UPSTREAM OIL INDUSTRY - continued

- 1953 – Gulf discovered 300 million barrel Ragusa oil field onshore Sicily (still producing today) – at the time Europe’s largest
- 1953 – Eni was formed to operate national interest in the Po Valley and were granted an exclusive area of 5 million hectares covering the entire onshore Po Basin with an offshore extension in to the Adriatic
- 1957 – National hydrocarbon law introduced for countrywide activity to be run by Ministry
- 1959 – Agip drills Europe's first offshore well Gela 21 offshore Sicily a year later discovered major gas field offshore Ravenna in Northern Adriatic – Europe’s first offshore gas field development
- 1967 – the Italian Ministry passed the important law 613 opening up the offshore area around parts of Italy to water depths up to 200m (considered maximum for drilling operations at that time) . Significant world class discoveries in Italy are Ragusa, Gela, Gagliano, Villafortuna, Rospo, Vega Aquila, 150 gas fields etc
- Major break through in the late eighties with modern seismic reprocessing etc in complex geology in mountain belts – 1 billion barrels Mt Alpi oil field complex and 250 Tempa Rossa were discovered in the southern Apennines Thrust belt. Currently producing 120,000 bopd by pipeline to the refinery at Taranto



HISTORIC SUMMARY OF ITALIAN UPSTREAM OIL INDUSTRY - continued

- In 1996 Eni's exclusive Po Valley zone ceased due to the European decree opening up the area to other entrants
- Today's significant foreign players include Mobil, Shell and Total, Northern/ATI, Forest Oil, Stratic (ex Grove), Petro Celtic and Po Valley Energy etc
- During the 1970 – 80's besides Agip and Edison, many overseas majors and large independents were operative in Italy including Conoco, Amoco, Anschutz, Hispanoil, Norsk Hydro, Elf, Total and Canada North West
- During the 1980 to 90's UK companies had a major presence in Italy such as Lasmo, Enterprise, British Gas and T.C.P.L.. The former two were later taken over.
- Also during this period medium sized independents entered into Italy such as Triton, British Borneo, Sovereign, Union Texas etc

THE ITALIAN DEAL Tax & Royalty System

Italy's excellent Licensing Terms:

Italy is an attractive country in which to conduct an oil and gas exploration and production enterprise. The fiscal and licensing terms in Italy are considered to be very favourable within the Company's business model:

- Italy has no bidding rounds – open acreage can be applied for at any time but good acreage is hard to obtain now
- Exploration licences can be applied for in an open area and as large as 750km²
- Exploration licences are awarded for an initial six year period, and it can be five years before a firm obligation to drill is required
- Once commercial oil or gas has been discovered a production concession can be obtained for 30 years
- There is a production royalty rising to only a maximum of 7% (4% for offshore oil) however no royalties are due on the first annual 20 million cubic metres of gas and 20 thousand tons of oil
- Italian source income is subject to both regional taxes and taxation on corporate profits at rates of up to 31.25%.
- There is no P.R.T in Italy
- Annual rentals are low

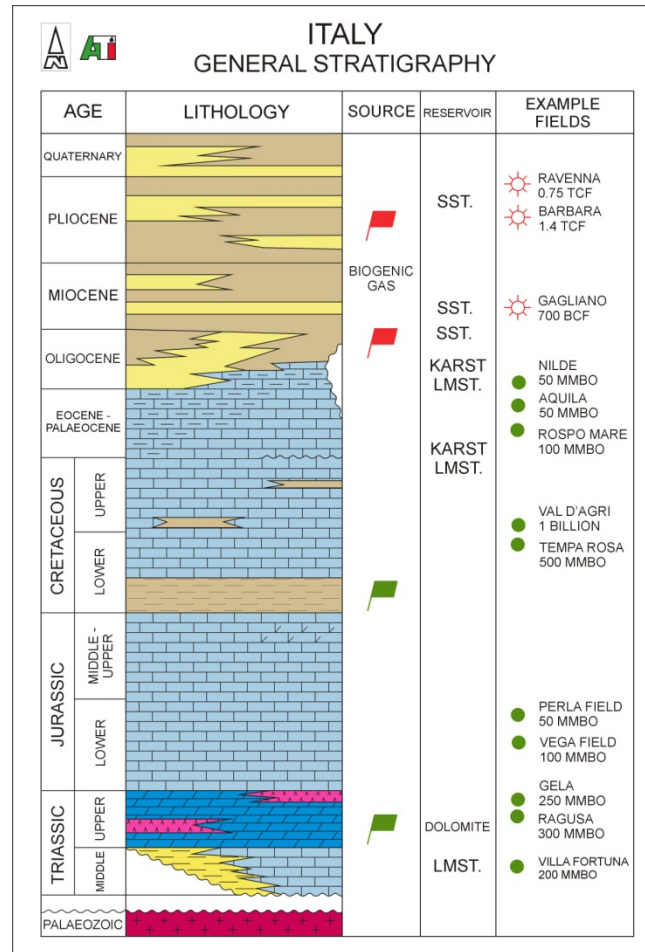




GEOLOGY OVERVIEW & PRINCIPAL EXPLORATION THEMES

- Geology of Italy is essentially complex with the entire backarc – thrust/foldbelt – Foredeep – foreland system originating from the collision between the African and European plates
- During the Mesozoic period the largely shallow water carbonate reservoirs and deeper basinal source rocks that contain the majority of Italian oil fields have strong affinity with the Geology of North Africa
- The Apulian plate moved north and was involved in the Alpine-Appenninic orogeny causing widespread structural formation and thrusting in the overthrust and fold belt
- In the post Miocene – widespread subsidence occurred with development of foredeep basins in front of the advancing thrust belt containing rich biogenetic gas prone source rocks and an influx of porous sandstone reservoirs
- A simplified exploration principal is that 70% of Italian gas reserves are trapped in Tertiary clastics (sandstones / siltstones) reservoirs predominantly sourced by biogenetic gas (99% pure methane and no sulphur) (rather unique to Italy) and located in the Tertiary foredeeps
- Many explorers have the wrong conception of Italy as a “heavy” oil” province. The reality is a range of 9° to 41 ° Api oils in numerous basins. Remember Prudhoe Bay is 14 ° - 18 ° Api and the real issue is oil mobility in the reservoir

General stratigraphy



GEOLOGY OVERVIEW & PRINCIPLE EXPLORATION THEMES

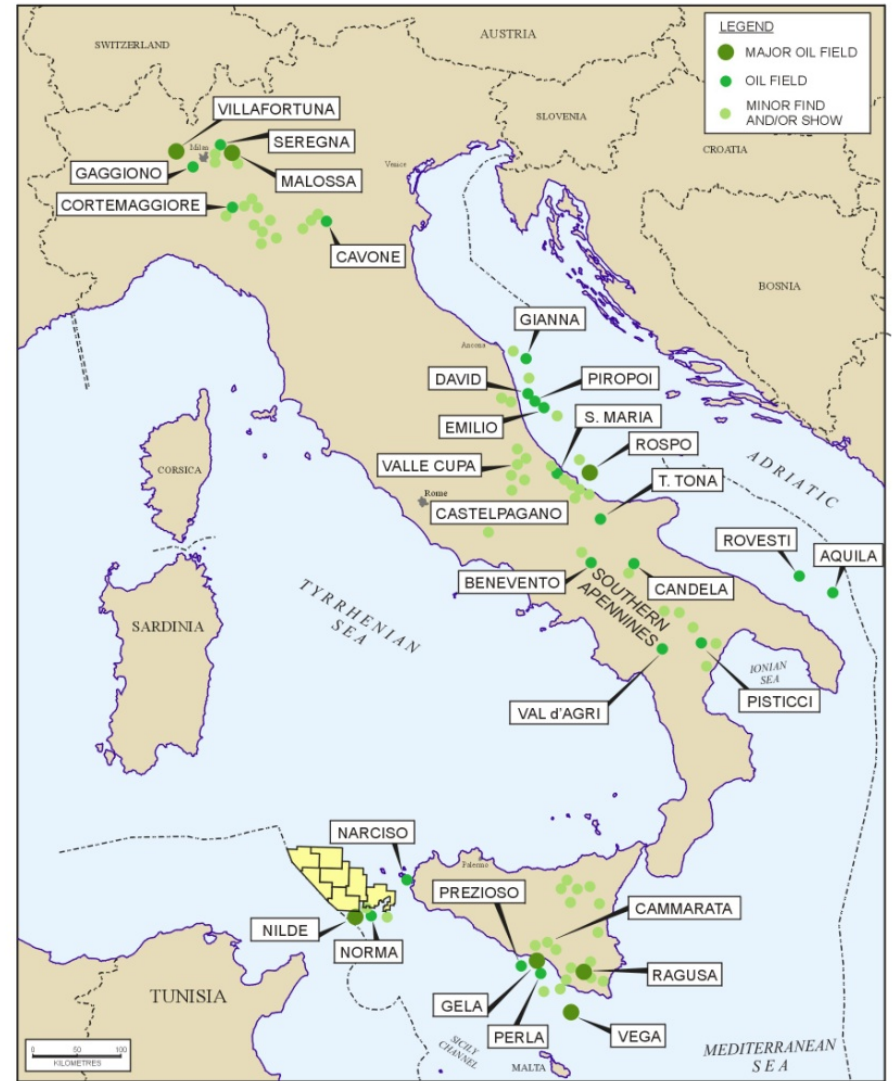
- The majority of Italian oil fields are trapped in Mesozoic carbonate reservoirs (limestones and dolomites) with generally low matrix but high fracture poroperms giving high production rates. Major source rocks are mesozoic basinal marls and shales which however have a limited regional distribution. There is a significant exception in the Southern Adriatic where Tertiary carbonate build ups host the Giove oil field.

Tertiary foredeep – prolific gas play minor oil play – runs the entire length of Italy – from Torino to the tip of Sicily. Contains 2000 – 5000 m of prospective section. Excellent sandstone reservoirs, rich biogenetic gas prone source rocks.

- Major expression is the Po Basin – containing 150 significant gas fields with the potential for a whole new range of more subtle part stratigraphic structural traps such as the recent discoveries of Abbadesse and Agosta gas fields.
- Marche, Abruzzo, Bradano troughs
- Crotona – Central Sicily basin



OIL FIELD AND THRUST BELT DISTRIBUTION IN ITALY



GEOLOGY OVERVIEW & PRINCIPLE EXPLORATION THEMES

Thrust Belt

- Highly complex, needs modern seismic technology to define prospects
- Runs length of Italy – thousands of structural closures but success depends on vicinity to localised mature source rock basins and Tertiary cap rocks
- These basins are in Lombardy, west central Adriatic, southern Apennines and western Sicily
- Most significant oil field Mt Alpi – Val d'Agri complex, Gagliano gas field – large areas non prospective and others contain beautiful national parks where no drilling exploration is now permitted

Foreland

- stable platform areas in front of the thrustbelt – act as a buffer – normal faulting – strike slip faulting . Major production in foreland carbonates are in Lombardia, Villa Fortuna, Rospo & Aquila in the Adriatic. Ragusa, Gela and Vega in Ibleo platform of Sicily.

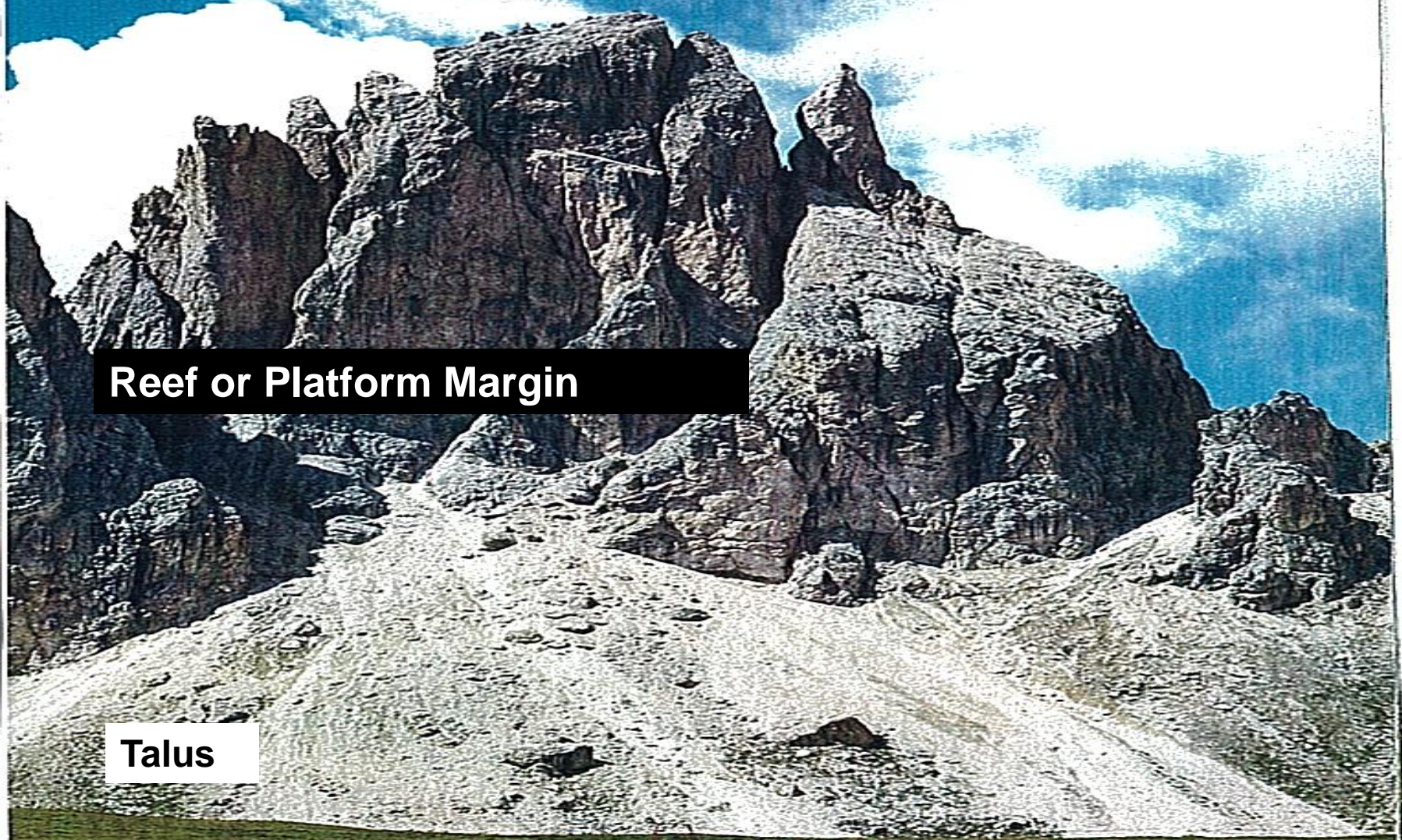
DATA ACCESS

(Improving, especially if you have local knowledge of how to get hold of it and the ability to read the Italian language!)

- A wealth of geological maps and publications. Vast regional database largely in Italian language. Excellent surface geological exposure of reservoirs, source rocks and structural style present as objectives in the subsurface.
- Data in “public domain” from Italian Ministry include 1650 composite well logs of which 280 offshore
- 500 regional offshore seismic lines of various vintages
- 1500 seismic lines from previous exploration projects
- Availability to technical files on all relinquished exploration permits
- In Po Basin seismic data available by purchase from Agip to title holders of individual licences
- Well data and seismic are not available to public over current production concessions
- Production data on individual fields is not in the “public domain”
- All Ministry data and reports are almost exclusively in the Italian language



Dolomite Outcrops Trentino Alps – Platform Margin Carbonates & Carbonate Talus Fans – Modern Analogue for major new play concept of Northern ATI in Southern Adriatic Licences



Reef or Platform Margin

Talus

Basin



LICENCE APPLICATIONS

- Initial exploration licence – subsequently to testing a discovery – a production licence
- Open season – select the area for exploration licence, write detailed technical report and select your work programme and file at the Ministry. Any application can be top filed within three months of the publication in the monthly hydrocarbon bulletin
- If the Ministry of Industry approves and pre-awards your application, an environmental report has to be commissioned, filed and approved by the Ministry of Environment
- If the decree is granted the exploration licence has an initial six year period with two further three year periods if a well is drilled in the first period
- If commercial hydrocarbons have been discovered and tested to the Ministry's satisfaction, a 30 year production licence can be applied for around the mapped area of the discovery

